CHEST

Using Clinical Pathways to Assess Interventions to Prevent COPD Readmissions

To the Editor:

Two recent articles and the accompanying editorial in *CHEST* (May 2015)[1-3] correctly point out that 30-day readmissions after COPD are usually not for COPD exacerbations and that the effect of currently identified interventions may not vary from control groups. Risk predictors for 30-day readmissions after COPD may depend on the principal discharge diagnosis of the readmission, since the majority of readmissions are not for COPD exacerbations.

We reviewed the fiscal year 2015 Hospital Readmissions Reduction Program worksheet for our 714-bed teaching hospital. Risk variables were compared using the Fisher two-tailed exact test. Patients with 30-day readmissions after COPD for sepsis (*International Classification of Diseases, 9th revision* codes 0380, 03811, 03812, and 0389) had higher rates of age > 90 years (six of 38 [15.8%] vs eight of 200 [4.0%], $P = .0128$) and hypertensive heart and renal disease or encephalopathy (16 of 38 [42.1%] vs 42 of 200 [21.0%], $P = .0120$) at the time of index admission for COPD. Patients with 30-day readmissions after COPD for COPD exacerbation (*International Classification of Diseases, 9th revision* codes 49121 and 49122) had higher rates of lung fibrosis (29 of 75 [38.7%] vs 36 of 163 [22.1%], $P = .0118$) but lower rates of hypertensive heart and renal disease or encephalopathy (nine of 75 [12.0%] vs 49 of 163 [30.1%], $P = .009$), renal failure (18 of 75 [24.0%] vs 68 of 163 [41.7%], $P = .009$) and peptic ulcer disease (six of 75 [8.0%] vs 35 of 163 [21.5%], $P = .0098$) at the time of index admission for COPD. Age did not predict readmissions for COPD exacerbation. Effective interventions to prevent 30-day readmissions after COPD may vary and be dependent on the clinical pathway leading to the specific type (ie, diagnosis) of the readmission. This should be considered when designing trials that evaluate interventions to prevent 30-day readmissions after COPD.

Jordan B. Glaser, MD
Michael Castellano, MD
Staten Island, NY

AFFILIATIONS: From the Division of Infectious Diseases (Dr Glaser), and the Pulmonary Division (Dr Castellano), Staten Island University Hospital.

CONFLICT OF INTEREST: None declared.

CORRESPONDENCE TO: Jordan B. Glaser, MD, Division of Infectious Diseases, Staten Island University Hospital, 475 Seaview Ave, Staten Island, NY 10305; e-mail: JBGRYG@aol.com

DOI: 10.1378/chest.15-1327

References

1. Shah T, Churpek MM, Coca Perraillon M, Konetzka RT. Understanding why patients with COPD get readmitted: a large national study to delineate the Medicare population for the readmissions penalty expansion. *Chest*. 2015;147(5):1219-1226.
2. Jennings JH, Thavarajah K, Mendez MP, Eichenhorn M, Kvale P, Yessayan L. Predischarge bundle for patients with acute exacerbations of COPD to reduce readmissions and ED visits: a randomized controlled trial. *Chest*. 2015;147(5):1227-1234.
3. Mannino DM, Thomashow B. Reducing COPD readmissions: great promise but big problems. *Chest*. 2015;147(5):1199-1201.

Response

To the Editor:

We thank Drs Glaser and Castellano for their comments on our recent article[1] in *CHEST* concerning predicting 30-day readmissions after acute exacerbation of COPD (AECOPD). Building on our finding that only 27.6% of readmissions were due to AECOPD and that respiratory-related reasons for readmission accounted for 51% of all readmissions, Drs Glaser and Castellano describe results from an analysis of risk factors specific to various reasons for readmission, using data from their teaching hospital, which presumably include all ages and payers, not only Medicare admissions for those age 65 years and older, as in our study.[1] Specifically, they looked separately at predictors of readmission for sepsis and AECOPD and found that the risk factors differed.

Patients with COPD are a challenging population in whom to improve health because of diagnostic difficulties and varying presentations of AECOPD. Although the reason for readmission cannot be known in advance, given that most readmissions are not for AECOPD, identifying key risk factors for common reasons for readmission could contribute to strategies that improve trajectories for patients with COPD.

As disease-guideline development is now trending toward consideration of multiple diseases together, we believe

successful interventions to curb AECOPD readmission require a holistic approach that spans beyond the focus on respiratory disease. Our findings and those of Drs Glaser and Castellano give further testimony to the need for research to better define AECOPD; to better understand the life cycle of patients hospitalized for AECOPD, starting from a period prior to hospitalization and extending beyond hospital discharge; and to engage more stakeholders in innovative approaches to disseminate information to improve health in patients with AECOPD.

Tina Shah, MD, MPH
Matthew M. Churpek, MD, PhD
Marcelo Coca Perraillon, PhD
R. Tamara Konetzka, PhD
Chicago, IL

AFFILIATIONS: From the Department of Pulmonary and Critical Care (Drs Shah and Churpek), The University of Chicago Medicine, and Department of Public Health Science (Drs Coca Perraillon and Konetzka), The University of Chicago.

FUNDING/SUPPORT: This study was supported by the Agency for Healthcare Research and Quality [Grant AHRQ R21HS021877] and by a National Institutes of Health National Heart, Lung, and Blood Institute Research Training in Respiratory Biology [Grant T32 HL007605]. Dr Churpek has received grant support from the National Institutes of Health [K08 HL121080].

CONFLICT OF INTEREST: None declared.

CORRESPONDENCE TO: Tina Shah, MD, MPH, Department of Pulmonary and Critical Care, The University of Chicago Medicine, 5841 S Maryland Ave, MC 6076, Chicago, IL 60637; e-mail: tina.shah@uchospitals.edu

DOI: 10.1378/chest.15-1440

Acknowledgments

Role of sponsors: The funding organizations had no role in the design and conduct of the study; the collection, management, analysis, and interpretation of the data; the preparation, review, or approval of the manuscript; or the decision to submit the manuscript for publication.

References

1. Shah T, Churpek MM, Coca Perraillon M, Konetzka RT. Understanding why patients with COPD get readmitted: a large national study to delineate the Medicare population for the readmissions penalty expansion. *Chest*. 2015;147(5):1219-1226.