

Editorial

Multidisciplinary Disease Management Program for Patients with Chronic Obstructive Pulmonary Disease

Abdulghani Sankari*

John D. Dingell Veterans Affairs Medical Center, Wayne State University, USA

***Corresponding author:** Abdulghani Sankari, Division of Pulmonary, Critical Care and Sleep Medicine, 3990 John R, 3-Hudson, Detroit, MI 48201, USA

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Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death worldwide and expected to be the third in 2020 [1,2]. Given the rise in prevalence, COPD has significant financial burden on the healthcare systems [3]. The total annual economic costs of COPD in the United States alone are \$50 billion after combining the direct costs (healthcare resources, medication prescriptions) and indirect costs (absence from paid work, consequences of disability) [4].

COPD is systemic condition characterized by limited airflow due to obstruction associated with ongoing inflammation that affects multiple systems and organs. It is a heterogeneous chronic disease, typically progressive and irreversible, and commonly complicated by multiple acute exacerbations [5]. COPD exacerbation occurs commonly in patients with moderate or severe disease but still unknown why certain individuals are more susceptible to develop exacerbation than others [6]. Each episode of COPD exacerbation leads to permanent loss of function and increases the risk of further morbidity. Acute COPD exacerbations are often not reported by patients to their health care providers out of fear of being hospitalized. Furthermore, studies showed that patient outcome and quality of life is related to COPD exacerbation frequency [7].

Evidence has emerged recently suggesting that integrated and multidisciplinary disease management (IDM) can improve quality and efficiency of care by reducing symptoms and avoiding fragmentation of care, while containing costs [8]. IDM is a multidisciplinary program that includes different elements of care in which different health care providers are collaborating to provide efficient and good quality care. In a recent Cochrane review, the efficacy and outcome of integrated disease management was thoroughly assessed from 26 trials involving 2997 people. The authors found that IDM improve quality of life and exercise tolerance, while reducing the number of exacerbations and hospitalizations days by three days. Compared to control group IDM group had a reduction in the number of one or more hospital admissions over 3-12 months (OR 0.68; 95% CI 0.47 to 0.99, P = 0.04; number needed to treat = 15). No difference was found on mortality and no adverse consequences were reported from implementing these

types of multidisciplinary COPD management programs. The authors of this Cochrane review study, however were cautious and did not recommend or decline the implementation of IDM awaiting further evidence. Given that COPD is a prevalent disease that affects 5% of the general population with of progressive deterioration and costly care, similar management models could be very useful especially in emerging integrated healthcare systems.

What is multidisciplinary disease management program for patients with COPD?

Multidisciplinary disease management program started to emerge in the last decade as a mean of improving quality of care for patients with chronic diseases. These programs have different names or definitions (integrated, multidisciplinary, comprehensive care, or interdisciplinary management programs) but the aim is the same to reduce symptoms and avoid fragmentation of care, while containing costs [9-11]. These programs have been reported to be beneficial in multiple chronic conditions (asthma, COPD, heart failure, and diabetes mellitus) [12-14]. Multidisciplinary disease management program for COPD consists of healthcare professionals from different departments (doctor, nurses, respiratory therapist, pharmacists, psychologist, and /or coordinator etc.). The aim of this team is to co-operate in the management of patients with COPD by assessing simultaneously symptoms (dyspnea, cough, functional ability), lung function, need for Oxygen, exacerbation predictors, and provide individualized care and education. The main outcomes of these programs are to improve quality of life and daily function, reduce hospital admissions/readmissions, reduce exacerbation rate, and limit cost [15,16]. In our medical center, which is within the United States Department of Veterans Affairs (VA) system, we started a successful multidisciplinary COPD program two years ago. The program includes two doctors, nurse, respiratory therapist, pharmacist, clinical psychologist and coordinator who work as a team in the same clinic once a week. The program includes standardized educational materials with action plan, COPD note template and electronic order set. After the implementation of the COPD program which focused on patient with severe or very severe disease, we noted that patient adherence to therapy increased from 25% to 77%. Adherence to inhaled medication is significantly associated with reduced risk of death and admission to hospital due to exacerbations in COPD [18]. However, further research is needed to understand this strong relationship.

There are several challenges before wide adaption of these disease management programs which include the heterogeneity of program structure, the lack of standardized objectives, and inadequate training or centralized database to assess specific outcomes. In 2011 there was major update of the COPD practice guidelines from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society, but it lacked any recommendations or guidance on the utilization

of these multidisciplinary COPD management programs despite multiple high quality evidence [17]. Other challenges include the lack of resources and personnel, and the inadequate integration of other important health services within the COPD program, such as palliative care, nutrition and psychiatry. Addressing these challenges along with increasing the awareness of COPD multidisciplinary programs should be the next priorities. This is important especially in healthcare systems that are undergoing healthcare reform in insurance coverage and/or patient care such as the affordable care act (ACA) in the US. One of the ACA mandates is to reduce 30-day hospital readmissions and align payment with outcome by imposing penalties on reimbursements if outcome is not met. The outcome measure proposed for initial phase is 30-day hospital readmissions for acute myocardial infarction, heart failure, or pneumonia. In 2015, acute exacerbation of COPD is considered one of the candidate diagnoses to be included in the ACA mandated 30-day hospital readmissions outcome [19]. Therefore, implementing multidisciplinary COPD management programs that reduce admission/readmission rate and improve outcome is not only cost effective but a win-win step of action in healthcare future.

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References

- Lopez AD, Shibuya K, Rao C, Mathers CD, Hansell AL, Held LS, et al. Chronic obstructive pulmonary disease: current burden and future projections. *Eur Respir J*. 2006; 27: 397-412.
- World Health Statistics 2008.
- Britton M. The burden of COPD in the U.K.: results from the Confronting COPD survey. *Respir Med*. 2003; 97: S71-79.
- National Heart Lung and Blood Institute. Morbidity and Mortality: 2009 Chart Book on Cardiovascular, Lung, and Blood Diseases. Bethesda, MD: National Heart, Lung, and Blood Institute; 2009.
- Wedzicha JA. The heterogeneity of chronic obstructive pulmonary disease. *Thorax*. 2000; 55: 631-632.
- Calverley PM, Walker P. Chronic obstructive pulmonary disease. *Lancet*. 2003; 362: 1053-1061.
- Seemungal TA, Donaldson GC, Paul EA, Bestall JC, Jeffries DJ, Wedzicha JA. Effect of exacerbation on quality of life in patients with chronic obstructive pulmonary disease. *Am J Respir Crit Care Med*. 1998; 157: 1418-1422.
- Kruis AL, Smidt N, Assendelft WJ, Gussekloo J, Boland MR, Rutten-van Mölken M, et al. Integrated disease management interventions for patients with chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2013; 10: CD009437.
- Schrijvers G. Disease management: a proposal for a new definition. *Int J Integr Care*. 2009; 9: e06.
- Norris SL, Glasgow RE, Engलगau MM, O'Connor PJ, McCulloch D. Chronic disease management: a definition and systematic approach to component interventions. *Disease Management and Health Outcomes*. 2003; 11: 477-488.
- Peytremann-Bridevaux I, Staeger P, Bridevaux PO, Ghali WA, Burnand B. Effectiveness of chronic obstructive pulmonary disease-management programs: systematic review and meta-analysis. *Am J Med*. 2008; 121: 433-443.
- Faxon DP, Schwamm LH, Pasternak RC, Peterson ED, McNeil BJ, Bufalino V, et al. Improving quality of care through disease management: principles and recommendations from the American Heart Association's Expert Panel on Disease Management. *Circulation*. 2004; 109: 2651-2654.
- Norris SL, Nichols PJ, Caspersen CJ, Glasgow RE, Engलगau MM, Jack L, et al. The effectiveness of disease and case management for people with diabetes. A systematic review. *Am J Prev Med*. 2002; 22: 15-38.
- Lemmens KM, Nieboer AP, Huijsman R. A systematic review of integrated use of disease-management interventions in asthma and COPD. *Respir Med*. 2009; 103: 670-691.
- Garcia-Aymerich J, Hernandez C, Alonso A, Casas A, Rodriguez-Roisin R, Anto JM, et al. Effects of an integrated care intervention on risk factors of COPD readmission. *Respir Med*. 2007; 101: 1462-1469.
- Effing T, Kerstjens H, van der Valk P, Zielhuis G, van der Palen J. (Cost)-effectiveness of self-treatment of exacerbations on the severity of exacerbations in patients with COPD: the COPE II study. *Thorax*. 2009; 64: 956-962.
- Qaseem A, Wilt TJ, Weinberger SE, Hanania NA, Criner G, van der Molen T, Put et al. Diagnosis and management of stable chronic obstructive pulmonary disease: a clinical practice guideline update from the American College of Physicians, American College of Chest Physicians, American Thoracic Society, and European Respiratory Society. *Ann Intern Med*. 2011; 155: 179-191.
- Vestbo J, Anderson JA, Calverley PM, Celli B, Ferguson GT, Jenkins C, et al. Adherence to inhaled therapy, mortality and hospital admission in COPD. *Thorax*. 2009; 64: 939-943.
- Kocher RP, Adashi EY. Hospital readmissions and the Affordable Care Act: paying for coordinated quality care. *JAMA*. 2011; 306: 1794-1795.