Are peak flow meters readily available in community pharmacies?

Hoan Linh Banh, PharmD; Elaheh Ahmadi, MD; Andrew Cave, MB ChB, MCIsc

Introduction

A written asthma action plan is a set of instructions for patients to treat their asthma symptoms during exacerbations to reduce the need for physician consultation and to expedite upgrading of therapy. Use of a symptom-based written asthma action plan has been proven to reduce hospitalization.^{1,2} A peak flow meter is a portable, user-friendly, handheld device that measures the air flow in the bronchi. Currently, written asthma action plans from most national bodies such as the Canadian Lung Association, the National Institute of Health, and the Family Physician Airway Group of Canada include symptoms and peak flow meter reading as measures of asthma control. Inconsistencies are found in written asthma plans, which usually include symptoms and may or may not include peak flow meter readings. A recent study identified 69 unique English-language or French-language asthma plans for adults in Canada.³ Despite this variation, many written action plans use symptom tracking and peak flow readings.^{3,4} Evidence has shown that asthma action plans that include peak flow meter assessment based on previous personal best readings consistently improved asthma outcome.⁵

Recently, we have noted that patients are having difficulties filling prescriptions for peak flow meters in Alberta. We contacted 9 local community pharmacies, and only 1 had a peak flow meter on hand. If obtaining a peak flow meter for patients poses difficulties, it is unlikely to encourage adherence to any action plan that includes peak flow meter readings. The primary goal of the study was to determine the proportion of community pharmacies in Alberta that stock peak flow meters. The secondary objectives were (1) to determine how many pharmacies would order a peak flow meter for a patient if they did

not have one in the pharmacy and (2) to determine whether pharmacists are able to provide instructions to patients on how to use a peak flow meter.

Method

Currently there are approximately 900 community pharmacies registered in Alberta. A total of 100 pharmacies in Alberta were randomly selected to participate in the study. They were surveyed by telephone by one investigator with community pharmacy experience, and asked about stocking, dispensing and teaching about peak flow meters. The study received University of Alberta Research and Ethics Board approval.

Results

A total of 104 pharmacies were contacted until 100 pharmacies agreed to answer the questionnaire. There were 64% and 36% of pharmacies from urban and rural areas, respectively. Of the 100 pharmacies, 79%, 18%, and 3% were chain, independent, and other pharmacies, respectively. Only 39 pharmacies had a peak flow meter in stock, 92 pharmacies would order a peak flow meter for patients, and 70 pharmacists considered themselves able to teach patients how to use a peak flow meter. The percentages of rural and urban pharmacies, independent or chain, that had a peak flow meter were similar (Tables 1 and 2). The greatest number of peak flow meters any pharmacy had dispensed was 6 in a year. Most pharmacies that stock peak flow meters are located near a respiratory clinic or employ a pharmacist who is a certified asthma educator.

Discussion

In a random sample of Alberta community pharmacies, we found that fewer than 40% stock

TABLE 1 Pharmacies in urban and rural areas with peak flow meters

	Urban, <i>n</i> (%)		Rural, <i>n</i> (%)	
In stock	Yes	25 (39)	Yes	14 (39)
	No	39 (61)	No	22 (61)
Will order	Yes	61 (95)	Yes	31 (86)
	No	3 (5)	No	5 (14)
Able to teach patients	Yes	46 (72)	Yes	24 (67)
	No	18 (28)	No	12 (33)

TABLE 2 Breakdown of types of pharmacies that have peak flow meters

	Chain, <i>n</i> (%)		Independent, <i>n</i> (%)		Other,* <i>n</i> (%)	
In stock	Yes	33 (42)	Yes	6 (33)	Yes	0 (0)
	No	46 (58)	No	12 (67)	No	3 (100)
Will order	Yes	72 (91)	Yes	18 (100)	Yes	2 (67)
	No	7 (9)	No	0 (0)	No	1 (33)
Able to teach patient	Yes	57 (72)	Yes	11 (61)	Yes	2 (67)
	No	22 (38)	No	7 (39)	No	1 (33)

*Home health care pharmacies.

peak flow meters. This may show a lack of willingness of physicians to use action plans for patients with asthma, but it may also represent an opportunity for pharmacists to engage with their patients to provide written action plans.

Location and pharmacy business model (independent or chain) were not correlated with the availability of peak flow meters. Interestingly, the largest number of peak flow meters dispensed was in a pharmacy in Fort McMurray, Alberta, which is near the major oil sand facilities. On average, acute respiratory infections and conditions such as bronchitis and chronic obstructive pulmonary disease contribute to the highest emergency visit rate in Fort McMurray.⁶

The main reason for not stocking peak flow meters in the pharmacy was reported to be the rarity of prescriptions for them. Physicians, particularly in primary care, do not frequently prescribe peak flow meters, with the main reason being that patients cannot afford to pay for them.^{7,8} Another reason may be that currently, third-party insurance does not cover peak flow meters and patients either cannot afford them or do not see their benefit. Also, since peak flow

meters do not require a prescription in Alberta, some patients may purchase the meters on the Internet. The average cost of a peak flow meter is \$35 from a pharmacy in Alberta and \$30 on the Internet.

The recommended strategy for asthma management and prevention from the Global Initiative for Asthma includes written asthma action plans that provide patient self-management in response to short-term changes in their symptoms and/or personal best based on peak flow meter readings.⁹ Peak flow meters are recommended for patients with moderate and severe asthma and for those who require adjustment of daily medications for asthma.^{10,11}

Currently, controversies exist about whether peak flow meters are useful in monitoring acute respiratory exacerbations.^{12,13} Canadian guidelines do not provide directives about peak flow meters for self-monitoring.¹⁴ All the national respiratory groups need to come together to develop a consistent asthma action plan regarding the inclusion or exclusion of peak flow meter measurements. This would allow pharmacies to better prepare to stock peak flow meters if they

are required for asthma action plans. The clinical implications of not having peak flow meters readily available in pharmacies are possible delays in patient care. Also, if more patients are purchasing peak flow meters on the Internet, these patients will not receive proper instructions or education about the use of peak flow meters. In-depth, qualitative research is called for to address this important issue. The provision of a peak flow meter to a patient is an opportunity for pharmacists to be actively involved in asthma management.

Limitations

The survey was conducted at a single point in time in 1 province. Pharmacist remuneration for provision and instruction regarding use of

peak flow meter and patient reimbursement may vary in other provinces and could affect the results. The short questionnaire and the fact that the caller was an experienced pharmacist colleague certainly may have contributed to the high response rate (100/104) and to the truthfulness of the responses.

Conclusion

A majority of pharmacies in Alberta do not have a peak flow meter available; however, most are willing to order peak flow meters for their patients. Most pharmacists are able to teach patients how to use a peak flow meter. The reasons for low prescribing of peak flow meters need to be explored. ■

From the Department of Family Medicine/Faculty of Medicine and Dentistry (Banh, Cave), University of Alberta; and Ellerslie Medical Centre (Ahmadi), Edmonton, Alberta. Contact hoan@ualberta.ca.

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