

## **ATLANTIC CANADA BACKGROUNDER: DRAMATIC RESULTS SHOW SHIFTING CHRONIC DISEASE CARE CLOSER TO HOME REDUCES HOSPITAL USE**

### **COPD In Canada – A growing problem**

Chronic obstructive pulmonary disease (COPD), which includes emphysema and chronic bronchitis, is one of the most deadly, prevalent and costly chronic diseases.<sup>1</sup>

About 800,000 Canadians 35 and over report they have been diagnosed with COPD<sup>2</sup> but this may just be the tip of the iceberg. Statistics Canada has estimated that COPD is under-diagnosed and up to three times more Canadians have respiratory changes consistent with COPD than have been formally diagnosed.<sup>3</sup> One in four Canadians will develop COPD in their lifetime.<sup>1</sup>

Patients in the advanced stages of COPD resort to episodic emergency department (ED) care and hospitals to cope with poorly managed symptoms of breathlessness. Of the chronic diseases, COPD is the leading cause for hospital admission from ED,<sup>4</sup> inpatient hospitalizations,<sup>5</sup> and hospital readmissions.<sup>6</sup> As a result, those living with advanced COPD are among the highest users of healthcare resources, costing the Canadian healthcare system approximately \$1.5 billion each year.<sup>7</sup>

### **An INSPIRED solution**

To address this issue, in 2014 CFHI launched INSPIRED Approaches to COPD, a pan-Canadian quality improvement collaboration focused on spreading an innovative model of COPD care. This proactive program supports patients living with moderate-to-severe COPD and their families to transition from the hospital into supported care in the community. It was modelled on the INSPIRED COPD Outreach Program™ developed by Medical Director Dr. Graeme Rocker and two colleagues, a respiratory therapist and a spiritual care practitioner, at Capital Health in Halifax (now part of the Nova Scotia Health Authority) based on extensive input from patients and their caregivers.

INSPIRED is a supportive program that equips patients to better manage their illness by providing them with: written action plans for managing their disease; phone calls after they are discharged home and at later intervals; at-home self-management education and psychosocial support; and advance care planning when needed. Patients in the program are also given a day-time telephone number to call for support.

## How INSPIRED is transforming COPD care in New Brunswick

Currently, 27,400 residents of New Brunswick age 35 and over report they have been diagnosed with COPD<sup>2</sup> but up to 82,200 may have breathing problems indicative of early stage disease or increased risk.<sup>3</sup>

### New Brunswick team selected for next phase of INSPIRED

- *Horizon Health Network*

In 2014-15, Saint John Regional Hospital implemented the INSPIRED program as part of the CFHI collaboration. In 2016, Horizon Health Network spread the program to an additional four regional hospitals: The Moncton Hospital, Doctor Everett Chalmers Hospital in Fredericton, Upper River Valley Hospital (Waterville/Hartland area), and Miramichi Regional Hospital (as well as satellite sites at the Oromocto Public Hospital, Hotel Dieu Perth, Charlotte County Hospital and Sussex Health Centre.

Since the Horizon Health Network began participating in the first phase of the INSPIRED collaboration in 2014-15, a total of 385 patients with COPD have been enrolled and tracked across all participating Horizon Health Network hospitals up to Nov 27, 2017.

Results to date:

- 69% reduction in hospital readmissions and a 65% decrease in hospital length of stay
- In 2016-17, a total of 1,059 bed days\* were avoided, for a total savings of \$1,027,186 in hospital costs
- Improved quality of life and patient experience for program participants

Given these stellar results, CFHI is investing \$206,500 to further support the scale up of INSPIRED across the Horizon Health Network. By March 2019, it is anticipated that an additional 340 patients will benefit. As the reach of INSPIRED increases, its benefits will continue to grow.

During this phase, the goal is to expand INSPIRED to five additional Community Health Centres within the Horizon Health Network, representing all areas of the Regional Health Authority; and post-collaboration to expand to another seven health centres.

---

\* Bed day is "a day during which a person is confined to a bed and in which the patient stays overnight in a hospital" (OECD, 2001)

Now as part of this collaboration, Horizon is scaling up to reach more patients at each site and implementing at the following new community health centre sites:

- Eel Ground Health & Wellness Centre (Miramichi)
- Albert County Health & Wellness Centre
- St. Joseph's Community Health Centre (Saint John)
- Fundy Health Centre
- Fredericton (Downtown Community Health Centre and a satellite site at Gibson Health Clinic).

### **Future implications for COPD patients in New Brunswick**

An independent analysis conducted by RiskAnalytica identifies possible savings in ED visits and in-patient hospital care by scaling INSPIRED throughout Canada.<sup>8</sup> The analysis accounts for aging and realistic growth in the Canadian population. It assumes gradual implementation and patient enrolment while adjusting for an expected decrease in cigarette smoking rates, the underlying cause of the majority (80%) of COPD cases in North America.<sup>9</sup>

It has been estimated that in New Brunswick, over five years INSPIRED could:

- Prevent up to 1,700 ED visits, for a cost savings of \$2 million
- Prevent 1,100 hospital readmissions and 9,900 bed days, for a savings of \$16 million in hospital costs
- Provide combined healthcare cost savings of approximately \$18 million. This figure includes the cost of the program (approximately \$1,000 per adult with COPD per year) but does not include potential savings in primary care costs associated with improved patient outcomes.<sup>8</sup>

Bottom line: \$1 invested in INSPIRED prevents \$21 in hospital costs.<sup>8</sup>

### **How INSPIRED is transforming COPD care in Nova Scotia**

Currently, 34,200 residents in Nova Scotia age 35 and over report they have been diagnosed with COPD<sup>2</sup> but up to 102,600 may have breathing problems indicative of early stage disease or increased risk.<sup>3</sup>

### **First developed in Halifax at the Queen Elizabeth II**

The INSPIRED COPD Outreach Program™ was first developed in 2010 by Dr. Graeme Rocker and two colleagues, a respiratory therapist and a spiritual care practitioner at Capital Health in Halifax (now part of the Nova Scotia Health Authority) based on extensive input from patients and their caregivers. Through working with CFHI in 2014-15 in the first of two phases of the INSPIRED collaboration, this model has successfully spread across the country.

### **Nova Scotia team selected for next phase of INSPIRED**

- *Nova Scotia Health Authority*

Since the creation of the INSPIRED program in 2010, over 600 Nova Scotians have participated at the Queen Elizabeth II.

Results to date for those enrolled in the program:

- 58% reduction in ED visits
- 62% fewer hospital readmissions
- Improved quality of life and patient experience for program participants
- For those in terminal stages of COPD, 38% were able to die at home in accordance with their wishes, a much higher proportion than for those outside of the program

Given these stellar results, CFHI is investing \$268,686 to further support the scale up of INSPIRED across the Nova Scotia Health Authority (NSHA). By March 2019, it is estimated that over 300 additional patients will benefit from the education, training and services of INSPIRED. As the program is scaled up, the benefits of INSPIRED will continue to grow.

Through this investment, INSPIRED is expanding to NSHA centres across the province including:

- South Shore Regional Hospital (Bridgewater)
- Hants Community Hospital (Windsor)
- Hants Health & Wellness Centre (Windsor)
- Twin Oaks Memorial Hospital (Musquodoboit Harbour)
- Eastern Shore Memorial Hospital (Sheet Harbour)
- Musquodoboit Valley Memorial Hospital
- Cumberland Regional Health Care Centre (Amherst)

- Cobequid Health Centre (Lower Sackville)
- Cape Breton Regional Healthcare Complex (Cape Breton):
  - Cape Breton Regional Hospital
  - Northside General Hospital (North Sydney)
  - Glace Bay Hospital and Health Care Facility
  - New Waterford Consolidated Hospital

The immediate goal of this expansion is to extend access to the INSPIRED COPD Outreach Program™ to those living with moderate/severe COPD in high priority areas of the NSHA. The longer term goal is to improve access to coordinated, community- and evidence-based care and self-management for this client population.

### **Future implications for COPD patients in Nova Scotia**

An independent analysis conducted by RiskAnalytica identifies possible savings in ED visits and in-patient hospital care by scaling INSPIRED throughout Canada.<sup>8</sup> The analysis accounts for aging and realistic growth in the Canadian population. It assumes gradual implementation and patient enrolment while adjusting for an expected decrease in cigarette smoking rates, the underlying cause of the majority (80%) of COPD cases in North America.<sup>9</sup>

It has been estimated that in Nova Scotia, over five years INSPIRED could be reaching a further 170 patients annually:

- Prevent 2,000 ED visits, for a cost savings of \$2.3 million
- Prevent 1,300 hospital readmissions and up to 11,900 bed days, for a savings of \$19 million in hospital costs
- Provide combined healthcare cost savings of approximately \$21.3 million. This figure includes the cost of the program (approximately \$1,000 per adult with COPD per year) but does not include potential savings in primary care costs associated with improved patient outcomes.<sup>8</sup>

Bottom line: \$1 invested in INSPIRED prevents \$21 in hospital costs.<sup>8</sup>

### **How INSPIRED is transforming COPD care in Prince Edward Island**

Approximately 8,000 people on PEI have been diagnosed with COPD.<sup>10</sup> <sup>11</sup>

### **PEI team selected for next phase of INSPIRED**

- *Health PEI*

Since the launch of the INSPIRED program at the Queen Elizabeth Hospital in Charlottetown, about 160 residents of PEI with COPD have participated.

Results to date:

- 40% reduction in ED visits
- 52% reduction in hospital readmissions and a 56% decrease in hospital length of stay
- Improved quality of life and patient experience for program participants

Given these stellar results, CFHI is investing \$202,647 to further support the scale up of INSPIRED across Health PEI. By March 2019, the number of patients who will benefit from the education, training and services of INSPIRED is expected to increase rapidly from approximately 160 to over 300. As the program is scaled up, the benefits of INSPIRED will continue to grow.

Through this investment, INSPIRED is expanding to Health PEI centres across the province, including:

- Prince County Hospital (Sumerside)
- Kings County Memorial Hospital (Montague)
- Souris Community Hospital
- Western Hospital (Alberton)
- O'Leary Community Hospital

The goals of participating in this collaboration include:

1. Partnership with Home Care to expand the reach of the program to all eligible COPD patients across the province.
2. Further enhancing COPD Educator capacity.

### **Future implications for COPD patients in PEI**

An independent analysis conducted by RiskAnalytica identifies possible savings in ED visits and in-patient hospital care by scaling INSPIRED throughout Canada.<sup>8</sup> The analysis accounts for aging and realistic growth in the Canadian population. It assumes gradual implementation and patient enrolment while adjusting for an expected decrease in

cigarette smoking rates, the underlying cause of the majority (80%) of COPD cases in North America.<sup>9</sup>

It has been estimated that in PEI, over five years INSPIRED could:

- Prevent 280 ED visits, for a cost savings of \$322,000
- Prevent 180 hospital readmissions and up to 1,600 bed days, for a savings of \$2.6 million in hospital costs
- Provide combined healthcare cost savings of approximately \$2.8 million. This figure includes the cost of the program (approximately \$1,000 per adult with COPD per year) but does not include potential savings in primary care costs associated with improved patient outcomes.<sup>8</sup>

Bottom line: \$1 invested in INSPIRED prevents \$21 in hospital costs.<sup>8</sup>

#### **A national snapshot of healthcare savings:**

If the INSPIRED program were implemented across Canada, by 2021 it would:

- Prevent 68,500 ED visits, for a cost savings of \$79 million
- Reduce hospital readmissions by 44,100 and bed days by 400,000, thus reducing hospital costs by \$644 million<sup>8</sup>

The INSPIRED program costs around \$1,000 per COPD patient to implement. By 2021, nationwide INSPIRED programs would net \$688 million in healthcare savings.<sup>8</sup> This figure is based on prevented ED visits and hospitalizations and does not include savings in prevented routine care, but includes the costs of delivering the program.

Bottom line: \$1 invested in INSPIRED prevents \$21 in hospital costs.<sup>8</sup>

CFHI is a not-for-profit organization funded by Health Canada.

*The views expressed herein do not necessarily represent the views of Health Canada.*

- 
- <sup>1</sup> Gerson AS, Warner L, Cascagnette P, Victor JC, To T. . Lifetime risk of developing chronic obstructive pulmonary disease: a longitudinal population study. *Lancet* 2011;378(9795):991-6
- <sup>2</sup> Canadian Community Health Survey 2015/16 CANSIM Table 105-0509.  
<http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=1050509&&pattern=&stByVal=1&p1=1&p2=31&tabMode=dataTable&csid=>
- <sup>3</sup> Evans J, Chen Y, Camp PG, Dowie DM, McRae L. Estimating the prevalence of COPD in Canada: reported diagnosis versus measured airflow obstruction. *Health Reports* 2014; 25(3): 3-11  
<https://www.statcan.gc.ca/pub/82-003-x/2014003/article/11908-eng.htm>
- <sup>4</sup> Canadian Institute for Health Information. Hospital admission from ED  
[https://secure.cihi.ca/free\\_products/NACRS\\_ED\\_QuickStats\\_Infosheet\\_2014-15\\_ENweb.pdf](https://secure.cihi.ca/free_products/NACRS_ED_QuickStats_Infosheet_2014-15_ENweb.pdf)
- <sup>5</sup> Canadian Institute for Health Information. Top 5 reasons for inpatient hospitalizations  
<https://www.cihi.ca/en/top-5-reasons-for-inpatient-hospitalizations>
- <sup>6</sup> Canadian Institute for Health Information. Hospital readmissions  
[https://secure.cihi.ca/free\\_products/Readmission\\_to\\_acutecare\\_en.pdf](https://secure.cihi.ca/free_products/Readmission_to_acutecare_en.pdf)
- <sup>7</sup> Canadian Institute for Health Information. *COPD in Alberta. Examining the Characteristics and Health Care Use of High Users*. 2017. [https://secure.cihi.ca/free\\_products/COPD-Alberta-high-users-report-2017-en-web.pdf](https://secure.cihi.ca/free_products/COPD-Alberta-high-users-report-2017-en-web.pdf)
- <sup>8</sup> Risk Analytica. Modelling the INSPIRED COPD Outreach Program™ National and Provincial Analysis, Final Report, April 2016. <http://www.cfhi-fcass.ca/sf-docs/default-source/documents/inspired/inspired-riskanalytica-e.pdf>
- <sup>9</sup> Stephens MB, Yew KS. Diagnosis of chronic obstructive pulmonary disease. *Am Fam Physician* 2008;78(1):87-92
- <sup>10</sup> Prince Edward Island Health and Wellness. *Prince Edward Island Chronic Obstructive Pulmonary Disease Trends 2001 - 2011*. December 2014.  
[https://www.princeedwardisland.ca/sites/default/files/publications/copd\\_trends\\_2001\\_2011\\_0.pdf](https://www.princeedwardisland.ca/sites/default/files/publications/copd_trends_2001_2011_0.pdf)
- <sup>11</sup> Promote, Prevent, Protect: PEI Chief Public Health Officer's Report 2016.  
[https://www.princeedwardisland.ca/sites/default/files/publications/cphorpt16\\_linkd.pdf](https://www.princeedwardisland.ca/sites/default/files/publications/cphorpt16_linkd.pdf)