Climate Change Toolkit for Health Professionals

Factsheet: Climate Change Solutions with Immediate Health Benefits

Canada Must Do More

Current commitments by governments, including those of Canada, are insufficient to limit average global warming well below 2°C, let alone to meet the 1.5°C target in the 2015 Paris Agreement. To stay below 1.5°C, global greenhouse gas (GHG) emissions need to fall by about 45 percent from 2010 levels by 2030 and reach 'net zero' by 2050. It is imperative to accelerate the shift to non-carbon sources of energy in order to avoid the catastrophic health impacts that would be associated with 2-degrees of warming.

The Lancet Countdown on health and climate change emphasized that a transformation is needed in the way we generate power, travel, build communities, eat and grow our food. Strong and predictable carbon pricing, the rapid phase-out of coal, increased access to renewable energy, promotion of healthy living through energy efficient buildings, low-cost active transportation and increased access to green space are among strategic directions that will reduce the impact of climate change on health.

Many Climate Actions Benefit Health

Actions to reduce GHGs can contribute to multiple health benefits by improving air quality, increasing physical activity, improving nutrition, reducing obesity and decreasing chronic diseases. At times, the health benefits alone can outweigh the costs of measures taken to reduce GHG emissions.

In Canada, the two top emitting sectors in 2016 were oil and gas (26% of total emissions) and transportation (25%). Transportation was the largest contributing sector in eight of the provinces/territories, while the oil and gas sector was the greatest contributors in Alberta and Saskatchewan.

Air Pollution

Chronic exposure to fine particulate matter (PM2.5)(a major component of air pollution) from the burning of fossil fuels is estimated to result in 7,142 premature deaths per year in Canada with welfare-related costs valued at $53.5 billion with 345 attributed to coal-fired power plants, 105 to coal-related industries, 2762 to non-coal industries, 1063 to land-based transportation, and 1282 to the agricultural sector.

The extraction of fossil fuels also causes significant pollution. The oil sands contribute a large proportion of PM in Edmonton's air and this pollution can travel as far as Ontario. There is mounting evidence of the adverse impacts of shale gas drilling (fracking). Emissions from gas wells can result in concentrations of air pollutants that exceed exposure guidelines for both carcinogenic and non-carcinogenic health risks. The production, distribution and use of oil and gas also releases

methane, a short-lived climate pollutant with 84 times the warming potential of CO_2.

Physical Inactivity

Physical activity is associated with improved heart and mental health, healthy child development and aging, and reduced risk of premature deaths, some cancers, diabetes, dementia, osteoporosis and obesity. In 2013, only 10% of Canadian children and youth and 20% of Canadian adults met the Canadian Physical Activity Guidelines.

Obesity

In the past 50 years, there has been a shift to unhealthy diets that are calorie-dense, highly-processed, and rich in animal products. This is contributing to an increasing burden of obesity and diet-related chronic diseases and environmental degradation, including climate change. Canadians eat more meat and fewer vegetables and fruits than is recommended for health. Lowering meat intake and increasing intake of foods of plant origin would be beneficial for the health of many people in Canada.

In Canada more than one quarter (25%) of people 18 years and older were living with obesity in 2015. Obesity increases the risk for premature death and chronic diseases, such as cardiovascular disease, cancer and diabetes. Transportation systems, urban design, land use, and food systems, which have a strong impact on GHG emissions, have a significant impact on obesity by influencing levels of physical activity and diet.

Climate Solutions that Benefit Health

Transition to Renewable Energy

An accelerated shift to non-carbon sources of energy is needed. These include renewable energy such as wind and solar, geothermal energy, and micro-hydro. In addition to carbon pricing, governments have a role in accelerating the creation of sustainable markets for low-carbon technologies such as minimum requirements for renewable sources of power in the energy mix.

Coal-fired electricity releases more air pollutants, GHGs, and mercury than any other source of electricity. In 2016, it was estimated that $5 billion in air pollution-related health benefits could be created and 31 Mt of GHGs could be reduced over if Canada's coal-fired power plants were phased out by 2030 with two thirds of that power replaced by renewable energy.

A study that explored the rapid transition to 80% wind, water and solar energy by 2030 and 100% by 2050 estimated that by 2050, such a shift could lead to USD$110 billion in savings in annual health costs or nearly 4% of GDP, including a reduction of about 9,900 air pollution-related deaths in Canada. It would only take 4.1 years of savings from reduced air pollution and climate impacts to pay for this shift.

Reducing Energy Use in Buildings

The International Energy Agency estimates that by 2050, we could reduce GHG emissions from buildings by 60%. This could be achieved by replacing oil- and gas-based heating with improved building envelopes, high-efficiency, electric systems including heat pumps. This would improve outdoor air quality and indoor conditions. It would reduce energy costs to households, energy poverty, and illnesses, medical visits and sick days off work and school.

Reducing Emissions from Transportation

To successfully reduce the impact of transportation on climate change, there is a need to transition to low- or zero-emission vehicles, reduce the demand for motorized transportation, and shift personal transportation to walking, cycling and transit. Health co-benefits include: reduced exposure to traffic-related air pollution especially along high volume traffic corridors; increased physical activity; reduced noise; fewer vehicle-related traffic injuries; and greater equity because of less dependence on automobiles.

Increased density and diversity of land uses with improved access to transit reduces GHG emissions and can contribute to a reduction in diabetes, cardiovascular disease, and respiratory disease through increased physical activity and reduced levels of air pollution.

Promoting Green Spaces

Improving urban green spaces not only helps cities adapt to climate change, it also contributes to climate mitigation. Urban greenery and tree canopies sequester and store carbon and their cooling effects reduce energy use. Green spaces such as parks or sports fields facilitate physical activity and relaxation. They can increase social cohesion, reduce crime and violence, and decrease noise and air pollution – all of which reduces cardiovascular disease, depression, anxiety, and stress. Green spaces may also reduce health disparities; providing more benefits to those in low income neighbourhoods.

Shift Toward Plant-Based Foods

Studies that have analysed ways to reduce GHG emissions associated with food production have concluded that dietary changes towards diets rich in plant-derived foods and reduction in food waste would have the largest impact on GHG emissions. This would promote health by shifting food consumption to conform with guidelines for a healthy diet and improve cardiovascular health. Increasing the consumption of plant-derived foods while reducing meat, as appropriate, is an affordable approach to improving nutrition.

Carbon Pricing is an Essential Tool

There is broad agreement that putting a price on carbon is essential if we are to transition to a low-carbon economy. A price on carbon levels the playing field

between fossil fuels and alternative forms of energy by incorporating the cost to health and the environment into the cost of the use of energy sources. While progress is being made globally, most jurisdictions, including Canada, have carbon prices that are much lower than those needed to be consistent with the goal of the Paris Agreement.

Fossil Fuel Subsidies Sending Wrong Signal

While subsidies to the fossil fuel industry are declining, they continue to be substantial and larger than subsidies to renewable energy. Between 2013-2015 Canada paid an average of $3.3 billion per year to the oil and gas industry in various forms of incentives or subsidies associated with production, field development, extraction, and exploration. A study estimated that without subsidies, global GHG emissions in 2013 could have been 21% lower and deaths from fossil fuel-related air pollution 55% lower. At the same time, government revenues and social welfare would have increased by 4% and 2.2% of global GDP, respectively.

GHG Emissions per Person

In Canada, on average, individuals were responsible for 20 tonnes of GHGs (20 t CO2eq) each in 2016. Quebec had the lowest per capita emissions at 9.5 t CO2eq while Saskatchewan and Alberta had the highest at 69.5 and 64.6 t CO2eq respectively. The high per capita emissions of Alberta and Saskatchewan reflect the GHG emissions from the fossil fuel industry in those two provinces, the products of which are mostly exported.

Ensuring a Just Transition

The phase-out of fossil fuels will have major impacts on people and families involved in the fossil fuel industry, as well as communities where industry facilities are located. By using some of the revenues from carbon pricing and savings from the elimination of subsidies, we can ease the transition for workers and foster economic diversification to contribute to a just transition.

Note: References for this factsheet can be found in Module 5 of CAPE's Climate Change Toolkit for Health Professionals.