

Total Knee Replacement

Measure #4: Preoperative Antibiotic Infusion with Proximal Tourniquet

Measure Description

Percentage of patients undergoing a total knee replacement who had the prophylactic antibiotic completely infused prior to the inflation of the proximal tourniquet

Measure Components

Numerator Statement	Patients who had the prophylactic antibiotic completely infused prior to the inflation of the proximal tourniquet
Denominator Statement	All patients undergoing a total knee replacement
Denominator Exceptions	Documentation of medical reason for not completely infusing the prophylactic antibiotic prior to the inflation of the proximal tourniquet (e.g., a tourniquet was not used)
Supporting Guideline & Other References	The following evidence statements are quoted <u>verbatim</u> from the referenced clinical guidelines: If a proximal tourniquet is used, the antimicrobial should be completely infused before inflation. (National Surgical Infection Prevention Project Advisory Statement 2004) ²⁴

Measure Importance

Relationship to desired outcome	The Surgical Care Improvement Project (SCIP) evaluates the timing and appropriateness of the prophylactic antibiotic. This measure evaluates that the prophylactic antibiotic is completely infused prior to the inflation of the tourniquet.
Opportunity for Improvement	Antibiotic prophylaxis was evaluated by SooHoo et al. They evaluated the timing, the discontinuation, the appropriateness of the antibiotic and the proximal tourniquet inflation after infusion. Adherence to this indicator ranged from 24 to 27 percent at the 3 hospitals. ¹³
IOM Domains of Health Care Quality Addressed	<ul style="list-style-type: none"> • Safe • Effective • Efficient
Exception Justification	A denominator exception has been added to capture those patients for whom a tourniquet was not used.
Harmonization with Existing Measures	This measure addresses the infusion of the prophylactic antibiotic prior to the inflation of the proximal tourniquet. The current SCIP measure does not address the antibiotic infusion prior to the tourniquet inflation.

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">• 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	Patients who had the prophylactic antibiotic completely infused prior to the inflation of the proximal tourniquet Report the CPT Category II code: <i>XXXXF: Patients who had the prophylactic antibiotic completely infused prior to inflation of the proximal tourniquet</i> in development for this numerator
Denominator Exceptions	Documentation of medical reason for not completely infusing the prophylactic antibiotic prior to the inflation of the proximal tourniquet (e.g., a tourniquet was not used) <ul style="list-style-type: none">• Append modifier to CPT Category II code: XXXXF-1P