

Disease Management of COPD in the Home Care Setting

Disease management is defined by the Disease Management Association of America as “a system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management supports the physician or practitioner/patient relationship and plan of care; emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies; and evaluates the clinical, humanistic and economic outcomes on an ongoing basis with the goal of improving overall patient health.”¹

Over the past 10 years, disease management programs have become an accepted intervention for the prevention, care, and treatment of specific chronic diseases in carefully defined patient populations ranging from diabetes to congestive heart failure. The driving force behind the development of these programs was employer concern regarding the effectiveness of health care expenditures. This resulted in cost-cutting efforts stemming from the concerns of the Centers for Medicare and Medicaid Services (CMS) and commercial insurers about overall clinical management and reimbursement. Disease management programs focus on disease prevention and patient management in an effort to reduce hospitalizations and other medical costs.² One of the diseases that has gained significant attention over the last couple of years is chronic obstructive pulmonary disease (COPD).

As respiratory therapists, we play an integral role in disease management of COPD patients in the home environment because we have the necessary skills to be effective disease managers as a result of our expertise with COPD, our ability to implement treatment protocols, our close collaboration with the managing physician or health care provider, and our

expertise in patient interaction and teaching.³ However, acute care respiratory departments and home care companies need to work collaboratively for COPD patients to receive the maximum benefit from disease management initiatives.

COPD — a growing health problem

COPD is gaining both national and global prominence as a major health problem affecting an increasing number of patients. It is a disease state characterized by airflow limitation that is not fully reversible. This airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases. COPD is progressive if the exposure to these noxious agents, especially that of tobacco smoke, is continued.

Since the clinical presentation of COPD is highly variable, reflecting pathological changes that involve both pulmonary and systemic effects, patients experience a myriad of consequences or outcomes, namely, weight loss, exercise intolerance, infections, reduced health-related quality of life, and increased use of health resources. These consequences often result in frequent readmission of the COPD patient to the acute care setting. Disease management programs should be focused on reducing these readmissions and improving each patient's quality of life.⁴ Addressing patient symptoms and consequences associated with the disease can

help achieve objectives such as:

- Helping the patient have a more active and productive lifestyle
- Ensuring compliance with prescribed home care therapy



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- Decreasing exacerbations related to COPD
- Reducing emergency department visits and/or hospitalizations
- Lowering expenditures for medical care.

One way to help patients is to enroll them in a program at the time they are initially set up with home oxygen and/or aerosol therapy or at any time during their home care upon receipt of a prescription. Depending on state licensure laws governing the practice of respiratory care, a prescription that covers patient assessment, including evaluation with pulse oximetry, is often required.

Early intervention is key

Early intervention with respiratory medications and home oxygen therapy can help lessen the severity of COPD and help improve a patient's quality of life. This intervention can also result in improved long-term patient outcomes.^{5,6} Respiratory care departments in acute care settings can partner with home care companies, especially those having formal disease management programs for COPD, in an effort to identify and help those patients who have frequent hospital re-admissions as a result of either increasing severity of their condition and/or non-compliance with their prescribed home care. Hospital-based patient protocols can be developed and implemented focusing on the need for home oxygen, aerosolized medications, breathing retraining with or without the use of adjuncts and activities of daily living (ADLs). These protocols should be carried over to the home setting with follow-up provided (as part of a disease management program) by the respiratory therapists at the home care company.

In an effort to get patients on home oxygen at an earlier stage of their disease process, the use of overnight pulse oximetry can help identify those patients who desaturate nocturnally but have oxygen saturations ranging from 90–93% during the day. Patients with oxygen saturations in this range while awake may experience nocturnal desaturation because of reduced tidal breathing, positioning with possible ventilation to perfusion imbalance, hypoventilation, and/or apneic episodes. An overnight pulse oximetry study can help confirm if any desaturation occurs.⁷⁻⁹

Whenever a patient becomes a candidate for a COPD disease management program in the home, patient consent should be obtained. Of course, patients have the right to refuse enrollment; if this is the case, the patient can sign a refusal form that would give notification to the prescribing physician or health care provider. Desirable elements of a disease management program in the home setting include:

- Initial patient screening and assessment by a licensed respiratory therapist to evaluate patient status
- Initial overnight pulse oximetry (if the patient is not already on home oxygen therapy) to assess patient oxygenation
- Subsequent pulse oximetry testing performed on an as-needed basis
- Home care visits by the respiratory therapist for patient assessment, review of equipment use and maintenance, reinforcement of prescribed home care therapy, and comprehensive patient education.

Patient education

The educational component is one of the key elements of any disease management program. Respiratory therapists can increase their patient education effectiveness by providing an illustrated manual written in language that is easy to understand. Important patient education topics include:

- Anatomy and physiology of the respiratory system and the COPD disease process
- Personal hygiene and smoking cessation
- Oxygen use, infection control, and overall equipment maintenance
- Medication and treatment compliance
- Breathing techniques and exercises
- ADLs
- Nutrition and hydration
- Stress management
- Pulmonary rehabilitation.

Oxygen equipment should be tailored to each patient to meet each individual's specific needs. This is another



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area where respiratory therapists play a valuable role. Assessing each patient's ambulatory and travel status, manual dexterity, and ability to comprehend instructions are key in providing state-of-the-art disease management of COPD. Systems most frequently provided for patient use include the concentrators with home fill capability, small M6 size cylinders with conserving regulators, portable oxygen concentrators, and liquid oxygen units.

Comprehensive post-program patient evaluation will help evaluate the effectiveness of any disease management program in terms of patient compliance and the value of the respiratory therapist's visits for clinical evaluation, review of prescribed therapy, educational sessions, and reinforcement. Questionnaires can gauge each patient's perceived quality of life, compliance with prescribed home therapy, and disease management program value.

Patient education and follow-up: hallmarks of disease management

Disease management programs can produce positive patient outcomes in terms of treatment compliance, stabilization of condition, reduced hospitalizations and medical expenditures, and in some instances, improvement in the respiratory condition, as evidenced by fewer symptoms such as dyspnea, cough, sputum production, sleep, appetite, and activity levels.^{10,11}

Respiratory therapists can help COPD patients by providing them with information about local pulmonary rehabilitation programs and better-breathing support

groups so that they can reinforce the concepts and practices of disease management taught in the home. Disease management in the home, coupled with either pulmonary rehabilitation or group support, can reduce health care expenditures for COPD patients and result in improved health care and quality of life. ■

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