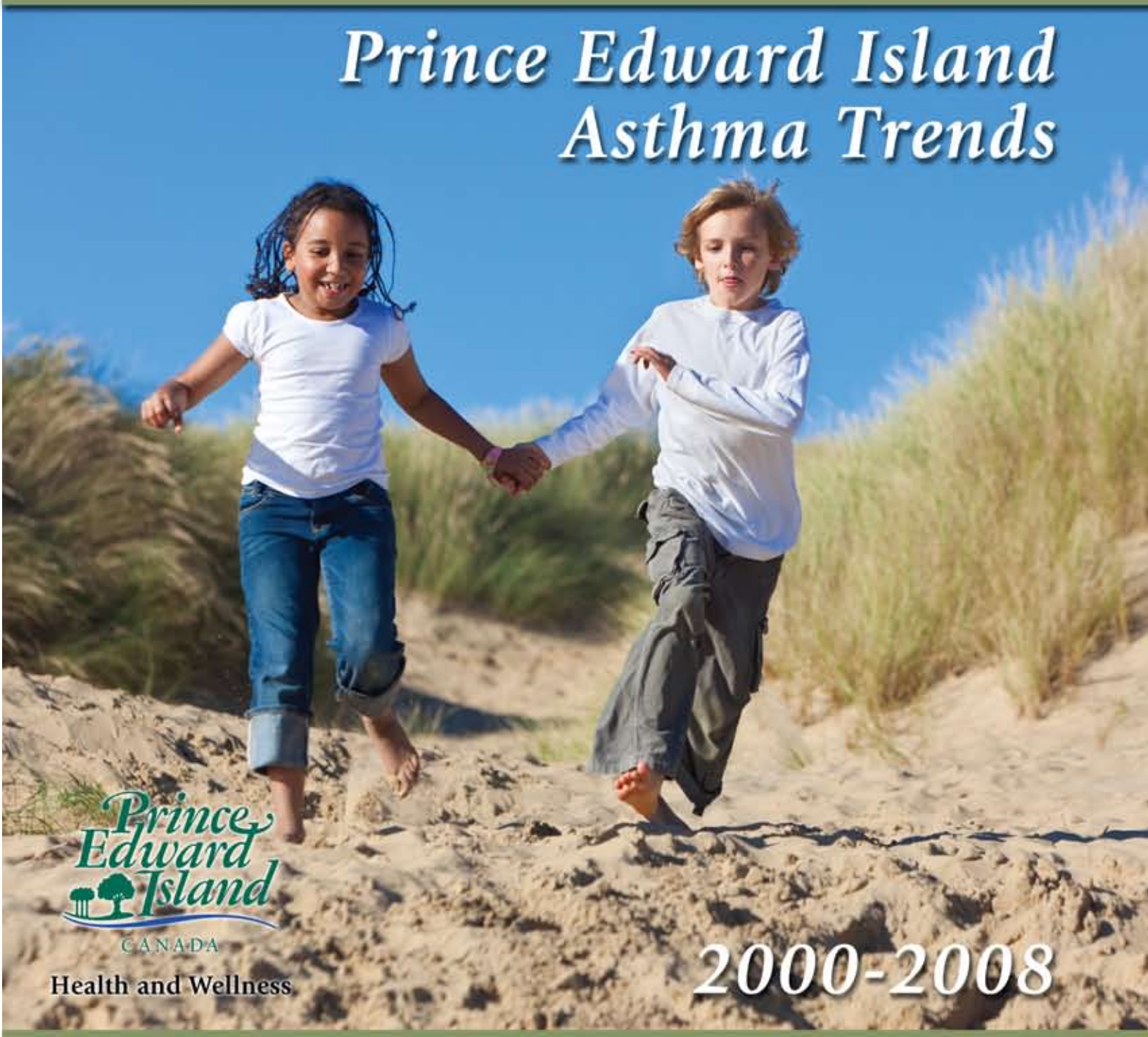
Prince Edward Island Asthma Trends



Prince Edward Island
CANADA

Health and Wellness

2000-2008

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Chief Public Health Office
Epidemiology Unit

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Key Messages

The proportion of Islanders who have been diagnosed with asthma (prevalence) rose from 7.4% in 2000 to 10.1% in 2008, an increase of 36% in the last nine years. Currently, 1 in 10 Islanders has been diagnosed with asthma.

After adjusting for differences in age distributions between provinces and territories, the prevalence of self-reported asthma in those aged 12 and older in PEI was 9.1% compared with all of Canada whose prevalence was 8.4%. However, this difference was not significant.

The number of newly diagnosed cases of asthma (incidence) has dropped from a total of 1185 newly diagnosed cases in 2000 to 733 new cases in 2008 (from 8.9 new cases per 1,000 Islanders to 5.5 per 1000).

There were 10,584 Islanders living with asthma in 2000. By 2008, there were 15,108, a 43% increase in the number of Islanders living with asthma. Slightly more asthma sufferers are females, with 52% being female in 2008.

Asthma is more prevalent in our younger population. The prevalence of asthma decreases considerably after 15 years of age. However, the prevalence is significantly higher in males until they reach 20 years of age after which the prevalence is higher in females.

The rate of new cases (incidence) diagnosed in children over the years 2000 to 2008 has been dropping. The largest decrease has been in the children less than 5 years of age from 37.3 cases per 1000 children to 26.8 per 1000 children; however, this remains the age group with the highest rate of new cases.

In 2008, Islanders living with asthma had over 30% more visits to family physicians and specialists compared to Islanders who did not have asthma. Of the physicians' visits for asthma, 67% of them were to the family doctor, 20% were to the pediatrician or other specialist, and 13% of them were to the ER doctor.

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Introduction

Asthma is a chronic disease affecting many adults and children in Prince Edward Island (PEI). Asthma is the result of hyper-responsive airways leading to chronic airway inflammation and an abnormal reduction of the airway capacity. The disease is characterized by repeated episodes of wheezing, shortness of breath, chest tightening, and coughing, often worse at night or in the morning. The reduction in airflow responsible for these symptoms is often reversible spontaneously or with treatment.[1]

Asthma is a chronic disease, but the symptoms can be managed. The Public Health Agency of Canada recommends managing asthma symptoms by[1]:

- knowing the triggers for symptoms and avoiding them
- having a written asthma action plan
- learning how to use medications properly
- working with a Certified Respiratory Educator to learn about asthma control

The purpose of this document is to provide a picture of asthma in Prince Edward Island so that policymakers, 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)[2], coordinated by the Public Health Agency of Canada. This surveillance system links the Prince Edward Island health insurance registry database with physician billing and hospitalization data. For an Islander to be considered an asthma case within this surveillance system, a person would have had one hospitalization with a diagnosis of *Asthma* or have had at least two physician visits with a diagnosis of *Asthma* within a two year period.

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

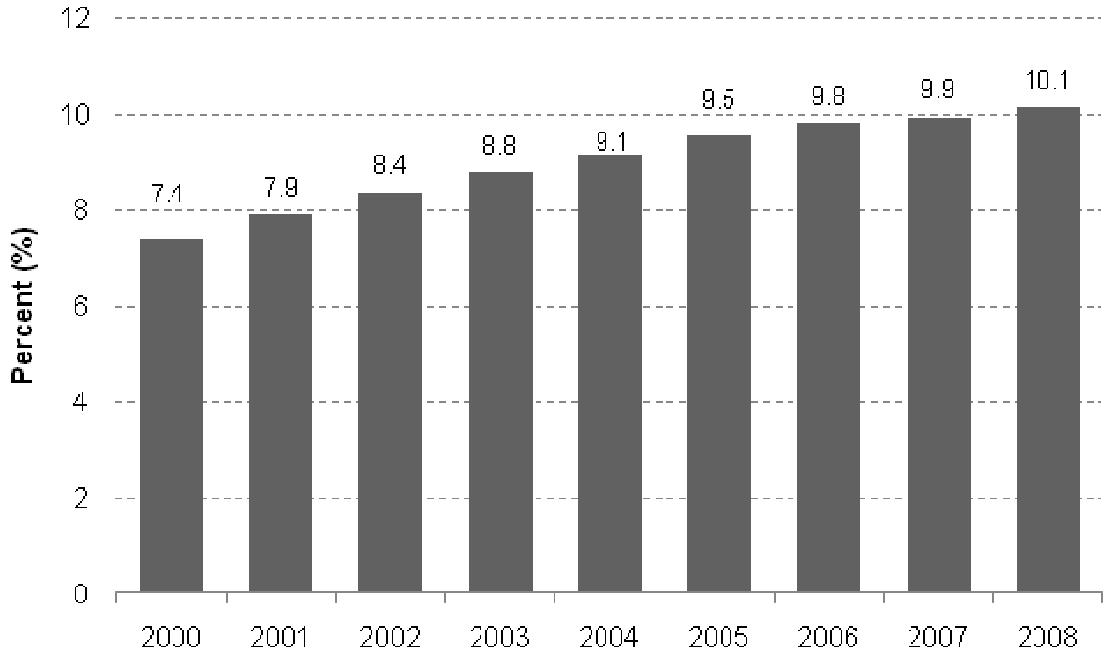
Prevalence data for other provinces and territories was unavailable from CCDSS at this time. However, self-reported data obtained from Public Health Agency of Canada information from the Canadian Community Health Survey[3] was used for comparison.

Age standardized rates are used to account for differences in age distributions from place to place and time to time. They are commonly used to compare the rates of disease in PEI to the rates in other provinces or all of Canada.

People Living With Asthma

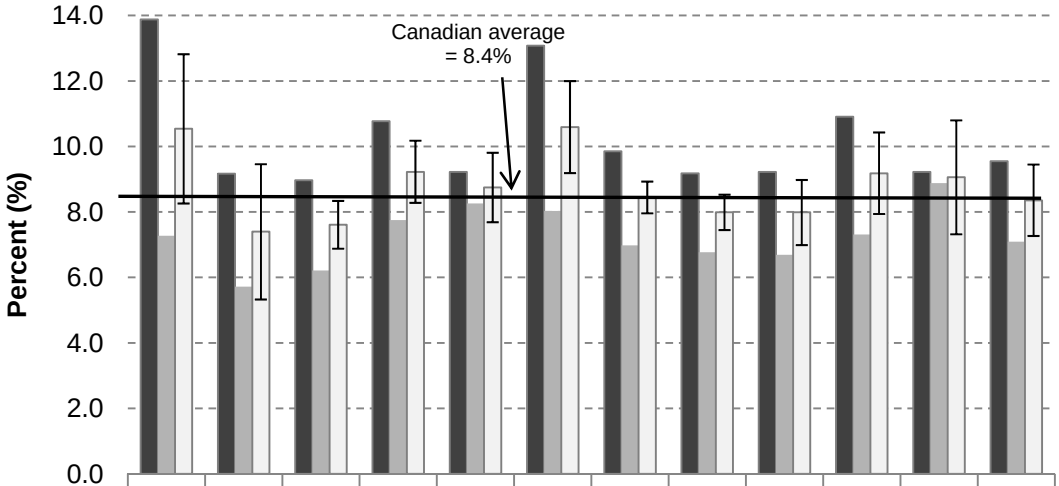
The proportion of Islanders who have been diagnosed with asthma (prevalence) rose from 7.4% in 2000 to 10.1% in 2008, an increase of 36% in the last nine years. Because asthma is a chronic disease, the proportion of people diagnosed with asthma tends to increase over time. However, this rate includes all cases including those mild cases that are very well managed. The proportion of patients with active asthma (at least one diagnosis of asthma by physician visit or hospitalization per year) remained under 3% for each year after 2000.

Asthma Prevalence, PEI, 2000-2008



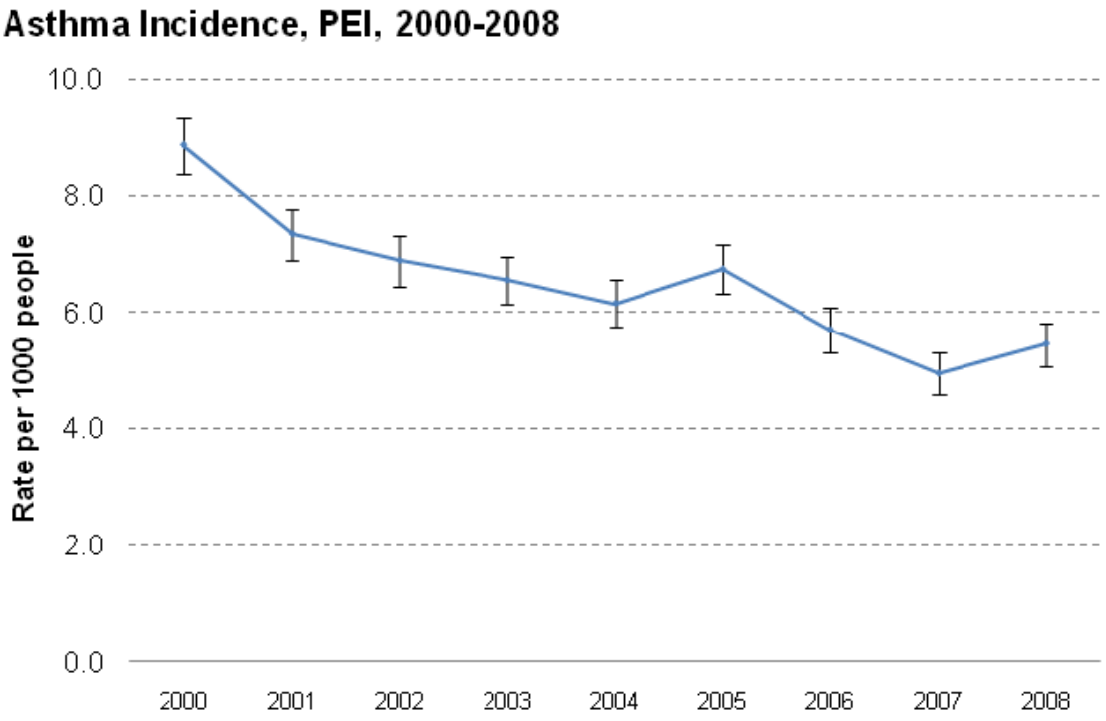
Data obtained from Public Health Agency of Canada information from the Canadian Community Health Survey[3] was used to compare asthma prevalence rates in Prince Edward Island with other provinces and territories and the prevalence of asthma in Canada. After adjusting for differences in age distributions between provinces and territories, the prevalence of self-reported asthma for those age 12 and older in PEI was 9.1% compared with all of Canada whose prevalence was 8.4%. However, this difference was not significant. Females had higher asthma prevalence than males in all provinces and territories. The true prevalence for each of these provinces and territories may differ as this data is based on surveyed people responding to whether or not they have physician diagnosed asthma.

Self-reported Asthma Prevalence by Province, Age 12 years and older, 2009-2010



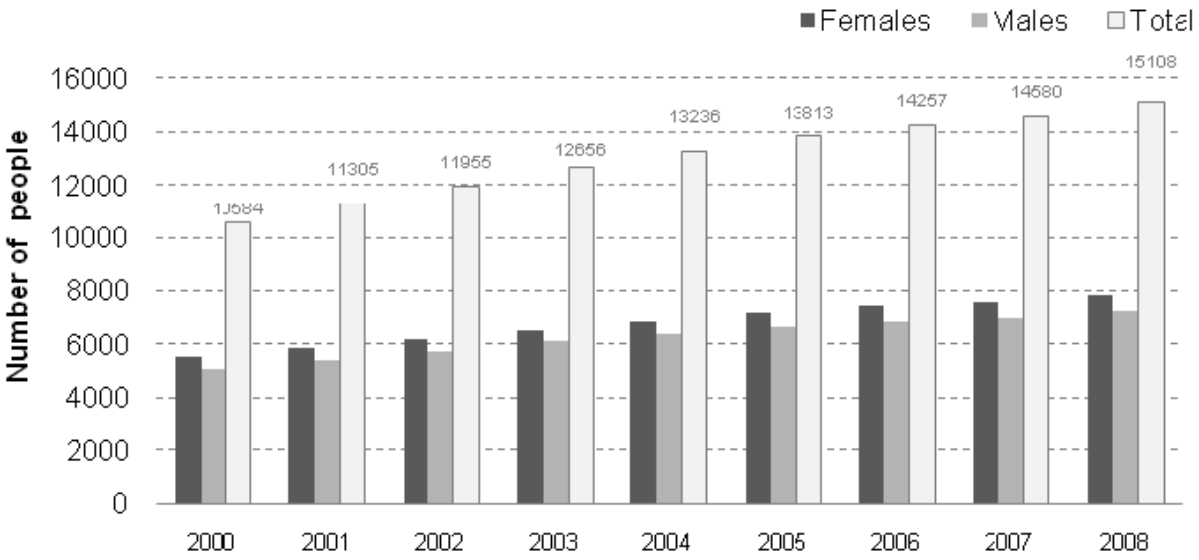
	YT	NT	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL
Females	13.9	9.2	9.0	10.8	9.2	13.1	9.9	9.2	9.2	10.9	9.2	9.6
Males	7.3	5.7	6.2	7.8	8.3	8.0	7.0	6.8	6.7	7.3	8.9	7.1
Total	10.5	7.4	7.6	9.2	8.8	10.6	8.4	8.0	8.0	9.2	9.1	8.4

The number of newly diagnosed cases of asthma (incidence) has dropped from a total of 1185 newly diagnosed cases in 2000 to 733 new cases in 2008 (from 8.9 new cases per 1,000 Islanders to 5.5 per 1000).



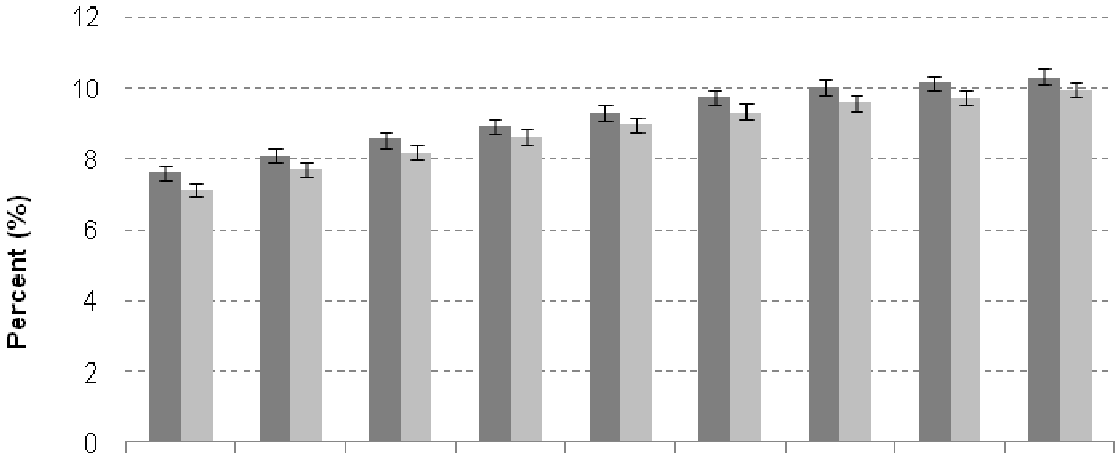
There were 10,584 Islanders living with asthma in 2000. By 2008, there were 15,108, a 43% increase in the number of Islanders living with asthma. Generally in PEI, slightly more asthma sufferers are females. In 2008, 52% of all Islanders living with asthma were female.

Number of people living with asthma in PEI, 2000-2008



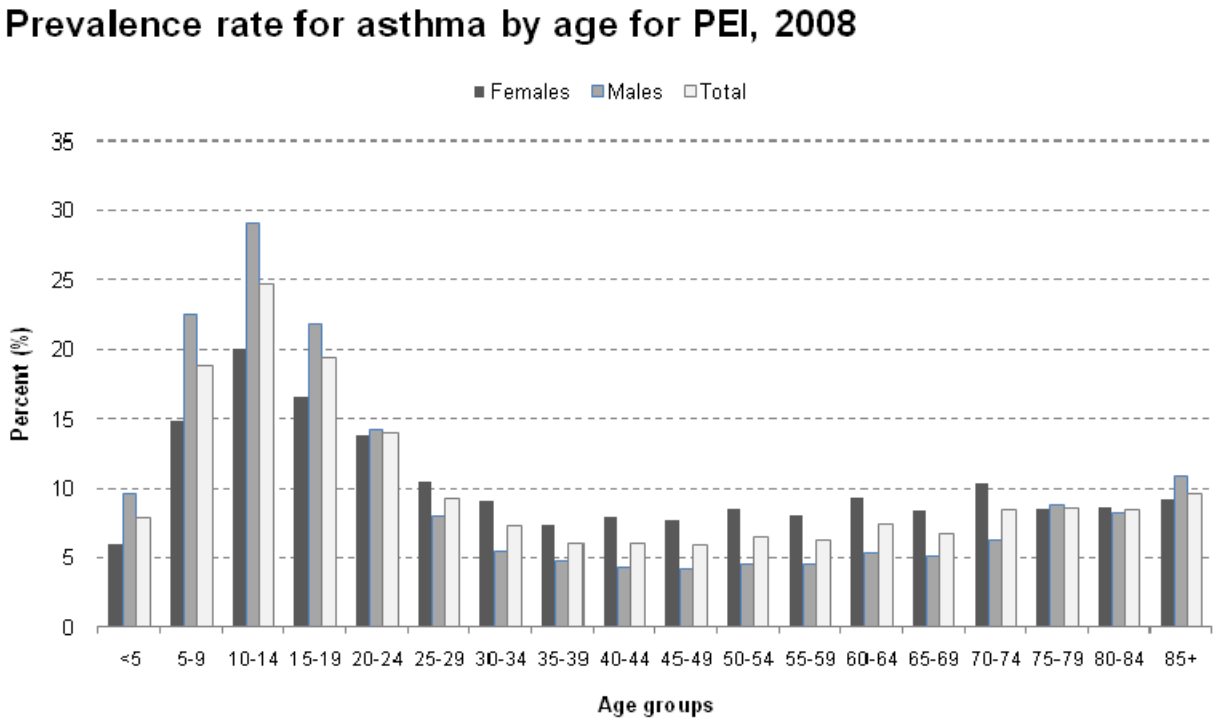
In 2008, the prevalence of asthma in females (10.3%) is slightly higher than males (10.0%). This trend has remained consistent over time. Currently, 1 in 10 Islanders have been diagnosed with asthma.

Asthma prevalence in PEI, males and females, 2000-2008



	2000	2001	2002	2003	2004	2005	2006	2007	2008
Females	7.6	8.1	8.5	8.9	9.3	9.7	10.0	10.2	10.3
Males	7.2	7.7	8.2	8.6	9.0	9.3	9.6	9.7	10.0

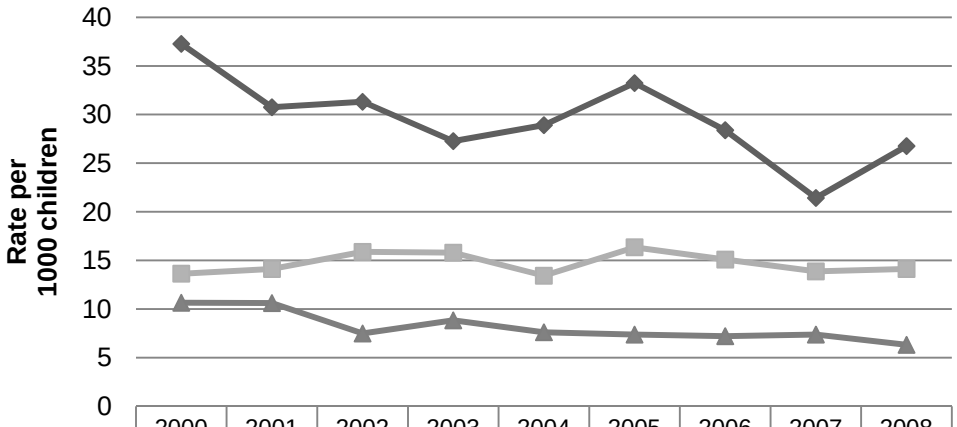
Asthma is more prevalent in our younger population. The prevalence of asthma decreases considerably after 15 years of age in both sexes. However, the prevalence is significantly higher in males than females until they reach 20 years of age when this pattern switches. After 20 years of age, women have a significantly higher rate of asthma than men until after 75 years of age. This prevalence trend is similar in earlier years (2000-2007).



Children living with Asthma

The rate of new cases (incidence) diagnosed in children over the years 2000 to 2008 has been dropping. The largest decrease has been in the children less than 5 years of age; however, this remains the age group with the highest rate of new cases. The rate of new cases in the 5-9 year old age group has remained stable over the same time period. The older children, aged 10-14 years of age, have a reduced rate of newly diagnosed cases of asthma during the same time period.

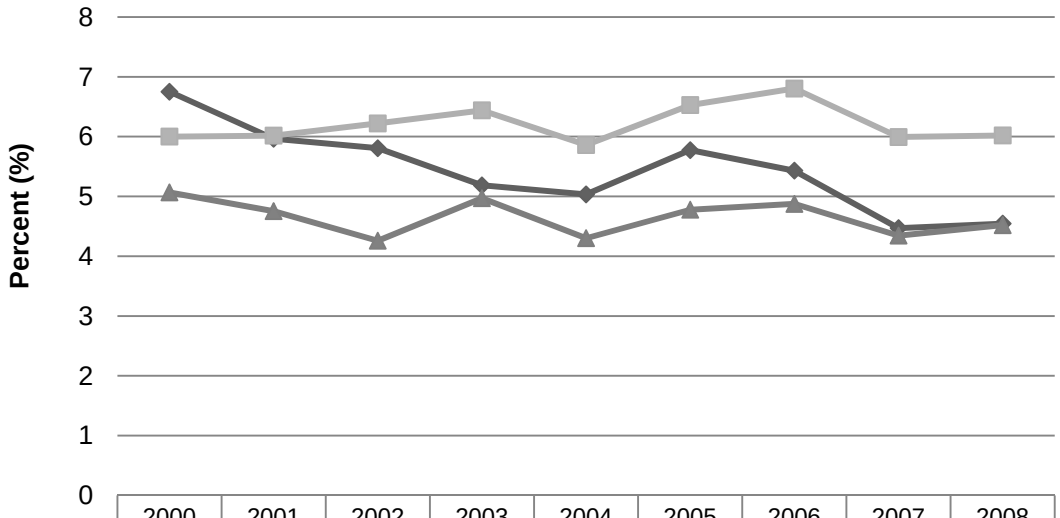
Asthma Incidence for children <15 years old



	2000	2001	2002	2003	2004	2005	2006	2007	2008
<5 years old	37.3	30.8	31.3	27.3	28.9	33.2	28.4	21.4	26.8
5-9 years old	13.6	14.1	15.9	15.8	13.4	16.3	15.1	13.9	14.1
10-14 years old	10.7	10.6	7.5	8.8	7.6	7.4	7.2	7.4	6.3

Overall, the proportion of children living with asthma who are consistently visiting a physician for asthma (active asthma) has been slowly decreasing over the years. The greatest decrease has been in the youngest children (<5 years old) which has declined by over 50% from 2000 to 2008.

Active asthma prevalence for children <15 years old who are consistently being treated for asthma



	2000	2001	2002	2003	2004	2005	2006	2007	2008
<5 years old	6.8	6.0	5.8	5.2	5.0	5.8	5.4	4.5	4.5
5-9 years old	6.0	6.0	6.2	6.4	5.9	6.5	6.8	6.0	6.0
10-14 years old	5.1	4.8	4.3	5.0	4.3	4.8	4.9	4.3	4.5

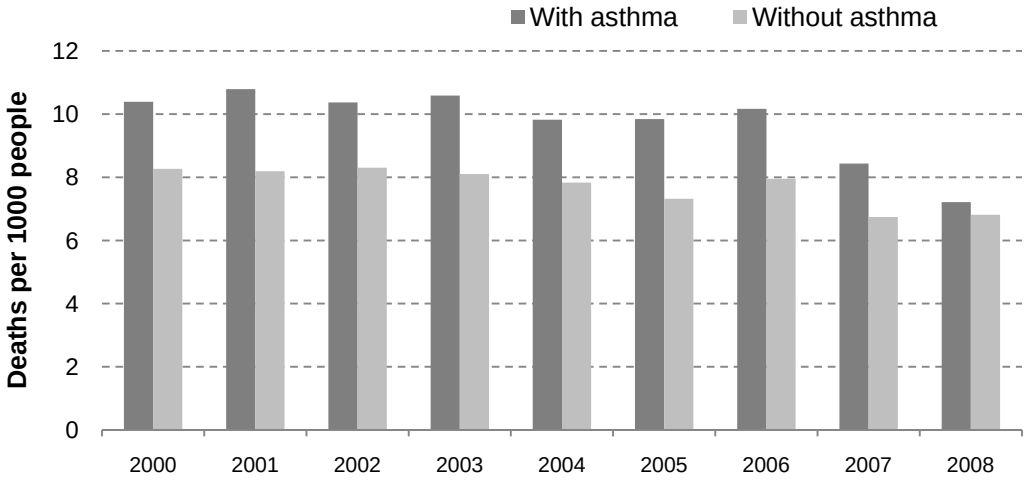
Risk Factors for Asthma

The development of asthma is related to both host and environmental factors. Genetic predisposition with a strong family history is linked to the development of asthma. Obesity and sex (young boys and adult women) are also risk factors for asthma. The presence of environmental factors such as indoor allergens (i.e. dust mites, furry animals, cockroaches, fungi and yeasts) and outdoor allergens (i.e. pollen, fungi and yeasts); viral infections; work-place exposure to sensitizers; tobacco smoke via active, second-hand smoke, and in utero exposure; indoor and outdoor air pollution; and diet also influence the development of asthma[4].

Deaths among People with Diagnosed Asthma (Mortality)

In the last nine years, death rates from all causes of death in Islanders with asthma have been higher than those without asthma. Between the years 2000 and 2008, the all cause mortaltiy rate was approximately 25% higher in Islanders with asthma compared to those without asthma.

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

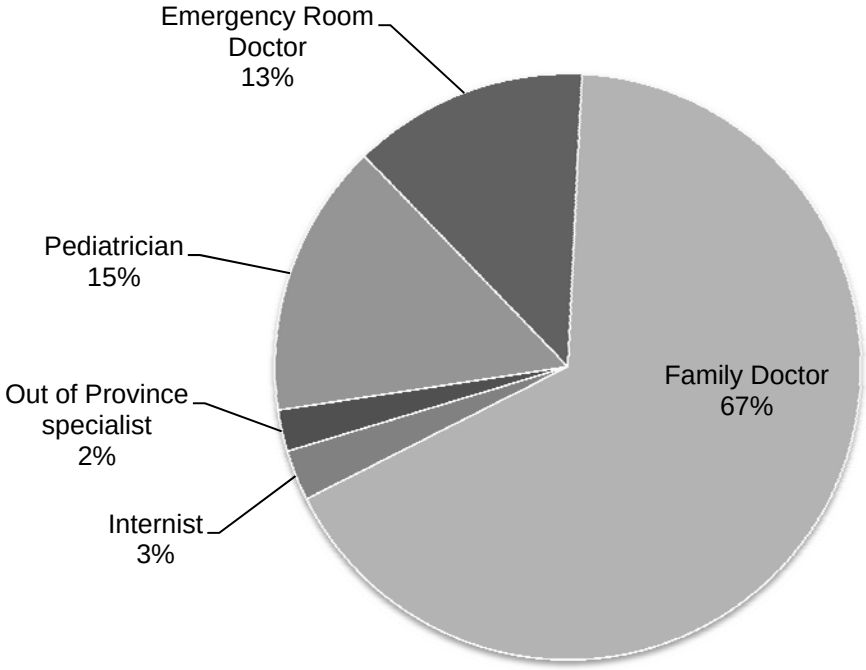


Although death rates are significantly higher in those with asthma, asthma is not a common cause of death. The number of people living in Canada who died from asthma has dropped from 292 in 2000 to 212 in 2007. This rate has continually been dropping since the 1990's and has likely been influenced by improvements in management of the disease[5,6].

Health Services Utilization

In 2008, Islanders living with asthma had over 30% more visits to family physicians and also to specialists compared to Islanders who did not have asthma. Those patients with asthma visited the family doctor 2 times more often than they visited the specialist and the Emergency Room doctor combined with 67% of visits to the family doctor, 20% of visits to the pediatrician or other specialist, and 13% of visits to the ER doctor. The type of physicians treating patients with asthma has been relatively consistent over the last 9 years. This pattern is in contrast to Ontario data from 2001/2002 which reports 66% of visits to the family doctor but only 4% of visits to the ER doctor[7].

Who provides care to Islanders for asthma, 2008



Recommendations

Prince Edward Islanders continue to cope with high levels of asthma. The proportion of Islanders living with asthma is 1 in 10 persons. An accurate count of Islanders with asthma is possible using the CCDSS. The prevalence rose from 7.4% in 2000 to 10.1% in 2008, an increase of 36% in the last nine years. Although the prevalence has risen, the rate of newly diagnosed cases has dropped from 8.9 new cases per 1000 Islanders to 5.5 new cases per 1000; a drop of 38% from 2000 to 2008.

Asthma is often considered a childhood disease. Although there is a higher rate of asthma in young Islanders, the disease does affect people of all ages. The highest rate of new cases diagnosed is in the youngest age group, <5 years of age. This rate has declined over that last 9 years, but still remains the highest incidence age group.

The decrease in the number of new cases diagnosed and the proportion of children <5 years of age living with asthma may be due to a decrease in risk factors for asthma. One of the risk factors that has been decreasing in Canada is the rate of upper respiratory infections. Also included are environmental factors such as improvements in air quality, changes in hygiene practice particularly in daycares, and a reduction to environmental tobacco smoke at home [8]. The Province of PEI has enacted a series of smoking ban legislation that started in 2003. There has been a decrease in the proportion of people who smoke as well as the proportion of people exposed to secondhand smoke since the start of the smoking bans[9]. The decrease in smoking rates and in secondhand smoke exposure is likely to have supported the reduction in new cases of asthma in children and also in adults.

The highest proportion of children living with asthma is in the 10-14 year old group. Recent research from Statistics Canada explores the relationship of asthma in children aged 7 to 15 years with school functioning. Children with asthma scored poorer in standardized math and reading tests compared to children with no chronic disease. The children with the worst asthma, as defined by reported wheezing or whistling with the use of medication, also had the worst test scores. This relationship remained even after adjusting for child and family factors[10].

Young males and adult women continue to have a higher risk for asthma, although the reasons why sex appears to be a risk factor are still unresolved. This is true in PEI where the prevalence of asthma is significantly higher in males than females up until 20 years of age when this patterns switches. After 20 years of age, women have a significantly higher rate of asthma than men until 75 years of age.

The majority of the asthma patients are being treated by family doctors. However in 2008, 13% of physician visits for asthma were seen by a physician in the Emergency Room. This is high relative to a report from Ontario from 2001/2002 which reports only 4% of asthma visits were to ER doctors[7].

Asthma remains a health concern in Prince Edward Island. In addition to asthmatics feeling unwell, there is also the burden on health care services and missed productivity days at work or at school. Asthma is a chronic disease, but Islanders can learn to manage their asthma better. Recommendations for this include:

1. Knowing the triggers for symptoms and avoiding them
2. Having a written asthma action plan
3. Learning how to use medications properly
4. Working with a Certified Asthma Educator to learn about asthma control

The first three recommendations can be enhanced by the 4th recommendation[1,11]. In PEI there are two Asthma Education Centres, one in Summerside and one in Charlottetown. Both centres work with children and adults with asthma who have been referred by a physician. These centres are free of charge. Patients with asthma should discuss how they may benefit from Asthma Education with a physician and ask for a referral.

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 asthma and living with asthma is essential for policymakers, 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 asthma is critical to reducing the incidence of this disease. Following the recommendations is the key to management for Islanders living with asthma.

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