

ICSI Institute for Clinical Systems Improvement

Health Care Guideline

Diagnosis and Management of Chronic Obstructive Pulmonary Disease (COPD)

ICSI has endorsed with qualifications the Veteran's Affairs/Department of Defense (VA/DoD) Clinical Practice Guideline for the Management of Chronic Obstructive Pulmonary Disease. Using the ICSI endorsement process, this document has been reviewed by the ICSI COPD work group: Anderson B, Brown H, Bruhl E, Bryant K, Burres H, Conner K, Kaderabek D, Kerestes G, Kuehn M, Lim K, Mrosak K, Raikar S, Rickbeil T, Westman K.

Access this guideline through the link below:

[VA/DoD Clinical Practice Guidelines](#)

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Please note, the previous ICSI Diagnosis and Management of Chronic Obstructive Pulmonary Disease (COPD) guideline from March 2013 is being retired.

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Text in blue in this document indicates a link to another part of the document or website.

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Evidence Grading

Literature Search

The VA/DoD literature search covered the time period from January 1, 2005 to February 2014. ICSI replicated this search to include January 2014 – February 2015.

Additional articles were provided by work group members and discussed by the work group prior to inclusion.

GRADE Methodology

Following a review of several evidence rating and recommendation writing systems, ICSI has made a decision to transition to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system.

GRADE has advantages over other systems including the current system used by ICSI. Advantages include:

- developed by a widely representative group of international guideline developers;
- explicit and comprehensive criteria for downgrading and upgrading quality of evidence ratings;
- clear separation between quality of evidence and strength of recommendations that includes a transparent process of moving from evidence evaluation to recommendations;
- clear, pragmatic interpretations of strong versus weak recommendations for clinicians, patients and policy-makers;
- explicit acknowledgement of values and preferences; and
- explicit evaluation of the importance of outcomes of alternative management strategies.

The VA/DoD document was developed using the GRADE methodology to evaluate the overall quality of the body of evidence (page 8 of [Va/DoD guideline](#)).

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Qualifications Table for COPD

Source: [VA/DoD Clinical Practice Guideline For the Management of Chronic Obstructive Pulmonary Disease](#)

The ICSI Chronic Obstructive Pulmonary Disease Work Group endorsed with qualifications the following recommendations.

Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New Search Support)
Diagnosis and Assessment of COPD				
#1 – We recommend that spirometry, demonstrating airflow obstruction (post-bronchodilator forced expiratory volume in one second/forced vital capacity [FEV ₁ /FVC] < 70%, with age adjustment for more elderly individuals), be used to confirm all initial diagnoses of chronic obstructive pulmonary disease (COPD).	Strong For	No	Care needs to be exercised when interpreting spirometry in the elderly as the percentages of patients with FEV ₁ /FVC < 0.7 rises with age so that about ½ of subjects age 75-85 have a decreased FEV ₁ /FVC ratio (<i>Chest</i> 2000;117:326S-31S). In a study of asymptomatic never-smokers > 70 years of age, 35% had FEV ₁ /FVC < 0.7.	<i>Hardie, 2002; Petty, 2000</i>
#2 – We have no recommendations regarding the utilization of existing clinical classification systems at this time.	Not Applicable	Yes	#2 dovetails into #3, see below	<i>Goossens, 2014</i>
#3 – We suggest classification of patients with COPD into two groups: a. Patients who experience frequent exacerbation (two or more/year, defined as prescription of corticosteroids, prescription of antibiotics, hospitalization or emergency department [ED] visit); and b. Patients without frequent exacerbations.	Weak For	Yes	Agree	<i>Gupta, 2014; Hsu, 2013</i> Resources: mMRC (Modified Medical Research Council dyspnea scale)
#4 – We recommend offering prevention and risk reduction efforts including smoking cessation and vaccination. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Strong For	Yes	Agree	Resource: CDC Vaccination link USPSTF – for current ACIP recommendations on immunizations, http://www.cdc.gov/vaccines/schedules/index.html . This link goes off-site. Click to read the external link disclaimer.

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
#5 – We recommend investigating additional comorbid diagnoses particularly in patients who experience frequent exacerbations (two or more/year, defined as prescription of corticosteroids, prescription of antibiotics, hospitalization, or ED visit) using simple tests and decision rules (cardiac ischemia [troponin, electrocardiogram], congestive heart failure [B-type natriuretic peptide (BNP), pro-BNP], pulmonary embolism [D-dimer plus clinical decision rule] and gastroesophageal reflux).	Strong For		Agree	<i>Neshemura, 2014;</i> <i>Shapira-Rootman, 2014</i>
#6 We suggest that patients with COPD and signs or symptoms of a sleep disorder have a diagnostic sleep evaluation. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Weak For	Yes	Agree	<i>Holmedahl, 2014</i>
#7 – We suggest that patients presenting with early onset COPD or a family history of early onset COPD be tested for alpha-1 antitrypsin (AAT) deficiency. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Weak For	Yes	Agree	
#8 – We recommend that patients with AAT deficiency be referred to a pulmonologist for management of treatment. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Strong For	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
Pharmacologic Therapy				
#9 – We recommend prescribing inhaled short-acting beta 2-agonists (SABAs) to patients with confirmed COPD for rescue therapy as needed. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Strong for	Yes	Agree	
#10 – We suggest using spacers for patients who have difficulty actuating and coordinating drug delivery with metered-dose inhalers (MDIs). <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Weak for	Yes	Agree	
#11 – We recommend offering long-acting bronchodilators to patients with confirmed, stable COPD who continue to have respiratory symptoms (e.g., dyspnea or cough).	Strong for	Yes	Agree	<i>Roskell, 2014</i>
#12 – We suggest offering the inhaled long-acting antimuscarinic agent (LAMA) tiotropium as first-line maintenance therapy in patients with confirmed, stable COPD who continue to have respiratory symptoms (e.g., dyspnea or cough).	Weak for	Yes	Agree	<i>Oba, 2015;</i> <i>Mathioudakis, 2014</i>
#13 – We recommend inhaled tiotropium as first-line therapy for patients with confirmed, stable COPD who have respiratory symptoms (e.g., dyspnea or cough) and severe airflow obstruction (i.e., post bronchodilator FEV ₁ < 50%) or a history of COPD exacerbations.	Strong For	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
<p>#14 – For clinically stable patients with a confirmed diagnosis of COPD and who have not had exacerbations on short-acting antimuscarinic agents (SAMAs), we suggest continuing with this treatment, rather than switching to long-acting bronchodilators.</p> <p><i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i></p>	Weak For	No	Clinically stable patients currently using a SAMA (ipratropium) or those having increased exacerbations should be offered the first-line therapy of LAMA. However, the short-acting agents do have demonstrated clinical benefit and may be continued if patient preference or cost considerations make this alternative therapy the preferred agent for selected patients.	
<p>#15 – For patients treated with a SAMA who are started on a LAMA to improve patient outcomes, we suggest discontinuing the SAMA.</p> <p><i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i></p>	Weak For	Yes	Agree	
<p>#16 – We recommend against offering an inhaled corticosteroid (ICS) in symptomatic patients with confirmed, stable COPD as a first-line monotherapy.</p>	Strong Against	Yes	Agree	DiSantostefano, 2014; Karbasi-Afshar, 2014; Mattishent, 2014
<p>#17 – We recommend against the use of inhaled long-acting beta 2-agonists (LABAs) without an ICS in patients with COPD who may have concomitant asthma.</p>	Strong Against	Yes	Agree	
<p>#18 – In patients with confirmed, stable COPD who are on inhaled LAMAs (tiotropium) or inhaled LABAs alone and have persistent dyspnea on monotherapy, we recommend combination therapy with both classes of drugs.</p>	Strong For	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
#19 – In patients with confirmed, stable COPD who are on combination therapy with LAMAs (tiotropium) and LABAs and have persistent dyspnea or COPD exacerbations, we suggest adding ICS as a third medication.	Weak For			<i>Lee, 2015;</i> <i>Bollmeier, 2014;</i> <i>Liu, 2014</i>
#20 – We suggest against offering roflumilast in patients with confirmed, stable COPD in primary care without consultation with a pulmonologist.	Weak Against	Yes	Agree	<i>Munoz-Esqueme, 2014;</i> <i>Rennard, 2014</i>
#21 – We suggest against offering chronic macrolides in patients with confirmed, stable COPD in primary care without consultation with a pulmonologist.	Weak Against	Yes	Agree Chronic macrolide therapy is typically considered to involve daily or alternate day medication for six months or more.	
#22 – We suggest against offering theophylline in patients with confirmed, stable COPD in primary care without consultation with a pulmonologist.	Weak Against	Yes	Agree	
#23 – There is insufficient evidence to recommend for or against the use of N-acetylcysteine (NAC) preparations available in the U.S. in patients with confirmed, stable COPD who continue to have respiratory symptoms (e.g., dyspnea, cough).	Not Applicable	Yes	Agree	
#24 – We suggest not withholding cardio-selective beta-blockers in patients with confirmed COPD who have a cardiovascular indication for beta-blockers.	Weak For	Yes	Agree	<i>Mathioudakis, 2014</i>
#25 – We suggest using non-pharmacologic therapy as first-line therapy and using caution in prescribing hypnotic drugs for chronic insomnia in primary care for patients with COPD, especially for those with hypercapnea or severe COPD.	Weak For	Yes	Agree	

Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
<p>#26 – For patients with COPD and anxiety, we suggest consultation with a psychiatrist and/or a pulmonologist to choose a course of anxiety treatment that reduces, as much as possible, the risk of using sedatives/anxiolytics in this population.</p> <p><i>Modified from the 2007 CPG without an updated systematic review of the evidence.</i></p>	Weak For	No	For patients with COPD and anxiety, we suggest consultation with a primary care physician, psychiatrist or pulmonologist to choose a course of anxiety treatment. Treating physicians should use caution in prescribing sedatives/anxiolytics for this population.	<p><i>Abascal-Bolado, 2015;</i> Anxiety and depression, combined with or separate from feelings of severe shortness of breath, should be assessed and concurrently treated to optimize health care utilization and increase QOL for patients with COPD.</p> <p><i>Blakemore, 2014</i></p>
Oxygen Therapy				
<p>#27 – We recommend providing long-term oxygen therapy (LTOT) to patients with chronic stable resting severe hypoxemia (partial pressure of oxygen in arterial blood [PaO₂] < 55 mmHg and/or peripheral capillary oxygen saturation [SaO₂] ≤ 88%) or chronic stable resting moderate hypoxemia (PaO₂ of 56-59 mmHg or SaO₂ > 88% and ≤ 90%) with signs of tissue hypoxia (hematocrit > 55%, pulmonary hypertension or cor pulmonale).</p> <p><i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i></p>	Strong For	Yes	Agree	Resource: 6-Minute Walk Test
<p>#28 – We recommend that patients discharged home from hospitalization with acute transitional oxygen therapy are evaluated for the need for LTOT within 30-90 days after discharge. LTOT should not be discontinued if patients continue to meet the above criteria.</p> <p><i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i></p>	Strong For	Yes	Agree	
<p>#29 – We suggest against routinely offering ambulatory LTOT for patients with chronic stable isolated exercise hypoxemia in the absence of another clinical indication for supplemental oxygen.</p>	Weak Against	Yes	Agree	<i>Stoller, 2010</i> Resource: 6-Minute Walk Test

Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
<p>#30 – For patients with COPD and hypoxemia and/or borderline hypoxemia (SaO₂ < 90%) who are planning to travel by plane, we suggest a brief consultation or an e-consult with a pulmonologist. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i></p>	Weak For	No	<p>Airline travel is safe for most patients with COPD. Hypoxemic patients should be evaluated clinically and a decision should be made regarding oxygen requirements. Patients with COPD receiving continuous oxygen at home will require supplementation during flight. Many airlines will allow the use of battery-operated portable oxygen concentrators (POCs) on board during flight. POCs were first approved for use by the FAA in summer 2005.</p> <p>Each airline has its own policy regarding on-board oxygen transport and in-flight oxygen usage.</p> <p>Patients need to contact the airline for their current policies regarding oxygen.</p> <ul style="list-style-type: none"> • Patients should notify the oxygen supply company two weeks in advance. • Many airlines have their own airline-specific medical form for the clinician to fill out. • POC rentals can be per day/week/month. • Patients should always carry a copy of their oxygen prescription. 	
<p>#31 – When other causes of nocturnal hypoxemia have been excluded, we suggest against routinely offering LTOT for the treatment of outpatients with stable, confirmed COPD and isolated nocturnal hypoxemia.</p>	Weak Against	Yes	Agree	
Stable Hypercapnea				
<p>#32 – In the absence of other contributors (e.g., sleep apnea), we suggest referral for a pulmonary consultation in patients with stable, confirmed COPD and hypercapnea.</p>	Weak For	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
Support Self-Management				
#33 – We suggest supported self-management for selected high-risk patients with COPD.	Weak For	Yes	Agree	Zwerinck, 2014
#34 – We suggest against using action plans alone in the absence of supported self-management.	Weak Against	No	Ensure that the patient has someone to contact (phone, electronically, etc.) as well as written documentation of patient education that the patient participated in the creation of the plan.	
Telehealth				
#35 – We suggest using telehealth for ongoing monitoring and support of the care of patients with confirmed COPD.	Weak For	Yes	Agree	Lundell, 2015
Pulmonary Rehabilitation				
#36 – We recommend offering pulmonary rehabilitation to stable patients with exercise limitation despite pharmacologic treatment and to patients who have recently been hospitalized for an acute exacerbation.	Strong For	Yes	Agree	Jácome, 2014; Osterling, 2014
Breathing Exercise				
#37 – We suggest offering breathing exercise (e.g., pursed lip breathing, diaphragmatic breathing or yoga) to patients with dyspnea that limits physical activity.	Weak For	Yes	Agree	Borge, 2014
Nutrition Referral				
#38 – We suggest referral to a dietitian for medical nutritional therapy recommendations (such as oral calorie supplementation) to support patients with severe COPD who are malnourished (body mass index [BMI] < 20 kg/m ²).	Weak For	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
Lung Volume Reduction Surgery and Lung Transplant				
#39 – We recommend that any patient considered for surgery for COPD (lung volume reduction surgery [LVRS] and lung transplant) be first referred to a pulmonologist for evaluation. <i>Modified from the 2007 CPG without an updated systematic review of the evidence.*</i>	Strong For	Yes	Agree	
Management of Patients in Acute Exacerbation of COPD				
#40 – We recommend antibiotic use for patients with COPD exacerbations who have increased dyspnea and increased sputum purulence (change in sputum color) or volume.	Strong For	Yes	Agree	
#41 – We suggest basing choice of antibiotic on local resistance patterns and patient characteristics. a. First-line antibiotic choice may include doxycycline, trimethoprim/sulfamethoxazole (TMP-SMX), second-generation cephalosporin, amoxicillin, amoxicillin/clavulanate and azithromycin. b. Despite the paucity of evidence regarding the choice of antibiotics, we suggest reserving broader spectrum antibiotics (e.g., quinolones) for patients with specific indications such as: i. Critically ill patients in the intensive care unit (ICU); ii. Patients with recent history of resistance, treatment failure or antibiotic use; and iii. Patients with risk factors for health care-associated infections.	Weak For	Yes	Agree Typical second-generation cephalosporins include cefuroxime, cefaclor and cefprozil.	
#42 – For outpatients with acute COPD exacerbation who are treated with antibiotics, we recommend a five-day course of the chosen antibiotic.	Strong For	Yes	Agree	
#43 – There is insufficient evidence to recommend for or against procalcitonin-guided antibiotic use for patients with acute COPD exacerbations.	Not Applicable	Yes	Agree	

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Recommendation	Strength of Recommendation	Agree without Qualification	Qualification Statement	Literature (New) Search Support
#44 – For acute COPD exacerbations, we recommend a course of systemic corticosteroids (oral preferred) of 30-40 mg prednisone equivalent daily for 5-7 days.	Strong For	Yes	Agree	
Management of Patients with COPD in the Hospital or Emergency Department				
#45 – We suggest use of airway clearance techniques utilizing positive expiratory pressure (PEP) devices for patients with COPD exacerbations and difficulty expectorating sputum.	Weak For	Yes	Agree	
#46 – We recommend the early use of non-invasive ventilation (NIV) in patients with acute COPD exacerbations to reduce intubation, mortality and length of hospital stay.	Strong For	Yes	Agree	
#47 – We recommend the use of NIV to support weaning from invasive mechanical ventilation and earlier extubation of intubated patients with COPD.	Strong For	Yes	Agree	<i>Bajaj, 2015</i>

*For additional information please refer to the "Reconciling 2007 CPG Recommendations" section of the [Va/DoD guideline](#) (page 9).

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The Aims and Measures section is intended to provide protocol users with a menu of measures for multiple purposes that may include the following:

- population health improvement measures,
- quality improvement measures for delivery systems,
- measures from regulatory organizations such as Joint Commission,
- measures that are currently required for public reporting,
- measures that are part of Center for Medicare Services Clinician Quality Reporting initiative, and
- other measures from local and national organizations aimed at measuring population health and improvement of care delivery.

This section provides resources, strategies and measurement for use in closing the gap between current clinical practice and the recommendations set forth in the guideline.

The subdivisions of this section are:

- Aims and Measures
- Implementation Recommendations
- Implementation Tools and Resources
- Implementation Tools and Resources Table

Aims and Measures

1. Decrease the percentage of COPD patients who have exacerbation requiring emergency department evaluation or hospital admission.

Measures for accomplishing this aim:

- a. Percentage of COPD patients seen in emergency department for COPD-related exacerbations in one month.
- b. Percentage of COPD patients who require hospital admission/readmission for COPD-related exacerbations in one month.
- c. Percentage of COPD patients with two or more hospitalizations over a 12-month period.

2. Increase the use of spirometry testing in the diagnosis of patients with COPD.

Measure for accomplishing this aim:

- a. Percentage of patients with a diagnosis of COPD who had spirometry testing to establish COPD diagnosis.

3. Increase the percentage of COPD patients who receive information on the tobacco cessation options and information on the risks of continued smoking.

Measures for accomplishing this aim:

- a. Percentage of patients with COPD who are asked about smoking and smoking exposure at every visit with clinician.
- b. Percentage of patients with COPD who are smokers who have assessment of readiness to attempt smoking cessation.
- c. Percentage of patients with COPD who are smokers who receive a smoking cessation intervention.
- d. Percentage of patients with COPD and smokers who quit smoking (100% quit-rate goal).

4. Increase the percentage of patients with COPD who have appropriate therapy prescribed.

Measure for accomplishing this aim:

- a. Percentage of patients with COPD who are prescribed appropriate therapy, including:
 - appropriate vaccinations per CDC schedule
 - long-term oxygen assessment and prescription for long-term home oxygen for those who are hypoxic and meet criteria
 - short-acting bronchodilator (when needed)
 - long-acting bronchodilator (when needed)
 - corticosteroids (when needed)

5. Increase the percentage of patients who have education and management skills with COPD.

Measure for accomplishing this aim:

- a. Percentage of patients with moderate or severe COPD who have been referred to a pulmonary rehabilitation or exercise program.

Aims and Measures

6. Increase the percentage of patients with moderate or severe COPD who have health directives in place.

Measure for accomplishing this aim:

- a. Percentage of patients with moderate or severe COPD who have health care directives in place.

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Aims and Measures

Measurement Specifications

Measure #1a

Percentage of COPD patients seen in emergency room for COPD-related exacerbations in one month.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients seen in emergency room for COPD-related exacerbations}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who are seen in emergency room for COPD-related exacerbations in one month.

Denominator: Number of patients with COPD diagnosis.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD. Review records to determine whether they were seen in the emergency room for COPD-related exacerbations.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is an outcome measure, and improvement is noted as a decrease in the rate.

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Aims and Measures

Measure #1b

Percentage of COPD patients who require hospital admission/readmission for COPD-related exacerbations in one month.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients who were hospitalized for COPD-related exacerbations}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who were hospitalized for COPD-related exacerbations in one month.

Denominator: Number of patients with COPD diagnosis.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD. Review records to determine whether they were hospitalized during the measurement period for COPD-related exacerbations.

Time Frame Pertaining to Data Collection

Measurement period could be weekly, monthly, quarterly or annual.

Notes

This is an outcome measure, and improvement is noted as a decrease in the rate.

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Aims and Measures

Measure #1c

Percentage of COPD patients with two or more hospitalizations over a 12-month period.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients who were hospitalized two or more times}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who were hospitalized for COPD-related exacerbations two or more times over a 12-month period.

Denominator: Number of patients with COPD diagnosis.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD diagnosis during a 12-month measurement period. Review records to determine whether they were hospitalized during this measurement period for COPD-related exacerbations two or more times.

Time Frame Pertaining to Data Collection

Annually.

Notes

This is an outcome measure, and improvement is noted as a decrease in the rate.

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Aims and Measures

Measure #2a

Percentage of patients with a diagnosis of COPD who had spirometry testing to establish COPD diagnosis.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients who had spirometry testing to establish COPD diagnosis}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who had spirometry testing to establish COPD diagnosis.

Denominator: Number of patients with COPD diagnosis.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD. Review records to determine whether spirometry testing was used to establish COPD diagnosis.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate. Check for quality of spirometry reading on a case-by-case basis.

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Aims and Measures

Measure #3a

Percentage of patients with COPD who are asked about smoking and smoking exposure at every visit with clinician.

Population Definition

Patients age 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\# \text{ of patients with COPD who are asked about smoking and smoking exposure at every visit with clinician}}{\# \text{ of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who are asked about smoking and smoking exposure at every visit with clinician.

Denominator: Number of patients with COPD.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD. Review records to determine whether patients were asked at every visit with clinician about smoking and smoking exposure.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Aims and Measures

Measure #3b

Percentage of patients with COPD who are smokers who have assessment of readiness to attempt smoking cessation.

Population Definition

Patients 18 years and older with COPD diagnosis and smokers.

Data of Interest

$$\frac{\text{\# of patients who have assessment of readiness to attempt smoking cessation}}{\text{\# of patients with COPD and smokers}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD and smokers who have assessment of readiness to attempt smoking cessation.

Denominator: Number of patients with COPD diagnosis and smokers.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD who also smoke. Review records to determine whether they had assessment of readiness to attempt smoking cessation at any time during measurement period.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Aims and Measures

Measure #3c

Percentage of COPD patients who are smokers who receive a smoking cessation intervention.

Population Definition

Patients 18 years and older with COPD diagnosis and smokers.

Data of Interest

$$\frac{\# \text{ of patients who receive a smoking cessation intervention}}{\# \text{ of patients with COPD and smokers}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD and smokers who receive a smoking cessation intervention.

Denominator: Number of patients with COPD diagnosis and smokers.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD and who are also smokers. Review records to determine whether they received a smoking cessation intervention during measurement period.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Aims and Measures

Measure #3d

Percentage of patients with COPD and smokers who quit smoking (100% quit-rate goal).

Population Definition

Patients 18 years and older with COPD diagnosis and smokers.

Data of Interest

$$\frac{\text{\# of patients who quit smoking}}{\text{\# of patients with COPD and smokers}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD and smokers who quit smoking.

Denominator: Number of patients with COPD diagnosis and smokers.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD and who are also smokers. Review records to determine whether they quit smoking at some point of their care.

Time Frame Pertaining to Data Collection

Annually.

Notes

This is an outcome measure, and improvement is noted as an increase in the rate. The target goal for quit rate is 100%.

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Aims and Measures

Measure #4a

Percentage of patients with COPD who are prescribed appropriate therapy, including:

- appropriate vaccinations per CDC schedule
- long-term oxygen assessment and prescription for long-term home oxygen for those who are hypoxic and meet criteria
- short-acting bronchodilator (when needed)
- long-acting bronchodilator (when needed)
- corticosteroids (when needed)

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients who are prescribed appropriate therapy}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with COPD who are prescribed appropriate therapy, including:

- appropriate vaccinations per CDC schedule
- long-term oxygen assessment and prescription for long-term home oxygen for those who are hypoxic and meet criteria
- short-acting bronchodilator (when needed)
- long-acting bronchodilator (when needed)
- corticosteroids (when needed)

Denominator: Number of patients with COPD diagnosis.

Method/Source of Data Collection

Review electronic medical records for all patients with COPD and determine if they were prescribed an appropriate therapy based on their need.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Aims and Measures

Measure #5a

Percentage of patients with moderate or severe COPD who have been referred to a pulmonary rehabilitation or exercise program.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients referred to a pulmonary rehabilitation or exercise program}}{\text{\# of patients with COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with moderate or severe COPD referred to a pulmonary rehabilitation or exercise program.

Denominator: Number of patients with moderate or severe COPD.

Method/Source of Data Collection

Review electronic medical records for all patients with moderate or severe COPD diagnosis during measurement period. Determine whether patients were referred to a pulmonary rehabilitation or exercise program at any time.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Aims and Measures

Measure #6a

Percentage of patients with moderate or severe COPD who have health care directives in place.

Population Definition

Patients 18 years and older with COPD diagnosis.

Data of Interest

$$\frac{\text{\# of patients who have health care directives in place}}{\text{\# of patients with moderate or severe COPD}}$$

Numerator/Denominator Definitions

Numerator: Number of patients with moderate or severe COPD who have health care directives in place.

Denominator: Number of patients with moderate or severe COPD.

Method/Source of Data Collection

Review electronic medical records for all patients with moderate or severe COPD. Determine whether patients have health care directives in place.

Time Frame Pertaining to Data Collection

Monthly.

Notes

This is a process measure, and improvement is noted as an increase in the rate.

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Implementation Recommendations

Prior to implementation, it is important to consider current organizational infrastructure that address the following:

- System and process design
- Training and education
- Culture and the need to shift values, beliefs and behaviors of the organization. In addition, this document was developed for the VA system and may not always be generalizable to all health care systems.

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Implementation Tools and Resources

Criteria for Selecting Resources

The following tools and resources specific to the topic of the guideline were selected by the work group. Each item was reviewed thoroughly by at least one work group member. It is expected that users of these tools will establish the proper copyright prior to their use. The types of criteria the work group used are:

- The content supports the clinical and the implementation recommendations.
- Where possible, the content is supported by evidence-based research.
- The author, source and revision dates for the content are included where possible.
- The content is clear about potential biases and when appropriate conflicts of interests and/or disclaimers are noted where appropriate.

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Implementation Tools and Resources Table

Author/Organization	Title/Description	Web Sites/Order Information
Resources		
American Association for Respiratory Care	Comprehensive Web sites for respiratory care professionals with links to a site tailored to COPD patients and their families.	http://www.aarc.org
American Association of Cardiovascular and Pulmonary Rehabilitation	Online searchable program directory	http://www.aacvpr.org/Resources/SearchableCertifiedProgramDirectory/tabid/113/Default.aspx
American Association of Colleges of Nursing	Provides information on conferences, products and resources for nurses on all aspects of end-of-life care; most resources available for a fee.	http://www.aacn.nche.edu/elnec/index.htm
American College of Chest Clinicians	Evidence-based clinical practice guidelines	http://www.chestnet.org
American Lung Association (Minnesota Chapter)	Primarily provides support for patients with COPD and other lung diseases; also contains health care clinicians education tools developed by the Minnesota COPD Coalition: <ul style="list-style-type: none"> • Quick Glance Guide to COPD Guidelines • Quick Glance Guide to Spirometry • Quick Glance Guide to Oxygen Therapy • COPD Action Plan • COPD Billing Codes and Service 	http://www.lung.org
American Thoracic Society	Comprehensive Web site for COPD; includes definition, diagnosis, risk factors, pathology.	http://www.thoracic.org/ For Patients: https://www.thoracic.org/patients/patient-resources/resources/copd-intro.pdf
American Thoracic Society	Spirometry standardization	http://www.thoracic.org/statements/resources/pfet/PFT2.pdf
CDC Vaccinations USPSTF	Current AICP recommendations for immunizations.	http://www.cdc.gov/vaccines/schedules/index.html This link goes offsite. Click to read the external link disclaimer.
Centers for Disease Control and Prevention	Help for individuals to quit smoking.	http://www.cdc.gov/tobacco/quit_smoking/
Centers for Disease Control and Prevention	Spirometry certificate	http://www.cdc.gov/niosh/topics/spirometry/pdfs/townsendhandout.pdf and http://www.cdc.gov/niosh/docs/2011-133/pdfs/2011-133.pdf

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Author/Organization	Title/Description	Web Sites/Order Information
Resources (Continued)		
COPD Assessment Test (CAT)	Questionnaire taken by patient to help you and your health care professional measure the impact COPD is having on your well-being and daily life.	http://www.catestonline.org/images/UserGuides/CATHCUser%20guideEn.pdf
Global Initiative for Chronic Obstructive Lung Disease (GOLD)	Guidelines for professionals in the diagnosis and treatment of COPD; resources include pocket guides, patient guides, teaching and educational materials.	http://www.goldcopd.com
Mayo Clinic	Health information on COPD.	http://www.mayoclinic.org/diseases-conditions/copd/basics/definition/con-20032017
Mayo Clinic	How to Use Inhalers	http://www.mayoclinic.org/search/search-results?q=inhalers
Implementation Tools		
American Thoracic Society (ATS)	ATS Statement: Guidelines for the Six Minute Walk Test.	https://www.thoracic.org/statements/resources/pfet/sixminute.pdf See appendix for tool
Modified Medical Research Council Dyspnea Scale (mMRC)	The MRC breathless Scale	http://ocmed.oxfordjournals.org/content/58/3/226.full.pdf+html

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The subdivisions of this section are:

- References
- ICSI Shared Decision-Making Model

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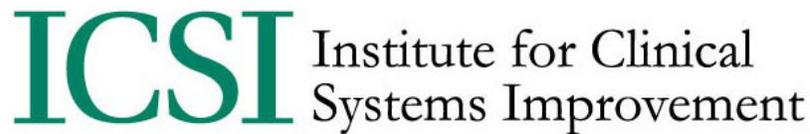
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ICSI Shared Decision-Making Model

The Collaborative Conversation™ Shared Decision-Making and the Translation of Evidence into Practice

A consistent finding from clinical and health services research is the failure to translate research into practice. The translation of evidence into practice can be advanced through the use of shared decision-making since shared decision-making results in evidence being incorporated into patient and clinician consultations.

Shared decision-making (SDM) is a process in which patient and clinicians collaborate to clarify all acceptable options, ensure that the patient is well-informed and chose a course of care consistent with patient values and preferences and the best available medical evidence. (Minnesota Shared Decision-Making Collaborative [MSDMC], 2011).

Evidence-based guidelines may recommend the use of shared decision-making for decisions in instances where the evidence is equivocal, when patient action or inaction (such as medication adherence or lifestyle changes) can impact the potential outcome, or when the evidence does not indicate a single best recommendation.

SDM is a patient-centered approach that involves a conversation between the patient and the clinician. It is ideal to involve caregivers and family members in these conversations as well. Family members and caregivers can participate in discussions, ask questions, hear content the patient may miss and provide invaluable support in decision follow-through. Although only patients and clinicians are specifically mentioned throughout this document for brevity purposes, this does not diminish the importance of caregivers and families in patient-centered care.

Both the patient and the clinician bring expertise to the shared decision-making conversation. Clinicians' expertise includes disease etiology, prognosis, options for treatment including the burden and benefit to the patient, and outcome probabilities. Patients' expertise lies in their knowledge of their risk tolerance, body, priorities, family and financial issues, as well as their daily experience with the condition (adapted from Making Shared Decision-Making a Reality. No decision about me, without me. Coulter, A., Collins, A., The King's Fund 2011).

Treatment options vary in their burden on a patient. SDM offers an opportunity to help the patient select a treatment to which they can adhere. When conversations discussing options occurs, patients and clinicians are actively engaged while considering the attributes and issues of the available options. This empathic approach results in the clinician and patient co-creating a decision and a plan of care (adapted from Montori, V., the Mayo Clinic KER UNIT, April 2015). Decision aids can be supportive of this conversation when they communicate the best available evidence to inform the patient and clinician discussion.

Without a conversation, clinicians may make assumptions about what the patient prefers. This creates the potential for discrepancies between what clinicians assume and what patients want, resulting in a "preference misdiagnosis" (adapted from Health Policy Publishing, LLC, May 2013).

Difficulty in initiating a conversation is cited by patients and clinicians as one of the barriers to shared decision-making. To address this impediment, ICSI worked with patients, practicing clinicians, and other stakeholders to develop the Collaborative Conversation™ model for use across the care continuum.

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Collaborative Conversation™

A collaborative approach towards decision-making is a fundamental tenet of Shared Decision-Making (SDM). The Collaborative Conversation™ is an interprofessional approach that nurtures relationships; enhances patients' knowledge, skills and confidence as vital participants in their health; and encourages them to manage their health care. Within a Collaborative Conversation™, the perspective is that the patient, rather than the clinician, knows which course of action is most consistent with the patient's values and preferences.

Use of Collaborative Conversation™ elements and tools is even more necessary to support patient, care clinician and team relationships when patients and families are dealing with high stakes or highly charged issues. A diagnosis of a life-limiting illness is one example of such a circumstance.

The overall objective for the Collaborative Conversation™ approach is to create an environment in which the patient, family and care team work collaboratively to reach and carry out a decision that is consistent with the patient's values and preferences, along with the best available evidence. A rote script, completed form or checklist does not constitute this approach. Rather it is a set of skills employed appropriately for the specific situation. These skills need to be used artfully to address all aspects of the person involved in making a decision: cognitive, affective, social and spiritual.

Key communication skills help build the collaborative conversation approach. These skills include (Adapted from O'Connor, Jacobsen Decisional Conflict: Supporting People Experiencing Uncertainty about Options Affecting their Health [2007], and Bunn H, O'Connor AM, Jacobsen MJ Analyzing decision support and related communication [1998, 2003])

1. Listening skills

Encourage patient to talk by providing prompts to continue such as *go on, and then? and uh huh* or by repeating the last thing a person said, *It's confusing*.

Paraphrase content of messages shared by patient to promote exploration, clarify content and to communicate that the person's unique perspective has been heard. The clinician should use their own words rather than just parroting what they heard.

Reflection of feelings usually can be done effectively once trust has been established. Until the clinician feels that trust has been established, short reflections at the same level of intensity expressed by the patient without omitting any of the message's meaning are appropriate. Reflection in this manner communicates that the clinician understands the patient's feelings and may work as a catalyst for further problem solving. For example, the clinician identifies what the person is feeling and responds back in his or her own words like this: *"So, you're unsure which choice is the best for you."*

Summarize the person's key comments and reflect them back to the patient. The clinician should condense several key comments made by the patient and provide a summary of the situation. This assists the patient in gaining a broader understanding of the situation rather than getting mired down in the details. The most effective times to do this are midway through and at the end of the conversation. An example of this is *"You and your family have read the information together, discussed the pros and cons, but are having a hard time making a decision because of the risks."*

Perception checks ensure that the clinician accurately understands a patient or family member perspective, and may be used as a summary or reflection. They are used to verify that the clinician is interpreting the message correctly. The clinician can say, *"So you are saying that you're not ready to make a decision at this time. Am I understanding you correctly?"*

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2. Questioning Skills

Open and closed questions are both used, with the emphasis on open questions. Open questions ask for clarification or elaboration and cannot have a yes or no answer. An example would be, *“What else would influence you to choose this?”* Closed questions are appropriate if specific information is required, such as *“Does your daughter support your decision?”*

Other skills such as summarizing, paraphrasing, and reflection of feeling can be used in the questioning process so that the patient doesn’t feel pressured by questions.

Verbal tracking, referring back to a topic the patient mentioned earlier, is an important foundational skill (Ivey & Bradford-Ivey). An example of this is the clinician saying, *“You mentioned earlier...”*

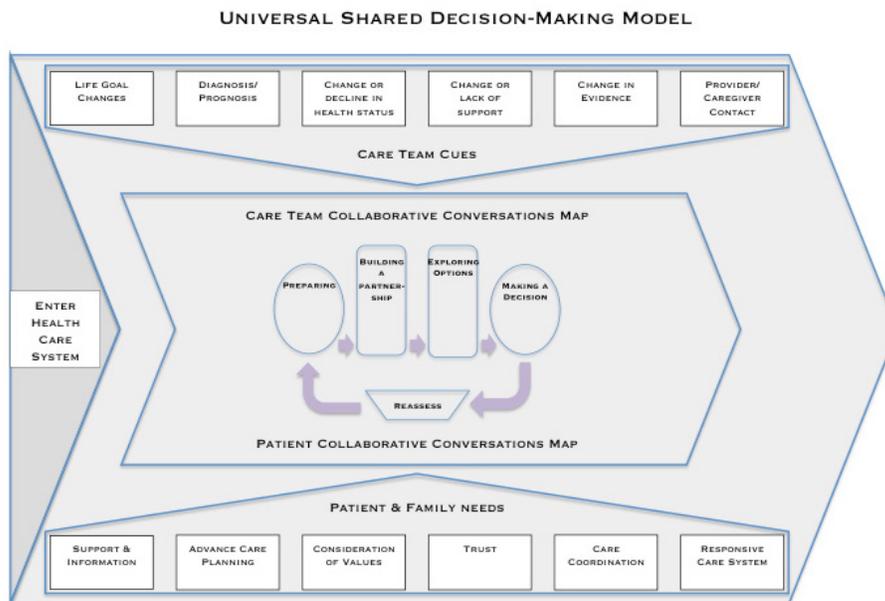
3. Information-Giving Skills

Providing information and **providing feedback** are two methods of information giving. The distinction between providing information and giving advice is important. Information giving allows a clinician to supplement his or her knowledge and helps to keep the conversation patient centered. Giving advice, on the other hand, takes the attention away from the patient’s unique goals and values, and places it on those of the clinician.

Providing information can be sharing facts or responding to questions. An example is *“If we look at the evidence, the risk is...”* **Providing feedback** gives the patient the clinician’s view of the patient’s reaction. For instance, the clinician can say, *“You seem to understand the facts and value your daughter’s advice.”*

When to Initiate a Collaborative Conversation™

Certain seminal events occur along the care continuum, creating especially opportune times for collaborative conversations. More than one of these opportunities may present at a time, and they will occur in no specific order.



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Table 1

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Cues for the Care Team to Initiate a Collaborative Conversation™:

- Life goal changes: *Patient's priorities change related to things the patient values such as activities, relationships, possessions, goals and hopes, or things that contribute to the patient's emotional and spiritual well-being.*
- Diagnosis/prognosis changes: *Additional diagnoses, improved or worsening prognosis.*
- Change or decline in health status: *Improving or worsening symptoms, change in performance status or psychological distress.*
- Change or lack of support: *Increase or decrease in caregiver support, change in caregiver, change in caregiver status, change in financial standing, difference between patient and family wishes.*
- Disease progression: *Change in physical or psychological status as a result of the disease progression.*
- Clinician/caregiver contact: *Each contact between the clinician/ caregiver presents an opportunity to reaffirm with the patient that the care plan and the care he or she is receiving are consistent with his or her values.*

Patient and Family Needs within a Collaborative Conversation™

- Request for support and information: *Decisional conflict is indicated by, among other things, the patient verbalizing uncertainty or concern about undesired outcomes, expressing concern about choice consistency with personal values, or exhibiting behavior such as wavering, delay, preoccupation, distress or tension. Support resources may include health care professionals, family, friends, support groups, clergy and social workers. When patient expresses a need for information regarding options and their potential outcomes, the patient should understand the key facts about the options, risks and benefits, and have realistic expectations. The method and pace with which this information is provided to the patient should be appropriate for the patient's capacity at that moment.*
- Advance Care Planning: *With the diagnosis of a life-limiting illness, conversations around advance care planning open up. This is an opportune time to expand the scope of the conversation to other types of decisions that will need to be made as a consequence of the diagnosis of a life-limiting illness.*
- Consideration of Values: *The personal importance a patient assigns potential outcomes must be respected. If the patient is unclear how to prioritize his or her preferences, value clarification can be achieved through the use of decision aids, detailing the benefits and harms of potential outcomes in terms of how they will directly affect the patient, and through collaborative conversations with the clinician.*
- Trust: *The patient must feel confident that his or her preferences will be communicated to and respected by all caregivers.*
- Care Coordination: *Should the patient require care coordination, this is an opportune time to discuss the other types of care-related decisions that need to be made. These decisions will most likely need to be revisited often. Further, the care delivery system must be capable of delivering coordinated care throughout the continuum of care.*
- Responsive Care System: *The care system needs to support the components of patient- and family-centered care so the patient's values and preferences are incorporated into the care he or she receives throughout the care continuum.*

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The Collaborative Conversation™ Map is the heart of this process. The Collaborative Conversation Map™ can be used as a stand-alone tool that is equally applicable to clinicians and patients, as shown in Table 2. Clinicians use the map as a clinical workflow. It helps get the shared decision-making process initiated and provides navigation for the process. Care teams can use the Collaborative Conversation™ to document team best practices and to formalize a common lexicon. Organizations can build fields from the Collaborative Conversation™ Map in electronic medical records to encourage process normalization. Patients use the map to prepare for decision-making, to help guide them through the process and to share critical information with their loved ones.

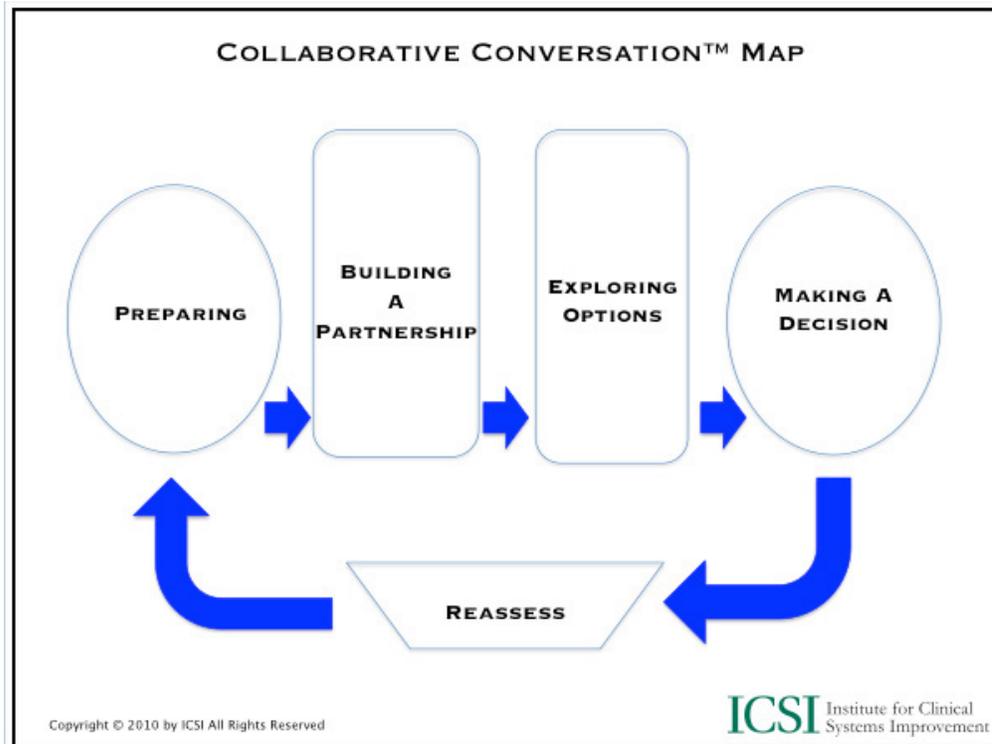


Table 2

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Evaluating Shared Decision-Making

It has proven challenging to assess shared decision-making. Measuring shared decision-making remains important for continued adoption of shared decision-making as a mechanism for translating evidence into practice; promoting patient-centered care; and understanding the impact of shared decision-making on patient experience, outcomes and revenues. Many assessments exist, but they are often proxy measures.

Two suggested methods for measuring shared decision-making are the CollaboRATE tool and the SURE Test. These two tools measure different aspects of shared decision-making, as described below.

The **CollaboRATE tool** measures the level of shared decision-making in the clinical encounter from the patient's perspective. It is a brief patient-reported measure of shared decision-making. The tools and guidance on their use can be found at <http://www.collaboratescore.org/>.

The **SURE Test** is a brief screening questionnaire the patient uses to assess his or her readiness and capacity to make a decision or to determine whether he or she is comfortable with the choice that was made. In other words, it provides information on how likely a patient may be experiencing decisional conflict. If the SURE Test indicates decisional conflict may exist, the **Decisional Conflict Scale** should be completed in order to assess clinically significant decisional conflict.

Shared decision-making is a useful mechanism for translating evidence into practice. While research on the impacts of shared decision-making continues to grow, there is mounting evidence that both patients and clinicians benefit from SDM. Shared decision-making offers the opportunity to bring evidence and the patient's values into the patient/clinician discussion of health choices.

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In 2010, the ICSI Conflict of Interest Review Committee was established by the Board of Directors to review all disclosures and make recommendations to the board when steps should be taken to mitigate potential conflicts of interest, including recommendations regarding removal of work group members. This committee has adopted the Institute of Medicine Conflict of Interest standards as outlined in the report, *Clinical Practice Guidelines We Can Trust* (2011).

Where there are work group members with identified potential conflicts, these are disclosed and discussed at the initial work group meeting. These members are expected to recuse themselves from related discussions or authorship of related recommendations, as directed by the Conflict of Interest committee or requested by the work group.

The complete ICSI policy regarding Conflicts of Interest is available at <http://bit.ly/ICSICOI>.

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ICSI facilitates and coordinates the guideline development and revision process. ICSI, member medical groups and sponsoring health plans review and provide feedback but do not have editorial control over the work group. All recommendations are based on the work group's independent evaluation of the evidence.

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ICSI Document Development and Revision Process

Overview

Since 1993, the Institute for Clinical Systems Improvement (ICSI) has developed more than 60 evidence-based health care documents that support best practices for the prevention, diagnosis, treatment or management of a given symptom, disease or condition for patients.

Audience and Intended Use

The information contained in this ICSI Health Care Guideline is intended primarily for health professionals and other expert audiences.

This ICSI Health Care Guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients and families are urged to consult a health care professional regarding their own situation and any specific medical questions they may have. In addition, they should seek assistance from a health care professional in interpreting this ICSI Health Care Guideline and applying it in their individual case.

This ICSI Health Care Guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition.

Document Development and Revision Process/Endorsement Process

The development process is based on a number of long-proven approaches and is continually being revised based on changing community standards. The ICSI staff, in consultation with the work group and a medical librarian, conduct a literature search to identify systematic reviews, randomized clinical trials, meta-analysis, other guidelines, regulatory statements and other pertinent literature. This literature is evaluated based on the GRADE methodology by work group members. When needed, an outside methodologist is consulted.

The work group uses this information to develop or revise clinical flows and algorithms, write recommendations, and identify gaps in the literature. The work group gives consideration to the importance of many issues as they develop the guideline. These considerations include the systems of care in our community and how resources vary, the balance between benefits and harms of interventions, patient and community values, the autonomy of clinicians and patients and more. All decisions made by the work group are done using a consensus process.

ICSI's medical group members and sponsors review each guideline as part of the revision process. They provide comment on the scientific content, recommendations and implementation strategies. This feedback is used by and responded to by the work group as part of their revision work. Final review and approval of the guideline is done by ICSI's Committee on Evidence-Based Practice. This committee is made up of practicing clinicians and nurses, drawn from ICSI member medical groups.

Implementation Recommendations and Measures

These are provided to assist medical groups and others to implement the recommendations in the guidelines. Where possible, implementation strategies are included that have been formally evaluated and tested. Measures are included that may be used for quality improvement as well as for outcome reporting. When available, regulatory or publicly reported measures are included.

Document Revision Cycle

Scientific documents are revised as indicated by changes in clinical practice and literature. ICSI staff monitors major peer-reviewed journals for any pertinent evidence that would affect a particular guideline and recommendation.

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