30 Day Readmission Efforts Within the Heart Failure Population

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Clinical Nurse Leader
Ross Heart Hospital
The Ohio State University Wexner Medical Center

Why Heart Failure?

- **1 in 4 HF patients are re-hospitalized within 30 days, costing upwards of 17 billion $ per year in hospital payments**
- **Total cost of HF is estimated to be 34.4 billion $ per year**
- **Complexity of patient needs, consistent follow up care**

Why Heart Failure?

- **CMS penalties**
  - **HF, AMI, pneumonia**
  - **2012 penalty was 1% of total CMS reimbursement, will increase yearly**
- **In 2012**
  - **71% hospitals were penalized (2217)**
  - **307 will lose maximum 1% reimbursements**
  - **Estimate $850 million will be reallocated**

Focused Interventions

- **Inpatient**
  - **Core measures, clinical guidelines, multidisciplinary approach**
- **Transition**
  - **Adequate discharge planning**
  - **Addressing of social issues**
  - **Identification of potential barriers to care**
- **Outpatient**
  - **Hospital follow up appointments**
- **Continued care**
  - **Access to healthcare providers**

Nurse Navigators

- **Implementation of Nurse Navigators**
  - **2 Nurse Navigators (Master's prepared Clinical Nurse Leaders)**
  - **Collaboration and lateral integration of multidisciplinary team**
  - **Patient education and counseling**
  - **Relationship building**
  - **Contact throughout healthcare continuum**
  - **Process improvement**

Communication

- 48 hour post discharge phone communication
  - Focused telephone assessment and triage
- Post acute care provider relationships and phone communication
  - Nurse liaisons
  - Education
  - Contact information

Heart Failure Transition Clinic

- Transition clinic utilization
  - Nurse Practitioner led
  - Hospital follow up within 10 days of discharge
  - Available for “quickie visits”
  - IV lasix protocol
  - Outpatient ultrafiltration

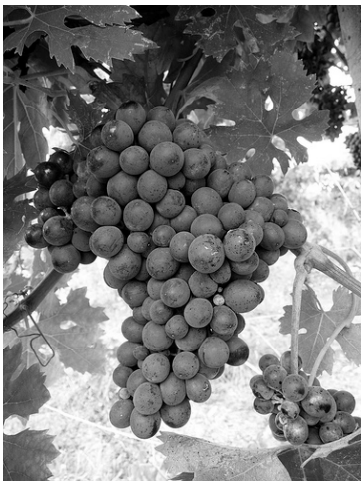
Preventing the Readmission

- Use of observation status and Clinical Decision Unit
  - Emergency Department education
  - Protocol and order set usage
- Efficient and focused care
  - Placement of patient on specific unit or service
- Quick discharge to skilled nursing facility or hospice
  - Palliative Care team
  - Case management and Social Work

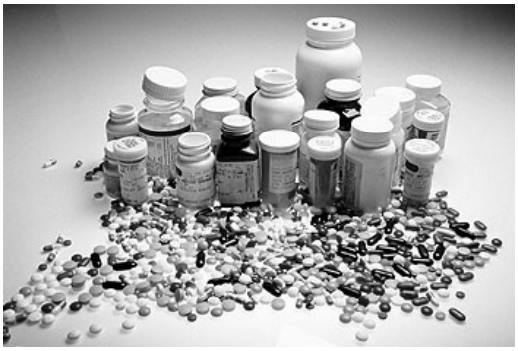
What's Next?

- Extensive improvement and growth of Heart Failure program
- Expansion of Nurse Navigator program across medical center and other diagnoses
- Established preferred post acute care providers
- Education
- Exposure

Reducing CHF readmissions: the low-hanging fruit



Medication management of CHF on a fixed-income budget



Strategies to Reduce Rehospitalization for COPD and Pneumonia Discharges

Dylan J. Wirtz, MD
Clinical Instructor
Division of Pulmonary and Critical Care Medicine
The Ohio State University Wexner Medical Center

Objectives

- **Discuss the burden of rehospitalization for patients discharged with COPD exacerbation and pneumonia**
- **Discuss risk factors for and causes of preventable readmissions**
- **Discuss proven strategies in the post-hospitalization management of patients with COPD exacerbation and pneumonia to decrease rates of rehospitalization**
- **Discuss an innovative approach to improvement in rehospitalization of patients with COPD at OSU East: A COPD Transitional Care Clinic**

SPECIAL ARTICLE

Rehospitalizations among Patients in the Medicare Fee-for-Service Program

Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H.

- **Analysis of Medicare claims data from 2003-2004 to describe the patterns of re-hospitalization and the relation of rehospitalization to demographic characteristics of the patients and to characteristics of the hospitals**

Jencks et al. Rehospitalizations among Patients in the Medicare Fee-for Service Program. N Engl J Med 2009: 360: 1418-28.

Table 2. Highest Rates of Rehospitalization and Most Frequent Reasons for Rehospitalization, According to Condition at

Condition at Index Discharge	30-Day Rehospitalization Rate	Proportion of All Rehospitalizations	Most Frequent	2nd Most Frequent
	percent			
Medical				
All	21.0	77.6	Heart failure (8.6)	Pneumonia (7.3)
Heart failure	26.9	7.6	Heart failure (37.0)	Pneumonia (5.1)
Pneumonia	20.1	6.3	Pneumonia (29.1)	Heart failure (7.4)
COPD	22.6	4.0	COPD (36.2)	Pneumonia (11.4)
Psychoses	24.6	3.5	Psychoses (67.3)	Drug toxicity (1.9)
GI problems	19.2	3.1	GI problems (21.1)	Nutrition-related or metabolic issues (4.9)
Surgical				
All	15.6	22.4	Heart failure (6.0)	Pneumonia (4.5)
Cardiac stent placement	14.5	1.6	Cardiac stent (19.7)	Circulatory diagnoses (8.5)
Major hip or knee surgery	9.9	1.5	Aftercare (10.3)	Major hip or knee problems (6.0)
Other vascular surgery	23.9	1.4	Other vascular surgery (14.3)	Amputation (5.8)
Major bowel surgery	16.6	1.0	GI problems (15.9)	Postoperative infection (6.4)
Other hip or femur surgery	17.9	0.8	Pneumonia (9.7)	Heart failure (4.8)

Jencks et al. Rehospitalizations among Patients in the Medicare Fee-for Service Program. N Engl J Med 2009: 360: 1418-28.

Geographic Pattern of Rehospitalization

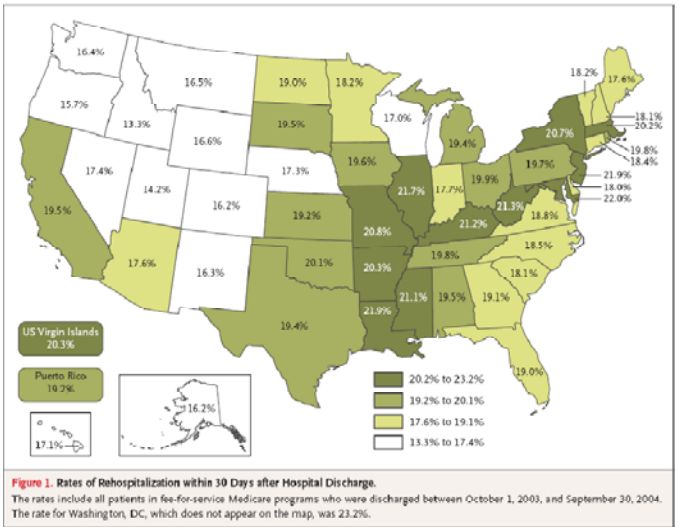


Figure 1. Rates of Rehospitalization within 30 Days after Hospital Discharge.
The rates include all patients in fee-for-service Medicare programs who were discharged between October 1, 2003, and September 30, 2004. The rate for Washington, DC, which does not appear on the map, was 23.2%.

Jencks et al. Rehospitalizations among Patients in the Medicare Fee-for Service Program. N Engl J Med 2009: 360: 1418-28.

Table 3. Predictors of Rehospitalization within 30 Days after Discharge.*

Variable	Hazard Ratio (95% Confidence Interval)
Hospital's ratio of observed to expected hospitalizations†	1.097 (1.096–1.098)
National rehospitalization rate for DRG†	1.268 (1.267–1.270)
No. of rehospitalizations since October 1, 2003	
0	1.00
1	1.378 (1.374–1.383)
2	1.752 (1.746–1.759)
≥3	2.504 (2.495–2.513)
Length of stay	
>2 times that expected for DRG	1.266 (1.261–1.272)
0.5–2 times that expected for DRG	1.00
<0.5 times that expected for DRG	0.875 (0.872–0.877)
Race‡	
Black	1.057 (1.053–1.061)
Other	1.00
Disability	1.130 (1.119–1.141)
End-stage renal disease	1.417 (1.409–1.425)
Receipt of Supplemental Security Income	1.117 (1.113–1.122)
Male sex	1.056 (1.053–1.059)
Age	
<55 yr	1.00
55–64 yr	0.983 (0.978–0.988)
65–69 yr	0.999 (0.989–1.009)
70–74 yr	1.023 (1.012–1.035)
75–79 yr	1.071 (1.059–1.084)
80–84 yr	1.101 (1.089–1.113)
85–89 yr	1.123 (1.111–1.136)
>89 yr	1.118 (1.105–1.131)

Jencks et al. Rehospitalizations among Patients in the Medicare Fee-for Service Program. N Engl J Med 2009: 360: 1418-28.

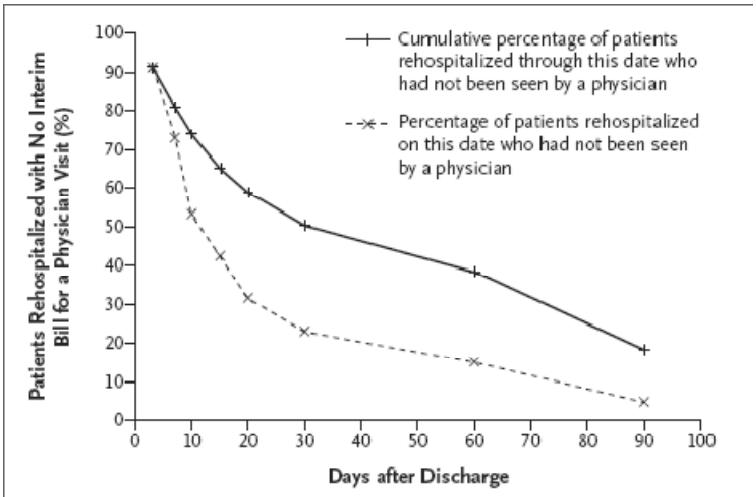


Figure 2. Patients for Whom There Was No Bill for an Outpatient Physician Visit between Discharge and Rehospitalization.

Jencks et al. Rehospitalizations among Patients in the Medicare Fee-for Service Program. N Engl J Med 2009: 360: 1418-28.

Data on Hospital Readmissions

- **% of Medicare Beneficiaries Readmitted Within…**
  - **-30 days of initial discharge= 19.6%**
  - **-90 days=34%**
  - **-12 months=56.1%**
- **Unplanned Readmissions Cost Medicare $17.4 Billion**
- **20-40% of Patients are Re-hospitalized at a Different Hospital**
- **Average Medicare Payment for a Potentially Preventable Readmission $7,200 ($1400 Less Than Original Stay)**

Rakoczy C. Strategies to Reduce Readmissions. Open Placement. July 2012.

Medicare Avoidable Readmission Penalty

- Incentive to improve care transitions and reduce avoidable readmissions
- Poor performing Hospitals (bottom quartile) will have **all** Medicare payments penalized
- Reduced Medicare DRG payments by 1%, rising to 3%
- 3 targeted conditions 2012
- Expanded to 7 targeted conditions 2015
- Readmission window 30 days

Medicare Avoidable Readmission Penalty

- Hospital-specific readmission rates to be published on Medicare Hospital Compare website
- Does not apply to Critical Access Hospitals
- Not limited to preventable, avoidable readmissions
- Applies even if readmitted at another hospital
- Likely to be expanded beyond the proposed 7 conditions

Targeted Conditions

2012

- **Pneumonia**
- **Heart Failure**
- **Acute Myocardial Infarction**

2015

- **Chronic Obstructive Pulmonary Disease**
- **Coronary Artery Bypass Grafting**
- **Urinary Tract Infection**
- **Percutaneous Transluminal Coronary Angioplasty**

Physician Barriers to Transitioning Patients from the Inpatient to the Outpatient Setting

- **Worrying my patient will be "lost" to follow-up**
- **My patient has no insurance**
- **My patient has no primary care physician**
- **My patient needs to see a subspecialist sooner than 3 months from now**
- **I'm already too over-booked to see this patient within the next 3 days**
- **I have no idea what happened while this patient was in the hospital**

Image by Sander van der Wel ; Creative Commons

Image courtesy of Creative Commons

Image by Pedro Ribeiro Simones; Creative Commons

Image by Victor (Screename:.v1ctor; Creative Commons

Risk Factors for Readmission

- **Use of high risk medications (antibiotics, anticoagulants, glucocorticoids, narcotics, antidepressants, antipsychotics, hypoglycemic agents, and narcotics)**
- **Polypharmacy (5 or more discharge medications)**
- **Specific clinical conditions (CHF, COPD, stroke, cancer, weight loss, depression)**

Risk Factors for Readmission

- Prior hospitalization within the last 12 months
- Black race
- Low health literacy
- Social isolation
- Leaving against medical advice

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Common Causes of Readmission

- Premature discharge
- Inappropriate site of discharge
- Insufficient follow-up
- Medication errors/Adverse drug events
- Poor transfer of information
- Procedural complications
- Nosocomial infections

Common Causes of Readmission

- Pressure ulcers
- Patient falls
- Insufficiently addressed co-morbid conditions (especially psychiatric conditions)
- Failure to address end of life care
- Failure to involve home health

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COPD Burden

- Fourth-ranked cause of death in the US= 120,000 per year
- 726,000 hospital admissions per year
- 1.5 million emergency department visits per year
- COPD is underdiagnosed- Only 15 to 20 percent of smokers are ever diagnosed with COPD although the majority develop airflow obstruction

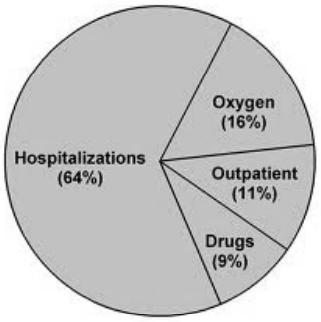

Image from nhlbi.nih.gov

Outcomes Following Acute Exacerbation of Severe Chronic Obstructive Lung Disease

ALFRED F. CONNORS, Jr., NEAL V. DAWSON, CHARLES THOMAS, FRANK E. HARRELL, Jr., NORMAN DESBIENS, WILLIAM J. FULKERSON, PETER KUSSIN, PAUL BELLAMY, LEE GOLDMAN, and WILLIAM A. KNAUS for the SUPPORT Investigators

Departments of Medicine and Epidemiology and Biostatistics, Case Western Reserve University at MetroHealth Medical Center, Cleveland, Ohio; Duke University Medical Center, Durham, North Carolina; Marshfield Medical Research Foundation/Marshfield Clinic, Marshfield, Wisconsin; UCLA Medical Center, Los Angeles, California; Beth Israel Hospital, Boston, Massachusetts; and ICU Research Center, George Washington University, Washington, District of Columbia

Am J Respir Crit Care Med Vol 154 pp 959-967, 1996

Survival Following Exacerbation

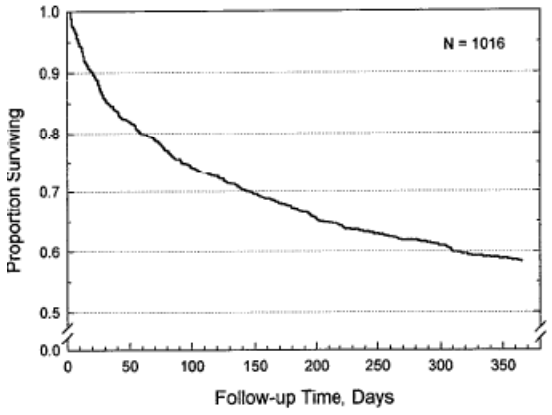

Figure 1. One-year survival for 1,016 patients with severe acute exacerbation of COPD. The Kaplan–Meier survival estimates over the 365 d after study entry are shown. Although moderate hospital mortality (11%) was seen, there was considerable mortality in the months after the index admission.

Am J Respir Crit Care Med Vol 154 pp 959-967, 1996

Common Reasons for COPD Readmission

- Inability to obtain medications
- Improper inhaler technique
- Insufficient follow-up
- Underutilization of pulmonary rehabilitation
- Tobacco dependence
- Comorbid conditions

Supplemental Therapy With Proven Efficacy

1. Smoking Cessation
2. Oxygen
3. "Triple Inhaler Therapy"
4. Vaccination
5. Pulmonary Rehabilitation

Image provided courtesy of the CDC

Supplemental Therapy With Proven Efficacy

6. Chronic Macrolide Therapy
7. Roflulimast
8. Lung Volume Reduction Surgery
9. Lung Transplantation
10. Palliative Treatment of Dyspnea
11. Hospice

Image provided courtesy of the CDC

What is Pulmonary Rehabilitation and Why Should I Send My Patient for it?

Respiratory Research

BioMed Central

Research

Open Access

Respiratory rehabilitation after acute exacerbation of COPD may reduce risk for readmission and mortality – a systematic review

Milo A Puhan*[1], Madlaina Scharplatz[1], Thierry Troosters[2] and Johann Steurer[1]

Address: [1]Horten Centre, University of Zurich, Switzerland and [2]Respiratory Division, Respiratory Rehabilitation, and Faculty of Kinesiology and Movement Sciences, Katholieke Universiteit Leuven, Leuven, Belgium

Email: Milo A Puhan* - milo.puhan@evimed.ch; Madlaina Scharplatz - madlaina.scharplatz@usz.ch; Thierry Troosters - thierry.troosters@med.kuleuven.ac.be; Johann Steurer - johann.steurer@evimed.ch

* Corresponding author

- Multidisciplinary approach including exercise, education, nutritional advice, relaxation, emotional support, breathing techniques, and the development of coping skills
- 3 days per week for 6-8 weeks
- Can enroll in a maintenance program afterward

Effects of Pulmonary Rehab on Hospital Readmission

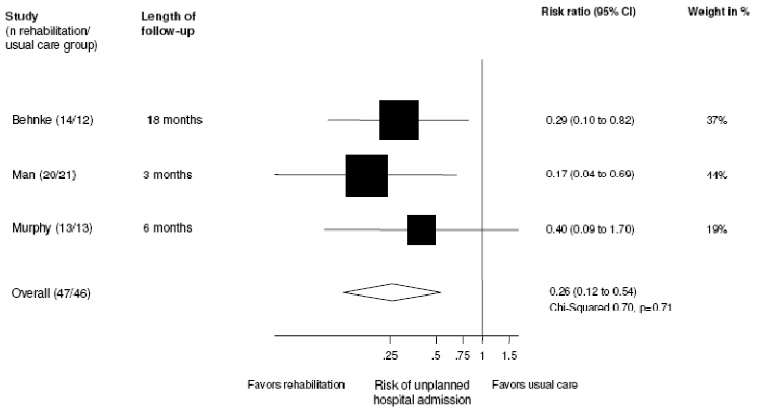

Figure 2
Effect of respiratory rehabilitation on unplanned hospital admissions. Boxes with 95% confidence intervals represent point estimates for the risk ratio.

Respiratory Research 2005, 6:54

Why Isn't My Pneumonia Getting Better?

- **Early Treatment Failure-no response within 72 hours (6.5% of cases)**
- **Late Treatment Failure-initial improvement but deterioration after 72 hrs (7% of cases)**
- **Antibiotic Noncompliance**
- **Inadequate Antimicrobial Selection- Think Staph, drug-resistant Pneumococcus, Pseudomonas (especially in patients with structural lung disease), and viruses**

Why Isn't My Pneumonia Getting Better?

- Unusual Pathogens
- Complications of Pneumonia
- Noninfectious Illness
- Aspiration

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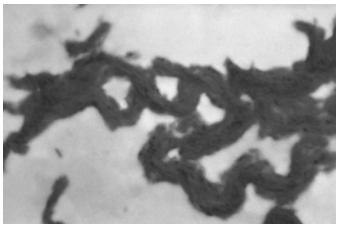
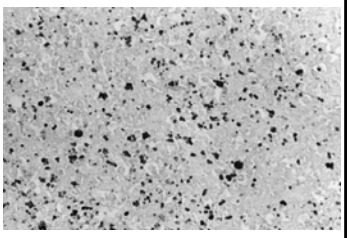
Unusual Pathogens

- Tuberculosis
- Endemic fungal pneumonia (histoplasmosis, blastomycosis, coccidiomycosis)
- PCP
- Coxiella burnetti
- Tularemia

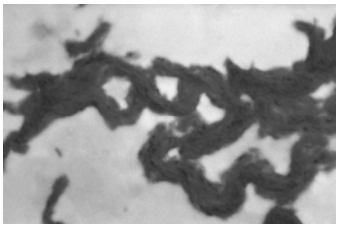


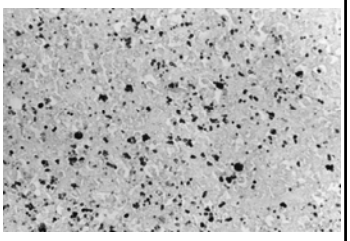


Images provided courtesy of CDC

Unusual Pathogens

- Anaerobes
- Nontuberculous mycobacteria
- Yersinia Pestis
- Leptospirosis
- Psitaccosis
- Bacillus anthracis
- Hantavirus

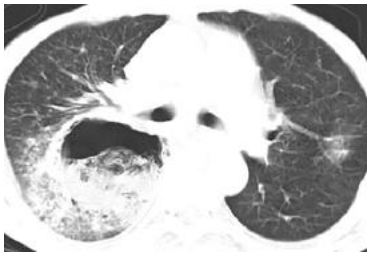


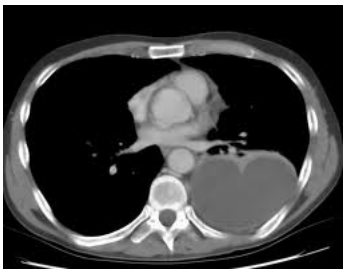


Images provided courtesy of CDC

Complications of Pneumonia

- Empyema and other metastatic infections
- Lung abscess
- Nosocomial pneumonia
- Pulmonary Embolus
- Bacterial superinfection of viral pneumonia

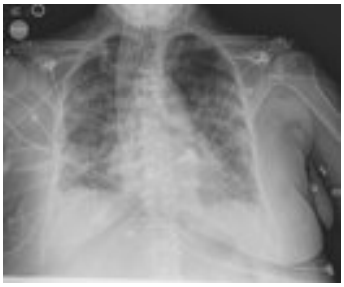
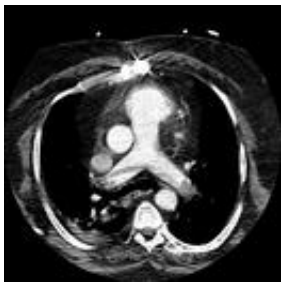
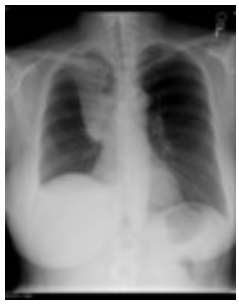




Images provided courtesy of MedPix

Noninfectious Illnesses

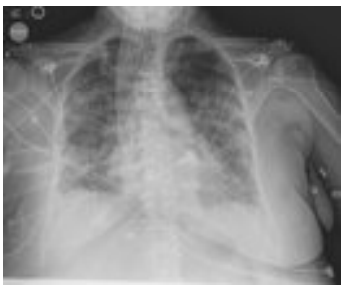
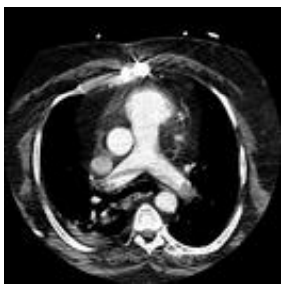
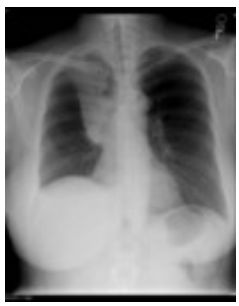
- Pulmonary embolus
- Congestive Heart Failure
- Obstructing bronchogenic carcinoma
- Vasculitis (Wegener's)
- Sarcoidosis

Images provided courtesy of MedPix

Noninfectious Illnesses

- Hypersensitivity pneumonitis
- Cryptogenic Organizing Pneumonia
- Drug-induced lung disease
- Eosinophilic pneumonia
- Acute interstitial pneumonia
- BAC

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Evaluation and Testing in the Non-Responding Patient

- Repeat Chest X-ray
- Chest CT
- Pleural fluid should be sampled via thoracentesis
- Bronchoscopy with bronchoalveolar lavage
- Open lung biopsy

Miami University Tobacco Education Program

Post-Hospital Management of Community-Acquired Pneumonia

- Follow-up chest x-ray 4-6 weeks following admission to exclude malignancy
- Smoking cessation counseling (smoking is a risk factor for CAP)
- Patients at risk for CAP should receive Influenza and Pneumococcal Vaccination
- HIV testing for patients age 15-54 admitted with CAP, or anyone with risk factors
- PPD testing for those patients with tuberculosis risk factors

Predischarge Interventions

- Patient Education
- Discharge planning
- Medication Reconciliation
- Scheduling follow-up appointments

Postdischarge Interventions

- Follow-up phone call
- Communication with ambulatory provider
- Home visits
- Teleconferencing visits
- Transitional care clinics

Bridging Interventions

- **Transition coaches**
- **Patient-centered discharge instructions**

Disease Management Program for Chronic Obstructive Pulmonary Disease

A Randomized Controlled Trial

Kathryn L. Rice[1,2], Naresh Dewan[3,4], Hanna E. Bloomfield[2,5,6], Joseph Grill[6], Tamara M. Schult[6], David B. Nelson[6], Sarita Kumari[7], Mel Thomas[8], Lois J. Geist[9,10], Caroline Beaner[1], Michael Caldwell[3], and Dennis E. Niewoehner[1,2]

[1]Pulmonary Section, Department of Medicine, VA Medical Center, Minneapolis, Minnesota; [2]Department of Medicine, University of Minnesota, Minneapolis, Minnesota; [3]Pulmonary Section, Department of Medicine, VA Medical Center, Omaha, Nebraska; [4]Department of Medicine, Creighton University, Omaha, Nebraska; [5]General Internal Medicine Section and [6]Center for Chronic Disease Outcomes Research, Department of Medicine, VA Medical Center, Minneapolis, Minnesota; [7]Pulmonary Section, Department of Medicine, Pittsburgh VA Healthcare System, Pittsburgh, Pennsylvania; [8]Department of Medicine, VA Medical Center, Sioux Falls, South Dakota; [9]Department of Medicine, VA Medical Center, Iowa City, Iowa; [10]Carver College of Medicine, University of Iowa, Iowa City, Iowa

- **Randomized, adjudicator-blinded, controlled trial at five VA centers including 743 patients with severe COPD who had either been hospitalized or to the ED for COPD, on systemic steroids, or on home oxygen**
- **Intervention group received a single 1-1.5 hr education session, an action plan for self treatment of exacerbations, and monthly follow-up calls from a case manager**
- **Followed for one year**

Am J Respir Crit Care Med Vol 182 pp 890-896, 2010

Hospitalizations and ED Visits

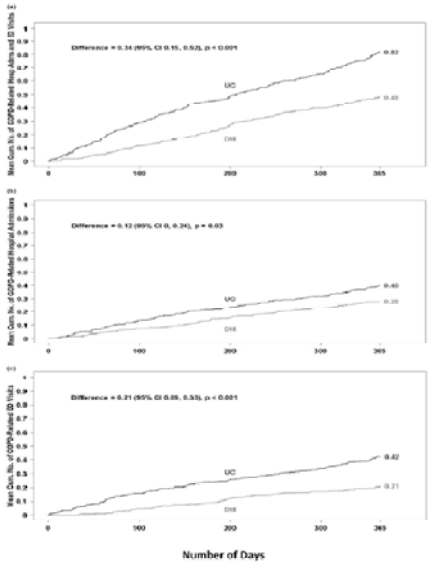


Figure 2. Comparing mean cumulative number of chronic obstructive pulmonary disease (COPD)-related (a) hospitalizations and emergency department (ED) visits combined, (b) hospitalizations, and (c) ED visits over 365 days by treatment: disease management (DM) versus usual care (UC).

Am J Respir Crit Care Med Vol 182 pp 890-896, 2010

Telephone Follow-up as a Primary Care Intervention for Postdischarge Outcomes Improvement: A Systematic Review

J. Benjamin Crocker, MD, Jonathan T. Crocker, MD and Jeffrey L. Greenwald, MD

American Journal of Medicine, The
Volume 125, Issue 9, Pages 915-921 (September 2012)
DOI: 10.1016/j.amjmed.2012.01.035

- **Systematic review of three large randomized trials examining the effects of a primary-care based follow-up phone call on rates of rehospitalization**
- **None of the trials showed a reduction in rates of rehospitalization**

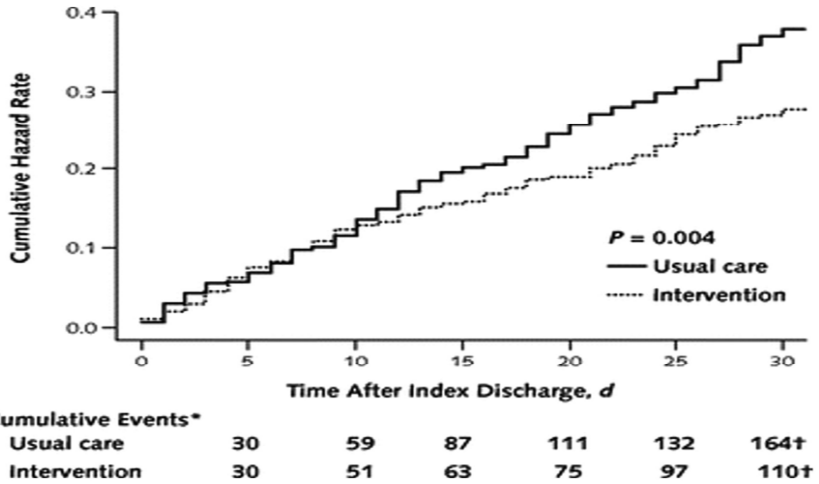
A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A Randomized Trial

Intervention group received:

1. **A nurse discharge advocate to assist with discharge planning and preparation**
2. **Medication reconciliation**
3. **Follow-up appointments scheduled at times convenient to the patient**
4. **Phone call from a clinical pharmacist two to four days after discharge**
5. **A low literacy discharge instruction booklet for patients**

Ann Intern Med. 2009 February 3; 150(3): 178–187.

Cumulative hazard rate of hospital utilization for 30 days after index hospital discharge



Cumulative Events*						
Usual care	30	59	87	111	132	164†
Intervention	30	51	63	75	97	110†

Ann Intern Med. 2009 February 3; 150(3): 178–187

OSU East COPD Transitional Care Clinic

- For Patients With a Primary Discharge Diagnosis of COPD Exacerbation
- All Visits Led by Advanced Practice Nurse (APN)
- Patients Seen Within One Week of Discharge
- Two Appointments Per Patient
- Clinic Located Within Walking Distance of Hospital
- Completed a Retrospective Review of the Clinic's First Year of Operation (08/01/2011-07/31/2012)

Clinic Interventions

- Medication Reconciliation
- Assessment of Response to Therapy and Medication Adjustments as Necessary
- Smoking Cessation Counseling
- Inhaler Technique Training
- Vaccination

Clinic Interventions

- **Follow-up of Micro and Radiology from Hospitalization**
- **Pulmonary Rehabilitation Referral**
- **Pulmonary Function Testing, Arterial Blood Gas Analysis, and Bone Density Testing When Indicated**

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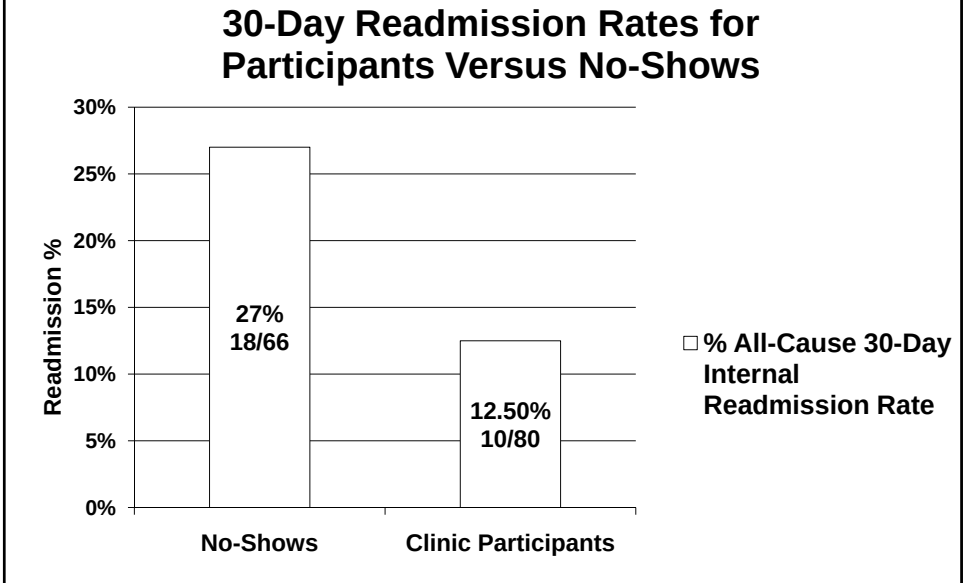

Summary

- Nationally, readmissions for pneumonia and COPD are exceedingly high at a great financial cost to the healthcare system
- Preventing avoidable readmissions has the potential to profoundly improve both the quality-of-life for patients and the financial well-being of healthcare systems
- Critical elements to successful hospital discharge include accurate medication reconciliation, establishing timely follow-up, and communication of the discharge plan to the primary care physician

Summary

- Several systems initiatives have shown promise in reducing rates of readmission including enhanced patient education and empowerment, home visits, telephone calls, transitional care managers, and early post-discharge follow-up at transitional care clinics
- Multiple concurrent interventions may be more effective than single components