AMGA

American Medical Group Association®

The Everett Clinic

For the whole you.

Best Practices in Managing Patients With Chronic Obstructive Pulmonary Disease (COPD)

The Everett Clinic Case Study

Organization Profile

Founded in 1924, The Everett Clinic is a nationally recognized, physician-owned multispecialty group practice with nearly 400 physicians and more than 2000 staff members. It provides care to approximately 250,000 patients each year in 16 locations throughout Snohomish County, Washington. The Everett Clinic specializes in more than 40 medical, surgical, and diagnostic fields. It has a proud history of providing excellent clinical care with a focus on quality and cost-effectiveness while maintaining high patient, physician, and staff satisfaction and consistently achieving solid financial performance.

To meet patients' needs and most effectively cover a service area of approximately 1700 square miles, The Everett Clinic evolved into a satellite model that includes 16 practice sites, 8 urgent care clinics, 2 outpatient surgery centers, ancillary services (clinical laboratory and advanced imaging), 3 retail pharmacies, and vision, optical, and hearing aid services.

The Everett Clinic uses the Epic electronic medical record (EMR) system, implemented in 2007.

Project Summary

The Everett Clinic set a corporate goal of reducing the total cost of care by 25% in 5 years. Consistently providing evidence-based care to patients with COPD is part of the equation to achieve this goal. However, relatively few performance measures exist for COPD when compared with other chronic medical conditions. Therefore, to optimize patient outcomes, in 2011 The Everett Clinic began its project to collaborate with other healthcare organizations to develop performance standards for the care of patients with COPD.

Program Goals and Measures of Success

In 2011, The Everett Clinic convened a multidisciplinary work team to develop a clinical guideline based on the Global Initiative for Chronic Obstructive Lung Disease (GOLD) Report comprised of an internist, intensivist, respiratory therapist, registered nurse (RN), and members of the quality department.[1] This guideline (Appendix) provides evidence-based treatment recommendations to primary care providers (PCPs). However, it is just the first step in developing a well-defined care management program for patients with COPD. Based on results from the clinic's other care management programs, it was clear that PCPs, without additional support, face great challenges with implementation of new processes and provision of optimal care. Therefore, emphasis is being placed on provider education, patient engagement, and extensive involvement of nurse care managers and behavioral health clinicians.

Goals and objectives

The goal of this program is to provide patients with COPD care that minimizes the number and severity of exacerbations, thereby improving their quality of life and reducing the need for inpatient care.

Objectives include

- Correctly identifying the COPD population

The organization developed a COPD registry using Epic data to identify patients. Figure 1 is a page from 1 provider's registry (de-identified).

Figure 1

The Everett Clinic
For the whole you.

COPD Registry

Diagnosis of COPD	FEV1/FVC Actual: <70%
Stage 1 (Mild) COPD	FEV1 Predicted: >=80%
Stage 2 (Moderate) COPD	FEV1 Predicted: 50% - 79%
Stage 3 (Severe) COPD	FEV1 Predicted: 30%-49%
Stage 4 (Very Severe) COPD	FEV1 Predicted: <30%; or <50% plus chronic respiratory failure

Disease Management

Statistics Current as of : 10/25/2012

EVERETT CLINIC MARYSVILLE

Patient Name	MRN	Age	Last Visit Dx Code	Next Scheduled Visit with PCP	Date of Spirometry or PFT	FEV1/ FVC Actual (%)	FEV1 % Predicted	Date of Rx for Bronchodilator	Last Flu Vaccine Date	Last Pneumococcal vaccine date	Tobaco Use
COPD Patients - Least to Most Severe											
		59	01/30/2012 496B		2/24/2011	66	87	01/21/10*	10/1/2012	11/15/2004	QUIT
Patients Lack Data to Confirm Dx of COPD											
		57	02/27/2012 496B					01/23/12	10/17/2011	3/17/2008	QUIT
		58	03/09/2012 496B					03/09/12			YES

Total Active COPD Patients :	3	
Active Patients with evidence of spirometry or PFT :	1	33.3%
Active Patients with Rx for bronchodilator in past year :	2	66.7%
Active Patients with flu vaccine in past year :	1	33.3%
Active Patients with pneumococcal vaccine :	2	66.7%
Active Patients who use tobacco :	1	33.3%

- Educating providers and staff about the evidence-based COPD clinical guideline

Education is ongoing and always a challenge. Providers have been informed of the GOLD guideline but the organization is still working to identify the best system to "educate" them. Diagnostic information and guidelines for assessing disease severity are included on patient registry reports as real-time reminders to providers. Plans have been made to audit providers on adherence to clinical guidelines/evidence-based care this year.

- Translating the guideline into tools in the Epic EMR system to support the care team

Prompts have been put in place to remind staff to obtain spirometry results for patients who do not have them on file.

- Redesigning workflows and roles to provide optimal COPD care

Nurse managers for high-risk patients enroll patients with complex care needs into the program (based on physician referral or health plan recommendation). The palliative care program also assists in coordinating care for some patients with COPD.

- Routinely evaluating patients' level of psychological distress

This is carried out consistently for patients whose care is managed, but has not been widely implemented for patients who do not have a care manager.

- Working with the Centers for Medicare & Medicaid Services to obtain accurate claims-based data regarding COPD hospital admissions

This effort is evolving as The Everett Clinic transitions from fee-for-service Medicare reimbursement to serve increasing numbers of patients on Medicare Advantage plans.

Clinical standards

As mentioned earlier, the clinic uses GOLD as the basis for its clinical guideline.[1]

Data collection and measurement

To monitor the effectiveness of the efforts to improve the care for patients with COPD, The Everett Clinic currently analyzes data available in the EMR to determine

- Rates of smoking
- Rates of spirometry utilization in diagnosis and disease severity classification
- Rates of influenza and pneumococcal immunization
- The clinic's "best practice" providers

The organization is working on collecting other data, such as efficacy of smoking cessation efforts and frequency of scheduled vs urgent outpatient visits.

Outcomes

The COPD program began in May 2011. As of March 2012, The Everett Clinic had achieved the following

- Potentially better diagnosis of patients with COPD. The number of patients diagnosed with COPD decreased from 2676 to 2673, which may be because all patients are not correctly diagnosed. As providers began to better understand the criteria for the diagnosis of COPD, they may have deleted this condition from the problem list of some patients. A problem list or diagnosis list is a listing in the EMR of all patients' major health issues. If a patient has COPD on the problem list, it communicates to all providers caring for the patient that he or she has COPD. Therefore, it is important that the problem list is accurate
- Increased usage of spirometry from 16% to 40% of cases
- Increased percentage of patients with COPD with pneumococcal vaccine from 62% to 66%
- Postdischarge visits within 7 days were being performed for 47% of patients
- A service agreement between hospitalists and pulmonologists to see patients with COPD discharged from the hospital within 5 days is expected to reduce readmissions, but results are too preliminary to report

Population Identification

The target population is identified based on a diagnosis of COPD on the patient's Epic problem list.

COPD Registry

In the first quarter of 2011, the clinic designed a registry for patients with COPD, similar to ones already in place for patients with diabetes, hypertension, and coronary artery disease. Registries are populated from diagnoses found on the problem list maintained in the patient's EMR. The severity of patient disease is determined utilizing a combination of patient-completed symptom surveys and spirometry measurement. Maintenance of this registry assists the clinic in analyzing the patient population and determining the efficacy and impact of the proposed interventions.

The Intervention

The model for COPD care was piloted at a primary care site identified as an "early adopter" to determine if the preliminary workflow design and resource allocation estimates were appropriate. Key components of the pilot involved incorporating COPD into previsit planning, patient outreach, and care management by RNs. The program has been expanded to all PCP practice locations.

When a patient presents with a diagnosis of COPD, but has no spirometry on file, an alert is generated from the EMR, prompting staff to obtain spirometry before the provider visit.

The COPD Disease Management program leverages some existing clinic programs.

- Advanced Care Management program: Nurse care managers expanded their responsibilities to coordinate care for patients with COPD. Initially, they had very few patients with COPD on their panels but numbers are increasing. Patients have the direct phone number of their nurse care manager. Based on scheduling, the nurse care manager sits in on appointments with the patient's PCP. If a patient goes to an emergency department (ED) or is admitted to the hospital, the nurse care manager follows up within 48 hours of discharge to make sure the patient understands his or her discharge instructions and medications and gets scheduled for a follow-up appointment
- Hospital Coach program: This program assists patients 65 years and older in their transition home from the local community hospital. A nurse or social worker from the clinic visits each patient, during the hospitalization, sometimes daily, in order to coordinate the patient's transition postdischarge. This includes scheduling timely follow-up appointments with the patient's PCP at the clinic. Phone contact may continue for up to 1 month after the patient has been discharged home. This program is designed to reduce hospital readmissions

Workflow and staffing changes

No additional staff members are dedicated to this project. There are now more nurse care managers on staff, but this increase is primarily due to the overall expansion of the nurse care manager program.

Workflow changes include documenting spirometry results in an electronic flowsheet that is used to populate the registry. The staff has also been trained to enter data from previously obtained spirometry (results found elsewhere in the EMR system) into the flowsheet to ultimately populate the providers' registry lists.

Using the registry, staff members are making outreach calls to patients with COPD who have not been seen in the past year to proactively bring them in for a visit in the summer or fall before cold/flu season begins. Spirometry, if not previously obtained, is completed at this visit.

Leadership Involvement and Support

Champions of the program are a pulmonologist and the facility medical director of medical specialty services. There were no additional funds, staffing, or physician incentives earmarked for this project.

Lessons Learned

Challenges

- Provider misconceptions about spirometry: many believe spirometry is not needed to establish a COPD diagnosis or determine severity level
- Limited information technology resources to put Epic tools in place
- Limited quality department resources
  - This project was in addition to other departmental activities. However, the organization wanted to improve outcomes for patients with COPD and learn from others in the American Medical Group Association collaborative
- Competing clinic initiatives (Table 1)

Table 1–2011 Balanced Scorecard (modified)

Patient Satisfaction	Quality and Safety	Cost-effectiveness	Team Engagement
Goals • We willimproveour patientsatisfaction scoresto>75thnational percentile • We willincreaseour patientenrollmentinthe EMRsystem,MyChart, to>30% • We willprovideanAfter VisitSummary(AVS)in >80%ofallpatientvisits • We willhaveathird availableappointment rateof0to2daysfor primarycareand <2weeksforspecialty departments	**Goals** • Wewillreachgoal on≥75%oftargeted healthmaintenanceand diseasemanagement goals • Wewillachieve100% eligibleproviders meetingmeaningful usecriteria • Wewillcomplete implementationofanew eventreportingsystem byNovember1,2011	**Goals** • Wewillreduceour hospitaladmission rate>10%byproviding qualitycaretocomplex patientssotheyare hospitalizedlessoften • Wewillreduceour hospitalreadmission rateandkeepit below10% byseeing alldischarged patientspromptlyand coordinatingtheircare • WewillreduceEDvisits >10%byeliminating unnecessaryEDvisits withcarefulattentionto ourpatients'needs	**Goals** • Wewillimprove employeesatisfaction scorestoexceed45% (equivalenttothe90th percentile) • Wewillimprove physiciansatisfaction scorestoexceedthe 80thpercentile • Wewillhaveavoluntary staffturnoverratethat is<10% • Wewillimplement adailymanagement systemin>60%of departmentsclinicwide

Appendix

CLINIC WIDE
GUIDELINE **# CW G-31**

TITLE:	**Chronic Obstructive Pulmonary Disease (COPD) Management Guideline**
Effective Date:	6/26/2009
Revision Date:	
Review Date:	*Must be reviewed every 2 years*
Approved by:	_____, MD

The care guidelines are intended to assist you in providing evidence-based recommendation and care to your patients with chronic disease. These guidelines are not a substitute for individual professional judgment based on accepted standards of practice, individual patient assessments (eg, past medical history, limited life expectancy, etc), and any other relevant factors.

Summary/Abstract: COPD is a chronic and usually progressive respiratory disease with significant extrapulmonary effects. Spirometry is the gold standard for diagnosing COPD. Symptoms and objective measures of airflow limitation should be monitored to determine when to modify therapy and to identify complications.

A. Clinical Background: COPD is characterized by incompletely reversible airflow limitation. This chronic airflow limitation is caused by a mixture of small airway disease (obstructive bronchiolitis) and parenchymal destruction (emphysema).

Burden of COPD

- 12 million Americans diagnosed with COPD
- Additional 12 million Americans likely have undiagnosed COPD
- Major cause of chronic morbidity and mortality
- Fourth leading cause of death in the world
- Significant economic burden

Consider diagnosis of COPD when the patient experiences

- Chronic cough
- Chronic sputum production
- Dyspnea
- Wheezing
- Presence of a risk factor (most commonly, smoking)

Diagnosis of COPD

Spirometry measured pre- and postbronchodilator treatment is the gold standard. It is the most reproducible, standardized, and objective way of documenting incompletely reversible airflow limitation. Measurement needs to occur when patients are not having an acute exacerbation of their disease.

Disease Severity	Stage I: Mild	Stage II: Moderate	Stage III: Severe	Stage IV: Very Severe
• Spirometry Measurement	• $FEV_1/FVC<0.70$ $FEV_1 \geq 80\%$*	• $FEV_1/FVC<0.70$ 50% $\leq FEV_1<80\%$*	• $FEV_1/FVC<0.70$ 30% $\leq FEV_1<50\%$*	• $FEV_1/FVC<0.70$ $FEV_1<30\%$,* or$FEV_1<50\%$* +chronic respiratoryfailure

*Predicted.

FEV_1=forced expiratory volume in 1 second; FVC=forced vital capacity.

B. Management/Action: The following clinical management guideline, endorsed by the Chronic Obstructive Pulmonary Disease (COPD) Disease Management Committee, is drawn from recommendations published by the Global Initiative for Chronic Obstructive Lung Disease (http://www.goldcopd.org)[1] and by the Institute for Clinical Systems Improvement (http://www.icsi.org).[2] This guideline represents the Clinic's evidence-based recommendations to standardize the care process and optimize outcomes for patients with chronic obstructive pulmonary disease (COPD).

Clinical Recommendation	Frequency	Treatment Goal (if applicable)	Treatment Recommendations (if applicable)
Comprehensive COPD Visit*	At least annually, usually in fall		
Visits for Acute Exacerbations† (Exacerbations are characterized by increased breathlessness, wheezing, chest tightness, increased cough and sputum, change of the color and/or tenacity of sputum, and fever.)	Urgently, as needed	Prevent ED visits and hospitalizations	• Increase the dose and/or frequency of existing short-acting beta-agonist • Prednisone ≥40 mg p.o. daily for 7–10 days • Oral antibiotics such as amoxicillin-clavulanate (provide coverage for *H influenzae*, *S pneumoniae*, and *M catarrhalis*)
Spirometry‡	Annually, and with substantial increase in symptoms or a complication		
Smoking Status §	Assess at every COPD visit	Abstinence from or cessation of smoking	Advise all patients not to smoke and offer smoking cessation materials/referrals. [see Tobacco Cessation guideline (CWG-11)]
Influenza Vaccine "	Annually		
Pneumococcal Vaccine	At least once at ≥65 years old; <65 years old if FEV_1 <40% predicted		
Continuous Oxygen Therapy¶	Stage IV severity		
Pulmonary Rehabilitation #		Symptom reduction, improved quality of life, increased physical and emotional participation in everyday activities	http://www.yourlunghealth.org/for list of Pulmonary Rehabilitation Programs

*Provides opportunity to monitor disease progression and development of complications, pharmacologic therapy and other medical treatment, monitor exacerbation history, and plan for future exacerbations. Urgent access to primary care with exacerbations may reduce need for hospitalization.

†Urgent access to primary care with exacerbations may reduce need for hospitalization.

‡Decline in lung function is best traced by periodic spirometry measurements.

§Smoking cessation is the single most effective—including cost—intervention to stop disease progression.

"Influenza vaccine can reduce serious illness and death in patients with COPD by approximately 50%.

¶Need for continuous oxygen therapy is based on waking arterial blood gas or pulse oximetry measurements.

#Program includes exercise training, nutrition counseling, and education.

References:

1. Global Initiative for Chronic Obstructive Lung Disease. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease; revised 2011. http://www.goldcopd.org/guidelines-global-strategy-for-diagnosis-management.html. Accessed July 10, 2012.
2. Institute for Clinical Systems Improvement. Health care guideline: diagnosis and management of chronic obstructive pulmonary disease (COPD). http://www.icsi.org/guidelines_and_more/gl_os_prot/respiratory/chronic_obstructive_pulmonary_disease/chronic_obstructive_pulmonary_disease__guideline_.html. Accessed July 10, 2012.

Provided as an educational resource by AMGA and Boehringer Ingelheim Pharmaceuticals, Inc.

One Prince Street, Alexandria, VA 22314

Tel: (703) 838-0033 Fax: (703) 548-1890 www.AMGA.org

© 2012 American Medical Group Association and Boehringer Ingelheim Pharmaceuticals, Inc. All rights reserved.

(08/12) COPD415400MHC-C