



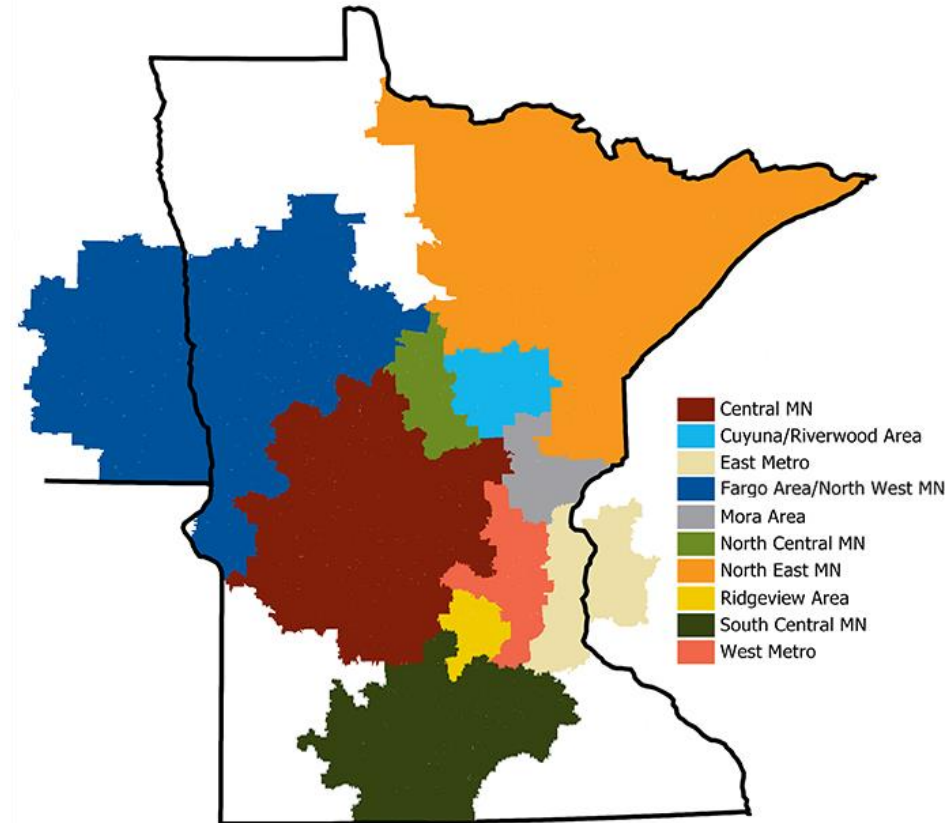
Minnesota Hospital Association

## Lake Superior Quality Innovation Network

MICHIGAN | MINNESOTA | WISCONSIN

Stratis Health serves Minnesota as part of  
the Lake Superior Quality Innovation Network.

# COPD Session 5: Pulmonary Rehabilitation



September 19, 2018  
12:00 – 1:00pm

# Coordination of Care Initiative Goals

- Improve quality of care for Medicare beneficiaries who transition among care settings
- Reduce 30-day hospital readmission rates and admission by 20% by 2019
- Increase the number of days at home
- Establish sustainable, transferrable transition practices across the spectrum of care

# COPD Webinar Series

May

- **COPD 101**
- Cheryl Sasse, American Lung Association,
- View the [webinar recording](#) from 5/22/18

June

- **Home Oxygen Therapy**
- Shelly Klein, Handi Medical
- View the [webinar recording](#) from 6/27/18

July

- **Inpatient COPD Care: How Adherence to Evidence-Based Care Decreased Cost and Reduced Readmissions**
- Becky Anderson, RRT, Sanford Medical Center; View the [webinar recording](#) from 7/25/18

August

- **Care in Advanced COPD: Prognosis, Planning and Palliation**
- Jeff Rubins, M.D., Hennepin Healthcare.
- [View the recording](#) from 8/29/18.

September

- **Therapy for COPD - Pulmonary Rehabilitation**
- September 19 from 12 – 1 p.m featuring Jessica Oman, RT from CentraCare Health. View the Recording [here](#) .

# Polling Question 1

Who is on the call (select one)?

- Clinic
- Community Partner
- Hospital
- Home Health Care
- Patient/Family Advocate
- Public Health
- Skilled Nursing Facility
- Transitional Care Unit
- Other

# Polling Question 2

What state do you reside in?

- Kansas
- Minnesota
- North Dakota
- Nebraska
- South Dakota
- Wisconsin
- Other

---

# PULMONARY REHABILITATION

JESSICA OMAN, RT

# OBJECTIVES

---

History of Pulmonary Rehab

What is Pulmonary Rehab?

Benefits and outcomes of Pulmonary Rehab

Barriers to participate in Pulmonary Rehab

Future of Pulmonary Rehab

# HISTORY OF PULMONARY REHAB

---

Dr. Alvan Barach wrote in a paper back in 1952:

“Two patients with pulmonary emphysema were noted to have improvement during walking, without dyspnea, while in a progressive exercise program; like a training program for athletes”.

Dr. Barach understood the intervention was necessary for rehabilitation of the COPD patients.

\*Respiratory Care-September 2008 Vol 53 No 9



# HISTORY OF PULMONARY REHAB

---

It would be about another 40 years before the benefits of Pulmonary Rehab were established by another well known Pulmonologist – Dr. Thomas Petty.

In late 1960's, Dr. Petty created a standardized out-patient pulmonary rehab program.



# HISTORY OF PULMONARY REHAB

---

In the 1980s, the American Thoracic Society issued an official statement for Pulmonary Rehab. Today their definitions reads:

“Pulmonary rehabilitation is a comprehensive intervention based on a thorough patient assessment, followed by patient tailored therapies that include, but are not limited to: exercise training, education, and behavior change. Designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviors.”

# NATIONAL EMPHYSEMA TREATMENT TRIAL

---

NETT started in 1996 and ended in 2005.

They looked at pulmonary rehab with LVRS.

***Study objectives:*** Pulmonary rehabilitation is an established treatment in patients with chronic lung disease but is not widely utilized. Most trials have been conducted in single centers. The National Emphysema Treatment Trial (NETT) provided an opportunity to evaluate pulmonary rehabilitation in a large cohort of patients who were treated in centers throughout the United States.

This study was sponsored by National Heart, Lung and Blood Institute (NHLBI).

\*Clinicaltrials.gov

\*CHEST / 128 / 6 / DECEMBER, 2005

# NETT TRAIL

---

**Conclusions:** The NETT experience demonstrates the effectiveness of pulmonary rehabilitation in patients with severe emphysema who were treated in a national cross-section of programs. Pulmonary rehabilitation plays an important role in preparing and selecting patients for surgical interventions such as, LVRS. (*CHEST* 2005; 128:3799–3809)

Around 30% of the enrolled patients did not want the surgical “feeling better” with PR. But, there was still no national coverage, no defined billing codes and not well regulated unless the local Medicare carriers directed. Not everyone was able to attend pulmonary rehab.

\*Clinicaltrials.gov

\*CHEST / 128 / 6 / DECEMBER, 2005

## SOME SUPPORT DURING THIS TIME

---

Around 2001, the Federal Registry developed three respiratory therapy codes: G0237, G0238 and G0239, with the intent for a respiratory therapist or another specially trained health professional to bill for services; incident to a physician services (outpatient rehabilitation in a hospital or comprehensive outpatient facility).

\*Federal Register

\*AACVPR reimbursement updates

# NEW LAW FOR PULMONARY REHAB IN 2008

---

**Federal Register** / Vol. 74, No. 226 / Wednesday,  
November 25, 2009 / Rules and Regulations

## **§ 410.47 Pulmonary Rehabilitation Program conditions for coverage**

**As of 2010, a new code was created by CMS: G0424**  
(with life time limit of 72 visits. “KX” modifier to be added  
after the 36<sup>th</sup> visit).

## COMPONENTS INCLUDED IN PULMONARY REHAB FOR CONDITIONS OF COVERAGE

---

- ✓ Physician-prescribed exercise
- ✓ Education/training
- ✓ Psychosocial assessment
- ✓ Individualized treatment plan

---

This new code (G0424) was a comprehensive bundled code for all services provided in the pulmonary rehab program and for patients with a diagnosis of “moderate to very severe COPD”.



# DIAGNOSTIC MEDICAL TESTING

---

Breathing test: Simple spirometry or complete pulmonary function testing with pre and post bronchodilator response.

# COPD DIAGNOSIS (G0424)

---

## **Airflow obstruction as staged by GOLD guidelines:**

All spirometry values are post bronchodilator values.

- **Moderated- $FEV1/FVC < 0.70$ ,  $50\% \leq FEV1 < 80\%$  predicted**
- **Severe-  $FEV1/FVC < .70$ ,  $30\% \leq FEV1 < 50\%$  predicted**
- **Very Severe- $FEV1/FVC < 0.70$ ,  $FEV1 < 30\%$  predicted**

\*[www.goldcopd.org](http://www.goldcopd.org)

## NON-COPD DIAGNOSIS (G0237,G0238, G0239)

---

- ✓ Must be a chronic lung condition.
- ✓ A medical necessity that is reasonable and may include need for pulmonary rehab services, i.e.:
  - Persistent symptoms despite medical therapy
  - Functional limitations
  - Quality of life impairment
  - Increased healthcare utilization

# NON-COPD DIAGNOSIS CODES

---

**G0237:** Therapeutic procedures to increase strength and endurance of respiratory muscles, face-to-face, one-on-one, and each 15 minutes (includes monitoring).

**G0238:** Therapeutic procedures to improve respiratory function, other than ones described by G0237, face to face, one-on-one, and each 15 minutes (includes monitoring).

**G0239:** Therapeutic procedures to improve respiratory function, two or more patients treated during the same period, and face-to-face.

\*Federal register

\*AACVPR reimbursement updates

# ENROLLMENT INTO PULMONARY REHAB

---

A physician referral is needed for individuals that have a chronic lung disease or condition.

## **Benefits of enrolling:**

- To improve a patient's quality of life
- Decrease symptoms
- Ability to function better in daily life
- Increase exercise tolerance
- Manage anxiety and depressions of shortness of breath

## CHRONIC LUNG DISEASES AND CONDITIONS MAY INCLUDE:

---

- Chronic Obstructive Lung Disease (COPD)
- Emphysema
- chronic bronchitis
- Bronchiectasis
- Sarcoidosis
- Pulmonary hypertension
- Pulmonary fibrosis
- Interstitial lung disease
- Lung cancer-lung cancer surgery,
- Lung volume reduction surgery
- Lung transplant (pre and post)

---

# GUIDELINES FOR PULMONARY REHABILITATION PROGRAMS

FOURTH EDITION

**AACVPR**  
American Association of Cardiovascular  
and Pulmonary Rehabilitation  
*Promoting Health & Preventing Disease*

©2018

# INTERDISCIPLINARY TEAM

---

**Medical Director**

**Pharmacists**

**OT / PT**

**Dietitians**

**Spiritual Care/Psychosocial aspect**

**Respiratory Therapists**

**Exercise Physiologists**

**And other healthcare members**



# INITIAL VISIT TO PULMONARY REHAB

---

- ✓ Create an Individualized Treatment Plan (ITP)
- ✓ Physician prescribed exercise
- ✓ Patient history
- ✓ Medications: inhaled and oxygen therapy
- ✓ Assessment of quality of life (CAT), PHQ9, shortness of breath (MMRC or SOBQ), and nutrition.
- ✓ Six minute walk test

# INDIVIDUALIZED TREATMENT PLAN

---

ITP is a written plan, established, reviewed and signed by a physician every 30 days, and will include the following:

- Individual's diagnosis
- Type
- Amount
- Frequency and duration of the items and services under the plan

# OUTCOMES OF PULMONARY REHAB

---

- Functional status/exercise capacity
- Six minute walk test
- Shuttle walk test and endurance shuttle walk test

# OUTCOMES IN PULMONARY REHAB

---

## Dyspnea measures:

- Modified Medical Research Council (MMRC)
- Borg CR 10 Scale
- University of San Diego Shortness of Breath Questionnaire (SOBQ)

# OUTCOMES OF PULMONARY REHAB

---

Health related quality of life:

- St. George's Respiratory Questionnaire (SGRQ)\*
- Chronic Respiratory Disease Questionnaire (CRQ)\*
- COPD Assessment Test (CAT)
- Dartmouth Primary Care Cooperative (COOP)\*

# OUTCOMES OF PULMONARY REHAB

---

Psychosocial assessment: Written evaluation of an individual's mental and emotional functioning and is related to the individual's rehabilitation or respiratory condition.

Patient Health Questionnaire (PHQ9)

Beck Depression Inventory (BDI-2)\*

Psychosocial Risk Factor Survey (PRFS)\*

## OTHER OUTCOMES

---

**Other outcomes as indicated by the patient's needs:** Nutrition support, pharmacy support, psychosocial support, and any other needs.

This can be face-to-face within the pulmonary rehab program or PCP to refer patient for more support.

# COMPLETION OF PULMONARY REHAB

---

## Discharge:

- ✓ Review of patient's long term goals
- ✓ Questionnaires: Quality of Life, PHQ9 and Shortness of Breath
- ✓ Six Minute Walk Test
- ✓ Discharge Summary



# PROGRESSION OF PULMONARY REHAB

---

- Most pulmonary rehab programs are two days a week with education and exercise.
- Each billed session, must have some exercise included in the 6-8 weeks.
- There is some increased benefit of attending pulmonary rehab for longer than 8 weeks.
- Goals set by patient and pulmonary rehab staff to be reviewed every 30 days and signed by physician.

# OUTCOME ASSESSMENTS

---

Individual patient outcomes and pulmonary rehab program outcomes:

The following information is derived from patients who have completed the program and whose discharge date is within the above selected date range.

% Gender	Mean Age	Range
Male	31.8	70
Female	68.2	73
UnSpecified	0	

% Race	
American Indian or Alaskan Native	0
Asian	0
Black or African-American	0
Ethnic category not listed	0
Ethnic category unknown or not given	0
Native Hawaiian or Pacific Islander	0
Non-white Hispanic or Latino ethnicity	0
White	100

% Diagnostic categories	
Alpha 1 antitrypsin deficiency	4.5
Asthma	36.4
Bronchiectasis	18.2
Chest wall abnormality (kyphosis / scoliosis)	0
Chronic Bronchitis	0
Chronic Obstructive Pulmonary Disease	31.8
Cystic Fibrosis	0
Emphysema	0
Hypoventilation due to Obesity	0
Idiopathic pulmonary fibrosis	13.6
Interstitial Lung Disease	0
Lung Cancer	0
Lung Transplant	0
LVRS – Endobronchial	0
LVRS – endobronchial	0
LVRS – Surgical	0
Neuromuscular lung disease (ALS, post polio syndrome)	0
Pulmonary Fibrosis	9.1
Pulmonary Hypertension/Cor Pulmonale	4.5
Sarcoidosis	0
Other	0

% Comorbidities	
AIDS	0
Anxiety	22.7
Cerebrovascular Disease	9.1
Chronic Obstructive Pulmonary disease	40.9
Chronic Pain Syndromes	0
Chronic Renal Disease	18.2
Connective Tissue Disease	0
Coronary Heart Disease (excluding previous MI)	22.7
Dementia	0
Depression	22.7
Diabetes mellitus	27.3
Gastroesophageal Reflux Disease	54.5
History of Heart Failure	18.2
Hypertension	63.6
Insomnia	0
Liver Disease (Moderate/Severe)	0
Malignancy	13.6
Metastatic Cancer	0
Neuromuscular disease	4.5
Obstructive sleep apnea	31.8
Osteoarthritis	9.1
Osteoporosis	9.1
Peripheral artery disease	0
Peripheral vascular disease	0
Pneumonia	13.6
Previous myocardial infarction	9.1
Ulcer Disease	0

Sessions Completed	
Mean completed sessions	15
Mean program duration (days)	77
Mean wait time (days)	33



% Tobacco Status (Intake)	
Current (<= 30 days)	4.5
Current status unknown	0.0
Former (>6 Months)	68.2
Never smoker	27.3
Recent (31 days – 6 months)	0.0

The following outcome values represent your programs mean for the associated item unless otherwise noted.

Outcome Measure	Initial	DC	FU	I-DC % Chg	I-FU % Chg	DC-FU % Chg
<b>Clinical</b>						
<b>BMI</b>						
Male	35.0	35.5		↓ 1		
Female	31.5	31.6				
<b>Fat Free Mass Index</b>						
Male	68.0					
Female						
<b>BODE Index</b>						
Male						
Female						
<b>Spirometry</b>						
FEV1-Actual	1.9					
FEV1-Predicted	72.0					
FVC-Actual	2.7					
FVC-Predicted	77.0					
FEV1FVCRatio	0.7					
DLCO-Uncorrected	12.5					
DLCO-Predicted	51.0					
IC-Actual	1.2					
IC-Predicted	60.0					
RV-Predicted						
TLC-Predicted						
ICTLC-Ratio						
RVTLC-Ratio						
FRC-Actual						
FRC-Predicted						
<b>Functional Capacity</b>						
Walk Distance(6Min) - FT	922.3	1059.5		↑ 15		
Walk Distance(6Min) METs	2.3	2.5		↑ 9		
Borg SOB	3.0	2.0		↑ 33		
Max Fatigue	3.0	3.0				
MET mins Per Week						
Steps Per Day						
<b>Quality of Life</b>						
CRQ Fatigue		17.0				
CRQ Emotional Function						
CRQ Dyspnea						
CRQ Mastery						
CRQ Global						
SGRQ Symptoms						
SGRQ Activity						
SGRQ Impact						
SGRQ Global						

SF36 MCS					
QLI Global	21.0	24.0		↗ 14	
Dartmouth COOP					
CAT	17.0	17.0			
<b>Psychosocial</b>					
PHQ-9 Score	6.0	3.0		↗ 50	
CES-D Score					
GDS-15					
GDS-30					
BDI-II					
HADS Depression					
HADS Anxiety					
PRFS Depression					
PRFS Anxiety					
PRFS Hostility					
PRFSocIsolation					
PRFS Distress					
<b>Dyspnea Assessment</b>					
MMRC	2.0	2.0			
SOBQ	45.0	42.0		↗ 7	
BDI					
TDI					
BDI/TDI					
<b>Oxygen Usage</b>					
Nasal Rest Flow Rate	2.3	2.0		↗ 13	
Nasal ADL Flow Rate	3.2	3.8		↘ 19	
Nasal Exercise Flow Rate	3.9	4.9		↘ 26	
Nasal Sleep Flow Rate	2.5	2.5			
Mask Rest Flow Rate					
Mask ADL Flow Rate					
Mask Ex Flow Rate					
Mask Sleep Flow Rate					
<b>Oxygen System</b>					
Gas E cyl	0	18.2	0		
Gas M2	4.5	0	0		
Gas M4	13.6	0	0		
Gas M6	0	0	0		
Liquid	4.5	9.1	0		
Portable oxygen concentrator (POC)	9.1	4.5	0		
Stationary concentrator	0	0	0		

Medications, % prescribed			
Beta Antagonist-Long Acting	88.2	88.2	0.0
Beta Antagonist-Short Acting	94.4	100.0	0.0
Anticholinergics-Long Acting	29.4	29.4	0.0
Anticholinergics-Short Acting	29.4	35.3	0.0
Corticosteroids - Inhaled	76.5	76.5	0.0
Corticosteroids - Oral	11.8	5.9	0.0
# Adverse Events	1		
% Readmissions	18.2		

-  Meets or exceeds goal
-  Short of goal and moving in the wrong direction

## BARRIERS TO ATTENDING PULMONARY REHAB

---

- Location of pulmonary rehab programs
- Transportation
- Illness
- Physician awareness of pulmonary rehab

# FUTURE OF PULMONARY REHAB

---

- ❖ Virtual pulmonary rehab program
- ❖ Telehealth
- ❖ Self guided pulmonary rehab - fitness tracker
- ❖ There's an app for that



# ONGOING SUPPORT FOR PATIENTS & FAMILIES

---

- Local Pulmonary Rehab Support Groups
- ALA and Better Breather Clubs: [www.lung.org](http://www.lung.org)
- Caregivers Support Groups
- United Way
- 211 First Call for Help: 2-1-1
- Well Spouse Association: [www.wellspouse.org](http://www.wellspouse.org)
- Senior LinkAge Line: [www.MinnesotaHelp.info](http://www.MinnesotaHelp.info)  
1-800-333-2433

# HEALTHCARE PROFESSIONAL SUPPORT

---

- American Association of Cardiovascular and Pulmonary Rehab: [www.aacvpr.org](http://www.aacvpr.org)
- American Association for Respiratory Care: [www.aarc.org](http://www.aarc.org)
- American Thoracic Society: [www.thoracic.org](http://www.thoracic.org)
- COPD Foundation: [www.copdfoundation.org](http://www.copdfoundation.org)

# COPD NATIONAL ACTION PLAN FIVE GOALS

---

1. Empower people with COPD, their families and caregivers to recognize and reduce the burden of COPD.
2. Improve the prevention, diagnosis, treatment, and management of COPD by improving the quality of care delivered across the health care continuum.
3. Collect, analyze, report, and disseminate COPD-related public data that drive change and track progress.
4. Increase and sustain research to better understand the prevention, pathogenesis, diagnosis, treatment and management of COPD.
5. Translate national policy, educational, and program recommendation into research and public health care actions.

---

## FAST FACTS:

- ✓ **COPD is a leading cause of death in the U.S.** and fourth leading cause of disability in the U.S.
- ✓ **16 million people have been diagnosed** and millions more have it and don't know it.
- ✓ **56% of COPD cases are in women.**

To learn more, visit [COPD.nih.gov](http://COPD.nih.gov)

QUESTIONS?

---

*Thank  
You*

Jessica Oman, RT  
[omanj@centracare.com](mailto:omanj@centracare.com)

# COPD Webinar Series

## Partners Contact Info

### **Jill Heins-Nesvold, MS**

American Lung Association

651-223-9565

[Jill.Heins@lung.org](mailto:Jill.Heins@lung.org)

### **Janelle Shearer, BSN, MA, CPHQ**

Stratis Health

[jshearer@stratishealth.org](mailto:jshearer@stratishealth.org)

952-853-8553

### **Angie Pokharel, MHS**

Minnesota Hospital Association

[Apokharel@mnhospitals.org](mailto:Apokharel@mnhospitals.org)

651-659-1431