

Prince Edward Island Chronic Obstructive Pulmonary Disease (COPD) Trends

2000-2008



CANADA

Health and Wellness



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Non - Smoking
Building



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Chief Public Health Office
Epidemiology Unit

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www.gov.pe.ca/health

Key Messages

The proportion of Islanders who have been diagnosed with COPD (prevalence) rose from 5.3% in 2000 to 7.6% in 2008, an increase of 43% in the last nine years. The proportion of patients with active COPD (at least one diagnosis of COPD by physician visit or hospitalization per year) remained close to 2% up until recently when the prevalence rose to 2.6% in 2008.

The prevalence of self-reported COPD in PEI was 3.8% compared to the overall Canadian prevalence of 4.2%. However, this difference was not significantly different ($P>0.05$.)

The number of newly diagnosed cases of COPD (incidence) has decreased from a total of 652 newly diagnosed cases in 2000 to 591 new cases in 2007 (from 9.1 new cases per 1,000 Islanders to 7.6 per 1000). In 2008, there was a significant increase to 844 new cases diagnosed in PEI (10.6 new cases per 1000 Islanders).

There were 4005 Islanders living with COPD in 2000. By 2008, there were 6431, a 61% increase in the number of Islanders living with COPD.

In the early 2000's, the prevalence of COPD was significantly higher in men compared to women. However, this has been changing over time. The prevalence in women continues to increase at a faster rate than men. In 2008, the prevalence in men (7.7%) was not significantly different than the prevalence in women (7.5%).

The prevalence of COPD increases in the older age groups. After 60 years of age, this pattern changes and the proportion is higher in males than in females. In the oldest age group, 85 years and older, 33% of men are living with COPD.

Cigarette smoking is the underlying cause in 80% to 90% of COPD cases. There has been a reduction in smoking and exposure to environmental tobacco smoke in the last 20 years. The PEI smoking rate has decreased from 28% in 1999 down to its current rate of 16.9% in 2010.

In the last nine years, death rates from all causes of death in Islanders with COPD have been higher than those without COPD. Between the years 2000 and 2008, the yearly mortality rate was 6 to 7 times higher in Islanders with COPD compared to those without COPD.

People with COPD are using health care services at a much higher rate than those without COPD. In 2008, Islanders with COPD had 2.4 times as many visits to the family physician and 2.1 times as many visits to the specialist for all causes compared to those without COPD. For patients visiting the physician for COPD, the majority of them are seen by their family doctor (79%). Ten% of the COPD visits are seen in the Emergency Room. The number of times a person was hospitalized for all causes was 4.3 times higher in COPD patients compared to people without COPD.

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Introduction

Chronic Obstructive Pulmonary Disease or COPD is a term for multiple chronic respiratory diseases that include chronic bronchitis and emphysema. Most people with COPD have both conditions resulting in a chronic cough with mucus from the chronic bronchitis and progressive destruction of the lungs with shortness of breath from the emphysema^{1,2}. Symptoms of COPD do not usually begin until after 55 years of age, but the damage to the lungs may begin many years earlier. The earlier the disease is diagnosed, the better improvements will be seen by risk factor reduction and treatments.

COPD is a chronic disease but with the proper management, the impact of the disease can be reduced. Flare-ups occur when COPD symptoms such as shortness of breath, cough or spitting up mucus get worse or new ones develop. These are the most common cause of disability and/or hospitalization of COPD patients. They are commonly caused by lung infections. Knowing how to prevent flare-ups of COPD is critical in the management of the disease. Public Health agency recommends following these simple rules to reduce the risk of flare-ups³:

- Take good care of yourself.
- Take all of the medications prescribed by your doctor.
- Talk to your doctor about creating an action plan to deal with a potential flare-up.
- Get a flu shot every year.
- Avoid triggers such as air pollution, cigarette smoke and breathing very cold or very humid air.

The purpose of this document is to provide a picture of COPD in Prince Edward Island so that policy makers, researchers, health practitioners and the general public can make informed public and personal health decisions.

Methods Used

Information for this report is based on the Canadian Chronic Disease Surveillance System (CCDSS)⁴, coordinated by the Public Health Agency of Canada. This surveillance system links the Prince Edward Island common client registry database with physician billing and hospitalization data. For an Islander to be considered a COPD case within this surveillance system, a person would have to be at least 35 years of age and would have had one hospitalization with a diagnosis of COPD or have had at least one physician visit with a diagnosis of COPD within a two year period.

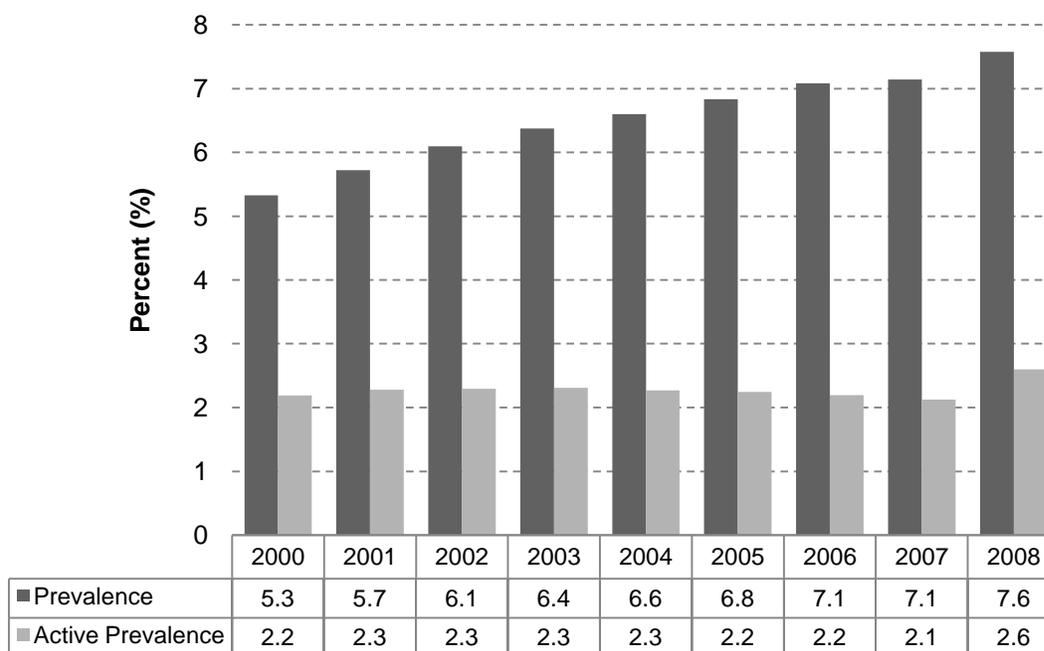
Incidence rate refers to the proportion of newly diagnosed people of all people that previously did not have COPD. Prevalence rate refers to the proportion of all people diagnosed with COPD in the population. Some cases of COPD are very well managed and require less medical attention. Therefore, the prevalence of active cases of COPD can also be measured. People meeting the definition of a COPD case contributed to the yearly prevalence of active COPD cases if they had one diagnosis of COPD at the hospital or by a physician during that year. These are likely the moderate to severe cases that are difficult to manage.

Prevalence data for other provinces and territories was unavailable from CCDSS and was obtained from Statistics Canada information from the Canadian Community Health Survey⁵. In addition, multiple morbidity data was obtained from the Canadian Community Health Survey.

People Living With COPD

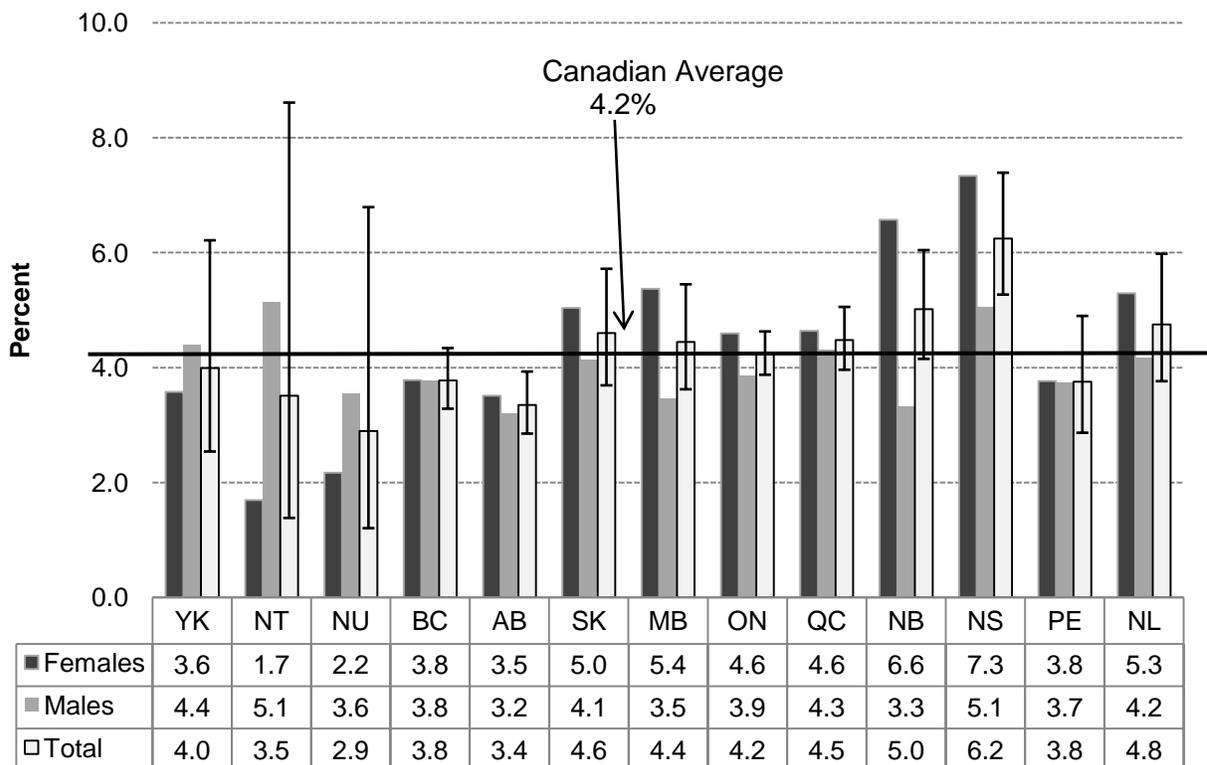
The proportion of Islanders who have been diagnosed with COPD (prevalence) rose from 5.3% in 2000 to 7.6% in 2008, an increase of 43% in the last nine years. Because COPD is a chronic disease, the proportion of people diagnosed with COPD tends to increase over time. However, this rate includes all cases including those mild cases that are very well managed. The proportion of patients with active COPD (at least one diagnosis of COPD by physician visit or hospitalization per year) remained close to 2% up until recently when the prevalence increased to 2.6% in 2008.

COPD Prevalence and Active Prevalence, PEI, 2000-2008, Age 35+



Data obtained from the Canadian Community Health Survey⁵ was used to compare COPD prevalence rates in Prince Edward Island with other provinces and territories and the prevalence of COPD in Canada because the comparison data was not currently available from CCDSS. The prevalence of self-reported COPD in PEI was 3.8% compared to the overall Canadian prevalence of 4.2%. However, this difference was not significantly different ($P>0.05$.) Although males and females in PEI had approximately the same COPD prevalence, the majority of the provinces had higher rates in females than in males. The true prevalence for each of these provinces and territories may differ as this data is based on self-report surveyed people responding to whether or not they have physician diagnosed COPD and not based on the actual medical records as done in CCDSS.

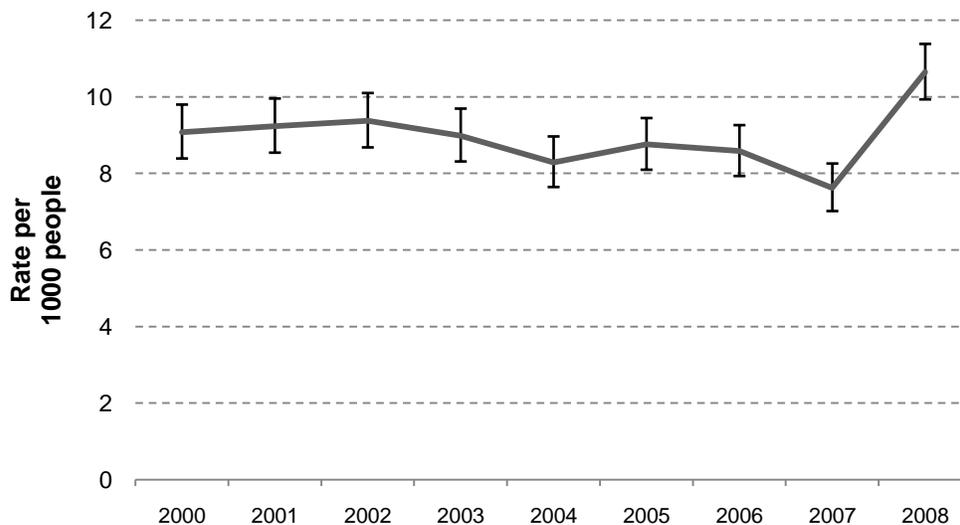
Self-reported COPD Prevalence by Province, Age 35 years and older, 2009-2010



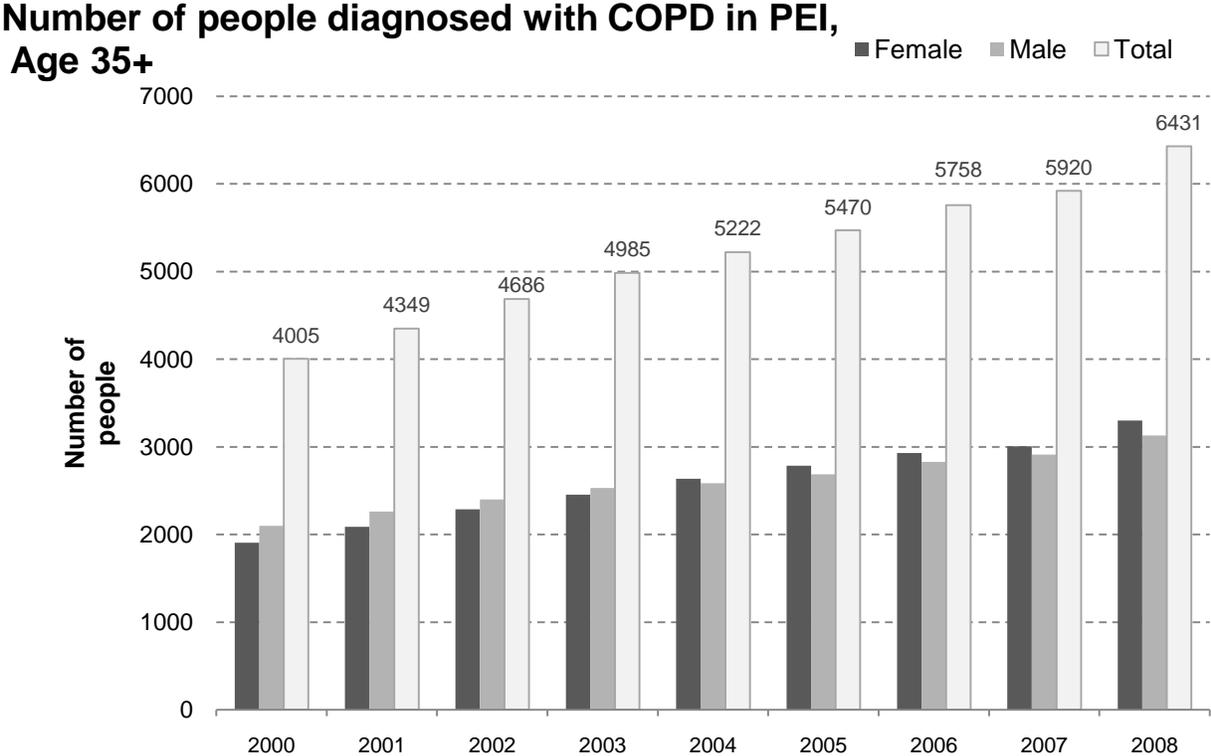
People Living With COPD

The number of newly diagnosed cases of COPD (incidence) has dropped from a total of 652 newly diagnosed cases in 2000 to 591 new cases in 2007 (from 9.1 new cases per 1,000 Islanders to 7.6 per 1000). In 2008, there was a significant increase to 844 new cases diagnosed in PEI (10.6 new cases per 1000 Islanders). Reasons for this sharp increase in cases diagnosed are likely multifaceted. In September 2007, the Canadian Thoracic Society published updates on the recommendations for management of COPD⁶. Two new physicians with respiratory medicine subspecialties were recruited to work in PEI during that period. In addition, there were pharmaceutical companies offering spirometry testing at pharmacy locations. These are just a few of the possible reasons for the rapid increase in the number of diagnoses from 2007 to 2008.

COPD Incidence, PEI, 2000- 2008



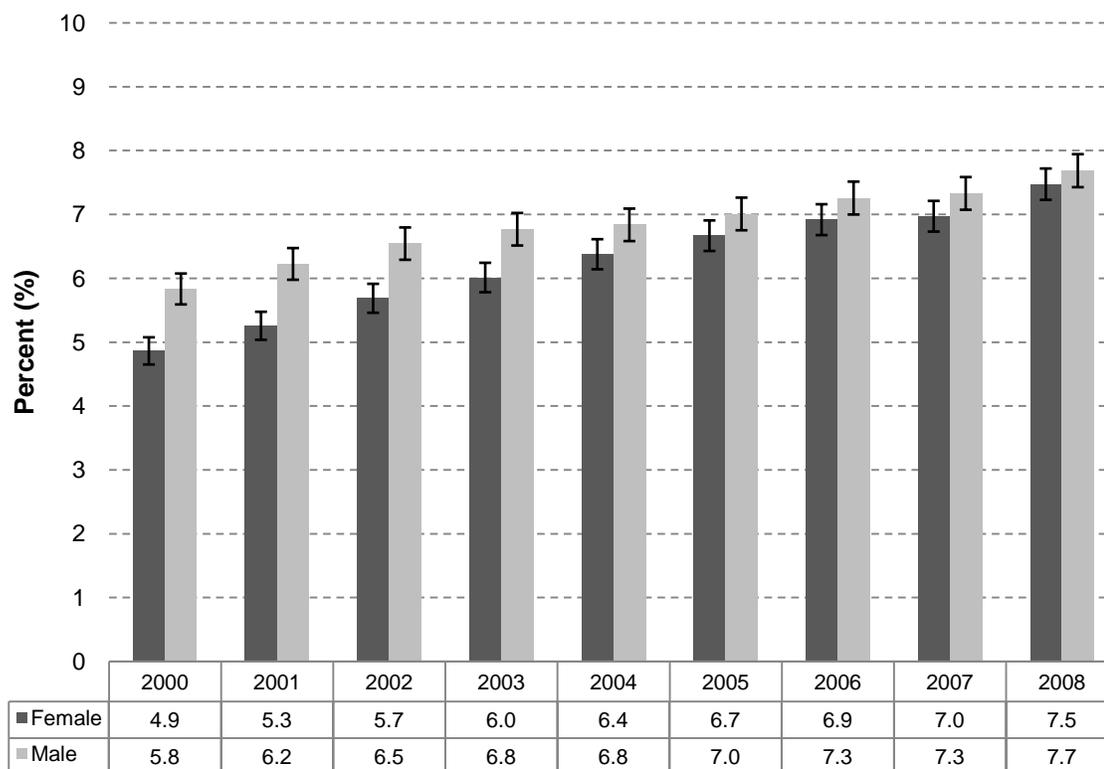
There were 4005 Islanders living with COPD in 2000. By 2008, there were 6431, a 61% increase in the number of Islanders living with COPD. Generally in PEI, slightly more COPD sufferers are females. In 2008, 51% of all Islanders living with COPD were female.



People Living With COPD

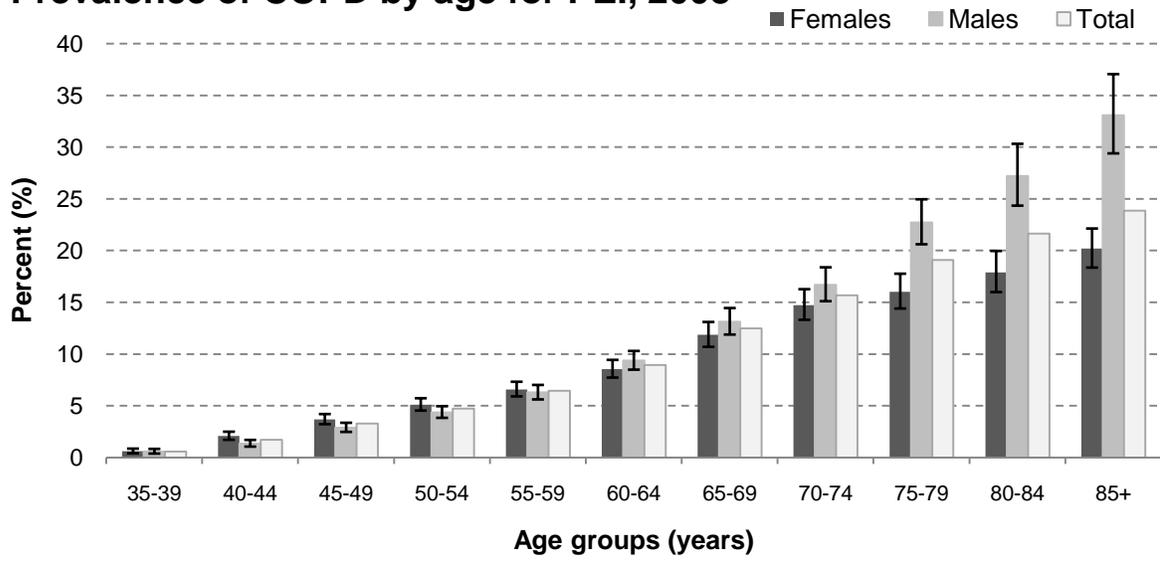
Although there are more women than men living with COPD in PEI, the proportion of men living with the disease has been slightly higher than the proportion of women living with COPD. In the early 2000's, the prevalence of COPD was significantly higher in men compared to women. However, this has been changing over time. The prevalence in women continues to increase at a faster rate than men. In 2008, the prevalence in men (7.7%) was not significantly different than the prevalence in women (7.5%).

COPD Prevalence in PEI, Males and Females, Age 35+



The prevalence of COPD increases with age. In addition, the prevalence is higher in females between 35 to 59 years of age. After 60 years of age, this pattern changes and the proportion is higher in males than in females. In the oldest age group, 85 years and older, 33% of men are living with COPD.

Prevalence of COPD by age for PEI, 2008

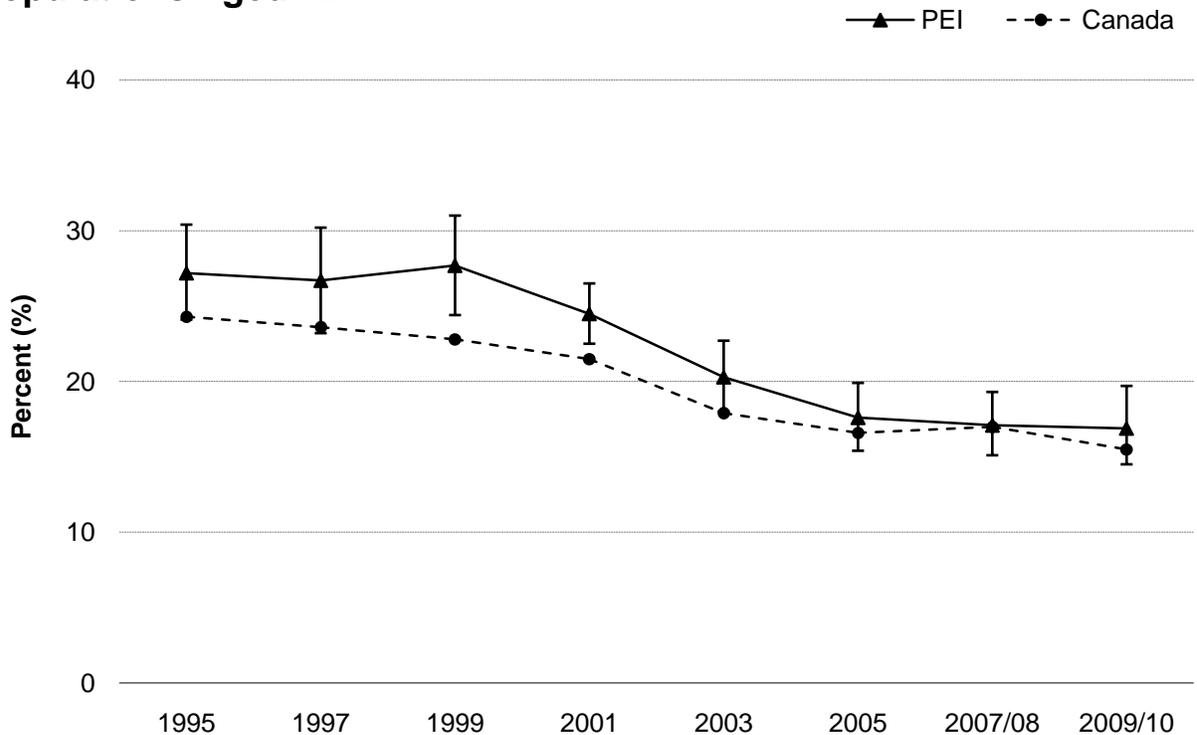


Risk Factors for COPD

There are several risk factors that contribute to the development of COPD. Cigarette smoking is the underlying cause in 80% to 90% of COPD¹. Exposure to environmental tobacco smoke (“second-hand smoke”) also plays a role. Other important risk factors for the development and severity of COPD include outdoor air pollution, house dust, and occupational exposures of dusts and fumes. Predisposition to COPD may be caused by repeated respiratory tract infections and exposure to second-hand smoke in children. There is also a genetic deficiency of a lung protecting substance (alpha-1-antitrypsin), which predisposes people to COPD¹.

There has been a reduction in smoking and exposure to environmental tobacco smoke in the last 20 years. Data from the National Population Health Survey and the Canadian Community Health Survey show the decrease in smoking rates over time in Canada and in PEI⁷. Currently 16.9% of Islanders smoke on a daily basis which is not significantly different from the Canadian level of 15.5%. The PEI smoking rate has decreased from 28% in 1999 down to its current rate.

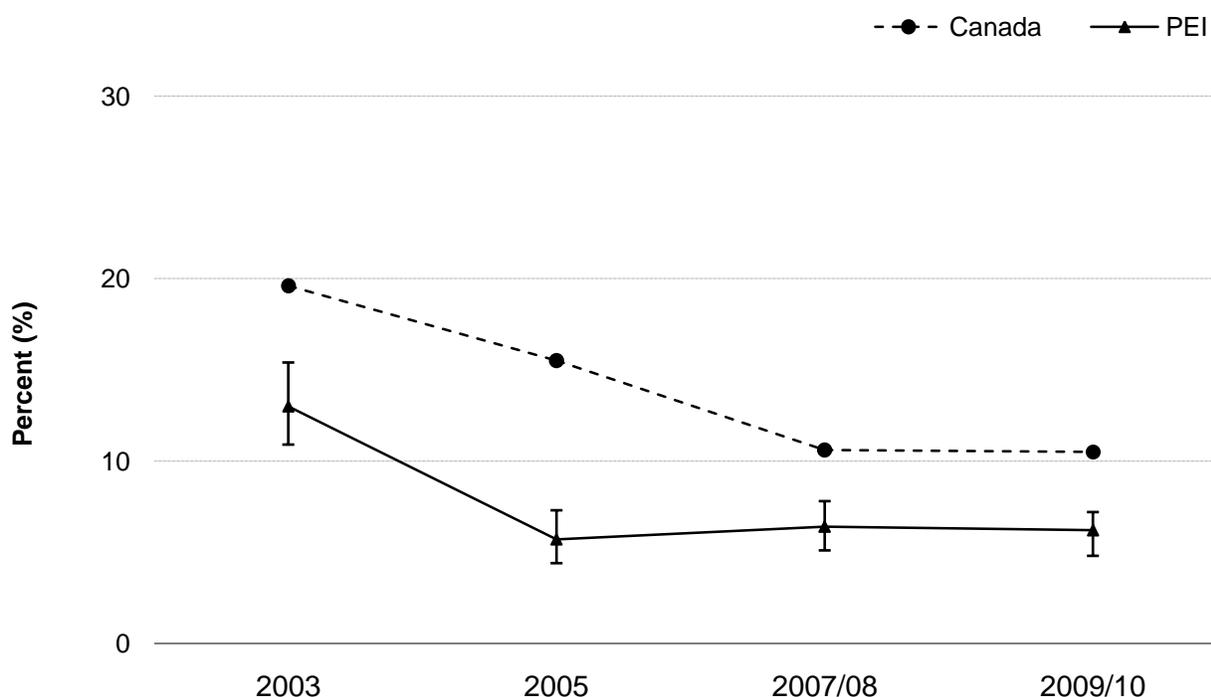
Self-Reported Daily Smoking, PEI and Canadian Populations Aged 12+



In 2003, PEI introduced the Smoke-free Places Act banning smoking in all public spaces. This Act has helped reduce the amount of environmental tobacco smoke exposure in public spaces. Currently Islanders report less exposure than all Canadians. PEI was the first province to institute a comprehensive, province-wide, anti-smoking legislation in Canada.

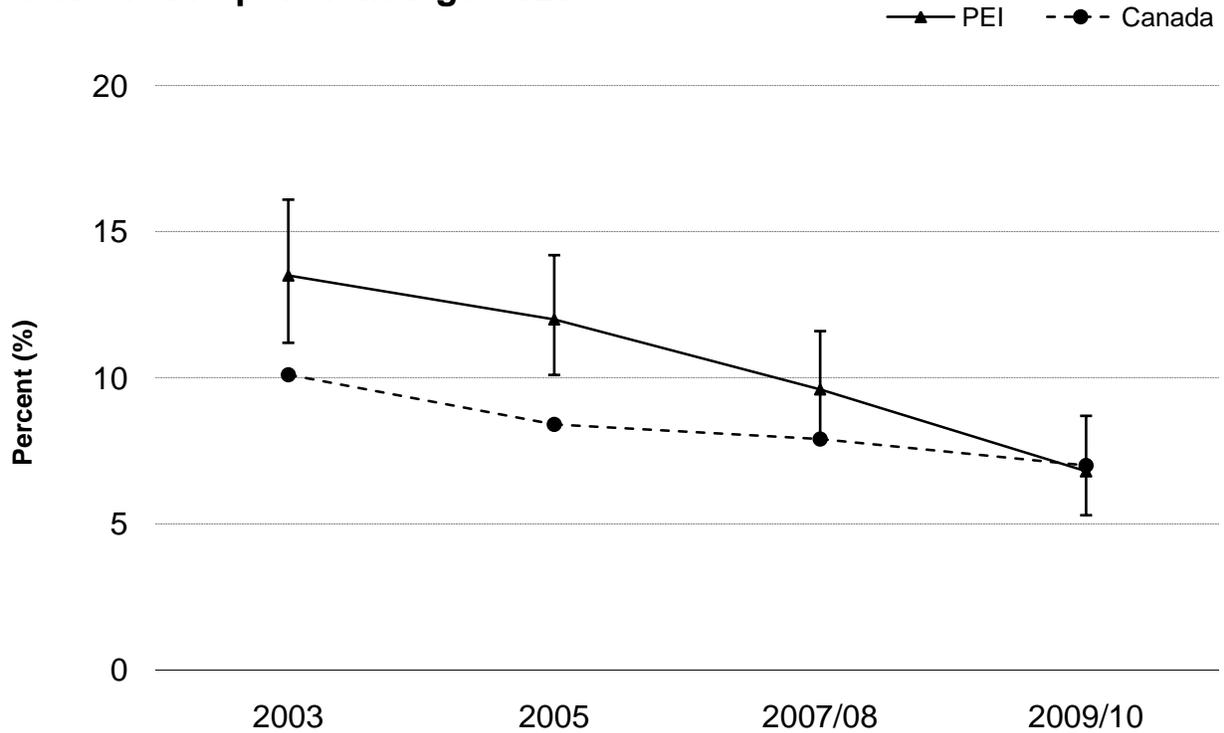
Exposure to environmental tobacco smoke in public places has decreased from 13.0% in 2003 to 6.2% in 2009-2010, a decrease of 52%. PEI has been significantly lower than Canadian rates since 2003.

Self-Reported Exposure to ETS in a Public Place, PEI and Canadian Populations Aged 12+



Exposure to environmental tobacco smoke in cars has decreased from 13.5% in 2003 to 6.8% in 2009-2010, a reduction of 50%, and presently is similar to the Canadian rate of 7.2%.

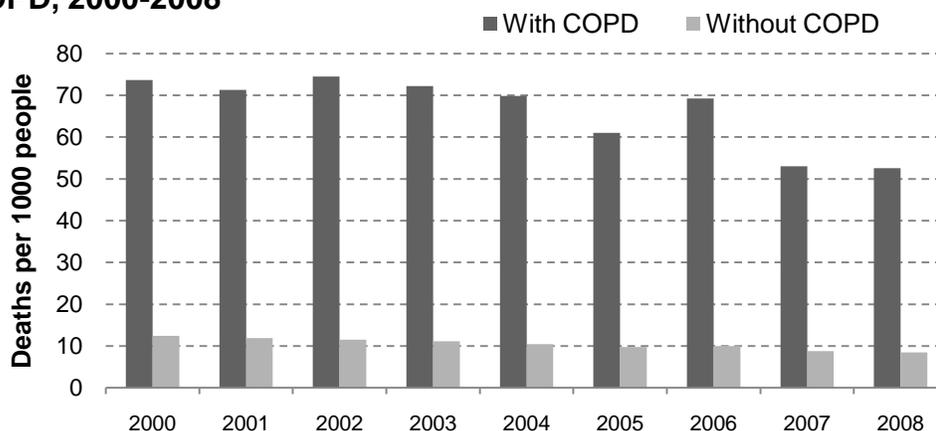
Self-Reported Exposure to ETS in a Car, PEI and Canadian Populations Aged 12+



Deaths among People with Diagnosed COPD (Mortality)

In the last nine years, death rates from all causes of death in Islanders with COPD have been higher than those without COPD. Between the years 2000 and 2008, the yearly mortality rate was 6 to 7 times higher in Islanders with COPD compared to those without COPD. Chronic lower respiratory disease is the 6th most common cause of death in PEI in 2008⁸. Most deaths due to chronic lower respiratory disease are due to COPD.

All cause death rate for people with and without COPD, 2000-2008



Multiple morbidities among People with Diagnosed COPD

In 2008, people with COPD had an all cause death rate 6 times higher than those without COPD. However, some of these deaths may be due to other diseases. Because many chronic diseases can be attributed to lifestyle, people often have more than one chronic disease. The presence of these other chronic diseases can contribute to the death rate differences.

People identified with self-reported COPD from the Canadian Community Health Survey in 2009-2010 are:

- 1.4 times as likely to have hypertension
- 2.4 times as likely to have diabetes
- 2.4 times as likely to have heart disease
- 3.8 times as likely to have cancer

Proportion of people with and without COPD who have multiple morbidities

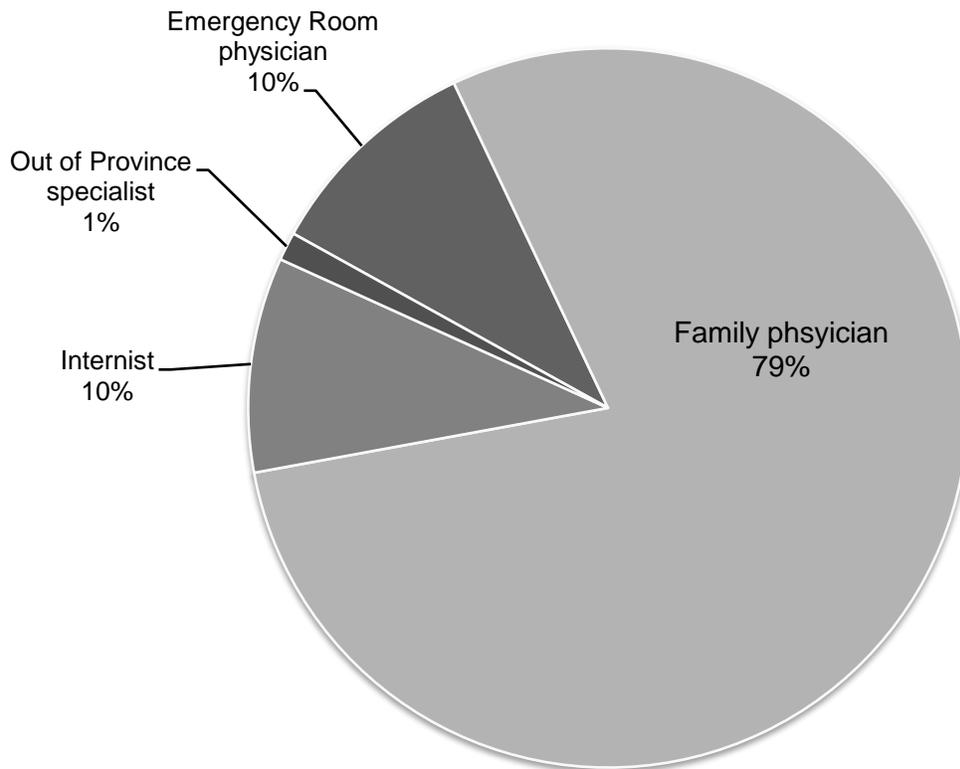
	Diabetes	Heart Disease	Cancer	Hypertension
% of people with COPD	22.9	20.9	9.5	36.1
% of people without COPD	9.7	8.7	2.5	25.1

Health Services Utilization

In 2008, Islanders with COPD had 2.4 times as many visits to the family physician and 2.1 times as many visits to the specialist for all causes compared to those without COPD. For patients visiting the physician for COPD, the majority of them are seen by their family physician (79%). Unfortunately, 10% of COPD visits are seen at the Emergency Room. A recent study done in Alberta found that 32% of people seen at the Emergency Room for COPD were admitted to hospital⁹.

The number of times a person was hospitalized for all causes was 4.3 times higher for individuals with COPD patients and the length of time they spent hospitalized was 1.2 times longer compared to those without COPD. People with COPD are using health care services at a much higher rate than those without COPD.

Who provides care for COPD to Islanders, 2008



Summary and Recommendations

COPD is a prevalent chronic condition of Prince Edward Islanders. The proportion of Islanders 35 years and older living with COPD is 1 in 13 persons which is higher than self-reported COPD rates from all provinces and territories in 2010. An accurate count of Islanders with COPD is possible using the CCDSS. The prevalence in Islanders greater than 35 years of age rose from 5.3% in 2000 to 7.6% in 2008, an increase of 43% in the last nine years. Although the prevalence has risen, the rate of new cases diagnosed was slowly decreasing until there was a sharp increase in 2008 with 10.6 cases new cases per 1000 Islanders.

Currently there are over 6000 Islanders living with COPD. For the most part, COPD is a preventable disease. The number of new cases of COPD can be reduced and the health of these Islanders with COPD can be improved. Since smoking is the cause of approximately 90% of COPD cases, the best way to prevent or slow the progression of this disease is by not smoking. PEI has supported tobacco reduction through the *Smoke-free Places Act* and by supporting smoking cessation programs.

If you are a smoker, it is never too late to quit. Quitting will reduce the risk of COPD or slow the progression of the disease if you already have it. If you have questions about quitting, you should contact your family physician or pharmacist. Smoker's helpline is available by phone (1-877-513-5333) or online (www.smokershelpline.ca) for help making a quit plan that is right for you. PEI also has QuitCare[®] for those who would benefit from an intensive cessation program.

The impact of this disease can be reduced if the disease is diagnosed early and flare-ups are prevented. Early diagnosis can lead to better outcome of the disease. A diagnosis is made by spirometry, a quick breathing test that measures the amount of air that you can move through your lungs. Currently this test can be done at both the Queen Elizabeth and Prince County hospitals with a physician's referral. However, testing services will be expanded into provincial clinics in the near future.

Flare-ups occur when COPD symptoms get worse or new ones develop. These are the most common cause of disability and/or hospitalization of COPD patients. They are commonly caused by lung infections. Knowing how to prevent flare-ups of COPD is critical in the management of the disease. Public Health agency recommends following these simple rules to reduce the risk of flare-ups³:

- Take good care of yourself. Eat healthy foods, exercise, get enough sleep and stay away from people who are sick. Staying healthy will help your body fight infections.
- Take all of the medications prescribed by your doctor. Ask for help if you have questions about how or when to take medications or what they're for.
- Talk to your doctor about creating an action plan to deal with a potential flare-up. A written action plan will help you to know when you need to make an appointment to see your doctor or when to go to the emergency department.
- Get a flu shot every year. Ask your doctor whether a pneumonia shot is right for you.
- Many people with COPD find that being around certain things can set off their symptoms. Avoid triggers such as air pollution, cigarette smoke and breathing very cold or very humid air.

Recommendations

Currently there is a COPD clinic at the Harbourside Clinic in Summerside. At the clinic a respiratory therapist provides testing for COPD and also supports the patients by teaching the patients how to best manage their COPD. There are plans to train nurses to be COPD educators and to supply 10 new spirometry machines to help diagnose the disease at an earlier stage. The program will be expanded across the Island in the near future for better access for all Islanders.

The Department of Health and Wellness, along with community partners, continue to apply the best available evidence to support and promote self management and track and report health outcomes. Understanding the changes in the number of patients diagnosed with COPD and living with COPD is essential for policy makers, researchers, health practitioners and the general public to make informed public and personal health decisions. Reduction and avoidance of risk factors to reduce the development of COPD is critical to reducing the incidence of this disease. Following the recommendations is the key to management for Islanders living with COPD.

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