

Total Knee Replacement

Measure #3: Venous Thromboembolic and Cardiovascular Risk Evaluation

Measure Description

Percentage of patients undergoing a total knee replacement who are evaluated for the presence or absence of cardiovascular risk factors within 30 days prior to the procedure including history of deep venous thrombosis (DVT), pulmonary embolism (PE), myocardial infarction (MI), arrhythmia, and stroke

Measure Components

Numerator Statement	Patients who were evaluated for the presence or absence of cardiovascular risk factors within 30 days prior to the procedure including history of DVT, PE, MI, arrhythmia, and stroke
Denominator Statement	All patients undergoing a total knee replacement
Denominator Exceptions	None
Supporting Guideline & Other References	<p>The following evidence statements are quoted <u>verbatim</u> from the referenced clinical guidelines.</p> <p>In patients with known coronary artery disease (CAD) or the new onset of signs or symptoms suggestive of CAD, baseline cardiac assessment should be performed. In the asymptomatic patient, a more extensive assessment of history and physical is warranted in those individuals 50 years of age or older, because the evidence related to the determination of cardiac risk factors and derivation of a Revised Cardiac Risk Index occurred in this population. Preoperative cardiac evaluation must therefore be carefully tailored to the circumstances that have prompted the evaluation and to the nature of the surgical illness. (ACC/AHA 2007)²¹</p>

Measure Importance

Relationship to desired outcome	<p>Prior to a total knee replacement the patient's venous thromboembolic and cardiovascular risk should be evaluated. A population-based study of all Olmstead County, Minnesota, patients undergoing a total hip or knee arthroplasty from 1994 - 2008, reported that patients undergoing a total knee arthroplasty with a previous history of a cardiac event or a thromboembolic event were associated with an increased risk of a 90-day cardiac or thromboembolic event following surgery.²²</p> <p>A study using the Danish national resident registries compared all patients undergoing a primary THR and TKR from 1998 - 2007 to control groups not undergoing one of the procedures and found that the AMI rate 2 weeks after TKR was increased 31-fold compared to the control group.²³</p> <p>Any preoperative disease state should be identified and managed prior to surgery to minimize the risk of the surgical procedure.</p>
Opportunity for Improvement	SooHoo and colleagues found that the cardiovascular evaluation was performed 40 percent of the time at the 3 California hospitals with the rates ranging from 15 to 59 percent. ¹³

IOM Domains of Health Care Quality Addressed	<ul style="list-style-type: none"> • Safe • Effective • Efficient
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Exception Justification	This measure has no exceptions.
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Harmonization with Existing Measures	Harmonization with existing measures was not applicable to this measure.
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Measure Designation

Measure purpose	<ul style="list-style-type: none"> • Quality improvement • Accountability
Type of measure	<ul style="list-style-type: none"> • Process
Level of Measurement	<ul style="list-style-type: none"> • Individual practitioner
Care setting	<ul style="list-style-type: none"> • Ambulatory care • Hospital care
Data source	<ul style="list-style-type: none"> • Electronic health record (EHR) data • Administrative Data/Claims (inpatient or outpatient claims) • Administrative Data/Claims Expanded (multiple-source) • Paper medical record • Registry data

Technical Specifications: Administrative/Claims Data

Administrative claims data collection requires users to identify the eligible population (denominator) and numerator using codes recorded on claims or billing forms (electronic or paper). Users report a rate based on all patients in a given practice for whom data are available and who meet the eligible population/denominator criteria.

The specifications listed below are those needed for performance calculation. Additional CPT II codes may be required depending on how measures are implemented. (Reporting vs. Performance)

Denominator (Eligible Population)	All patients undergoing a total knee replacement
	CPT Service Code: 27446, 27447, 27438, or 27442

Numerator	<p>Patients who were evaluated for the presence or absence of cardiovascular risk factors within 30 days prior to the procedure including history of DVT, PE, MI, arrhythmia, and stroke</p> <p>Report the CPT Category II code: XXXXF: <i>Patients who are evaluated for venous thromboembolic and cardiovascular risk factors</i> in development for this numerator</p>
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