

Cardio Respiratory Rehabilitation and Integrated Care of Chronic Respiratory Disease

Name of Institution: McGill University
Location: Montreal Chest Institute, McGill University Health Centre
Parent Training Program: Adult Respiriology

Program Information : One year fellowship

- a. Number of fellowship positions requested:* 1
- b. Academic affiliation:* McGill University/McGill University Health Centre
- c. Name of hospitals involved in training and time spent in each institution:*
- Montreal Chest Institute, McGill University Health Centre (8-10 months)
 - Mount Sinai Hospital (1 month)
 - Service Régional de Soins Respiratoires à Domicile (Regional Home Respiratory Care Service) for Home Rehabilitation and Palliative Care in patients with chronic respiratory diseases (1 month)
 - Other specialized academic sites will be allowed to respond to a specific need; this will require the approval of the training committee (≤ 2 month)

d. Background

There is an increased prevalence of chronic disease, largely related to the ageing of the Canadian population. Chronic respiratory diseases account for a substantial proportion of practice in respiratory medicine, and include COPD, bronchiectasis, bronchopulmonary dysplasia (BPD), asthma and pulmonary hypertension (PAHT). Respiriologists also provide medical management for patients with complications from thoracic surgery (lung cancer resection, emphysema, etc) and those with extended stays in the ICU (neuromuscular, post op complications, COPD, etc). Increasingly, respirologists are responsible for the development and implementation of targeted strategies and comprehensive pulmonary rehabilitation programs aimed at optimizing the long-term management of patients with chronic respiratory conditions. This practice profile also incorporates elements of palliative care medicine. Thus, there is an overlap of pulmonary rehabilitation and palliative care medicine in the integrated management of chronic respiratory disease.

Pulmonary rehabilitation is a relatively new area in respiratory medicine, requiring additional training and expertise in exercise physiology, exercise training (including neuromuscular stimulation, eccentric and concentric training) combined with psychological processes related to motivation, emotional adjustment (anxiety and depression), and chronic disease self-management. Pulmonary rehabilitation combines state-of-the-art medical management with participation in hospital- and home-based programs aimed at improving exercise tolerance and

cardiopulmonary function, mood regulation and coping skills in an effort to increase patients' control over their disease and enhance their overall quality of life.

Additional training in the core elements of pulmonary rehabilitation medicine is essential to provide respirologists who will practice in this area with the background and skills to develop and lead programs that can meet the medical, psychological and social needs of a broad range of patients in various settings as part of an integrated care process. Specialized training will also ensure that respirologists acquire the necessary skills to develop programs which meet established standards. Training in ongoing quality improvement and clinical research skills are necessary to ensure the continuous refinement of care delivery and practices, proper monitoring, and ongoing improvement. Finally, leadership training provides skills in developing and managing programs and multidisciplinary teams across settings and as part of an integrated care process.

e. Research activity

Respiratory residents will work collaboratively on a comprehensive research project focused on cardiorespiratory exercise physiology in chronic airway disease and within the context of a multidisciplinary team. Typically, these projects will be conducted within the Clinical Exercise Physiology Research Lab of the Respiratory and Epidemiology Clinical Research Unit (RECRU) at the Montreal Chest Institute. Emphasis will be on translational research and the transfer of new knowledge into clinical practice, e.g. specific teaching to health professionals, development and implementation of guidelines and clinical programs as part of the organization of care.

f. Publications

*Vieira D, Maltais F, **Bourbeau J**. Home-Based pulmonary rehabilitation in COPD patients. Curr Opin Pulm Med 2010; 16(2):134-143.

Bourbeau J, van der Palen J. Promoting effective self-management programmes to improve COPD. Eur Respir J 2009;33(3):461-463.

Bourbeau J. Activities of Life: The COPD Patient. COPD. 2009; 6:192–200.

Nici L, Raskin J, Rochester C, **Bourbeau J**, Carlin B, Casaburi R, Celli BR, Cote C, Crouch RH, Diez-Morales L F, MD; Claudio F Donner, MD; Bonnie F Fahy, Garvey C, Goldstein R, Lane-Reticker A, Lareau SC, Make B, Maltais F, McCormick J, Morgan MD, Ries A, Troosters T, ZuWallack R. Pulmonary Rehabilitation: What we know and what we need to know. J Cardiopulm Rehabil Prev. 2009 may-Jun; 29(3):141-151.

Maltais F, **Bourbeau J**, Shapiro S, Lacasse Y, **Perrault H**, Baltzan M, et al., for the Chronic Obstructive Pulmonary Disease axis of the Respiratory Health Network, Fonds de la recherche en santé du Québec (FRSQ). Effects of home-based versus outpatient hospital-based pulmonary rehabilitation in patients with COPD: a non-inferiority, randomized clinical trial. Ann Intern Med 2008;149:869-878.

Bourbeau J, Nault D. Self-management strategies in chronic obstructive pulmonary disease. *Clin Chest Med* 2007; 28(3):617-628.

Nici L, Donner C, Wouters E, Zuwallack R, Ambrosino N, **Bourbeau J**, Carone M, Celli B, Engelen M, Fahy B, Garvey C, Goldstein R, Gosselink R, Lareau S, MacIntyre N, Maltais F, Morgan M, O'Donnell D, Prefault C, Reardon J, Rochester C, Schols A, Singh S, Troosters T. American Thoracic Society/European Respiratory Society statement on pulmonary rehabilitation. *Am J Respir Crit Care Med* 2006; 173(12):1390-1413.

*Gadoury MA, Renzi P, Rouleau M, Maltais F, Julien M, Beupré A, Nault D, Schwartzman, K, **Bourbeau J.** Self-management reduces both short- and long-term hospitalisation in COPD. *Eur Respir J.* 2005 Nov;26(5):853-57.

Landry JS, Menzies D. Predicting the occurrence and severity of bronchopulmonary dysplasia and respiratory distress syndrome after a premature birth. *Pediatrics*, submitted July 16th 2009.

Bourbeau J and Bartlett SJ. Patient adherence in COPD. *Thorax* 63: 831-838, 2008.

McCauley J, Tarpley MJ, Haaz S, **Bartlett SJ.** Daily spiritual experiences of older adults with and without arthritis and the relationship to health outcomes. *Arthritis Rheum* 2008; 59(1):122-128.

Perrault H, Baril J, Henophy S, Rycroft A, Bourbeau J, Maltais F. Paced-walk and step testing to assess exertional dyspnea in COPD. *COPD* 2009; 6:330–339.

*Picard M, Godin R, Sinnreich M, Baril J, **Bourbeau J, Perrault H** et al. The mitochondrial phenotype of peripheral muscle in chronic obstructive pulmonary disease: disuse or dysfunction? *Am J Respir Crit Care Med.* 2008;178:1040-1047.

Perrault, H., G. Gravel, D. Ofir, D. Rittmaster, B. Aguilaniu, and J. Bourbeau. Cycling efficiency is not compromised for moderate exercise in moderately severe COPD. *Med Sci.Sports Exerc.* 2007; 39:918-925

*Baril J, de Souza M, Leroy D, Ofir D, Aguilaniu B, Gladys C, Olivenstein R, **Bourbeau J, Perrault H.** Does dynamic hyperinflation impair submaximal exercise cardiac output in chronic obstructive pulmonary disease? *Clin Invest Med.* 2006; Apr;29(2):104-9

Nault D, Sedeno MF, Bourbeau J. L'éducation, une composante clé de la gestion thérapeutique. In: Préfaut C et Ninot G. La réhabilitation du malade respiratoire chronique: Des bases fondamentales à la pratique quotidienne. *Elsevier-Masson* 2009

g. Mission

The purpose of the McGill fellowship in cardiopulmonary rehabilitation and integrated care is to provide respiratory trainees with the additional knowledge, skills and experience needed to care for patients with chronic disease including pulmonary rehabilitation (rehabilitation techniques including all physical and psychosocial aspects, and expected long and short term benefits) as part of an integrated care process and self-management support.

We are confident that providing experience for respiratory trainees to participate in ongoing research and develop new projects of their own as part of an experienced, productive team at the RECRU will also promote interest in pursuing a career in academic and clinical pulmonary research and facilitate research networking in future practice.

h. How the proposed fellowship will enhance residency training

This fellowship will offer additional knowledge and specific training in exercise physiology, specialized knowledge and skills in behavioral and psychosocial management of various chronic respiratory diseases, and continuous quality improvement with an evaluative approach. The RECRU is an ideal setting in which to obtain this unique fellowship training as trainees will have an opportunity to participate in clinical research as part of an experienced, productive multidisciplinary research team with longstanding collaboration with provincial (groupe strategique, Respiratory Health Network of the FRSQ), national and international networks.

Goals and specific objectives: Appendix 1

Program director, coordination and fellowship committee

a. Fellowship Program Director

Dr. Jean Bourbeau
Director, Pulmonary Rehabilitation
Respiratory Division
Montreal Chest Institute, Room K1.32
Department of Medicine, McGill University Health Centre

b. Fellowship Coordinator

Ms Esther TomKee (Respiratory Division)
Montreal Chest Institute, Room K1.21

c. Fellowship Training Committee Members

Dr. Jean Bourbeau (Chair)

Director of COPD and Pulmonary Rehabilitation,
Respiratory Division, McGill University Health Centre

Dr Bourbeau will act as the director of the fellowship. He is the co-founder of the rehabilitation/exercise physiology research laboratory at the RECRU. He has consolidated the multidisciplinary group in chronic respiratory disease and in rehabilitation/exercise physiology at the clinical exercise physiology research lab of the MCI developed jointly by the RECRU

and the Department of Kinesiology and Physical Education, McGill University. Provincial and national collaboration has been very productive through the Respiratory Health Network of the FRSQ. His research work in disease management, self-management (program Living Well with COPD) and pulmonary rehabilitation has not only impacted research but also the health care system (tertiary, secondary and primary care) and the public domain.

Dr Jennifer Landry

Medical Director, Respiratory Acute Care Ward, Montreal Chest Institute
Respiratory Division, McGill University Health Centre

Dr. Landry will act as associate director and assist Dr Bourbeau as fellowship director. She created and acts as the medical director of a Pediatric to Adult Transition and Orphan Lung disease clinic (PATROL) at the Montreal Chest Institute since 2005. She is the medical director of the acute care ward at the Montreal Chest Institute and has collaborated with Dr Bourbeau and nursing colleagues to develop a COPD Care Map for integrated care in chronic respiratory disease. Dr. Landry's current research activities are centered on the study of long-term outcomes of premature births, including the natural history of bronchopulmonary dysplasia and the quality of life and healthcare utilization of former premature infants having reached adulthood. She is a contributor to the Cystic Fibrosis BREATH project and to COPD research.

c. Fellowship Training Committee Members

Susan Bartlett PhD

Associate Professor
Respiratory Division, McGill University Health Centre

Dr Bartlett is a clinical psychologist with significant experience and expertise in behavioral sciences related to health behaviors and quality of life outcomes in chronic respiratory diseases. Health behaviors (eating, physical activity, smoking) and beliefs have a significant effect on the development and long-term outcomes of most chronic illnesses. Emotional factors such as depression influence health behaviors, including willingness and ability to change, as well as self management practices, including adherence to treatment. Dr. Bartlett's current research activities are to identify, understand and address potential barriers to the enhancement of self-management and optimize clinical management and quality of life associated with chronic illnesses.

Helene Perrault PhD

Dean of the Faculty of Education,
Full professor, Department of Kinesiology and Physical Education,
McGill University

Dr Perrault's role will be complementary with respect to exercise pathophysiology and integrated cardiorespiratory advanced exercise physiology. She is the co-founder with Jean Bourbeau of the rehabilitation/exercise physiology research laboratory at the RECRU.

Diane Nault, RN

Clinical Nurse specialist, Service régional de soins respiratoires à domicile (SRSRD),
Hôpital Maisonneuve-Rosemont, centre affilié à l'université de Montréal

Diane Nault is a specialized nurse with extensive experience with chronic respiratory disease patients, home care and palliative care. She is the nurse-practitioner at the SRSRD. She developed the education and self-management program “Living Well with COPD” with Dr Bourbeau. This program has just been adopted by the Québec Ministry of Health to be distributed and used by health professionals in the health care system: CLSC, home care, hospitals. There has been continuous development of this program for patients with chronic respiratory disease and reference guides with training for the health professionals. A website is available: www.livingwellwithcopd.com (password: copd).

Dr. Kevin Schwartzman (ex officio)

Respiratory Division, McGill University Health Centre
Residency Training Program Director, Adult Respiriology

Academic Facilities

a. Facilities for clinical and academic pursuit

The Montreal Chest Institute offers all the facilities for this fellowship training:

- Access to patients (respiratory ICU, inpatient, outpatient) with a large variety of chronic respiratory diseases
- Specialized outpatient clinics (COPD, CF, BPD, pulmonary rehabilitation)
- Pulmonary rehabilitation programs (respiratory ICU, hospital and home-based programs)
- Specialized exercise physiology laboratory and technician expertise
- Research facilities at the RECRU

b. Library access, materials relevant to fellowship training

Electronic access to McGill Life Sciences Library from computers in dedicated resident/fellow rooms at the RECRU; hospital and McGill libraries accessible.

c. Availability of a skills lab if applicable

- The Research Pulmonary Physiology and Cardiorespiratory Exercise Laboratory rehabilitation/exercise physiology at the RECRU. The Laboratory provides a full range of pulmonary function tests and routine exercise testing with all its variations and combinations such as cardiac output measurement and ventilatory measurement with IC (inspiratory capacity) or NEP (Negative Expiratory Pressure).
- The Laboratory also gives clinical trainees access to the manager, specialized technicians and students in kinesiology (MSc and PhD) available for:
 - Training and supervision for cardiopulmonary testing
 - Information on pulmonary function and exercise testing

- Assistance in setting up protocols for research studies
- Information on quality assurance

Fellow Duties and Responsibilities

a. Call responsibilities to cover service

While on rotation in the MCI ICU, the fellow will contribute to on-call coverage (typically 3-4 calls per rotation, in-house). During other months, the fellow may be asked to aid with weekend coverage of the respirology consultation services at the MUHC (maximum one weekend per rotation), or coverage of the MCI (1-2 calls per rotation).

b. Include whether the fellow is the senior supervisor of residents

The fellow does not supervise residents or medical students.

c. Outline whether there are fixed rotations at various institutions

There will be rotations in

- Pulmonary rehabilitation programs (PEP, PAP, home-based) and Respiratory ICU at the MCI (8 months)
- In-Patient Rehabilitation Program at Mount Sinai (1 month)
- SRSRD for home rehabilitation, palliative/supportive care in patients with advanced respiratory diseases (1 month)
- Specialized pulmonary rehabilitation program (other than the MCI) for specific needs of the resident for his future practice and environment of practice (2 months). This might include specific settings and patients (pulmonary rehabilitation and telehealth medicine, patients with cardiac disease, pulmonary hypertension patients, etc). These will be reviewed by the training committee, confirmed and booked according to individual needs.

d. Outpatient clinic responsibilities need to be outlined

The resident will have 2 clinics per week:

- COPD pulmonary rehabilitation clinic
- Pediatric to Adult Transition and Orphan Lung disease clinic (PATROL)

The resident will also take part during the training year in the following specialized programs:

- Smoking cessation program (4 weeks: 2 sessions per week)
- Stress management group and program (4 weeks: 1 session per week)
- Program and group education in pulmonary rehabilitation (12 weeks: 1 session per week)

e. Outline role of the fellow towards residents on service

Residents from the core respirology program spend two rotations in specialized outpatient clinics which include one half-day per week of COPD/rehabilitation clinic. During those times the rehabilitation fellow will work in parallel with the core resident. The fellow may provide some ad hoc teaching for the resident during these clinics. In addition the fellow will be expected to contribute 1-2 formal teaching sessions per year to core didactic teaching for respirology residents.

f. Teaching responsibilities towards residents

See “e” above.

g. Outline participation in academic activities involving the residents: seminars, outcome assessment (morbidity and mortality rounds etc)

Multidisciplinary team and pulmonary rehabilitation meetings:

- Weekly seminar of the multidisciplinary team in COPD and pulmonary rehabilitation;
- Supervised physical exercise program and interdisciplinary education/teaching: nursing, physiotherapy, occupational therapy, clinical nutrition, inhalation therapy.

Teaching activities specific to the training program in pulmonary rehabilitation (in collaboration with many McGill University departments: kinesiology and physical education, physiotherapy, nutrition, psychology, etc.)

- Weekly seminar: presentations by department members on subjects related to rehabilitation, presentations by residents and students, book club;
- Renowned invited speakers (6 times per year), recognized in the field of rehabilitation or other related field.

Teaching activities on applied research: RECRU seminars every week.

Graduate course at the Department of Kinesiology and Physical Education/Department of Physiology: EDKP 652 "Cardiorespiratory advanced exercise physiology" (Friday AM, fall session)

One or more respirology conferences, e.g. Canadian Respiratory conference (CRC), Chest, American Thoracic Society or other conference relevant to Pulmonary Rehabilitation.

*h. Describe any support staff available to the fellow:
program coordinator, nurse clinician, secretarial*

The resident will be supported by respiratory specialized nurses in the outpatient clinic programs and in pulmonary rehabilitation all along the fellowship training, by the physiotherapist in the exercise training programs and the other health professionals of the multidisciplinary team.

As well the resident will have a working station with access to computer, internet and secretarial support at the RECRU.

i. Proposed meetings to be attended by the fellow

- **Retreat with the Chest Institute's multidisciplinary team in pulmonary rehabilitation** (1 day);
 - **Workshops** (3 days): Exercise physiology seminar and interpretation of exercise tests
 - **Scientific days of the Respiratory chronic diseases and Pulmonary rehabilitation strategic group of the Respiratory Health Network of the FRSQ** (2 days)
- Research productivity and publications expected of the fellow**

The fellow will be expected to serve as primary investigator on one research project and collaborate on other existing projects in the Rehabilitation and Exercise Physiology Lab. with the research students (MSc, PhD, post doc). This will be done with the faculty supervisor responsible for the research. The expected outcome of this project is the submission of abstract(s) and presentation(s) at national or international conference pulmonary conferences, and publication in a peer-reviewed medical journal.

Curriculum

a. Intended case load

Evaluation of 6 new patients and 12-14 follow up visits each week. Over the course of the fellowship year, the fellow will supervise ≥ 100 patients undergoing pulmonary rehabilitation including ICU patients, in-patients and out-patients with various chronic respiratory diseases and co-morbidities.

b. Evaluation

The committee will meet quarterly: to review progress of the fellows and to review the fellowship. A written evaluation will be completed for every rotation, in CanMEDS format, by the primary supervisor for that rotation. In addition, evaluations will be completed every 6 months by the fellow's continuity clinic supervisor, and by the faculty members responsible for supervision of pulmonary rehabilitation. Summative evaluations will be synthesized and completed by the fellowship director every 6 months. In all cases, evaluations will be reviewed with, and co-signed by, the fellow. As with other trainees, it is expected that supervisors will provide informal feedback to the fellow on an ongoing basis, notably at mid-rotation, and that any areas of concern will be flagged at mid-rotation.

The fellow will also complete faculty evaluations for every primary faculty supervisor, which will be held by the respirology program office and distributed to supervisors accordingly.

c. Intended Percentage of varieties of cases

Evaluation of 4-6 new patients and 8-10 follow up visits each week, including patients with COPD, CF, severe asthma, BPD, lung fibrosis, PHT, neuromuscular diseases. Patients will be seen in different settings, i.e., outpatient clinic, inpatient and ICU. Patients with COPD will represent 75% of the overall case load.

d. Regular reading materials provided (if any)

Review articles and Statements by the ATS and ERS:

Ries AL, Bauldoff GS, Carlin BW et al. Pulmonary Rehabilitation Executive Summary: Joint ACCP/AACVPR Evidence-Based Clinical Practice Guidelines. Chest 2007; 131:1S-3S.

Nici L, Donner C, Wouters E et al. American Thoracic Society/European Respiratory Society statement on pulmonary rehabilitation. Am J Respir Crit Care Med 2006; 173(12):1390-1413.

Book:

“Pulmonary Rehabilitation: Role and Advances” (Dr. Linda Nici, Guest Editor) published in *Seminars in Respiratory and Critical Care Medicine* (Thieme, N.Y.) 2009.

e. Conference weekly schedules

- Weekly seminar of the multidisciplinary team in COPD and pulmonary rehabilitation;
- RECRU seminars;
- Respiratory rounds when possible

f. Role of the fellow in attending, presenting, supervising, organization

Presentation of cases at multidisciplinary pulmonary rehabilitation weekly meeting, with review of all relevant tests (and clinical data beforehand, review of cases with pathologist).

Presentation of didactic conference at Exercise Physiology and Pulmonary Rehabilitation weekly conference (2-4/year), RECRU Seminar (1/year) and/or McGill/MUHC Respirology Rounds (1-2/year)—at least once every two months.

The fellow will also be expected to prepare **didactic presentations for academic rounds held by the service** where he/she is on rotation, as is the case for other trainees.

Appendix 1: GOALS, OBJECTIVES

GOAL

The goal of this clinical fellowship in pulmonary rehabilitation is to allow the respirologist to acquire scientific knowledge in respiratory rehabilitation for chronic respiratory diseases, in rehabilitation techniques including all physical and psychosocial aspects, and expected long and short term benefits.

The respirologist must have solid knowledge and experience in pulmonary rehabilitation in order to establish a pulmonary rehabilitation program in his area of practice, and ensure its leadership and quality control by teaching and supervising other professionals of the multidisciplinary team. He/she must also have the knowledge and the experience required to evaluate a rehabilitation program according to established standards and to ensure constant improvement of the program.

SPECIFIC OBJECTIVES

Building upon the foundation of clinical training in respirology, the resident will focus on acquiring knowledge, clinical and technical skills and special skills closely linked to **groups of patients with chronic respiratory diseases.**

Following the practicum, the candidate will have to demonstrate competence in the following fields:

1. MEDICAL EXPERT

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 1.1 Understand and implement strategies to optimize care and services; an approach taking into consideration not only acute episodes, but also the evolution of the chronic illness.
- 1.2 Understand the importance of the non pharmacological approach to chronic respiratory diseases, recognize the biopsychosocial aspects of illness, the efficiency of various methods and strategies.
- 1.3 Understand the optimal pharmacological treatment of chronic respiratory diseases such as asthma, CF, BPD and COPD leading to improvement of symptoms and of ability to exercise as a form of self-directed rehabilitation.
- 1.4 Understand and implement alternatives to hospitalizations for patients with asthma, CF, BPD and COPD exacerbations.
- 1.5 Understand dyspnea mechanisms and control; generate interventions that are better adapted and personalized.
- 1.6 Develop and implement exercise programs; recognize the principles, benefits, indications; select and evaluate patients.
- 1.7 Understand and implement oxygen therapy and other modalities for exercise.
- 1.8 Understand and implement energy conservation concepts, and interventions regarding fatigue.

- 1.9 Understand psychosocial aspects; interventions allowing necessary psychosocial adjustments and better coping with the chronic illness.
- 1.10 Understand and implement end of life and palliative care.
- 1.11 Understand and implement education and teaching of elderly patients; learning principles and barriers, the different steps to ensure adequate patient education; recognizing the knowledge and competence needs of professionals educating patients.
- 1.12 Understand and describe indications, contraindications, benefits and risks for the various pulmonary rehabilitation modalities (concentric training, eccentric training, neuroelectrical stimulation, etc).
- 1.13 Acquire and demonstrate proficiency in evaluating a rehabilitation program and starting a program according to various possible structures: in-hospital, ambulatory, at-home; become familiar with the different evaluation tools so as to select appropriate ones.
- 1.14 Appreciate the role and importance of research in the advancement of knowledge and treatment.

2. COMMUNICATOR

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 2.1 Demonstrate clear and compassionate oral communication with patients and family members, respecting patients' values, cultural and educational backgrounds.
- 2.2 Promote and support informed decision making by patients and family members with respect to investigation and treatment decisions, including suitable discussion of end-of-life care.
- 2.3 Provide effective oral case presentations and discussions with physicians and other professionals sharing patients' care.
- 2.4 Provide effective written and/or dictated consultation notes to referring physicians and other providers, which clearly outline an accurate, problem-oriented assessment of the patient's condition, and a corresponding, evidence-based management plan.
- 2.5 Provide effective oral presentations at didactic teaching conferences.
- 2.6 Provide effective oral and written communication of research findings.

3. COLLABORATOR

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 3.1 Understand the role of the multidisciplinary team in chronic respiratory disease care, including health professionals from other disciplines.
- 3.2 Participate effectively in shared management of respiratory chronic disease patients with other physicians and health professionals.
- 3.4 Demonstrate respect for all physician and non-physician team members, professionals in clinical settings (CLSC, respiratory care at home, hospital) and academics (physical education, physiotherapy, nutrition, etc) at all times.

4. MANAGER

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 4.1 Demonstrate knowledge of the cost of disease management, self-management, pulmonary rehabilitation and palliative care.
- 4.2 Implement a cost-effective approach to the use of novel procedures when appropriate.
- 4.3 Set appropriate priorities in evaluating and referring patients.

5. HEALTH ADVOCATE

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 5.1 Advocate for his/her patients in planning investigation and treatment in a resource-limited setting.
- 5.2 Advocate for his/her patients by identifying relevant studies or clinical trials in which they may choose to participate.
- 5.3 Advocate for his/her patients by participating in activities that raise public awareness of, and support for, chronic respiratory disease patients.

6. SCHOLAR

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 6.1 Demonstrate awareness of the importance of self-evaluation and continuing education; willingness to teach others, including students, residents and other health professionals.
- 6.2 Incorporate up-to-date scientific evidence in his/her patient management, including investigation and treatment.
- 6.3 Demonstrate that he/she can access the medical literature effectively, in order to address a clinical management question.
- 6.4 Demonstrate critical review skills for clinical and epidemiologic research articles.
- 6.5 Demonstrate self-directed learning, and an ongoing commitment to scholarship and intellectual growth.
- 6.6 Attend relevant scientific and educational conferences, both locally and elsewhere.
- 6.7 Demonstrate the ability to present an effective, informative educational conference.

7. PROFESSIONAL

The fellow in cardiorespiratory rehabilitation and integrated care will:

- 7.1 Demonstrate appropriate and ethical professional attitudes and behaviors at all times.
- 7.2 Demonstrate and communicate respect and understanding of patients, family members, colleagues, other team members, and all health care personnel at all times.