

<b>eMeasure Title</b>	Changes in Patient-Reported Outcomes (PROs) following Non-Emergent PCI
<b>Measurement Period</b>	January 1, 20xx through December 31, 20xx
<b>Measure Steward</b>	Centers for Medicare & Medicaid Services (CMS)
<b>Measure Developer</b>	The Lewin Group
<b>Description</b>	Percentage of patients aged 18 years or older undergoing a qualifying non-emergent percutaneous coronary intervention (PCI) procedure with documented improvement in self-reported functional status, health-related quality of life (HRQoL), and symptoms, using a combination of disease-specific patient-reported outcome measures (PROMs). The select PROMs are: Seattle Angina Questionnaire Short Form (SAQ-7) and Rose Dyspnea Scale (RDS).
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<b>Measure Scoring</b>	Proportion
<b>Measure Type</b>	Outcome
<b>Stratification</b>	None
<b>Risk Adjustment</b>	None
<b>Rate Aggregation</b>	None
<b>Rationale</b>	<p>An estimated 15.5 million Americans over the age of 20 have coronary heart disease (CHD), the underlying cause of about one in seven deaths in the United States in 2011 (Mozaffarian et al., 2015). Including the cost of health care services, medications, and lost productivity, CHD costs the United States an estimated \$108.9 billion each year, a number projected to increase by up to 100% between 2013 and 2030 (CDC, 2015; Mozaffarian et al., 2015; Heidenreich et al., 2011). CHD can lead to serious, often fatal acute coronary syndromes, and can also result in chronic and debilitating heart conditions, such as angina or heart failure (Mozaffarian et al., 2015).</p> <p>Angina, one of the most common symptoms of CHD, is characterized by chronic or episodic pain or discomfort in the chest and throughout the shoulder, arms, neck, jaw, or back, often as a result of exertion or stress (Fihn et al., 2012; Young et al., 2013). It results from cardiac ischemia, i.e., when the oxygen supply to the heart muscle is insufficient to meet metabolic demands, which is usually caused by CHD. In 2012, 8.2 million Americans reported having angina (Mozaffarian et al., 2015). Angina symptoms often impose a significant burden on a person's functional status (Mozaffarian et al., 2015; Young et al., 2013). Similarly, dyspnea, or breathlessness, is one of the most common and distressing symptoms experienced</p>

<p><b>Rationale (cont.)</b></p>	<p>by patients with CHD and is independently associated with impaired HRQoL (Arnold et al., 2009).</p> <p>Non-emergent percutaneous coronary intervention (PCI) is a procedure that can be used to improve the HRQoL, functional status, and angina and dyspnea symptoms of patients with CHD (Levine et al., 2011; Weintraub et al., 2008). It is one of the most commonly performed cardiovascular procedures; from July 2014 to June 2015, 245,213 non-emergent PCI procedures were performed in the United States (ACCF, 2015). As there is limited evidence to suggest that PCI reduces a patient's risk of myocardial infarction (MI) or death in most circumstances, the primary, if not only, expected benefit of non-emergent PCI is to improve a patient's health status (YNHHSC/CORE, 2016; Kureshi et al., 2014; Spertus et al., 2013).</p> <p>These benefits have been measured with disease-specific, validated tools that assess changes in HRQoL, functional status, and symptom burden (Spertus et al., 2004; Chan et al., 2014, McNamara et al., 2015). PROMs are increasingly recognized as a valuable source of information about a patient's health status and are guiding more informed discussions about the management of their care (McNamara et al., 2015). It is important to capture the patient's perspective of their own health status through self-reporting, which providers can interpret and use in clinical action, as well as inform and support shared decision making (Rumsfeld et al., 2013; Spertus 2014, Bradley 2014). Specifically, this measure incorporates the short SAQ-7, which measures physical limitation, angina frequency, and quality of life (Chan et al., 2014), and the RDS, which measures a patient's dyspnea (Arnold et al., 2009).</p>
<p><b>Clinical Recommendation Statement</b></p>	<p>The 2012 Guideline for the Diagnosis and Management of Patients with Stable Ischemic Heart Disease (SIHD) from ACA/AHA and endorsed by other organizations includes recommendations on chronic stable angina (Fihn et al., 2012, Fihn et al., 2014) and states:</p> <p>“For patients with SIHD, disease management should include an annual follow-up, and monitoring and treatment of angina involving ‘assessment of symptoms and clinical function’.” Class I, Level of Evidence: C</p> <p>In addition to the 2012 Guideline from the ACA/AHA, the 2011 Guideline for Percutaneous Coronary Intervention from ACCF/AHA and endorsed by other organizations also includes recommendations for the appropriate use of PCI (Levine et al., 2011) and states:</p> <p>“CABG or PCI to improve symptoms is beneficial in patients with 1 or more significant (<math>\geq 70\%</math> diameter) coronary artery stenoses amenable to revascularization and unacceptable angina despite guideline-directed medical treatment (GDMT).” Class I, Level of Evidence: A</p> <p>Lastly, the International Consortium for Health Outcomes Measurement (ICHOM) published a consensus document (McNamara et al., 2015) recommending standardized outcome measurement for patients with coronary artery disease, which included PROMs measured using the SAQ-7 and RDS:</p> <p>“The SAQ-7, which is short, widely translated into many languages, and has a high degree of clinically interpretability most closely aligned with these qualities [domain coverage, psychometric properties, feasibility to implement, and clinical interpretability] and was recommended in the standard set. The Working Group desired additional questions to assess patients' level of dyspnea and depressive symptoms. The PHQ-2, a widely used 2-item questionnaire assessing signs of depression, and 2 items from the Rose Dyspnea Score were included to cover these domains.”</p>
<p><b>Improvement Notation</b></p>	<p>A higher rate indicates better quality.</p>
<p><b>Reference</b></p>	<p>American College of Cardiology Foundation (ACCF). National Cardiovascular Data Registry (NCDR®) CathPCI Registry® Institutional Outcomes Report 2015Q2. 2015 October.</p>

<b>Reference</b>	Arnold SV, Spertus JA, Jones PG, Xiao L, Cohen DJ. The impact of dyspnea on health-related quality of life in patients with coronary artery disease: results from the PREMIER registry. <i>Am Heart J.</i> 2009 Jun;157(6):1042-9.e1.
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<b>Reference</b>	Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention. Heart Disease Fact Sheet. Updated November 30 2015. Accessed December 17 2015. Available at: <a href="http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm">http://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm</a> .
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<b>Reference</b>	Kureshi F, Jones PG, Buchanan DM, Abdallah MS, Spertus JA. Variation in patients' perceptions of elective percutaneous coronary intervention in stable coronary artery disease: cross sectional study. <i>BMJ</i> 2014;349:g5309.
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<b>Reference</b>	Young JW, Melander S. Evaluating symptoms to improve quality of life in patients with chronic stable angina. <i>Nursing Research and Practice</i> . 2013 Aug; <a href="http://doi.org/10.1155/2013/504915">http://doi.org/10.1155/2013/504915</a> .
<b>Definition</b>	The minimally important difference (MID) approach is used to define the smallest measurable difference in symptom status that is clinically meaningful. Non-emergent PCI is defined as a PCI procedure that is not performed during an episode of acute coronary syndrome (i.e., unstable angina or myocardial infarction).
<b>Guidance</b>	PROMs must be administered in the following timeframes to count for this measure: 30 days up to and including the day of the PCI procedure and 28-60 days following the procedure.  The measure scoring is considered most attributable to interventional cardiologists performing the PCI procedures.
<b>Initial Patient Population</b>	Patients 18 years of age and older with a diagnosis of stable coronary artery disease who undergo a qualifying non-emergent percutaneous coronary intervention (PCI) procedure during the measurement period.
<b>Denominator</b>	Equals Initial Patient Population

<b>Denominator Exclusions</b>	<p>As coded at the time of the PCI procedure:</p> <ul style="list-style-type: none"> <li>• Patients with acute coronary syndromes (ST-segment myocardial infarction [STEMI], non-ST segment myocardial infarction [NSTEMI], and unstable angina)</li> <li>• Patients with other acute processes (e.g., decompensated heart failure)</li> <li>• Patients undergoing PCI in anticipation of another procedure (e.g., patients with aortic stenosis undergoing PCI prior to transcatheter aortic valve replacement [TAVR])</li> </ul>
<b>Numerator</b>	<p>Patients with documented improvement in self-reported functional status, HRQoL, or symptoms, defined as an improvement of at least the minimally important difference (MID) for one of two disease-specific PROMs: five points in the summary score for the short Seattle Angina Questionnaire (SAQ-7), or one point in the Rose Dyspnea Scale (RDS) (only if the patient does not experience a five point worsening in the SAQ-7 summary score).</p>
<b>Denominator Exceptions</b>	<p>None</p>
<b>Supplemental Data Elements</b>	<p>For every patient evaluated by this measure also identify payer, race, ethnicity and gender.</p>