Best Practice Recommendations for Cardiac & Pulmonary Rehab

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Best Practice Recommendations for Cardiac & Pulmonary Rehab

No Disclosures
No Conflicts of Interest
Best Practice Recommendations

Objective:

*Choose to implement at least one practice update in your rehab program based on the guidelines reviewed & discussed*
Guidelines Update

WHY???

Contemporary Healthcare = Evidence Based
• From Science to Practice
• That what we do everyday has been...
  – tested & documented to be safe & effective
  – proven to achieve defined goals
Pulmonary Rehabilitation

AACVPR
Guidelines for Pulmonary Rehabilitation Programs, 4th ed., 2011

www.HumanKinetics.com
1. Pulmonary Rehabilitation

GOLD Guidelines

International experts,
10-12 countries
Broad COPD interest,
includes PR

Updated January 2016
1. PR: GOLD Guidelines

GOLD Goal = to improve the diagnosis & treatment of COPD worldwide

- Short term: relieve the impact of symptoms
- Long term: reduce the risk of future adverse events & exacerbations
1. PR: GOLD Guidelines

- Diagnostic criteria
- Risk criteria
- PR benefits
1a. GOLD Diagnostic Criteria

STEP 1: Clinical indicators = symptoms

– Dyspnea
– Chronic cough
– Sputum production
– History of exposure

    Tobacco smoke, occupational fumes,
    outdoor or indoor pollutants

*Suggestive, NOT diagnostic*
1a. GOLD Diagnostic Criteria

STEP 2: Required confirmation = spirometry
– Pulmonary function test
– With bronchodilator medication
– Within the last 6-12 months

To CONFIRM “persistent airflow limitation”
1a. GOLD Diagnostic Criteria

Medicare uses GOLD Diagnostic Criteria for PR admission:

**COPD = Post-bronchodilator measurement of FEV1/FVC ratio less than 70%**

(normal = 70-80%)
1a. GOLD Diagnostic Criteria

IF FEV1 / FVC ratio less than 70%,
THEN of what severity...

<table>
<thead>
<tr>
<th>Stage/Grade</th>
<th>FEV1 Value</th>
<th>COPD Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&gt; 80% predicted</td>
<td>Mild</td>
</tr>
<tr>
<td>2</td>
<td>50-80% predicted</td>
<td>Moderate</td>
</tr>
<tr>
<td>3</td>
<td>30-50% predicted</td>
<td>Severe</td>
</tr>
<tr>
<td>4</td>
<td>&lt; 30% predicted</td>
<td>Very Severe</td>
</tr>
</tbody>
</table>
1a. GOLD Diagnostic Criteria

Medicare only covers...

<table>
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<td>Very Severe</td>
</tr>
</tbody>
</table>
! Practice Note!

PR program MUST have PFT results on hand to:

• Confirm COPD diagnosis

• Identify severity of disease

*Medicare only covers for
moderate, severe, very severe
(based on GOLD criteria)*
NEW COPD Risk Level:

• Rationale: increased likelihood of recurrent events/exacerbations = more aggressive medical treatment

• Risk status influenced by:
  – Severity of disease
  – Number/frequency of prior exacerbations
  – Co-morbidities
1b. GOLD Risk Level

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>GOLD Severity Stage/Grade</th>
<th>Exacerbations Per year</th>
<th>Dyspnea symptoms MMRC / CAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1-2</td>
<td>&lt; 1</td>
<td>0-1 / &lt; 10</td>
</tr>
<tr>
<td>B</td>
<td>1-2</td>
<td>&lt; 1</td>
<td>&gt; 2 / &gt; 10</td>
</tr>
<tr>
<td>C</td>
<td>3-4</td>
<td>&gt; 2</td>
<td>0-1 / &lt; 10</td>
</tr>
<tr>
<td>D</td>
<td>3-4</td>
<td>&gt; 2</td>
<td>&gt; 2 / &gt; 10</td>
</tr>
</tbody>
</table>
1b. GOLD Risk Level

Treatment Recommendation:

Higher risk status = more aggressive medical management to reduce morbidity & mortality

• Pharmacologic Therapy = bronchodilators, corticosteroids, oxygen
• Non-pharmacologic Therapy...
1b. GOLD Risk Level

Treatment Recommendation:
Non-pharmacologic therapy
• Smoking cessation
• Pulmonary rehabilitation *
• Physical activity
• Vaccines

* risk groups B, C, D
Rehabilitation Implication:

PR patient risk stratification?!

To guide exercise intensity & pace of progression, such as

— Group B = low risk, fast track
— Group C = moderate risk, intermediate track
— Group D = high risk, slow track
1c. GOLD PR Benefits

- Improves exercise capacity
- Reduces perceived breathlessness
- Improves health-related quality of life
- Reduces the number of hospitalizations & days in the hospital
- Improves recovery after hospitalization
1c. GOLD PR Benefits

- Reduces anxiety & depression associated with COPD
- Improves arm function through strength training
- Enhances the effects of bronchodilators
- **Improves survival**
  
  *Benefits extend beyond the training period*
For PR program justification...

• Remind all stakeholders (patients, physicians, payers, administrators) of the benefits & value of pulmonary rehabilitation

• Use GOLD summary of benefits as potent handout (Table 3.5, pg. 27 of full report)
GOLD Reference

Global Initiative for Chronic Obstructive Lung Disease. **Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Diseases:**

Updated January 2016

Full report = 111 pages, Pocket Guide = 30 pages

GOLD website:  [www.goldcopd.org](http://www.goldcopd.org)
2. PR: ATS/ERS Joint Statement

Key Concepts & Advances in Pulmonary Rehabilitation: October 2013

ATS = American Thoracic Society
ERS = European Respiratory Society

• Multidisciplinary committee of experts
• Specific to Pulmonary Rehabilitation
An Official American Thoracic Society/European Respiratory Society Statement: Key Concepts and Advances in Pulmonary Rehabilitation


This official statement of the American Thoracic Society (ATS) and the European Respiratory Society (ERS) was approved by the ATS Board of Directors, June 2013, and by the ERS Scientific and Executive Committee in January 2013 and February 2013, respectively.

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2. PR: ATS/ERS Joint Statement

• Highlights the important role of PR in chronic disease management
• States & supports that...

“Pulmonary rehabilitation is recognized as a core component of the management of individuals with chronic respiratory disease”
2. PR: ATS/ERS Joint Statement

Overview

Components

Structure & Operation
NEW DEFINITION: Pulmonary rehabilitation is...

- A comprehensive intervention based on thorough patient assessment
- Followed by patient-tailored therapies including
  - Exercise training
  - Education & behavior change
Pulmonary rehabilitation is... designed to

- Improve the physical & psychological conditions of chronic respiratory disease
- Promote long-term adherence to health-enhancing behavior
Pulmonary Rehab Delivery is...

- “Implemented by a dedicated multidisciplinary team, including physicians”
  - Direct providers = RTs, RNs, EPs
    (mostly physiotherapists in Europe)
  - Supplemental staff = RDs, PTs, MSW, etc.
2a. PR Overview ATS/ERS

Pulmonary Rehab Delivery is...

• Individualized to the unique needs of the patient based on
  – Initial & ongoing assessment
  – Disease severity & complexity
  – Co-morbidities
Pulmonary Rehab Goals:

- Minimize symptoms
- Maximize exercise performance
- **Promote autonomy**
- Increase daily activities
- Enhance quality of life
- **Effect long-term health enhancing behavior change**
2b. PR Components ATS/ERS

1. Exercise Training = Assessment
   • Ensure patient safety
   • Rule-out cardiovascular co-morbidities

CONTRAINDICATIONS:
   – Any condition that precludes safe exercise
   – Any condition that substantially interferes with the rehab process
2b. PR Components ATS/ERS

1. Exercise Training
   To maximize exercise benefits...
   • Optimize bronchodilator therapy
   • Individualize oxygen titration
For exercise safety, PR must provide “Cardiac clearance”. Which method do you use??

❑ pre-rehab cardiopulmonary stress test
❑ Written OK from patient’s cardiologist/PCP
❑ Each patient seen/cleared by program’s Medical Director
❑ Other __________________________
2b. PR Components ATS/ERS

2. Patient Education

“Traditional didactic approach is insufficient”

Current emphasis:

COLLABORATIVE SELF-MANAGEMENT

Patient & professional work together to increase skills to manage respiratory illness & co-morbidities
2b. PR Components ATS/ERS

2. Patient Education = Assessment

Recommended Tools:

Lung Information Needs Questionnaire (LINQ)

Focuses more on information needs from patient perspective

vs.

Knowledge/lack from provider perspective

www.linq.org.uk
2b. PR Components ATS/ERS

2. Patient Education = Strategies
   • Goal setting
   • Problem solving
   • Decision making
   • Taking action based on a pre-defined ACTION PLAN
2b. PR Components ATS/ERS

#1 ACTION PLAN

• Early recognition of symptoms
• Planned responses for self-treatment
• Important triggers for when to access healthcare resources
## MY COPD ACTION PLAN

It is recommended that patients and physicians / healthcare providers complete this action plan together. This plan should be discussed at each physician visit and updated as needed.

The green, yellow and red zones show symptoms of COPD. The list of symptoms is not comprehensive, and you may experience other symptoms. In the "Actions" column, your healthcare provider will recommend actions for you to take based on your symptoms by checking the appropriate boxes. Your healthcare provider may write down other actions in addition to those listed here.

### Green Zone: I am doing well today

<table>
<thead>
<tr>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take daily medicines</td>
</tr>
<tr>
<td>Use oxygen as prescribed</td>
</tr>
<tr>
<td>Continue regular exercise/diet plan</td>
</tr>
<tr>
<td>At all times avoid cigarette smoke, inhaled irritants*</td>
</tr>
</tbody>
</table>

### Yellow Zone: I am having a bad day or a COPD flare

<table>
<thead>
<tr>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue daily medication</td>
</tr>
<tr>
<td>Use quick relief inhaler every ____ hours</td>
</tr>
<tr>
<td>Start an oral corticosteroid (specify name, dose, and duration) ____</td>
</tr>
<tr>
<td>Start an antibiotic (specify name, dose, and duration)</td>
</tr>
<tr>
<td>Use oxygen as prescribed</td>
</tr>
<tr>
<td>Get plenty of rest</td>
</tr>
<tr>
<td>Use pursed lip breathing</td>
</tr>
<tr>
<td>At all times avoid cigarette smoke, inhaled irritants*</td>
</tr>
<tr>
<td>Call provider immediately if symptoms don’t improve*</td>
</tr>
</tbody>
</table>

### Red Zone: I need urgent medical care

<table>
<thead>
<tr>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call 911 or seek medical care immediately*</td>
</tr>
<tr>
<td>While getting help, immediately do the following:</td>
</tr>
</tbody>
</table>

*The American Lung Association recommends that the providers select this action for all patients.

The information contained in this document is for educational use only. It should not be used as a substitute for professional medical advice, diagnosis or treatment. The American Lung Association does not endorse any specific commercial product.

For more information, visit www.Lung.org or call 1-866-LUNG-USA (1-800-586-4872)
For collaborative self-management, PR programs should work with patients to set-up Action Plans for important health enhancing behaviors. Which of the following do you offer as Action Plans??

- Sign/symptom recognition & response
- Smoking cessation
- Home exercise
- Advance care planning
2c. Program Structure & Operation

Pulmonary Rehab Timing:
Early after hospital discharge, especially when admitted for acute exacerbation of COPD AECOPD

Refer at time of hospital discharge

Start within 3 weeks
2c. Program Structure & Operation

Pulmonary Rehab Enrollment:
Referrals who do NOT enroll = 8–50%
Most common reasons:
• Scheduling issues
• Travel/transportation issues
• Lack of encouragement
  – Health-care provider
  – Spouse/family
2c. Program Structure & Operation

Pulmonary Rehab **Duration:**

NO CONSENSUS on optimal length of program

- Minimum of 8 weeks recommended
- Longer produces greater gains
- Function usually plateaus approx 12 weeks

8-12 weeks
2c. Program Structure & Operation

Pulmonary Rehab Completion:
Participants who do NOT complete = 10-32%
• #1 reason = illness pulmonary or co-morbid
• Fewer for scheduling or travel reasons
2c. Program Structure & Operation

Pulmonary Rehab Maintenance:

Evidence in support of a supervised maintenance program is equivocal at best

- Optimal format & timing of maintenance has not been identified

- Benefits can be maintained by home-based exercise, especially if supported by follow-up phone calls or periodic check-up visits
Pulmonary Rehab Staffing:

• NO evidence-based guideline exists for optimal staff:patient ratio

• AACVPR ratio of 1:4 is based on opinion vs. evidence

• Ratios should be based on clinical judgment of patient acuity & rehab needs
2c. Program Structure & Operation

PR Impact on Healthcare Use

• Decreased physician office visits
• Decreased medication use
• Decreased emergency room visits
• Decreased hospital admissions
• Decreased hospital days if re-admitted

[www.atsjournals.org](http://www.atsjournals.org)
Coming Attractions

- Science to Practice
- Rules & Regulations

PR Program
CMS Readmission Measures

In October 2014, Medicare added COPD to its list of diagnoses for which the hospital will not be paid for readmissions in 30 days

*Hospitals now appreciate pulmonary rehab!*
## Benefits of Pulmonary Rehab

<table>
<thead>
<tr>
<th>GOLD</th>
<th>ATS / ERS</th>
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<tbody>
<tr>
<td>• Reduced the number of hospitalizations &amp; days in the hospital</td>
<td>• Decreased emergency room visits</td>
</tr>
<tr>
<td>• Improved recovery after hospitalization</td>
<td>• Decreased hospital admissions</td>
</tr>
<tr>
<td></td>
<td>• Decreased hospital days if re-admitted</td>
</tr>
</tbody>
</table>
Pulmonary Rehab Value

• No longer about how much revenue a program does/does not make approx. $66 per visit

• It is now about how much loss a program can save a hospital on readmissions

Cost saving vs. revenue producing
Hospitals are making plans for how to reduce COPD readmissions. Are you/your program part of those important discussions?

BE THERE!!

There is now a strong evidence-base to confirm that PR participation helps keeps COPD patients out of the hospital as well as reduces the use of other healthcare resources.
PR Opportunities

• To increase awareness & visibility of PR by becoming a part of hospital’s initiative to reduce COPD readmits
• To build on Guidelines through AACVPR’s 2014 Core Competencies for PR staff
!! Stand & Stretch !!

Pulmonary

Cardiac
CR Opportunities

- To increase awareness & visibility of CR by becoming a part of hospital’s initiative to reduce CHF readmits
- To prepare for the new AACVPR professional certification exam CCRP
! Practice Note !

AACVPR National Meeting
New Orleans

Sept. 8-10, 2016

Consider attending & taking the new CCRP Exam!!
WHO: Cardiac Rehab

1. acc/aha
2. DHHS/nhlbi
3. ada
4. acsm

aacvpr
Cardiac Rehabilitation

AACVPR
Guidelines for Cardiac Rehabilitation & Secondary Prevention Programs, 5th ed., 2013

www.HumanKinetics.com
1. ACC/AHA 2013 Guidelines Set

a. Assessment of Cardiovascular Risk
b. Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults
c. Management of Overweight & Obesity in Adults
d. Lifestyle Management to Reduce Cardiovascular Risk

November 2013
1a. Assessment of CV Risk

*Purpose*: to inform medical decision making about the intensity of lifestyle & pharmacologic interventions needed to prevent CVD

- Designed for primary prevention, BUT...
- Built on data from 20-79 year olds
1a. Assessment of CV Risk

Identifies 10-year risk:

www.myamericanheart.org/cvriskcalculator

• LOW < 7.5% = repeat assessment 4-6 years
• HIGH ≥ 7.5% = treat aggressively

Known heart disease

All cardiac rehab patients
1. ACC/AHA 2013 Guidelines Set

- Cholesterol Guidelines 1b
- Overweight/Obesity 1c
- Lifestyle Management 1d
1b. ACC/AHA Cholesterol Guidelines

- Looks for high LDL ≥ 190mg/dL
- Emphasizes treatment strategies for
  - High risk primary prevention
  - All secondary prevention
- Abandons target goals
  “unable to find RCT evidence to support continued use of specific LDL or non-HDL treatment targets”
1b. Cholesterol Guidelines

**Assessment**
Initial lipid profile to determine starting point

**Intervention**
1. Lifestyle Management
2. Statin therapy
1b. Cholesterol Guidelines

Focus on WHEN & HOW to use statins:

• High dose = 40-80 mg daily
  Lowers LDL by approx 50%

• Moderate dose = 20-40mg daily
  Lowers LDL by 30-50%
1b. Cholesterol Guidelines

Statin therapy:

• Titration not necessary

• Addition of non-statin drugs, e.g. niacin, fibrates, etc. is not helpful
  (unless patient unable to tolerate statins)
1b. Cholesterol Guidelines

**Rationale:**
- treat inflammation, not numbers, to reduce risk

---

**Conundrum:**
- examples used start with high LDL, e.g.
  - 160-190mg/dL
  - 50% reduction =
    - 80-95mg/dL
  - “less than 100”
1b. Cholesterol Guidelines

Treatment strategy for secondary prevention
= all CR patients:

Moderate-high dose statins

+ Lifestyle modifications
Reference


Circulation, November 2013

www.circ.ahajournals.org
1c. AHA/ACC/TOS
Overweight/Obesity Guidelines

Assessment

Identify those in need of weight loss:

• Emphasizes use of Body Mass Index (BMI) calculated from height & weight
• Recommends adding waist circumference measurement
1c. Overweight/Obesity Guidelines

- Sticks with the current numeric goals & cut-points

<table>
<thead>
<tr>
<th>Body Mass Index (BMI)</th>
<th>Waist/Abdominal Girth</th>
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<tbody>
<tr>
<td>Overweight = BMI 25.0-29.9</td>
<td>Female = 35 inches or less</td>
</tr>
<tr>
<td>Obese = BMI ≥ 30kg/m²</td>
<td>Male = 40 inches or less</td>
</tr>
</tbody>
</table>
1c. Overweight/Obesity Guidelines

**Intervention**

Counsel those who need to lose weight:

- Assess readiness to make lifestyle changes
- If ready, emphasize creation of a calorie deficit through 2-part change:
  1. a calorie-restricted diet
     - deficit of 500-750 kcal/day
     - low carb, high fiber, low fat = ALL WORK!
1c. Overweight/Obesity Guidelines

2. A daily physical activity plan
   – Increase energy/calorie expenditure

• Encourage behavioral strategies to support efforts, e.g. record weight, calories, food intake, etc.

• Set realistic goals for slow, sustained loss

  2.5-5% in 3 months, 5-10% in 6 months
1c. Overweight/Obesity Guidelines

- Consider additional therapy if bigger loss needed (≥ 30 BMI):
  - High-intensity counseling by a nutrition professional
  - Weight loss medication
  - Bariatric surgery if BMI >35
Reference


Circulation, November 2013

www.circ.ahajournals.org
1d. AHA/ACC Lifestyle Management to Reduce CVD Risk

- Eating Patterns
- Sodium Use
- Physical Activity
1d. AHA/ACC Lifestyle Management to Reduce CVD Risk

1. Adopt a healthy eating pattern

**EMPHASIZES**

- Fresh fruit
- Fresh vegetables, especially green & root
- Whole grains = cereal, bread, rice, pasta
- Fatty fish
1d. Lifestyle Management

1. Adopt a healthy eating pattern

**INCLUDES**

- Low-fat dairy
- Poultry, fish, legumes
- Non-tropical vegetable oils
- Nuts (walnuts, almonds, hazelnuts)
1d. Lifestyle Management

1. Adopt a healthy eating pattern

**ALLOWS**

- Monounsaturated oils & spreads
- Olive oil or canola oil for cooking, salads
- Flaxseed or rapeseed margarines
1d. Lifestyle Management

1. Adopt a healthy eating pattern

**LIMITS**

- Sweets
- Sugar-based beverages

**2015 Dietary Guidelines:**
Less than 10% calories/day from sugar
1d. Lifestyle Management

**APPROPRIATE CALORIE REQUIREMENTS**

- Total fat = 30-35% of calories
- Saturated fat = 5-6%
- Trans-fat = minimal
- Fiber = 27-37 g/day

**2015 Dietary Guidelines:**
Less than 10% calories/day from saturated fat
1d. Lifestyle Management

Diets that incorporate healthy eating patterns:

- DASH Dietary Pattern
- USDA Food Pattern
- AHA Diet

?? “Mediterranean Diet” ??

\textit{no uniform definition}
BB idea: 4-way grid to list foods for BEST diet advice = healthy eating pattern that:

- Emphasizes
- Includes
- Allows
- Limits
1d. Lifestyle Management

2. Decrease Sodium Intake

- Goal = 1500 – 2400 mg/day
  DG: less than 2300 mg/day
- Start by reducing intake by 1000mg/day
  Bigger impact on BP with DASH + low sodium
  Biggest impact on CVD Risk with DASH + low sodium + weight loss
1d. Lifestyle Management

3. Increase Physical Activity

Reduces CVD risk by:

• General systemic effects = reducing endothelial inflammation

• Specific risk factor effects:
  – Blood pressure
  – Lipid levels
  – Weight
1d. Lifestyle Management

Benefits take 10-12 weeks to accrue, IF

- **F**requency = 3-4 x per week
- **I**ntensity = moderate (3-5.9 METs) or vigorous (≥ 6 METS)
- **T**ype = aerobic activity
- **T**ime = avg. 40 minutes each day, minimum of 10 minutes per episode
1d. Lifestyle Management

NOTE:
Combined **FIT** elements = total exercise volume
Expressed as MET-minutes, MET-hours
Recommendation in Guideline:
12 MET-hours/week = 720 MET minutes
(Goal = 500-1000 MET-minutes/week)
Reference


Circulation, November 2013

www.circ.ahajournals.org
2. Blood Pressure Guidelines

8th Joint National Committee on Blood Pressure Management (JNC 8)

2014 Evidence-based Guideline for the Management of High Blood Pressure in Adults

JAMA 311;5, Feb. 5, 2014
2. Blood Pressure Guidelines

- Hypertension is most common condition seen in PCP offices
- Prevalence expands CVD risk throughout US population
- Adds urgency to appropriate treatment & long-term management
2. Blood Pressure Guidelines

• Accepts JNC7 definition of hypertension as $> 140/90$
• Focuses on thresholds for treatment of those with hypertension
2. Blood Pressure Guidelines

Recommendation 1:

• All patients diagnosed with hypertension should be treated with non-pharmacologic lifestyle interventions (diet, sodium, physical activity)

• Add pharmacologic therapy as follows
2. Blood Pressure Guidelines

Recommendation 2 & 3:

- In patients aged 60 or more
  
  Treat if BP 150/90 or more
  
  GOAL: < 150/90

- In patients less than 60 years old
  
  Treat if BP 140/90 or more
  
  GOAL: < 140/90
2. Blood Pressure Guidelines

Recommendation 2 & 3:
Rationale = treating to previous lower goals contributed to:

↑ Side effects, e.g. orthostatic problems
↓ Coronary & cerebral perfusion
NEW Reference

AHA/ACC/ASH Scientific Statement: Treatment of Hypertension in Patients with Coronary Artery Disease

*Circulation* May, 2015

[www.circ.ahajournals.org](http://www.circ.ahajournals.org)
Recommendation:
For secondary prevention in patients with CAD:
GOAL: < 140/90

“Reasonable”
2b. Blood Pressure Guidelines

Recommendation:
For some individuals, lower may be better:

GOAL: $< 130-80$

– Abdominal aortic aneurysm (AAA)
– History of stroke or TIA
2b. Blood Pressure Guidelines

Recommendation:

For patients with Heart Failure:

Generally, GOAL: < 140/90
Selectively, < 130/80

BUT...
2b. Blood Pressure Guidelines

CAUTION!!
Elderly patients ($\geq$ 80 years)
  • Wide pulse pressure is common
  • Lowering SBP may cause very low DBP

AVOID:
  Pushing SBP $< 130 = \text{drags DBP} < 65$
  HIGH RISK of orthostatic side effects
NEWEST Evidence

September 2015 news release:

“NIH study shows intensive blood pressure management may save more lives”

SPRINT STUDY

Targeted lowering SBP < 120 mmHg
Significantly reduced rates of CV disease development & death
## BP Targets Being Re-evaluated!!

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior</td>
<td>JNC 7</td>
<td>&lt; 130/80 mmHg</td>
</tr>
<tr>
<td>2014</td>
<td>JNC 8</td>
<td>&lt; 150/90</td>
</tr>
<tr>
<td>2015</td>
<td>ACC/AHA/ASH</td>
<td>&lt; 140/90</td>
</tr>
<tr>
<td>2016</td>
<td>SPRINT</td>
<td>&lt; 120/80</td>
</tr>
<tr>
<td>New BP</td>
<td>Guidelines</td>
<td>Pending!</td>
</tr>
</tbody>
</table>
What adjustments might you need to make in patient outcome goals as a result of the new guidelines? Lipids, B/P, etc.

Please discuss with your Medical Director to:

• Get her/his opinion on the new guideline recommendations
• Get approval to change outcome goals
## Sample Memorial Hospital
### Outpatient Cardiac Rehab Program
### Patient Outcome Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rehab Entry</th>
<th>Rehab Exit</th>
<th>Evidence-based Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEALTH OUTCOMES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical events in rehab</td>
<td></td>
<td>#_________</td>
<td>due to ____________</td>
</tr>
<tr>
<td>Cardiac Hospital Readmissions</td>
<td></td>
<td>#_________</td>
<td>due to ____________</td>
</tr>
<tr>
<td>Quality of Life: Dartmouth Coop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical fitness</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Feelings</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Daily activities</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Social activities</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Change in health</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Overall health</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td>≤ 3</td>
<td></td>
</tr>
<tr>
<td><strong>CLINICAL OUTCOMES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resting blood pressure</td>
<td>/</td>
<td>/</td>
<td>&lt; 140/90</td>
</tr>
<tr>
<td>6’ walk distance (feet)</td>
<td></td>
<td></td>
<td>Increase ≥ 100 feet</td>
</tr>
<tr>
<td>Peak METS rehab treadmill</td>
<td></td>
<td></td>
<td>Increase</td>
</tr>
<tr>
<td>Lipid Management:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On moderate-high dose statin</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Not on statins due to</td>
<td></td>
<td></td>
<td>Moderate – High dose</td>
</tr>
<tr>
<td>Only if can’t tolerate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight:</td>
<td>Pounds</td>
<td>2.5 – 5%</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td></td>
<td>19-25</td>
<td></td>
</tr>
<tr>
<td>Body Mass Index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waist circumference (inches)</td>
<td></td>
<td>&lt; 40M, &lt; 35F</td>
<td></td>
</tr>
<tr>
<td>Diabetics:</td>
<td>FPG</td>
<td>90-150</td>
<td></td>
</tr>
<tr>
<td>Depression Screen:</td>
<td>worst score = 27 ; lower score = improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Health Questionnaire 9</td>
<td>&lt; 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BEHAVIOR OUTCOMES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking Habits:</td>
<td>counted as smoker at entry if quit in last 12 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td># cigarettes/day</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietary Habits:</td>
<td>worst score &lt; 41 ; higher score = improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate Your Plate score</td>
<td>≥ 58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Activity Habits:</td>
<td>at home last week both home &amp; rehab</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MET-minutes/week</td>
<td>500 - 1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication Habits:</td>
<td>self report of how many of 7 days last week?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adherence to prescriptions</td>
<td>______/7</td>
<td>______/7</td>
<td>7/7</td>
</tr>
<tr>
<td><strong>PATIENT’S STATED REHAB GOALS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. EX</td>
<td>met</td>
<td>improved</td>
<td>not met due to ________</td>
</tr>
<tr>
<td>2. ED</td>
<td>met</td>
<td>improved</td>
<td>not met due to ________</td>
</tr>
</tbody>
</table>
Best Practice Recommendations

Pulmonary Rehab Guidelines
• GOLD
• ATS/ERS

Cardiac Rehab Guidelines
• ACC/AHA
• BP sources

Thank you!
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