

**EMERGENCY DEPARTMENT (ED) SUPPORT FUND**  
**APPLICATION**

**1. Proposal Introduction**

**Title of Proposal**

COPD Chronic Disease Management in the Community: An Emergency Department Solution

**Leader(s)**

St. Mary's General Hospital

**Most Responsible Contact**

Sandra Hett, Assistant Vice President, Patient Services,  
St. Mary's General Hospital (SMGH)  
911 Queen's Blvd., Kitchener ON N2M 1B2  
Phone: 519-749-6578 Ext. 1905  
Email: [shett@smgh.ca](mailto:shett@smgh.ca)  
Fax: 519-749-6856

**Parties Involved in Developing this Proposal**

Dr. Eric Hentschel, Respiriologist, Medical Director, Chest Program, SMGH and  
Director, Pulmonary Rehabilitation Program, Grand River Hospital (GRH)  
Suzy Young, RN, MN, ACNP, St. Mary's General Hospital  
Gloria Whitson-Shea, Vice President and Chief Nursing Officer, GRH  
Jane Lindsay, PT, Conestoga College Faculty  
Angela Tuffnail, OT, Freeport Pulmonary Rehabilitation Program, GRH

**Executive Summary**

Chronic obstructive pulmonary disease (COPD) is a largely preventable, progressive respiratory disease that accounts for a majority of emergency department (ED) visits and hospitalizations. At SMGH, COPD exacerbation readmission rates are the highest across CMGs at 10% within 29 days post discharge. This proposal will include systems to inform decision makers about options for improved care and expenditure savings through chronic disease management strategies. This program could serve as a template for the management of other chronic diseases in a community based setting. Specifically, our LHIN has a higher admission rate for those with respiratory disease compared with the provincial average (Health System Intelligence Project, 2004).

**2. Rationale**

**The Problem and Proposed Solution**

Chronic obstructive pulmonary disease (COPD) is a largely preventable, progressive respiratory disease that accounts for a majority of emergency department (ED) visits and hospitalizations. It is the fourth leading cause of death in Canada and rising implicating an enormous human and economic burden. COPD is also the second most common

reason for hospital admission in the aging (CIHI, 2001). In the Waterloo Region, like many other regions, it accounts for many episodes of recidivism to acute care facilities for exacerbation. Comprehensive COPD care challenges health care providers and the entire health care system. The creation of a program for persons with COPD and their caregivers would be a proactive, comprehensive approach to health maintenance of a population that historically has been under-recognized and under-reported. A systematic approach to COPD community management will attempt to identify those at risk of disease progression, complications and hospitalization. This can be accomplished by providing a multidisciplinary community service incorporating education, tailored exercise and disease self-management strategies utilizing experts and best practice. National and international COPD best practice guidelines for members of the health care team are readily available. These guidelines will be utilized in the program which will include education, early diagnosis support, disease prevention strategies, promotion of an active lifestyle and documentation of outcomes.

This program is based on the following best practice - The Chronic Care Model - <http://www.improvingchroniccare.org/change/model/components.html>

At SMGH, COPD exacerbation readmission rates are the highest across CMGs at 10% within 29 days post discharge. Compared with other diagnoses, it is by far the most significant. This is a similar phenomenon across the province. By having a rapid response team involved at discharge from the ED or from the in-patient ward, those persons at risk for revisitism would have an alternate source of support and care. As well, those in the community with COPD would become active in managing their chronic disease in a positive manner, recognizing care needs earlier. The proposed program would have the added benefit of preventing further exacerbation and ED visits through improved self management and guidance.

There are examples of this type of program across the country. For example, in the Saskatoon Health Region Chronic Disease Management Program they realized a 23% reduction in acute care facility readmission rates with a very similar program (Abstract, CCA, 2006). Calgary Health Region has made great strides in chronic disease management with computerized databases and multidisciplinary monitoring with rapid follow-up.

The Ministry of Health and Long Term Care states that alternate COPD care “*should* otherwise be provided in the community” (MOHLTC, 2006). It is our hope that the Waterloo-Wellington LHIN can provide that care through this proposal. Through community partners, persons with COPD could gain knowledge, link with necessary services and manage their disease effectively outside of the acute care realm.

Also known is the paucity of research in the care of persons with COPD. It is a largely unknown disease with significant economic and morbidity burden. This proposal will include systems to inform decision makers about options for improved care and expenditure savings through chronic disease management strategies. This program could

serve as a template for the management of other chronic diseases in a community based setting.

Regional LHIN health plans should include such interventions as addressing acute and ongoing concerns of the patient and their families, peer support, behaviour change through education and peer teaching, and effective documentation and sharing of information within the regional system. The LHIN for Waterloo Wellington has goals which mirror what is included in this proposal. Specifically, our LHIN has a higher admission rate for those with respiratory disease compared with the provincial average (Health System Intelligence Project, 2004). If this program is successful in the Waterloo - Wellington LHIN it could serve as a template for programs across the province or country. The Waterloo- Wellington LHIN also has a lower proportion of its population with primary care to follow chronic diseases like COPD, therefore allowing those in need a service for advice, care and education (Health System Intelligence Project, 2004).

Early prevention for COPD is the ultimate goal. SMGH is currently proceeding with a proactive initiative for a regional smoking cessation plan with an eventual outcome of reducing COPD prevalence in our local communities. Until then, a sustainable program to support our COPD population and their caregivers is necessary.

#### Explanation of the Program:

An integral part of chronic disease management is understanding needs and having availability of resources (Ministry of Health and Long-Term Care, 2005). This proposal advocates the use of professionals well versed in COPD management. A comprehensive enrolment, documentation and follow-up system will be maintained. Evidence based guidelines will be utilized for education and care. A case management system will be incorporated into the delivery of the program. Family members/caregivers will be included as appropriate in the program to ensure a strong support system. Linkage will occur with appropriate community resources for further empowerment of COPD patients. Given the nature of COPD, telephone contact may be necessary for follow-up given that the disease is socially isolating and the ability of recurrent attendance is challenging. The nurse coordinator would be available after hours via pager to past and present participants of the program for advice, education and support.

The referral process for the proposed program will be through multiple sources. Automatic referral from EDs, inpatient units and pulmonary function labs as well as suggested referrals through primary health practices and Urgent Care Clinics will incur multiple contacts. A computer based system will be necessary to track the progress and completely evaluate the initiative. Decision support and information systems which include transfer of information between acute care, community care and chronic care will be necessary to fully realize the success and evaluation of this program. This program would also support persons with COPD at all stages of the disease, tailoring education and exercise accordingly.

COPD is a multisystem disease and all aspects of disease management must be considered to have the program become successful. A nurse and physiotherapist who are knowledgeable about COPD and program management could successfully manage the program. Providers within the program must be multidisciplinary. Dietitians, social workers and pharmacists are necessary resources in the program. Public Health and the Community Care Access Centres will be strong links and non profit organizations including The Lung Association will be visible partners in the program. Other community partnerships will include Family Physicians, Respirologists, pharmaceutical and respiratory supply companies, community organizations and the existing pulmonary rehabilitation program in the region.

The program will operate four days per week in a community building where space will be leased for a minimal cost. The building will be accessible with free parking. The programs will be two hours in length and will be small group sessions. The sessions will include exercise, education and community linkage as suggested in the Canadian Thoracic Society recommendations (CTS, 2004). It will be a repeating program every two weeks, two days per week and exercise on the other two days per week as outlined in the appendix. A participant would attend one education session and one exercise session each week for 2 weeks. The education sessions will use information from the "Living Well With COPD" program and resources from The Lung Association. The education sessions will be mainly expert-patient led. The exercise program will consist of stationary bicycles, treadmills, free weights and resistance bands. Many community rooms already have this equipment therefore start-up cost will be minimal.

The Waterloo Wellington LHIN has the benefit of an inpatient and outpatient pulmonary rehabilitation program. This proposed program would work closely with the existing rehab program though would be more flexible and would involve those persons who may disqualify for the rehab program, for example smokers. The wait times for this proposed program will be shorter than those of the existing pulmonary rehabilitation program therefore rapid follow up after discharge from hospital could be accomplished.

SMGH has a commitment to the community as a cardiorespiratory centre. This organization has proven itself as a leader in evidence based care with positive outcomes. The proposed model could be transferred to other chronic diseases like congestive heart failure, diabetes and obesity for which a similar referral process could occur. The program could be transferred to rural and urban centres without the need for extensive human resources or space planning needs.

The incidence of COPD is increasing as is the hospitalization rate and therefore referral of participants should be continuous and ongoing. Sustainability will be achieved through collaborative partnerships and evidence of the efficacy of this program as it is developed and evolves as a resource for COPD patients in the community. In the short timeframe for this pilot it must be recognized that any reported results will be preliminary and the full benefit of the program (reduced emergency visits and admissions) may take longer to realize.

### 3. Work Plan

- 1) Secure a location in the community (preliminary positive discussions have occurred)
- 2) Hire nurse coordinator, physiotherapist
- 3) Create the program outlines
- 4) Purchase equipment and supplies
- 5) Create the database
- 6) Confirm data collection strategies and modes of evaluation and reporting
- 7) Hire support staff and retain other professionals (dietitian, pharmacist, social worker)
- 8) Secure links with community partners
- 9) Create the referral system and market to GRH and SMGH family health networks

### 4. Evaluation

Success of the program will be measured in numerous ways. Participant attendance will be monitored. Participant satisfaction will be assessed through surveys. Participants will be followed by telephone monthly for 6 months after the completion of the program to assess disease self management skills as evidence by amount of exercise, exacerbation self management, smoking cessation rates and community linkages. Hospital ED visits will be monitored for acute visits or inpatient stays by participants. Quality of life will be assessed by participants completing a validated quality of life questionnaire prior to and upon completion of the program.

### 5. Budget

Nurse Coordinator - 1.0 FTE	\$ 89,875
Physiotherapist - 0.5 FTE	\$ 45,340
OT / Pharmacist – 0.5 FTE	\$ 45,340
Administrative Assistant - 0.3 FTE	\$ 18,325
Dietitian - 0.2 FTE	\$ 17,055
Social Worker - 0.2 FTE	\$ 17,995
Stipend for Peer Leaders	\$ 5,000
Physician Consultant, meetings	\$ 1,000
Space rental	\$ 40,000
Equipment*	\$ 45,000
Learning materials/copying	\$ 5,000
Evaluation materials	\$ 3,000
Office materials	\$ 7,000
Computer Projector	\$ 7,000
Travel / Cell phone expenses	\$ 3,000
<b>Total</b>	<b><u>\$349,930</u></b>

\*Equipment needed - vital signs monitoring equipment, portable defibrillator, treadmill, stationary bicycle (recumbent), free weight set, therabands, chairs, water cooler.

## Appendix

### Description of COPD Community Based Chronic Disease Management Program

#### Referral Sources:

ED, Inpatient discharges, Community primary care,  
- formation of a registry

Participant would attend one education and one exercise session per week for 2 weeks (total of 4 sessions) i.e. Mon/Wed for 2 weeks

#### Twice Weekly Education

2 hour small group sessions  
Led by nurse coordinator, peer leader  
and other professionals  
2 sessions repeated monthly:  
1. COPD patho, meds,  
2. Smoking cessation, avoiding triggers  
3. Nutrition, importance of exercise  
4. Breathing/sputum clearance techniques

#### Twice Weekly Exercise

2 hour small group sessions  
Led by physiotherapist  
4 topics per session  
1. Strength and endurance - free weights  
2. Cardio/walking  
3. Relaxation/energy conservation  
4. Staying well, action plans

#### Evaluation: (bimonthly telephone follow-up for 6 months by nurse coordinator or participant will call the nurse coordinator with concerns)

# participants  
Quality of life questionnaire (before/after)  
frequency ED/FD/other unscheduled visit  
Exacerbation rate  
Compliance with learned self management strategies  
# community partners engaged

A summary will be sent to the participant's referring physician and/or primary care provider after completion of the program.