

University of California Davis ROAD™ Center
**COPD Case Management led by
Respiratory Therapists Decreases
Healthcare Utilization and Improves
Patient Outcomes**

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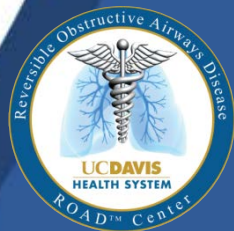
UC Davis ROAD™ Center

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Disclosures

- Monaghan Medical
- Philips Resporonics

A HEALTHIER WORLD THROUGH **BOLD INNOVATION**



COPD – The Challenge

- **Acute Exacerbation of COPD (AECOPD)**
 - 3rd Leading Cause of Death in the United States (US)
 - 78% of direct cost of COPD: Hospitalizations and Exacerbations
 - \$49.9 Billion 2010 Total Direct Cost to Nation
- **Goal for UC Davis**
 - Develop Quality Improvement Program for COPD Care
 - Improve the Standard of Care
 - Increase Public Awareness of COPD
 - Integrate and Synchronize COPD Services
 - Reduce AECOPD Hospitalizations and Readmissions

Respir Med 2003; 97 (Suppl C: S81-S89)
US National Institute of Health; 2009

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COPD – Trends

- **AECOPD in the UC Davis Health System**

- Increasing Hospitalizations

- Fiscal Year (FY) 2009: 459
- FY 2011: 587

Total Direct Cost: \$15,470,385

- Increasing Length of Stay (LOS)

- FY 2009: 6.27 days
- FY 2011: 7.57 days

National Benchmark 4.4 Days

- Increasing Cost of Hospital Admission

- FY 2009: \$14,259
- FY 2011: \$26,355

Compare to FY 1999: \$7,100

JAMA 1995; 274: 1852 JAMA 2005; 294: 1255
AM J Respir Crit Care Med 1996; 157: 959

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A Solution To A Problem

- **Samuel Louie, MD, Professor**
 - Medical Director of UCD Dept. of Respiratory Care
 - Director of University of California Asthma Network (UCAN)
- **University of California Asthma Network (UCAN)**
 - Founded May 1999
 - In the First 2 Years:
 - Treated 162 Patients in Clinic
 - Decreased ED Visits by 90.3%
 - Decreased Hospitalizations by 96.5%

A Solution To A Problem

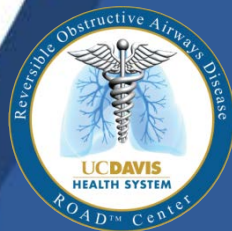
- Doctors and Patients are becoming **INDIFFERENT**
- **PUBLIC AWARENESS** Remains Poor
- **NO ONE CARES** Preventable Deaths Occur Daily
- **COPD Patients** are **SEEN BUT NOT HEARD**



COPD Case Management Team



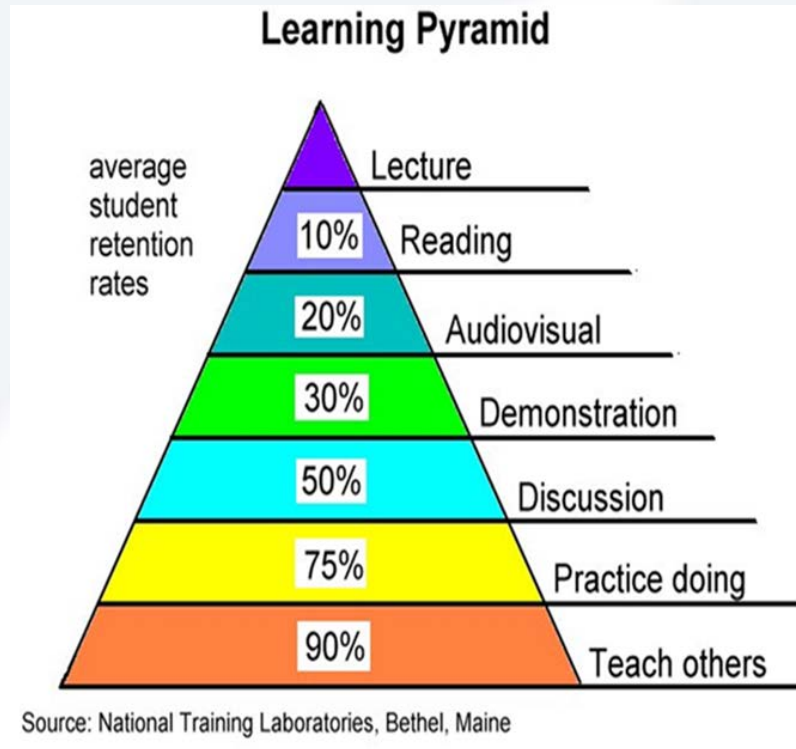
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COPD Case Management Program

- COPD ROAD™ Education

- 4 sessions <1 hour at bedside
- Inhaler Device Technique Confirmed
- Teaching Tools
 - Lung Models
 - iPad Videos
 - Drawing
 - Inhaler Demos
 - Bubbles
 - UC Davis Pages



COPD Case Management Program

- **Select Patients**

- Screening Tool
- COPD Exacerbation
- Meets Exclusion Criteria?
 - “Pharmacy Education”
- Meets ROAD Program Criteria?
 - Complete Education

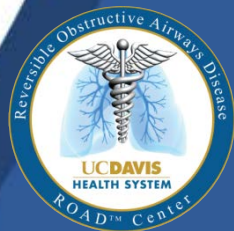
- **Reconcile Medications**

- Home Respiratory Medications
- Inpatient Respiratory Medications
- Transition Prior to D/C



ABCDEF of COPD™

- **A**nticholinergic
- **B**eta-Agonist
- **C**orticosteroid
- **D**aliresp (Roflumilast)
- **E**xercise
- **F**lu Shot and Friends



COPD – ROAD™ Education



Education Session 1

- **What is COPD**
 - Diagnosing COPD
 - **COPD IS TREATABLE**
 - Treatments for COPD
 - Stages of COPD
- **Normal Lung Anatomy vs. COPD Lung Anatomy**
 - The Respiratory System
 - Alterations from COPD
 - Slowing the Progression

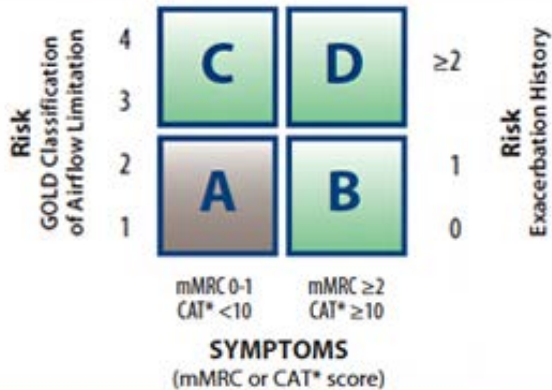
Education Session 2

- **Medications**
 - Classifications
 - Maintenance vs. Rescue
 - Method of Action
- **Inhalation Devices**
 - Demonstration (Case Manager)
 - Return Demonstration (Patient)
- **Bronchial Hygiene**

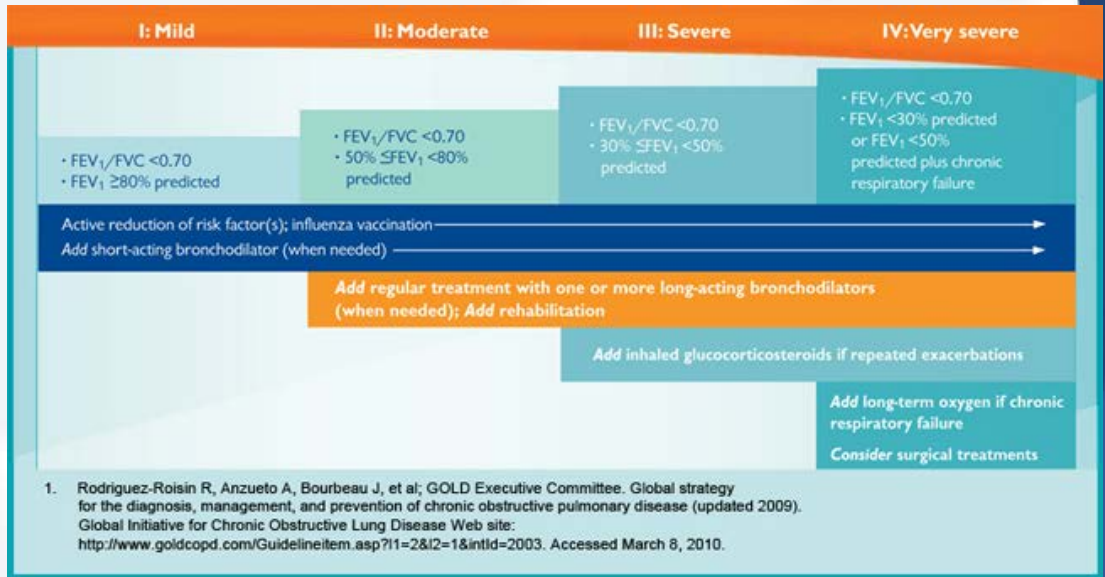
GOLD Guidelines



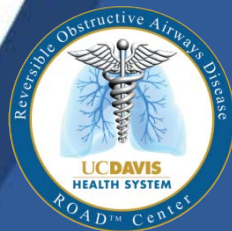
Patient classification¹



	Spirometric classification	Exacerbations per year	mMRC	CAT*
GROUP A: low risk, less symptoms	GOLD 1-2	≤1	0-1	<10
GROUP B: low risk, more symptoms	GOLD 1-2	≤1	≥2	≥10
GROUP C: high risk, less symptoms	GOLD 3-4	≥2	0-1	<10
GROUP D: high risk, more symptoms	GOLD 3-4	≥2	≥2	≥10



1. Rodriguez-Roisin R, Anzueto A, Bourbeau J, et al; GOLD Executive Committee. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease (updated 2009). Global Initiative for Chronic Obstructive Lung Disease Web site: <http://www.goldcopd.com/GuidelineItem.asp?11=2&I2=1&intId=2003>. Accessed March 8, 2010.



COPD – Education

Education Session 3

- Early S&S AECOPD
- Controlled Breathing Techniques
 - Practice with Pt.
- Coping with SOB
 - Stress Management
- Preventing Infection
 - Vaccinations
- Referrals for Outpatient Resources
 - Smoking Cessation
 - Pulmonary Rehabilitation



COPD – Education

Education Session 4

- Discharge Instructions
- Oxygen Safety
 - Whether Prescribed for Home Use or Not
- STOP-Bang Score
 - Evaluate for OSA
- ROAD™ COPD Action Plan
 - Medications
 - Dose
 - Picture of Device



COPD – After Hospital Discharge

- Follow Up

- Call Pt. at 3-5 days
 - PCP Appointment F/U
 - Referral Status Update
 - Discharge Medications
- Call Pt. at 6-8 weeks
 - PCP Appointment F/U
 - Referral Status Update
 - Medication Effectiveness



COPD – “Pharmacy Education”

- Patients who meet exclusion criteria for ROAD™ COPD Program:
 - Severe psychiatric history
 - Current Recreational Drug and/or ETOH abuse
 - Dementia
 - Refusal of full ROAD™ education
- Reconcile Medications
 - Home Respiratory Medications
 - Inpatient Respiratory Medications
 - Transition Prior to D/C

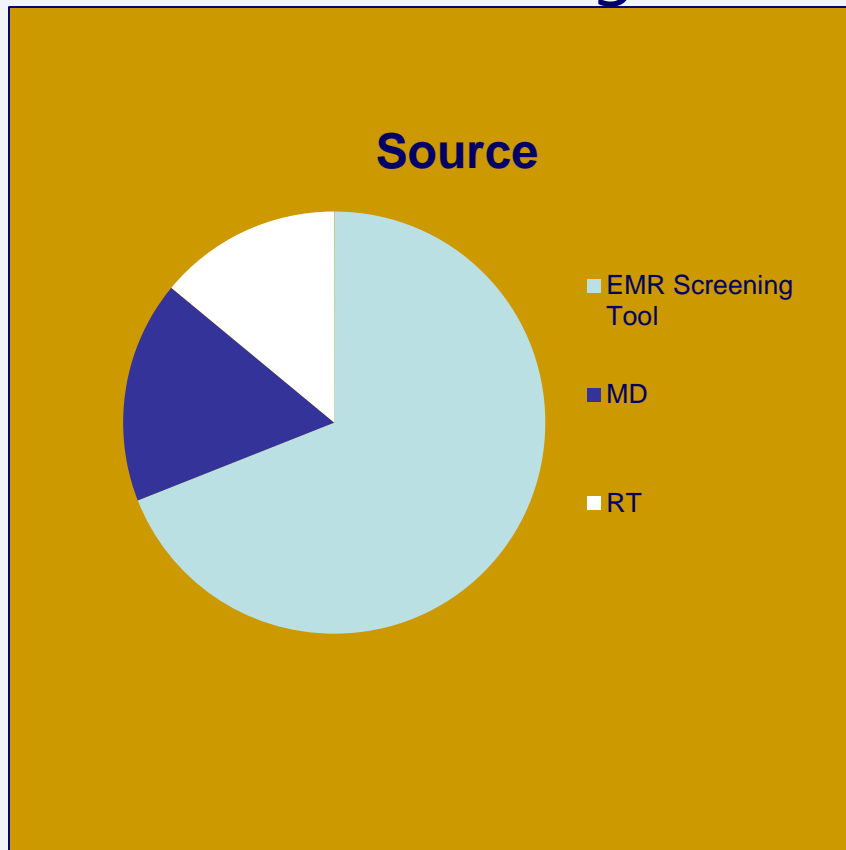
COPD – “Pharmacy Education”

- Bedside education provided:
 - “What is COPD?”
 - Medications
 - Classifications
 - Maintenance vs. Rescue
 - Method of Action
 - Inhalation Devices
 - Demonstration (Case Manager)
 - Return Demonstration (Patient)
- “Behind the scenes”
 - Home medications:
 - Are they appropriate?
 - Is the patient using them?
 - Are they using the right?
 - Can they afford them?
 - Can we do better?
 - Communication
 - Patient and family, RT, Transition of Care (TOC) pharmacist, Hospitalist, social work, nursing

ROAD™ – Demographics



Referrals to Program:

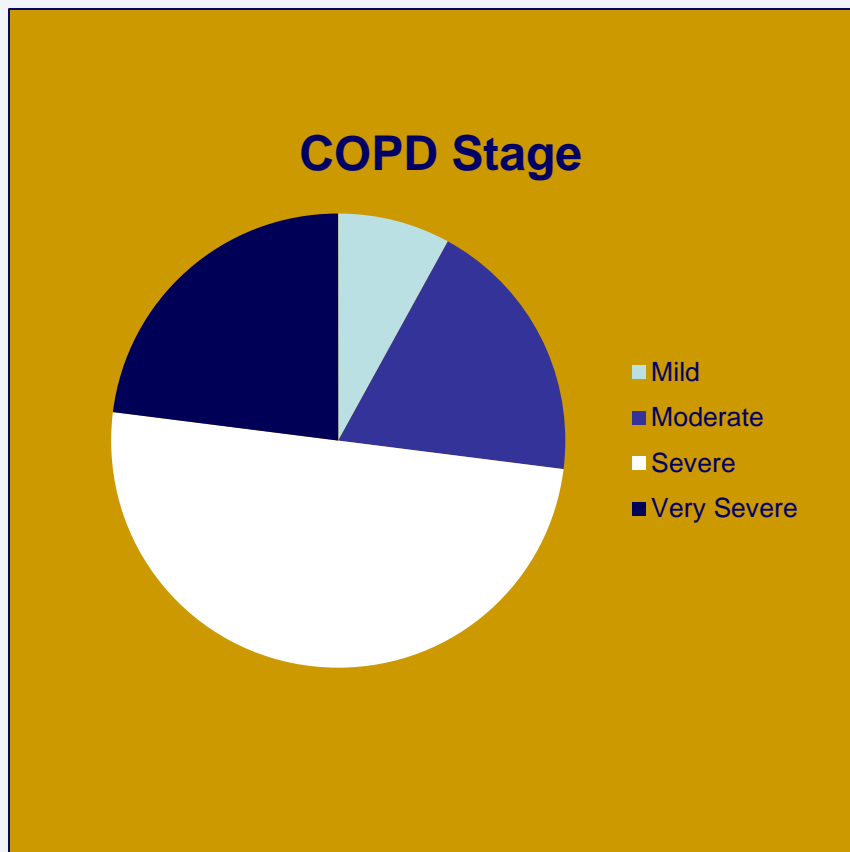


210 Patients Seen
3/13/2012 - 3/13/2016

- **Women: 60%**
- **Mean Age: 68yrs (46-91yrs)**
 - Prior COPD Education: 14%
 - Average BMI: 27.3
 - Average pk/yrs: 50.2
 - Smokers on Admission: 67
 - Up to Date Flu Vaccine: 69%
 - Up to Date Pneumovax: 61%
 - Asthma/COPD Overlap: 28%
 - Anxiety/Depression: 36%
 - OSA Diagnosed: 17%

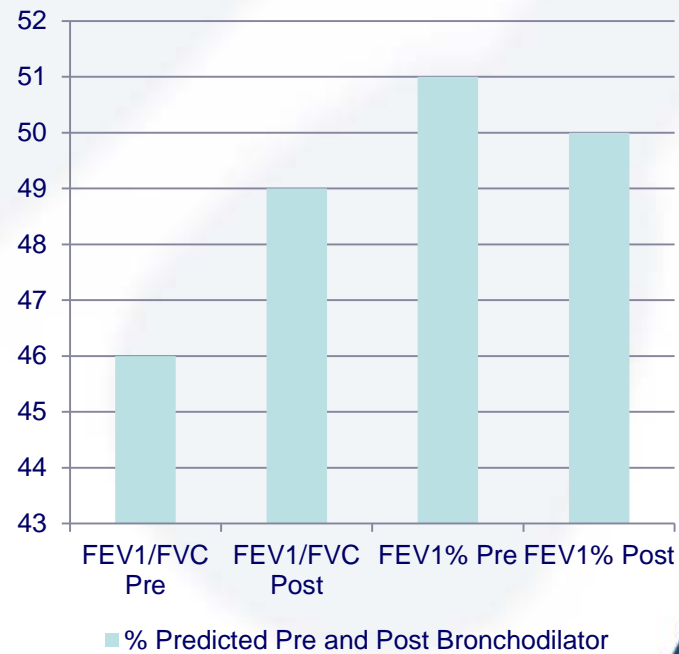
ROAD™ – Lung Function

Severity Based on PFT's or Treatment Plan:



Average Spirometry:

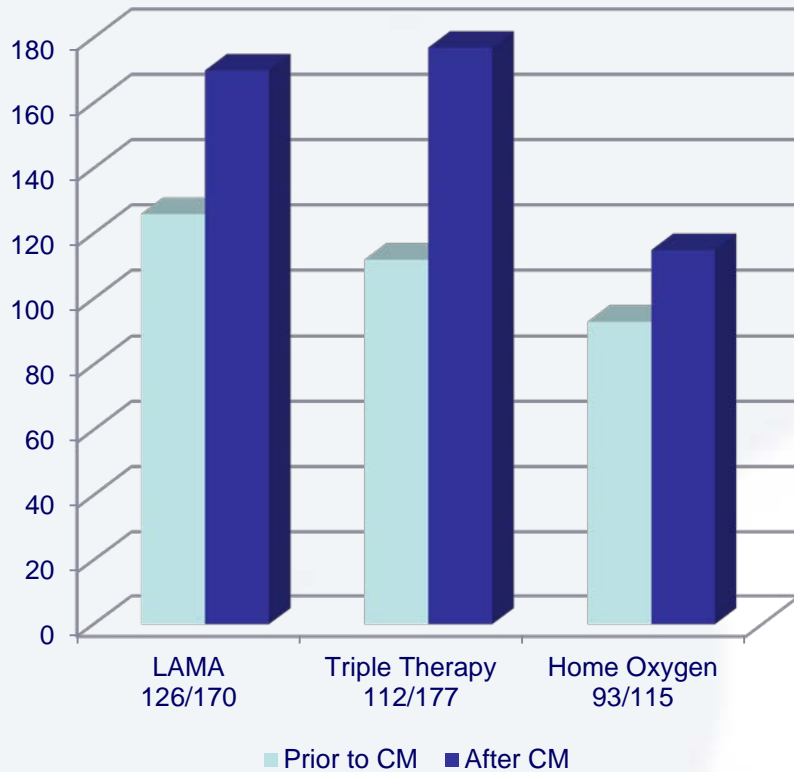
Of 54% With PFT's on File



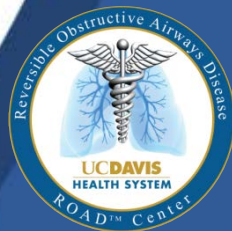
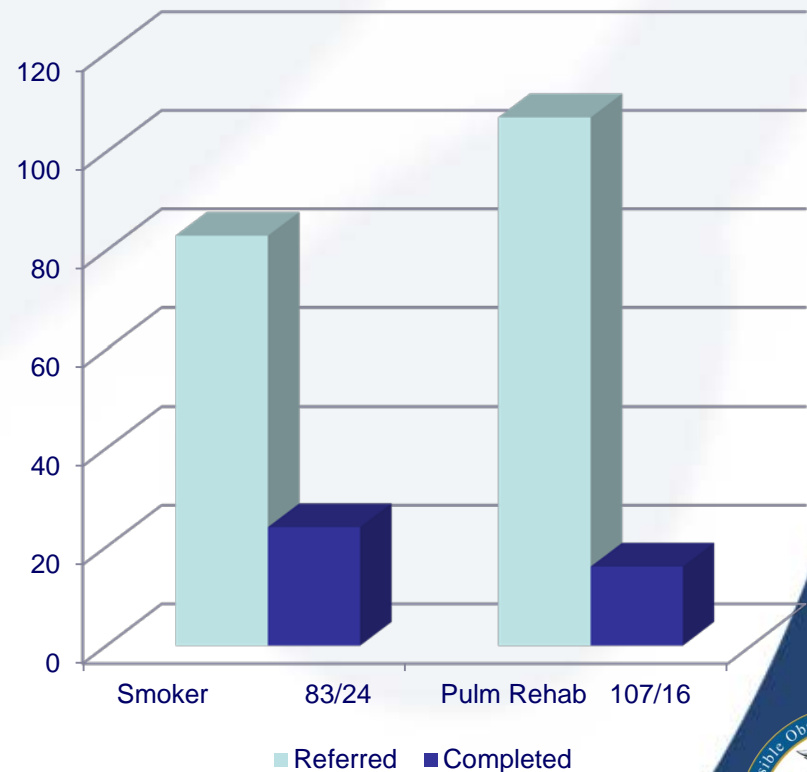
ROAD™ – Medications



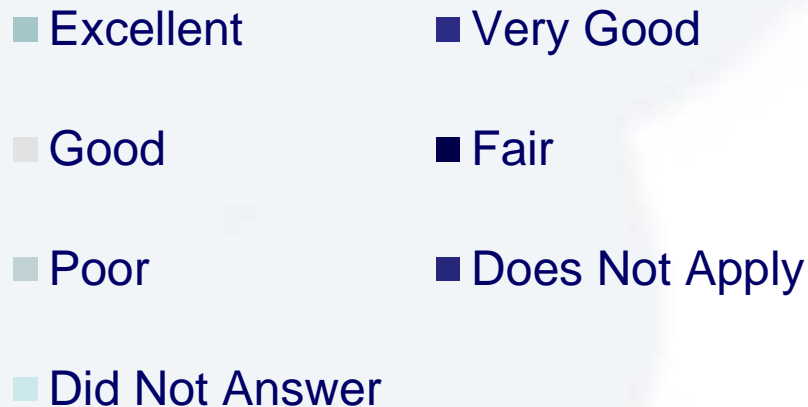
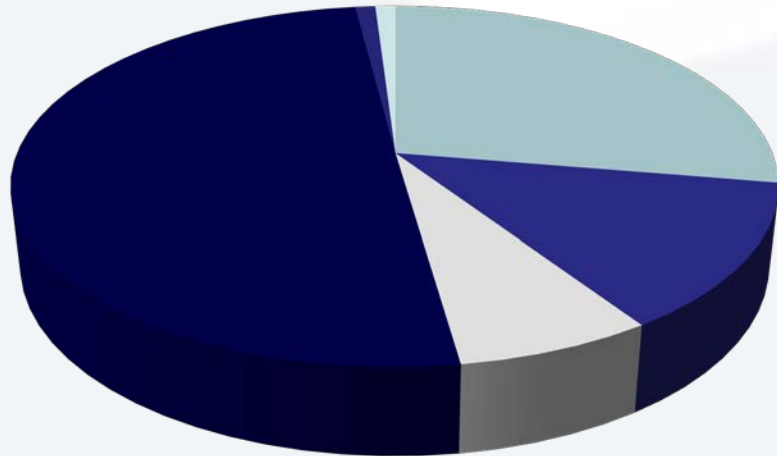
Maintenance Medications Prior to and After COPD Case Management:



Other Cohort Findings:



ROAD™ Patient Satisfaction

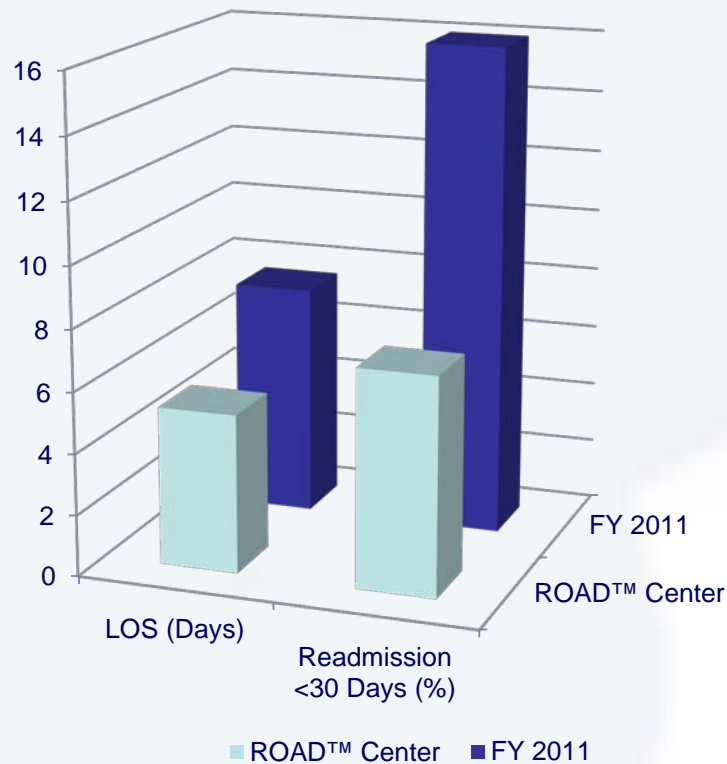


- Response Rate: 27%
 - 56% Excellent
 - 25% Very Good
 - 14% Good
 - 0 Fair
 - 0 Poor
 - 2% Does not apply
 - 3% Did not answer all columns
- Highest Rated Responses:
 - Was the COPD CM courteous and professional?
 - Overall satisfaction
- Lowest Rated Response:
 - Overall quality of life may improve as a result of your experiences with the COPD Case Managers?

ROAD™ COPD Program Statistics

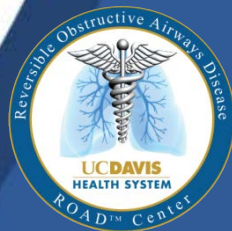


Decrease in LOS and Readmission Rate <30 Days:



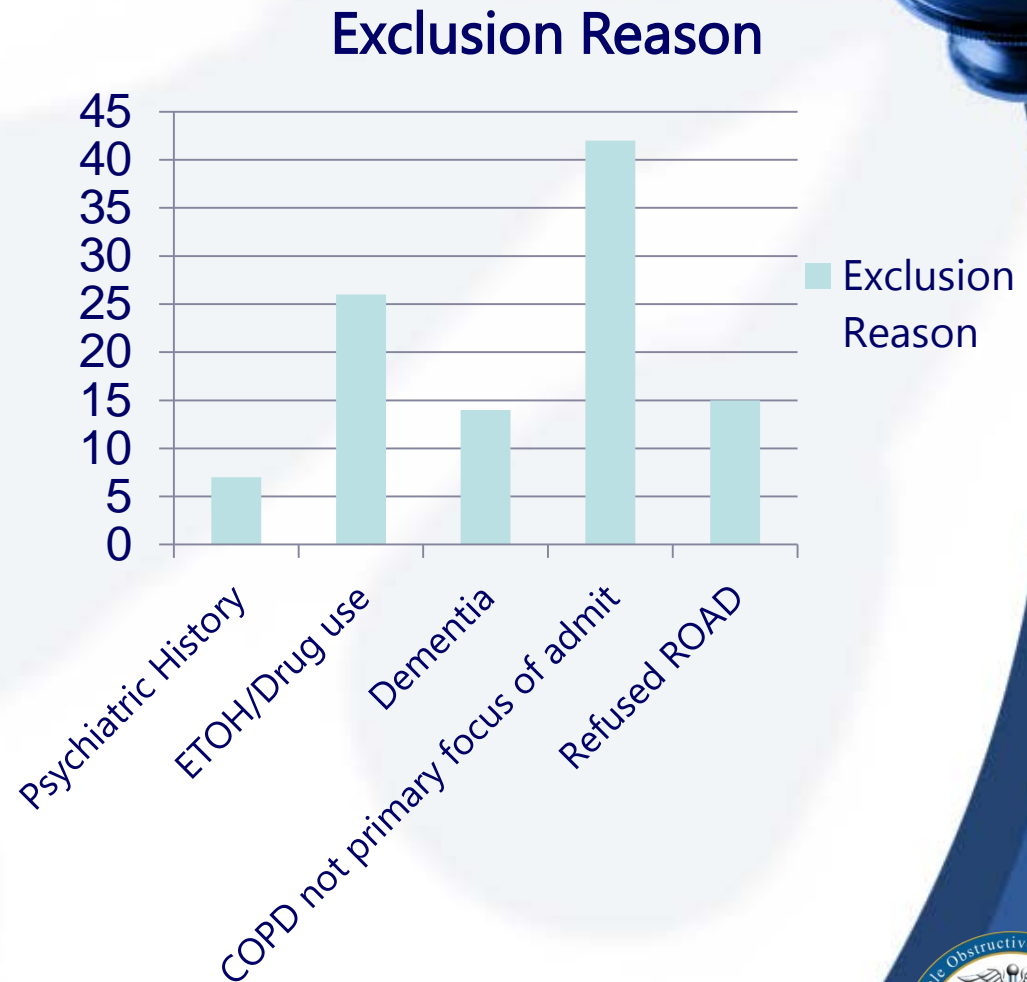
Cost Savings:

- Average LOS: 5.17 Days
 - Decreased from 7.57 Days
 - Projected Cost Savings
 - **\$8,356**
- Readmission Rate <30 Days after Discharge: 7.1%
 - Decreased from 16% FY 2011
 - Projected Cost Savings
 - **\$492,574.95**
- Total Projected Cost Savings:
 - **\$2,247,334.95**



Pharmacy Patient Cohort Findings

- COPD patients that were ruled out of ROAD™ Program
- 392 Patients from July 2013-July 2015
 - 7% Psychiatric History
 - 26% Current ETOH/drug use
 - 14% Dementia
 - 42% COPD not primary focus
 - 15% Refused ROAD™ or there was too little time for this education to be provided (Hem/onc, CHF education)

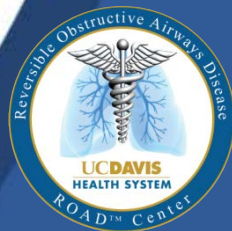
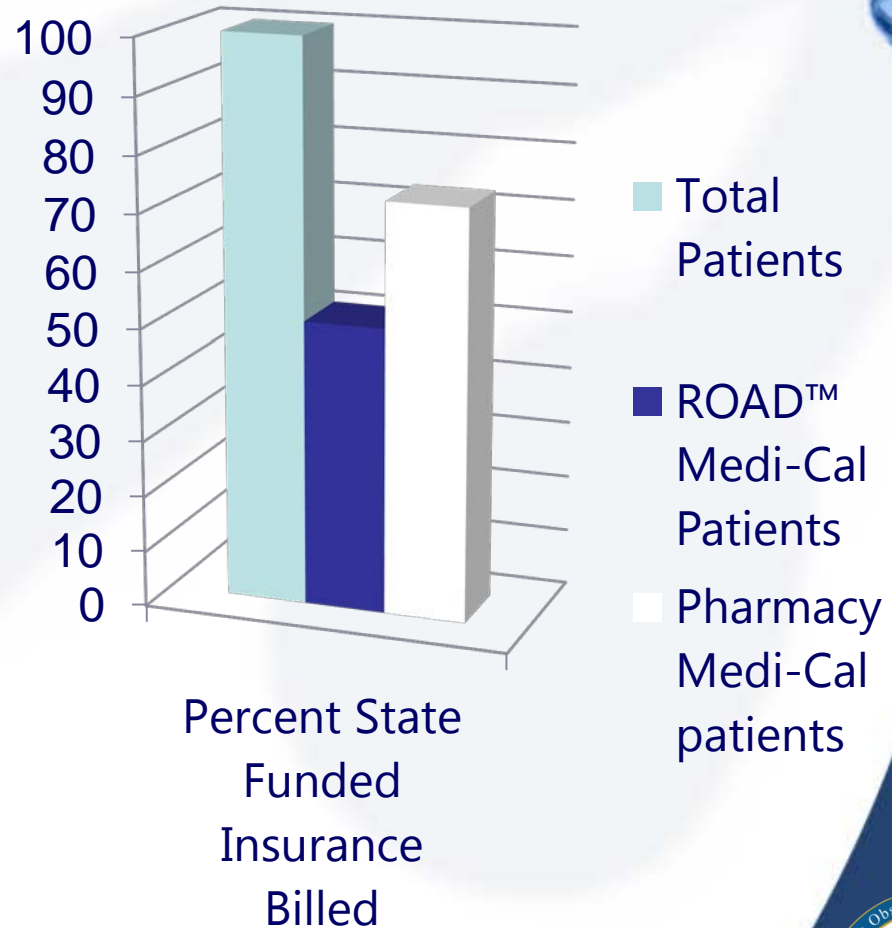


Pharmacy Patient Cohort Findings

- 236 (60%) admissions required changes/additions to their COPD medication regimen.
- Smokers on admission = 204 (52%)
 - ROAD patients = 39%
- Average pack years = 37.8
- Readmission Rate <30 Days after Discharge: 8%
 - Decreased from 16% FY 2011
 - Projected Cost Savings
 - **\$866,552**

Who is Paying?

- **51%** of ROAD™ COPD patients had a form of **state funded insurance** billed for their hospitalization
 - 23% billed primarily
 - 28% billed secondary to Medicare
- **73%** of the “Pharmacy COPD patients” had a form of **state funded insurance** being billed for their hospitalization.
 - 33% Medi-Cal primary
 - 40% Medi-Cal secondary to Medicare



Why Do We Do This?



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Why Do We Do This?



How satisfied are you with the knowledge the COPD Case Manager displayed regarding your condition?	X	
Thinking about past experiences with your health, do you feel you have been given a sense of empowerment regarding your condition and how it can be managed?	X	
Do you feel your overall quality of life may improve as a result of your experience with the COPD Case Managers?		X ②
Do you feel the time allotted for your educational sessions were adequate?		X
How satisfied are you overall with the COPD Management Program?	X	

Do you feel the time allotted for your educational sessions were adequate?	✓					
Yes, but it NEVER stops - LEARNING EVERY DAY						
How satisfied are you overall with the COPD Management Program?	✓					
I LOVE THEM ALL, THEY MAKE A BIG IMPACT ON COPD PATIENTS.						

Is there anything you would suggest we do differently in order to best educate and care for our COPD patients?

Thank you for everything, I'm feeling so good about myself now. I go to therapy Monday, Wednesday, and Fridays.

Do you have any additional comments or suggestions?

Keep up the good work.

Conclusions

- Development of a **Quality Improvement Program** for COPD care offers benefits for hospitals with COPD admissions and readmissions on the rise.
- **Respiratory Care Practitioners** (RCP's) perform a vital role for integrating COPD care by improving patient education and coordination of patient care services.
- RCP's facilitating healthcare navigation and utilization for COPD patient results in improved outcomes and **Cost Savings** for the patient, the hospital, and the patient's medical insurance company.



“The treatment of a disease may be entirely impersonal; the care of the patient must be completely personal.”

-Francis W. Peabody, MD

JAMA, Vol. 88 March 19, 1927

“For every patient, in the final analysis, you must do a clinical trial of one.”

-Eugene D. Robin, MD

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