

Asthma rates rise in Alberta, but medication use flatlines, says study

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University of Alberta researchers have uncovered a worrying trend in the dispensation of asthma medications that if addressed could improve patient outcomes and reduce hospital visits.

In research published online, the team looked back at dispensation records for the 10 most commonly prescribed [asthma medications](#) in Alberta over a 12-year period from 2009 to 2020, and cross-referenced them with administrative data on doctor and hospital visits for 4.5 million Albertans.

They found that while [asthma prevalence](#) increased by about 50%, the number of prescriptions filled was low and remained stable, and the dispensation trend for [pediatric patients](#) actually decreased.

"On average, the number of dispensations was at or below one three-month prescription per year," says pulmonary specialist Mohit Bhutani, professor in the Faculty of Medicine & Dentistry and president-elect of the Canadian Thoracic Society. "So basically for three-quarters of the year, you don't have enough medications to cover chronic management."

Bhutani says many patients may not realize they can achieve a normal quality of life if they use their inhaled therapies optimally.

"They're breathless, (so) they adapt their behavior and they tend to live a more sedentary lifestyle because of the fact that they feel breathless, but there are good non-pharmacological and pharmacological therapies that can help improve their outcomes," he says.

A chronic illness that can be managed well

Asthma is a chronic inflammatory lung disease that makes it difficult to breathe, affecting 3.8 million Canadians and between 7% and 12% of Albertans, according to Statistics Canada. It's more common in males than females, and in children rather than adults. There can be a range of severity, but on average people with [asthma](#) have more sick days from school or work and more interactions with the health-care system.

Asthma Canada reports that about 250 Canadians die from asthma each

year.

In the study, the researchers report there were an average of 21,000 emergency department admissions for acute asthma in Alberta each year between 2014 and 2018.

Canadian Thoracic Society treatment guidelines recommend that everyone with an asthma diagnosis should use maintenance medication on a daily basis if they experience more than two symptoms in a week, including shortness of breath at rest or with exercise, wheezing, chest tightness or coughing.

"If you don't use your medication regularly, you're likely to have more of those symptoms, and the less control you have, the more likely you are to have a flare-up that would require an unexpected visit to your [family physician](#) or an emergency department visit or a hospitalization," Bhutani says.

Some people, especially parents of children with asthma, may be wary of giving inhaled corticosteroids on a regular basis, but Bhutani says these drugs are "the quarterback or cornerstone therapy" for managing the disease.

"Asthma is a very treatable disease and for most asthmatics, they can have, essentially, a normal quality of life if the treatments for the disease are actually implemented," he notes.

'A bigger problem than we realized'

Bhutani cites previous research indicating that between 30% and 70% of asthma patients were taking their medications properly, but this study puts that number at just 25%. He says the numbers are especially credible because this is the first time such a long-term study has been

done within a publicly funded health-care jurisdiction.

"I tell you, our eyes jumped out of our heads when we saw the numbers," he says. "This is a bigger problem than we realized."

Bhutani plans to do further research to discover the causes for patients not filling their prescriptions properly. One reason he posits is that there may be a misdiagnosis of asthma, which can only be confirmed with spirometry. Previous research indicates that as many as 30% of patients given an asthma diagnosis actually don't have it. Bhutani prescribes better physician education and more testing referrals for this problem.

Another contributing factor, Bhutani says, may be that patients don't understand their diagnosis or how to use their medications properly, indicating that more patient education is also needed.

"Our guidelines tell us that every patient with asthma should get asthma education and have access to an asthma educator, but we just don't have those resources here in the province," Bhutani says.

A final contributing factor to the low [medication](#) dispensation rate could be that patients find their medications too expensive, the researchers suggested.

Whatever the reasons for patients not filling their prescriptions fully, Bhutani says remedying the situation could help alleviate individual suffering as well as strain on Alberta's health-care system. Although people with asthma are at higher risk for other respiratory illnesses such as COVID-19, flu and [respiratory syncytial virus](#), he says those who have their asthma symptoms under control are likely to have milder symptoms due to those bugs and more likely to stay out of hospital for any reason.

"This is a disease that—if it's optimally managed and patients are using

the medications properly—they probably don't need to use the emergency department as much," Bhutani says, "So that's low-hanging fruit if you want to improve the bottlenecking that happens with acute care utilization."

More information: Subhabrata Moitra et al, An inverse relationship between asthma prevalence and medication dispensation trend: a 12-year spatial analysis of Electronic Health Records data in Alberta, Canada, *ERJ Open Research* (2022). [DOI: 10.1183/23120541.00489-2022](https://doi.org/10.1183/23120541.00489-2022)

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