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Editorial

Hospitalizations and ED Visits in COPD: A Collision of Socioeconomic Realities with Chronic Comorbid Medical Illnesses

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Abbreviations: acute exacerbations of chronic obstructive pulmonary disease, **AECOPD**; emergency department, **ED**

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Treating acute exacerbations of chronic obstructive pulmonary disease (AECOPD) represents the major cost associated with this condition, primarily because of overuse of hospital and emergency department (ED) resources.[1-3] Although hospitalization and ED-based care is needed in urgent situations that fail optimal therapy, many hospitalizations and re-hospitalizations stem from failure to receive optimal outpatient care. A number of pharmacologic interventions including bronchodilators, corticosteroids, phosphodiesterase-4 inhibitors, and macrolide antibiotics have been shown to reduce the frequency of COPD exacerbations but none has been consistently shown to substantially reduce the rates of hospitalization.[4] Similarly, the effects of pulmonary rehabilitation and disease management programs have shown inconsistent impact on hospital utilization rates.[5-7] However, new drugs or treatments may not be the answer. No matter how good a COPD therapy is, if patients cannot or do not receive it, hospital and ED admission rates will remain unchanged. Understanding who the patients are that require hospital or ED admission will hopefully facilitate creative multimodality approaches to solve this problem.

In this issue of *Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation* Kumbhare and colleagues report on their analysis of data from the 2012 Behavioral Risk Factor Surveillance System survey where respondents completed the optional COPD module questions. Their findings mostly support the conclusions of other investigators who have shown increased risk for exacerbations that require hospitalization for those COPD patients who have multiple comorbidities, low physical activity, and lower socioeconomic status. They were surprised to find that there were no differences in tobacco use between those admitted for COPD exacerbation and those who were not and that those who were admitted to the hospital were younger than those not admitted. While no one can argue the general negative effects of smoking, it is quite possible that those not admitted to the hospital continued to smoke simply because their disease, while present, was not severe enough to result in hospitalization. Also, while increasing age does generally correlate with increased rates of COPD hospitalization, older age has also been shown to have

either no effect or a protective effect in studies that have looked at risk factors for repeated hospitalization after discharge.[8,9] The Centers for Disease Control and Prevention has reported that the number of visits to physician offices by Americans 65 years and older now averages 6 visits per year.[10] This has been offset by the declining trend of visits by younger generations. Getting preventive care at the physicians' offices helps offset some of the unnecessary ED visits for the older population.

One of the major factors associated with patients who had a hospital or ED admission was not being able to obtain an outpatient visit because of financial difficulties. It is not clear whether the financial hardship was the result of lack of insurance coverage, high co-pays, lack of transportation, or the work loss associated with obtaining outpatient medical care. As others have demonstrated, ready access to outpatient care is of pivotal importance to preventative care management and the reconciliation of medications and therapies post discharge.[9,11] Removing financial barriers that prohibit ready access to optimal outpatient COPD care seems a logical approach. However, solving this problem will not be easy. Changes in the current medical coverage payment scheme to address this issue will require the efforts of the health policy infrastructure (i.e., the public, politicians and payers) to make effective policy changes.

In addition to having easy access to outpatient care, the COPD medication regimens prescribed to patients at the hospital or during ED discharge need to be started in a timely manner. This is a critical factor in the avoidance of readmission. This too is impacted by high co-pays that limit patient access to their medications. As a solution to this issue some hospitals are providing *meds at beds* prior to discharge or working with pharmaceutical manufacturers to assist patients in obtaining their initial 30-day supply of medications.

Other underpinning findings from their study are that individuals more likely to receive hospital or ED-based care were more obese, most likely unemployed, single and younger. Chronic comorbid medical problems that were commonly found in these COPD patients either as the result of obesity, inactivity or shared risk of smoking again demand a multidisciplinary solution that includes healthy life style changes as well as providing economic opportunities for employment as well as health care. Perhaps recasting COPD as a multimodality disorder laden with socioeconomic barriers will allow clinicians and health policy makers to take a more inclusive approach to their diagnostic and treatment plans to enact more effective treatment regimes.

The authors mentioned that socioeconomic status plays an important role in ED and hospital utilization, and that education, income, and employment were inversely associated with ED visits or hospitalization. This may be because patients who are more educated and employed have greater access to online resources that can help them better manage their disease. With advancements in technology where smart devices are becoming more affordable, as well as expanded internet accessibility, we may be able to provide electronic disease management solutions to many of our currently underserved patients.

The authors have identified several weaknesses in their study including the lack of access to lung function tests, uncertainty of a COPD diagnosis, and reliance on patient self-reporting of the disease and reason for hospitalization. While we agree with these limitations, it is noteworthy that many of the conclusions reached by others were achieved in this study using an entirely different methodology. This paper, as well as prior reports, suggests that if we are to move the mark forward to improve the care of COPD patients, transformations in health care access as well as delivery will be key components to that solution.

References

1. National Institutes of Health, National Heart, Lung, and Blood Institute. Morbidity & mortality: 2012 chartbook on cardiovascular, lung, and blood diseases. National Heart, Lung and Blood Institute website. http://www.nhlbi.nih.gov/resources/ docs/2012_ChartBook_508.pdf. Published August 2014. Accessed April 2016.

2. Izquierdo JL. The burden of COPD in Spain: results from the Confronting COPD survey. *Respir Med*. 2003;97 (Suppl C):S61-9.doi: http://dx.doi.org/10.1016/S0954-6111(03)80026-4

3. Britton M. The burden of COPD in the U.K.: results from the Confronting COPD survey. *Respir Med*. 2003;97 (Suppl C):S71-9. doi: http://dx.doi.org/10.1016/S0954-6111(03)80027-6

4. Marchetti N, Criner GJ, Albert RK. Preventing acute exacerbations and hospital admissions in COPD. *Chest*. 2013;143(5):1444-1454.

5. Griffiths TL, Burr ML, Campbell IA, et al. Results at 1 year of outpatient multidisciplinary pulmonary rehabilitation: a randomised controlled trial. *Lancet*. 2000;355(9201):362-368.

6. Ko FW, Dai DL, Ngai J, et al. . Effect of early pulmonary rehabilitation on health care utilization and health status in patients hospitalized with acute exacerbations of COPD. *Respirology*. 2011;16(4):617-624.
doi: http://dx.doi.org/10.1111/j.1440-1843.2010.01921.x

7. Nguyen HQ, Harrington A, Liu IL, Lee JS, Gould MK. Impact of pulmonary rehabilitation on hospitalizations for chronic obstructive pulmonary disease among members of an integrated health care system. *J Cardiopulm Rehabil Prev*. 2015;35:356-366.
doi: http://dx.doi.org/10.1097/HCR.0000000000000128

8. Mullerova H, Maselli DJ, Locantore N, et al for the ECLIPSE Investigators. Hospitalized exacerbations of COPD: risk factors and outcomes in the ECLIPSE cohort. *Chest*. 2015;147(4):999-1007. doi: http://dx.doi.org/10.1378/chest.14-0655

9. Sharif R, Parekh TM, Pierson KS, Kuo YF, Sharma G. Predictors of early readmission among patients 40 to 64 years of age hospitalized for chronic obstructive pulmonary disease. *Ann Am Thorac Soc*. 2014;11(5):685-694.
doi: http://dx.doi.org/10.1513/AnnalsATS.201310-358OC

10. Ambulatory and Hospital Care Statistics Branch, Centers for Disease Control and Prevention (CDC). National Ambulatory Medical Care Survey: 2012 State and National Summary Tables. CDC website. Accessed April 2016.

11. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare free-for-service program. *N Eng J Med*. 2009;360:1418-1428.
doi: http://dx.doi.org/10.1056/NEJMsa0803563