

Research

Asthma in Canada: missing the treatment targets

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∞ See related research article page 1013

Twenty years ago, an article in *CMAJ* catalyzed a revolution in Canadian asthma management.¹ Mao and colleagues reported a rising rate of deaths caused by asthma at a time when physicians were complacent about their ability to manage this commonplace disease.¹ Subsequent investigations in Canada and elsewhere showed that patients and their physicians relied too heavily on quick-fix bronchodilators while ignoring effective preventive therapies.² These practices have shifted dramatically, and the most recent data show that although asthma prevalence continues to increase, the death rate has decreased.³ Most attribute this to the earlier use of inhaled corticosteroids in the management of asthma.

Success in Canada has been limited, however. Surveys of Canadians with asthma have revealed that the typical patient experiences needless disability.⁴⁻⁶ Many people report that their asthma symptoms interfere with their day-to-day activities, that they are chronically fatigued by asthma symptoms that awaken them from sleep and that they have curtailed their activities for fear of triggering asthma symptoms. This residual disability is associated with considerable costs. Urgent visits to the emergency department or doctor's office because of uncontrolled asthma add substantially to the direct costs of caring for this disease, and days missed from work, school or usual activities add to indirect societal costs through lost productivity.⁷ (It is unknown what lost productivity costs are attributable to "presenteeism," the phenomenon of showing up to work but performing less effectively because of disease symptoms.) The best recent estimates are that almost two-thirds of Canadians have less than adequate control of their disease despite guidelines that have made the absence or near absence of symptoms and normal or nearly normal lung function the targets of asthma care for more than a decade.^{8,9} Investigators in western Europe, the United States and Asia have reported similar discouraging findings.^{10,11} The size of this burden in Canada is staggering: an estimated 8.3% of Canadians over the age of 12 have physician-diagnosed asthma (2.2 million Canadian adults and adolescents) and an estimated 15.6% of children aged 4-11 years have physician-diagnosed asthma (485 700 children).³

In this issue of the *CMAJ*, Klomp and colleagues used several databases to evaluate asthma treatment outcomes in Saskatchewan.¹² Although the available data did not allow them to evaluate control comprehensively, they were able to quantify the proportion of people with asthma who are overly reliant on quick-fix bronchodilators (about 1 in 5 people with asthma). They showed that many people with asthma did not receive inhaled corticosteroids, received corticosteroids at too

Key points

- Although asthma mortality has decreased in Canada, the majority of Canadians with asthma do not enjoy the control of symptoms recommended by guidelines.
- Physicians often overlook the excessive use of rapid-acting bronchodilators as a marker of poor asthma control.
- The study by Klomp and colleagues suggests that as many as 1 in 5 Canadians with asthma use rapid-acting bronchodilators more often than recommended.

low a dosage or received corticosteroids at a high dosage without appropriate adjunctive therapy. In effect, their data show how often we fail to achieve guideline-recommended suppression of bronchodilator dependence and how often we fail to prescribe the recommended pharmacotherapy to patients with poor control.

Previously published studies that reported a widespread lack of asthma control were based on telephone surveys.^{4,5,11} That is, researchers dialed telephone numbers at random and only people who were willing to identify themselves as having physician-diagnosed asthma and to respond to questions asked by an anonymous researcher were included. It is tempting to speculate that results of these telephone surveys were skewed by this process and that only patients with the poorest control would have been willing to take the time to respond. However, the results suggest that this is not the case, as most patients with poor control are surprisingly unconcerned about their lack of control.⁴ Nonetheless, it is reassuring to see that data collected in 2 completely different ways support similar conclusions. By defining poor control as 4 or more short-acting β -agonist inhalers being dispensed in a 1-year period as an indication of poor asthma control, Klomp and colleagues found that 18% of patients with asthma had poor control. In a previous telephone study that used a more stringent measure of poor control (the use of short-acting β -agonists 3 or more times in a week or more than 2 canisters in a 1-year period), we reported that 37% of asthma patients had poor control.⁴

There are limits to what even careful analyses of databases can tell us about the residual morbidity of asthma in Canada and how we can improve asthma management. Although Klomp and colleagues reported that only 37% of patients

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with poor control were dispensed an inhaled corticosteroid, their study cannot tell us whether this was because the physician failed to write the appropriate prescription or because the patient chose not to fill it. Further study will be needed to understand the gaps in care and how to close them most efficiently. Fortunately, considerable information is already available to suggest where care is inadequate and how this likely contributes to suboptimal outcomes. In Canada, only half of people with asthma have ever had a measure of their lung function and only 11% have received from their physician a written action plan with instructions for self-management of an exacerbation.⁴ In addition, patient education is often lacking and patients frequently misunderstand the role of the inhalers prescribed for them.⁵ These lapses in optimal care could be targeted in future efforts not only to disseminate but also to implement guidelines, and quality-of-care indicators such as those described by Klomp and colleagues could quantify the impact on patient outcomes. We have recently reported the initial successful steps of such an intervention. We assisted 354 primary care physicians to audit their patients' asthma control using a simple 1-page questionnaire.⁶ Of 10 428 patients, 59% had uncontrolled symptoms, 19% had well-controlled symptoms and 23% had totally controlled symptoms. Physicians overestimated control among their patients by estimating that only 42% of patients had uncontrolled symptoms. These physicians were most likely to overlook excess bronchodilator use as a marker of poor control, which was the very quality-of-care indicator highlighted in the study by Klomp and colleagues. Nonetheless, when physicians correctly identified a patient as having suboptimal control, they were likely to report plans to alter the treatment regimens, usually doing so in a fashion consistent with guideline recommendations.

One could lament the quality-of-care indicators that were not accessible or not analyzed by Klomp and colleagues. How often did patients attend emergency department for asthma care? Was pulmonary function tested? How often, if ever, did patients receive education from a certified asthma educator?^{7,13-15} How often were the patients with uncontrolled symptoms referred to specialists? For a disease as common and as costly as asthma, it is regrettable that we do not already have a larger list of validated quality-of-care indicators.

Whatever the limitations of the quality-of-care indicators

suggested in the study by Klomp and colleagues, they provide us with reasonable outcome measures as we intervene to reduce asthma's considerable morbidity. We hope to read about further reduced morbidity in the pages of *CMAJ*; however, we hope not to wait another 20 years for the next step in our progress to be reported.

Competing interests: Kenneth Chapman has received consultant's fees and research grants or contracts, and has provided continuing medical education for Astra Zeneca, Boehringer-Ingelheim, GlaxoSmithKline, Novartis and Telacris. He has received consultant's fees from Altana, Genpharm, Pfizer and Schering Plough, and research grants or contracts from Hoffman LaRoche, Merck Frosst and Nycomed. He has also provided continuing medical education for Nycomed and Pfizer.

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