MOVING THE DIAL
ON THE DIAGNOSIS AND TREATMENT OF ASTHMA

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the lung association
The Lung Association is a not-for-profit organization dedicated to helping all Canadians breathe. Our community of donors, patients, researchers, volunteers and professional staff work to ensure Canadians have the healthy lungs, bodies and clean air necessary to breathe. A healthy breath fuels the body and mind. It’s something we should not take for granted.

We help Canadians breathe by:

**PROMOTING HEALTHY BREATHING**
We promote healthy breathing by fighting for policies that protect our air and educate Canadians about what they can do to promote their own lung health.

**SUPPORTING THOSE WITH LUNG DISEASE**
We support and advocate for those living with conditions that affect the lungs and the ability to breathe, and fight to challenge the stigma and ignorance that can be associated with lung disease.

**FINDING FUTURE SOLUTIONS**
Through education and research, we work to turn knowledge into action and find cures to diseases that will deliver a future of better breathing for all.

We would like to thank the members of our advisory committee for their time and expertise:

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**TABLE OF CONTENTS**

3  About the Project
4  Recommendations
7  Moving Forward
7  Endnotes
Moving the Dial on Diagnosis and Treatment of Asthma examines the barriers and challenges a patient faces throughout their journey with asthma. Along the way, many gaps and challenges can arise regarding how and when they are diagnosed and treated. This study will help The Lung Association and others shape an environment that will better support more effective and timely diagnosis and treatment and provide a strong base for education, awareness and advocacy efforts.

To improve the lives of the millions of Canadians with asthma, it is imperative to increase access to diagnosis, treatment, support and education along each step of their journey. This starts when their first symptoms appear, for example, with access to a family physician to investigate and make a proper diagnosis. Spirometry testing—considered the gold standard in diagnosis by the Canadian Thoracic Society—enables accurate diagnosis, which is necessary for appropriate treatment. The access and availability of treatments, including respiratory biologics, all influence whether patients will be able to live full, active lives. Education—of patients and healthcare providers—regarding appropriate use of medications and devices, as well as patient management tools such as asthma action plans, will ensure Canadians with asthma are equipped to manage their disease and decrease healthcare costs and pressures.

The path to this ideal picture involves increasing access to accredited, high quality spirometry testing, including education for test providers and those interpreting the results, as well as regulations for testing sites. Better education is also needed to help patients and physicians understand asthma control. Patients need to know how to control their asthma, including understanding the type of asthma they have and ensuring they are on the right management plan.

The use of asthma action plans has been shown to result in behaviours that improve asthma control and increase patient self-advocacy. Educating healthcare providers and patients about the benefits of an asthma action plan and how to use this tool could help improve asthma control and patient quality of life, save healthcare costs and lead to patients feeling more empowered in managing their disease.

These facets can lead to correct treatment for all people living with asthma. Asthma is not the same for all patients and one type of treatment does not fit all. Proper diagnosis, followed by education of patients and healthcare providers will lead to individualized, effective treatment.

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Moving the Dial on Diagnosis and Treatment of Asthma shared the experiences of healthcare providers and people living with asthma and identified gaps and issues faced along a patient’s journey. Through this, four key recommendations emerged that would improve asthma management in Canada and reduce its physical, social and financial impact.

**Nationwide strategy to increase access to accredited, high-quality spirometry**

The importance of spirometry testing in asthma diagnosis has been well established in this report. As well, Canadian Thoracic Society (CTS) guidelines state that diagnosis should come from the combination of clinical history and objective measures of lung function (in patients six years of age and older), with spirometry as the preferred method. Despite this, spirometry is not consistently used, due to lack of education, access to equipment or testing facilities or failure to follow guidelines. This can lead to over diagnosis and under diagnosis of asthma, which is harmful to patient health and leads to unnecessary healthcare costs.

A strategy is needed to increase access to spirometry testing, proper education for test providers and those interpreting the results and accreditation/regulations for labs or other settings where lung function testing is performed.

In a recent Asthma Canada Speakers Series Webinar on proper diagnosis and correct testing, Dr. Shawn Aaron, senior scientist, Clinical Epidemiology Program at the Ottawa Hospital Research Institute and chief of Respiratory Medicine at The Ottawa Hospital, pointed out that if, for example, pneumonia is suspected, a physician will send a patient for an x-ray, often right across the street, and have a report within 24 hours. Spirometry could be performed in much the same way, within a diagnostic lab, interpreted by a respirologist and sent back to the family physician in 24 hours.

Another way to improve access is to educate primary care physicians on the importance of spirometry in making a proper diagnosis, rather than relying on a clinical exam alone. With proper education, when a primary care physician suspects a lung condition, they would send a patient for a spirometry test and have it interpreted by a specialist. Another strategy to improve access would be to increase spirometry testing in primary care offices—but this must come with proper training of the healthcare providers doing the testing and interpreting the results, as well as an accreditation system for testing the facility and verifying the provider’s qualifications.

Other creative strategies are possible. For example, the London Family Health Team in Ontario created and shared a flow chart for the process of referring patients for spirometry testing, promoted training sessions to demonstrate best practice in spirometry technique and trained registered nurses on spirometry testing. Following this, the per cent of those currently smoking and those who formerly smoked over 40 years of age screened for COPD increased from 72.2 per cent in September 2010 to 98 per cent in August 2011.

For the Asthma Toolkit Program in Colorado, asthma specialists train primary care providers on spirometry. As part of the Lung Association Provider Education Program’s online spirometry workshop, healthcare providers see a demonstration on how to do spirometry and actively work through interpreting case test results. They learn to list the terms and measurements of lung values in order to apply this to spirometry interpretation, identify criteria for test acceptability and correctly interpret 20 spirometry case studies. The online Spirometry 360 program in Washington is similar and also provides five monthly feedback reports on provider spirometry test results.

In British Columbia, for the past 20 years, only interpretation of a portion of spirometry test results (numeric data) could be approved for payment by the Medical Services Plan to private-office practitioners. As of December 2018, the province is allowing and reimbursing for interpretation of another part (graphic/flow volume loop) if the practitioner is appropriately credentialed and the facility is accredited. This new allowance permits adult and pediatric respirologists, clinical immunologists and allergists to perform complete interpretations in private practice—something only previously allowed in hospital-affiliated labs. The express
The purpose of this policy change was to increase access to spirometry.

A spirometry test is inexpensive and fast, costing about $40 in Ontario. This expenditure could save the healthcare system millions of dollars, as under diagnosis of asthma leads to ER visits and hospital admissions due to exacerbations, as well as employees missing work due to uncontrolled symptoms. Over diagnosis can mean other serious conditions go undiagnosed and untreated and can cost millions of dollars in unnecessary medications that can expose patients to unnecessary side effects.

**Nationwide strategy to improve asthma control**

Many patients and healthcare providers do not understand what asthma control means. Asthma control refers to how well symptoms and limitations (missing school or work or being unable to exercise) have been reduced or eliminated with treatment. Severity of asthma and control of asthma are two different things. For example, a person with severe asthma can be well controlled while a person with mild asthma may have poor asthma control.

The 2016 Asthma Control in Canada survey found that 93 per cent of Canadians with asthma believe their condition is well-controlled, but in fact, nine in 10 Canadians with asthma do not have it under control according to Canadian Thoracic Society Guidelines criteria, which include not missing school or work due to symptoms, experiencing daytime symptoms three times a week or less and needing rescue inhalers fewer than four times a week.5

In our 2018 Asthma Survey, 92 per cent of respondents said they have their condition under control, with more than half indicating it is very well under control. But about 40 per cent of respondents said they regularly experience symptoms (wheezing, coughing and/or a hard time breathing) and 56 per cent use an inhaler more than three times in a given week. Meanwhile, almost one-third don’t exercise at all because of their asthma. They have just accepted this as a part of coping, but with proper management of their disease, they could live life fully, engaging in activities they have given up.

These statistics show that better education is needed to help patients and physicians understand what asthma control actually looks like. If patients are experiencing symptoms, their asthma is not under control. They need to know how to control their asthma, which includes understanding the type of asthma they have, ensuring they have been properly diagnosed and referred to a specialist if necessary and are receiving the correct treatment.

The increased use of validated assessment tools can help improve control and aid healthcare providers in recognizing improvement or decline in control. During an appointment, healthcare providers may ask patients to report their control based on symptoms, use of inhalers and any limitations on activities. However, patients may overestimate their control when self-reporting in this way. Easy-to-use, validated tools for the assessment of asthma control can better monitor improvement or deterioration and should become part of common practice. These include standardized questionnaires, such as the 30 Second Asthma Test, Asthma Control Check or the Asthma Control Questionnaire.

Education for healthcare professionals could also include widespread implementation and use of resources to learn about asthma and increase adherence to guidelines. These include programs such as The Lung Association – Ontario’s Provider Education Program.

Another way to improve control is through education on inhaler technique, adherence to prescribed treatments, oral/systemic corticosteroid use and over-reliance on short-acting beta agonists (SABAs). A start would simply be improved promotion of resources that already exist, for example, the Lung Association Lung Health Information Line, staffed by certified respiratory educators. As well, fewer than half of the Asthma Society of Canada’s National Asthma Patient Alliance (now the Asthma Canada Member Alliance), were aware of an asthma clinic or education centre in their area. Since members of this alliance are more engaged than average asthma patients, this lack of knowledge shows more promotion is needed. Another strategy might be active campaigns to encourage more professionals to become certified as certified respiratory educators or certified asthma
educators and to increase patient education during ER visits prior to discharge.

Nationwide strategy on the use of asthma action plans

Asthma action plans help patients take control of their asthma, know when to adjust their medications and decide when to seek urgent care. CTS guidelines state that while verbal plans have not been shown to benefit patients, written plans, when combined with asthma education, regular medical review and self-assessment, can help reduce hospitalizations, emergency visits, urgent physician visits, missed days at work or school and days of restricted activity and help improve pulmonary function.7

Despite this, many patients report not having a written asthma action plan. Our 2018 Asthma Survey found that only 44 per cent of respondents know what an action plan is and just 22 per cent have one in place. The survey also found that respondents with an action plan were more likely to:

- Take medications as prescribed
- Discuss possible negative side effects associated with oral corticosteroids (among past and present users)
- Look up information about asthma on the internet
- Discuss treatment options, specifically biologics, with their healthcare provider

Increasing the use of asthma action plans requires educating healthcare providers and patients. Providers need to know the benefits and how to use this tool with their patients. If patients are aware of the tool, they can ask their healthcare provider about it or even bring one to an appointment (free, preformatted templates are available online through The Lung Association). Publicizing asthma action plans, through advertising and social media campaigns and literature in physician offices and asthma clinics, could prompt patients to request a plan from their healthcare provider. This simple, inexpensive tool helps save the costs of ER visits and hospitalization and can help a patient feel empowered and better able to advocate for themselves.

If asthma action plans are part of training when healthcare providers learn about asthma, they will become a standard part of care. To increase convenience, asthma action plans could also be incorporated into electronic medical record (EMR) systems to be routinely given to a patient on discharge from the hospital, emergency room or physician’s office. In one study, when an asthma action plan was integrated into the EMR, it increased the number of children hospitalized with an asthma exacerbation who received an asthma action plan. Prior to the EMR system, four per cent received an asthma action plan upon discharge, while after implementation, 58 per cent received an asthma action plan upon discharge.8

Individualized treatment plans—right medication for the right patient at the right time

Asthma is not the same for all people. There are differences in types of asthma, causes, triggers and severity. One type of treatment does not fit all. Once a patient has a proper diagnosis—through a clinical exam, patient history and spirometry testing—a personalized treatment plan must be established. With wider acceptance that there are different types of asthma along with the emergence of biologics, it is time to reconsider asthma treatment and take a tailored, personalized approach. One key to this is referral to a specialist for patients with asthma that is difficult to manage. Another is access to proper prescription medications. Lengthy provincial public and private drug plan review of respiratory biologics for formulary listings delays access to these treatments. Without public or private coverage, it can be difficult for patients to cover the cost of these medicines out of pocket.

Patients also need to be aware of all of their treatment options. Those who have been maximized on their inhaler therapies and continue to experience asthma symptoms may have undiagnosed severe asthma and should be referred to a specialist to determine if a more personalized treatment approach is required, such as a biologic. Otherwise, they may not be receiving the proper treatment for their asthma and are being exposed to possible serious side effects. Our 2018 Asthma Survey showed that 63 per cent of respondents had never discussed a respiratory biologic with their doctor. Increased awareness of the availability of novel treatments is needed among family physicians and patients for those who have a proper diagnosis of severe asthma. They need to know other options exist. Patients and doctors need a holistic approach to treatment—one size does not fit all.
In Finland, the Ministry of Social Affairs and Health set up a comprehensive, national asthma program from 1994 to 2004 to ease the burden of asthma on individuals and society. In 2010, it was estimated that total asthma costs (healthcare, drugs, disability and productivity loss) would have been €500-800 million annually by that point, if 1990s trends had continued with no action. Instead, the actual costs in 2010 were less than half of that, at about €200 million. The program reached deep into healthcare structures and included education of primary care providers, more spirometry testing and increased patient education, including guidance on inhaler technique and the use of written asthma action plans. Reducing the burden of asthma on patients in Canada, as well as direct and indirect costs to our healthcare system, will take a coordinated, comprehensive effort including the recommendations discussed above. The Lung Association, patients with asthma, healthcare professionals and government can work together to achieve effective and timely diagnosis and treatment, education and support to improve the lives of Canadians with asthma.

ENDNOTES

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