



Asthma in British Columbia

Determining how much asthma is work related

Asthma is a chronic inflammatory disease of the airways (the tubes that carry air in and out of the lungs) that impacts roughly one in 16 British Columbians. It can cause shortness of breath, tightness in the chest and coughing or wheezing. Asthma has many causes, and both genetics and environmental factors—including work environment—play a part.

Asthma prevalence has increased worldwide and in Canada over the last three decades, and represents a substantial burden for individuals, families and health care systems. According to Health Canada, asthma-related hospitalization and drug costs exceeded \$400 million in 1998, while costs related to mortality and long-term disability topped \$750 million. And because asthma is so widespread and often difficult to attribute to specific occupational exposures, the condition presents a particular challenge to workers' compensation boards.

Researchers with the WorkSafeBC-CHSPR partnership have undertaken the first population-based study in British Columbia that examines both the cumulative prevalence and incidence of new cases of asthma in children

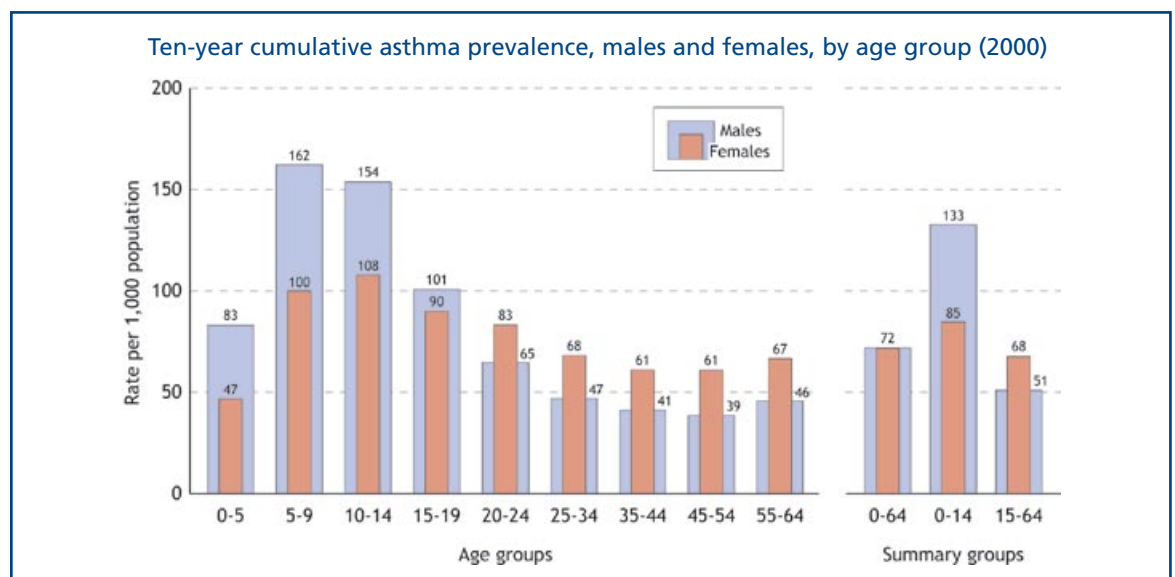
Based on research presented in

McLeod CB, Bogyo T, Demers P, Edeer D, Hertzman C, Kennedy S, Koehoorn M, McGrail KM, Tamburic L. Asthma in British Columbia. Vancouver (BC): Centre for Health Services and Policy Research; January 2007.

and the working-age population. They have also worked to estimate the number of asthma cases that may be attributable to workplace exposures, and compared these results to the number of compensated claims.

By analyzing population-wide data on physician and hospital service use from the BC Linked Health Database (BCLHD) and complete records of time-loss compensation claims for asthma, this work lays the foundation for a much broader research agenda looking at asthma in the workplace. It will also hopefully inform compensation policy and prevention program development, and demonstrate the potential of the BCLHD to contribute to such processes.

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Asthma by the Numbers

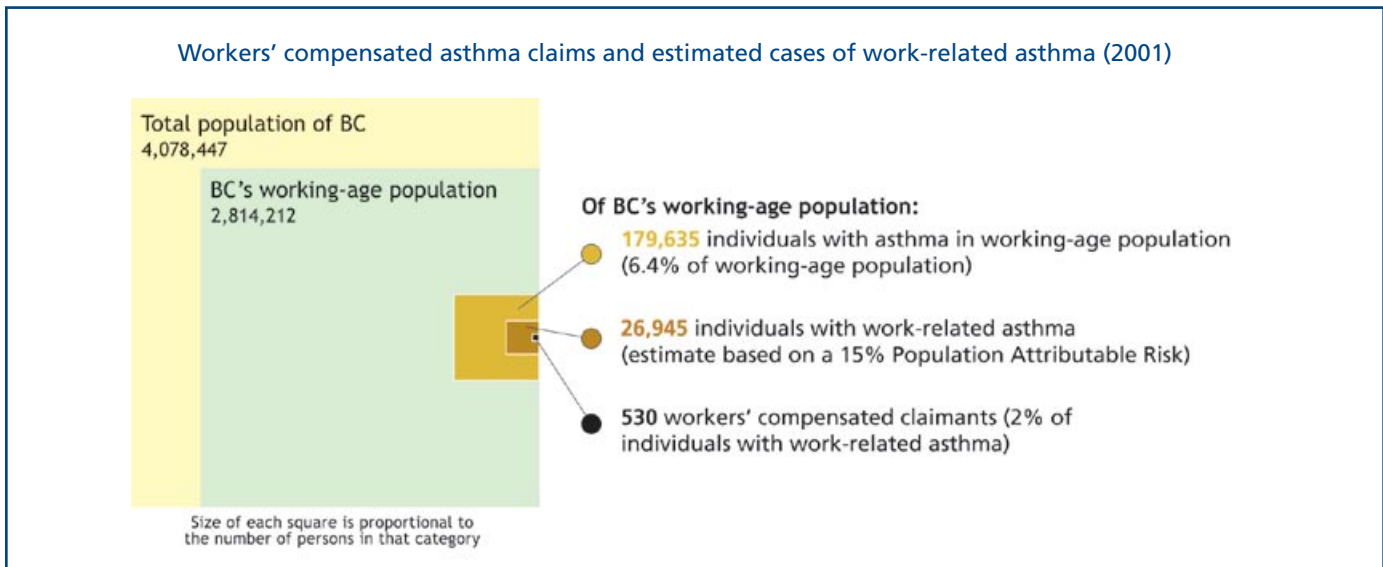
In 2000, the ten-year cumulative prevalence of asthma among the working-age population of British Columbia was 51 and 68 cases per 1,000 among males and females respectively. Of this population, 37 per cent of females and 34 per cent of males received physician or hospital treatment for their asthma in 2000—an overall rate of 26 per 1,000. In the same year, 35 per cent of working-age females and 40 per cent of working-age males diagnosed with asthma in the ten-year period had not received treatment for at least three years. The prevalence of active asthma increased slightly between 1996 and 2000, most notably among adult females.

The incidence of new cases of asthma among the working-age population was four and three cases per 1,000 among males and females respectively in 2000. Overall, the incidence of new cases of asthma remained relatively stable in the province between 1996 and 2000.

lated asthma. The difficulty of linking cases to workplace exposures may explain, at least in part, the gap between estimated asthma rates and compensation rates.

A Look to the Future

The cumulative prevalence of asthma among the immediate pre-working-age population (ages 10 to 14) was 154 and 108 cases per 1,000 among males and females respectively. Some evidence from the last decade (mostly regarding childhood asthma) suggests that trends in asthma morbidity and mortality may have stabilized. Even so, a high stable rate among children may predict higher rates of adult asthma. This large group of children who have, or have had, asthma indicates that a large percentage of young workers may enter the labour force with underlying sensitivities. The potential burden of work-related asthma—whether individuals receiving treatment at any given time or all individuals ever diagnosed—measures in



Asthma at Work

One epidemiological tool, Population Attributable Risk (PAR), is an estimate of the proportion of the cases of a disease that could be avoided if all workplace exposures were eliminated. A widely accepted, and relatively conservative, PAR for asthma is 15 per cent.

If approximately one in seven cumulative prevalent cases of asthma can be attributed to workplace exposures, approximately 27,000 working-age British Columbians experienced work-related asthma in 2001 (nine cases per 1,000). Five-hundred-and-thirty occupational asthma claims were accepted by WorkSafeBC between 1991 and 2000—two per cent of estimated work-related asthma. Applying the same 15 per cent Population Attributable Risk, approximately 9,000 working-age British Columbians were receiving treatment for active work-related asthma in 2000. Just over 100 occupational asthma claims were compensated in the same year—about one per cent of estimated work-re-

lated asthma. The estimates offered in this report, while broad, suggest that there is a need to focus prevention and screening efforts on this disease.

Researchers with the WorkSafeBC-CHSPR partnership are refining their methodology in order to provide better estimates by industry, occupation and demographic characteristics. In particular, they will begin to include data on asthma-related drug prescriptions—which should provide a better idea of asthma rates than those generated using data on physician and hospital visits alone. CHSPR researchers will also use the population-based data in the BCLHD to examine whether actual rates of asthma do in fact differ within industries typically associated with a high risk of occupational asthma. The results from this research may well improve our ability to identify workers in need of compensation, and better target prevention efforts.