



*We do not inherit the land from our fathers,
we borrow it from our children.*

— Aboriginal saying.

From a global perspective, Canadians enjoy a relatively healthy physical environment. We have one of the safest food supplies in the world, the overall quality of our air and drinking water is good, and the built (or human-made) environment is generally clean and healthy. The quality of the Canadian environment, however, cannot be taken for granted. In recent years, there has been a growing concern that some of the pollutants we release into our environment will persist and pose a risk to human health. Indeed, in a 1996 survey, almost two out of three Canadians said that their health had been affected by pollution, and more than one out of two people said they were very concerned about air quality.¹

At the same time, there is a growing realization that Canada also has a global responsibility to protect and strengthen the world's environmental resource base. Air pollution and other environmental problems aren't restricted by national boundaries. Sustaining the health of the planet for future generations is our ultimate challenge.

The physical environment is an important determinant of health in its own right. At certain levels of exposure, contaminants in our air, water, food and soil can cause a variety of adverse health effects, including cancer, birth defects, respiratory illness and gastrointestinal ailments. In the built environment, factors related to housing, indoor air quality, and the design of communities and transportation systems can significantly influence our physical and psychological well-being.

The physical environment is also linked to other determinants of health. Active living requires green spaces, clean water and protection from exposure to excessive ultraviolet rays. Healthy eating depends on the availability of safe, nutritious foods. Healthy working conditions require safe workplaces that maximize comfort, productivity and well-being. Healthy child development can be dramatically affected by the physical environment because children are particularly vulnerable to environmental contaminants.

In a recent review in the *Canadian Journal of Public Health*, Chaudhuri discussed the potent mix of poverty, childhood and environmental hazards. “Not only do poor children generally live in the most polluted parts of cities, they also tend to be less well-nourished, to live in the poorest quality and most unhealthy housing, and to have parents who work in the most dangerous and stressful jobs.”²

This chapter begins with a brief discussion of the concept of sustainable development. It then looks at a selected number of factors in the natural and built environments that have a significant effect on health. The reader is referred to a number of other sources in Appendix C for more detailed and comprehensive information than can be covered in this chapter.

Highlights

From a global perspective, the quality of the physical environment in Canada is relatively good. However, certain groups of Canadians are affected more than others by hazards and problems in the physical environment.

- ◆ Children are more vulnerable to environmental contaminants. Poor children are particularly likely to be exposed to multiple contaminants as a result of living in substandard housing and in neighbourhoods adjacent to high transportation corridors and polluting industries.
- ◆ The prevalence of childhood asthma, a respiratory disease that is highly sensitive to airborne contaminants, has increased sharply over the last two decades, especially among the age group 0 to 5. It was estimated that some 13% of boys and 11% of girls aged 0 to 19 (more than 890,000 children and young people) suffered from asthma in 1996–97.
- ◆ Children and outdoor workers may be especially vulnerable to the health effects of a reduced ozone layer. Excessive exposure to UV-B radiation can cause sunburn, skin cancer, depression of the immune system and an increased risk of developing cataracts.

Environmental tobacco smoke (ETS) is a major health hazard in the built environment.

- ◆ Some 300 Canadian non-smokers die each year from ETS-related lung cancer. Deaths due to ETS-related heart disease are estimated to be much higher.
- ◆ Infants and young children are particularly vulnerable to the negative health effects of environmental tobacco smoke. In 1995, at least 1.4 million children were exposed to ETS in their homes.
- ◆ In 1995, municipal bylaws on smoke-free spaces covered 63% of the population of Canada. The nature of smoking restrictions varied considerably from setting to setting, and in most commercial settings the lowest levels of restrictions were in place.

Access to affordable, safe housing has become a major concern for many low-income Canadians.

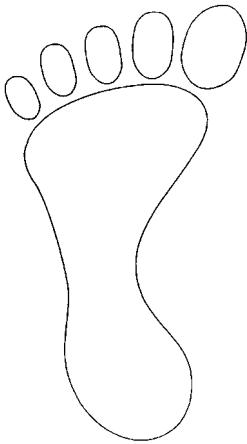
- ◆ In 1996, a growing number of Canadians, including 58% of lone-parent families and 59% of older Canadians living in one-person households were spending more than 30% of their income on housing.
- ◆ As many as 200,000 Canadians were estimated to be homeless or living in substandard housing. Homeless Canadians included increasing numbers of women and children and other groups in special circumstances, including adolescents, persons with mental illness and Aboriginal people.

Sustainable Development and Health

The Report of the World Commission on the Environment defines sustainable development as “a process in which the exploitation of sustainable resources, the direction of investment, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.”³

Thus, sustainable development combines economic, social and environmental goals and takes into account their effects on health. If our natural and built environments, our economy and our social structure are not sustainable, then the health of Canadians will inevitably suffer.

On a global scale, the World Health Organization identifies two broad classes of environmental threats to health: “traditional hazards” associated with lack of development, and “modern hazards” associated with unsustainable development. Traditional hazards related to poverty and insufficient development include inaccessible safe drinking water, inadequate sanitation in the household and community, indoor air pollution from cooking and heating, and inadequate solid waste disposal. Modern hazards are related to development that lacks health and environmental safeguards, and unsustainable consumption of natural resources. These include climate change, stratospheric ozone depletion, urban air pollution, water pollution and transboundary pollution.⁴



Ecological Footprints

Mathis Wackernagel and colleagues have developed a crude but useful concept called “the ecological footprint,” which measures dependence on natural resources to sustain oneself. A nation’s ecological footprint corresponds to the land and water it uses to produce the resources it consumes and absorb the waste it generates. Wackernagel estimates that, globally, approximately 1.7 hectares per capita are available for human use and that this will decline to approximately 1.0 hectare per capita over the next 30 years. In 1993, the size of Canada’s footprint was estimated to be 7.0 hectares per capita. In other words, Canadians consume far more than their share of the world’s precious resources.⁵

The Natural Environment

This section focuses on six aspects of the natural environment: ozone depletion, climate, air, environmental toxins, water and food.

Ozone Depletion

Stratospheric ozone acts as a natural filter by shielding the earth’s surface from the sun’s ultraviolet (UV) rays. Excessive exposure to UV-B radiation may cause sunburn, skin cancer, depression of the immune system and an increased risk of developing cataracts in humans.⁶ Children and outdoor workers may be especially vulnerable to the health effects of a reduced ozone layer.

Melanoma, an often fatal type of skin cancer, is caused by periods of intense and intermittent exposure to ultraviolet radiation. The incidence and death rates from melanoma steadily increased from 1969 to 1985 among women and from 1969 to 1989 among men, when overall rates started to decline due to reductions among the younger age groups. In 1999, there were an estimated 3,500 new cases of melanoma and 770 deaths from melanoma. New cases and deaths among men were about double the rates for women.⁷ Cataracts were reported by 659,000 Canadians aged 18 and older in the 1996–97 National Population Health Survey (NPHS).

The manufacture and release of ozone-depleting substances (chlorofluorocarbons or CFCs) used in air conditioning, refrigeration equipment, some fire extinguishers, solvents and pesticides contribute to the thinning of the ozone layer. In Canada, there have been substantial fluctuations in measured stratospheric ozone levels over the last 15 years. According to Environment Canada, the levels have ranged from a high of 15% below pre-1980 levels in 1993, to 6% in 1996 and 2% in 1998.

Canada, along with 150 other countries that signed the 1987 Montreal Protocol, is making a serious effort to phase out the use of ozone-depleting substances. From 1987 to 1996, new supplies of ozone-depleting substances have fallen from 27.8 kilotonnes to 0.8 kilotonnes.⁸ However, given the long half-lives of existing CFCs, this problem will persist into the new millennium.

Sun Exposure and Protection

Sun Exposure:⁹ Most serious sun exposure in Canada occurs during the summer months, during outdoor work and leisure-time activity. In 1996, a national survey on sun exposure and protective behaviours found that three out of four summer outdoor workers were male, and 72% were under 45 years of age. Two out of three outdoor workers (both sexes) were exposed to the sun for two or more hours per day.

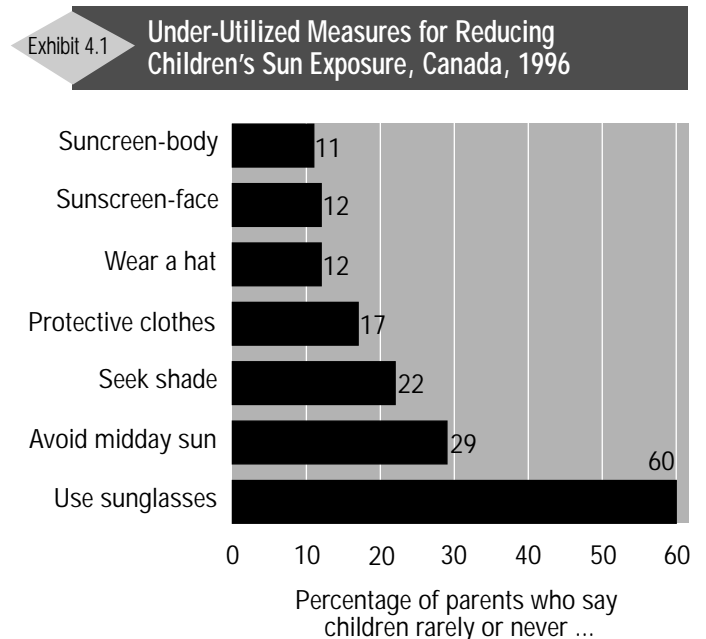
In the general population, 35% of men and 21% of women reported more than two hours of leisure-time sun exposure per day during the summer months. One out of two adults were sunburned at least once during the summer months; nearly half were sunburned while participating in outdoor recreation activities, while one-third were sunburned while working outdoors.

The highest rates of sun exposure were among children under the age of 12. About 96% of parents said that, on average, their children were exposed to the sun for 30 minutes or more each day during the summer months. More than one out of two reported sun exposure of two hours per day or more. Forty-five percent of parents reported that one or more of their children had a sunburn during the summer months.

Protective Behaviours: Because melanoma and cataracts are long-term outcomes of excessive sun exposure, dermatologists and other public health authorities advise people to limit their midday sun exposure. This is especially important for children, whose skin and eyes may be more susceptible, and who have more years of potential exposure.

When asked about protective behaviours, 72% of adult Canadians said that they seek shade, avoid the midday sun (66%), use sunscreen on their face (53%), use sunscreen on their body (42%), wear sunglasses (70%), wear a hat (59%), or wear protective clothing (67%).

There is substantial room for improvement in efforts to protect children from excessive sun exposure (Exhibit 4.1). In the 1996 National Survey on Sun Exposure and Protective Behaviours, 22% of parents said that their children rarely or never sought shade or avoided the midday sun (29%). Parents also reported that their children rarely or never wore a hat (12%), did not wear sun protective clothes (17%), rarely or never used sunscreen (11%, 12%), and did not use sunglasses (60%).



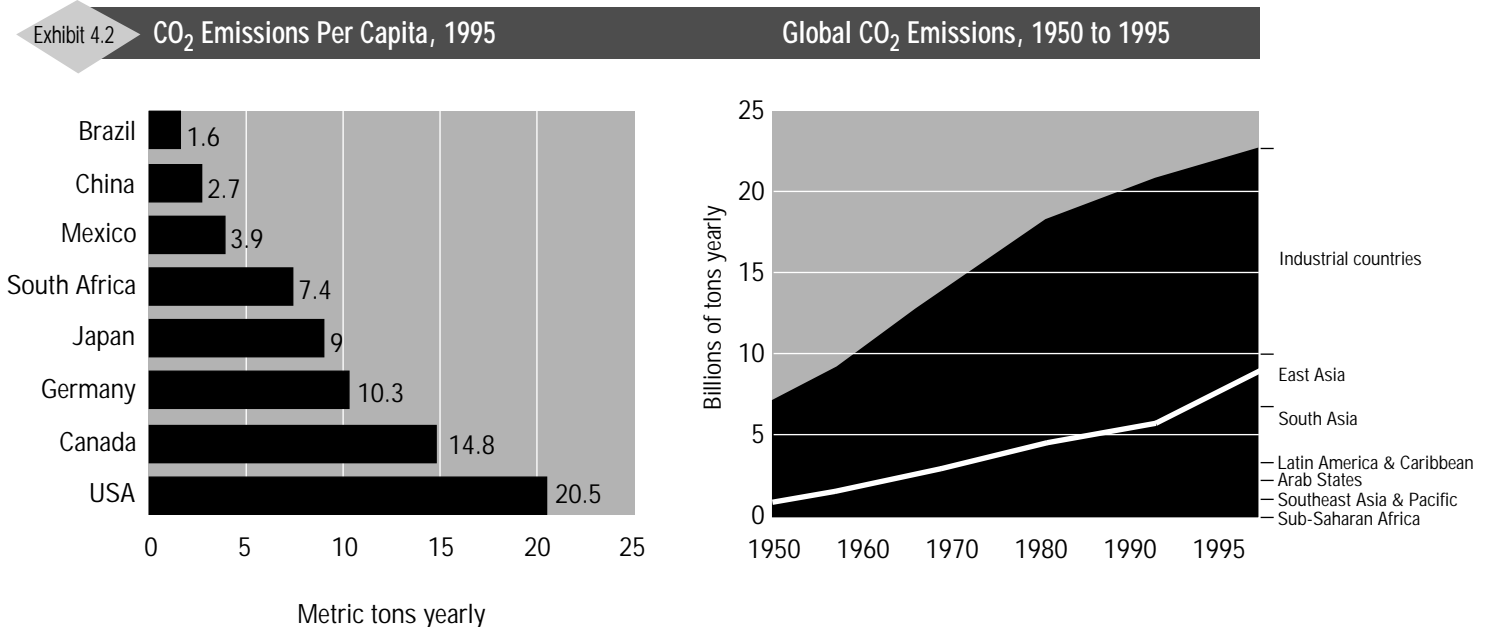
Source: Statistics Canada. *Sun Exposure Survey, 1996*. (Statistics Canada Cat. No. 62M0019XDBGPE).

Climate

Average global air temperature has risen by about 0.5° C over the past century. As a northern country, Canada is likely to experience greater temperature changes than most regions of the world. The impacts of continued global warming are expected to be both positive and negative. Already, Canada has experienced longer growing seasons, increased forest yields and record agricultural harvests, as well as an increase in severe weather and in the frequency and severity of smog episodes. On the global front, possible consequences of warming also include threats to food security, decreased cold-related illnesses but increased heat-related illnesses, and the possible emergence of tropical diseases in temperate climates such as Canada.¹⁰

The balance of evidence suggests that greenhouse gases such as carbon dioxide, methane and nitrous oxide are contributing to the current global warming trend. Much of the growth in global atmospheric carbon dioxide concentrations is the result of human activity — in particular, the burning of fossil fuels and deforestation.

As Exhibit 4.2 suggests, global carbon dioxide emissions from fossil fuels have continued to rise with increasing global energy consumption. Canada ranks second highest in the world in per capita carbon dioxide emissions and the majority of these emissions come from the burning of fossil fuels.



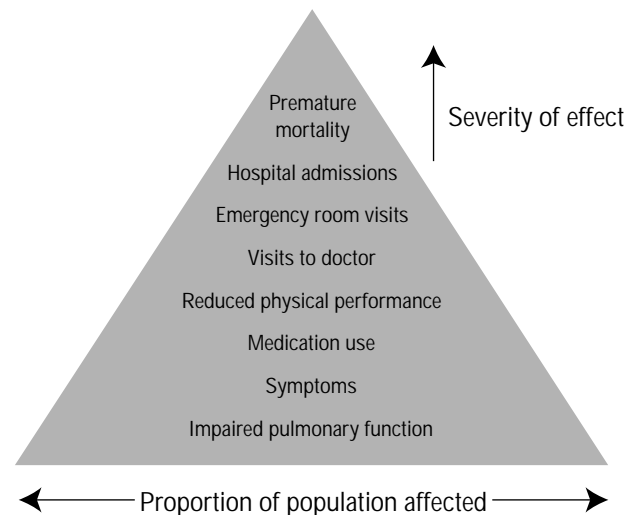
Source: *United Nations Human Development Report 1998* (CDIAC 1996; UN 1996 and 1997; UNESCO 1997; World Bank 1997).
New York: Oxford University Press, 1998.

Air

Even though we have reduced the levels of many air pollutants, evidence suggests that many Canadians are still adversely affected. As Exhibit 4.3 shows, the impact of air pollution on health may vary from subtle, subclinical effects to hospital admissions and early deaths. A recent study published in the *Canadian Journal of Public Health* found a substantial increase in the death rates in 11 Canadian cities when smog was at its worst. Although rates varied from city to city, exposure to ambient air pollution was associated with an increased risk of premature mortality in each of the cities studied. The study concluded that the combined effects of various pollutants accounted for as much as one out of every 11 non-accidental deaths.¹¹

Exhibit 4.3

The Health Effects of Air Pollution



Source: Health Canada. *Outdoor Air and Youth Health: A Summary of Research Related to the Health Effects of Outdoor Air Pollution in the Great Lakes Basin*. 1996: 3. Adopted from the *Canadian Respiratory Journal* 2, 3 (1995): 155–160.

What Is Smog?

The word “smog” was coined to describe the combination of smoke and fog in the atmosphere, which is often visible as a brownish yellow haze over urban areas. Smog is a complex product of vehicle exhaust and industrial pollution that tends to form during hot, sunny days. Ground-level ozone is the principal ingredient of smog. Acidic air pollutants are also present.

One of the most common health problems related to airborne contaminants is asthma — a respiratory disease that affects more than 2 million Canadians.¹² Asthma results in about 49,000 hospital separations and 198,000 in-hospital days each year.¹³ In addition to the serious impact asthma has on the quality of life of many Canadians, it poses a heavy burden on the nation’s health-care expenditures.

It is estimated that more than 89,000 Canadian children 0 to 19 years of age suffer from asthma (approximately 13% of boys and 11% of girls).¹⁴ Over half of all hospitalizations for asthma occur among this age group; the majority are aged 0 to 4. This young age group has also experienced the greatest increase in hospitalization rates due to asthma. From 1971 to 1995, the rate increased more than three-fold.¹⁵

Environmental Toxins

Canadians are concerned about the effect of exposure to toxic substances on their health, their children's health and that of future generations, as well as the impact these substances have on the ecosystem.

All Canadians are exposed to a variety of natural and human-made toxic substances. The nature and degree of exposure vary significantly from region to region and with varying eating habits.¹⁶ Children are more vulnerable to environmental contaminants because of their rapid growth and metabolic immaturity. Their greater food, air and fluid intake relative to body weight makes them especially vulnerable to excessive exposure levels of contaminants that might have less profound health consequences among adults. As well, they are just beginning a lifetime of exposure to cumulative environmental hazards, the likes of which no other generation has experienced.

Another area of emerging concern is the possible effect of certain chemicals known as endocrine disrupters, which resemble human hormones. Some scientists suggest that there is a link between specific chemicals or chemical mixtures and disruptions in female and male reproductive functions and/or the occurrence of certain cancers.¹⁷ Further research is needed before such links can be demonstrated or ruled out.

Water

In Canada, the overall quality of our drinking water remains high. About 87% of Canadians receive treated municipal drinking water, and Canada has one of the lowest incidences of waterborne diseases in the world.¹⁸

The incidence of waterborne diseases is several times higher in First Nations communities than in the general population, in part because of inadequate or non-existent water treatment systems. The Assembly of First Nations, in partnership with Health Canada, is taking steps to improve this situation.¹⁹

Keeping Canada's natural water resources clean for both human consumption and recreational use remains a basic priority for population health. While there has been a concerted effort to correct past abuses in areas such as the Great Lakes and St. Lawrence basins, other water sources continue to come under pressure from industrial and municipal pollution, landfill leachates, agricultural run-off and inadequately treated sewage.²⁰

Food

Food security is one of the essential prerequisites for health identified in the Ottawa Charter for Health Promotion.²¹ In 1996–97, 6% of Canadians (approximately 1.5 million) reported that, at some point during the previous year, their household had run out of money and couldn't buy food. Of these, more than one out of four (27% or approximately 400,000 Canadians aged 12 and over) said that they had received food from a food bank, soup kitchen or other charitable agency, and 62% (910,000) said that they did not always have enough food to eat.

Low-income households were the most likely to report running out of food (28%), receiving food from a food bank or other organization (10%) and not always having enough food to eat (21%). Among single parents, 18% of women and 8% of men reported

that they had run out of food during the previous year; 7% of lone-parent women and 3% of lone-parent men reported not always having enough food to eat; and 4% of women, as well as 3% of men, reported using a soup kitchen or other organization.²²

A 1998 report from the Canadian Association of Food Banks showed that the number of Canadians using food banks more than doubled between 1989 and 1998, and the number of communities with food banks more than tripled during that time. The report also stated that in 1998, more than 250,000 children and young people under age 18 were recipients of food banks. Although children and youth made up only one-quarter of Canada's population that year, they represented 42% of the people who depended on food banks.²³ This finding is in keeping with the increase in the number of low-income families (see Chapter 2) and with the 1996–97 NLSCY results on child hunger (see Chapter 3).

Food shortages appear to be a serious problem in certain Aboriginal communities. According to the Aboriginal People's Survey conducted in 1993, 8% of all respondents over 15 years of age reported food availability as a problem during the previous year. The percentage was highest among Inuit people (13%). In total, 8% of all Indians living on reserve and 9% of Indians living off reserve reported food availability as a problem.²⁴

In terms of quality, Canadians are blessed with one of the safest food supplies in the world. According to Health Canada's Market Basket Surveys, the levels of contaminants to which Canadians are exposed in their food are far below national and international guidelines.²⁵

An interesting example of the complex interactions between food, culture and the environment was reported in a recent study related to mercury contamination in First Nations communities. This study suggested that the presence of environmental contaminants can have profound effects on the way of life of Aboriginal communities beyond the physical health risks posed by the contaminants themselves. Many Aboriginal communities view human health within a model that embodies physical, emotional, intellectual and spiritual well-being. Thus, a food advisory in an Aboriginal community can mean far more than removing a certain food from one's diet. A quote from the report makes the point most eloquently: "Inuit foods give us health, well-being and identity. Inuit foods are our way of life. For us to be fully healthy, we must have our foods, recognizing the benefits they bring. Contaminants do not affect our souls. Avoiding our food from fear does."²⁶

Any discussion of food resources in Canada is bound to bring to mind the tragic loss of the cod stocks in Atlantic Canada, and more recently the reduction of salmon stocks in British Columbia. The failure to ensure sustainability of these precious food stocks has had a devastating effect on the economic status and way of life of Canadian families and communities whose livelihoods depend on fishing. The sustainable management of natural food sources will continue to be a challenge in the next millennium.

The Built Environment

Most Canadians spend more time indoors than outdoors. We are as much a part of our built environment as we are part of our natural environment. The built environment includes our homes, schools, workplaces, parks, business areas and roads. It extends overhead in the form of electric transmission lines, underground in the form of waste disposal sites and subway trains, and across the country in the form of highways. This section looks at three aspects of the built environment: tobacco smoke as a key contaminant in indoor air quality, transportation and affordable housing.

Environmental Tobacco Smoke

Health Canada has estimated that more than 300 Canadian non-smokers die each year from lung cancer caused by exposure to environmental tobacco smoke (ETS).²⁷ The number who die from heart disease as a result of ETS is likely much higher, since researchers have estimated that at least 10 times the number of non-smokers die from ETS-related heart disease than from ETS-related lung cancer.²⁸

Many municipalities now have restrictions on smoking in public settings in an effort to protect the health of both smokers and non-smokers. In 1995, municipal bylaws on smoke-free spaces covered 63% of the population of Canada. The nature of smoking restrictions imposed by municipalities varied from the lowest level of restriction (designated, unventilated smoking areas) to the highest level of restriction (total ban with an explicit provision for enforcement). In commercial settings (such as restaurants and shopping malls), the most common requirements were designated, unventilated smoking areas.²⁹

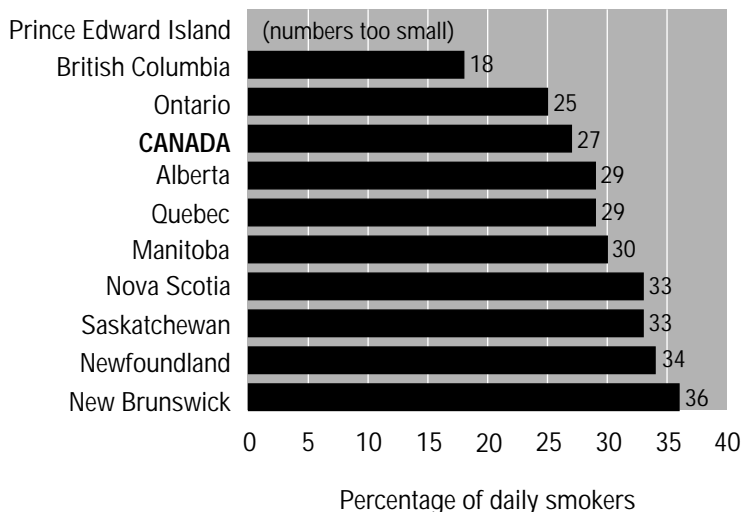
There were significant interprovincial variations in municipal smoking restrictions. The population covered by bylaws ranged from 3% in Newfoundland to 81% in Ontario. For most provinces, municipal bylaw coverage was greater in 1995 than in 1991, with the exception of Manitoba, where coverage actually decreased during that time.³⁰

Pregnant women, fetuses and young children are particularly susceptible to the effects of ETS, which include complications of pregnancy and low birthweight, increased risk of sudden infant death syndrome and ear infections, reduced lung development, and increased severity of asthma and other respiratory illnesses.³¹

In 1995, at least 1.4 million Canadian children were exposed to ETS in their homes. The majority of these children lived with parents aged 25 to 44 — the age group that smokes the greatest number of cigarettes

Exhibit 4.4

Percentage of Daily Smokers* with at Least One Child (Under Age 15) Who Permit Smoking in the Home, by Province, Canada, 1995



* Smokers aged 15+ who live in a home in which smoking is permitted.

Source: Statistics Canada. *General Social Survey 1995 (Cycle 10)*, special tabulations from the Housing, Family and Social Statistics Division.

daily. Level of education was directly linked with the chance that daily smokers would observe some form of smoking restriction in the home — the more educated the smoker, the greater the chance of restrictive smoking behaviour.³²

On a provincial basis (Exhibit 4.4), about one-third of daily smokers in New Brunswick, Newfoundland, Saskatchewan and Nova Scotia potentially exposed at least one child to ETS. Daily smokers in Quebec who did not live in a home where smoking was restricted potentially exposed a minimum of 491,000 children to ETS in the home, representing the largest group out of all of the provinces.

A study of smoke-free workplaces in 1994 showed that 26% of male employees and 11% of female employees worked in environments in which there were no restrictions on smoking. Workers in Quebec were most likely to be in workplaces that allowed smoking “anywhere” (30%) or “in most places” (13%).³³

Transportation

Most Canadians enjoy a high degree of mobility and personal freedom, thanks primarily to the automobile. In 1993, there were more than 12 million cars in Canada, almost one for every two people. This love affair with the automobile, however, comes with a price. The widespread and frequent use of cars reduces air quality. Traffic congestion creates stress and car crashes can wound and kill. Motor vehicle crashes account for nearly half of all accidental deaths in Canada each year. They are the third leading cause of death overall and the most common cause of death for children and young people under age 35.³⁴

Walking and cycling are two of the most popular forms of alternative transportation. Many Canadian drivers say that they would walk and cycle more if street and community designs were more favourable to these practices.³⁵ Since the majority of Canadians are insufficiently active to achieve health benefits, increased support for active forms of transportation would benefit individual health as well as collective air quality.

According to the 1996 Census, 73% of working Canadians drove their own automobile to work; 7% travelled as a passenger in a private vehicle; 10% used some form of public transportation; 7% walked to work; and 1% bicycled.

Men were more likely to drive to work (79%) than were women (67%); women were more likely than men to travel to work as a passenger, by public transportation, or on foot. Men (1.6%) were slightly more likely than women (0.6%) to report riding a bicycle to work.

Affordable, Adequate Housing

The Ottawa Charter for Health Promotion recognizes adequate shelter as a basic prerequisite of health. A number of physical factors in the home environment can have a negative influence on health, including a lack of access to piped water and sanitary facilities, high levels of noise, poor indoor air quality, inadequate refuse storage and collection facilities, overcrowding, poor lighting, building defects and pests.³⁶ In 1991, the Canada Mortgage and Housing Corporation reported that one in five Canadians who paid rent lived in inadequate or unsuitable housing.³⁷ In 1993, Aboriginal people often reported poor housing as a major problem. Inadequate housing and crowded living conditions may be factors in increased rates of respiratory infections and other infectious diseases in Aboriginal children, compared with non-Native children.

From 1991 to 1996, the number of Canadians who owned a house increased by 10%. But at the same time, shelter became less affordable for many other Canadians. From 1991 to 1996, average shelter costs for owners decreased by approximately 1%, while their average household incomes declined by 5%. Among renters, average shelter costs declined by 3%, while average household incomes declined by 12%. Young Canadians were particularly hard hit. Among young people under the age of 30, average household incomes declined by more than 17%, while rent declined by less than 5%. As a consequence, during that period, a full 43% of renters had a housing affordability problem — that is, more than 30% of their income was spent on shelter, as compared with 17% of owners.³⁸

In 1996, 27% of couples without children who rent had an affordability problem. This increased to 30% among couples with children, to 51% among one-person households, to 58% among lone-parent families, and to an incredible 76% among lone-parents under the age of 30. Very high rates of affordability problems (59%) also were experienced by Canadians aged 65 and over living in one-person households.³⁹

These findings reflect the growth in number of young low-income families in Canada in the early 1990s (see Chapter 2). At the same time, decreases in government spending on social housing forced a growing number of families with children to seek accommodation in the private marketplace where housing may be more expensive or of poorer quality than subsidized non-profit housing.⁴⁰

Homelessness

No condition demonstrates the importance of adequate housing for health better than the problem of homelessness. Homeless people have a range of chronic health problems due to their extreme poverty, lack of stable housing and exposure to the elements on the street. They are less likely to receive adequate medical care and more likely to draw heavily upon emergency medical services.⁴¹

The causes of homelessness are complex. They include poverty, changes in the housing market, reductions in social assistance, family violence, substance abuse and changing mental health services. As a result, the face of the typical homeless Canadian has changed; the composition of this group now includes increasing numbers of women and children and other groups in special circumstances, such as adolescents, persons with mental illness and Aboriginal people.⁴² A review by Beavis cites these factors as well as socioeconomic marginalization, poor housing and severely depressed conditions on reserve and in remote communities as major risk factors in Aboriginal homelessness. The author also notes that “the majority of runaways and street youth in Pacific cities are Aboriginal people, with more females than males.”⁴³

Although estimating the total number of homeless people is difficult, as early as 1986, 130,000 to 200,000 Canadians were estimated to be homeless or living in substandard housing,⁴⁴ and there is compelling evidence that this number has been increasing. For example, several groups have estimated that in Toronto alone, 25,000 people were homeless in 1996 — double the number in 1994. The Good Shepherd Hostel reported a 30% increase in people using its shelter between 1995 and 1996; and the Metro Children’s Aid Society reported a 33% increase in households sharing accommodation and a 52% increase in families in shelters over the same period.⁴⁵

A 1998 Environics' survey showed strong public support for action on homelessness. More than 80% of respondents disagreed with the statement "homelessness really only harms the people who are homeless themselves; there is no real cost to the rest of society." More than 80% agreed that "the homeless population is changing and now includes more young people, women and families than used to be the case." And, more than one out of two Canadians endorsed the notion that "governments should spend more on preventing homelessness, even if the money must come out of other areas or possibly from increased taxes."⁴⁶

A 1996 review of the literature by Novac concluded that homelessness and violence are inextricably linked for women. Novac noted that "homeless women with histories of family disruption and abuse distinguish being housed from being safe, so that homelessness is a problem for women, but it also is a strategy for escaping violence. The relationship between violence and homelessness among women is complex, since there is also a great risk of violence when women are homeless."⁴⁷

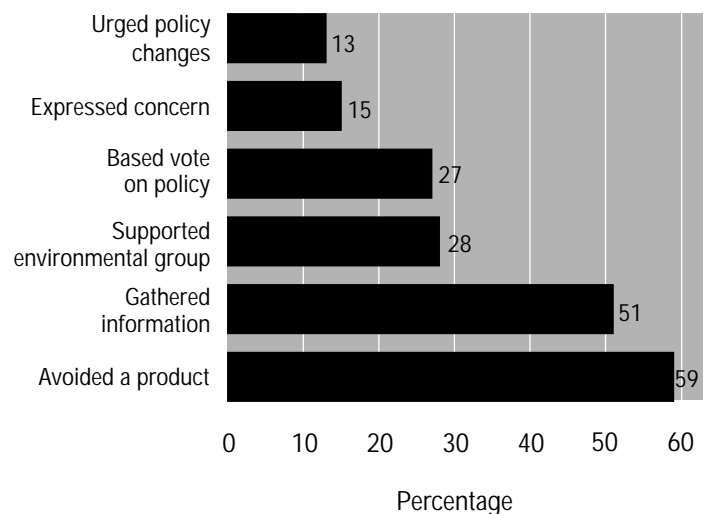
A recent study by Caputo and colleagues concluded that street youth are a heterogeneous group, and that the magnitude of the problem continues to be subject to debate. They note that "involvement in the street lifestyle can include participation in illegal activities such as stealing, shoplifting or breaking and entering ... A major reason for involvement in such activities is to acquire the resources needed to meet basic needs while living on the street. In addition, participation in the street lifestyle involves alcohol and other drug use, participating in high risk sexual activities and facing the hazards of living in marginal circumstances. These hazards include violence and other threats to a person's physical and emotional well-being."⁴⁸

What Canadians Are Doing

In addition to taking up active forms of alternative transportation, in 1997–98, large numbers of adult Canadians reported taking a range of other actions to preserve their physical environment or to protect their health against perceived environmental hazards. Among ongoing actions to preserve the environment, recycling and/or composting — reported by 88% of Canadians — were the most common, while 64% of Canadians bought environmentally sensitive products and 69% reported that they used energy-saving devices. In each of these areas, action was reported more frequently by women than by men, and by highly educated Canadians, particularly those with university degrees.⁴⁹

Exhibit 4.5

Percentage Reporting Environmentally-Inspired Actions in the Past Year, Aged 18+, Canada, 1997–98



Source: Environics Research Group Ltd. *The Environmental Monitor*, 1998, Cycle 1.

Exhibit 4.5 shows how Canadians are increasingly inclined to make a political or public statement about their environmental concerns. Over half of all adults (59%) claimed to have avoided certain consumer products for environmental reasons in the previous year, while many others gathered information about environmental issues (51%) and/or voted for or against political candidates or parties because of their stand on environmental issues (27%).

Individual action is reinforced and complemented by the many collective efforts of Canadians to improve and protect the environment in their communities, and to support group efforts to preserve certain aspects of the physical environment. In 1997–98, 28% of Canadians said that they supported an organized environmental group.

Discussion

Sustainable Development

In terms of creating and sustaining physical environments that promote health, the greatest challenge we face is to create a more sustainable society. Sustainable development calls for a balanced approach in which economic vitality, environmental integrity, human development and social well-being are all considered and equally weighed when decisions are made. This balance must be achieved not only in a Canadian context, but also globally. Encouraging Canadians and Canadian institutions to “think globally and act locally” is still a good strategy.

The Natural Environment

In the natural environment, reducing fossil fuel emissions is an immediate and long-term priority. Fossil fuel combustion is believed to be a major cause of both climate change and air pollution. The two problems are also related from a health perspective. As the global climate warms, air pollution and smog production will worsen, resulting in further increases in respiratory illnesses and deaths.

The Kyoto Protocol of December 1997 established emission reduction targets for the year 2012. Canada agreed to reduce its greenhouse emissions by 6% below 1990 levels between the years 2008 and 2012. The health and quality of life of Canadians and others will benefit greatly from the immediate and long-term implementation of intersectoral strategies to increase energy efficiency and reduce fossil fuel emissions. Reducing air pollution will also reduce the billions of dollars lost in early deaths and spent on health services to treat asthma and other respiratory diseases.

The Built Environment

Within the built environment, air quality is seriously compromised by environmental tobacco smoke which takes a large toll on health, especially the health of children. Concerted action on this issue needs to continue.

The data reported in this chapter suggest that Canada is experiencing a housing affordability crisis. As family incomes and support for social housing have dropped in many jurisdictions, housing costs have remained high, especially for renters. One of the quickest and most direct ways to decrease the inequities discussed throughout this report is to increase access to affordable housing for all Canadians. Working with Aboriginal

people both on and off reserve to ensure that housing is adequate in both quantity and quality must be a top priority.

There is also a growing number of Canadians who believe that homelessness in one of the world's richest countries is a national and community disgrace that should be rectified. A recent study that looked at predictors of entry into shelters and subsequent housing stability for a cohort of families in New York City showed that subsidized housing was the best predictor of residential stability after shelter living. The odds of stability were 21 times greater for families who received housing subsidies than for those who did not. Compared to the availability of affordable housing, mental or physical health problems did not appreciably cause family homelessness or impede later stability.⁵⁰

This study suggests that a reinvestment in social housing by all levels of government is an important strategy for ameliorating the current crisis in both housing affordability and homelessness. It may also be one of the best ways to prevent homelessness in the first place.

As this chapter shows, Canadians have demonstrated a growing interest in and concern about issues related to the physical environment and its link to health. Policy-makers and leaders who are managing health risks in the environment need to be sure that the public is both informed and involved in the decision-making process. At the same time, groups working on different but related issues need to be encouraged to collaborate and build stronger alliances in the pursuit of common goals. As we have seen in this report so far, child health, environmental protection, consumer information and income distribution are inextricably linked.

While there are many unanswered questions concerning the physical environment, two areas stand out as particularly important for further research efforts. The first is a need to answer some broad questions related to the effects of environmental contaminants and changes on human health, especially as they relate to the health of children.

At the 1997 G-8 Denver Summit, the Declaration on Children's Environmental Health (of which Canada is an official signatory) identified seven areas of concern that require further study and information sharing in terms of policy and program solutions:

- increasing our understanding of the particular exposures and sensitivities of infants and children to environmental contaminants and exchanging information on relevant regulatory decisions and standards
- further reducing maternal and child exposure to lead
- ensuring microbiologically safe drinking water for all Canadian families
- reducing air quality threats
- reducing the exposure of pregnant women, children and youth to environmental tobacco smoke
- reducing threats to children's health from endocrine-disrupting chemicals
- reducing the impact of global climate change on children's health.⁵¹

The second related area for investigation concerns the potential impacts of environmental endocrine-disrupting chemicals on human reproduction functions. The recently announced Toxic Substance Research Initiative will help address this issue.⁵²

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