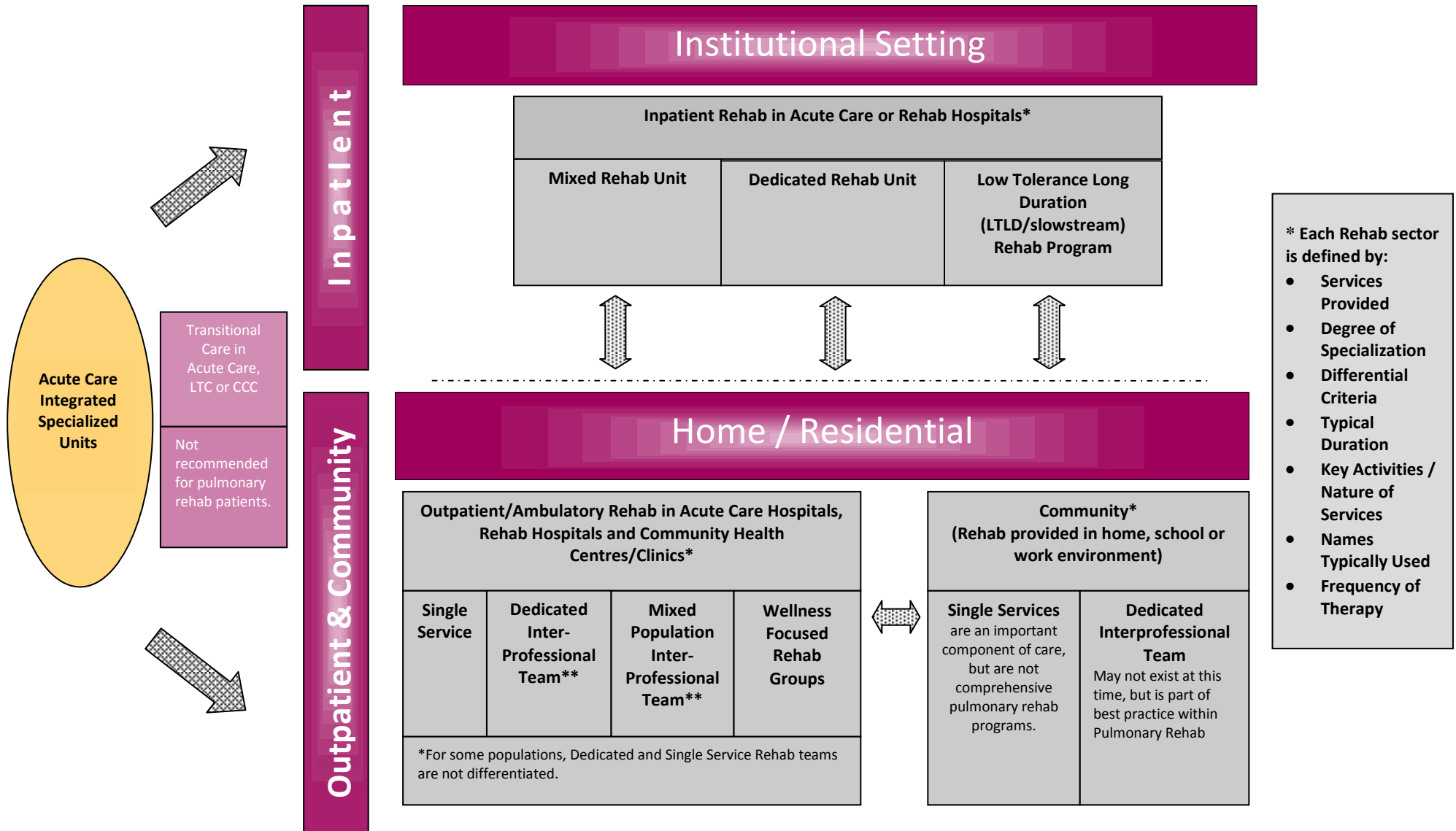


Pulmonary Rehab Definition Framework

Evidence indicates that a comprehensive pulmonary rehab program is multifactorial^{1,2} and includes the following components: an interprofessional team which provides education,^{3,4} exercise⁵, and psychosocial support.^{6,7,8} As such, programs that are focused on wellness and single services are core components of pulmonary rehab, but must exist in tandem in order to yield positive results.



Pulmonary Rehab Definition Framework

GUIDING PRINCIPLES

Objective:

I. Increase clarity and consistency in the forms of cognitive and physical rehab across the continuum by:

1. Clarifying the distinctions between and across institutional and community-based rehab programs.
2. Classifying programs with consistent terminology.
3. Describing the key features of institutional and community-based rehabilitation programs based on the services provided, the degree of specialization, differential/critical criteria, duration, and the primary focus of the rehab program/service.

II. Inform planning and performance measurement through the development of standards for rehab program components against which rehab programs can be benchmarked.

Guiding Principles:

1. The Rehab Definitions Conceptual Framework presupposes the World Health Organization's definition of "rehabilitation" as "*a progressive, dynamic, goal-oriented and often time-limited process, which enables an individual with an impairment to identify and reach his/her optimal mental, physical, cognitive and/or social functional level. Rehabilitation provides opportunities for the individual, the family and the community to accommodate a limitation or loss of function and aims to facilitate social integration and independence.*"
2. The Rehab Definitions Conceptual Framework refers to cognitive and physical forms of rehabilitation. This includes Acquired Brain Injury behavioural programs and geriatric psychiatry. The rehab conceptual diagram refers to acute care, inpatient rehab programs within institutional settings and outpatient and community-based rehab for clients residing at home or in a residential setting. The use of bi-directional arrows in the schematic reflects the flow of patients and continuity of care across these settings.
3. The framework identifies key features of rehab programs based on evidence-based practices where available to define the "gold standard" of rehab care (e.g. rehab beds are clustered together). In most instances these key features reflect current practices; however, some organizations may be required to implement changes within their organizations to achieve consistency with the criteria set out in the framework.
4. The term "patient" is used for individuals receiving rehabilitation in a hospital setting. The term "client" is used to refer to individuals receiving community rehab services.

Pulmonary Rehab Definition Framework

5. The Rehab Definitions Conceptual Framework uses categories that have been defined based on the rehab needs of the patient and the typical services provided. Length of stay or the type of facility in which the rehab is provided is not considered essential to defining rehab sectors.
6. The Rehab Definitions Conceptual Framework is based on the assumption that clients participating in the programs described have rehab potential and rehab goals. For criteria regarding rehab potential, medical stability and rehab readiness for inpatient rehab, refer to the GTA Rehab Network's Inpatient Rehab Referral Guidelines (www.gtarehabnetwork.ca).
7. The framework uses terminology that is consistent with the MOHTLC guidelines for inpatient rehabilitation beds and can be applied to community and ambulatory service delivery.
8. While it is appreciated that much of rehabilitation occurs in third-party payer assessment centres or private clinics, the framework refers to publicly-funded rehabilitation. However, it is hoped that the framework will promote consistency in standards of care and equitable access across all rehab programs.
9. Input from healthcare providers representing acute care, regional rehab centres and community-based organizations that provide adult (including geriatric) and paediatric rehab has been obtained to validate the Rehab Definitions Conceptual Framework.
10. The Pulmonary Rehab Definitions Framework will be reviewed every 3 years to incorporate any newly emerging research in pulmonary rehab.

Pulmonary Rehab Definition Framework

GLOSSARY OF REHAB COMPONENT TERMS

Dedicated Interprofessional Team (Community): Rehab provided in the home, school or work environment by an interprofessional team using a coordinated, integrated approach for specific rehab populations or to reduce the impact of a particular disability.

Dedicated Interprofessional Team (Outpatient/Ambulatory Rehab): Outpatient rehab provided by an interprofessional team with expertise in the treatment and assessment of a particular patient population. Outpatient/Ambulatory dedicated interprofessional teams are located in acute care hospitals, rehab hospitals and community health centres/clinics. They provide rehab to patients who require more than one rehab service and a coordinated rehab approach.

Dedicated Rehab Unit: An inpatient rehab unit located in acute care and rehab hospitals that serves a single patient population group and provides intensive rehabilitation. Some units may specialize in more than one diagnosis in related populations (e.g. Cardio/Respiratory, Orthopaedic/Amputation, etc.). A dedicated rehab unit is suitable for individuals who require 24-hour hospital care and who are in need of an interprofessional rehab program using a coordinated rehab approach.

Low Tolerance Long Duration (LTLD/slowstream) Rehab: Located in acute care and rehab hospitals, LTLD rehab is suitable for individuals in need of an interprofessional rehab program who may also have a chronic/complex condition requiring 24-hour hospital care over an extended period of time and who are expected to benefit from a slower-paced rehab program for a longer duration than is offered in dedicated or mixed rehab units.

Mixed Population Interprofessional Team (Outpatient/Ambulatory Rehab): Outpatient rehab that is provided by an interprofessional team, which typically assesses and treats patients from a variety of patient population groups. Outpatient/Ambulatory mixed population interprofessional teams are located in acute care hospitals, rehab hospitals and community health centres/clinics. They provide rehab to patients who require more than one rehab service and a coordinated rehab approach.

Mixed Rehab Unit: Formerly referred to as a General inpatient rehab unit, this type of unit is located in acute care and rehab hospitals, provides intensive rehabilitation and serves a variety of patient population groups. The mixed rehab unit is suitable for individuals who require 24-hour hospital care and are in need of an interprofessional rehab program using a coordinated approach.

Single Service (Community): Individual rehab services that are usually provided through Community Care Access Centres. Single rehab services are suitable for individuals who are in need of one or more rehabilitation services in single specialty area(s)/profession(s) provided in the home,

Pulmonary Rehab Definition Framework

school or work environment. Although clients may receive more than one service, a coordinated approach is not used as rehab providers typically work as individual providers. However, some communication with other health providers may occur on an as-needed basis.

Single Service (Outpatient/Ambulatory Rehab): An outpatient rehab service located in acute care hospitals, rehab hospitals and community health centres/clinics that is suitable for individuals who are in need of an outpatient rehabilitation service in a single specialty area/profession. Clients may receive more than one rehab service; however, the services are not provided by way of a coordinated rehab approach. Services may include assessment only or assessment and treatment. Services may be provided during a one-time visit or multiple visits.

Wellness Focused Rehab Groups: These groups are provided in an outpatient/ambulatory setting and led by an individual rehab provider or team or rehab specialists to enhance an individual's ability to cope with a particular disability or impairment. These time-limited groups are publicly-funded although a small fee may be charged for materials.

Pulmonary Rehab Definition Framework

ACUTE CARE	
Integrated Specialized Units	
Names Typically Used	<ul style="list-style-type: none"> ● Intensive Care Unit ● Pulmonary Medicine Unit/Cardio-Thoracic Unit ● General Medicine Unit
Services Provided	<ul style="list-style-type: none"> ● The unit is staffed by a dedicated interprofessional team. ● Core team consists of: physician (MD), nursing (RN), physiotherapy (PT), respiratory therapy (RT), occupational therapy (OT), clinician/case coordinators, pharmacy and/or others ● Consult services include: speech language pathology (SLP), clinical dietitian (RD), social work (SW) and palliative care team (as needed) ● Other consult services are available to address co-morbidities and medical complexities of patients (e.g. Geriatric services). ● Assessment of rehabilitation needs
Specialization vs. Non-Specialization	<ul style="list-style-type: none"> ● The interprofessional team has knowledge and expertise in pulmonary medicine⁹. ● Specialized Cardio-Thoracic care / Pulmonary Medicine
Differential Criteria	<ul style="list-style-type: none"> ● Admission criteria include patients with acute exacerbation of pulmonary disease (COPD). ● Patient shows some level of rehabilitation potential or requires rehabilitative assessment. ● Patient should have identifiable goals as determined by patient/team
Typical Duration	<ul style="list-style-type: none"> ● Until extubated and transferred to step down unit, or shows evidence of no rehab potential
Key Activities / Nature of Service	<ul style="list-style-type: none"> ● Focused multi-disciplinary assessment to determine breadth of deficits and rehab intensity required ● Education^{10,11,12} to patient and family is initiated regarding function and rehab goals ● An individualized exercise program is provided¹³ which includes: <ul style="list-style-type: none"> ○ Aerobic training (may be ambulation) ○ Strengthening ○ Flexibility (may include simple range of motion exercises) ● Other components to the rehab program may include: Clearance of secretions, Breathing control, Oxygen titration ● Activities of Daily Living (ADL) training is provided to maximize independence ● Discharge planning is initiated and referrals made to appropriate community/hospital based programs.

Pulmonary Rehab Definition Framework

TRANSITIONAL CARE

**NOT APPROPRIATE FOR PATIENTS WITH A PRIMARY PULMONARY DIAGNOSIS WHO ARE DEEMED APPROPRIATE FOR REHAB.
PATIENTS SHOULD BE TRANSFERRED DIRECTLY FROM ACUTE CARE TO INPATIENT REHAB/LTLD/COMMUNITY**

Pulmonary Rehab Definition Framework

INPATIENT REHAB						
Dedicated Interprofessional Team within Mixed Rehab Program in Acute Care and Rehab Hospitals		Dedicated Rehab Program in Acute Care and Rehab Hospitals		Low Tolerance Long Duration Rehab Program in CCC and Rehab Hospitals		
<p>Inpatient Rehab: Suitable for individuals in need of an interdisciplinary rehab program who also require 24-hour hospital care (see Appendix A).</p> <p>Pulmonary patients suitable for this type of program are those whose symptoms of dyspnea are significantly impairing functional independence; those who are newly diagnosed and have not been through pulmonary rehab prior to this hospitalization¹⁴</p>		<p>Inpatient Rehab: Suitable for individuals in need of an interdisciplinary rehab program and who also require 24-hour hospital care (see Appendix A).</p> <p>Pulmonary patients suitable for this type of program are those whose symptoms of dyspnea are significantly impairing functional independence; those who are newly diagnosed and have not been through pulmonary rehab prior to this hospitalization¹⁵</p>		<p>LTLD Rehab: Suitable for individuals in need of an interdisciplinary rehab program who may also have a chronic/complex condition requiring 24-hour hospital care over an extended period of time and who are expected to benefit from low intensity, long duration rehab (see Appendix A).</p> <p>Pulmonary rehab patients suitable for this type of program generally have multiple medical, social and rehabilitation needs that dictate the need for longer hospitalization and slow paced rehabilitation.¹⁶</p>		
Names Typically Used	<ul style="list-style-type: none"> • General Rehabilitation or Medical Rehabilitation 		<ul style="list-style-type: none"> • Specialized Pulmonary Rehabilitation Program 		<ul style="list-style-type: none"> • LTLD rehab; Slow-Stream; Slow-to-Recover 	
Services Provided	<ul style="list-style-type: none"> • Intensive rehab program¹⁷. • Program provides a minimum of 90 minutes of therapy per day for 5-6 days per week¹⁸ • Amount of therapy provided is flexible, allowing for the fact that newly admitted patients may have a lower tolerance for rehab until their status improves. • A dedicated interdisciplinary team provides rehab. • Staffing ratios should support the 		<ul style="list-style-type: none"> • Intensive pulmonary rehab program¹⁹. • Program provides a minimum of 90 minutes of therapy per day for 5-6 days per week.²⁰ • The program accepts those who may, initially, be able to tolerate less than 90 min of rehab but whose tolerance is expected to increase to at least 90min/day • An interdisciplinary team provides rehab. • Staffing ratios should support the recommended amount of therapy • Core team* includes: respirologist, nurse, physiotherapist, respiratory therapist, occupational 		<ul style="list-style-type: none"> • Low to moderately intensive rehab program²¹. • Program provides a minimum of 30 minutes of therapy per session at least twice per day, for up to 5 hours of therapy per week goals. • An interdisciplinary team provides rehab. • Staffing ratios should support the recommended amount of therapy • Core team* typically includes: respirologist, nurse, physiotherapist, respiratory therapist, occupational therapist <ul style="list-style-type: none"> ◦ At a minimum, the core team must consist of a physician plus two or more 	

Pulmonary Rehab Definition Framework

INPATIENT REHAB		
Dedicated Interprofessional Team within Mixed Rehab Program in Acute Care and Rehab Hospitals	Dedicated Rehab Program in Acute Care and Rehab Hospitals	Low Tolerance Long Duration Rehab Program in CCC and Rehab Hospitals
<p>recommended amount of therapy</p> <ul style="list-style-type: none"> ● Core team* includes: respirologist, nurse, physiotherapist, respiratory therapist, occupational therapist ● Consultation is available from: social worker, care coordinator, therapeutic recreationist, pharmacist, clinical dietitian, speech language pathologist, psychologist, palliative care and chaplain/ pastoral care provider. ● Services may be supplemented by OTA/PTA/CDA/PSW[±] under the direct supervision of respective health care professionals (e.g., OT directing OTA, PT directing PTA, etc.) as legislated by their respective colleges. Assistants can provide support to the therapists, but the overall care is directed by the regulated health professional and the OTA/PTA/CDA/PSW usually does not exceed 50% of therapy time) ● Where a client has more than one rehab need, a mechanism is in place to 	<p>therapist</p> <ul style="list-style-type: none"> ● Consultation is available from: social worker, care coordinator, therapeutic recreationist, pharmacist, clinical dietitian, speech language pathologist, psychologist, palliative care and chaplain/ pastoral care provider. ● Services may be supplemented by OTA/PTA/CDA/PSW[±] under the direct supervision of respective health care professionals (e.g., OT directing OTA, PT directing PTA, etc.) as legislated by their respective colleges. Assistants can provide support to the therapists, but the overall care is directed by the regulated health professional and the OTA/PTA/CDA/PSW usually does not exceed 50% of therapy time) ● Where a client has more than one rehab need, a mechanism is in place to cross consult to another rehab service to acquire expertise in other rehab areas 	<p>of the other professionals listed (i.e. 2 of nurse, physiotherapist, occupational therapist, respiratory therapist).</p> <ul style="list-style-type: none"> ○ Those who are listed but not available as part of the core team must be available for consultation. ● Consultation services may be available from multiple professionals, including the pharmacist, psychologist, psychiatrist speech-language pathologist, care coordinator, palliative care and clinical dietitian <ul style="list-style-type: none"> ○ At a minimum, consultative services must be available from a respirologist and a social worker. ● Services may be supplemented by OTA/PTA/CDA/PSW[±] under the direct supervision of respective health care professionals (e.g., OT directing OTA, PT directing PTA, etc.) as legislated by their respective colleges. Assistants can provide support to the therapists, but the overall care is directed by the regulated health professional and the OTA/PTA/CDA/PSW usually does not exceed 50% of therapy time)

*Core team refers to the team members who are essential, actively involved in the assessment and treatment (if required) of respiratory patients on the unit and who participate regularly in team rounds

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*Core team refers to the team members who are essential, actively involved in the assessment and treatment (if required) of respiratory patients on the unit and who participate regularly in team rounds

± OTA=Occupational Therapy Assistant; PTA=Physiotherapy Assistant; CDA=Communications Disorders Assistant; PSW=Personal Support Worker

± OTA=Occupational Therapy Assistant; PTA=Physiotherapy Assistant; CDA=Communications Disorders Assistant; PSW=Personal Support Worker

Pulmonary Rehab Definition Framework

INPATIENT REHAB					
Dedicated Interprofessional Team within Mixed Rehab Program in Acute Care and Rehab Hospitals		Dedicated Rehab Program in Acute Care and Rehab Hospitals		Low Tolerance Long Duration Rehab Program in CCC and Rehab Hospitals	
		cross consult to another rehab service to acquire expertise in other rehab areas		<ul style="list-style-type: none"> Where a client has more than one rehab need, a mechanism is in place to cross consult to another rehab service to acquire expertise in other rehab areas Comprehensive discharge planning is provided to transition patients to specialized services and community support programs as needed. 	
Specialization vs. Non-Specialization		<ul style="list-style-type: none"> Specialized Respiratory Therapy Program The Interprofessional team has expertise in pulmonary rehab care²³ and access to education/training to develop and maintain necessary skills and knowledge base Typically specialized in persons whose primary diagnosis is pulmonary and whose dysfunction secondary to that diagnosis is significant One or more member of the core team should fulfill the role of COPD Educator 		<ul style="list-style-type: none"> Typically specialized in persons with severe disability who also have a demonstrated lack of resources and social supports resulting in need for longer course of rehabilitative care Typically degenerative disorders are excluded Rehab providers, including physiotherapists and respiratory therapists should have demonstrated competency in assessing and treating patients with primary pulmonary diagnosis²⁴ The program is able to address, either through direct intervention or through consultative services, related co-morbidities and complexities in the pulmonary rehab population (e.g. Diabetes, Stroke) 	
Differentiating Criteria		<ul style="list-style-type: none"> Referral Criteria: <ul style="list-style-type: none"> Function significantly limited by dyspnea Primary diagnosis is pulmonary Designated interdisciplinary team, including Respirologist, with specialization in pulmonary 		<ul style="list-style-type: none"> Patients require a slower-paced rehab program for a longer duration to maximize rehab potential Coordinated team approach with regular team meetings/conferences. The expectation is that patients will return to 	

Pulmonary Rehab Definition Framework

INPATIENT REHAB		
Dedicated Interprofessional Team within Mixed Rehab Program in Acute Care and Rehab Hospitals	Dedicated Rehab Program in Acute Care and Rehab Hospitals	Low Tolerance Long Duration Rehab Program in CCC and Rehab Hospitals
<ul style="list-style-type: none"> ● Coordinated interprofessional team, including Respiriologist ● Coordinated team approach with regular team meetings/conferences. ● Geographically clustered beds ● Expectation is that patients will either be discharged home or to their preferred accommodation in the community or to a specialized outpatient respiratory rehabilitation program. ● A mechanism is in place to transfer patients to a slower paced rehab program if they are no longer appropriate for this level (i.e. LTLD program). A mechanism is in place to transfer patients to a slower paced rehab program if they are no longer appropriate for this level (i.e. LTLD program). ● Mechanisms for communication of goals and plans between patients/families/caregivers and team are established. 	<p>rehab.</p> <ul style="list-style-type: none"> ● Coordinated team approach with regular team meetings/conferences. ● Expectation is that patients will either be discharged home or to their preferred accommodation in the community with follow up ● A mechanism is in place to transfer patients to a slower paced rehab program if they are no longer appropriate for this level (i.e. LTLD program). ● Mechanisms for communication of goals and plans between patients/families/caregivers and team are established. 	<p>home or a community residential setting following LTLD rehab.</p> <ul style="list-style-type: none"> ● Patients may be exempt from co-payment when located in CCC while the realistic goal for them remains returning to the community. ● A mechanism is in place to transfer patients to a higher level of rehab if their needs and abilities change during their stay in the rehab program. ● Mechanisms for communication of goals and plans between patients/families/caregivers and team are established.
<p>Typical Duration</p>	<ul style="list-style-type: none"> ● 4-6 weeks²⁵; however, the length of the stay is not constrained by a maximum duration, but is linked to the patients needs and goals 	<ul style="list-style-type: none"> ● 4-6 weeks²⁶; however, the length of the stay is not constrained by a maximum duration, but is linked to the patients needs and goals
<p>Key Activities / Nature of Service</p>	<ul style="list-style-type: none"> ● Rehabilitation programs are suitable for individuals requiring an intensive interdisciplinary rehab program. 	<ul style="list-style-type: none"> ● Specialized rehabilitation programs are suitable for individuals requiring an intensive interdisciplinary rehab program.
	<ul style="list-style-type: none"> ● LTLT rehab is typically offered in complex continuing care; however, it may also be available in rehab hospitals (e.g. Slow to recover) and Long- 	

Pulmonary Rehab Definition Framework

INPATIENT REHAB		
Dedicated Interprofessional Team within Mixed Rehab Program in Acute Care and Rehab Hospitals	Dedicated Rehab Program in Acute Care and Rehab Hospitals	Low Tolerance Long Duration Rehab Program in CCC and Rehab Hospitals
<ul style="list-style-type: none"> ● Program components²⁷ include: aerobic exercise²⁸ (walking, may include treadmill, cycling), strength training^{29,30} (upper and lower extremity), breathing exercises³¹, training in ADLs, self management training³², energy conservation, nutritional support³³, psychosocial support^{34,35,36}, smoking cessation^{37,38}, home exercise prescription^{39,40} ● Patient education^{41,42} in the form of ‘self-management’ – includes disease specific education, counselling, behaviour modification, symptom monitoring and management, and end of life decision making⁴³. ● Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are involved throughout the rehab process: <ul style="list-style-type: none"> ▶ Families/caregivers, with patient consent, are included in discussions around key treatment decisions ▶ Families (and patients) are encouraged to participate in team meetings 	<ul style="list-style-type: none"> ● Program components⁴⁴ include: aerobic exercise⁴⁵ (walking, may include treadmill, cycling), strength training^{46,47} (upper and lower extremity), breathing exercises⁴⁸, training in ADLs, self management training⁴⁹, energy conservation, nutritional support⁵⁰, psychosocial support^{51,52,53}, smoking cessation^{54,55}, home exercise prescription^{56,57} ● Patient education^{58,59} in the form of ‘self-management’ – includes disease specific education, counselling, behaviour modification, symptom monitoring and management, and end of life decision making⁶⁰. ● Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are involved throughout the rehab process: <ul style="list-style-type: none"> ▶ Families/caregivers, with patient consent, are included in discussions around key treatment decisions ▶ Families (and patients) are encouraged to participate in team meetings 	<p>Term Care.</p> <ul style="list-style-type: none"> ● LTLD rehab is suitable for individuals in need of an interdisciplinary rehab program, who require an extended period of rehab to maximize recovery. ● Patients may also have a chronic and a complex condition that requires care over an extended period of time and who are expected to benefit from low intensity, long duration rehabilitation ● Program components⁶¹ include: aerobic exercise⁶² (walking, may include treadmill, cycling), strength training (upper and lower extremity), breathing exercises⁶³, training in ADLs, self management training⁶⁴, energy conservation, nutritional support⁶⁵, psychosocial support^{66,67,68}, smoking cessation^{69,70}, home exercise prescription^{71,72}. ● Patient education^{73,74} in the form of ‘self-management’ – includes disease specific education, counselling, behaviour modification, symptom monitoring and management, and end of life decision making⁷⁵. ● Family/significant others are recognized as key to enabling client function and attainment of rehab goals and are involved throughout the rehab process: <ul style="list-style-type: none"> ▶ Families/caregivers, with patient consent, are included in discussions around key treatment decisions ▶ Families (and patients) are encouraged to participate in team meetings

Pulmonary Rehab Definition Framework

OUTPATIENT / AMBULATORY REHABILITATION		
<p>Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</p> <p style="text-align: center;">Specialized Pulmonary Rehabilitation Program</p>	<p>Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics</p> <p>Suitable for individuals in need of an interdisciplinary rehab program. Program is often group therapy, with pulmonary rehab patients clustered together</p>	
<p>Evidence indicates that a comprehensive pulmonary rehab program is multifactorial^{76,77} and includes the following components: an interprofessional team which provides education^{78,79}, exercise⁸⁰, and psychosocial support^{81,82,83}. As such, programs that are focused on wellness and single services are core components of pulmonary rehab, but must exist in tandem in order to yield positive results.</p>		
<p>Names Typically Used</p>	<ul style="list-style-type: none"> ● Specialized Pulmonary Rehabilitation Program 	<p>Day Treatment Program, General Rehab Day Hospital Program</p>
<p>Services Provided</p>	<ul style="list-style-type: none"> ● Program provides a minimum of 1-2 hours of therapy per session (including education, exercise and psychological support)⁸⁴. ● Care is provided by a dedicated interdisciplinary team. ● The core team typically includes the following: physician, nurse, physiotherapist, occupational therapist and respiratory therapist. <ul style="list-style-type: none"> ○ At a minimum, the core team must consist of a physician plus two or more of the other professionals listed (i.e. 2 of nurse, physiotherapist, occupational therapist, respiratory therapist). ○ Those who are listed but not available as part of the core team must be available for consultation. ● Consultation services may be available from multiple professionals, including the pharmacist, psychologist, psychiatrist, care coordinator, palliative care and clinical dietitian <ul style="list-style-type: none"> ○ At a minimum, consultative services must be available from a respirologist and a social worker. ● One or more member of the core team should fulfill the role of COPD Educator 	<ul style="list-style-type: none"> ● Program provides a minimum of 45 - 60 minutes of therapy per session⁸⁵. ● Care is provided by a dedicated interdisciplinary team. ● The core team typically includes the following: physician, nurse, physiotherapist, occupational therapist and respiratory therapist. <ul style="list-style-type: none"> ○ At a minimum, the core team must consist of a physician plus two or more of the other professionals listed (i.e. 2 of nurse, physiotherapist, occupational therapist, respiratory therapist). ○ Those who are listed but not available as part of the core team must be available for consultation. ● Consultation services may be available from multiple professionals, including pharmacist, psychologist, psychiatrist, care coordinator, palliative care and clinical dietitian <ul style="list-style-type: none"> ○ At a minimum, consultative services must be available from a Respirologist and a social worker. ● One or more member of the core team should fulfill the role of COPD Educator

Pulmonary Rehab Definition Framework

OUTPATIENT / AMBULATORY REHABILITATION		
Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics		Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics
Specialization vs. Non-Specialization	<ul style="list-style-type: none"> ● These programs are specialized to provide rehab for the purpose of one or more of the following: <ol style="list-style-type: none"> 1. to reduce respiratory symptoms (dyspnea and fatigue) 2. Improve functional mobility and performance of ADL 3. Improve HRQL and reduce anxiety and depression symptoms 4. Reduce unscheduled emergency room visits and hospital admissions 	<ul style="list-style-type: none"> ● Non-specialized. Rehab providers assess/treat patients from a variety of diagnostic population groups ● Health care professionals working with Pulmonary Rehab population should have specialized training in pulmonary rehabilitation⁸⁶
Differentiating Criteria	<ul style="list-style-type: none"> ● Suitable for patients already residing in the community who no longer need 24-hour hospital care. ● Dedicated interdisciplinary team, including physician, with specialization respiratory rehab population⁸⁷ group served by the program. ● Co-ordinated services with regular weekly team meetings and conferences. ● Typically, these are community patients who are responsible for arranging their own transportation to and from their outpatient appointments. 	<ul style="list-style-type: none"> ● Suitable for patients already residing in the community who no longer need 24-hour hospital care. ● Coordinated services with regular team meetings/conferences at least once a month to discuss the care plan. ● Typically, these are community patients who are responsible for arranging their own transportation to and from their outpatient appointments.
Typical Duration	<ul style="list-style-type: none"> ● Program should be a minimum of 20 supervised rehab sessions^{88,89} over 6-8 weeks⁹⁰. ● During the entire duration of rehab, there must be a minimum of 3 exercise sessions per week; at least 2 of these sessions must be supervised^{91,92}. ● A longer program is more likely to obtain more enduring results⁹³. 	<ul style="list-style-type: none"> ● Program should be a minimum of 20 supervised rehab sessions^{94,95} over 6-8 weeks⁹⁶. ● During the entire duration of rehab, there must be a minimum of 3 exercise sessions per week; at least 2 of these sessions must be supervised^{97,98}. ● A longer program is more likely to obtain more enduring results.⁹⁹
Key Activities/ Nature of Service	<ul style="list-style-type: none"> ● The core components of pulmonary rehabilitation¹⁰⁰ include education^{101,102}, exercise¹⁰³ and psychological support^{104,105,106}, specifically the following should be included in the program. <ol style="list-style-type: none"> 1. Patient assessment of functional and respiratory status 2. Supervised exercise program¹⁰⁷ 3. Self management program¹⁰⁸ 4. Smoking cessation if currently smoking^{109,110} 5. Medication use, management and education 6. Implementation of a home treatment program^{111,112} 7. Follow-up¹¹³ 	<ul style="list-style-type: none"> ● Programs are time limited and goal directed. ● The core components of pulmonary rehabilitation¹¹⁵ include: education^{116,117}, exercise¹¹⁸ and psychological support^{119,120,121}, specifically the following should be included in the program. <ol style="list-style-type: none"> 1. Patient assessment of functional and respiratory status 2. Supervised exercise program¹²² 3. Self management program¹²³ 4. Smoking cessation if currently smoking^{124,125}

Pulmonary Rehab Definition Framework

OUTPATIENT / AMBULATORY REHABILITATION	
Dedicated Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics	Mixed Population Interprofessional Team in Acute Care Hospitals, Rehab Hospitals and Community Health Centres/Clinics
<ul style="list-style-type: none"> • The program could be delivered in an individual/group format. • Assessments¹¹⁴ include one of each of the following: a disease specific quality of life measure (e.g. CRQ) and a standardized field walk test (e.g. 6 minute walk test). 	<ol style="list-style-type: none"> 5. Medication use, management and education 6. Implementation of a home treatment program^{126,127} 7. Follow-up¹²⁸ <ul style="list-style-type: none"> • The program could be delivered in an individual/group format. • Assessments¹²⁹ include one of each of the following: a disease specific quality of life measure (e.g. CRQ) and a standardized field walk test (e.g. 6 minute walk test).

Pulmonary Rehab Definition Framework

COMMUNITY (Rehab is provided to client in home environment)	
Names Typically Used	Community Care Access Centre (CCAC), Family Health Teams, Other publicly funded programs (e.g. Lung Association)
Services Provided	<ul style="list-style-type: none"> ● An interdisciplinary team provides rehab ● The core team typically includes the following: physician, nurse, physiotherapist, occupational therapist and respiratory therapist. <ul style="list-style-type: none"> ◦ At a minimum, the core team consists of a physician plus two or more of the other professionals listed (i.e. 2 of nurse, physiotherapist, occupational therapist, respiratory therapist). ◦ Those who are listed but not available as part of the core team must be available for consultation. ● Consultation services may be available from multiple professionals, including the pharmacist, psychologist, psychiatrist, care coordinator, palliative care and clinical dietitian <ul style="list-style-type: none"> ◦ At a minimum, consultative services must be available from a respirologist and a social worker. ● CCACs provide in-home rehab services through contracts with Provider Agencies and manage clients through a Case Management collaborative model.
Specialization vs. Non-Specialization	<ul style="list-style-type: none"> ● Health professionals should have experience in respiratory care/pulmonary rehab.
Differential Criteria	<ul style="list-style-type: none"> ● Service is provided in the environment that is most appropriate (e.g. client is home-bound; services are focused on community re-integration).
Typical Duration	<ul style="list-style-type: none"> ● Varies depending on service provided. The duration of rehab is not constrained by a maximum duration but is linked to the client's needs and goals.
Key Activities/ Nature of Service	<ul style="list-style-type: none"> ● Assessments, treatment, discharge planning to community activities. ● The core components of pulmonary rehabilitation¹³⁰ include education^{131,132}, exercise¹³³ and psychological support^{134,135,136}, specifically the following should be included in the program. <ol style="list-style-type: none"> 1. Patient assessment of functional and respiratory status 2. Supervised exercise program¹³⁷ 3. Self management program^{138,139} 4. Medication use, management and education 5. Implementation of a home treatment program^{140,141} 6. Home modifications to promote safety and mobility 7. Follow up as needed¹⁴² ● Assessments¹⁴³ include one of each of the following: a disease specific quality of life measure (e.g. CRQ) and a standardized field walk test (e.g. 6 minute walk test).

APPENDIX A – INDICATIONS FOR PULMONARY REHABILITATION

The indications for Pulmonary Rehab include the presence of respiratory impairment potentially responsive to the techniques available. Such impairment may be manifested as:

1. dyspnea experienced during rest or exertion
2. hypoxemia, hypercapnia
3. reduced exercise tolerance or a decline in the patient's ability to perform activities of daily living
4. an unexpected deterioration or worsening symptoms against a background of long-standing dyspnea and a reduced but stable exercise tolerance level
5. the need for surgical intervention (pre- and postoperative lung resection, transplantation, or volume reduction)
6. chronic respiratory failure and the need to initiate mechanical ventilation
7. ventilator dependence
8. increasing need for acute care intervention, including emergency room visits, hospitalizations, and unscheduled physician office visits

Referral Criteria may include the following specific measures:

1. FEV₁ less than or equal to 65% of predicted value
2. FVC less than or equal to 65% of predicted value
3. Diffusing capacity for carbon monoxide adjusted for haemoglobin less than or equal to 65% of predicted value
4. Resting hypoxemia (SpO₂ of 90% or less)
5. Exercise testing demonstrating hypoxemia (SpO₂ of 90% or less) *

* AARC Clinical Practice Guidelines for Pulmonary Rehabilitation. Reprinted from the May 2002 issue of *Respiratory Care*. [2002;37(5):617–625]

Pulmonary Rehab Definition Framework

ACKNOWLEDGEMENTS

The GTA Rehab Network would like to acknowledge the members of the Pulmonary Rehab Definitions Task Group for their contribution to the development of the Rehab Definitions Framework:

Dr. Roger Goldstein, Respiriologist, West Park Healthcare Centre (Chair)

Dr. Dina Brooks, Physiotherapist, West Park Healthcare Centre

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Raj Kohli, Respiratory Therapist, West Park Healthcare Centre

Maria Lahey, Physiotherapist, Trillium Health Centre

Carole Madeley, Respiratory Therapist, The Lung Association

Shirley Price, Occupational Therapist, West Park Healthcare Centre

Krisztina Weinacht, Physiotherapist, Toronto East General Hospital

Charissa Levy, Executive Director, GTA Rehab Network

Sarah Dimmock, Project Coordinator/Planner, GTA Rehab Network

Hannah Seo, Project Coordinator/Planner, GTA Rehab Network

ENDNOTES

¹ *"The components of pulmonary rehabilitation vary widely from program to program but a comprehensive pulmonary rehabilitation program includes exercise training, nutrition counseling, and education."*

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³ *There is level B evidence that "patient education alone does not improve exercise performance or lung function..., but it can play a role in improving skills, ability to cope with illness, and health status." There is also level B evidence that, "education also improves patient response to exacerbations." Note that in this review, level B evidence indicates sources of evidence which are randomized controlled trials (RCTs) with a limited body of data.*

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Pulmonary Rehab Definition Framework

⁵⁵ *“Smoking cessation is the single most effective intervention to reduce the risk of developing COPD and to slow its progression (level of evidence: 1A)...Quitting advice given to smokers...increases cessation.”*

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⁵⁶ *There is B level evidence that “benefit does wane after a rehabilitation program ends, but if exercise training is maintained at home the patient’s health status remains above pre-rehabilitation levels .” Note that B level evidence indicates sources of data which are randomized controlled trials with a limited body of data.*

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⁵⁷ *“Follow-up was considered an integral part of rehabilitation in 49 (82%) facilities and consisted of reassessment, exercise and support....There is a need for follow-up and maintenance.”*

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⁵⁸ *“Patient education is more than simply providing didactic information. It involves a combination of teaching, counseling, and behavior modification techniques to promote self-management skills and self-efficacy. Patient education should also integrate end-of-life decision making into the overall treatment strategy.”*

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⁵⁹ *“Ideally, educational messages should be incorporated into all aspects of care for COPD and may take place in many settings...Education should be tailored to the needs and environment of the individual patient, interactive, directed at improving quality of life, simple to follow, practical, and appropriate to the intellectual and social skills of the patient and the caregivers. The topics that seem most appropriate for an education program include: smoking cessation; basic information about COPD and pathophysiology of the disease; general approach to therapy and specific aspects of medical treatment; self-management skills; strategies to help minimize dyspnea; advice about when to seek help; self-management and decision-making during exacerbations; and advance directives and end-of-life issues.”*

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⁶³ *There is level A evidence that pulmonary rehabilitation in COPD “reduces the perceived intensity of breathlessness” and level C evidence that “respiratory muscle training is beneficial, especially when combined with general exercise training.” Note that in this review level A evidence indicates sources of data which includes randomized controlled trials (RCTs) with a rich body of data and level C evidence indicates sources of data which are nonrandomized trials and observational studies.*

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⁶⁵ *A review of literature reports that, “nutritional state is an important determinant of symptoms, disability, and prognosis in COPD...Health care workers should identify and correct the reasons for reduced calorie intake in COPD patients.”...Present evidence suggests that nutritional supplementation alone may not be a sufficient strategy. Increased calorie intake is best accompanied by exercise regimes that have a nonspecific anabolic action, and there is some evidence this also helps even in those patients without severe nutritional depletion.”*

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⁶⁶ *There is level A evidence that pulmonary rehabilitation in COPD “reduces anxiety and depression associated with COPD” and there is level C evidence that “psychosocial intervention is helpful” as part of pulmonary rehabilitation in COPD. Note that in this review level A evidence indicates sources of data which are randomized controlled trials (RCTs) with a rich body of data and level C evidence indicates sources of data which are nonrandomized trials and observational studies.*

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⁶⁷ *Authors of a study interviewed 32 patients with COPD regarding symptoms they associated with the onset of an acute exacerbation and found that “Mood disturbances, including anxiety, panic, stress or depression, were frequently noted (44%).”*

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⁶⁸ A prospective study of 416 patients across 5 countries analyzed the risk of rehospitalisation in patients with COPD. Authors found that 60.6% of patients had a re-admission within 12 months and reported that, “the risk of rehospitalisation was also increased in subjects with anxiety...and in subjects with low health status....In patients with low health status, anxiety is an important risk factor for rehospitalisation.”

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⁷³ “Patient education is more than simply providing didactic information. It involves a combination of teaching, counseling, and behavior modification techniques to promote self-management skills and self-efficacy. Patient education should also integrate end-of-life decision making into the overall treatment strategy.”

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⁷⁶ *“The components of pulmonary rehabilitation vary widely from program to program but a comprehensive pulmonary rehabilitation program includes exercise training, nutrition counseling, and education.”*

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⁸⁹ "20 sessions of comprehensive pulmonary rehabilitation has been demonstrated to show considerably more improvement in multiple outcomes than 10 sessions." The practice guideline states that "A minimum of 20 sessions should be given at least three times a week to achieve physiologic benefits; twice-weekly supervised plus one unsupervised home session may also be acceptable."

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⁹⁰ There is level B evidence that, "the minimum length of an effective rehabilitation program is 6 weeks; the longer the program continues, the more effective the results." Note that in this review level B evidence indicates sources of data which are randomized controlled trials with a limited body of data.

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⁹² A randomized trial of 100 patients comparing the outcomes for patients in an exercise training program vs. usual medical care found that there were "significant and clinically relevant changes in 6-minute walking distance, maximal exercise performance, peripheral and respiratory muscle strength, and quality of life" and that "most of these effects persisted 18 months after starting the program." Note that, "patients assigned to the training program were invited to attend the outpatient sessions three times a week in the first 3 months; during the subsequent 3 months, training frequency was reduced to twice weekly. Each session had a duration of 1.5 hours. Training items were cycling, treadmill walking, stair climbing, and peripheral muscle training."

Troosters, T., Gosselink, R., and Decramer, M. (2000). Short and long term effects of outpatient rehabilitation in patients with chronic obstructive pulmonary disease: A randomized trial. *American Journal of Medicine*, 109, 207-212.

⁹³ "Many rehabilitation programs feature three directly supervised sessions per week, each lasting 3 to 4 hours. The duration of most programs ranges from 6 to 12 weeks, although some studies suggest that longer programs may provide additional and more durable benefits."

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¹¹³ *A review of literature indicates that items to assess at a follow-up visit 4-6 weeks after discharge from hospital for exacerbations of COPD include: "ability to cope in usual environment," "measurement of FEV₁," "reassessment of inhaler technique," "understanding of recommended treatment regimen" and "need for long-term oxygen therapy and/or home nebulizer (for patients with Stage IV: Very Severe COPD)."*

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¹¹⁴ *"Baseline and outcome assessments of each participant in a pulmonary rehabilitation program should be made to quantify individual gains and target areas for improvements."*

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¹¹⁶ *There is level B evidence that “patient education alone does not improve exercise performance or lung function..., but it can play a role in improving skills, ability to cope with illness, and health status.” There is also level B evidence that, “education also improves patient response to exacerbations.” Note that in this review, level B evidence indicates sources of evidence which are randomized controlled trials (RCTs) with a limited body of data.*

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¹¹⁷ *“Patient education is more than simply providing didactic information. It involves a combination of teaching, counseling, and behavior modification techniques to promote self-management skills and self-efficacy. Patient education should also integrate end-of-life decision making into the overall treatment strategy.”*

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¹¹⁸ *There is level A evidence that “All COPD patients benefit from exercise training programs, improving with respect to both exercise tolerance and symptoms of dyspnea and fatigue....Data suggest that these benefits can be sustained even after a single pulmonary rehabilitation program. Benefit does wane after a rehabilitation program ends, but if exercise training is maintained at home the patient’s health status remains above pre-rehabilitation levels (Evidence B)....benefits have been reported from rehabilitation programs conducted in inpatient, outpatient and home settings.” Note that in this review level B evidence indicates sources of data that are randomized controlled trials with a limited body of evidence.*

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¹¹⁹ *There is level A evidence that pulmonary rehabilitation in COPD “reduces anxiety and depression associated with COPD” and there is level C evidence that “psychosocial intervention is helpful” as part of pulmonary rehabilitation in COPD. Note that in this review level A evidence indicates sources of data which are randomized controlled trials (RCTs) with a rich body of data and level C evidence indicates sources of data which are nonrandomized trials and observational studies.*

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¹²⁰ *Authors of a study interviewed 32 patients with COPD regarding symptoms they associated with the onset of an acute exacerbation and found that “Mood disturbances, including anxiety, panic, stress or depression, were frequently noted (44%).”*

Costi, S., Brooks, D., and Goldstein, R.S. (2006). Perspectives that influence action plans for chronic obstructive pulmonary disease. *Canadian Respiratory Journal*, 13(7), 362-368.

¹²¹ *A prospective study of 416 patients across 5 countries analyzed the risk of rehospitalisation in patients with COPD. Authors found that 60.6% of patients had a re-admission within 12 months and reported that, “the risk of rehospitalisation was also increased in subjects with anxiety...and in subjects with low health status....In patients with low health status, anxiety is an important risk factor for rehospitalisation.”*

Gudmundsson, G., Gislason, T., Janson, C., Lindberg, E., Hallin, R., Ulrik, C.S., Brondum, E., Nieminen, M.M., Aine, T., and Bakke, P. (2005). Risk factors for rehospitalisation in COPD: Role of health status, anxiety and depression. *European Respiratory Journal*, 26(3), 414-419.

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¹²² *There is level A evidence that pulmonary rehabilitation in COPD “improves exercise capacity” and that “all COPD patients benefit from exercise training programs, improving with respect to both exercise tolerance and symptoms of dyspnea and fatigue....Data suggest that these benefits can be sustained even after a single pulmonary rehabilitation program. Benefit does wane after a rehabilitation program ends, but if exercise training is maintained at home the patient’s health status remains above pre-rehabilitation levels (Evidence B)...benefits have been reported from rehabilitation programs conducted in inpatient, outpatient and home settings.” Note that in this review level B evidence indicates sources of data that are randomized controlled trials with a limited body of evidence.*

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¹²³ *A multicentre, randomized clinical trial of 191 patients from 7 different hospitals identified that “a continuum of self-management for COPD patients provided by a trained health professional can significantly reduce the utilization of health care services and improve health status.”*

Bourbeau, J., Julien, M., Maltais, F., Rouleau, M., Beupre, A., Begin, R. et al. (2003). Reduction of hospital utilization in patients with chronic obstructive pulmonary disease. *Archives of Internal Medicine*, 163, 585-591.

¹²⁴ *There is level A evidence that “smoking cessation is the single most effective-and cost effective-intervention in most people to reduce the risk of developing COPD and stop its progression....All smokers-including those who may be at risk for COPD as well as those who already have the disease-should be offered the most intensive smoking cessation intervention feasible. Even a brief (3-minute) period of counseling to urge a smoker to quit results in smoking cessation rates of 5-10%. At the very least, this should be done for every smoke at every health care provider visit.” Note that in this review, level A evidence indicates sources of evidence that are randomized controlled trials (RCTs) with a rich body of data.*

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¹²⁵ *“Smoking cessation is the single most effective intervention to reduce the risk of developing COPD and to slow its progression (level of evidence: 1A)...Quitting advice given to smokers...increases cessation.”*

O’Donnell, D.E., Aaron, S., Bourbeau, J., et al. (2007). Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease -2007 update. *Canadian Respiratory Journal*, 14(Suppl B), 5B-32B.

¹²⁶ *There is B level evidence that “benefit does wane after a rehabilitation program ends, but if exercise training is maintained at home the patient’s health status remains above pre-rehabilitation levels .” Note that B level evidence indicates sources of data which are randomized controlled trials with a limited body of data.*

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¹²⁷ *“Follow-up was considered an integral part of rehabilitation in 49 (82%) facilities and consisted of reassessment, exercise and support....There is a need for follow-up and maintenance.”*

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