



PITTSBURGH REGIONAL HEALTH INITIATIVE

*Spreading Quality, Containing Costs.*

REDUCING HOSPITAL READMISSIONS  
BY  
TRANSFORMING CHRONIC CARE

July 2008



# What is PRHI?

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- A non-profit agency dedicated to improving the safety and quality of health care in the Pittsburgh Region and nationally
- Board members include CEOs and senior staff from regional hospitals (e.g., UPMC, Jefferson), health insurers (e.g., Aetna, Highmark), and employers (Allegheny County, Duquesne Light, Medrad), and other civic leaders
- Funded by local corporations, foundations, health plans, and government contracts and grants
- Trains health care staff in Perfecting Patient Care<sup>sm</sup>, a quality improvement method based on the Toyota Production System
- Organizes and supports demonstration projects in hospital infection reduction, chronic care improvement, etc.

# Hospital Readmissions

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## **What We Know: Major Contributor to High Costs**

- PHC4 reports that nearly 1 in 5 patients are readmitted to a hospital within 30 days after being discharged
- Hospital charges for these readmissions total \$2.2 billion and involve 365,000 hospital days statewide
- Nearly 25% of readmissions due to complications/infections
- Significant variation among hospitals

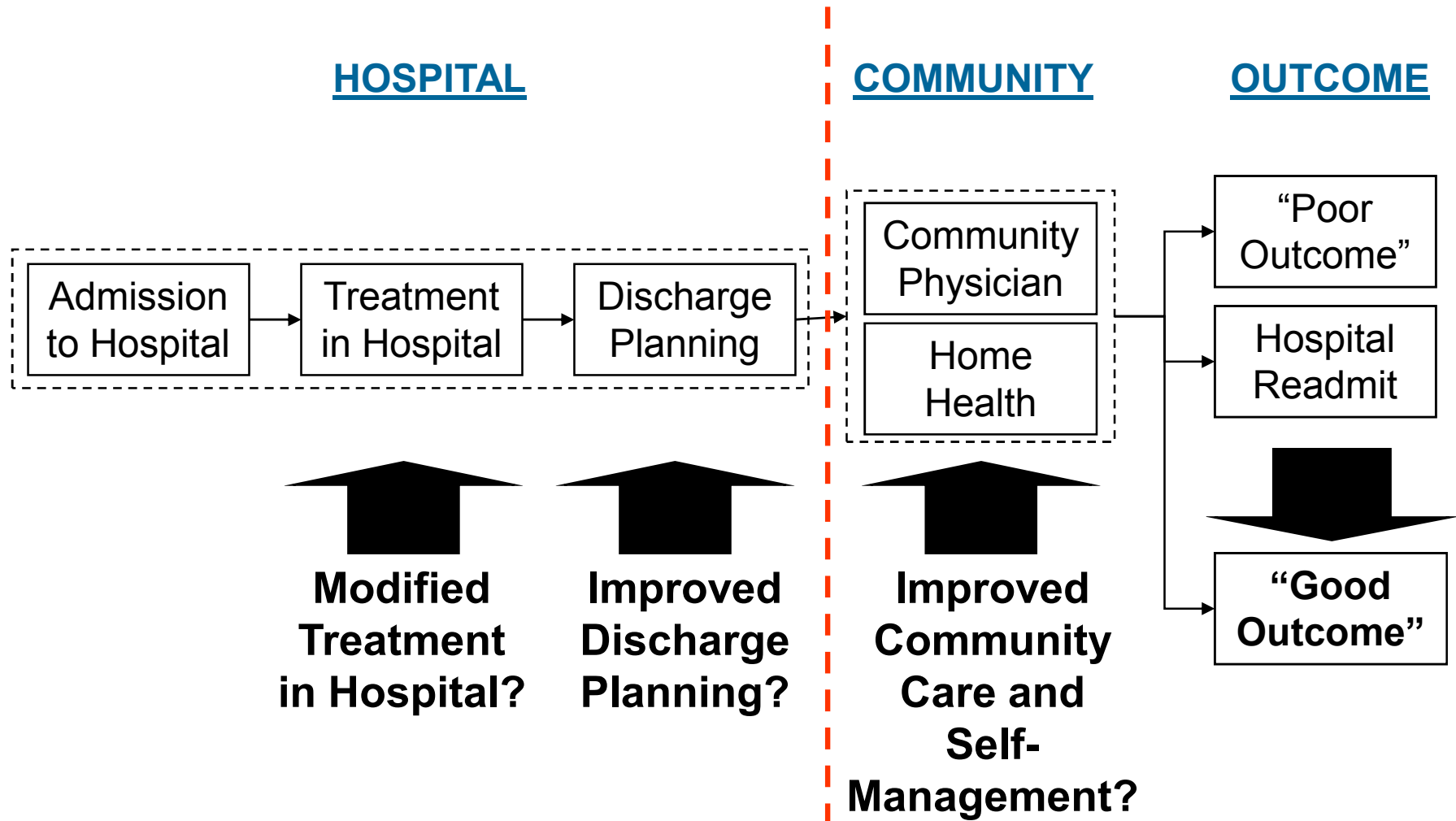
## **What We Need to Know: How to Reduce Readmits**

- How many of the readmissions could be eliminated through improved quality processes, and how can it be done?

## **How We Will Find Out: Research & Demonstration**

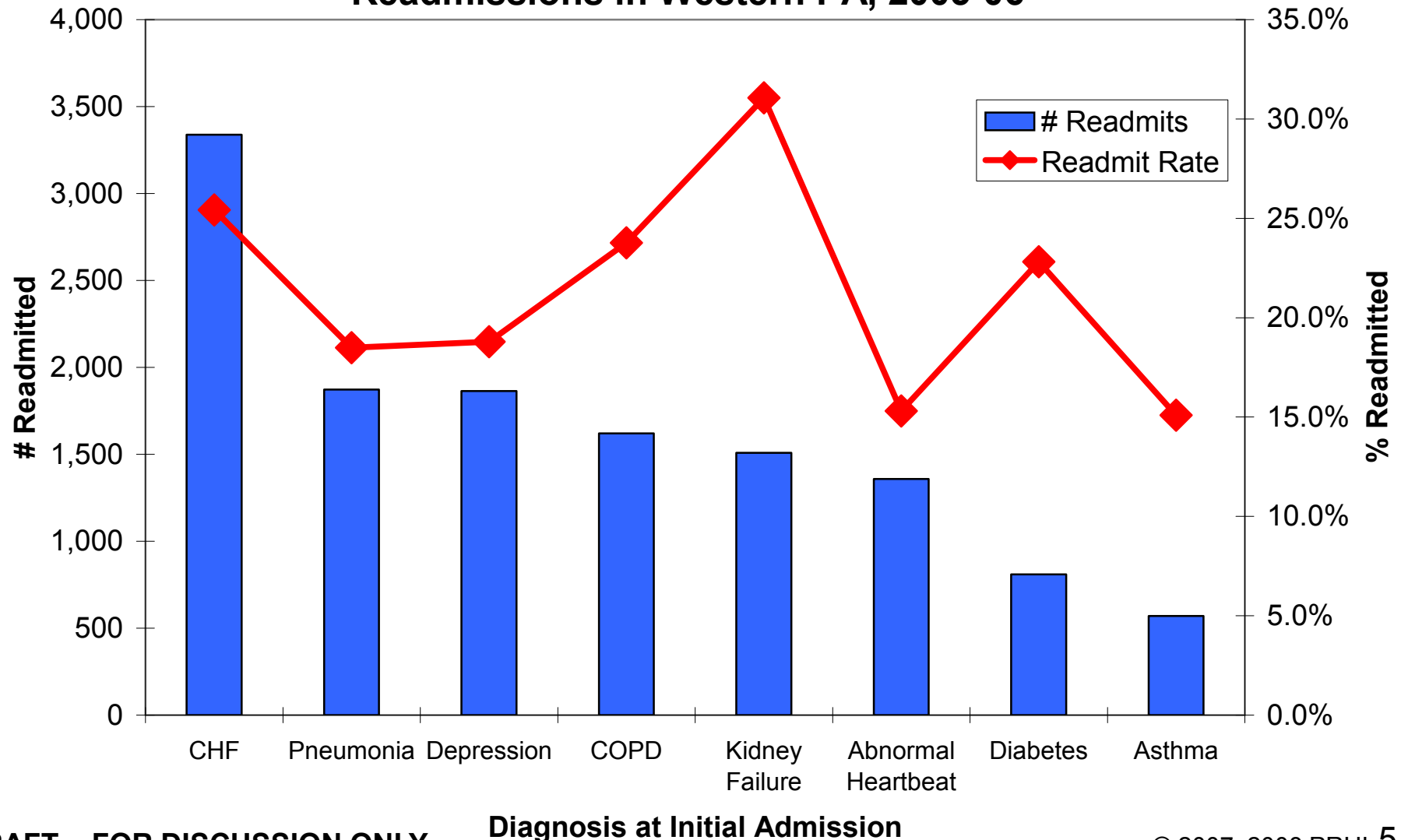
- Three-year grant from the R. K. Mellon Foundation

# Reducing Readmission Requires Thinking Across Provider Lines



# Chronic Diseases Are Largest Categories of Readmissions

Readmissions in Western PA, 2005-06



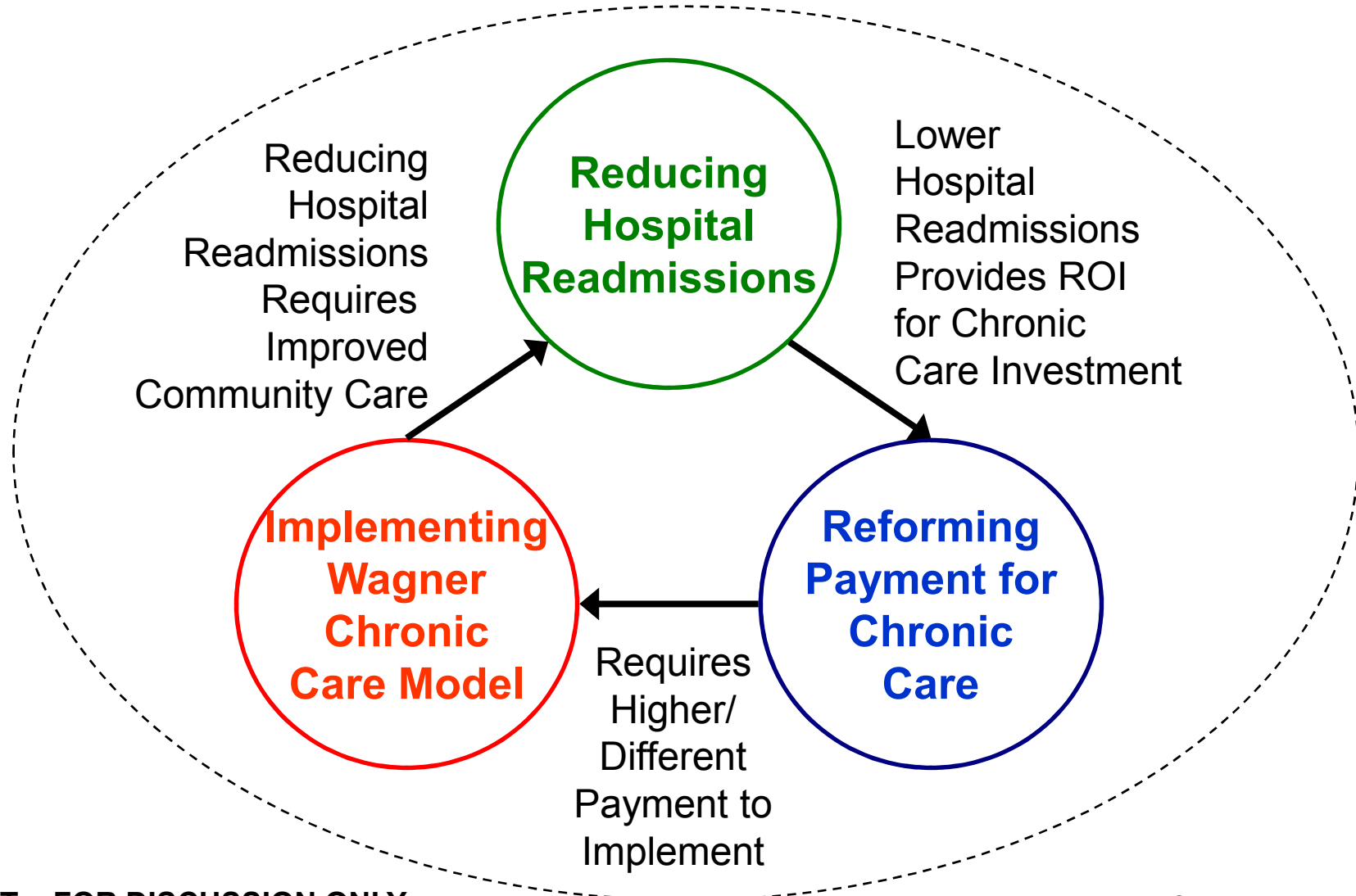


# Challenge #1: Chronic Care Model Not Reimbursed Today

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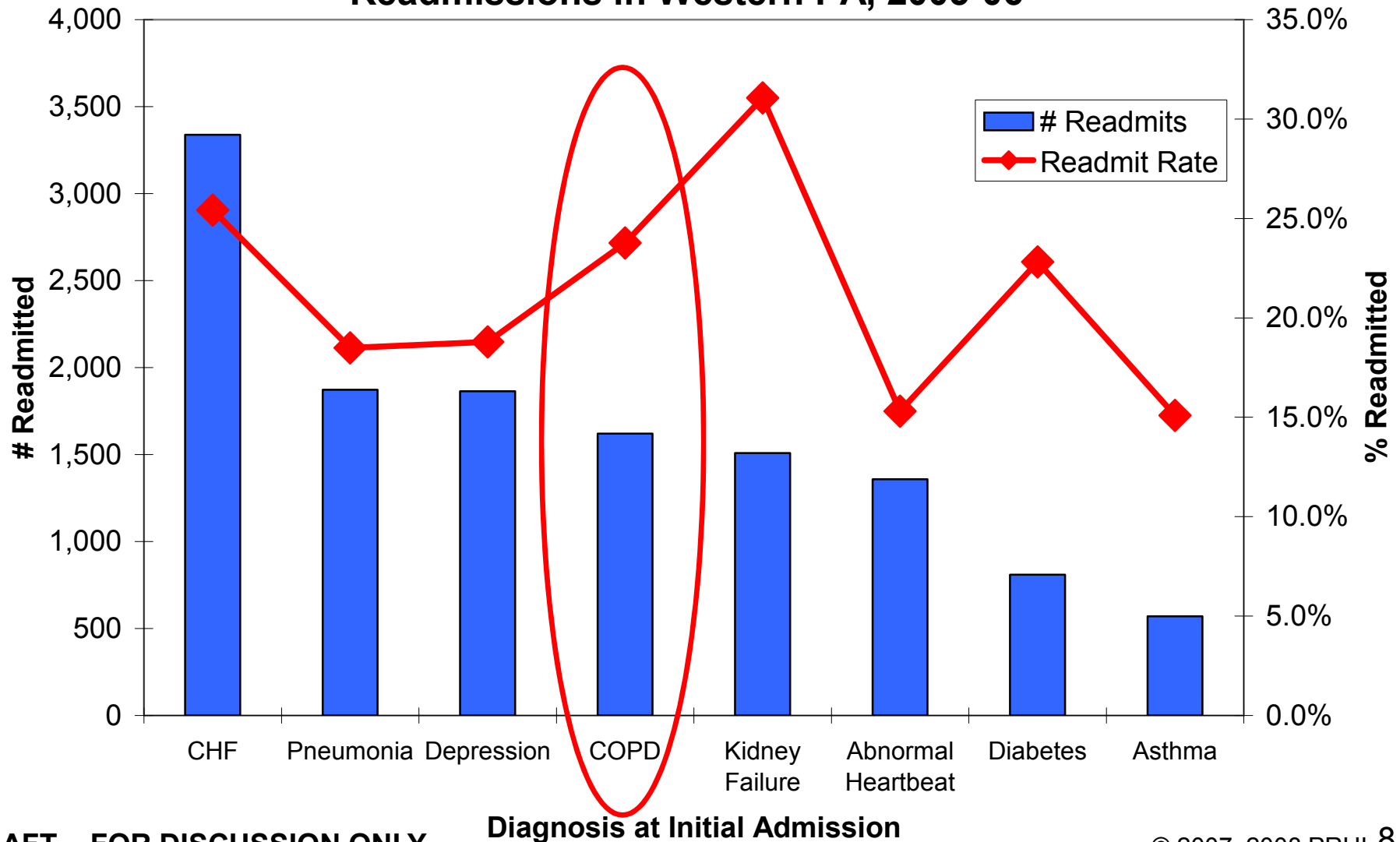
- **Key Services Not Billable/Reimbursable**
  - hiring additional non-physician personnel (e.g., nurse care managers)
  - patient contacts with physicians by phone or email (health insurance only pays for face-to-face visits)
- **Insurers and Purchasers Reluctant to Pay for More Services and Increase Costs in the Short Run**
- **Physician Practices Don't Have Systems/Expertise for Managing Hospital Admissions/Readmissions**

# Chronic Care/Preventable Admission Initiative



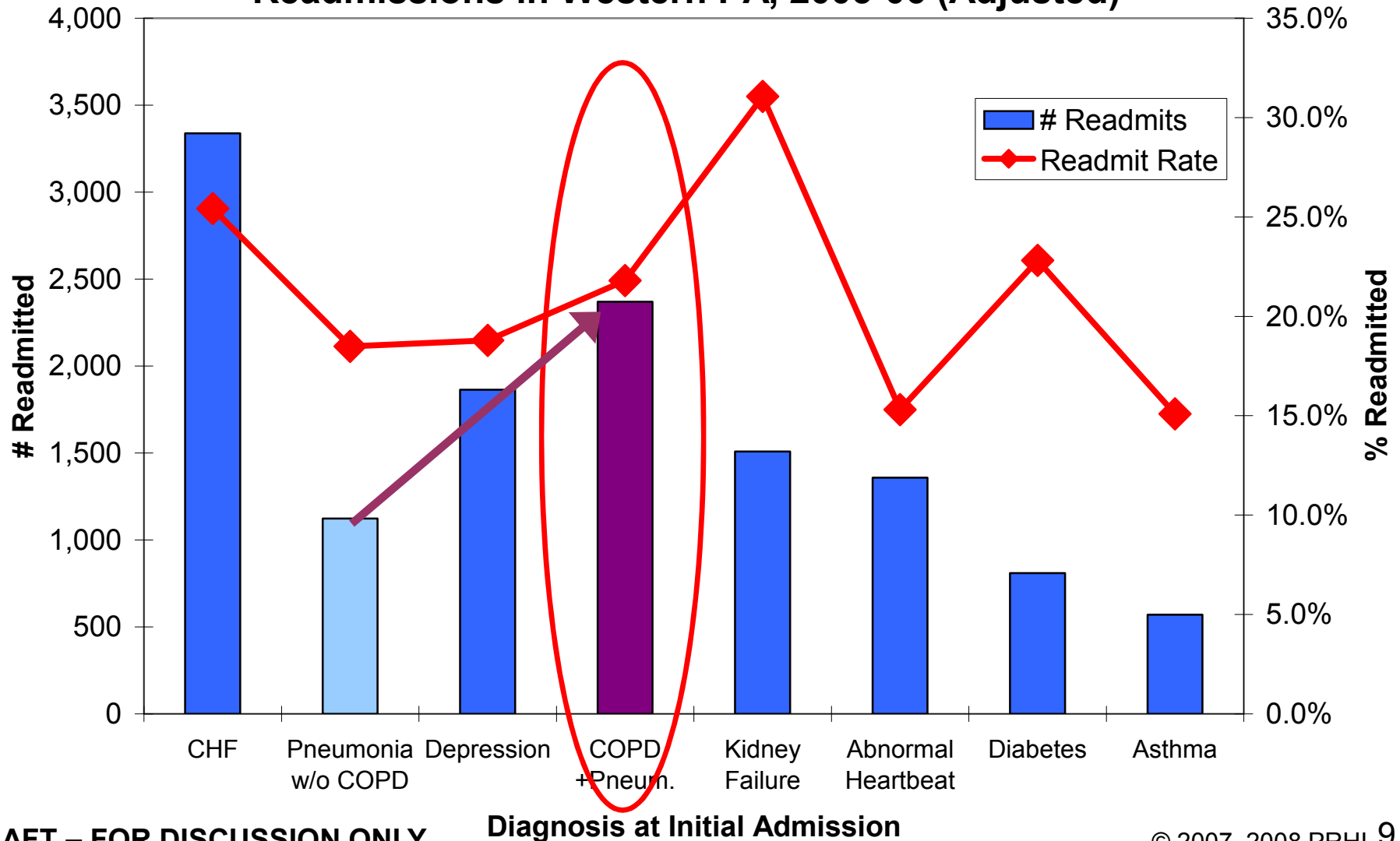
# COPD is 4<sup>th</sup> Highest Volume & Rate of Readmissions

Readmissions in Western PA, 2005-06



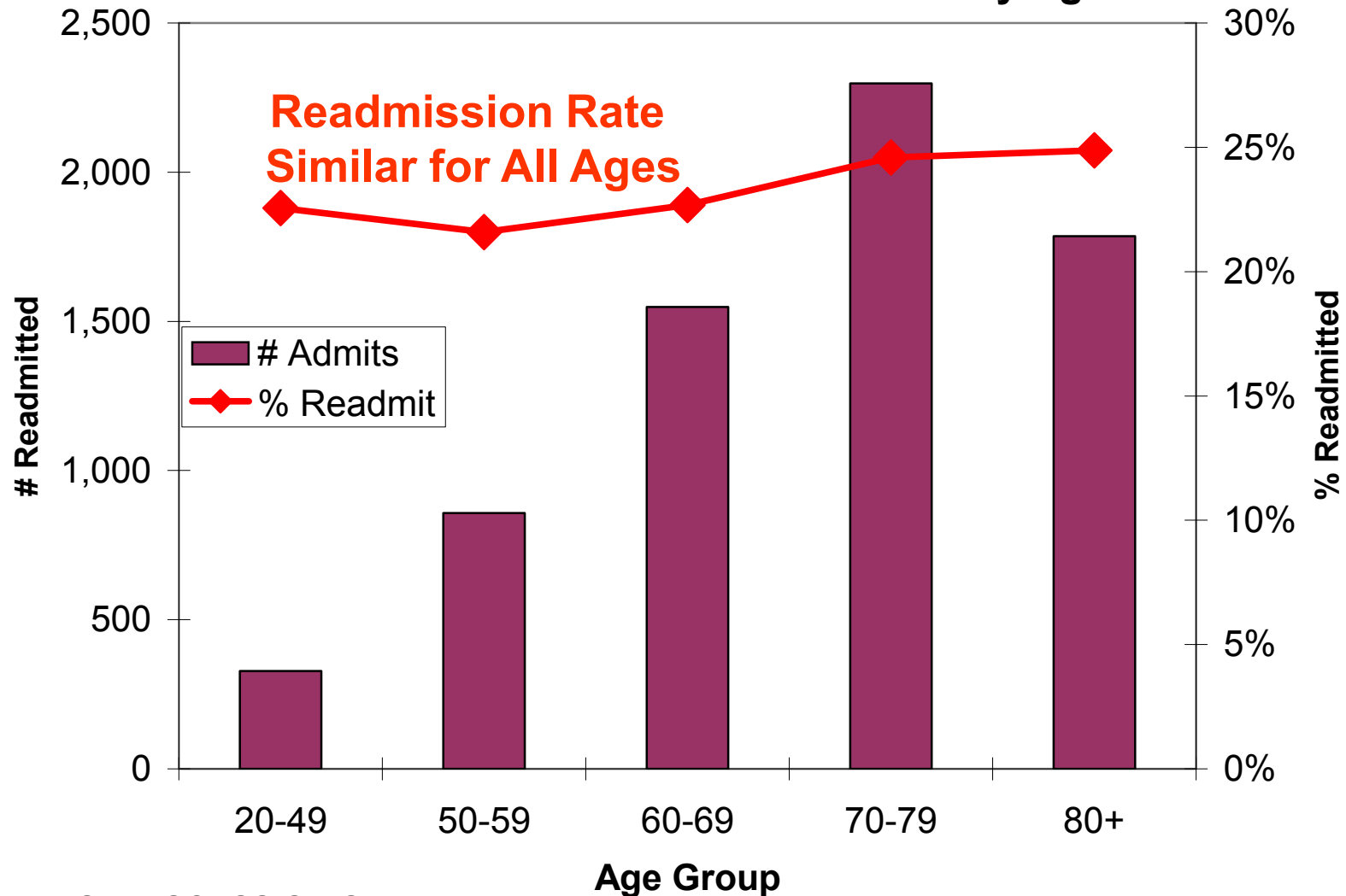
# Plus, 40% of Pneumonia Readmits Are COPD Patients

Readmissions in Western PA, 2005-06 (Adjusted)



# 70% of COPD Patients Under 65, 33% of Admissions Under 65

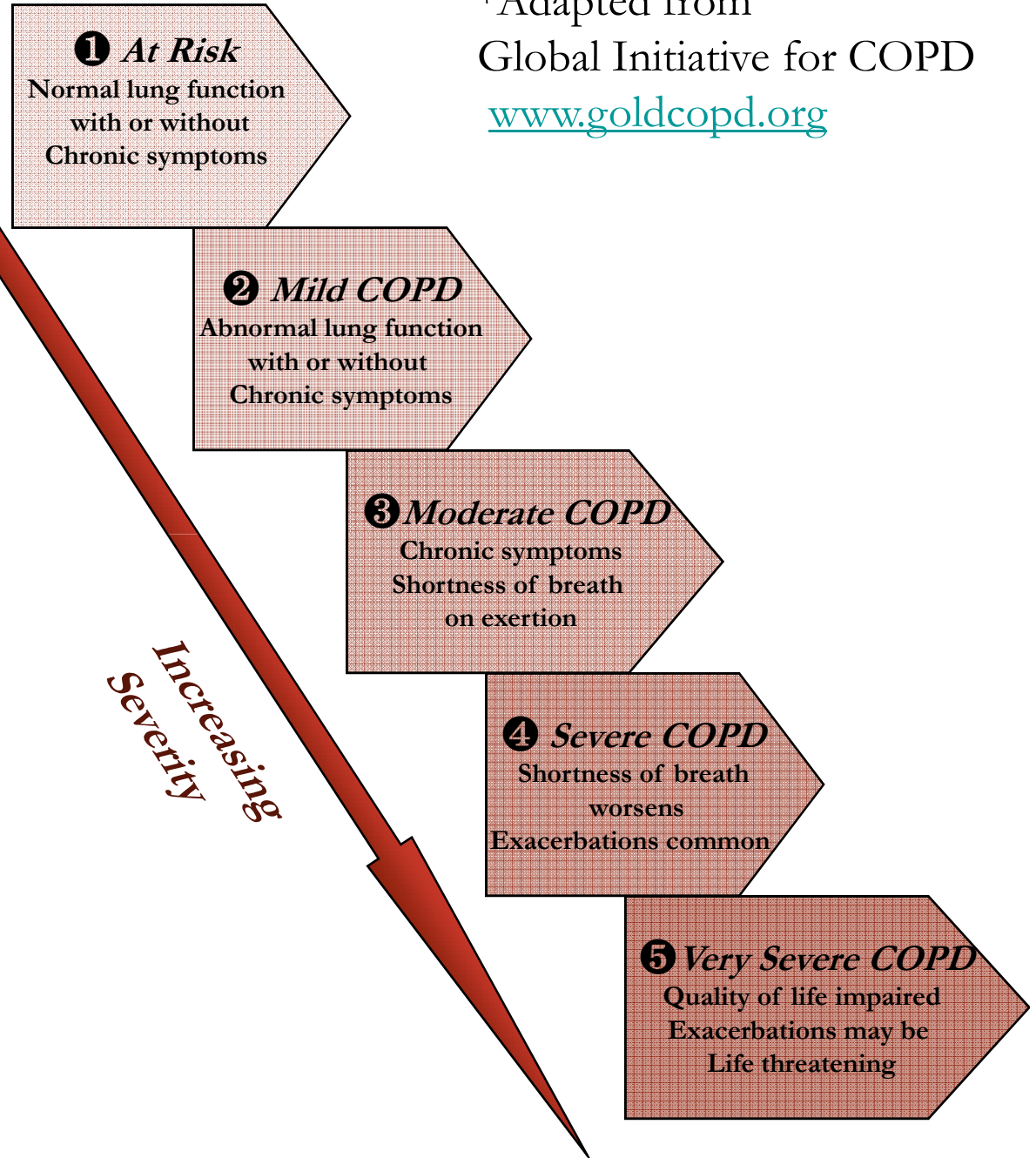
**COPD Admissions/Readmissions by Age**



# Clinical Practice Guidelines Exist:

## \*Long-Term Treatment for Stable COPD

- ① Avoidance of Risk Factors; Influenza Vaccination
- ② Add Rapid-Acting Bronchodilator *when indicated*
- ③ Add Short or Long-acting Bronchodilators and Pulmonary Rehabilitation
- ④ Add medium to high-dose inhaled or oral glucocorticosteroids or antibiotics *when indicated*
- ⑤ Add long-term oxygen; consider surgical referral



\*Adapted from  
Global Initiative for COPD  
[www.goldcopd.org](http://www.goldcopd.org)



# Research Shows Dramatic Impact From Simple Interventions

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- **39.8% reduction in admissions from improved patient education and self-management**
  - case managers (nurses or respiratory therapists)
  - 1 hour/week of teaching at home for 7-8 weeks, including exercise
  - weekly follow-up phone calls for 8 weeks, monthly calls beyond
- **37.3% reduction in admissions from education, training on medications, action plan for worsening symptoms**
- **30% - 50% reductions in admissions from influenza vaccination**
- **Significant reduction in hospital admissions from smoking cessation**



# A Key Element May Be Inhaler Training

## **NATURE OF ERRORS IN MDI USE**

79% of patients coming into an ER did not use their MDI inhaler(s) properly.

Errors were:

Step 1: Taking the cap off (3%)

Step 2: Shaking the canister (15%)

Step 3: Exhaling first (46%)

Step 4: Actuating the inhaler with or slightly after onset of inspiration (34%)

Step 5: Steady, deep inspiration (30%)

Step 6: Holding breath for at least 10 seconds (37%)

Step 7: Waiting 1 minute before next puff (49%)

## **ERRORS IN MDIs VS. DPIs**

<b>Inhaler</b>	<b>Error Rate</b>	<b>Most frequent error</b>
MDI w/o spacer:	74.6%	Trigger and simultaneously breathe in
DPI Turbuhaler:	43.2%	Hold upright; turn grip until it clicks
DPI Diskus:	6.8%	Slide the lever until it clicks
DPI Aerolizer:	16.9%	Push the buttons to pierce the capsule



# Inhaler Training (Continued)

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## **ERRORS IN INSPIRATORY FLOW RATE**

MDI	59.0% Inhaled Too FAST
DPI Handihaler	57.0% Inhaled Too SLOWLY
DPI Turbuhaler	14.2% Inhaled Too SLOWLY
DPI Diskus	4.9% Inhaled Too SLOWLY

## **TIME REQUIRED FOR PATIENT TRAINING**

### **One Study:**

Time to teach patients to do all 7 steps correctly at least once:

Average: 8.3 minutes. Maximum: 30 minutes

80% required 15 minutes or less

### **Another Study:**

Median teaching time of 6.5 minutes



# Opportunities to Use Hospital Stay As A “Teachable Moment”

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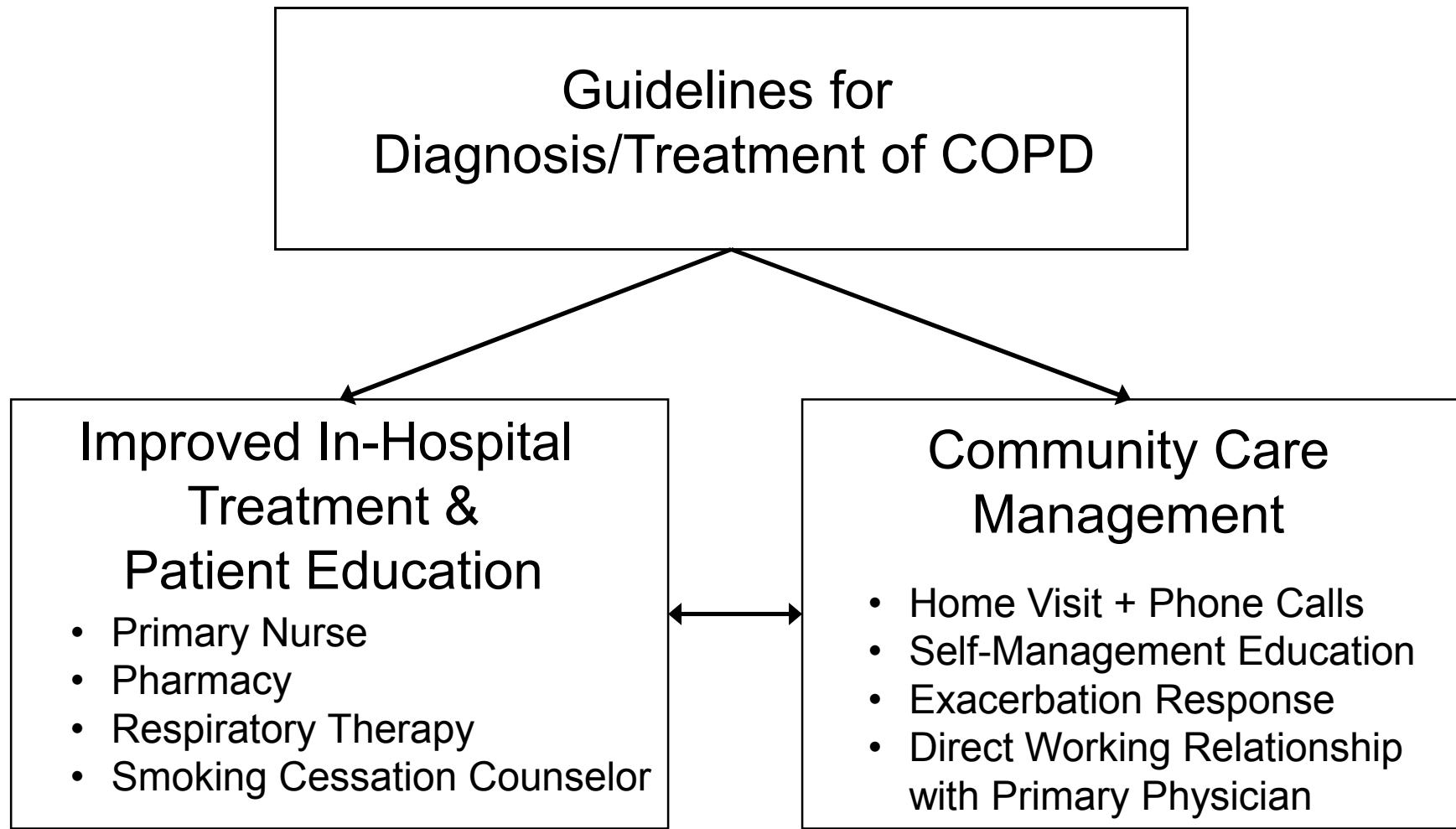
- **Inhalers**

- COPD patients use inhalers to prevent/manage exacerbations
- Neither PCP nor pharmacy trains patient on inhaler technique (only 20% know how to use it properly)
- Failure to use inhalers properly may result in hospitalization
- Hospital staff only trains patients if the inhaler is newly prescribed
- Patients in hospital typically treated with nebulizers, instead of the inhalers they will use after discharge, so limited opportunity for training
- Hospital may learn of barriers to patient use of medications (affordability, convenience, etc.), but don't address them

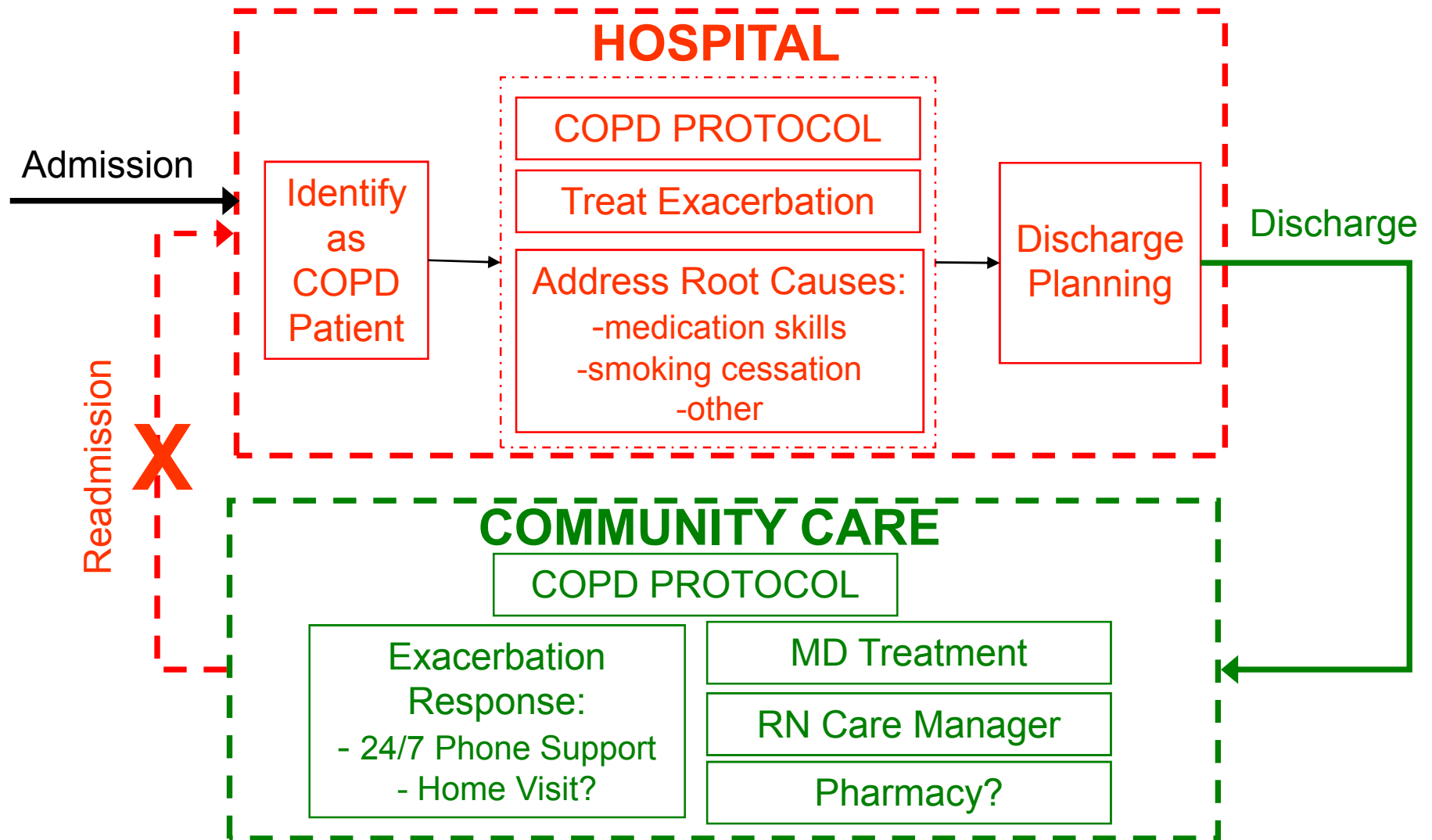
- **Smoking Cessation**

- Smokers are, by definition, in forced smoking cessation during hospital stay, but it's not systematically treated as an opportunity for initiation of ongoing smoking cessation therapy

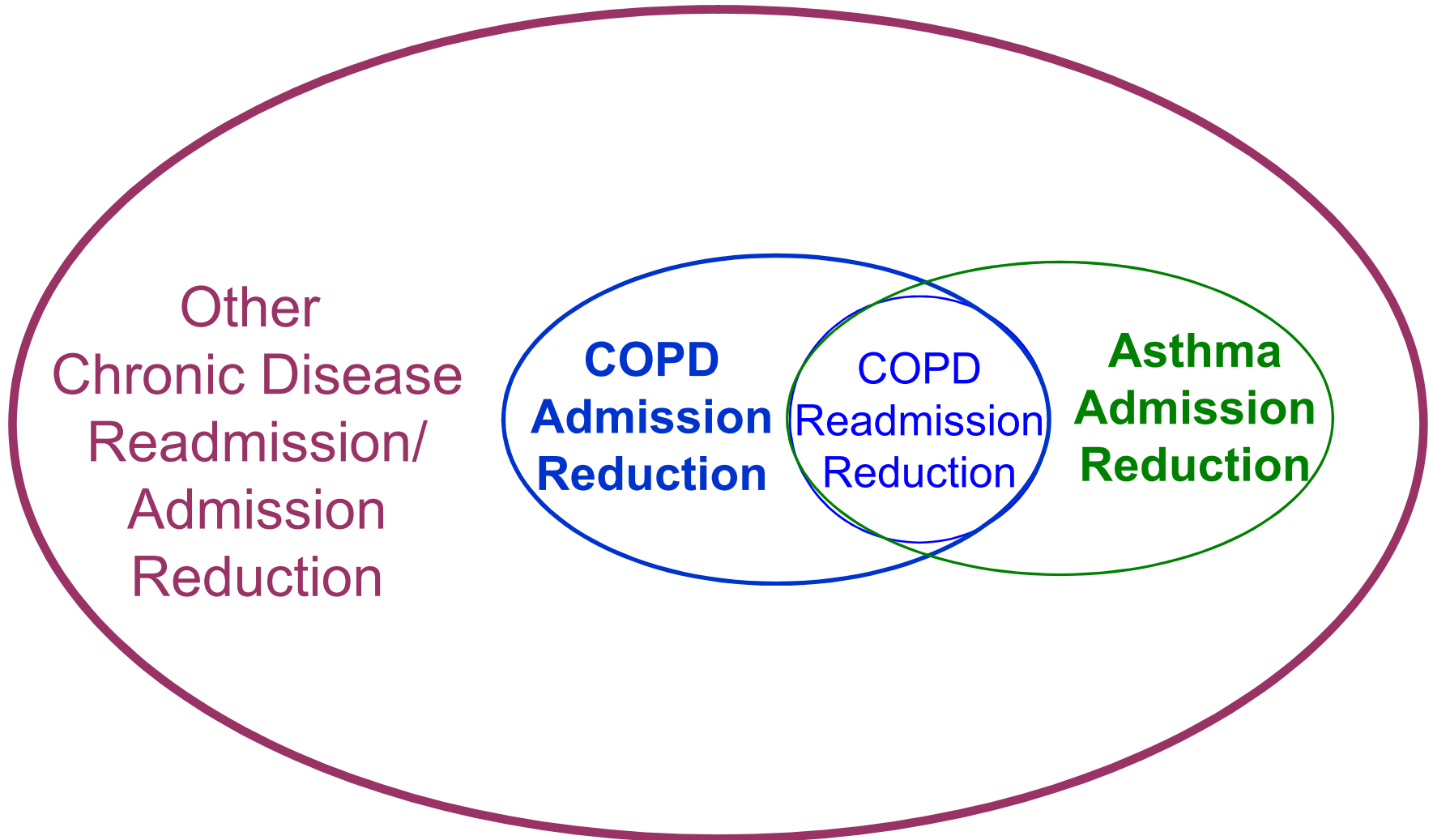
# 3 Key Elements for COPD Readmission Reduction



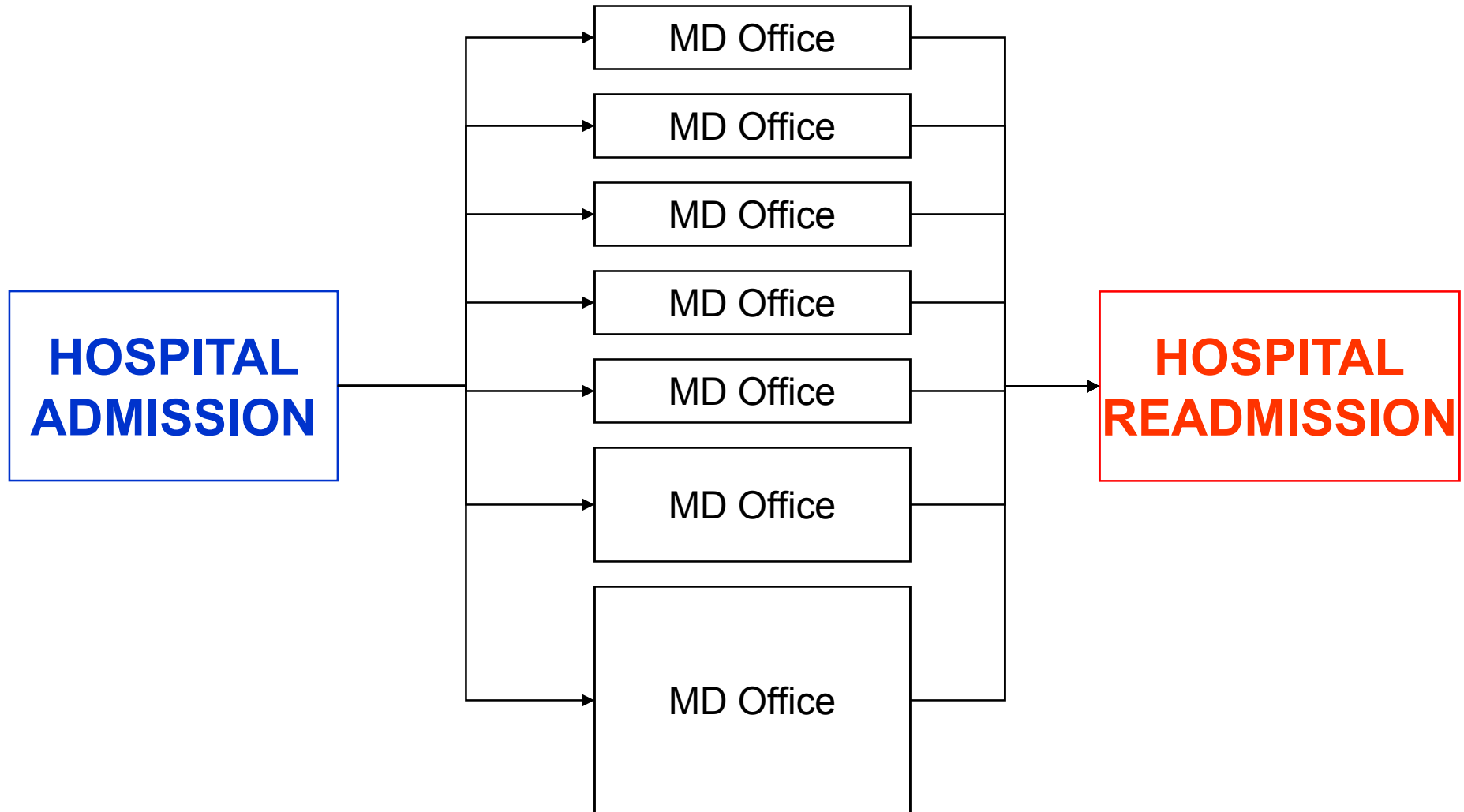
# A More Detailed View of the Demo Concept



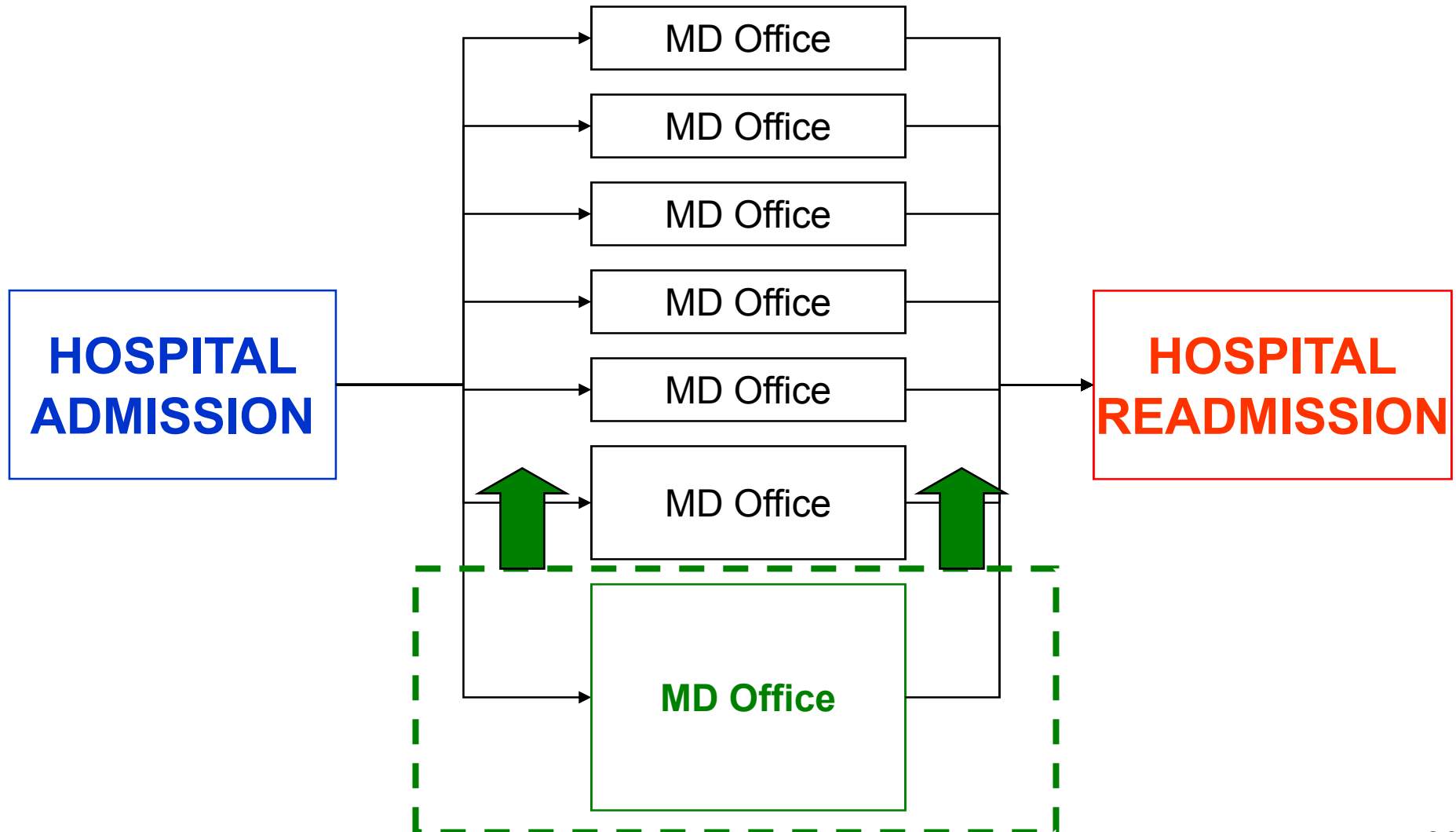
# Similar Approach Likely Applicable to Other Chronic Diseases



# Challenge #2: Care is Delivered By Lots of Small Practices

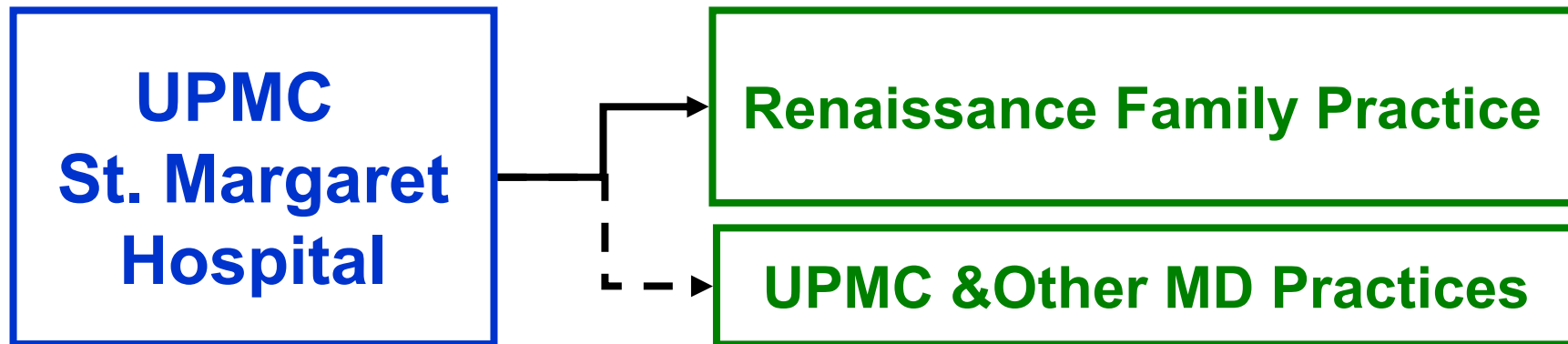


# We're Starting With Big Practices and Then Hope to Spread Out

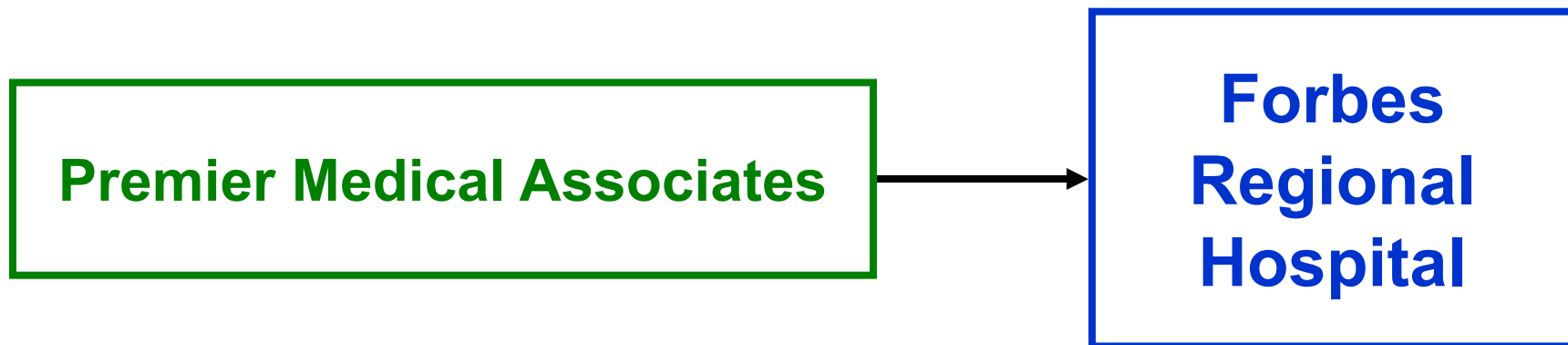


# Planned Initial Demonstration Sites

## DEMONSTRATION SITE 1



## DEMONSTRATION SITE 2





# Two Stages to Designing Improved Care

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1. What can be done differently *in the hospital* to reduce the chances of readmission after discharge
  - Why focus on the hospital first?
    - Patients have demonstrated risk of hospitalization
    - Patients are “captive” for several days
    - Staff and treatment resources already exist
  
2. What can be done differently *in the community* to reduce the chances of readmission after discharge (and ultimately preventing initial admission)
  - Bigger challenges to be addressed
    - Challenge #1: Lack of payment mechanisms for care management
    - Challenge #2: Many small physician practices

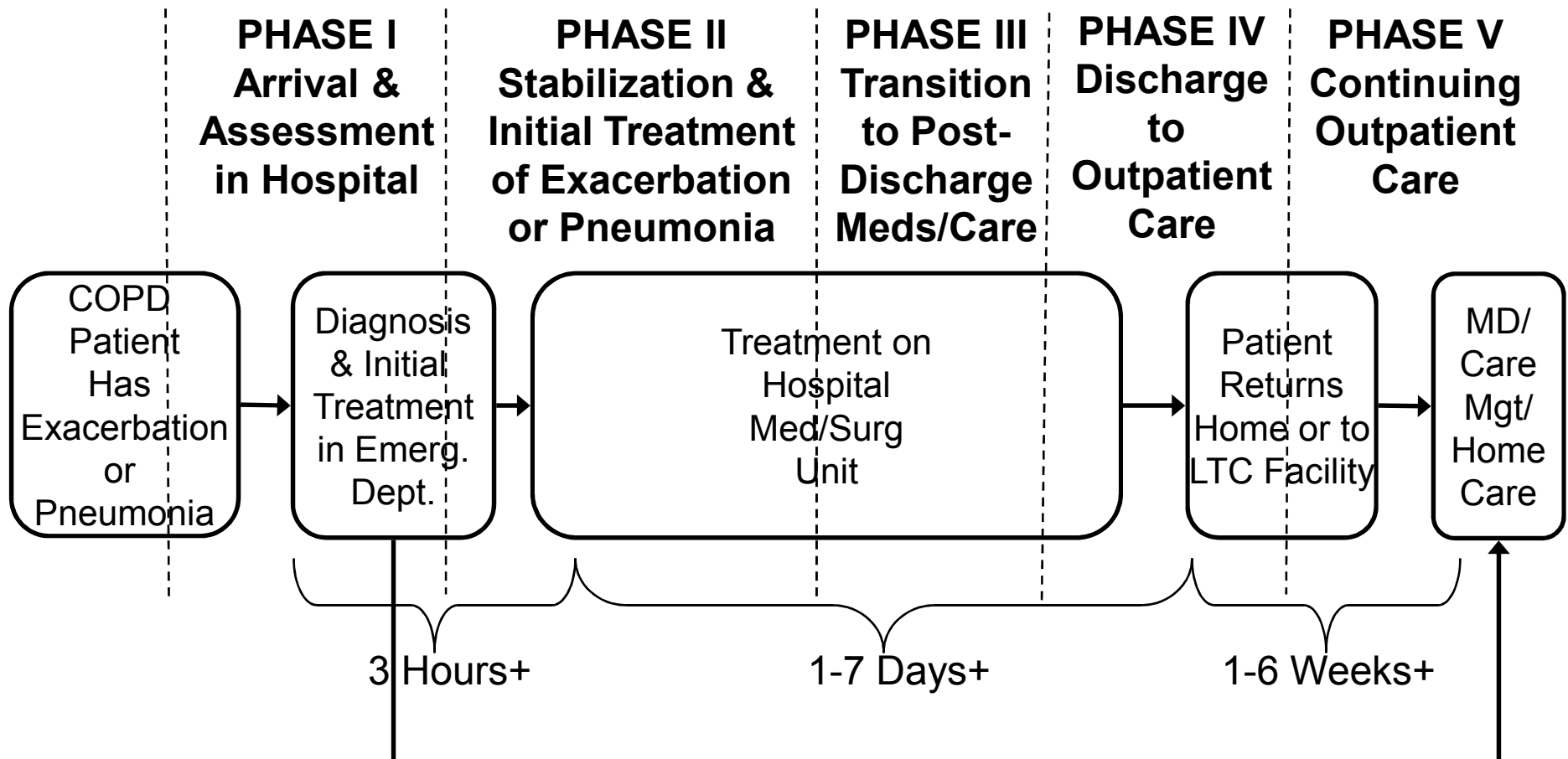


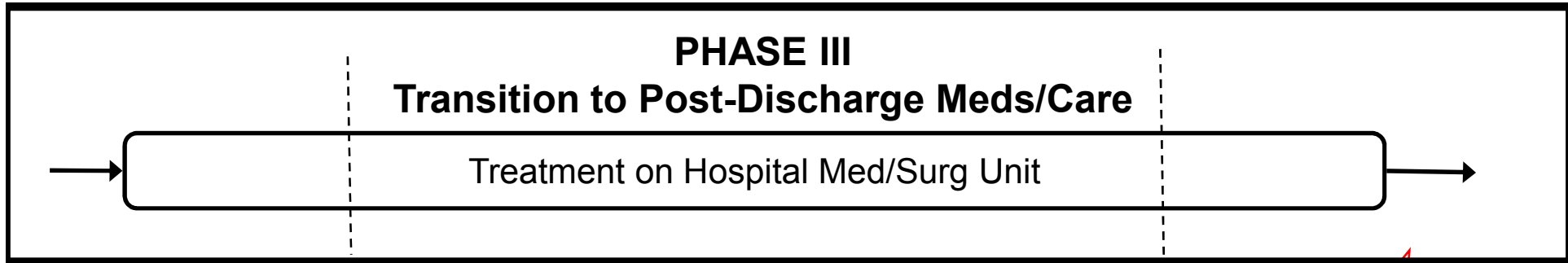
# Process for Improving Hospital Care at UPMC St. Margaret

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- **Formation of Physician Leadership Team**
  - Pulmonologist and 2 PCPs, along with key hospital dept. heads
  - Meeting monthly since December
- **Formation of Staff Task Force**
  - Over 20 staff from multiple departments (Care Management, Home Care, Nursing, Nursing Education, Pharmacy, Respiratory Therapy, Social Work)
- **Creation of Draft Protocol for Improved Treatment**
  - Based on national/international guidelines
  - Customized by pulmonologist from Physician Leadership Team
- **3-Day Toyota/PPC Workshop to Reinvent Processes**
  - Facilitated by Healthcare Performance Partners and PRHI/PPC staff
  - 13 hospital staff participated
  - Recommendations endorsed by hospital management and physicians

# Phases of Care for a Hospitalized COPD Patient





**CURRENT STATE**



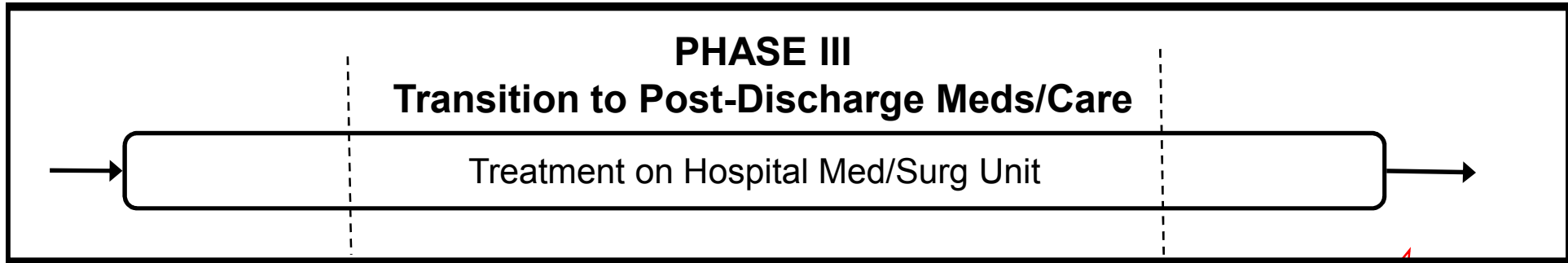
Respiratory Therapy Administers Nebulizer

RN Administers MDI Inhalers

RN Administers All Other Medications

No Transition to  
Inhaler Before  
Discharge

Little or No  
Patient Training  
on Inhaler



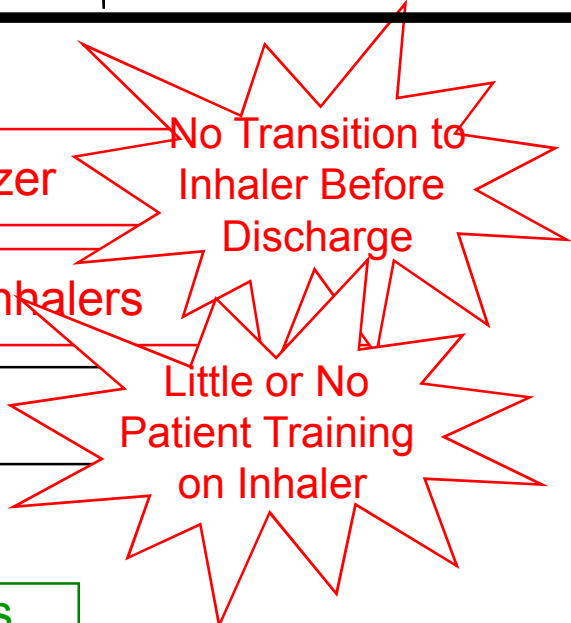
**CURRENT STATE**



Respiratory Therapy Administers Nebulizer

RN Administers MDI Inhalers

RN Administers All Other Medications



**RECOMMENDATION**



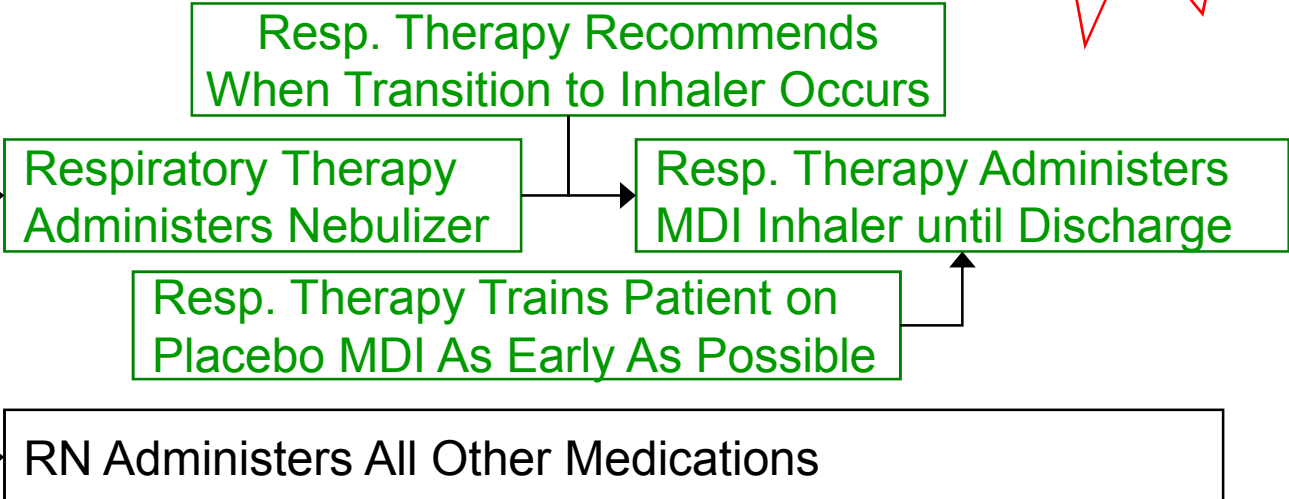
Respiratory Therapy Administers Nebulizer

Resp. Therapy Trains Patient on Placebo MDI As Early As Possible

RN Administers All Other Medications

Resp. Therapy Recommends When Transition to Inhaler Occurs

Resp. Therapy Administers MDI Inhaler until Discharge





# Challenge #3: Hospital May Lose Payment From Some Payers

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- Standard care guidelines say that only patients receiving bronchodilators by nebulizer are appropriate for hospitalization, *not patients receiving bronchodilators from handheld inhalers*
- Those insurers who pay for hospital care on a per diem basis (as opposed to DRGs) *may disallow payment to the hospital* once the patient is transitioned to their handheld inhaler, *even though the training they receive in the hospital may help prevent them from being readmitted later*
- Even under DRGs, if patient doesn't "need" to stay, the hospital has a financial incentive to discharge earlier, and get a "repeat customer" later
- Highlights a fundamental problem with the payment system: providers are not financially responsible for *keeping the patient well over an extended period of time*



# Next Step: Creating a Community Care Manager

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- **Goals:**

- Integral member of primary care team
- Focus on patients with COPD (initially) with ability to expand to other patients with high rates of readmission in the future
- Sufficient number of cases at risk of hospitalization to justify expense of a new position



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- **Options:**

- Employee in physician practice
  - works only for large practices



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- **Options:**

- Employee in physician practice
  - works only for large practices
- Shared employee among physician practices
- **Hospital-based employee (covering multiple small practices)**
- Expanded Pharmacy function
- Expanded Urgent Care Center function



# Challenge #1: Paying for Community Care Management

Guidelines for Physician  
Diagnosis/Treatment of COPD  
(Similar to Asthma Action Plan)

Improved In-Hospital  
Treatment Coordination &  
Patient Education

- Primary Nurse
- Pharmacy
- Respiratory Therapy
- Smoking Cessation Counselor

***NOT CURRENTLY PAID FOR!***

Community Care  
Management

- Home Visit + Phone Calls
- Self-Management Education
- Exacerbation Response
- Direct Working Relationship with Primary Physician



# Challenge #1a: Establishing The Business Case

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**Reduction in Hospital Payments  
from Reduced Readmissions**

**- Costs of Interventions  
(Community Care Mgrs, etc.)**

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**>>\$0**



# Significant Savings Exceeds Cost of Care Management

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## CURRENT

# Admissions/Year:	500
% Readmitted: (<30 Days)	<b>25%</b>
\$/Admission (Medicare/No Complic.):	\$5,400
Cost of Readmissions:	<b>\$675,000</b>



# Savings Potential Exceeds Cost of Care Management

	CURRENT	40% REDUCTION
# Admissions/Year:	500	500
% Readmitted: (<30 Days)	<b>25%</b>	<b>15%</b>
\$/Admission (Medicare/No Complic.):	\$5,400	\$5,400
Cost of Readmissions:	<b>\$675,000</b>	<b>\$405,000</b>
<b>Savings:</b>		<b>\$270,000</b>



# Challenge #1b: Getting All Payers to Pay for Care Management

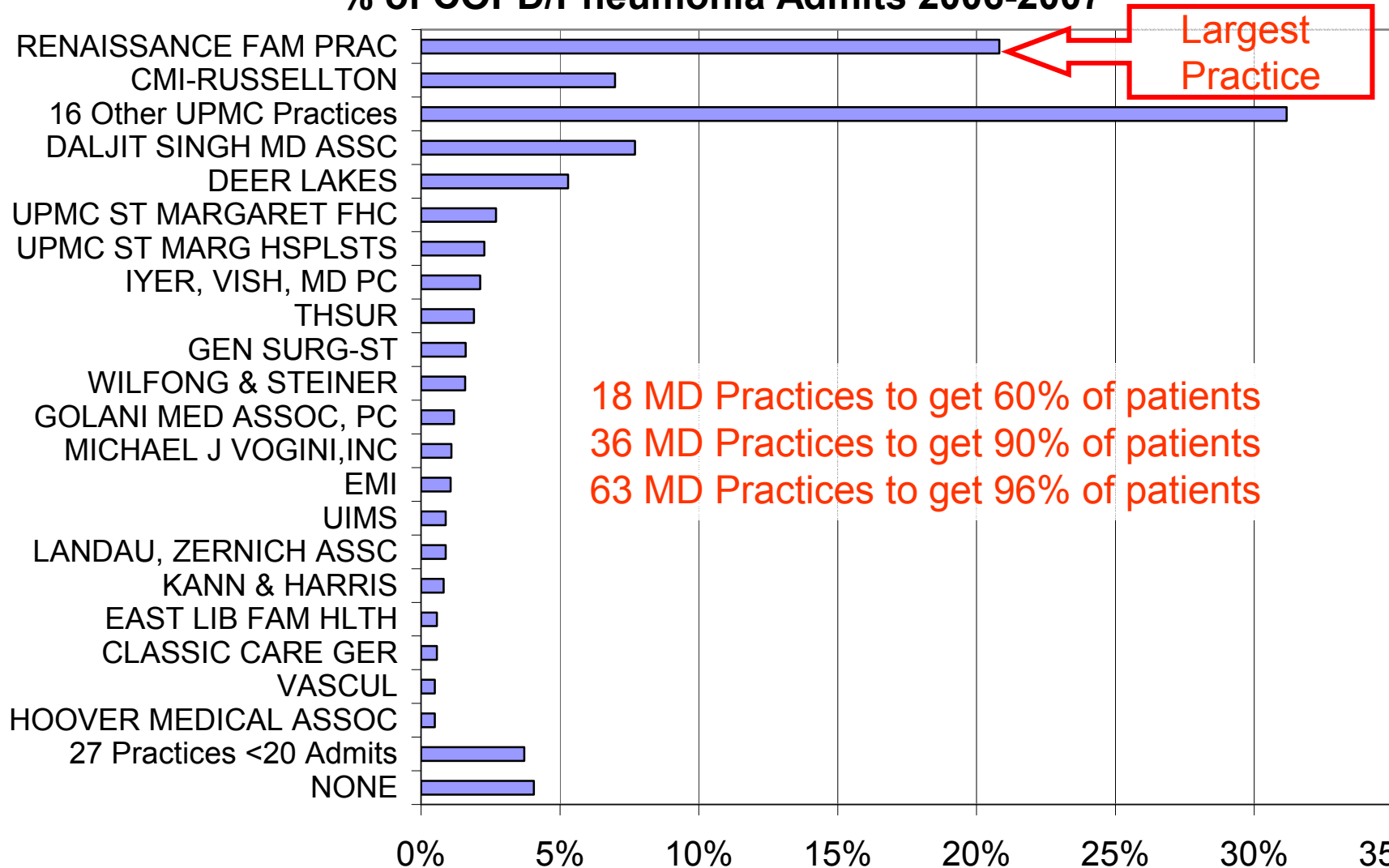
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- Major health plans already employ their own care managers, at considerable expense
  - not integrated with physician practices
  - little or no face-to-face contact w/patients (e.g., no hands-on training in use of inhalers)
  - paying for care managers in MD practices seems like (and is) duplication
- Different solutions from different health plans means providers can't treat all patients alike
  - e.g., “practice-based care manager” employed by one health plan would only improve care *for the patients of that particular health plan*
  - health plan will only let its own employees access data



# Challenge #2: Getting Small MD Practices to Participate

**% of COPD/Pneumonia Admits 2006-2007**



**Largest Practice**

18 MD Practices to get 60% of patients  
 36 MD Practices to get 90% of patients  
 63 MD Practices to get 96% of patients



# Few Incentives for Small MDs to Participate

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- No financial penalty to MDs if patients are hospitalized frequently
- Current P4P measures from payers focused on diabetes and heart disease, not COPD
- Reinventing care processes takes time away from billable time with patients



# Challenge #4: Limited Capacity for CC Mgt in MD Practices

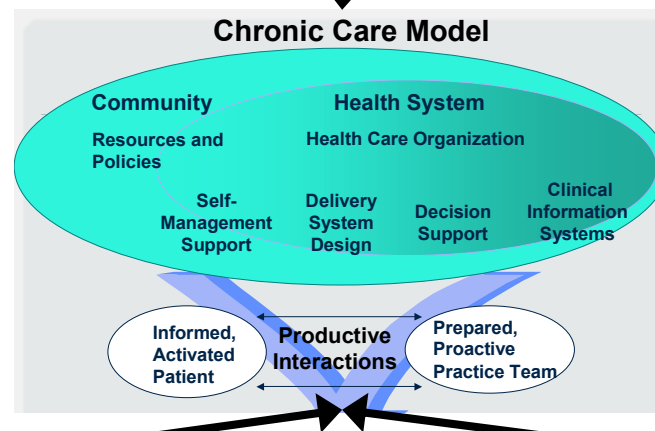
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- No EHR
- No patient registry
- No outcome measurement/feedback mechanisms
  - don't know rate of hospital admission/readmission
  - don't know whether patients are actually using meds
- Lack of key equipment
  - spirometer
  - inhaler training devices
- Limited hours of operation
- No care management capacity

# Solutions Through Combining Efforts

## PRHI Chronic Care/Preventable Admission Initiative

- Initial demo sites and champions identified
- Focus on clear, short-term business case
- Staff/resources to support technical assistance



## GOHCR Chronic Care Initiative

- Financial support for care management
- Financial support for practice improvement
- Stronger incentive to participate

## CMS EHR Initiative

- Financial support for EHR
- Incentives for quality improvement for Medicare patients



# Challenge #5: Addressing Other Needs, Particularly Depression

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- More than 60% of people with COPD also have depression or anxiety
- Depression is a significant factor affecting medication adherence
- In one study, healthcare providers recognized fewer than 40% of depressive or anxiety disorders in patients with COPD, and only 31% were being treated

# Overarching Issues

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- **Lack of mechanisms to bring multiple payers together to develop (common) improved payment systems**
  - needs to be designed to avoid anti-trust problems (some regions have done it)
  - needs leadership by corporate purchasers to overcome competition and excuse that “purchasers don’t want it”
- **Lack of mechanism(s) for engaging small primary care practices in quality improvement; possible approaches:**
  - focus on all MDs admitting to a particular hospital?
  - provide financial incentives for them to participate?
  - encourage formation of IPAs or other organizational mechanisms that can sponsor quality initiatives and distribute financial incentives?

For More Information:

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