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OMICS International Conferences

OMICS International is a pioneer and leading science event organizer, which publishes around 500 open access journals and conducts over 500 Medical, Clinical, Engineering, Life Sciences, Pharma scientific conferences all over the globe annually with the support of more than 1000 scientific associations and 30,000 editorial board members and 3.5 million followers to its credit.

OMICS Group has organized 500 conferences, workshops and national symposiums across the major cities including San Francisco, Las Vegas, San Antonio, Omaha, Orlando, Raleigh, Santa Clara, Chicago, Philadelphia, Baltimore, United Kingdom, Valencia, Dubai, Beijing, Hyderabad, Bengaluru and Mumbai.

RUTGERS

Atlantic
Health System

Correlation of Medication Therapy in Chronic Obstructive Pulmonary Disease(COPD) Patients with 30-day Readmission Rates

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Morristown Medical Center

- Teaching hospital under the Atlantic Health System
- 656-bed general medicine and surgical facility
- Approximately 34,871 admissions per year reported
- 83,596 emergency room visits
- Nationally ranked in:
  - Cardiology
  - Geriatrics
  - Orthopedics
  - Pulmonology

Hospital Readmissions Reduction Program (HRRP)

- Introduced in 2012, penalizes hospitals for high 30-day readmission rates of Medicare patients.

- Currently for indications of:
  - Pneumonia
  - Heart failure
  - Myocardial infarction
  - COPD
  - Total knee/hip arthroplasty

Readmissions Reduction Program. Centers for Medicare & Medicaid Services, n.d. http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html. Accessed July 23, 2014.

Rationale – Why Study COPD Readmissions?

- In 2010, COPD imposed $49.9 billion in direct and indirect healthcare costs.[1]

- Medicare claims spanning 2003-2004 displayed a 30-day hospital readmission rate for COPD patients of 22.6%.[2]

- Exacerbations and readmissions are associated with high medical costs.

1. Impact of COPD on Health Care Costs. Jan 1, 2012. COPD Foundation. http://www.copdfoundation.org/pdfs/Impact%20on%20Costs.pdf>. Accessed July 23, 2014.
2. Reducing COPD readmissions—a personal and political priority. The Lancet Respiratory Medicine, Volume 1, Issue 5, Page 347, July 2013. doi:10.1016/S2213-2600(13)70153-X. http://www.thelancet.com/journals/lanres/article/PIIS2213-2600(13)70153-X/fulltext. Accessed July 23, 2014.

Global Strategy for Diagnosis, Management, and Prevention of COPD

When assessing risk, choose the highest risk according to GOLD grade or exacerbation history
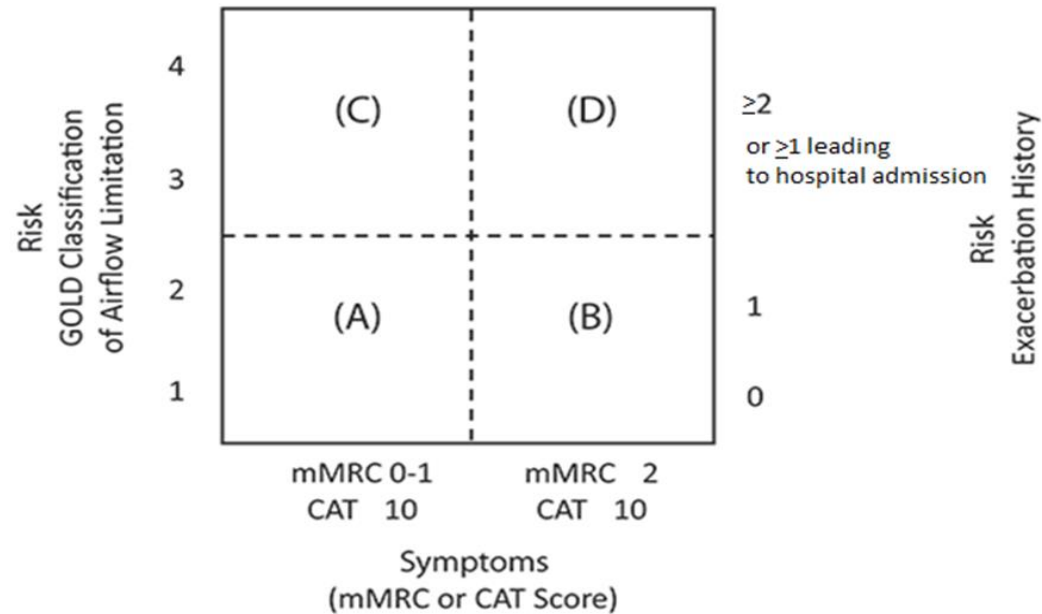
Patient Category	Characteristics	Spirometric Classification	Exacerbations Per Year	mMRC	CAT
A	Low Risk, Less Symptoms	GOLD 1-2	1	0-1	<10
B	Low Risk, More Symptoms	GOLD 1-2	1	2	10
C	High Risk, Less Symptoms	GOLD 3-4	2	0-1	<10
D	High Risk, More Symptoms	GOLD 3-4	2	2	10

GOLD Treatment Recommendations

Patient Group	Recommended First Choice	Alternative Choice	Other Possible Treatments
A	**Short acting muscarinic antagonist prn** or **Short acting beta agonist prn**	**Long acting muscarinic antagonist** or **Long acting beta agonist** or **Short acting beta agonist** and **Short acting muscarinic antagonist**	**Theophylline**
B	**Long acting muscarinic antagonist** or **Long acting beta agonist**	**Long acting muscarinic antagonist** and **Long acting beta agonist**	**Short acting beta agonist** and/or **Short acting muscarinic antagnost** or **Theophylline**
C	**Inhaled corticosteriod + Long acting beta agonist** or **Long acting muscarinic antagonist**	**Long acting muscarinic antagonist** and **Long acting beta agonist** or **Long acting muscarininc antagonist** and **Phosphodiesterate-4-inh**. Or **Long acting beta agonist** and **Phosphodiesterate-4-inh.**	**Short acting beta agonist** and/or **Short acting muscarinic antagonist** or **Theophylline**
D	**Inhaled corticosteriod + Long acting beta agonist** and/or **Long acting muscarinic antagonist**	**Inhaled corticosteriod + Long acting beta agonist** and **Long acting muscarinic antagonist** or **Inhaled corticosteriod + Long acting beta agonist** and **Phosphodiesterase-4-inh.** Or **Long acting muscarninc antagonist** and **Long acting beta agonist** or **Long acting muscarninc antagonist** and **Phosphodiesterase-4-inh.**	**Carbocysteine** or **Short acting beta agonist** and/or **Short acting muscarinic antagonist** or **Theophylline**

Global Strategy for Diagnosis, Management, and Prevention of COPD. Global Initiative for COPD, n.d. http://www.goldcopd.org/guidelines-global-strategy-for-diagnosis-management.html. Accessed July 22, 2014.

Objective

- Primary outcome: to examine the correlation of medication therapy in COPD patients with 30-day readmission rates.
  - Evaluate appropriate treatment at the following points:
    - Preadmission
    - Exacerbation
    - Discharge
- Secondary outcome: correlation of drug therapy to length of stay.

Methods

- Time period: January-March of 2015
- Data collection was performed utilizing ChartMaxx and Access1.
- Patient selection was generated using the University Health System Consortium(UHC).

Methods: Study Population

- Inclusion criteria: patients selected were admitted to Morristown Medical Center
  - with a Medicare Severity Diagnosis Related Group (MS-DRG) of:
    - 190 - COPD with major complication or comorbidity (MCC).
    - 191 - COPD with complication or comorbidity(CC).
    - 192 – COPD without CC/MCC.
    - COPD patients who fell under the category of
      - Obstructive chronic bronchitis, with (acute) exacerbation
      - Obstructive chronic bronchitis with acute bronchitis
      - Chronic obstructive asthma, with (acute) exacerbation

Methods

- Exclusion Criteria:
  - Chemotherapy
  - Hospice
  - Radiation therapy
  - Rehabilitation
  - Death 1st admit
  - Delivery/birth
  - Mental diseases/alcohol and drug use

Methods: Data Collections

- Collected patient information included:

Background	Treatment
• Age	• Prior to admission
• Gender	• During admission
• Race	• At discharge
• Co-morbities	
• Previous admissions	
• Readmissions	

Methods: Group Randomization

- Patients were included in the pharmacy group if the clinical pharmacist or pharmacy students assessed or intervened with the patient.
    - Pharmacist and pharmacy students work with a multidisciplinary team which included at least a physician and nurse.
    - May have also included a care manager, social worker, respiratory therapist, medical residents, and/or medical students
- All other patients were included in the non-pharmacy group and received standard care.

Methods: Pharmacy Group Interventions

- COPD education
- Appropriateness of home, exacerbation, and discharge Medications
- Appropriateness of vaccination history
- Conversion of medications from IV to oral
- Assessment of device technique
- Medication/Device access
  - Financially challenged patients received 30 day supply of medications at no charge (max 400 USD)
- Referral to smoking cessation

Methods: Statistical Analysis

- Chi-square test

  - Appropriateness of medications and 30 day readmissions

- Mann-Whitney U test

  - Relationship between appropriateness and hospital length of stay

Results: Baseline Demographics

Characteristic	Pharmacy	Non-Pharmacy
Mean Age, years	73.9 $\pm$ 11.4	75.3 $\pm$ 11.0
Gender, %		
Female	42.3	51.9
Male	57.7	48.1
Race, %		
White	90.5	90.1
Asian	0.8	0.5
African American	4.7	6.1
Other	4.0	3.3

Results: Patient Groups

Results: Appropriateness of Medications
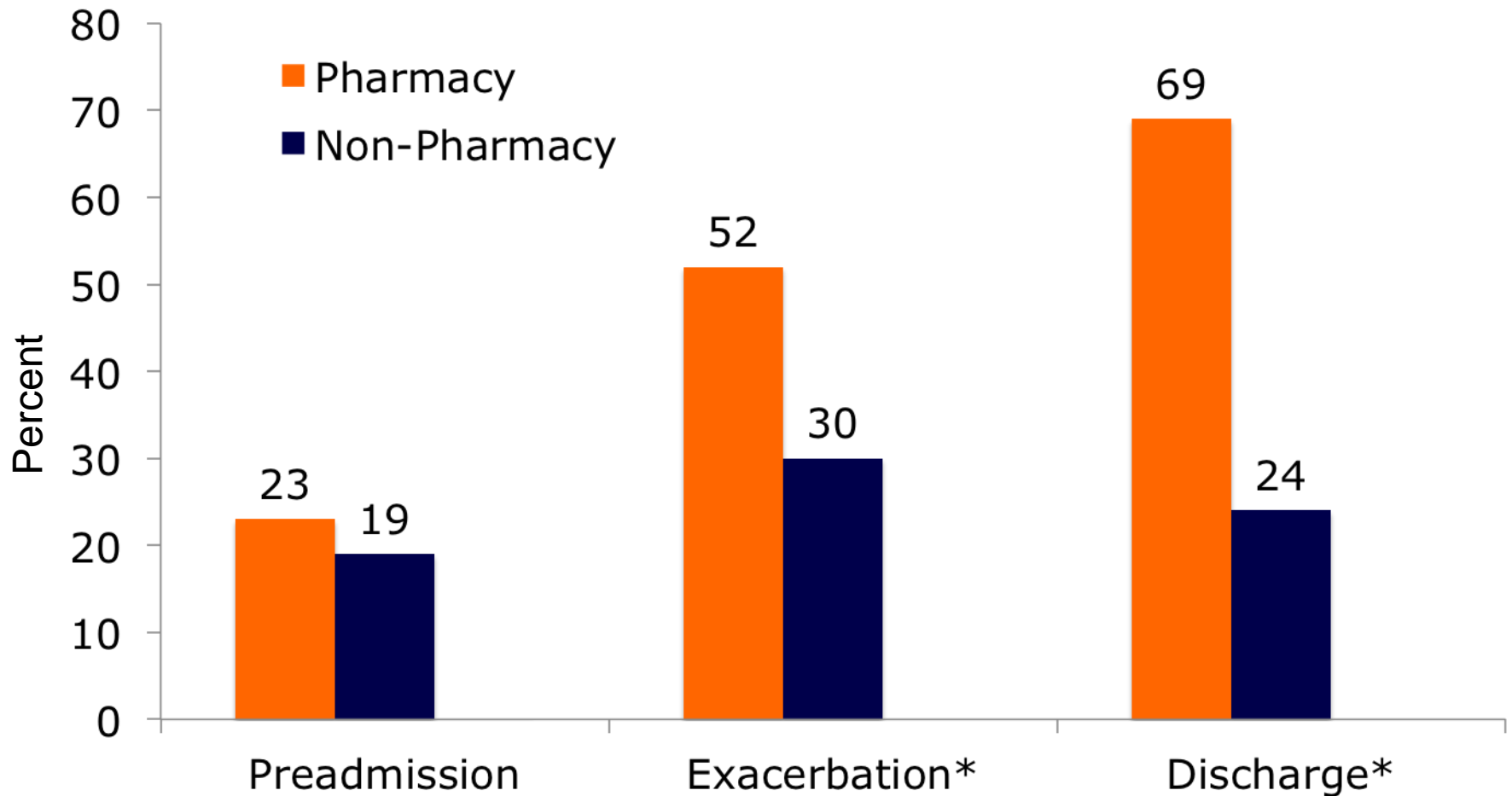
* p<0.001

Results: Readmission within 30 Days

p<0.001
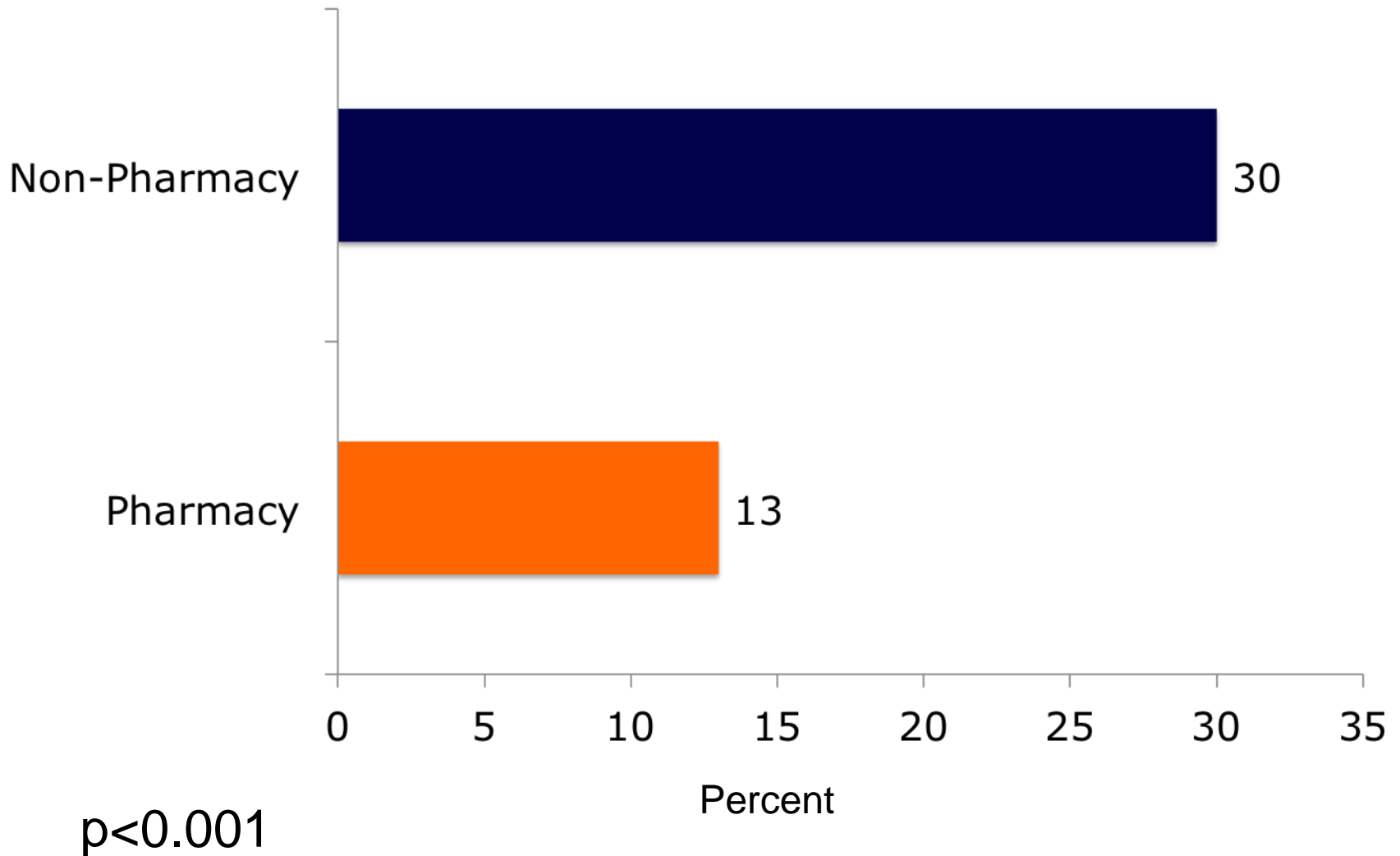
Results: Readmission Rates > 30 days
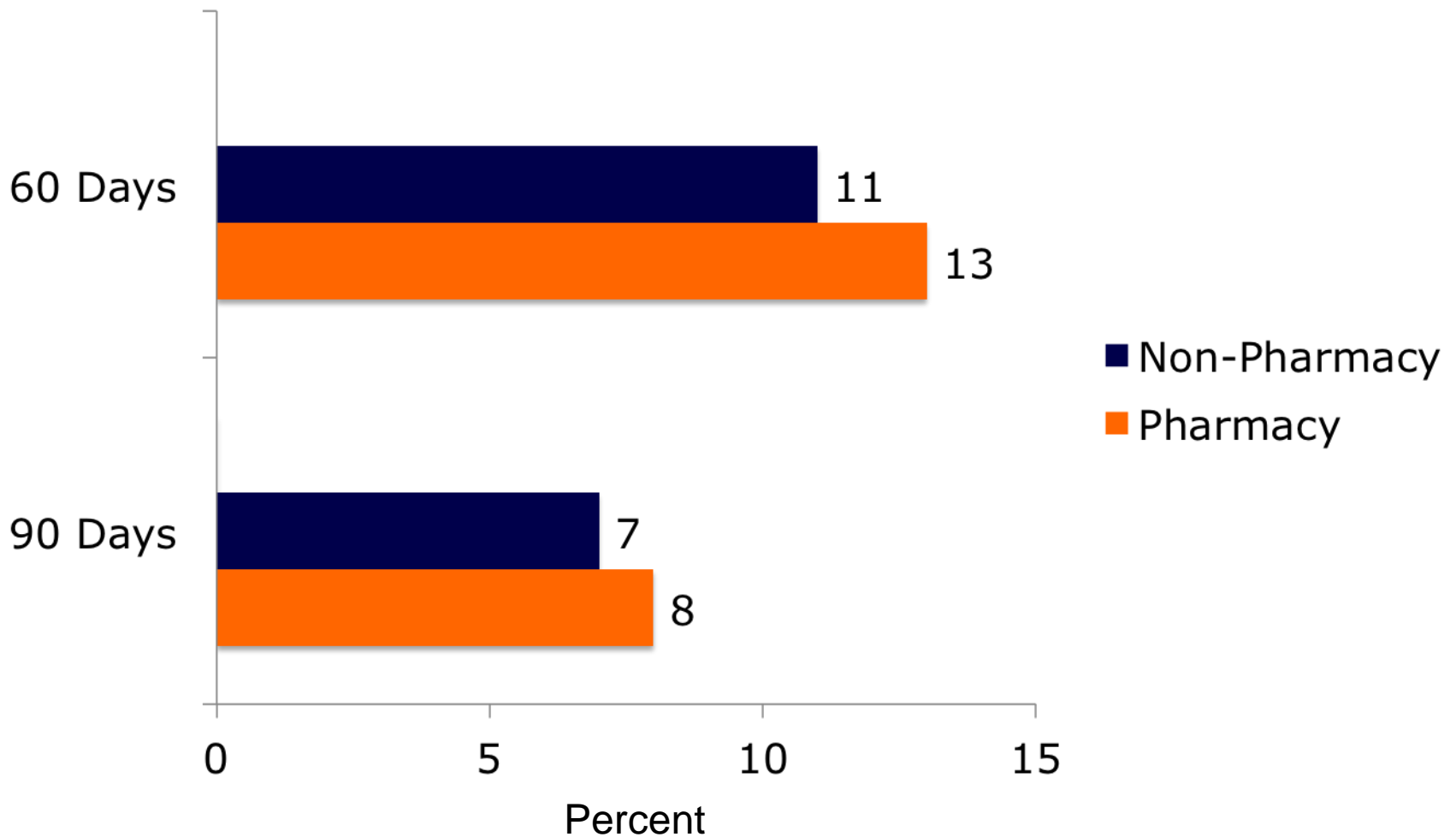
Results: Length of Stay

- Median LOS: 6 days for pharmacy group.
- Median LOS: 5 days for the non-pharmacy group.

Next Steps

- Correlation of drug therapy to length of stay.
- Correlation of drug therapy to readmissions.
- Continue to build the sample size to continue to show the difference year round.

Conclusions

- Pharmacist(s) working with multidisciplinary team can help optimize exacerbation and discharge medications related to COPD
- Pharmacist can be utilized in the multidisciplinary team approach to help reduce readmission rates.
- Pharmacists, pharmacy technicians, residents, and students, have beneficial roles in medication reconciliation, discharge counseling, as well as improving medication access for patients at high risk.

Acknowledgements

- Stephanie Chiu
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- Stephen May

Questions?

Let us meet again..

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June 18-20,2016, Berlin, Germany.

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