

# INSPIRED Approaches to COPD: Improving Care and Creating Value

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## Context:

Chronic obstructive pulmonary disease (COPD) is a primary cause of emergency room (ER) and hospital visits in Canada and second only to chest pain for ER visits at the Queen Elizabeth II Health Sciences Centre at Nova Scotia Health Authority. A clinical team – respirologist/pulmonologist, registered respiratory therapists (RRT), spiritual care practitioner (SCP) and program coordinator/evaluator – committed to reducing by half ER and hospital visits.

## Aim:

**INSPIRED** (Implementing a Novel and Supportive Program of Individualized Care for Patients and Families Living with **RE**spiratory Disease) is holistic, proactive, hospital-to-home care, providing patients/families living with late-stage COPD specialized care and support. The program includes:

- ▶ Self-management education
- ▶ Action plans
- ▶ Psychosocial & spiritual care support
- ▶ Advance care planning (ACP)

## Measurement:

- ▶ ER visits
- ▶ Hospital admissions
- ▶ Acute inpatient length of stay (LOS)
- ▶ Efficiency (cost containment)
- ▶ Care Transitions Measure (CTM\*)
- ▶ Quality of life, anxiety/depression and hope
- ▶ Program helpfulness
- ▶ Intensive/Intermediate care unit (ICU/IMCU) use
- ▶ Personal directive (PD) & palliative care use

## Strategy for Change:

**Deliver more holistic patient-centred care while reducing reliance on hospital care**

1. Patients with COPD (Medical Research Council stage 4-5) are referred to INSPIRED by inpatient staff.
2. The INSPIRED respirologist and RRT meet with the patient to seek program enrolment, optimize medications\* and develop an action plan.\*
3. The patient is discharged and the RRT phones within 48-72hrs to arrange the first home visit.
4. The RRT and SCP make home visits ~2 weeks apart (~4-6 weeks). The RRT provides self-management education and reviews the action plan. Then, the SCP assesses coping and reviews goals of care, as needed, including ACP (completing a PD if the patient desires).
5. Monthly phone follow-up continues for 3 months; and additional follow-up, as needed.

\*as per Canadian Thoracic Society guidelines

## Results:

**An INSPIRED Shift: From provider- to patient-driven, hospital to home, volume to value**

- Compared to six months pre-INSPIRED, for n=131 patients:
  - **60%** fewer ER visits (from 282→113)
  - **63%** fewer hospital admissions (154→57), and patients admitted 2X or more in six months decreased (27→5)
  - **62%** fewer days in hospital (1573→596), where the 977 fewer bed days = an estimated indirect cost 'saving' of \$977,000 (more than 3X annual INSPIRED operating costs)
  - These reductions continued for n=93 patients compared to 12 months pre-INSPIRED (**Table 1**)
- Interviews show patients felt: more confident in managing their symptoms and willing to discuss goals of care, including ACP; less anxious (**Table 2**)
- Significant improvements in quality of care transitions. No marked changes in quality of life, anxiety/depression and hope.
- Patients at end-of-life showed significantly lower LOS and greater likelihood to have PDs (**Table 3**)

**Table 1.** Six- and 12-month Results pre/post-INSPIRED for ER Visits, Hospital Admissions and LOS (n=93)\*

Pre-INSPIRED			INSPIRED	Post-INSPIRED				
12 months total	6-12 months	0-6 months		0-6 months	6-12 months	0-12 months total	% change 6 months	% change 12 months
ER visits	266	71	195	54	73	127	<b>-72%</b>	<b>-52%</b>
Admissions	136	21	115	24	37	61	<b>-79%</b>	<b>-55%</b>
LOS (days)	1333	202	1131	235	284	519	<b>-79%</b>	<b>-61%</b>

**Table 2.** Top Five Patient-reported Reasons How INSPIRED Helps (n=18)

1. Action plan and prescriptions on-hand or on-order
2. Accessible education, information and resources
3. Improved outcomes relevant to patient and family, for example, less breathlessness, more stamina, recognition and management of COPD, use of medications
4. Someone to call for guidance and support; and not feeling so alone and abandoned
5. Feeling cared for by caring, reliable, knowledgeable staff using effective communication

**Table 3.** 2011-2013 Results for INSPIRED (n=20) and non-INSPIRED (n=96) Decedents' LOS, ICU/IMCU Use, Development of PDs & Palliative Care Involvement

	INSPIRED	non-INSPIRED
<b>Decedents</b>	n=20 <sup>1</sup>	n=96
<b>LOS median (interquartile range)</b>	#2.5 (0-6)	7.0 (4-15)
<b>ICU/IMCU use n (%)</b>	4 (20%)	20 (21%)
<b>ICU/IMCU LOS (mean)</b>	3	8.9
<b>PDs n (%)</b>	11 (55%)*	10 (10%)
<b>Palliative care involved n (%)</b>	13 (65%)	38 (40%)

1. INSPIRED patients who died at home = 6/20 (30%)  
 # p= 0.001 (Mann Whitney U test)  
 \*p<0.0001 (Fishers exact test)

## Messages for Others:

- INSPIRED interrupts a dependency on hospital-based care at a time when readmission risk is high.
- The Canadian Foundation for Healthcare Improvement (CFHI), in collaboration with Boehringer Ingelheim (Canada) Inc. (BICL), supported the spread of INSPIRED to 19 Canadian sites. [Learn how you can adapt and adopt INSPIRED.](#)
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