COPD in Western Canada: Health, Care and Costs

Fact sheet prepared for the *INSPIRED Approaches to COPD Collaborative Regional Roundtable Series*

The INSPIRED COPD Outreach Program™ (**I**mplementing a Novel and Supportive Program of Individualized care for patients and families living with REspiratory Disease) was developed to improve care transitions from hospital-to-home for patients living with chronic obstructive pulmonary disease (COPD) and their families. INSPIRED supports patients and families to manage their symptoms of advanced COPD at home through individualized, coordinated, proactive care that includes in-home self-management education, psychosocial/spiritual support, individualized action plans and, for those for whom it is appropriate, advance care planning.

Key Messages

- *Triple Aim* is the simultaneous pursuit of improved population health, care experience and cost of care[1]
- The INSPIRED COPD Outreach Program™ improves symptom management and care experience for patients living with advanced COPD and their families, while relieving the hospital-based cost burden on the health system[2]
- In Western Canada, there's rationale from a health, care and cost perspective to pursue programs like INSPIRED within and across the provinces
  - I. On population health
    - In Western Canada, 3.4% (AB) to 4.5% (SK)[6] of the population live with COPD; and one in four Canadians over 35-years-of-age will develop the disease[3]
  - II. On care experience
    - In a Canadian Lung Association/Canadian Thoracic Society report care on quality of COPD care, the Western provinces received D+ and C+ grades for experience of COPD care[4]
  - III. On cost of care
    - Hospital admission rates for a primary diagnosis of COPD vary across Western Canada; however, all told, COPD results in 22,926 total admissions across Western Canada and accounts for 2.1% (MB) to 2.7% (SK) of all admissions in each province (AB & BC: 2.3%).[26] COPD is responsible for the highest percentage (18.8%) of 30-day readmissions to acute care in Canada[5]

I. Population Health

I.i Health Outcomes

- In terms of morbidity:
  - In Western Canada, 3.4% (Alberta, AB; 62,276 people) to 4.5% (Saskatchewan, SK; 22,880 people)[6] of the population live with COPD (British Columbia, BC: 3.8%, 94,975 people; Manitoba, MB: 4.4%, 27,232 people). These Statistics Canada (2013) estimates are consistent with Canadian estimates (4.3%, 832,114) and indicate that COPD affects more women (55%) than men. [6] However, the number of reported COPD admissions is considered to be underestimated (e.g., COPD symptoms and the disease are well-known to be under-

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diagnosed) and there is known discrepancy between self-reported vs. clinical diagnosis (e.g., the prevalence of measured airflow obstruction was 2-6X higher in the Canadian population than self-reports of COPD)[7]
    - In addition, many Canadians live with multiple chronic diseases; for example, 56% of Canadian adults over 65-years-old have two or more chronic conditions[8]
- In terms of mortality:
    - Chronic respiratory diseases account for 4.6% of all deaths in Canada;[9] in the Western provinces, respiratory diseases account for anywhere from 180 (AB) to 231 (SK) potential years of life lost (PYLL) as compared to Canada (174 PYLL) and other Western provinces (BC: 186 PYLL; MB: 191 PYLL)[10]
    - According to Statistics Canada, COPD ranges from the 5th leading cause of death (BC, SK, MB) to the 4th (AB & Canada);[9] however, the World Health Organization predicts that COPD will be the 3rd leading cause of death worldwide by 2030[11]

I.ii Behavioural and Physiological Factors

- Most cases (80-90%) of COPD are associated with cigarette smoking as the underlying cause;[12] currently, one in five people in Western Canada are smokers (MB: 20%, 199,571; SK: 21.9%, 183,313; AB: 21.6%, 682,027; BC: 15.1%, 593,226)[13]
- Compared with many chronic illnesses, patients living with COPD tend to report poorer psychological functioning,[14] for example:
    - Fatigue and anxiety are more commonly cited in COPD than in advanced cancer, heart disease or renal disease[15,16]
    - Severe depressive symptoms or clinical depression are/is seen in as many as 40% of patients living with COPD; that's 2-4X higher than rates in the general population[17]
    - One-third (32%) of people living with COPD and depression also report having panic disorders, which is – in and of itself – a leading cause of emergency department (ED) visits[18]
- In a nationally representative sample of 1,133 Canadians living with COPD:[17]
    - 45% reported their overall health as "fair or poor";
    - 33% reported their health as "somewhat worse or much worse" than a year ago;
    - 21% reported that breathing problems affect their life "quite a bit or extremely";
    - 28% reported most days are "quite a bit or extremely stressful"; and
    - 14% reported being "dissatisfied or very dissatisfied" with their life

II. Care Experience

- In a 2005 Lung Health report card by the Canadian Lung Association and Canadian Thoracic Society, the Western provinces received poor grades for experience of COPD care (BC, AB and SK all received D+ grades; MB received C+).[4] Based on other sources, this is congruent with the lack of access and coordination that Western Canadians living with COPD often experience, for example:
    - In general, with increasing symptom burden, people with advanced COPD often experience physical restrictions (e.g., they are often housebound) and report a high degree of social isolation[19] and abandonment by healthcare providers[20]
    - In general, due to limited mobility, primary care services are less accessible for people living with advanced COPD; and end-stage COPD care is often "fragmented, episodic and reactive"[21]

  - In Canada, rates of hospital admissions for a primary diagnosis of COPD were 3X higher for individuals with low socioeconomic status (SES) as compared to those in higher SES brackets[22]
  - In Canada, only 1.2% of those living with COPD received access to pulmonary rehabilitation[23]
  - In AB and BC, a minority (8%) of physicians admit to discriminating against smokers in terms of quality of healthcare; while 24% (BC) to 29% (AB) of patients report that their quality of healthcare was diminished because they were, or had been, smokers (no report available in SK or MB)[4]
- On overall quality of care, Canada ranks as the poorest performer of 11 Commonwealth countries, as it relates to access and timeliness of care; and third to last as it relates to effectiveness, safety, coordination and patient-centredness.[24] In the Western provinces:
  - 50% (BC) to 57% (SK) of the population over 55-years-of-age waited >2 days to see a doctor or nurse[24]
  - 30% (BC) to 39% (AB) of the population went to an ED for a condition that could have been treated by their primary healthcare provider (MB: 34%; SK: 33%)[24]
  - 8% (BC, AB, SK) to 11% (MB) of the population said that specialists did not have basic information or test results from their family doctor and 16% (BC) to 19% (SK) reported that their family doctor did not seem to be informed and up-to-date about the specialist care they had received (AB: 18%; MB: 18%)[24]

III. Cost of care

- When it comes to healthcare utilization:
  - As a primary diagnosis for hospital admissions, COPD ranges from the 2nd reason (AB, BC) to the 5th (MB) leading cause after childbirth, convalescence (following treatments) and heart attacks in Western Canada.[26] COPD results in 22,926 total admissions across Western Canada and accounts for 2.1% (MB) to 2.7% (SK) of all admissions in each province (AB & BC: 2.3%).[26] However, many patients living with COPD are admitted to hospital with COPD as a comorbid condition (e.g., in Ontario, it is estimated that COPD patients account for 24% of all hospital admissions in the province, including admissions where COPD is *not* the most responsible diagnosis)[3]
  - COPD prevalence rates vary within each province (e.g., 2.4% in what was considered 'South Zone' AB to 7.7% in 'Central Zone' AB),[6] which may correspond with greater demand on hospital use in those areas most affected
  - Average length of stay for patients with a primary diagnosis of COPD in acute care organizations ranges from 7.3 days (SK) to 9.6 days (MB); 7.8 days (BC); 8.2 days (AB)[26]
  - COPD has the highest rate (18.8%) of 30-day readmissions to acute care in Canada[5]
- When it comes to costs of care:
  - In Canada, acute exacerbations of COPD (AECOPDs) account from $646-million to 736-million a year in hospital-based costs – a conservative estimate that does not include the costs of routine care[27]
  - According to Mittmann et al., (2008) the average overall cost of a moderate AECOPD is $641 ($126/outpatient + $515/ED), while the average overall cost of a severe AECOPD is $9,557 ($114/outpatient +$774/ED + $8,669/hospitalization)[27]

- Using 2013 hospital utilization data, the Canadian Institute for Health Information (2014) calculated the average cost per patient for hospital care (for COPD, excluding physician fees) across the Western provinces ranges from $6,351 (in MB) to $8,868 (AB) vs. Canada $7,192 (BC: $6,639; SK: $6,968)[28]
- For example, in SK, the total estimated acute inpatient cost for COPD is $47-million per year[25]
- For just 17 of the INSPIRED collaborative teams, it is estimated that they spend a combined $212-million a year treating COPD exacerbations in hospital[29]

- From an employment/work productivity standpoint:
  - 17% of COPD patients changed the number of hours worked or type of work due to breathing problems, and 14% reported stopping working permanently[17]

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