HealthCare Partners
Medical Group and Affiliated Physicians

AMGA 2013 Institute for Quality Leadership

Phoenician, Scottsdale, AZ
September, 25-27

AMGA
American Medical Group Association

Empowering COPD Patients
COPD Disease Management

HealthCare Partners Medical Group Background

- Physician-owned Group & IPA Serving the greater Los Angeles Orange Counties
- Facilities/Physicians
  - 66 Staff Model Facilities (Primary Care, Urgent Care, Walk-In, Ambulatory Surgery, Pharmacy)
  - 753 IPA Medical Offices

  Physicians
  - 235 Employed
  - 975 IPA
  - 290 Specialists Employed
- ~575,000 + lives
  - ~479,000 commercial, ~99,000 senior

•Health Plans Accepted: 14 Medicare Advantage, 8 Commercial (HMO/POS)

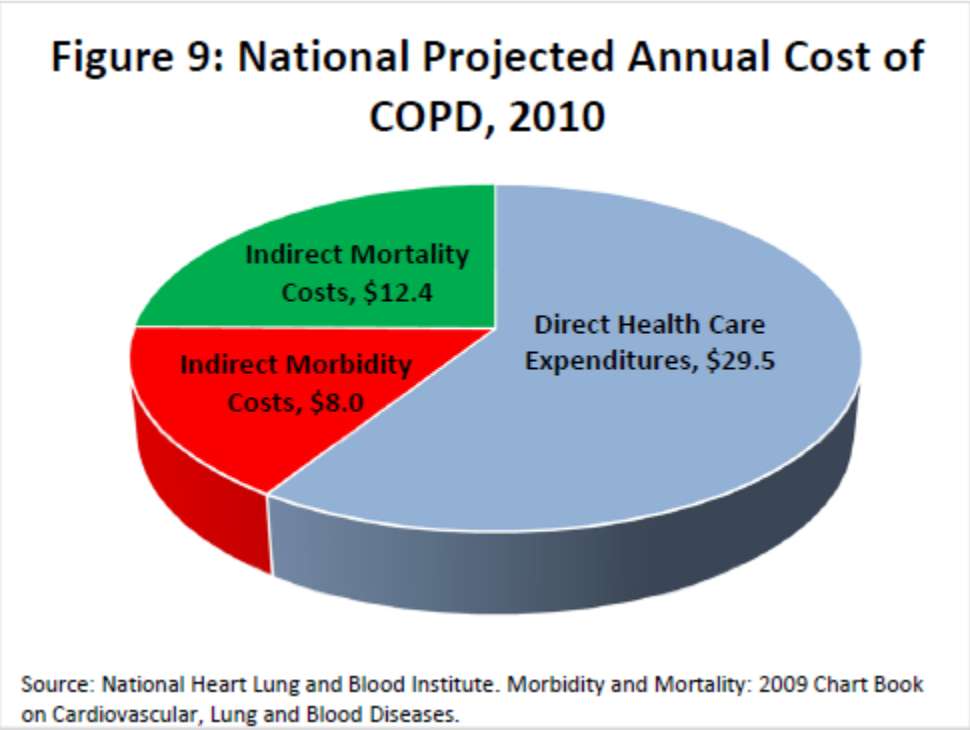
Chronic Obstructive Pulmonary Disease (COPD)

- COPD Burden: 3rd Leading Cause of Death in the US (up from the 4th and increasing)
- Economic burden of COPD is significant
  - Greater than $2,000 nationally per member, per month
  - Inpatient hospitalization accounts for ~50% of all costs
- COPD is consistently one of the top 10 diagnosis ranked for inpatient admissions and readmissions.
  - 30 day readmission rate = 18%; 59% at 1 year

- Disease Registry of HCP COPD Patients
  - 2009: 16,642
  - 2011: 20,357
  - 2012: 25,695
  - 2013: 29,305

Content source: *National Center for Chronic Disease Prevention and Health Promotion, Division of Adult and Community Health*

COPD Burden



Source: National Heart Lung and Blood Institute. Morbidity and Mortality: 2009 Chart Book on Cardiovascular, Lung and Blood Diseases.

Impact of COPD Disease Management

Self Management programs for COPD have demonstrated cost benefits

- Especially among those previously hospitalized patients

- Bourbeau, *Chest*, 2006

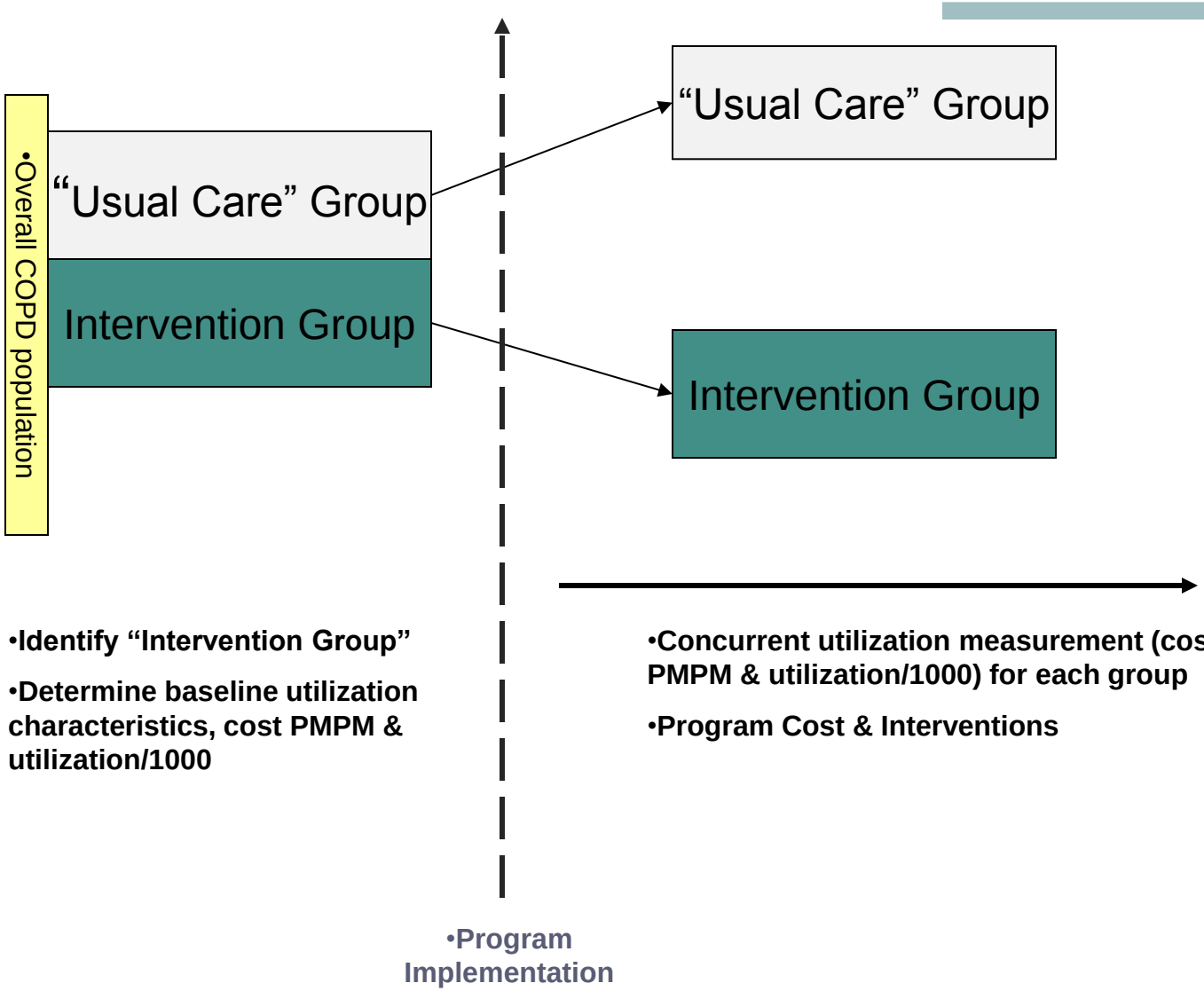
Brief COPD Project Overview

To implement a disease management program at HCP focused on COPD patients

- Improve patient outcomes
- Decrease hospitalization: goal 20% reduction
- Decrease ER visits: goal 20% reduction
- Reduce cost of care: goal 10% reduction in the pmpm of study population

GOAL:

- Enhancing quality of life for the patient and caregiver
- Improving outcomes for the population
- Reducing unnecessary cost and waste


•Overall COPD population
"Usual Care" Group
Intervention Group
"Usual Care" Group
Intervention Group
•Identify "Intervention Group"
•Determine baseline utilization characteristics, cost PMPM & utilization/1000
•Program Implementation
•Concurrent utilization measurement (cost PMPM & utilization/1000) for each group
•Program Cost & Interventions
•Frequency and timing of concurrent program measurement
•Frequency: monthly
•Stage 1
•Stage 2

Pilot Staffing

- 300 patients targeted
- 2 RN Care Managers (1:150 Patients)
- 1 Care Coordinator/Administrative Assistant (1:300)
- Wrap around coverage by TeleHealth Nursing
- Physician support and champion

COPD Program

Examples of Things that can be done

Patient Instructed to Call When Having:

- More Shortness of Breath or Wheezing
- Worsening Cough
- Increased Mucus or Sputum
- Trouble Getting Mucus Up
- Mucus Changed to Green or Yellow
- Onset of Fever
- Trouble Concentrating
- More Fatigue and Needed More Rest

Facilitate Care…Action Plan & Follow ups

Patient Educational Material

Learn to Breathe More Easily

Pursed Lip Breathing

Pursed lip breathing helps you re
lungs. It is one of the simplest wa

- Sit comfortably with muscle
through your nose counting
- Purse your lips like you are g
through your lips counting t

It should take twice as long to ex

Diaphragmatic or Abdom

This simple breathing method gi
move as you breathe.

- Get yourself into a comforta
shoulder muscles.
- Place one hand on your abd
your chest.
- Inhale slowly through your n
out and your chest should st
- Tighten your abdominal mu
lips. Your chest should rema

COPD Action Plan

Managing Your COPD

GREEN ZONE You feel well.	YELLOW ZONE You feel worse.	RED ZONE You feel much worse or in danger!
• You are able to breathe without difficulty while doing your usual activities. • There is no change in your cough, sputum, ability to think/ remember, or energy.	• You have more shortness of breath, wheezing, or coughing than usual. • Your sputum is thicker, or has turned green or brown. • You have a fever of 100°F or more. • You may feel forgetful or confused, and may have difficulty concentrating or sleeping. • You feel more tired, and cannot finish your usual activities without resting.	• You are having trouble breathing. • You have difficulty coughing up sputum. • You have blood in your sputum. • You feel drowsy or have difficulty waking up. • You are not able to do any of your usual activities.
Action Plan	**Action Plan**	**Action Plan**
• **Continue** your usual activities. • **Take** your medicine as directed by your doctor.	• **Increase** the use of your "Rescue Inhaler" or Nebulizer (Albuterol or Xopenex). • **Use** Pursed Lip Breathing and/or other energy-saving techniques. • **Continue** to use any oral steroids (Prednisone) and/or antibiotics your doctor has prescribed. • **Call** your doctor or care manager, or go an affiliated Urgent Care / Walk-In Center.	• **Follow** the Action Plan in the yellow zone column. • **Call** your doctor or care manager immediately. • **Go** to the nearest **Urgent Care / Walk-In Center** or **Hospital Emergency Room** or **call 911** if necessary.

Follow-Up Information

My Primary Care Doctor _____

My Doctor's Phone Number _____

My Appointment with this Doctor (date/time) _____

My Other Appointments _____

During my follow-up with my doctor, I should ask about the following:

1. **COPD Zones and Action Plans**
2. **Emergency Prescriptions and Rescue Inhalers**
3. **Advance Directives**

HealthCare Partners.

Living with COPD

Patient and Family Guide

COPD Pilot Results

Date: 8/1/08-7/31/09	Control	Intervention	% Change
Total admits	57	40	30% reduction
Total beddays	190	115	39% reduction
Total ED visits	92	71	23% reduction
Cost of care (all paid-pmpm)	$7,070	$4,661	34% reduction
PCP visit	683	887	30% increase
Drug cost est.	$402,553	$415,154	3% increase

Predictors of Outcome

The single best predictor of exacerbation

- HISTORY of exacerbation

Exacerbation becomes more frequent and more severe as the severity of COPD increases (stage)

- Eclipse Investigators, *NEJM*, 2012

There is a significant relationship between baseline FEV_1 and exacerbation frequency

- Eclipse Investigators, *NEJM*, 2012

Predictors of Poor Outcome

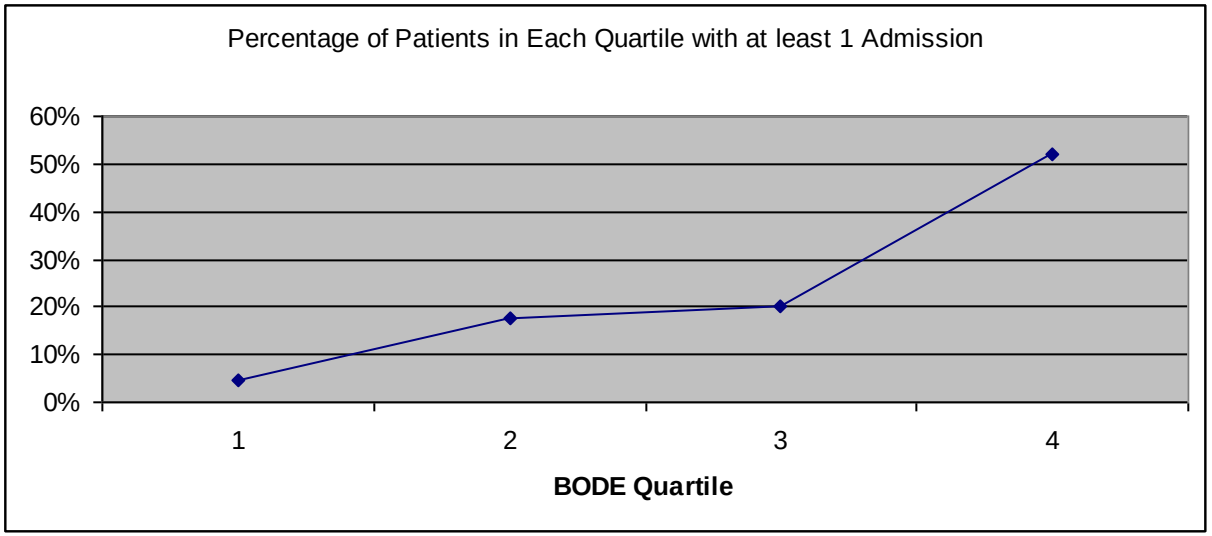
Predictors of Mortality

- Malignancy
- **Weight loss**
- CHF or pulmonary hypertension
  - McGhan (VA), *Chest*, 2007
- Depression
  - Voogd, *Chest*, 2009

One of the Strongest predictors of all-cause mortality…

- **Reduced Physical Activity**
  - Waschki, *Chest*, 2011

BODE Stratification and Correlation to Patient Outcomes

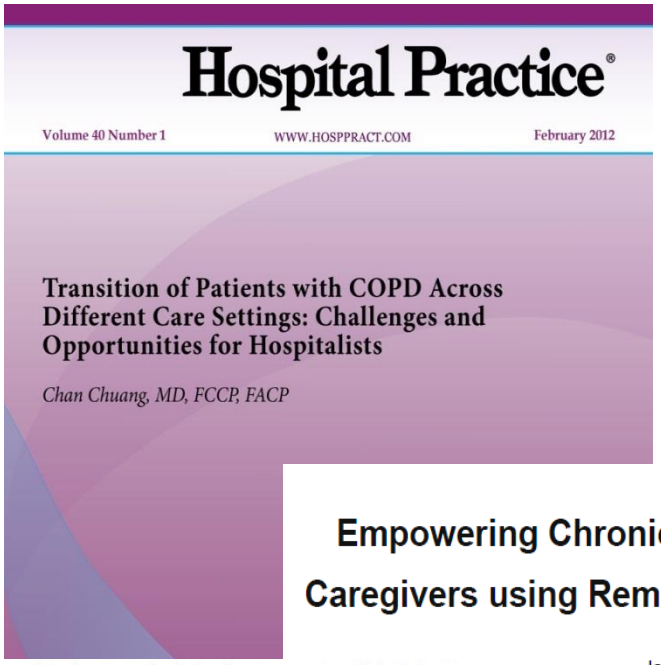


COPD Best Practices

- Initial face-to-face visit for assessment and education; BODE Assessment; COPD Staging
- Expedited access to clinical staff; including 24-hour triage
- Immediate intervention including emergency prescriptions and intervention based on “Zones of Symptoms”
- COPD Interactive Voice Response to monitor patient’s symptoms and symptom changes
- “Pathways” tracking process of patient self management

POPULATION HEALTH MANAGEMENT
Volume 14, Number X, 2011

DOI: 10.1089/pop.2010.0015



Enhancing Cost-Effective Care with a Patient-Centric COPD Program

Chan Chuang, MD, FCCP, FACP[1], Stuart H. Levine, MD, MHA,[2] and Jeremy Rich, DPM[3]

Abstract

Chronic obstructive pulmonary disease (COPD
and the public at large, resulting in considerable
at a managed care medical group to empower
quality of life through enhancing cost-effective ca
group that imparted self-management principles,

AMGA
American Medical Group Association®

Empowering Chronically Ill Patients and their Caregivers using Remote Monitoring Technology

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Population Characteristic And Medication Adherence Among Patients With Chronic Obstructive Pulmonary Disease

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RATIONALE: The objective of the study is to describe the population characteristics and assess medication adherence and any factors contributing to non-adherence to inhaled controller medications in COPD patients.
METHODS: A retrospective analysis was conducted using a database consisting of medical and pharmacy claims from a regional managed care organization from 2003 to 2007. Selection criteria included: (1) age≥ 45; (2) ≥1 diagnosis of COPD and (3) continuously eligible with the organization 6 months before and 12 months after the initiation of a long-acting COPD bronchodilator. The four categories of the initial medication(s) include 1) long-acting muscarinic antagonists (LAMA), 2) long-acting ß2-agonists (LABA), 3) fixed dose combination (FDC) of LABA & inhaled corticosteroid, and 4) multiple drugs regimen, consisting of either a combination of LAMA and LABA, or LAMA and FDC. Medication non-adherence was assessed using proportion of days covered (PDC) <0.8. Multivariable logistic regressions with stepwise selection were used to assess type of medication and other risk factors associated with non-adherence.
RESULTS: A total of 1,970 patients with a mean age of 70.2 years old, with 57.9% females were identified. The most prevalent co-morbid condition was hypertension (40.3%). Overall PDC for these agents was poor (0.36) but consistent with previous studies. Patients initiated on LAMA were more likely to have higher PDC (0.43) than those on LABA (0.33), or on FDC (0.34, P<0.0001). The patients on multiple drugs

Best Practices in Managing Patients With Chronic Obstructive Pulmonary Disease (COPD)

A medical neighborhood is a community comprised of patients, informal caregivers, (family and friends) and clinicians engaged in promoting positive health behaviors while enhancing satisfaction and improving patient-driven health care. This clinical community may help

Expanding Clinical Capacity

IVR Technology

- Expand the clinical capacity of our nurses; Case Loads ~200 patients; 5% triggering follow up.
- Supports the administration of emergency prescriptions; patients recognize worsening symptoms and are taking action.
- Increasing Readmissions at > 6 months post Program closure.

Clinicians' Reports

- Reports are easy to read/actionable; Nurses: "We know which symptoms the patient is experiencing."
- Frees-up time and allows clinicians to focus on patients who are more at-risk.

Optimizing Telehealth Operations

Detecting Exacerbations Sooner

- Not intrusive: brief calls that engage patients.
- Avoided timely and complicated set up: patient uses their own phone; majority were Senior patients; majority use land-line phones, but increasing cell phone use.
- Convenient: calls occur either at noon with a back-up call early evening.
- Provides critical and actionable information for clinicians.
- Survey captures yellow zone or red zone symptoms and reinforces recognition on a regular basis.

IVR ROI Analysis (Pilot)

Analysis Pilot: 90 Enrolled Patients in IVR 2011-2012	Disease Management program only (Matched n=90)	Disease management program + IVR (n=90)
Hospital admissions	48	22
Hospital Costs ($USD)	8,529	3,909
Outpatient Clinic Visits	446	581
Outpatient Clinic Costs ($USD)	765	996
Return on Investment ($USD)		4,388

COPD IVR Participation/Discharge

COPD IVR	N= 382
< 6 months	177
6 months – 1 year	78
1-2 + years	127 pts

COPD IVR Discharges	N= 137
Opted Out	56
Deceased	36
Left HCP/Left Area	9
Hospice	26
SNF Long Term Care	1
Phone Disconnected	5
Needs Live Calls/Care Manager Changed status	4

Comparison: COPD IVR Program vs COPD Program Alone

Date:	2012 Program	2012 IVR
Admits/1000	385	146
ALOS/1000	4	3

Improving Recruiting of Patients

COPD Symptom Phone Survey

Managing Your Chronic Obstructive Pulmonary Disease

To properly manage your COPD, your Care Coordinato
will personally call you to monitor your general healt
We also have free, automated phone survey monitorin
These weekly surveys help us to identify Red and Yello
Zone symptoms and stop a COPD event before it start

GREEN ZONE You feel well.

YELLOW ZONE You feel worse.

RED ZONE You feel much worse or in danger!

It's Easy! Here's How it Works:

1. Every Monday and/or Thursday, you will receive a phone call between noon – 1 pr
   If we are unable to reach you, we will call you again between 6 – 7 pm.
2. After you say "hello," the automated phone system will begin the COPD Symptom Surve
3. The survey has nine questions. To save time, you may press the response number tha
   best fits your current symptoms at any point during the survey.
4. It's fine if you miss a survey call. We know that you may not always be available at th
   time we call.

Look on the other side of this flyer for a list of the COPD Symptom Phone Survey questions and response options.

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The Right Doctors Make All The Difference

COPD Symptom Phone Survey Questions

1. **Breathing in general:**
   Press 1 if you have no trouble breathing.
   Press 2 if you have more coughing, shortness of breath, or wheezing than usual.
   Press 3 if you are having a lot of trouble breathing when at rest.
2. **Breathing while eating:**
   Press 1 if you can eat without being out of breath.
   Press 2 if you are slightly out of breath when eating.
   Press 3 if you are breathless when eating.
3. **Feet and ankles:**
   Press 1 if you have no foot or ankle swelling.
   Press 2 if you have some swelling in your feet or ankles.
   Press 3 if you have a lot of swelling in your feet or ankles.
4. **Weight:**
   Press 1 if you have not gained weight this week.
   Press 2 if you have gained 2 to 4 pounds over the last week.
   Press 3 if you have gained 5 or more pounds over the last week.
5. **Sleep:**
   Press 1 if you are sleeping through the night without problem.
   Press 2 if you are waking up and unable to fall back to sleep 1 to 3 nights a week.
   Press 3 if you are waking up and unable to fall back to sleep more than 3 nights a week, or woke up gasping for air.
6. **Sputum/mucus:**
   Press 1 if your mucus is clear.
   Press 2 if your mucus is thick or stickier than usual, or your mucus is turning yellow or green.
   Press 3 if you are having a lot of trouble coughing up mucus, or you have blood in your mucus.
7. **Ability to focus:**
   Press 1 if you can think clearly.
   Press 2 if you are having trouble concentrating.
   Press 3 if you are very confused or have slurred speech.
8. **Appetite:**
   Press 1 if you are eating your normal amount.
   Press 2 if you are eating a little less than usual.
   Press 3 if you are eating much less than usual.
9. **Energy level:**
   Press 1 if you are not tired doing your usual activities
   Press 2 if you are tired or cannot finish your usual activities without getting tired.
   Press 3 if you are very tired and cannot do any activities.

Questions?
Call your
Care Coordinator at
310.354.4336.

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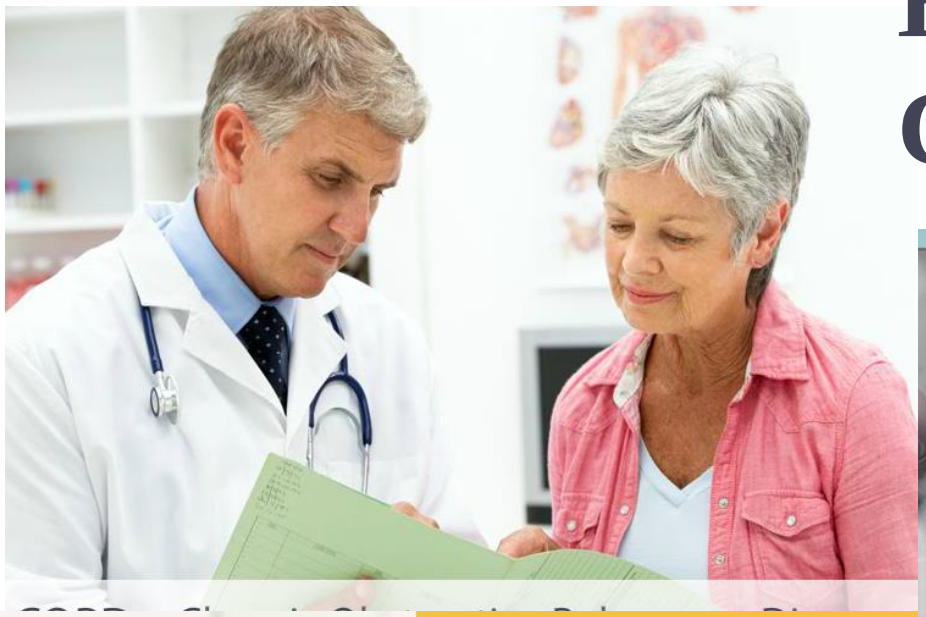
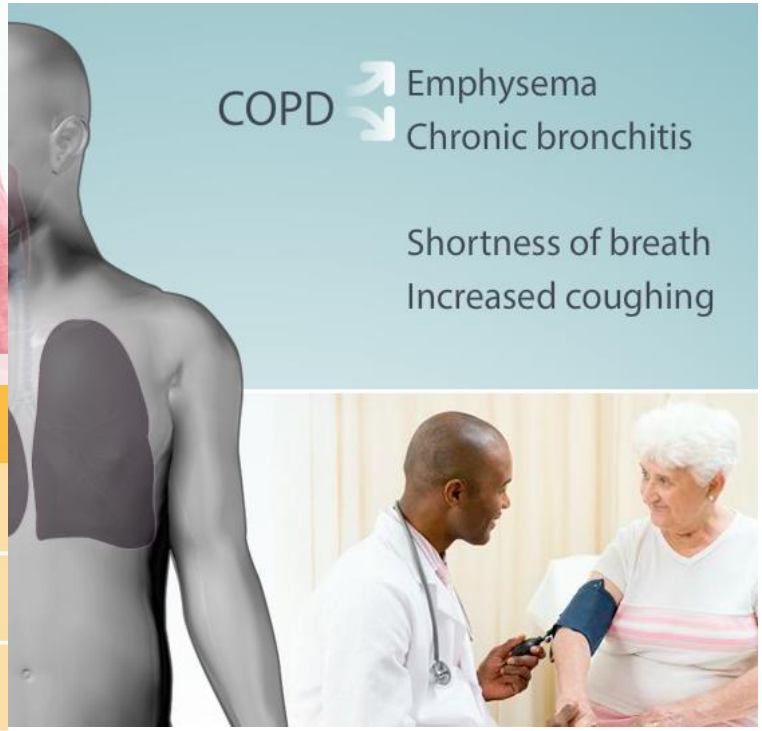
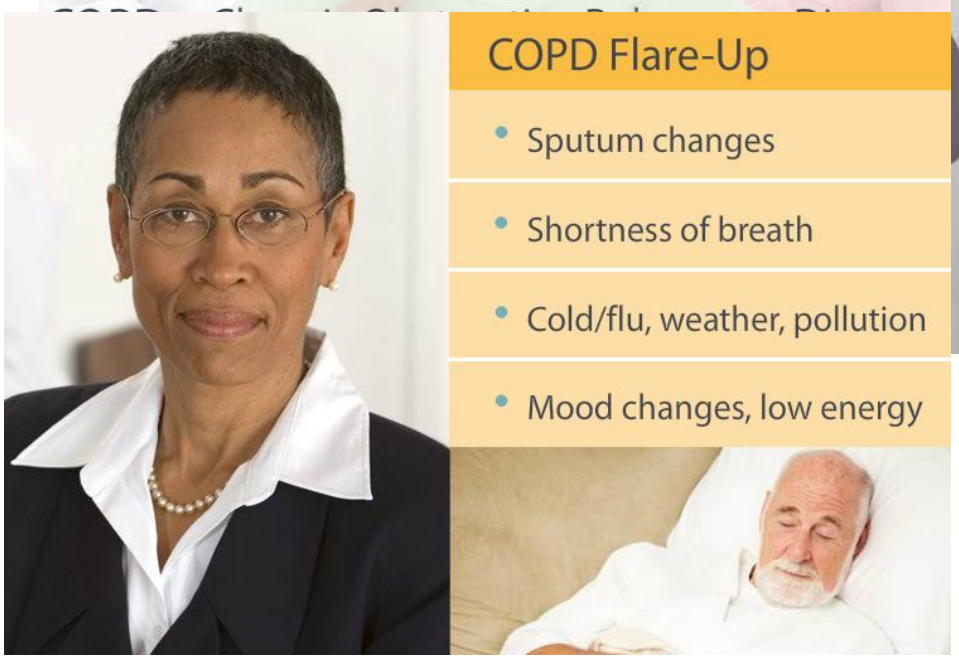
Future Plans and Diffusion

- Expansion has included CHF and Spanish IVR for both CHF and COPD (2012); Currently 382 patients enrolled (COPD) and expanding and 152 CHF and expanding
- De-centralize IVR deployment (allow Care Teams to enroll patients)
- Launching in other geographical areas (Florida, Nevada)
- White papers, intervention surveys, operational streamlining (“what’s working”, “what’s not working”, “sharing best practices”)

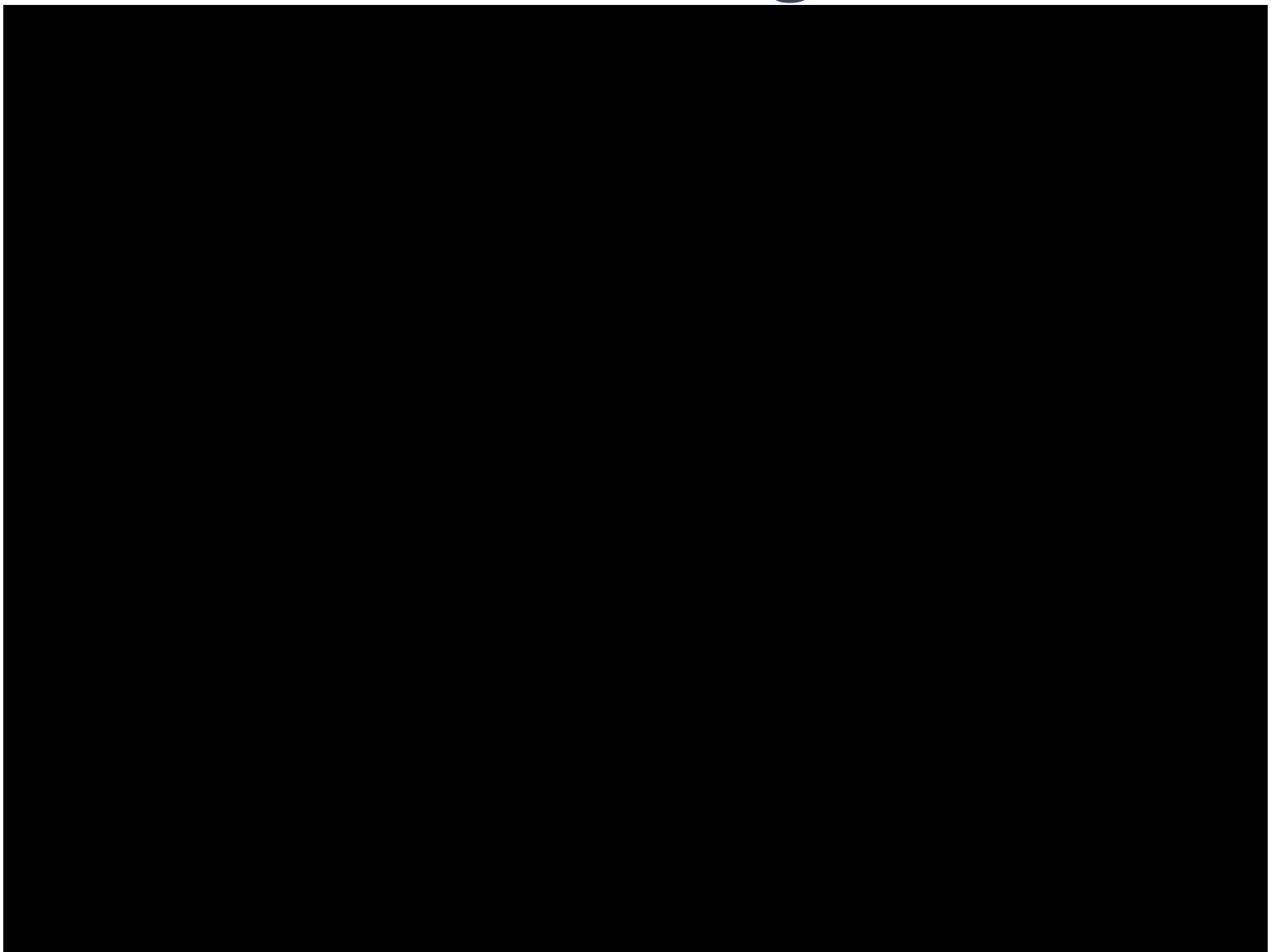
Education at Care Team Sites







COPD Educational Vignettes



COPD Educational Vignettes

- Deploy on iPads; finalizing infrastructure build to download to iPads.
- Launch at selected Pilot Care Team sites.
  - **Expect to have challenges in monitoring the iPads and instituting the use of the iPads in the Care Team sites.**
  - **Concerns about cleaning and disinfecting iPads.**

Challenges/Opportunities

- HCP has COPD educators, but not enough to individually address all 20,000+ COPD patients.
  - **Focus "high risk" hospitalized.**
- Patients do not all fully understand COPD and what to watch for.
  - **Not all referred for education will take advantage of educational offerings.**
- Planning for a New Strategy to focus on Symptom Monitoring and COPD management.
  - **Address these patients in the clinics/expand to more patients.**

University of Michigan Health System

Best Practices in COPD:
The University of Michigan Health System's COPD Journey

Steven Bernstein, MD, MPH

DeAnn VanSickle, BSN, RN

THE MICHIGAN DIFFERENCE®

There are no speaker disclosures

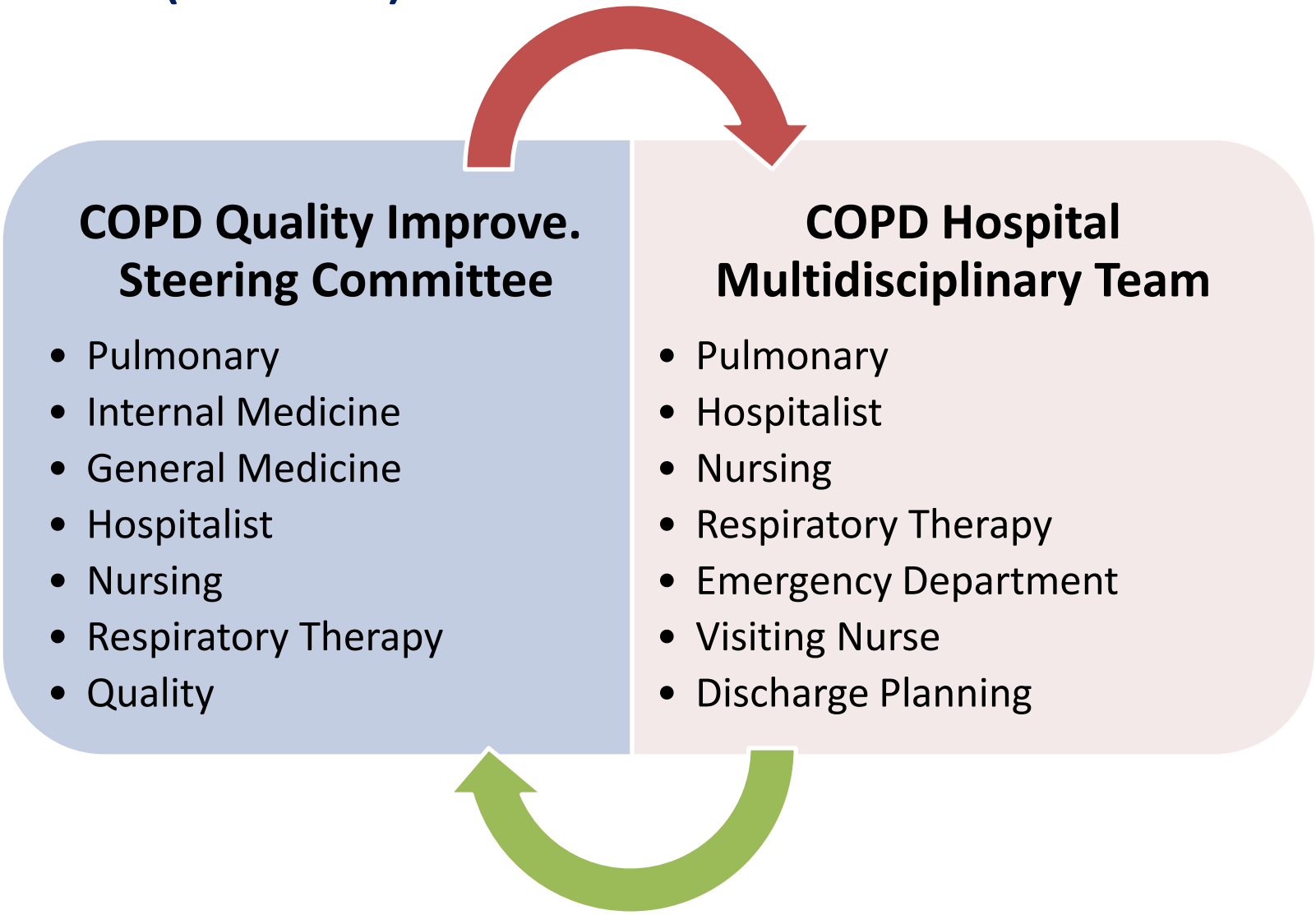
What is COPD?

- Chronic obstructive pulmonary disease (COPD) is a chronic, progressive disease of the lungs
  - Emphysema / Chronic Bronchitis
  - Primarily caused by smoking or exposure to air pollutants
  - 50% of patients with poor pulmonary function tests are unaware they have COPD
- 4th leading cause of death in the US
  - 15 million Americans report being diagnosed with COPD
  - Projected U.S. COPD 2010 cost was $50 billion

COPD Treatment Options

Medications	Bronchodilators
	Corticosteroids
	Antibiotics (for infections)
Life-style changes	Stop smoking
	Nutrition Counseling
Advanced Treatments	Supplemental Oxygen
	Pulmonary Rehabilitation
	Lung Reduction Surgery
Palliative Care	

University of Michigan Health System (UMHS) COPD Teams Structure



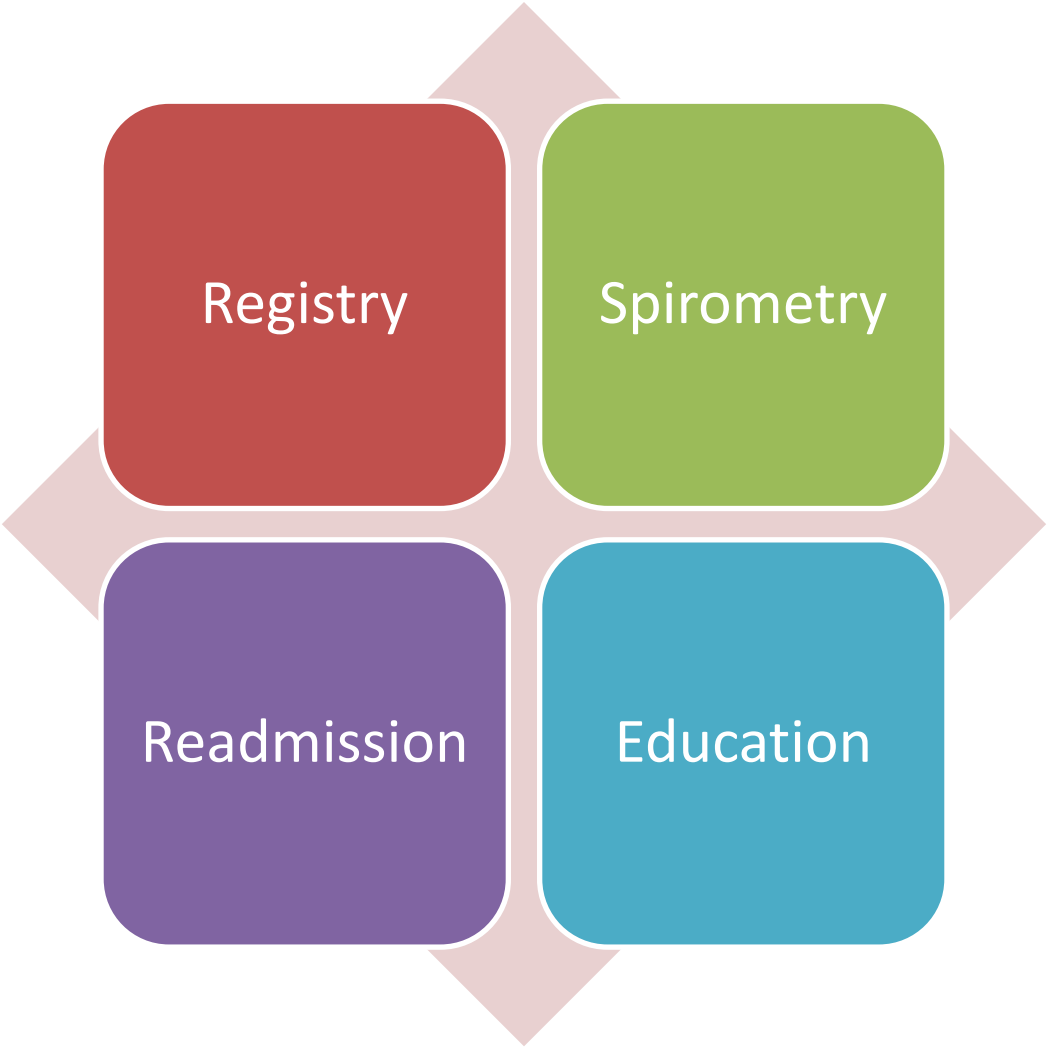
Project Overview: Initial Goals

- Improve the quality of care provided to COPD patients
- Maximize the quality of life of patients with COPD
- Reduce rates of emergency department visits and hospitalizations for patients with COPD

Project Overview: Specific Goals

- Increase number of patients with spirometrically confirmed diagnosis
- Improve the quality of spirometry performed in primary care clinics
- Track quality metrics for COPD patients
- Standardize COPD education materials across the health system
- Increase collaboration between primary and specialty clinicians caring for COPD patients

Project Overview: *Four Focus Areas*



GOAL: *Establish a COPD patient registry*

Creating a COPD Registry

- Define criteria for entry to registry
  - Established patients (2 visits within 2 years); age ≥ 40
  - Diagnosis of COPD
  - Documentation of spirometry (FEV1/FVC < 70%)
  - Chart reviews of different 'buckets

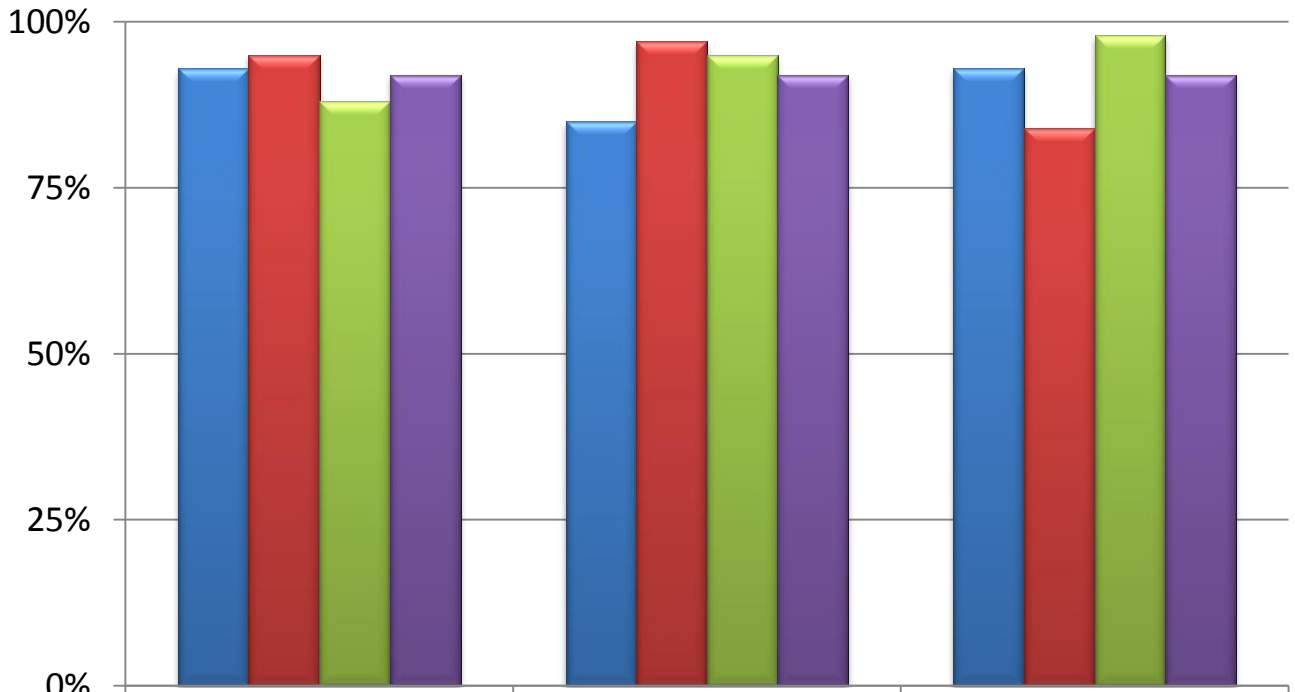
Description	Number
Measurable COPD patients that meet registry criteria	1639
COPD problem list diagnosis and NO confirming spirometry	843
COPD problem list diagnosis, NO confirming spirometry, and a 'rule-out' condition (BOOP, Lung Cancer, etc.)	112
TOTAL PATIENTS	2594

UMHS COPD Registry*

#	Measure Name	Overall %
1	Spirometry performed	100%
2	Current PFT FEV1/FVC < 70%	92%
3	Bronchodilator prescribed	92%
4	Immunizations - Pneumococcal	75%
5	Immunizations - Influenza**	NA
6	Tobacco Status Documented	92%
7	Current Tobacco User	20%

* Report from May 2013; 1631 patients age ≥40 yrs.

Variation on Performance by Specialty, March 2013



	FEV1/FVC <70%	Bronchodilator Medication	Tobacco Use Documented
Primary Care (N=463)	93%	85%	93%
Pulmonary Only (N=509)	95%	97%	84%
Jointly Managed (N=479)	88%	95%	98%
All UMHS	92%	92%	92%

Variation in COPD Performance by Clinic, March 2013

- The data below are for 4 Pulmonary clinics

	N	Spirometry	FEV1/FVC < 70%	Bronchodilator Medication	Immunizations[1]		Tobacco Use Documented	Current Tobacco User
					Influenza	Pneumococcal		
Clinic 1	257	100%	89%	96%	NA	NA	95%	16%
Clinic 2	102	100%	93%	95%	NA	NA	85%	11%
Clinic 3	629	100%	93%	97%	NA	NA	90%	13%
Clinic 4	988	100%	92%	96%	NA	NA	91%	14%
UM Total	**1,631**	**100%**	**92%**	**92%**	**NA**	**NA**	**92%**	**20%**
Goal		**NA**	**NA**	**90%**	**82%**	**82%**	**90%**	**NA**

Green is above target;
red is below target

UM COPD Registry: *Physician Level Report*

Patients with any FEV1/FVC < 70% within the past 10 years or have been clinically validated by chart review. (included in the measured rates above)

CPI	Patient Name	Age (years)	PSL COPD Diagnosis^	Most Recent PFT Results:*				On Asthma Registry^	Broncho dilator Medication	Pneumo ccocal Vaccine	Tobacco Status Documented	Current Tobacco User
				Date	FEV1 % Predicted	FEV1/FVC	FEV1/FVC % Predicted					
			Y	6/5/2008	32	44	68		Y	Y	Y	
				10/8/2010	38	62	89			Y	Y	
			Y	6/22/2006	65	58	82		Y	Y	Y	
			Y	6/24/2008	87	68	94		Y	Y	Y	Y
			Y	10/11/2010	37	37	50		Y	Y	Y	
				2/22/2011	64	68	93		Y	Y	Y	
			Y	3/19/2009	71	65	85		Y	Y	Y	Y
			Y	3/20/2008	55	40	54		Y	Y	Y	Y
			Y	8/11/2009	59	64	97			Y	Y	
			Y	12/9/2009	92	73	102		Y		Y	Y
			Y	7/6/2010	82	69	93		Y		Y	Y

Patients with most recent FEV1/FVC >= 70% but have been billed for COPD and/or have a PSL diagnosis of COPD.

CPI	Patient Name	Age (years)	PSL COPD Diagnosis^	Most Recent PFT Results:*				On Asthma Registry^	Broncho dilator Medication	Pneumo ccocal Vaccine	Tobacco Status Documented	Current Tobacco User
				Date	FEV1 % Predicted	FEV1/FVC	FEV1/FVC % Predicted					
				6/3/2008	112	74	105		Y	Y	Y	
				7/23/2009	92	76	113			Y	Y	
			Y	7/11/2007	71	79	106			Y	Y	
			Y	1/27/2009	94	80	121		Y	Y	Y	Y
			Y	5/30/2008	85	70	100				Y	

Patients with no PFT results but have been billed for COPD and/or have a PSL diagnosis of COPD.

CPI	Patient Name	Age (years)	PSL COPD Diagnosis^	Most Recent PFT Results:*				On Asthma Registry^	Broncho dilator Medication	Pneumo ccocal Vaccine	Tobacco Status Documented	Current Tobacco User
				Date	FEV1 % Predicted	FEV1/FVC	FEV1/FVC % Predicted					
			Y						Y	Y	Y	Y
			Y								Y	
			Y						Y		Y	

UM Point of Care Report

ACTIONABLE REPORT FOR: | AGE: 64

Appt Date/Time: | Clinic: MED-EHG | Today's Provider: | Patient's PCP:

Registry:

- [X] Asthma
- [ ] COPD*
- [ ] CAD/Stroke
- [X] Diabetes
- [ ] CHF
- [ ] Kidney Dz*
- [ ] Controlled Substance*

Future Appointments

MED-EHG	08/04/10

Labs / Vitals

Weight		BP		Lab Results													Other Tests		
Date	LBS	Date	BP	Date	A1c	Chol	Trig	HDL	LDLC	UMA	URPT	Drug	EGFR	Scr	Na	K	Date	EF	NYHA
04/29/10	258	05/27/10	110/68	05/27/10		171		47	80				84	0.7	135	4.6	04/14/08	59	
04/16/09	276	04/29/10	110/82	02/16/10	9.0	248		51	150								01/30/98	55	
02/24/09	278	03/05/10	108/70	11/11/09	7.7	274		53	174				77	0.8	138	4.4			
01/07/09	283	03/02/10	110/62	10/19/09									90	0.7	137	4.7			
10/30/08	283	02/16/10	122/68	10/16/09										0.7	137	5.1			
09/23/08	283	12/04/09	132/76	10/14/09										0.6	136	4.2			
09/04/08	280	11/19/09	128/72	10/09/09									90	0.7	138	4.5			
07/21/08	278	11/09/09	128/72	10/05/09										0.7	135	4.7			
04/30/08	270	08/18/09	114/63	10/04/09							NEG								
		07/28/09	104/71	10/02/09										0.9	136	4.1			
		06/30/09	110/71	10/01/09										0.8	139	4.3			
		06/16/09	132/58	09/30/09							NEG			0.7	138	5.0			
		06/09/09	92/58	09/28/09									90	0.7	140	4.2			
		05/22/09	122/62	09/25/09							NEG								
		04/30/08	164/80	07/21/08	8.7														

Spirometry*

Date	FEV1	FEV1/FVC

Calculated*

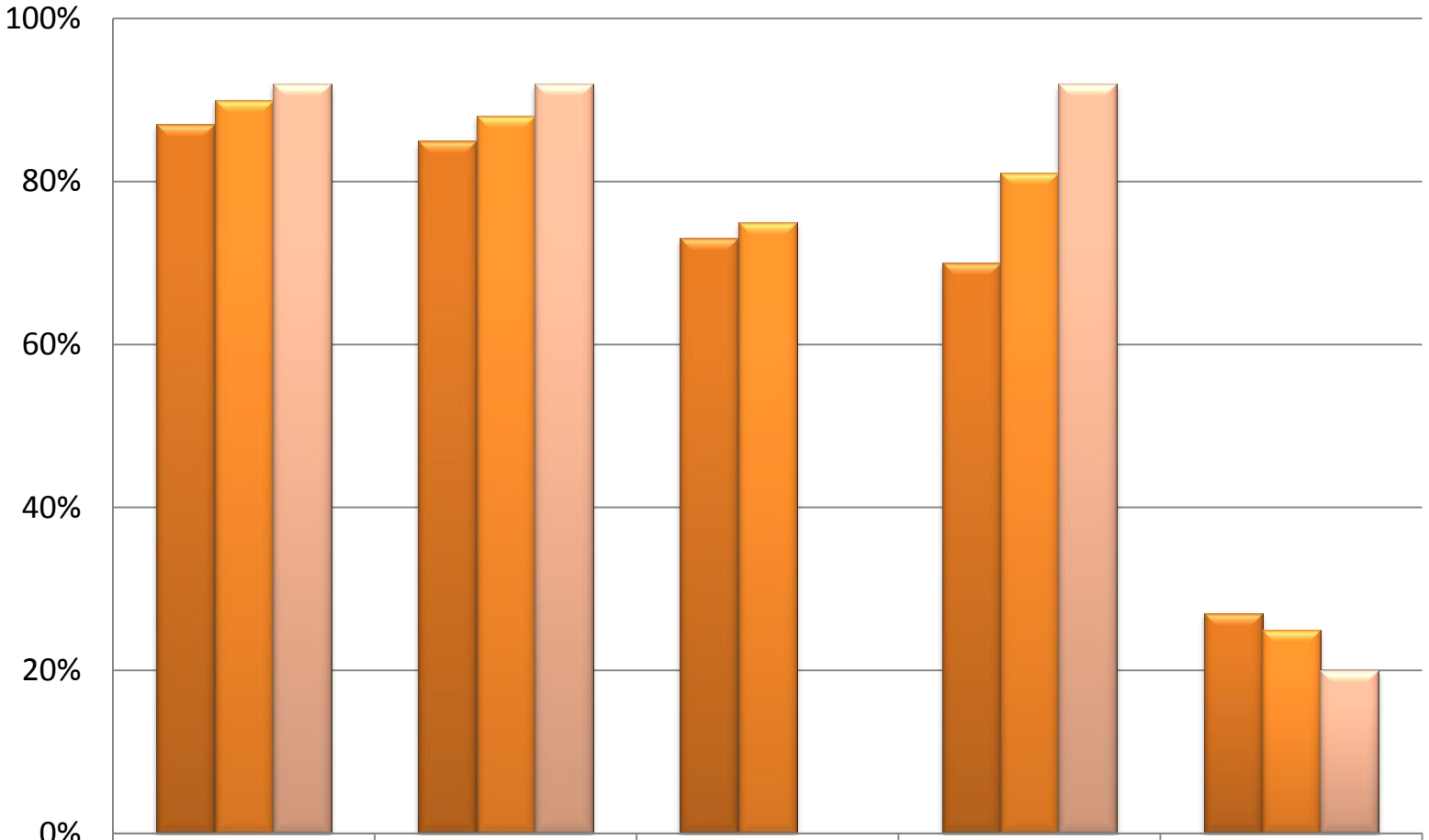
Date	CV Risk	BMI

Recommended Action Items

Labs:	[ ] A1c [ ] Urine Microalbumin
Exams/Tests:	[ ] Diabetic eye exam
Medications:	[ ] ACEI/ARB
Education:	[ ] Asthma action plan Comment:
Preventive Health:	[ ] Mammogram
Immunizations:	
Discuss/Referral:	

*Item has not been programmed yet.
This report is not intended to replace the medical record. The patient's PCP is assigned based on an algorithm and so may be different from the one listed in the medical record.
To provide feedback to the FGP Quality Management Program (QMP) regarding this report please e-mail QMP-Feedback@med.umich.edu

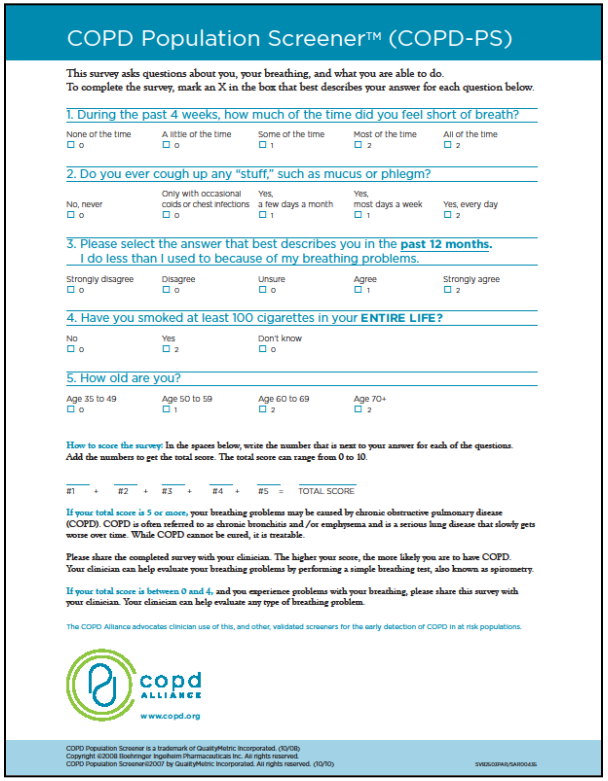
Improvement in Performance, 2011 –2013



	FEV1/FVC <70%	Bronchodilator Medication	Pneumococcal Vaccine	Tobacco Use Documented	Current Tobacco User
March 2011 (n=1845)	87%	85%	73%	70%	27%
March 2012 (n=1724)	90%	88%	75%	81%	25%
March 2013 (n=1631)	92%	92%		92%	20%

Assessment & Screening Tools

- COPD Screener
- CAT (COPD Assessment Tool)
- EXACT-Pro (Exacerbations of Chronic Pulmonary Disease Tool)
- Others we have not yet explored
  - Clinical COPD Questionnaire
  - Modified Medical Research Council Baseline Dypsnea Index
  - St. George's Respiratory Questionnaire



COPD Population Screener™ (COPD-PS)

This survey asks questions about you, your breathing, and what you are able to do.
To complete the survey, mark an X in the box that best describes your answer for each question below.

1. During the past 4 weeks, how much of the time did you feel short of breath?

None of the time	A little of the time	Some of the time	Most of the time	All of the time
☐ 0	☐ 0	☐ 1	☐ 2	☐ 2

2. Do you ever cough up any "stuff," such as mucus or phlegm?

No, never	Only with occasional colds or chest infections	Yes, a few days a month	Yes, most days a week	Yes, every day
☐ 0	☐ 0	☐ 1	☐ 1	☐ 2

3. Please select the answer that best describes you in the **past 12 months.** I do less than I used to because of my breathing problems.

Strongly disagree	Disagree	Unsure	Agree	Strongly agree
☐ 0	☐ 0	☐ 0	☐ 1	☐ 2

4. Have you smoked at least 100 cigarettes in your **ENTIRE LIFE?**

No	Yes	Don't know
☐ 0	☐ 2	☐ 0

5. How old are you?

Age 35 to 49	Age 50 to 59	Age 60 to 69	Age 70+
☐ 0	☐ 1	☐ 2	☐ 2

How to score the survey: In the spaces below, write the number that is next to your answer for each of the questions. Add the numbers to get the total score. The total score can range from 0 to 10.

___ #1 + ___ #2 + ___ #3 + ___ #4 + ___ #5 = TOTAL SCORE

If your total score is 5 or more, your breathing problems may be caused by chronic obstructive pulmonary disease (COPD). COPD is often referred to as chronic bronchitis and /or emphysema and is a serious lung disease that slowly gets worse over time. While COPD cannot be cured, it is treatable.

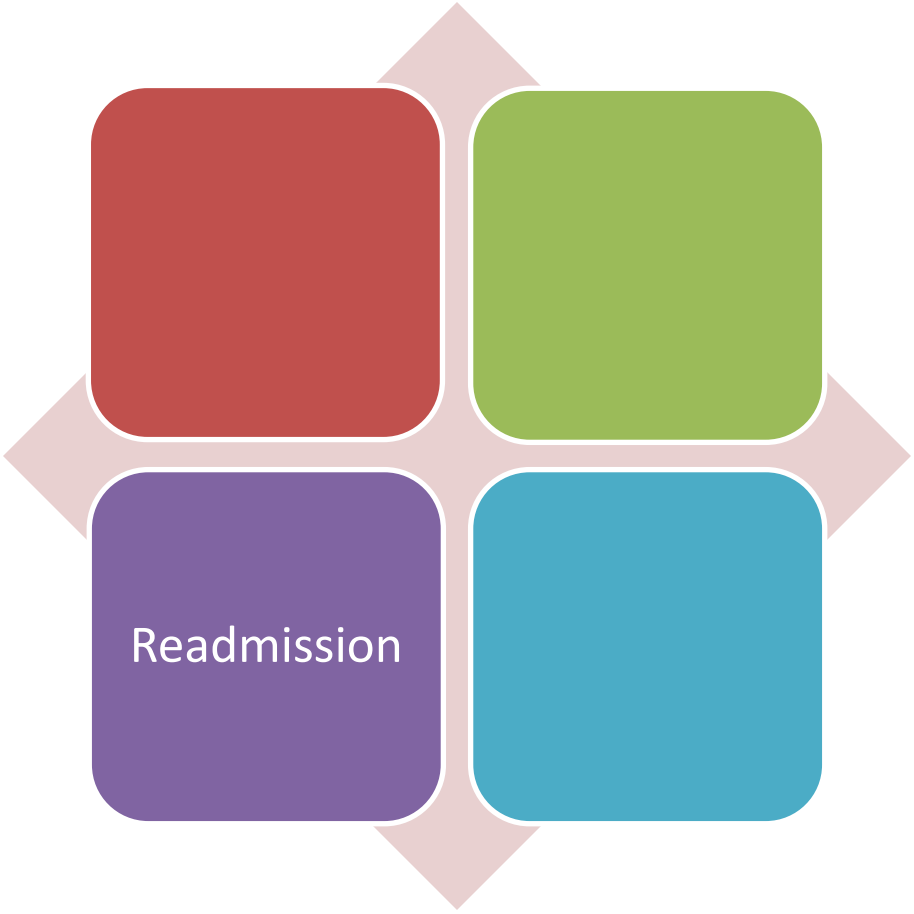
Please share the completed survey with your clinician. The higher your score, the more likely you are to have COPD. Your clinician can help evaluate your breathing problems by performing a simple breathing test, also known as spirometry.

If your total score is between 0 and 4, and you experience problems with your breathing, please share this survey with your clinician. Your clinician can help evaluate any type of breathing problem.

The COPD Alliance advocates clinician use of this, and other, validated screeners for the early detection of COPD in at risk populations.

copd ALLIANCE
www.copd.org

GOAL: *Decrease COPD readmissions*



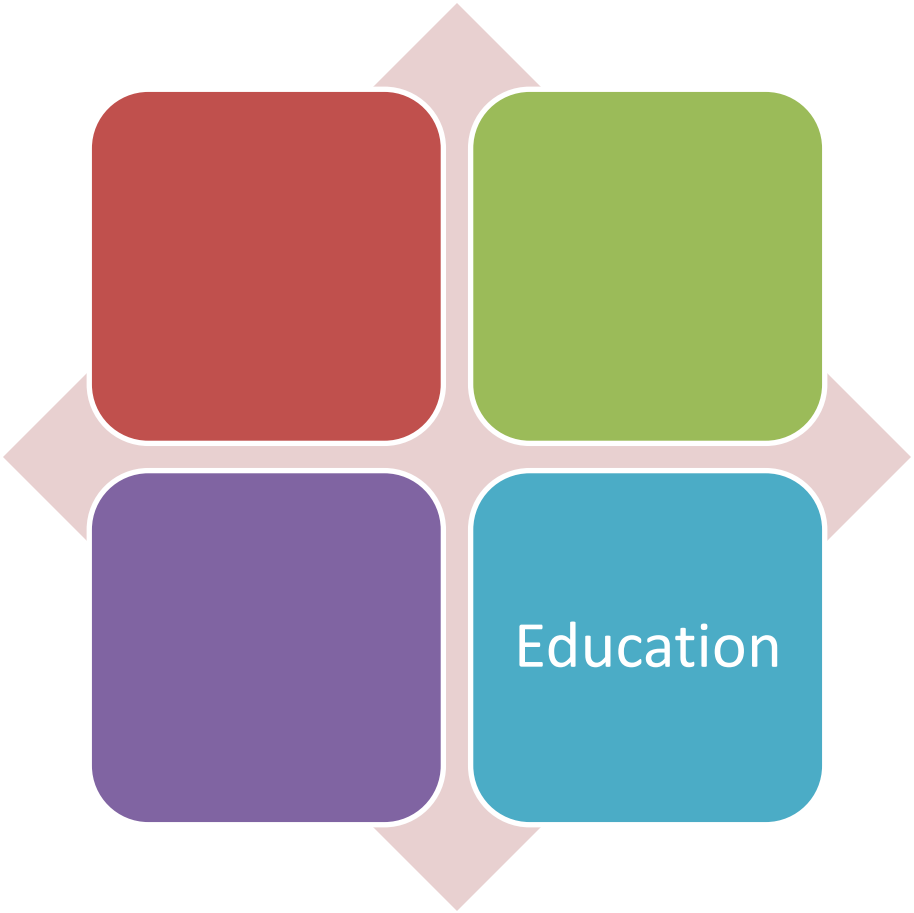
Factors Contributing to Readmissions

- Review charts of patients readmitted with COPD
  - Admission Source
  - Discharge Disposition
  - Completion of discharge planning during hospitalization
  - Follow up appointments in pulmonary & primary care
- Factors contributing to readmission
  - Chronic problems from comorbidities
  - On home oxygen / bipap
  - Psychosocial or psychiatric issues
  - Non-compliance with treatment

Assessment Tools

- Looking for a way to assess patients to determine if ready for discharge in comparison to baseline status
- Little concrete physiological numbers in COPD to determine if patient has improved from admission
- Literature has not determined that there is one tool for this purpose

GOAL: *Select Education Materials*



Educational Materials Selected

- Goal of standardization across all care settings
- American College of Physicians ‘Living With COPD’ book is the UMHS COPD book
- Available in English and Spanish

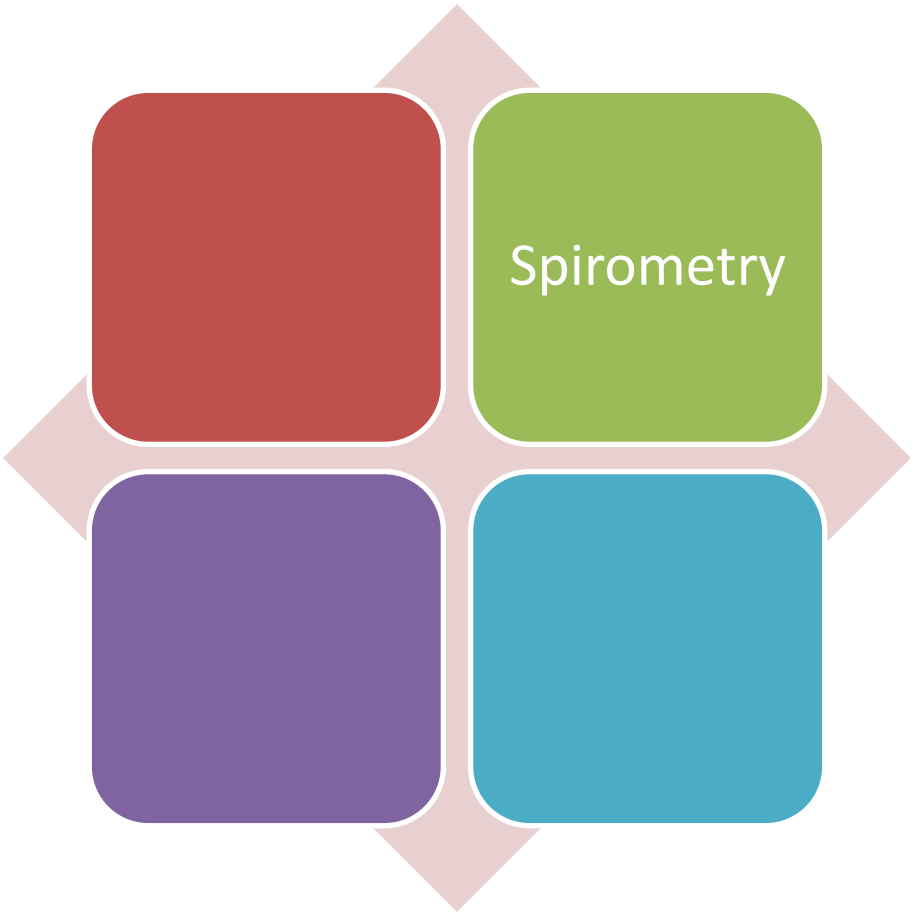
Educational Materials Selected

- Supplemental Materials from the COPD Foundation
  - Slim Skinny Reference Guides® for patients
  - Big Fat Reference Guide® for patients and clinicians
  - Clinician pocket cards

Future Educational Plans

- Inservices on COPD and inhaler device training to primary care, inpatient units, and staff training groups
- Consider creating a COPD e-learning module for staff
- Assure all materials are available on internal patient education clearinghouse

GOAL: *Provide quality spirometry in primary care*



Spirometry Improvement Project

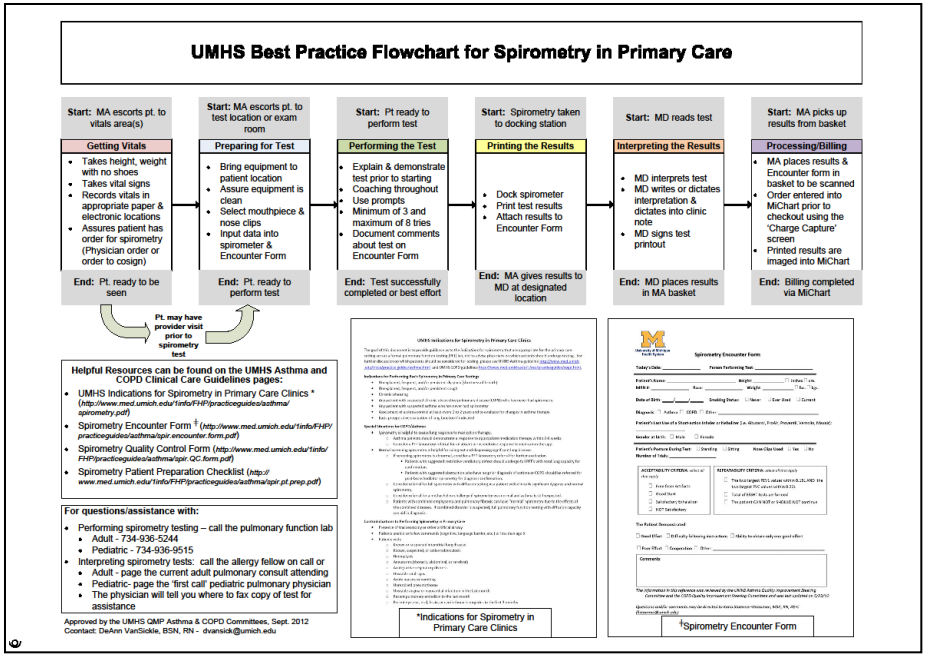
- Goals:
  - Standardize spirometry in primary care clinics
  - Improve access to testing
  - Educate clinicians how to use spirometry in clinic settings
- Current State
  - 4 types of spirometers with no software
  - Very few primary care providers knowledgeable on interpretation and use of spirometry
  - No standard educational program

Spirometry 360

- Awarded grant to participate in National Asthma Control Initiative Champions Spirometry 360® "Train the Trainer" Pilot Program
- Provided access to the University of Washington spirometry educational program for coaches and providers
- 6 Pilot Sites received training, over reading services and support to incorporate spirometry into their primary care practices

Spirometry Improvement Work

- Created online education materials for coaches and providers based on Spirometry 360® materials
- Regularly communicated tips and performance reports from over reader system to clinics
- Conducted “Go & See” visits to five sites to determine best practice in workflow
- Produced flowchart for distribution



UMHS Best Practice Flowchart for Spirometry in Primary Care

Start: MA escorts pt. to vitals area(s)	Start: MA escorts pt. to test location or exam room	Start: Pt ready to perform test	Start: Spirometry taken to docking station	Start: MD reads test	Start: MA picks up results from basket
Getting Vitals • Takes height, weight with no shoes • Takes vital signs • Records vitals in appropriate paper & electronic locations • Assures patient has order for spirometry (Physician order or order to cosign)	**Preparing for Test** • Bring equipment to patient location • Assure equipment is clean • Select mouthpiece & nose clips • Input data into spirometer & Encounter Form	**Performing the Test** • Explain & demonstrate test prior to starting • Coaching throughout • Use prompts • Minimum of 3 and maximum of 8 tries • Document comments about test on Encounter Form	**Printing the Results** • Dock spirometer • Print test results • Attach results to Encounter Form	**Interpreting the Results** • MD interprets test • MD writes or dictates interpretation & dictates into clinic note • MD signs test printout	**Processing/Billing** • MA places results & Encounter form in basket to be scanned • Order entered into MiChart prior to checkout using the ‘Charge Capture’ screen • Printed results are imaged into MiChart
End: Pt. ready to be seen	**End:** Pt. ready to perform test	**End:** Test successfully completed or best effort	**End:** MA gives results to MD at designated location	**End:** MD places results in MA basket	**End:** Billing completed via MiChart

Pt. may have provider visit prior to spirometry test

Helpful Resources can be found on the UMHS Asthma and COPD Clinical Care Guidelines pages:

- UMHS Indications for Spirometry in Primary Care Clinics * (*http://www.med.umich.edu/1info/FHP/practiceguides/asthma/spirometry.pdf*)
- Spirometry Encounter Form † (*http://www.med.umich.edu/1info/FHP/practiceguides/asthma/spir_encounter_form.pdf*)
- Spirometry Quality Control Form (*http://www.med.umich.edu/1info/FHP/practiceguides/asthma/spir_QC_form.pdf*)
- Spirometry Patient Preparation Checklist (*http://www.med.umich.edu/1info/FHP/practiceguides/asthma/spir_pt_prep.pdf*)

For questions/assistance with:

- Performing spirometry testing – call the pulmonary function lab
  - Adult - 734-936-5244
  - Pediatric - 734-936-9515
- Interpreting spirometry tests: call the allergy fellow on call or
  - Adult - page the current adult pulmonary consult attending
  - Pediatric- page the ‘first call’ pediatric pulmonary physician
  - The physician will tell you where to fax copy of test for assistance

Approved by the UMHS QMP Asthma & COPD Committees, Sept. 2012
Contact: DeAnn VanSickle, BSN, RN – dvansick@umich.edu

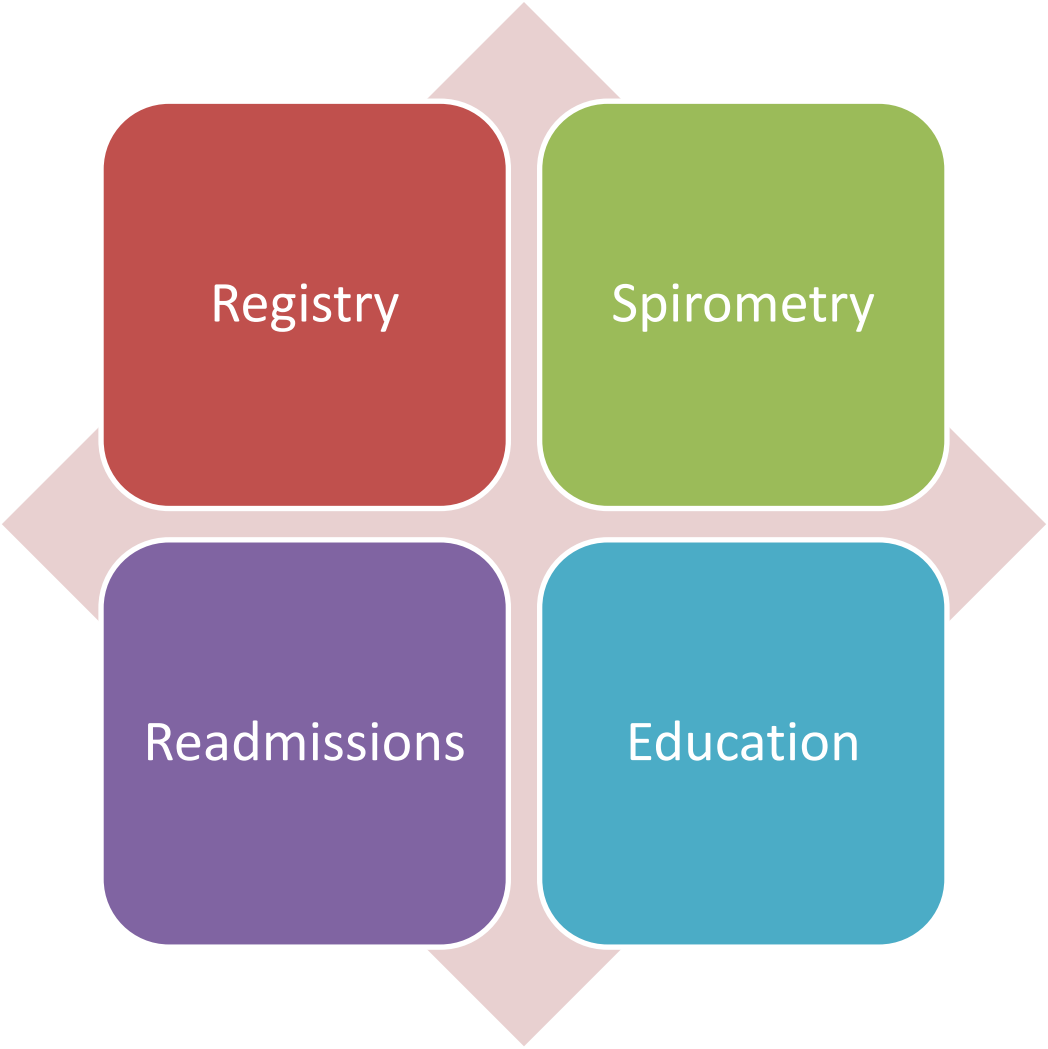
*Indications for Spirometry in Primary Care Clinics

†Spirometry Encounter Form

Spirometry Results and Follow-up

- Insufficient volumes of spirometry
  - Needed 30/clinic /month ➔ Achieved 3/clinic/month
- Poor accuracy of testing
  - Goal was 80% pass rate ➔ Achieved 52% pass rate
- New spirometry model needed
  - Traveling pulmonary function tech
  - Bring spirometer and laptop to site

Project Overview: Summary



Best Practices at UMHS

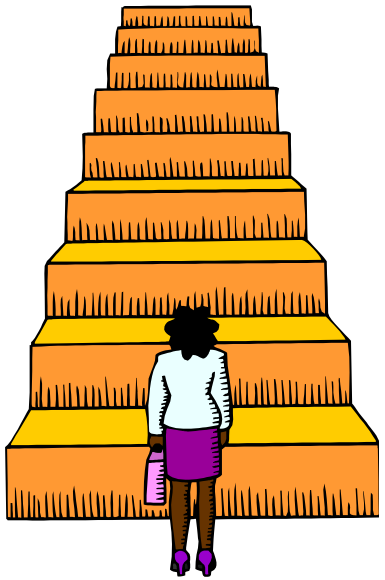
- Multidisciplinary teams representing entire health system
- Robust data and research support
  - Registry / Clinicians involved in research
- Evidence-based interventions
- Willingness to experiment
- Quality improvement support
  - Project manager-type role

Challenges & Lessons Learned

- Important to hold regular team meetings
- Data is a necessary part of decision making
- Involve all levels of staff from clinical settings
- Patience with implementation of an electronic medical record

Next Steps

- Improve data pull from EMR to registry
- Utilization of screening tools in ambulatory care
- Study of inpatient tool for assessment of readiness for discharge
- Pilot new spirometry delivery model




QUESTIONS?

University of Michigan Health System

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