Performance Measures for Cardiac and Pulmonary Rehabilitation: What? When? How?

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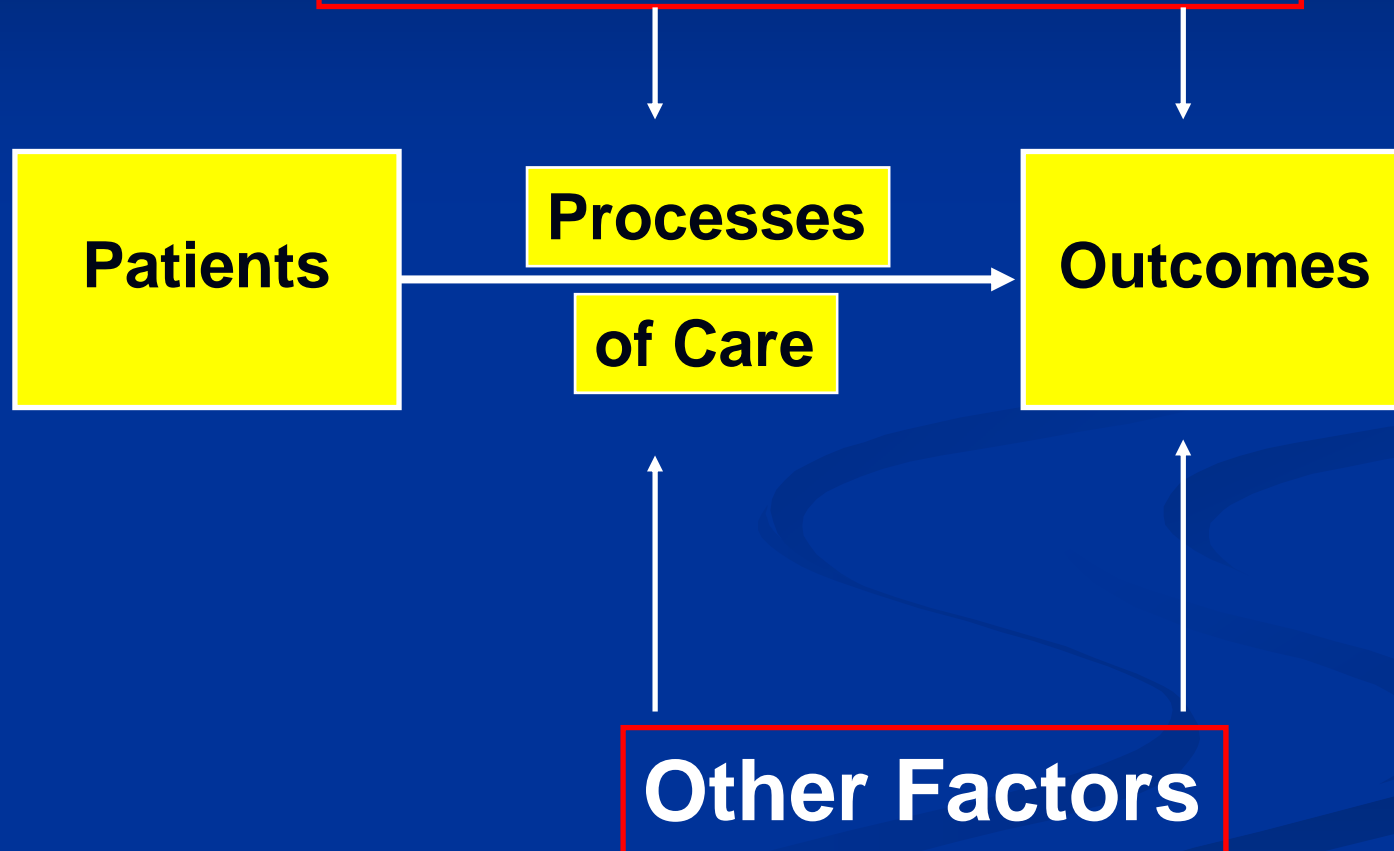Mayo Clinic
Rochester, Minnesota

Outline

- What are Performance Measures?
- Why in Healthcare?
- Why in Cardiac/Pulmonary Rehabilitation?
- When will we have CR and PR measures?
- How to implement?

What are Performance Measures?

Methods to measure components and/or outcomes of care

Performance Measures

- **<u>Structure:</u>** Emergency response equipment in place?

- **<u>Process:</u>** Number of patients screened for diabetes?

- **<u>Outcome</u>:** Re-hospitalization rate following MI?

Why
Performance Measures?

**Where performance is measured, performance improves.
Where performance is measured and reported, the rate of improvement accelerates.**
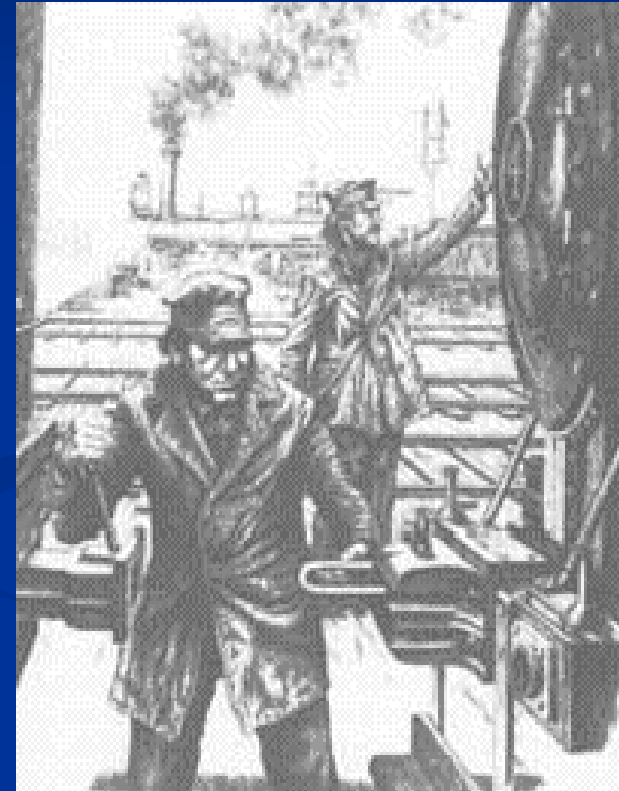
-Thomas S. Monson

Quality Then and Now

- 13th Century Guilds

- Industrial Revolution

- Wartime productivity demands

- Total Quality Management

- LEAN, Six Sigma

Lessons from History: Railroads

- 1853: Accidents, deaths
- 1868: Coupler invented (Janney)
- 1869: Air brakes invented (Westinghouse)
- 1908: Federal Employer's Liability Act (T. Roosevelt)

Why Performance Measurement in Healthcare?

- **Gaps between ideal care and actual care**

Crossing the Quality Chasm (2001)

Methods to Improve Delivery of Preventive Services

Characteristics of Successful Centers

- Common goals
- Administrative support
- Clinician support
- Systematic design
- Use of data
- Adaptive to circumstances

Why Now?

- Evidence of Gaps in Care
- Growing Expectations
- Increasing Complexities of Care
- Effective Quality Improvement Methods

Performance Measures Development

- **Construct Measurement Sets**
  - **Define population, domains of care, sampling time**
  - **Review literature**
  - **Identify measures**
- **Determine Measure Feasibility**
- **Measure Performance**

Performance Measures

- ## Historical timeline
  - 2003: "Mini-sets" (ACC/AHA/AMA)
    - Heart failure, hypertension, stable angina
  - 2005: Methodology paper published
  - 2005: Heart failure (ACC/AHA)
  - 2006: STEMI/NSTEMI (ACC/AHA)
  - 2007: Card Rehab/2° prev (AACVPR/ACC/AHA)
  - 2007: Atrial fib (ACC/AHA/PC)
  - 2008: STEMI/NSTEMI (ACC/AHA)
  - 2009: 1° prevention CAD (ACC/AHA)
  - 2010: Updated Cardiac Rehab Referral Measures

Do Performance Measures Improve Outcomes?

Heart Failure Performance Measures

Table 4. Unadjusted and Risk-Adjusted Process-Outcome Links for ACC/AHA Hospital Performance Measures for Heart Failure

Performance Measures	Predictive of Mortality at 60- to 90-d Follow-up		Predictive of Mortality or Rehospitalization at 60- to 90-d Follow-up	
	Hazard Ratio (95% CI)	P Value	Odds Ratio (95% CI)	P Value
Unadjusted				
Discharge instructions	0.86 (0.66-1.13)	.29	0.97 (0.85-1.12)	.69
Evaluation of LV systolic function	0.75 (0.55-1.03)	.08	0.86 (0.71-1.04)	.11
ACE inhibitor/ARB for LV systolic dysfunction	0.48 (0.31-0.73)	<.001	0.55 (0.43-0.70)	<.001
Smoking cessation counseling	0.54 (0.30-0.96)	.04	0.67 (0.49-0.92)	.01
Warfarin for atrial fibrillation	0.81 (0.58-1.13)	.22	0.87 (0.71-1.07)	.18
β-Blocker at discharge	0.42 (0.27-0.63)	<.001	0.69 (0.52-0.91)	.008
Risk-adjusted				
Discharge instructions	0.90 (0.66-1.23)	.51	1.07 (0.89-1.28)	.46
Evaluation of LV systolic function	0.91 (0.65-1.28)	.59	1.06 (0.81-1.38)	.67
ACE inhibitor/ARB for LV systolic dysfunction	0.61 (0.35-1.06)	.08	0.51 (0.34-0.78)	.002
Smoking cessation counseling	0.75 (0.41-1.37)	.35	0.74 (0.50-1.09)	.12
Warfarin for atrial fibrillation	0.74 (0.50-1.09)	.13	0.83 (0.64-1.09)	.19
β-Blocker at discharge	0.48 (0.30-0.79)	.004	0.73 (0.55-0.96)	.02

Abbreviations: ACC/AHA, American College of Cardiology/American Heart Association; ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; CI, confidence interval; LV, left ventricular.

Risk-Standardized 30-Day All-Cause Hospital Mortality Rate Based on Performance on Process Measures by Quintile

Table 5. Percent Variance in 30-Day Risk-Standardized Mortality Rates Explained by Each Process Measure and Composite Measure*

Process Measure	% Variance Explained
β-Blocker at admission	0.1
β-Blocker at discharge	2.6
Aspirin at admission	0.3
Aspirin at discharge	3.3
ACE inhibitor at discharge	0.9
Smoking cessation counseling	0.1
Timely reperfusion therapy†	3.3
Composite score, timely reperfusion measure and smoking measure‡	6.0

Abbreviation: ACE, angiotensin-converting enzyme.
*Hospitals were included if they had at least 10 patients eligible for the given process measures.
†Percentage of all patients with ST-segment elevation myocardial infarction receiving reperfusion therapy within recommended time (30 minutes for fibrinolytic therapy and 120 minutes for percutaneous coronary intervention).
‡Composite score for each patient based on 1 to 5 indicators (β-blocker at admission and discharge, aspirin at admission and discharge, and ACE inhibitor at discharge) for which that patient is eligible.

Do Performance Measures Improve Outcomes?

Yes,
if closely linked
to desired outcomes

Mehta et al., Am J Med 2007;120:398-402

Why Performance Measurement in Cardiac and Pulmonary Rehabilitation?

Why in CR and PR?

- Parallels train safety history
- Effective methods
- Underutilized
- 3rd party intervenes
- Mandatory application
- Win-win-win

When?

Now!

Cardiac Rehabilitation

Cardiac Rehabilitation/Secondary Prevention Performance Measures

Thomas RJ, King M, Lui K, Oldridge N, Piña IL, Spertus J. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. *Circulation*. September 20, 2007. DOI: 10.1161/CIRCULATIONAHA.107.185734. Available at: http://circ.ahajournals.org/cgi/content/full/CIRCULATIONAHA.107.185734 Accessed on September 20, 2007.

CR/SP Performance Measures
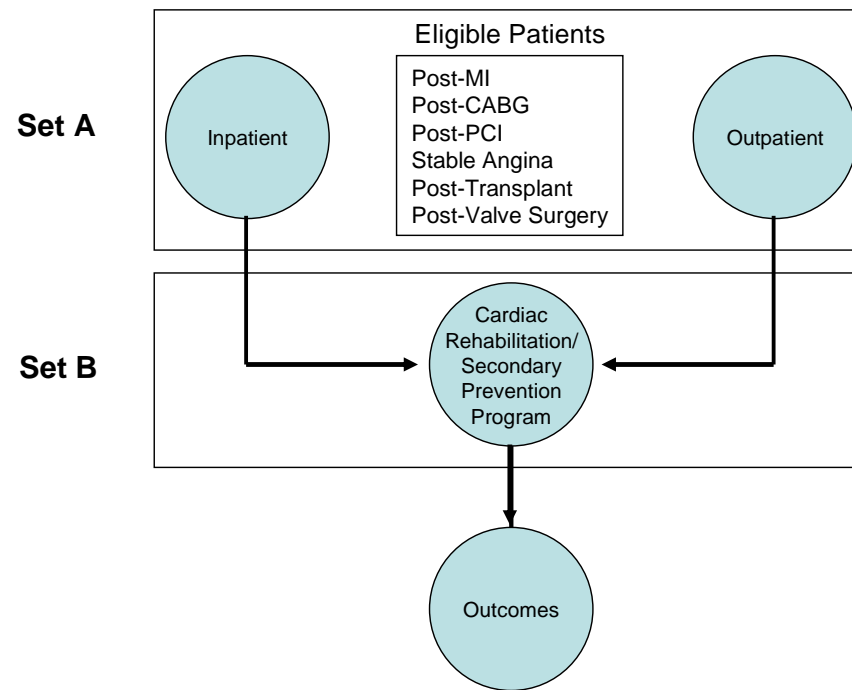
Set A

Eligible Patients

Inpatient

Post-MI
Post-CABG
Post-PCI
Stable Angina
Post-Transplant
Post-Valve Surgery

Outpatient

Set B

Cardiac
Rehabilitation/
Secondary
Prevention
Program

Outcomes

Thomas RJ, King M, Lui K, Oldridge N, Piña IL, Spertus J. AACVPR/ACC/AHA 2007 performance measures on cardiac rehabilitation for referral to and delivery of cardiac rehabilitation/secondary prevention services. *Circulation*. September 20, 2007. DOI: 10.1161/CIRCULATIONAHA.107.185734. Available at: http://circ.ahajournals.org/cgi/content/full/CIRCULATIONAHA.107.185734 Accessed on September 20, 2007.

Cardiac Rehabilitation Performance Measures

Set A: Referral to CR

- A-1: In-patients referred to out-patient CR
- A-2: Out-patients referred to out-patient CR

Cardiac Rehabilitation Performance Measures

Set B: Delivery of CR

- **B-1: Medical and emergency standards**
- **B-2: Assessments of risk for CV events**
- **B-3: Risk factor assessment/treatment plan**
  - Coordination with other healthcare providers
- **B-4: Monitor response to therapy**

Cardiac Rehabilitation Performance Measures

- **Endorsement**
  - **National Quality Forum (May 2010)**
    - **Set A only**
  - **Centers for Medicaid and Medicare Services**
    - **Included as part of PINNACLE data registry and Physician Quality Reporting Initiative (PQRI)**
    - **Core Quality of Care Measure?**

Pulmonary Rehabilitation

What About Pulmonary Rehabilitation?

- Effective therapy

- Utilization gap?

- Feasible to narrow the gap?

- Performance measures?

- Outcome measures?

- National Quality Forum shortcut?

What About Pulmonary Rehabilitation?

- Outcome Measures
  - Quality of Life
    - Chronic Respiratory Disease Questionnaire
  - Functional Capacity
    - 6 minute walk

- **Endorsed by NQF September 2010**

Now What?

Implementation
Testing
Ongoing Maintenance

Cardiac Rehabilitation Performance Measures

Implementation of Set A (Referral)

- **AACVPR Certification, Toolkit**
- **National Quality Measures Clearinghouse**
- **Data Registries**
  - **ACC**
  - **AACVPR**
- **Other Measures Sets**
  - **ACC/AHA STEMI/NSTEMI Performance Measures**
  - **AMA-PCPI CAD Performance Measures**
- **Local implementation by hospitals, clinics, practices**

AMA Physician Consortium for Practice Improvement (PCPI):
CAD Performance Measures
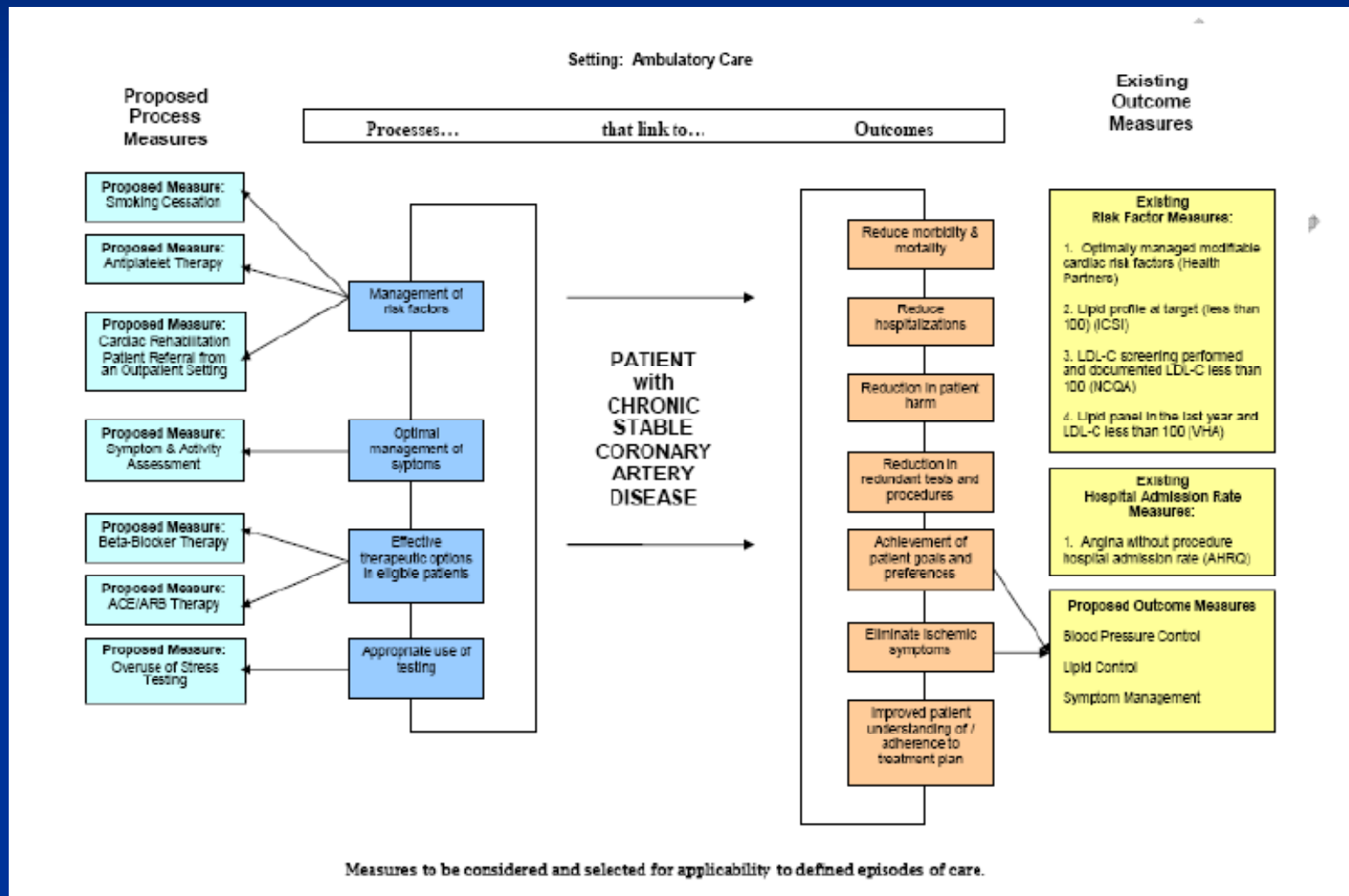
AMA Physician Consortium for Practice Improvement (PCPI): CAD Performance Measures

The measures listed below may be used for quality improvement and accountability. Measures that are new to the 2009 chronic stable coronary artery disease measure set are identified with an asterisk:

Measures addressing patient-centered outcomes

Measure #4: Symptom Management*

Measures addressing intermediate outcomes (management of risk factors/co-morbidities)

Measure #1: Blood Pressure Control

Measure #2: Lipid Control

Measures addressing underuse of effective services (treatment strategies)

Measure #5: Tobacco Cessation and Intervention

Measure #6: Antiplatelet Therapy

Measure #7: Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

Measure #8: ACE Inhibitor or ARB Therapy—Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)

Measure #9: Cardiac Rehabilitation Patient Referral from an Outpatient Setting*

Measures addressing underuse of patient-centered care strategies

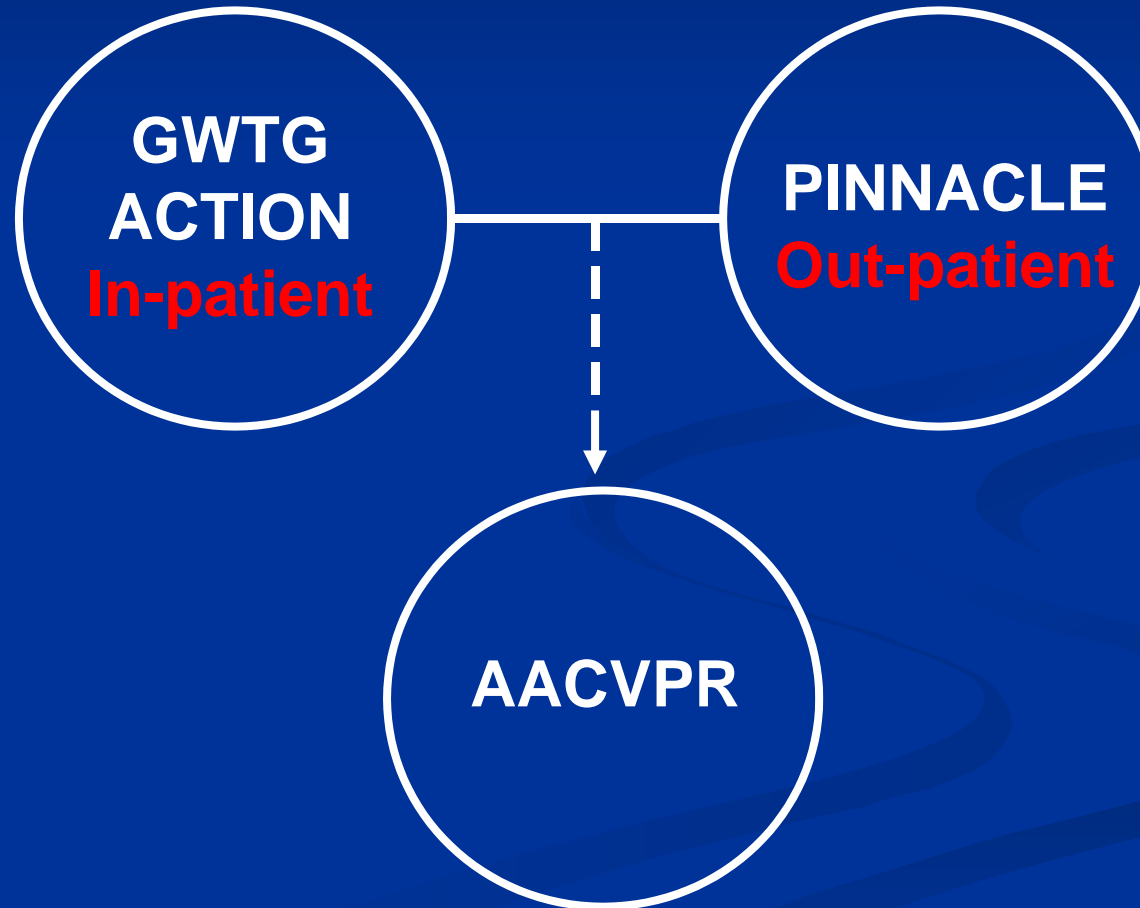Measure #3: Symptom & Activity Assessment

Measures addressing overuse

Measure #10: Overuse of Stress Testing*

Cardiac Rehabilitation Performance Measures

Implementation of Set B (CR Programs)

- **Revision process**
- **Implementation**
    - **AACVPR standards and certification**
    - **Link to reimbursement?**
    - **AACVPR National Registry link**

Registry Connections

Cardiac Rehabilitation Performance Measures

Keys to Local Implementation

- Consensus
- Systematic Plan
    - Assess Current Performance
    - Identify challenges (eligible patients, etc.)
    - Implement Quality Improvement Steps
    - Re-assess Performance
- (Report Performance)

3 D's of Change

- Desire
- Do Something About It!
- Don't Give Up!

Testing and
Ongoing Maintenance

Cardiac Rehabilitation Performance Measures

Testing: Key Factors

- Validity: Do measures really measure what they are designed to measure?

- Reliability: Is the measurement reproducible?

- Usability: Is the measure easy to use?

Cardiac Rehabilitation Performance Measures

Maintenance

- Are measures decreasing the care gap, suggesting need to maintain over time?

Summary

- **What?**
  - Measures to improve outcomes
- Why?
  - Reduce gaps in care
- **When?**
  - CR PM's emerging, PR PM's starting
- **How?**
  - Begin with basic steps of agreement and planning, then progress to bigger steps!