Preventing re-admission with COPD: Transitioning from Acute to Home Care

Course Description

- Frequent re-admission to the hospital for patients with COPD is a national concern and comes with a penalty from CMS if the re-admission occurs within 30 days of discharge.
- Patients with COPD require monitoring beyond the acute care setting and current evidence supports careful monitoring of these patients beyond the acute care setting and the acute exacerbation.
- However, transition from the acute care setting to the home (or outpatient setting) is not always smooth and communication is often lacking.

Course Description

- This course will discuss the problem of readmission and transition of care, and discuss the patient with COPD who is treated in the acute care setting and moves to the home setting.
- Identifying the high re-admission risk COPD patient will be discussed, the medications the patients may be sent home with, and BEST PRACTICE for care in the home and outside the hospital.

Course Objectives

- Upon completion of this course, participants will be able to:
  - Apply the information on COPD diagnosis, prognosis and diagnostic testing and determine risk for readmission and for monitoring in the home or out patient setting.
  - Analyze the degree of impairment in patients with COPD by utilizing appropriate outcome measures to monitor their progress from acute care to home care.
  - Compare the information from cases on patients with COPD and determine best practice for home care programs for each case.
  - Apply information on transition of care issues and determine appropriate documentation and transition practices.

Purpose

- Discuss Relevance to the Health Care System
- Discuss the relevance to Allied Health Therapies
- Discuss what Influence therapy can have

Overview of the problem: Readmission and transition of care issues

COPD Readmission: The Problem

- The Hospital Readmissions Reduction Program (HRRP) penalizes hospitals for 30 day readmission and extended this to COPD in October of 2014.
  - Used claims data from 2006-2010 in 7 states
  - 26.8 million admissions which were 3.5% COPD
  - At 30 days: 20.2% were readmitted to hospital
    - Respiratory related diseases accounted for 50% of readmission (COPD common diagnosis)
  - Patients d/c home without home care more likely to be readmitted for COPD than patients discharged to any post acute care (31% vs 18%)
  - Patients readmitted were more likely to have longer median length of stay (5 vs 4 days) and more co-morbidities

Shah 2015

COPD Readmission: The Problem

- Analysis of billing data in 15 states:
  - All cause 30 day readmission rate 20.5%; 1 in 3 is related to COPD
  - Majority of admissions are due to co-morbidities
    - Co-morbidities include cardiac, renal, GI and concurrent infections
  - Greater COPD exacerbations in areas with lower socio-economic income, African-American ethnicity

COPD Readmission: The Problem

- General Recommendations to decrease readmissions:
  - Improve access to care
  - Improve quality and coordination of care post D/c
    - Assistance with out of pocket costs for prescription medications
    - Improve availability of transportation to appointments
- Programs that reduce unplanned readmissions
  - Use evidence based guidelines
  - Medication reconciliation
  - Promote self management skills and use handoffs during transition

Predictors of Readmission

Retrospective study on 106 patients (Amalakuhan 2011) determined the following predictors:

- Employment status
- BMI
- # previous surgeries
- Albumin level on admission
- Presence of administration of azithromycin/ceftriaxone/moxifloxacin

Predictors of Readmission

Garcia-Ayermmich (Thorax 2003) (344 pts)

- 63% were readmitted at least once (followed 1.1 years)
  - Strong association between usual physical activity and reduced risk of readmission to hospital
    - High level of usual physical activity associated with 46% risk reduction for readmit
  - > or = 3 COPD admissions in year before recruitment into study
  - > or = 3 COPD ER visits
  - Lower FEV1%
  - Lower pO2

Is Frailty a factor? Flint: Circ Heart Fail 2012

- Fried criteria (J Geront A Biol Sci Med Sci 2004)
- Short Physical Performance Battery
- Gait Speed
- Handgrip Strength
- Lee criteria (Circulation 2010)
- Frailty Index- Comprehensive Geriatric Assessment (Jones Am Ger Soc 2004)
- Comprehensive Assessment Frailty (Sundermann Eur J Card Surg 2011)
- Frailty Staging System (Cacciatore Eur J Clin Invest 2005)
- Robinson (Ann Surg 2009)
- Edmonton Frailty Scale (Dasgupta; Arch Gerontol Geriatri 2009)

Fried Criteria for Frailty

- Unintentional weight loss
- Weak handgrip strength
- Self reported exhaustion
- Slow gait speed
- Low self reported physical activity

COPD: diagnosis, diagnostic tests, symptoms, medications and treatment

Definition and Characteristics of COPD

- Characterized by air trapping, bronchospasm, lung hyperinflation, diaphragmatic flattening, and difficulty getting air **OUT** of the lungs
- Commonly a combination of Emphysema, Chronic Bronchitis, Chronic Asthma
- Deterioration of small airways, alveolar walls, and dilation of alveolar spaces

Additional Characteristics of COPD

- Loss of elastic recoil
- May have reduced/absent breath sounds and retain CO2
- Commonly use Accessory Breathing Muscles: SCM, Scalenes, Upper Trapezius
- Poor posture: Forward head, protracted/elevated shoulders, thoracic kyphosis
- Barrel chest
- Often see weak peripheral musculature and impaired balance

COPD Diagnostic Testing

- Pulmonary Function Tests (PFTs)
  - Reduced dynamic expiratory air flow (FVC, FEV1, FEV1/FVC): < 70% predicted
  - Increased Residual Volume (RV): nl RV = 1200 ml
  - Reduced Diffusing Capacity (DLCO)
- Chest Imaging: Chest X-Ray*, CT, MRI
- Arterial Blood Gases (ABGs): PaO_2, $PaCO_2$, pH
- Patient History: Passive/Active smoker, childhood respiratory problems, older age, exposed to poor air quality, poor dentition, poor nutrition, family history, shortness of breath with activity

Initial Symptoms of COPD

- Shortness of breath with some tasks
- Persistent cough
- Productive cough of mucus from lungs, not related to respiratory infection
- Older age: > 40 years old
- Fatigue
- Difficulty breathing and sleeping or talking

Common Medications for Ongoing Treatment of COPD

- Bronchodilators: (Short and Long Acting) Relax smooth muscle surrounding bronchioles
- Inhaled Steroids: Decrease inflammation
- Oral Steroids: Systemic pathway to further decrease inflammation
- IV Steroids: Often given during acute hospitalization for COPD exacerbation
- Oxygen: Patient prescription for Rest, Sleep, Exercise
  - Rest and Sleep may be the same, but not always
  - Rest and Exercise are usually different and determined by Titration Test
- Antibiotics for COPD exacerbation
- Vaccinations (Flu and Pneumonia) are IMPORTANT!

Criteria for Out-Patient Pulmonary Rehabilitation or Therapy

- Muscle weakness
- Poor endurance; de-conditioning
- Balance and ambulation impairments; need for ambulatory assist device for safety
- Posture abnormalities
- Poor breathing mechanics/poor quality cough
- Shortness of breath
- Inability and/or decrease in self-management and/or ADLs
- COPD exacerbation
- Preparation for upcoming surgery
  - Lung Cancer surgery or treatment
  - Chronic thromboembolic pulmonary hypertension (CTEPH) surgery
  - Transplantation (Lung, Heart/Lung, Multiple organ)
  - Prior to other surgery with significant H/O pulmonary disease
- Rehabilitation following surgery

Out-Patient Pulmonary Rehabilitation: Medicare-based treatment for COPD

- Physical Therapists may use bundled billing code for NCD for Pulmonary Rehabilitation (G0424)
- G0424 = 1 unit of PR (at least 31 minutes of exercise, max 2 units/day or 91 minutes of exercise)
- Max of 72 lifetime units; > 36 sessions, must use KX modifier
- May be used by any ***"licensed health care provider"***
  - Stage II,III,IV COPD per GOLD guidelines
  - Medicare insurance coverage: either primary or secondary, regardless of age
  - Documented diagnosis of ***"COPD"*** by MD

PT-based Pulmonary Therapy

- Physical Therapists can treat any patient with a pulmonary diagnosis with functional impairments that qualify them for skilled PT
  - Decreased endurance, deconditioning
  - Muscle weakness (including respiratory muscles)
  - Ambulation or balance impairments
  - Poor airway clearance
  - Poor breathing or cough mechanics
  - Poor balance
- May use CPT codes for “Pulmonary Therapy” for other pulmonary diagnoses; e.g. Pulmonary Fibrosis, Asthma, Chronic Bronchitis, Cystic Fibrosis, etc.
- May use CPT codes for component billing (Evaluation, Physical Performance Testing, Treatment)

Treatment of COPD acute exacerbation in the acute care and home care settings

COPD Case

- 66 year old male diagnosed with COPD, PFTs reveal FEV_1 42%, FEV_1/FVC 56% uses 2L O2 via nasal cannula. Meds: Spiriva, Xopenex in nebulizer. Admitted with acute exacerbation of COPD with ABGs: 7.29/pCO2 72/pO2 56. Placed on BiPAP and given IV Solumedrol.

Acute exacerbations of COPD

- Occur approximately 1.3 times/year
- Defined as an acute change in patient's baseline dyspnea, cough or sputum beyond normal variability and sufficient to warrant a change in therapy (ATS/ERS definition)
- Classified as mild, moderate or severe based upon intensity of medical intervention required to control patient's symptoms
- Presentation may be a transient decline in function and stabilization; or a fatal event
- Exacerbations contribute to high mortality rate

Classifications of exacerbations by severity

Severity of Exacerbation	Description
Mild	Can be controlled with an increase in dosage of regular medications
Moderate	Requires treatment with systemic corticosteroids and antibiotics
Severe	Requires re-eval in Emergency Dept or hospitalization

Treatment of Acute Exacerbation

- Noninvasive positive pressure (CPAP or BiPAP): improves respiratory acidosis, decreases need for intubation, decreases RR, and decreases hospitalization days
- Inhaled bronchodilators/Scheduled Nebulizer treatments: relieve dyspnea and improve exercise tolerance
- Short course of systemic corticosteroids: shortens hospital stay, increases time to subsequent exacerbation, improves FEV1 and hypoxemia
  - Current recommendation is 5 days of treatment
- Low dose steroids are NOT inferior to high dose steroids in decreasing treatment failure
- Oral prednisone is equivalent to IV prednisolone in decreasing risk of treatment failure

Treatment of Acute Exacerbation

- Antibiotics should be used in patients with moderate or severe exacerbation, especially if increased sputum or required hospitalization
- Smoking cessation education: decreases mortality and future exacerbations
- Long term oxygen therapy decreases risk of hospitalization and reduces hospital stay

Management of acute exacerbation

- Two major actions:
  - Relieve acute symptoms
  - Reduce the risk of subsequent exacerbations

Long-Term Management of Acute Exacerbation

- Oxygen therapy with documented hypoxemia
- Medical management
  - Bronchodilators
  - Inhaled, or in some cases, systemic oral glucocorticosteroids
  - Antibiotics and antivirals prn
- Monitored activity: progressive endurance activity and strengthening exercises
- Supportive care/Palliative care
- Ventilatory Support
  - CPAP or BiPAP

Evidence with COPD

- Quadriceps weakness present in COPD Kharbanda Int J COPD 2015, Spruitt Thorax 2003
  - Magnitude of Quad weakness related to severity of COPD
    - Bernard Am J Resp Crit Care 1998
- Quad strength related to prognosis Swallow; Thorax 2007
- 6MWD < 350 meters is associated with increased risk of mortality Cote Eur Resp J 2008
- Determinants of poor 6MWD (ECLIPSE study) Spruitt 2010
  - Severe airflow limitation, amt of emphysema, O2 use, presence of depressive symptoms and mod to severe dyspnea

Assessment of Frailty

- Assess frailty and make a plan for decreasing frailty upon discharge
  - Options: SPPB, Gait speed alone, 6 min walk, or any other option

Role of PT with COPD in acute care

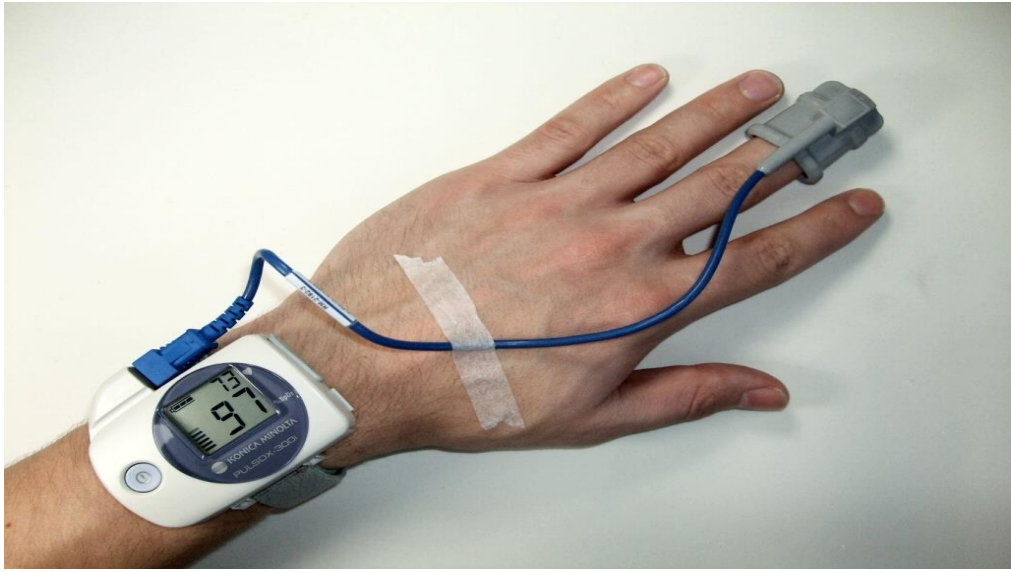
- Combination of endurance and strength training is essential for therapy and improved morbidity and mortality
  - Maximize pulmonary function (optimizing timing of medications) prior to exercise
  - Quad Strengthening
  - UE and LE strengthening
  - Consider high intensity interval training if tolerated
  - If cannot perform high intensity then perform low intensity longer duration activity
  - Supplemental oxygen should be evaluated and maximized with activity

Role of oxygen with COPD

Role of Oxygen

- Oxygen therapy is of central importance in the hospital treatment of exacerbations:
  - Administration for greater than 15 hours per day increases survival and improves hemodynamics, exercise capacity, and general alertness. (British Medical Research Council 1981; NOTT study 1983)
  - The role of oxygen in patients with mild hypoxemia is controversial (LOTT 2016)
  - Oxygen is recommended for patients with Pulmonary Disease (partial arterial oxygen pressure [PaO_2] < 55 mmHg or oxygen saturation < 88%) and the goal of therapy is to preserve the function of vital organs by increasing the $PaO_2 \geq 60$ mmHg and oxygen saturation to ≥ 90

Pulse Oximetry



Problems with Pulse Oximetry:

blood flow, irregular heart rhythm, anemia

Official Guidelines from the Cardiovascular and Pulmonary Section

Supplemental Oxygen Utilization During Physical Therapy Interventions

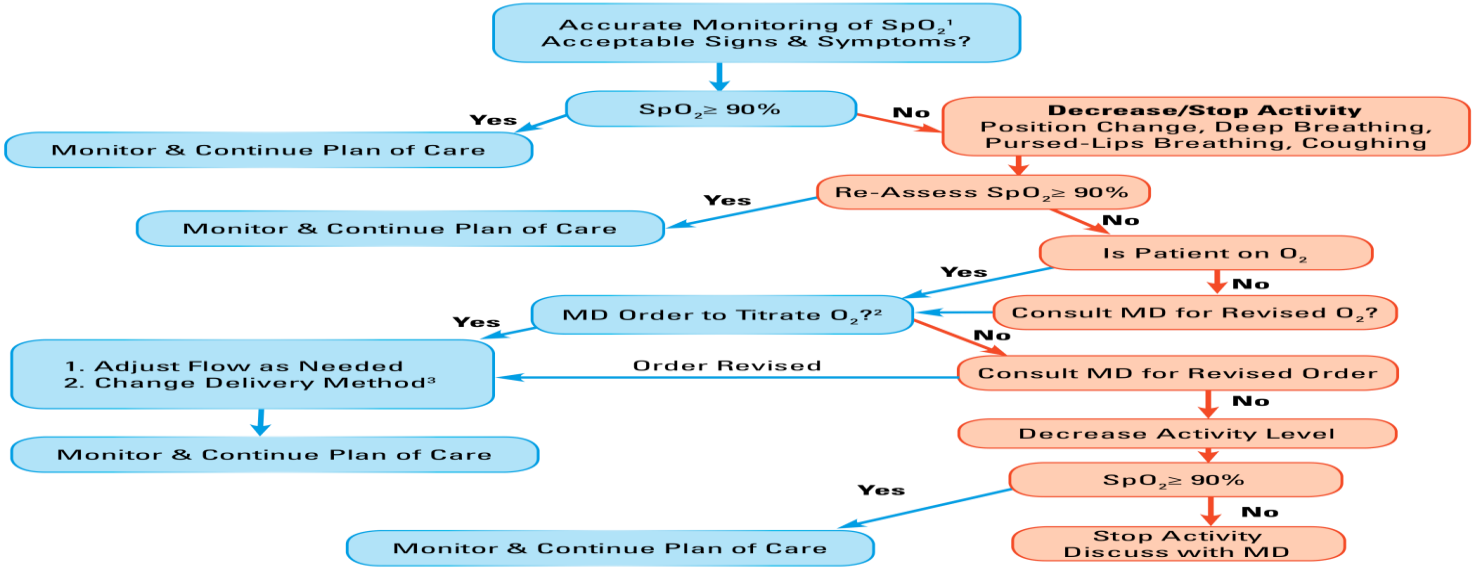
Task Force on Supplemental Oxygen: Ellen Hillegass, PT, EdD, CCS, FAACVPR, FAPTA; Ann Fick, PT, DPT, MS, CCS; Amy Pawlik, PT, DPT, CCS; Rebecca Crouch, PT, DPT, CCS, FAACVPR; Christiane Perme, PT, CCS; Rohini Chandrashekar, PT, DPT, CCS; Susan Butler McNamara, PT, MMSc, CCS; Lawrence P. Cahalin, PT, PhD, CCS

ABSTRACT/SUMMARY

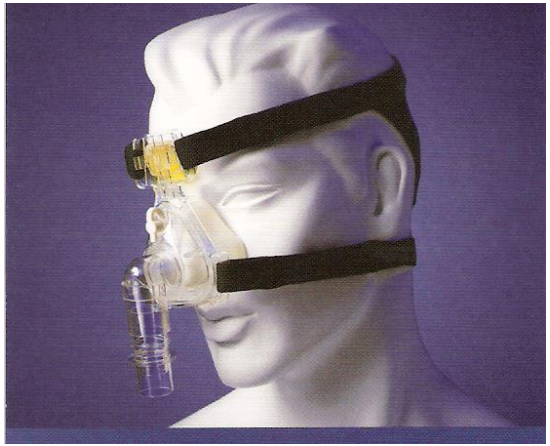
INTRODUCTION AND PURPOSE

Hillegass Cardiopulmonary Journal 2014

OXYGEN ALGORITHM



1. Correct use of oxygen monitoring devices link.
2. Order example:"Titrate oxygen to maintain $SpO_2 \geq$ ___%".
3. Oxygen delivery system needs to be changed to maintain/improve oxygenation.



Additional mechanisms to provide oxygen: Noninvasive Ventilation

CPAP versus BiPAP

- CPAP = continuous positive airway pressure
  - Indications:
    - Sleep apnea, inability to maintain adequate blood gases while sleeping
    - Keep airways and air sacs open longer for better gas exchange
- BiPAP = two levels of pressure…some pressure for inspiration, some pressure on expiration.
  - Indications:
    - For individuals who are weak, and unable to achieve full inspiration
    - Inability to keep airways and air sacs open on expiration
    - Assists to eliminate CO_2

New Oxygen findings: LOTT

- Guidelines on Oxygen:
  - SpO2 88% at rest or less: long term oxygen KNOWN to reduce mortality
  - Less severe hypoxemia unclear
    - Moderate Resting Desaturation: SpO2 89-93% at rest
    - Moderate Exercise-induced Desaturation: SpO2 < 90% for > 10 seconds and > 80% for > 5 min during walk
    - Older individuals did better with O2
    - Poorer quality of life did better with O2
    - Exacerbation within past 3 months: reduction in re-hospitalization if given O2

NEJM Oct 2016

Case: D/C status from Acute Care

- D/C on 3 liters O2 nasal cannula (has oxygen at home),
- 6min walk test results: walked 420 ft with 4 rests. Max drop in SpO2 to 82 with dyspnea 8
- Performed SPPB:
  - Could not stand without use of arms, only could do 3 sit to stands performed in 20 secs
  - Balance: lost balance with semi tandem at 3 secs. No tandem performance
  - Gait speed: 0.48 m/sec.

What about after the acute care admission? What is the transition to home care?

Functional Status and Re-hospitalization Risk

- Patient's with COPD who were non-ambulatory at discharge were more than twice as likely to be re-admitted in 30 days compared to patients able to ambulate 50 feet.
- Risk of re-hospitalization within 30 days increased with:
  - Hx of prior hospitalizations within 12 months
  - New Prescription for Oxygen at Discharge
  - Presence of anemia at admission
  - Chronic Pain
  - Visit to ED or an observational stay within 30 days of DC and prior to a readmission that occurred.
  - Length of stay longer than 13 days

Nguyen et al. Functional status at discharge and 30-day readmission risk in COPD. *Respir Med*. 2015;109(2):238-246.

Physical Activity - Predictor of 30 day Re-hospitalization

- Prospective Study
- Accelerometer continuously tracked PA for 30 days
- Inactivity defined as fewer than 60 minutes per week
- Lower levels of PA (1st week after hospital dc) 6.7 times more likely to be re-hospitalized (all cause)
- < 60 min/day of higher intensity PA = sig predictor of re-hospitalization

- PA decreased over time in those who were eventually readmitted, but, increased in those who were not readmitted
- Increased risk for re-admission noted for patients who did not leave the house in the week preceding the initial hospitalization (functional biomarker)

Chawla et al. Ann Am Thorac Soc. 2014

Re-hospitalization Risk Factors

- Exacerbations are often not fully resolved at the time of discharge
- Disjointed patient management
- Patient training is inadequate
  - Patients may not administer medications correctly
  - They may not have their oxygen or be sufficiently oxygenated
  - They may have resumed smoking
  - Remain sedentary
- Lack of professional follow-up occurs post discharge.
- Equipment in the home is inadequate
  - Oxygen equip is impediment to the patient being active (heavy port tank)
- Lack of a Rapid Action Plan

Tiep B et al. White Paper. COPD Patient 30-Day Hospital Readmission Reduction Program. 2015.

What is a Rapid Action Plan?

- Pts recognize the early signs of an exacerbation (⇧ than usual dyspnea upon the same exertion and change in sputum)
- Call doctor; start steroids, antibiotics, bronchodilators and fluids; adjust oxygen; and engage in pursed lips breathing
- A checklist-procedure should be in place for specific interventions by the patient, physician, ED physician, hospitalist, and COPD coordinator

Tiep B et al.

Signs and Symptoms of COPD

Green Zone = "All Clear" Means: Your symptoms are under control; Continue taking your meds; Continue avoiding environmental triggers and extremes, keep your medical appointments

No New Shortness of Breath, coughing or chest pain No decrease in your ability to maintain your activity level You have no new symptoms

Yellow Zone = "Caution" If you begin to have any of the following signs and symptoms: call your health care provider as soon as you notice any of these changes.

You are coughing more than usual and/or your mucous changes in color, consistency You have increased sputum production You have increased shortness of breath You need more pillows to sleep, you need to sleep sitting up in a chair

Red Zone = "Medical Alert" You need to be evaluated by a physician right away. Call 911
You have unrelieved shortness of breath or increased shortness of breath at rest You have chest pain You have wheezing or chest tightness at rest You have confusion or inability to think clearly

Adapted from LIHN "Managing your COPD" Teaching Guide. LIHN.org

Teach Back

- Did you know that patients forget up to 80% of what you tell them after a visit?
- If they do remember, only half of what they remember is correct.

Steps to Teach Back.

1. Share
2. Ask
3. Listen
4. Share Again
5. Ask Again

Adapted from: AHRQ.gov Guide to Patient and Family Engagement in Primary Care.

Transitional Care Plans

- COPD Coordinator - role is one of educating and training the patient and family to self-monitor and self-manage post discharge (patient-centered care)
- Efficient and effective communication
- Seamless discharge – ensure there is no interruption in the medications and care plan from the hospital to the home
- Home visit (proper equipment, med rec, smoking cessation, cog./family/financial considerations)
- Make distinction between treatment (acute) and prevention (chronic)

Tiep B et al.

Transitional Care Plans

Acute

- Active treatment occurs only during acute exacerbation.
- Time-sensitive treatment is frequently delayed.
- A COPD exacerbation is a dynamic process leading to destruction and airway remodeling.
- Time sensitive (time is tissue)…… When destruction occurs, repair takes longer and tissue may not fully repair.

Chronic

- The chronic component often is not addressed.
- Even when the patient gets pulmonary rehabilitation, it is a short-term solution for a problem that is lifelong, progressive and gets worse over time.
- How patients manage their care at home

Transitional Care Plans

- Active Lifestyle supports physical and mental health, supports airway clearance and helps with early exacerbation recognition and rapid response.
- Proper equipment (MDI spacer, oxygen titrated via pulse oximetry to assure oxygenation as well as mobility, pulse ox for low ox saturation and biofeedback for pursed lip breathing, airway clearance devices)
- Pulmonary Rehab, smoking cessation

Home Health Agency Data - 2016

- **1022 patients** admitted with a primary Dx. of COPD.
- **251** were readmitted within **30 days**.
- COPD re-hospitalization rate for the year **24.5%**
- **71** patients or approximately **28%** of all readmissions are admitted between **8 and 14** days on service.
- Only **30** patients or **11%** admitted in the first 3 days.

- Possible reasons for readmissions?

Medication Non-Adherence

"Adherence is influenced more by patients' perception of their health and medication effectiveness, the presence of depressed mood, and co- morbid illness than by demographic factors or disease severity."

- Low adherence with medications was present in 29.5 % of the patients.

Khdour et al. *Eur J Clin Pharmacol.* Potential risk factors for medication non-adherence in patients with chronic obstructive pulmonary disease (COPD). 2012.

Therapy Interventions for COPD

- Patient education in symptom management during exercise (especially breathlessness)
- Flat walking track (preferably indoor and air-conditioned), resistance bands, hand weights and pulse oximeter
- Assessment: Six-minute walk test (6MWT), dyspnea scale, pulse oximeter, device to measure blood pressure, spirometry, disease-specific quality of life questionnaire
- Results - Improved QOL & functional exercise capacity in intervention group

  Hoffmann TC, Hons B, Maher CG, et al. Prescribing exercise interventions for patients with chronic conditions. *Cmaj*. 2016;188(7):510-518
- *I would also add Functional Testing (balance, STS, TUG, etc.)*

Best Practices

- Patient-Centered Focus
- Medication Management
- Communication and Care Coordination
- Timely Follow-Up by the Health Care Team (including the primary care physician and home health)
- Patient-activated Education and Coaching
- Self Management
  - Oxygen Use
  - Medication Adherence
  - Activity Level
    - Stretching, aerobic, resistance
  - Diet
- Patient Education Materials
- Teach Back

Best Practices in all Care Locations

- Patient Training (use of Teach Back)
    - Meds
    - Mobility
    - Titration of home oxygen
    - Pursed-Lip Breathing
    - Airway clearance
    - Avoidance of smoking, avoidance of exposure to perfumes, dusts, chemicals

Physical Activity Recommendations

- 30 minutes of moderate intensity (MET ≥ 3) at least 5 days per week or at least 20 min of vigorous-intensity physical activity (MET ≥ 6) ≥ 3 days per week or a combination of both.

  Hartman et al. Physical activity recommendations in patients with COPD. *Respiration.* 2014.

- British Thoracic Society
  - Moderate intensity aerobic training @ 60% of peak work rate for 30-60 minutes per session
  - Resistance Training to major muscle groups - Quads - 2-4 sets of 10-15 reps. 48 hours between sessions

  Bolton et al. BTS guideline on pulmonary rehabilitation in adults: accredited by NICE. *Thorax.* 2013.

Physical Activity Vital Sign (PAVS)

Patient Report Measure

1. On average, **how many days a week** do you perform physical activity or exercise?
2. On average, **how many total minutes** of physical activity or exercise do you perform on those days?

   days/week X minutes/day = min/week (PAVS)

3. Describe the **intensity** of your physical activity or exercise:

Light = casual walk Moderate = brisk walk Vigorous = jogging

Sallis RE et al. Call to action on making physical activity assessment and prescription a medical standard of care. *Curr Sports Med Rep*. 2016.

The Physical Activity Vital Sign

1. On average, how many days per week do you engage in moderate to strenuous exercise (like a brisk walk)? _____ days

2. On average, how many minutes do you engage in exercise at this level? _____ minutes

Total minutes per week of physical activity (multiply #1 by #2) _____ **minutes per week**

Using the Physical Activity Vital Sign

- National guidelines recommend 150 minutes per week of moderate intensity physical activity. Moderate intensity activity is usually done where an individual can talk, but cannot "sing". Examples include: *brisk walking, slow biking, general gardening*, and *ballroom dancing*.
- In place of moderate intensity activity, an individual can also complete 75 minutes of vigorous intensity physical activity. Vigorous intensity activity is done at a pace where individuals can no longer talk and are somewhat out of breath. Examples include: *swimming laps, playing singles tennis*, and *fast bicycling*.
- Individuals can also achieve 150 "minutes" through a combination of moderate and vigorous intensity physical activity, with 1 minute of vigorous activity being equal to 2 minutes of moderate activity.
- If activity is done throughout the day, individuals are encouraged to perform activity in "bouts" that are at least 10 minutes in length.
- If your patient is NOT achieving 150 minutes a week of physical activity, advise them to gradually increase either their frequency or duration until they are capable of safely performing 10 minutes bouts of activity and achieve national recommendations.

The Physical Activity Vital Sign – *Other Considerations*

- A comprehensive assessment of physical activity should include promotion of active living throughout the day to reduce sedentary time, as well as muscle strengthening and flexibility exercises as recommended by the Physical Activity Guidelines for Americans.
- If you wish to add a question on muscle strengthening activities, we would recommend the following question:

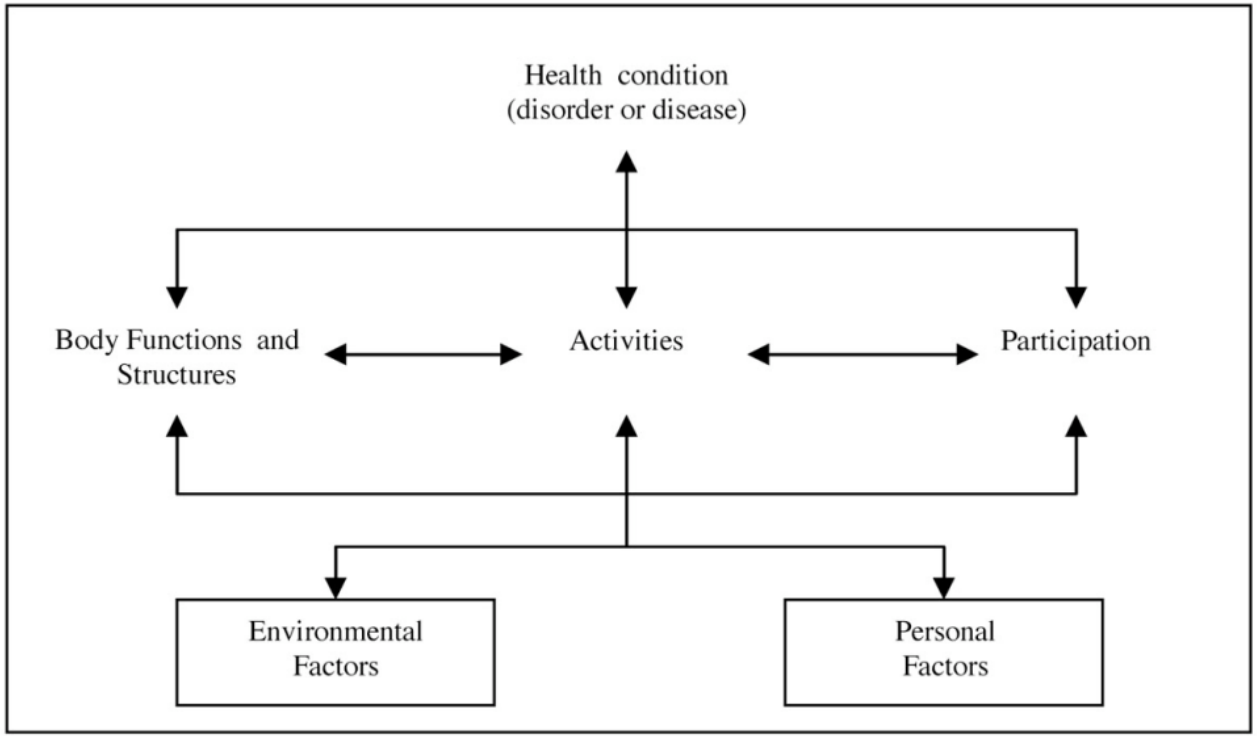
How many days a week do you perform muscle strengthening exercises, such as bodyweight exercises or resistance training? _____ days

www.exerciseismedicine.org

Teach the Perceived Exertion Scale

1 - 10 Borg Rating of Perceived Exertion Scale	
0	Rest
1	Really Easy
2	Easy
3	Moderate
4	Sort of Hard
5	Hard
6	
7	Really Hard
8	
9	Really, Really, Hard
10	Maximal: Just like my hardest race

International Classification of Functioning, Disability and Health (ICF model)



Co-Morbid Conditions

- Anxiety
- Depression
- Osteoporosis
- Steroid induced diabetes (hyperglycemia)
- Active Smoker

- Long Term Steroid Use side effects
  - Skin fragility
  - Myopathy
  - Mood swings

Recommendations

Recommendations

- Early mobilization in hospital with PT
- Assess Discharge status and communicate to discharge agency directly
- Assess oxygen needs for home and activity
- Address psychosocial factors and co-morbidity
- Medication Adherence/Review for intended effects/side effects
- Physical Activity promotion (+) effect on depression/anxiety/physical functioning