



chapter 22

DATA METHODS

General Methods

Within the majority of tables and figures of this report, values are presented to one decimal of precision while values in the text of the report are rounded to the nearest whole number. Due to rounding, some values may sum to more or less than 100%.

The following terms have been used to imply statistical significance between groups: “significantly”, “more likely” and “less likely”. Ninety-five per cent confidence intervals were used to determine the significance of differences between groups.

Logarithmic scales have been used in several graphs throughout the report. A logarithmic scale uses the base-10 logarithm of the rate instead of the actual value of the rate on the y-axis.

With the exception of data from the Canadian Community Health Survey and the Rapid Risk Factor Surveillance System, descriptions of time trends for age-standardized rates or incidence rates are based on the visual representation of the

data and are not meant to imply statistical significance. However, when the data were from a report, significance distinctions are included if made by the original report’s authors.

Unless otherwise stated, all data presented from surveys have been weighted to account for the sampling method used.

To ensure confidentiality, data were suppressed under the following conditions:

- If Canadian Community Health Survey data met the suppression guidelines for CCHS. If unweighted numerators or counts were less than 10 individuals, this is noted within the report as “NR = not releasable due to small numbers”.
- If Rapid Risk Factor Surveillance Data (RRFSS) met the suppression guidelines specifically designed for RRFSS. If unweighted numerators or counts were less than five individuals, this is noted within the report as “NR = not releasable due to small numbers”.
- If vital statistics, hospitalization or emergency department data counts were less than five individuals.

When comparing two populations, differences in the respective age distributions were controlled by using a process of “age-standardization”. This minimizes the effect of differences in age distributions between populations so that observed differences can then be attributed to factors other than age. Throughout this report, the 1991 Canadian population is used as the “standard” population. The incidence rates for HIV and AIDS were not standardized.

“Causes” of death or illness are coded using a standard system called the International Statistical Classification of Diseases and Related Health Problems Tenth Revision (ICD-10). The Ninth Revision of the International Classification of Diseases (ICD-9) was used to code cause of death between 1979 and 1999 and hospital separations between 1986 and 2002. The ICD-10 system was used to code mortality data from 2000 forward. Hospitalization and emergency department visit data from 2003 forward were coded using the Canadian version of the ICD-10 system (ICD-10-CA), with codes provided by Canadian Institute for Health Information.

As changes in the coding system may cause artificial changes in the number of cases of a particular cause or illness, trends in specific causes must be interpreted with caution. These were noted in the text when applicable.

In 2005, a total of 12% of Peel respondents in the Canadian Community Health Survey had missing information related to their household income category. Those with missing income information have been removed from the denominator for all analyses related to household income.

When making international comparisons, countries selected for inclusion were those at the top and bottom of the ranking (e.g. the countries with the highest and lowest life expectancy) and those with relevance based on the most significant immigrant groups in Peel. This included: India, United Kingdom, Italy, China, Portugal, Poland, Jamaica, and the United States.

Data related to ethnicity from the 2005 Canadian Community Health Survey were grouped into eight categories for analysis. The categories were based on the population aged 12 years and older who responded to the question about cultural and racial backgrounds at the time of the interview.

The categories were:

- 1) White
- 2) East/Southeast Asian, including Chinese, Filipino, Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese), Japanese, Korean
- 3) West Asian/Arab, including Arab and West Asian (e.g., Afghan, Iranian)
- 4) South Asian (e.g., East Indian, Pakistani, Sri Lankan)
- 5) Latin American (Mexico, Caribbean islands, South American)
- 6) Black
- 7) Aboriginal people of North America (North American Indian, Metis, Inuit/Eskimo)
- 8) Other (multiple responses across categories defined here, and non-response/don't know/refusal).

Mapping Methods

For Map 4.1, the number of live births is shown in combination with the number of internal migrants and new immigrants in the past five years to show the positive population growth for Mississauga, Brampton and Caledon. This map does not account for any negative population change due to out-migration or death. The number of live births was compiled from two separate sources – Ontario's Live Birth Database (2001-2004) and the Niday Perinatal Database (2005-2006). Data regarding internal migrants and new immigrants were obtained from the 2006 Census (Statistics Canada). Internal migrants are persons who have moved from a different Census Subdivision, in this case, during the five years prior to the Census Day in 2006. Immigrants are defined as persons who have been granted the right to live in Canada permanently by immigration authorities. The term “new immigrants” is used for the purposes of this map to refer to immigrants arriving between 2001 and 2006.

Map 4.2 shows the prevalence of low income after tax by census tract in 2006. Statistics Canada's low-income cut-offs (2006) refer to the percentage of economic families or persons not in economic families who spend 20% or more of their after-tax income than average on food, shelter and clothing. For each census tract in Peel, the proportion of families or individuals with low income was calculated and the census tracts were ranked based on this percentage. These ranked census tracts were sub-divided into five roughly equal groups (quintiles), with an approximately equal number of census tracts in each group.

Map 4.3 shows the after-tax median household income and the proportion of new immigrants (those who immigrated between 2001 and 2006). For each census tract, the percentage of new immigrants was calculated and the census tracts were ranked and classified into quintiles with an equal number of census tracts in each group. After-tax median household income was classified into five, roughly equal groups, with each grouping encompassing the nearest five hundred or thousand.

Map 4.4 shows the dominant ethnic origins of the residents in Peel for 2006. In this map, dominance is defined as the ethnic group with the highest proportion of residents within a dissemination area. However, when proportions are equal, dominance is assigned to the group that reflects groups that are more recent immigrants in Peel. The breakdowns of the ethnic origins are listed in Table 19.1. In the 2006 Census, respondents were asked to specify as many origins as applicable. As well, a total of four lines were provided for written responses with only up to six retained. Although there is some ambiguity in this census variable, this map is meant to show the dominant response for any given dissemination area. Total responses for North American, British Isles and Western European ancestry were combined to represent non-visible minorities. All other responses are intended to reflect the immigrant composition within Peel. Dissemination areas were chosen

over census tracts in this instance because this is the smallest level of geography at which census data are available. This allows smaller ethnic communities to be included since they would otherwise have much smaller values in a larger geographic area.

Map 14.1 presents the surface temperature variation in the Greater Toronto Area (GTA) on August 10, 2002. The map was created using Landsat 7 satellite imagery provided by the Earth Science Sector of Natural Resources Canada. The surface temperature was classified such that Lake Ontario was readily discernible.

Map 15.1 overlays the rate of fast food outlets per 10,000 residents with after-tax median household income. The rate was calculated by summing the number of fast food outlets in each census tract, dividing the count by the population, and then multiplying by 10,000. The after-tax median household income was classified as in Map 4.3.

How Fast Food Was Defined for Map 15.1

For the purpose of this map, fast food outlets were included if their facility type was categorized as 'convenience', 'food take out' or 'snack bar' in the Hedgehog database as of October 16, 2008. Other inclusion criteria were:

- Restaurants with "Take Out", "Snack Bar", "Express" or "Fast Food" in their name
- Restaurants with the same name as an establishment already coded as takeout, snack or convenience (without a duplicate address)
- Restaurants for which the 2007/08 yellow pages indicated 'take-out' in the relevant detailed ad
- Restaurants that are part of an obvious food chain (e.g. McDonalds, Quiznos, Mr. Sub, Tim Hortons, Wendy's, Swiss Chalet, Giggling Tomatoes, Taco Bell, Harvey's)
- Restaurants with the following words in their name:
 - "Café", "Fish and Chips", "Pizza", "Pizzeria", "Donut", "Burger", "Bagel", "Baguette", "Sandwich", "Deli", "Bakery", "Sweets", "Coffee", "Wraps" or "Pita"

Table 19.1
Ethnic Origins, 2006 Census

North American	Eastern European	West Asian	African
American	Estonian	Afghan	Afrikaner
Canadian	Latvian	Armenian	Akan
Newfoundlander	Lithuanian	Assyrian	Amhara
Nova Scotian	Byelorussian	Azerbaijani	Angolan
Ontarian	Czech	Georgian	Ashanti
Quebecois	Czechoslovakian	Iranian	Bantu
Other provincial or regional groups	Slovak	Israeli	Black
	Hungarian	Kurd	Burundian
	Polish	Pashtun	Cameroonian
British Isles origins	Romanian	Tatar	Chadian
Cornish	Russian	Turk	Congolese (Zairian)
English	Ukrainian	West Asian, n.i.e. †	Congolese, n.o.s. ††
Irish			Dinka
Manx	South Asian	Arab	East African
Scottish	Bangladeshi	Egyptian	Eritrean
Welsh	Bengali	Iraqi	Ethiopian
British Isles, n.i.e. †	East Indian	Jordanian	Gabonese
	Goan	Kuwaiti	Gambian
Western European	Gujarati	Lebanese	Ghanaian
Austrian	Kashmiri	Libyan	Guinean, n.o.s. ††
Belgian	Nepali	Algerian	Harari
Dutch (Netherlands)	Pakistani	Berber	Ibo
Flemish	Punjabi	Moroccan	Ivorian
Frisian	Sinhalese	Tunisian	Kenyan
German	Sri Lankan	Maghrebi, n.i.e.	Sri Malagasy
Luxembourger	Tamil	Palestinian	Malian
Swiss	South Asian, n.i.e.†	Saudi Arabian	Mauritian
		Syrian	Nigerian
Southern European	East and Southeast Asian	Yemeni	Oromo
Albanian	Burmese	Arab, n.i.e. †	Peulh
Bosnian	Cambodian		Rwandan
Bulgarian	Chinese		Senegalese
Croatian	Filipino		Seychellois
Cypriot	Hmong		Sierra Leonean
Greek	Indonesian		Somali
Italian	Japanese		South African
Kosovar	Khmer		Sudanese
Macedonian	Korean		Tanzanian
Maltese	Laotian		Tigrian
Montenegrin	Malaysian		Togolese
Portuguese	Mongolian		Ugandan
Serbian	Singaporean		Yoruba
Sicilian	Taiwanese		Zambian
Slovenian	Thai		Zimbabwean
Spanish	Tibetan		Zulu
Yugoslav, n.i.e.†	Vietnamese		African (Black), n.i.e.†
	East or Southeast Asian, n.i.e. †		
	Asian, n.o.s.††		

† n.i.e. = not included elsewhere

†† n.o.s. = not otherwise specified

Source: 2006 Census, Statistics Canada

- “Caribbean”, “Jamaica”, “Jerk”, “Roti”, “West Indian”, “Mexicana” “Mexican”, “Mexicali”, “Asian”, “China”, “Chinese”, “Thai”, “Japanese”, “Korean”, “Viet”, “Vietnamese”, “Pho”, “Spring Rolls”, “Sushi”, “Italian”, “Italy”, “Indian”, “India”, “Punjabi”, “Bombay”, “Tandoor”, or “Tandoori”

Restaurants and selected facilities were excluded if:

- FACTYPE = restaurant and if the 2007/08 yellow pages did NOT indicate ‘take-out’ in the detailed ad
- Selected adult entertainment establishments (based on 2007/08 phone book)
- They had one or more of the following in their name:
 - “Country Club”, “Golf Club”, “Golf course”
 - “Inn”, “Hotel” or “Suites”
 - “Banquet” or “Banquet Hall”
 - “Hospital”
- Restaurants or selected facilities which were hotels, or within a Business Centre
- Restaurants or selected facilities which were known or obvious long-term care centres or retirement homes
- Other restaurants or selected facilities which the general public would generally not be likely to go to frequently for fast food, such as:

- homeless shelters
- Stage West
- Selected clubs (e.g. flying, curling, racquet, Yacht club)
- Selected recreation facilities (e.g. Wild Water Kingdom, Chingaucousy Ski Chalet & Band Shell, Hershey Centre)

- If ‘Convenience’ or ‘Take Out’ locations had a duplicate address, only one was used
- Convenience Stores named “M&M Meat Shop” or dollar stores

CHAPTER-SPECIFIC METHODS

The following outlines methods which were specific to particular chapters of the report.

Chapter 2 - Determinants and Disparities

Within this chapter, income has been categorized several ways based on the source of the information:

The Canadian Community Health Survey (2005)

Based on the self-reported total household income and the number of individuals in the household, four ranked household income categories were developed (Table 19.2)

Table 19.2
Household Income Categories,
Canadian Community Health Survey 2005

Income Level	Income Level Name	Number of people in the household	Total household income
11	Low-Lower Middle (Lowest)	1-2 people	<\$14,999
		3-4 people	<\$19,999
		5+ people	<\$29,999
12	Middle	1-2 people	\$15,000 to \$29,999
		3-4 people	\$20,000 to \$39,999
		5+ people	\$30,000 to \$59,999
13	Upper Middle	1-2 people	\$30,000 to \$59,999
		3-4 people	\$40,000 to \$79,999
		5+ people	\$60,000 to \$89,999
14	Highest (Highest)	1-2 people	More than \$60,000
		3 or more	More than \$80,000

Proportion of Families with Low Income by Census Tract Quintile

In order to examine the association of low income and health outcomes (e.g. low birth weight, sexually transmitted infections), the proportion of economic families or individuals not in economic families below the low income cut-off within a census tract was calculated for each census tract in Peel. Statistics Canada has established low income cut-offs (LICOs), which is an income threshold below which a family likely devotes a larger share of its income on food, shelter and clothing compared to the average family (20% more than the average family).

Census tracts were ranked according to the proportion of low income families/individuals and divided into five equal groups (quintiles), with an equal number of census tracts within each quintile. Health outcome data by census tract could then be linked to the low income information for each census tract (Table 19.3).

For figures related to marital status and highest level of education, only those residents aged 25 to 64 years were included, to avoid confounding the relationship observed with age (i.e. that younger persons are not as likely to be married or to have completed their education and older people are more likely to be widowed or to have lower attained levels of education).

Chapter 4 - Who Lives in Peel?

Census data are rounded to the nearest five prior to release, with the exception of the total

municipality population figures. Due to this rounding, the column totals may be more or less than the actual sum of the column values.

Census data regarding religion are collected every ten years. In Table 4.4, the specific responses included in the general Christian category were: Roman Catholic, United Church, Anglican, Christian (not specified), Baptist, Pentecostal, Protestant (not specified), Presbyterian, Lutheran, and Greek Orthodox.

Chapter 5 - How Healthy are the Residents of Peel?

Respondents in the Canadian Community Health Survey 2005 were asked whether they had ever been diagnosed by a health professional with selected chronic conditions. The chronic conditions examined include: asthma, arthritis or rheumatism (excluding fibromyalgia), back problems (excluding fibromyalgia and arthritis), high blood pressure, chronic bronchitis, emphysema, chronic obstructive pulmonary disease (COPD), diabetes, epilepsy, heart disease, cancer, intestinal or stomach ulcers, suffer from the effects of a stroke, bowel diseases (e.g. Crohn's disease, ulcerative colitis), Alzheimer's diseases or any other dementia, cataracts, glaucoma, thyroid conditions, schizophrenia, mood disorders (e.g. depression, bipolar disorder), anxiety disorders (e.g. a phobia, obsessive-compulsive disorder), and eating disorders (e.g. bulimia, anorexia). Only respondents aged 18 years and older were asked about diagnoses of Alzheimer's disease or

Table 19.3
Low Income Level Categories,
2006 Census

Category	Proportion of economic families/individuals with low income
LI5 (Wealthiest)	0.6% to 5.5%
LI4	5.6% to 7.9%
LI3	8.0% to 9.9%
LI2	10.0% to 13.5%
LI1 (Poorest)	13.6% to 25.6%

dementia, cataracts and glaucoma. Only respondents aged 30 years and older were asked about diagnoses of emphysema and chronic obstructive pulmonary disease. Respondents were categorized as having a chronic condition if they reported at least one of the above conditions.

Figure 5.5 shows the burden of selected diseases in the Ontario population. The prevalence figure for each cause is self-reported, based on respondents in the Canadian Community Health Survey (2005). The age-standardized rates of mortality (2004), potential years of life lost (2004), hospitalizations (2005) and emergency department visits (2006) are for varying years due to data availability and reliability. The self-reported prevalence of “injuries, accidents and suicides” excludes the prevalence of suicide completions and does not include suicide attempts or suicidal thoughts. The prevalence of cardiovascular disease was based on a self-reported diagnosis of “heart disease” or “suffers from the effects of a stroke” in the CCHS, whereas the ICD chapter “Diseases of the Circulatory System” was used for the other measures.

Chapter 10 - Injuries

Figure 10.4 shows the burden of selected types of injuries in Peel. The age-standardized rates of mortality (2004), hospitalizations (2006) and emergency department visits (2006) are for the most current year of data available.

Adult respondents with a child aged four to eleven years in the Rapid Risk Factor Surveillance System (RRFSS) were asked about the use of booster seats during travel in a car or other vehicle. Among those respondents with more than one child in this age range, the child who had the most recent birthday was the target of the response.

Health and Safety at Work

Lost-time injury and traumatic fatality claims include allowed claims for individuals injured or killed at a workplace of an employer where the head office was located in Peel. It is possible that

some injuries and fatalities may have occurred in Peel at an employer’s branch location, and these claims would not be reflected in these data. However, if the head office is not in Ontario, then injuries or fatalities which occurred at branch offices located in Peel would be included. The data reflect the date of accident for all claim types. Allowed occupational disease claims are for those where the exposure occurred in Peel.

Lost time injuries are those in which the employee loses time from work after the day on which the injury occurred.

Peel Forward Sortation Areas (FSA) were identified by matching the FSAs from the 2006 Postal Code Conversion File (PCCF) provided by the Public Health Agency of Canada to the census tracts provided by Statistics Canada.

Chapter 11 - Dental Health

To collect dental indices survey data sample size calculations were conducted for each of the municipalities. Schools were randomly selected within each of the municipalities to achieve the sample size requirement. Caledon was over-sampled to account for the smaller school population. Data for Junior Kindergarten (JK), Senior Kindergarten (SK), grade 6 and grade 8 were collected in 2003/2004 while data for JK, SK, grade 2 and 4 were collected in 2004/2005.

To adjust for the smaller population of school children in Caledon, Caledon was over-sampled and weights were applied to the data for the final analysis.

A total of 4,629 children in JK and SK and grades 2, 4, 6 and 8 were surveyed for the data reporting period between 2003 and 2005: 1,612 from Brampton, 1,326 from Caledon and 1,691 from Mississauga. Only children aged five, seven, nine, 11 and 13 were included in the analysis. All other ages were excluded.

Chapter 13 - Infectious Disease

Peel data up to 2006 were downloaded from the Integrated Public Health Information System (iPHIS) on different dates which are indicated in the source of each figure. Data were cleaned for case definition, age and sex after each download date by Peel Public Health staff in the Communicable Disease and Environmental Health Divisions.

Infectious disease data for Ontario are from iPHIS and are taken from the Ontario Public Health's Information Exchange, available from www.PublicHealthOntario.ca. Ontario infectious disease data up to 2006 were extracted from this site on February 20, 2008. Tuberculosis data up to 2007 were extracted on September 12, 2008. Ontario data beyond 2004 are preliminary and subject to change. Ontario data have not been cleaned and may include duplicates. Any comparison of incidence rates between Peel and Ontario should be interpreted with caution.

Chapter 15 - Focus on Obesity and Diabetes

The body mass index categories for those under the age of 18 years are different than those used to categorize adults. For Figure 15.1, those students from the School Health Assessment survey who were less than 12 years of age and those who were more than 17 years of age were removed from the analysis.

Figure 15.12 presents the projected number of cases of diabetes in Peel per 100 population aged 20 years and older to 2025/2026. A straight-line projection was made based on the average age- and sex-adjusted prevalence rate for the years 1995/1996 to 2004/2005 from the ICES (Institute for Clinical Evaluative Sciences) in-Tool.

To demonstrate the estimated health care cost for diabetes among Peel residents, a cost of \$3,500 per case of diabetes was applied to the estimated number of cases in Peel residents aged 20 years and older for selected years. Based on the straight line projection for the prevalence rate in 2025/2026, and unofficial population projections

for those 20 years and older, the number of cases in 2025/2026 was estimated.

The population projections for 2025 were unofficial projections obtained from Peel Environmental Transportation & Planning Services department and were used for the purpose of this analysis only.

Chapter 18 - Preventing Chronic Disease

In this Chapter, the population attributable fraction was used to determine the number of preventable cases and deaths due to a selected disease. The diseases selected were those where there were strong relative risk data for the risk factor and the disease. For additional details and references about the association of these risk factors for each of the diseases, please refer to the Chronic Conditions in the Mississauga Halton LHIN report.¹

The diseases chosen for this analysis included:

- Lung cancer
- Colorectal cancer
- Female breast cancer
- Prostate cancer
- Diabetes (type 2)
- Ischaemic heart disease
- Stroke (all) and ischaemic stroke
- Asthma
- Chronic obstructive pulmonary disease
- Osteoarthritis, and
- Hypertension (high blood pressure).

The following data sources were used to calculate the population attributable fraction for each disease:

- Cancer Incidence 2004, Cancer Care Ontario
- Canadian Community Health Survey 2005, Statistics Canada, Share File, Ontario Ministry of Health and Long-Term Care and Public Use Microdata File, Statistics Canada
- Ontario Mortality Database, Health Planning System (HELPS) 2002-2004, Ministry of Health Promotion.

Details about the data for each disease and risk factor contained in Tables 18.1 and 18.3 in the main report are as follows:

Disease or Risk Factor	Incidence/Prevalence	Mortality
Lung Cancer	SEER*Stat ICD9 codes:162 Age=30 years and older Year=2004	ICD10 codes: C33 and C34 Age=30 years and older Year=2004
Colorectal Cancer	SEER*Stat ICD-9 codes: 153-154 Age=30 years and older Year=2004	ICD10 codes: C18-C21, C26.0 Age=30 years and older Year=2002-2004 average
Breast Cancer	SEER*Stat ICD-9 codes: 174 Age=50 years and older Sex=Female Year=2004	ICD10: C50 Age=50 years and older Sex=Female Year=2002-2004 average
Prostate Cancer	SEER*Stat ICD -9 Codes: 185 Age=30 years and older Sex=Male Year=2004	ICD codes C61, 185 Age=30 years and older Sex=Male Year=2002-2004 average
Diabetes [†]	CCHS ccce_101: Do you have diabetes? Age=30 years and older Year=2005	ICD-10 codes: E10-E14 Age=30 years and older Year=2002-2004 average
Ischaemic heart disease [†]	CCHS ccce_121: Do you have heart disease? Age=30 years and older (35 year and older for smoking as a risk factor) Year=2005	ICD-10 codes: I20-I25 Age=30 years and older (35 years and older for smoking as a risk factor) Year=2002-2004 average
Stroke [†]	CCHS ccce_151: Do you suffer from the effects of a stroke? Ischaemic stroke Age=35 years and older All stroke Age=30 years and older Prevalence estimates are for all stroke. Data presented for ischaemic stroke will be slightly over-estimated.	ICD-10 Codes: Ischaemic stroke: I63, G45 Age=30 years and older Year=2002-2004 average All stroke: I60-I64, C464, G45 Age=35 years and older
Chronic Obstructive Pulmonary Disease [†]	CCHS ccce_91f: Do you have Chronic Obstructive Pulmonary Disease? Age=35 years and older Year=2005	ICD-10 codes: J40-J44 Age=35 years and older Year=2002-2004 average
Asthma [†]	CCHS ccce_031: Do you have asthma? Age=20 years and older Year=2005	ICD-10 codes: J45 Age=20 years and older Year=2002-2004 average
Osteoarthritis [†]	CCHS ccce_151: Do you have arthritis or rheumatism, excluding fibromyalgia? Age=30 years and older Year=2005	ICD-10 codes:M15-M19 Age=30 years and older Year=2002-2004 average
Hypertension [†]	CCHS ccce_071 Has high blood pressure Age=30 years and older Year=2005	ICD-10 codes:M15-M19 Age=30 years and older Year=2002-2004 average

[†]Long term conditions which are expected to last or have already lasted Six months or more and have been diagnosed by a health professional.

Risk Factor Definitions used for the Preventing Chronic Diseases Chapter

The CCHS 3.1 Public Use Microdata file and the Share File were used for these analyses.

Alcohol Use

The variable used for alcohol use was ALCEDDLY. Alcohol use was defined as follows:

Females

No drinks = 'Not applicable (non drinkers)'

≤1 drink = '<1.5 drinks per day'

2 drinks = '1.5-3 drinks per day'

≥3 drinks = '3 drinks per day'

Males

No drinks = 'Not applicable (non drinkers)'

≤ 2 drinks = '< 3 drinks per day'

3-4 drinks = '3-4.5 drinks per day'

>4 drinks = '≥4.5 drinks per day'

Binge Drinking was defined using the ALCE_3 variable as: current drinkers who report having one or more episodes of consuming five or more drinks on at least one occasion during the past 12 months.

Smoking

The variable used for smoking prevalence was SMKNDSTY. Smoking was defined as being a current or occasional smoker.

Fruit and Vegetable Consumption

The variable FVCEGTOT was used to extract data for fruit and vegetable consumption. For the calculations, it was assumed that <5 servings was equal to <600g of fruit and vegetables daily.

Physical Activity

The variable PACEDPAI was used to extract data for physical inactivity.

Body Mass Index

The variable HWTEDISW was used to extract data for overweight and obesity.

All data from the Canadian Community Health Survey were weighted using the share weight variable in the file used.

Methods for Table 18.5:

To calculate the estimated number of chronic conditions by income quintile, treated prevalence data were obtained from the ICES In-Tool website for Peel for the following conditions:

- Cerebrovascular disease
- Chronic obstructive pulmonary disease
- Osteoarthritis, and
- Ischaemic heart disease.

As an estimate of socioeconomic status (SES) in a study population, the median household income of each neighbourhood (obtained from Statistics Canada census data) was attributed to all persons living in that neighbourhood. Neighbourhoods were then ranked by quintile, from poorest (Q1) to wealthiest (Q5), within areas assigned by Statistics Canada. It is important to bear in mind that income quintiles characterize neighbourhoods, not individual households (i.e. an individual person may live in a high income household within a low income neighbourhood, or vice versa).

Prevalence data from ICES were provided by income using five income categories of which Q1 was the lowest income (poorest 20%) and Q5 was the highest income (wealthiest 20%). The number of Peel cases of the condition were calculated using the ICES adjusted rate for each of the income levels by multiplying the adjusted rate by the population count. The population counts are less than actual Peel population because many residents do not report income data and are thus counted as "missing." The Q5 income level was considered the reference category for the "difference" calculated between income categories and therefore did not change for the column labelled "# cases using Q5 adjusted rate". The column labelled "difference"

was the difference in prevalent cases between the columns “# cases using the adjusted rate” and “# cases using Q5 adjusted rate”. The reduction column is the sum of the difference column and indicates the number of prevalent cases that could be potentially prevented if all residents had the same income as the Q5 group.

Avoidable Mortality

Based on the listing of avoidable conditions outlined by James et al.,² selected causes of death in Peel and Ontario from 1986 to 2004 were defined as “avoidable” among those aged 0 to 74 years. These avoidable causes were further subdivided into those causes which were avoidable

due to medical intervention and treatment and those avoidable due to public health intervention. Causes amenable to public health intervention are those where there are interventions known to prevent the condition from occurring, although treatment options may be more limited. For example, lung cancer and cirrhosis of the liver may be avoided as a result of health behaviour changes, whereas motor vehicle deaths may be avoided by legislative measures. In contrast, conditions amenable to medical intervention include those where it is reasonable to expect medical treatment would be able to prevent death, after the condition has developed (Table 19.4).

Table 19.4
List of Causes of Deaths Deemed Avoidable by Type of Intervention

All avoidable causes of death				
Medical intervention	<ul style="list-style-type: none"> • Intestinal infection • Tuberculosis • Diphtheria • Whooping cough • Tetanus • Septicaemia • Poliomyelitis • Measles • Syphilis • Other bacterial infections • Female breast cancer • Cervical cancer • Other uterine cancer 	<ul style="list-style-type: none"> • Testicular cancer • Hodgkin’s disease • Leukemia • Diseases of the thyroid • Diabetes Mellitus • Deficiency anemias • Epilepsy • Active rheumatic fever • Chronic rheumatic heart disease 	<ul style="list-style-type: none"> • Hypertensive disease • Cerebrovascular disease • Influenza • Pneumonia • Other acute respiratory infections • Asthma • Peptic ulcers • Appendicitis • Abdominal hernia • Ilius without hernia • Cholelithiasis, cholecystitis, and cholangitis • Nephritis and nephrosis 	<ul style="list-style-type: none"> • Infections of the urinary system • Hyperplasia of the prostate • Complications of pregnancy • Osteomyelitis and periostitis • Congenital cardiovascular anomalies • Congenital digestive anomalies • Perinatal conditions
Public health intervention	<ul style="list-style-type: none"> • HIV • Lung cancer • Skin cancer 	<ul style="list-style-type: none"> • Cirrhosis of the liver 	<ul style="list-style-type: none"> • Chronic obstructive lung disease 	<ul style="list-style-type: none"> • Motor vehicle accidents
Both medical care and public health	<ul style="list-style-type: none"> • Ischaemic heart disease 			

Source: James et al.²

References

1. Health System Intelligence Project (HSIP), Ministry of Health and Long-Term Care Health Results Team for Information Management. *Chronic Conditions in the Mississauga Halton LHIN*. October, 2007.
2. James PD, Wilkins R, Detsky A, Tugwell P, Manuel DG. Avoidable Mortality by Neighbourhood Income in Canada: 25 Years After the Establishment of Universal Health Insurance. *J Epidemiol Comm Health*. 2007; 61:287-296.