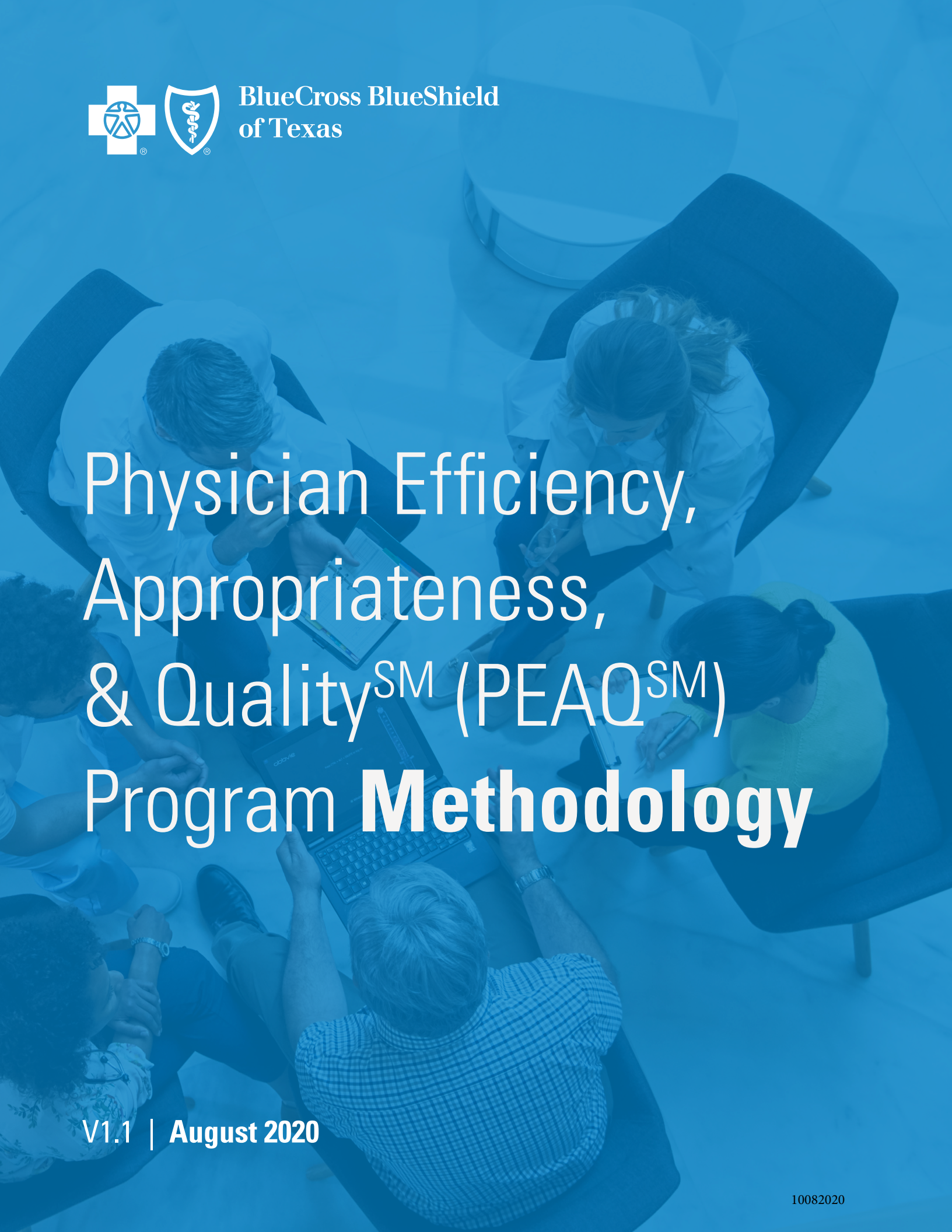


BlueCross BlueShield of Texas

Physician Efficiency, Appropriateness, & Quality℠ (PEAQ℠) Program **Methodology**

V1.1 | **August 2020**

10082020

I.

Overview of Physician Efficiency, Appropriateness, & Quality (PEAQ) Program

At Blue Cross Blue Shield of Texas (BCBSTX) we do everything in our power to stand with our members in sickness and in health.

We take the quality and affordability of the care provided to our members very seriously. As a part of this commitment, one of BCBSTX's core objectives as a health plan is to maximize and improve the value of care our members receive.

To further this commitment, our BCBSTX Physician Efficiency, Appropriateness, and Quality (PEAQ) Program evaluates physician performance in a transparent and multidimensional way. A goal of PEAQ is to work with the physician community to **maximize physician efficiency, appropriateness, and quality of care.** BCBSTX is developing the PEAQ program with input from physicians currently in practice.

The guiding principles of our BCBSTX Physician Efficiency, Appropriateness, and Quality (PEAQ) Program include:

Metrics

Selecting meaningful measures of health care efficiency, appropriateness, and quality

Collaboration

Sharing with physicians to ensure measurement transparency and clinical relevance

Insights

Providing physician-level insights on how to improve overall patient care

Transparency

Equipping physicians with meaningful information about efficiency, appropriateness of care, and quality

Continuous Improvement

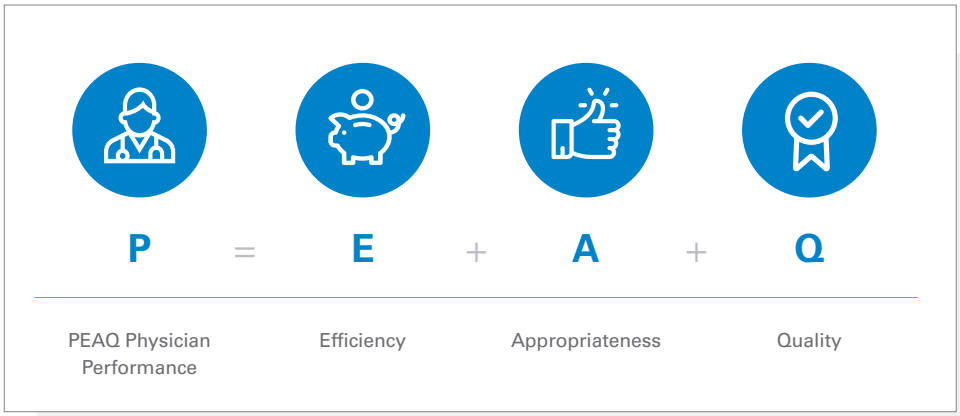
Reevaluating our methodology and measures regularly based on feedback and recent clinical evidence

Member Focus

Helping our members identify physicians who are right for them

Summary Overview

The three key components of BCBSTX's PEAQ program are described below.



Efficiency

To evaluate physicians for cost-**efficiency**, we use BCBSTX's proprietary Provider and Network Decision Analytics (PANDA®) program. The efficiency model is a comprehensive data analysis and reporting solution with financial and utilization metrics that provides users with the ability to identify potential efficiency improvement opportunities.

Our efficiency program compares physicians to their peers within the same Working Specialty and Geographic Market as defined in Section II. It applies dynamic drill-down capabilities at the episode level in order to compare physicians with similar patients with similar disease stages. Additional consideration is given for pharmacy benefit coverage as well as network plan design for the patient. Comorbidity and demographic adjustments are applied to account for additional factors influencing care delivery outcomes.

Appropriateness

The **appropriateness** of care measures reflect whether care provided is evidence-based and/or meets generally accepted standards of practice based on peer-reviewed evidence and clinical opinion. The methodology and results — which are produced by Motive Medical Intelligence (Practicing Wisely Solutions™) for the PEAQ program — are statistically valid and reviewed by expert physicians to ensure clinical appropriateness.

Quality

The Institute of Medicine defines health care **quality** as:

> ***"The degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."*** [1]

Our methodology relies on evidence-based, endorsed measures and leverages existing nationally recognized quality measurement standards. The intention is to minimize the burden for physicians who are often asked to manage large volumes of measurements across various health plans.

[1] Institute of Medicine (US) Committee to Design a Strategy for Quality Review and Assurance in Medicare; Lohr KN, editor. Medicare: A Strategy for Quality Assurance: Volume 1. Washington (DC): National Academies Press (US); 1990. 1, Health, Health Care, and Quality of Care.

The elements of quality evaluation are 1) nationally endorsed quality measures, 2) CMS Merit-based Incentive Payment System (MIPS) and MIPS Alternative Payment Models (APMs) self-reported quality measures, 3) participation in national designation programs, and 4) participation in BCBSTX value based contracts. Quality measure adherence rates include nationally endorsed quality measures and CMS MIPS / MIPS APM self-reported data. Participation in national designation programs such as Bridges to Excellence (BTE) or Blue Cross Blue Shield Association (BCBSA) Blue Distinction Centers (BDC) or participation in BCBSTX value based contracts are considered as additional recognition when applicable.

Continuous Improvement

We will continually reevaluate our methodology for each of the three components of BCBSTX's PEAQ program for accuracy and statistical rigor. Iterative improvements will be made to account for feedback and future development. Notifications of methodological changes will be communicated to physicians.

Covered Physicians

For a variety of reasons, not all physicians are evaluated by the PEAQ program. These reasons may include:

- Specialty not included in current methodology
- Inadequate peer group information
- Non-MD/DO physician
- Limited volume
- Limited number of quality measures

II. Efficiency Measurement Details

Key Components for Fair Comparisons

PANDA® is an award-winning[2], data-driven approach to efficiency measurement that was developed by a team of data scientists and clinicians at BCBSTX with input from physicians. The model accounts for physicians, patients, and attributed benefits to ensure fair comparisons.

We use the latest machine learning methodologies and statistical controls to minimize outlier impact, align physicians to peer groups, and remove anomalous patient episodes. A key component of this review and basis for cost roll-up is care delivery by the team of physicians managing patient care.

Our efficiency methodology breaks down the impact of site of service, type of service, volume of service, and price of the various services to determine total cost.

	Fair Comparison Component	Description & Application
01	Episode Condition & Disease Stage	The Medical Episode Grouper (MEG) is the proprietary episode grouping methodology of IBM Watson. Today, over 150 health plans, employers, and state Medicaid agencies use MEG. PANDA® matches patients to other patients with the same clinical condition using MEG's episodes of care. In total, there are over 500 episode categories that are further segmented by severity and disease stage progression and grouped as Acute or Chronic. Only episodes marked as complete are utilized in efficiency results.
02	Working Specialty	Physicians are matched to other physicians within the same Working Specialty (WS). The WS represents a physician's specialty and/or sub-specialty and is determined using information from BCBSTX's physician demographics database and claims submitted by the physician. The WS may be more specific than a physician's self-declared specialty. For example, WS may distinguish an interventional cardiologist from a non-interventional cardiologist based on claims submitted by the physician.

[2] Honoree of the 2019 Digital Edge 50 Award from IDG (the publisher of CIO magazine) and one of Drexel University LeBow College of Business' 2016 Analytics 50 honorees.

	Fair Comparison Component	Description & Application
03	Contracted Network	Physicians are matched to other physicians practicing in the same network model type such as a Preferred Provider Organization (PPO) or a Health Maintenance Organization (HMO), with similarly aligned BCBSTX network products grouped to model type.
04	Patient Risk	The model employs the latest machine learning and predictive modeling techniques to accurately adjust for patient population differences related to comorbidities and demographics.
05	Pharmacy Coverage	Comparative groups are defined separately depending on whether patients are enrolled in a prescription program with a Pharmacy Benefits Manager (PBM) that reports financial data to BCBSTX or not. Patients in PBM programs that do not include such prescription financial data are evaluated on Medical cost only.
06	Geographic Market	Physicians are matched with peers who practice in the same geographic market. Depending on the concentration of patients and physicians in a geographic area, a market region area can be limited to several zip codes. Otherwise, markets are based on Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget.
07	Outliers	Outlier patient episodes and their associated costs can positively or negatively skew physicians' results. In order to control for such anomalous data, episodes' Total Allowed Costs are truncated for each episode group and disease stage combination. In addition, machine learning methods are used to identify remaining outliers in further analysis.

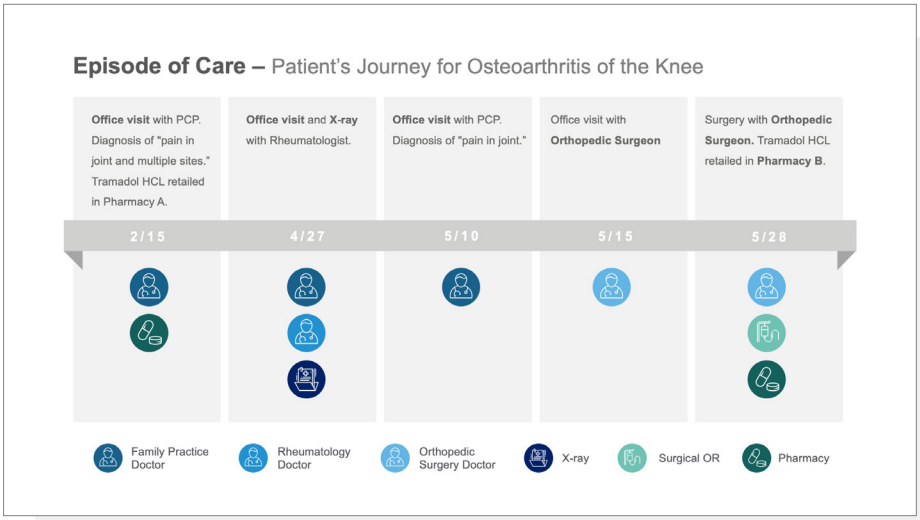
Methodology

A physician's overall efficiency is a weighted average of efficiencies across that physician's episodes of care. Using MEG, all related claims are combined to form "episodes of care" to identify treatment teams. Episodes are diagnosis-based rather than procedure-based. For example, if a patient had a procedure, the episode of care would include all related care provided before and after the procedure, across working specialties. This model captures the impact of site of service, type of service, volume of services, and price points for each service and includes all types of services (e.g., IP, OP, Prof, Ancillary, Rx).

The total cost for each of a physician's episodes of care is compared to the total expected cost of the episode – an average across episodes of the same type / stage, treated by the same type of physician, in the same area and network. The expected cost of the episode is further adjusted for patient comorbidities and demographic risks. A physician's episode measurement result is the ratio of the episode's actual cost to the its expected cost, with a lower ratio providing a more favorable cost-efficiency result. A physician's overall efficiency is equal to the weighted average of the episode measurement results across episodes for all included networks, weighted based on the size of the episode and proportion of care provided.

Time Period and Frequency

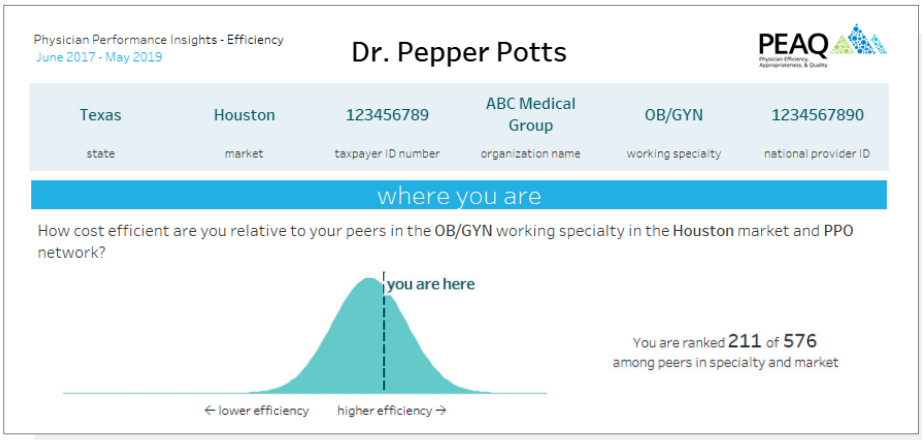
Our model considers episodic data from 24 months of incurred services and 27 months of paid services. On the next page is an example of services that are combined into a clinically coherent episode of care. The services displayed are a selection of services for demonstration only. Actual episodes may include additional services based on actual care delivery.



Relative Efficiency Range

Our model calculates relative efficiency and segments physicians from low to high efficiency. Granular, model-driven estimates offer maximum flexibility when applying to various use cases such as network optimization, patient steerage, and custom solutions.

Below is an example of an efficiency dashboard.



Minimum Thresholds for Credible Results

For an episode condition to be included, the following criteria must be met:

1. A minimum of **three episodes** treated for the condition category by a physician
2. A total of at least **ten episodes** across all physicians treating the condition in the same peer group

Only episodes that meet cost thresholds and are marked as complete by MEG are included in measurement. Physicians with less than 50 episodes across all conditions currently do not receive a relative efficiency range.

Credibility thresholds will be continually evaluated and are subject to change. Significant updates will be shared with physicians.

Current Specialties Measured for Efficiency

The efficiency component of the PEAQ program measures physicians across primary care, medical, and surgical specialties where there is sufficient share of practice. Measured specialties for the efficiency component of the PEAQ program are listed below:

Medical	Surgical	Primary Care*
Cardiology	Cardiothoracic Surgery	Family Medicine
Endocrinology	Ophthalmology	Internal Medicine
Gastroenterology	Orthopedic Surgery	Pediatrics
Nephrology	Urology	
Pulmonary	Vascular Surgery	
Rheumatology		
Obstetrics/Gynecology		

**Geriatric Medicine and General Practice specialties are included in Family Medicine and Internal Medicine, respectively.*

III.

Appropriateness Measurement Details

Appropriateness of care is another important dimension of physician performance. Our appropriateness metrics evaluate the extent to which physicians make decisions about patient care that are consistent with current evidence-based guidelines. We have partnered with Motive Medical Intelligence to deliver these measures using the Practicing Wisely Solutions appropriateness of care measurement methodology.

See Appendix A for a list of appropriateness of care measures for each specialty.

Measure Details

Appropriateness of care measures physician practice patterns that have potential for patient harm and wasteful spending, and/or for which significant variations in care exist among different physicians. The purpose in evaluating appropriateness is to help physicians practice within current evidence-based guidelines. Appropriateness of care measures are determined through a systematic examination of data, evidence, and clinical opinion. Data are abstracted from BCBSTX claims data as shared by the plan. Evidence is culled by Motive Medical Intelligence from peer-reviewed literature, which is analyzed with quantitative bibliometrics. Opinion is derived from subject matter experts who are in active clinical practice in the areas being measured, and who are identified by quantitative indices of expertise.

The resultant measure topics are developed with regard for the realities of clinical practice, leveraging a range of better practice (ROBP) to allow for clinical variables that cannot be gleaned from claims data.

Measure Construction

Appropriateness measure rates are formulated as numerator–denominator statements, utilizing a standardized denominator, exclusion, attribution, and numerator (DEAN) methodology. Each component of the DEAN methodology is subject to the data, evidence, and opinion process outlined above.

Cases meeting inclusion criteria and exclusion criteria are identified within claims datasets. Numerator–denominator measures are analyzed to identify potentially inappropriate episodes of care.

Cases that warrant intensive treatment are excluded, and attention instead is focused on areas of known inappropriate care based on current evidence and guided by Motive Medical Intelligence's clinical experts. These practices avoid misrepresentation of physician performance and ensure accurate measurement of performance among peers.

Measures are attributed to the physician responsible for the care decision, and attribution is carefully evaluated so that a given physician's scores are not biased by the actions of others; cases that cannot be definitively attributed to a physician are excluded. A number of considerations are involved in proper attribution, depending on the measure:

	Consideration	Example
01	Specialty procedures are attributed only to physicians within the specialty of interest.	Inappropriate cardiac catheterization is attributed to the cardiologist rather than the primary care provider.

	Consideration	Example
02	The timing of interventions relative to physician visits may be a factor in determining attribution.	In the case of a patient who undergoes MRI of the spine during the same month in which he or she has evaluation and management (E&M) visits with both a PCP and a spine surgeon, the MRI may be attributed to the PCP if it occurs after the PCP visit but before the first spine surgeon visit; conversely, it may be attributed to the spine surgeon if it takes place after the spine surgeon visit but before the PCP visit.
03	For episodes of care in which the physician rendering the service is responsible for the decision to deliver that service (e.g., cardiac catheterization), the event of interest is attributed to the physician identified as the rendering NPI (National Provider Identifier) on the claim.	In measuring physician performance on percutaneous coronary intervention (PCI) without prior measurement of fractional flow reserve (FFR), the decision to perform PCI is attributed to the physician on the PCI procedure claim.
04	For E&M measures, the event of interest is attributed to the presumptive ordering physician at a prior E&M visit instead of the rendering NPI. This approach is used because the physician rendering the service may be different from the physician responsible for the decision to deliver that service.	In a measure of MRI for neck pain, the MRI will be presumed to have been ordered by the physician at the prior E&M visit, rather than the radiologist performing the procedure. Correct attribution in E&M measures requires additional nuance. For example, a PCP who saw a patient twice before ordering an MRI of the neck on the third visit will get credit for conservative care on the two visits that did not lead to imaging.

A ROBP is established to account for variation in practice patterns based on clinical evidence and expert oversight. The ROBP also serves to acknowledge the variation in medical coding practices, gaps in claims data, and the realities of clinical medicine, such as regional resource limitations, reliance on tertiary referral, and individual patient factors. A minimum threshold number of cases is established to generate statistically significant analyses, while ensuring that physicians are evaluated based on the care decisions they make regularly.

Current Specialties Measured for Appropriateness (as of August 2020)

The appropriateness component of the PEAQ program measures physicians across primary care, medical, and surgical specialties. Measured specialties for the appropriateness component of the PEAQ program are listed below:

Medical	Surgical	Primary Care
Cardiology	Orthopedic Surgery	Family Medicine
Gastroenterology	Ophthalmology	Internal Medicine
Obstetrics/Gynecology		
Oncology		

IV. Quality Measurement Details

Physician Quality Framework

There are four components to the physician quality framework.

	Component	Scoring Methodology
01	**Health Care Quality Measures*** National Quality Forum (NQF) and/or National Committee for Quality Assurance (NCQA) endorsed measures	Assumes a minimum denominator for each measure to be considered a part of the calculation. Calculations are measured within peer groups and geographies, risk-adjusted, and then normalized.
02	**Centers for Medicare and Medicaid Services (CMS) MIPS / MIPS APM Quality Score**** Physician self-reported six measures of quality performance to fit their own practice	MIPS / MIPS APM quality scores for physicians are extracted from the CMS website then normalized based on peer groups within geography.
03	**Annual Participation in National Designation** Bridges to Excellence (BTE) or affiliated or employed with a Blue Cross Blue Shield Association (BCBSA) Blue Distinction Center (BDC)	Additional considerations by specialty***
04	**Annual Participation in BCBSTX Value Based Care (VBC) Program** Accountable Care Organizations (ACOs), Patient Centered Medical Home (PCMH), or other VBC programs offered by BCBSTX	Additional considerations for participation and/or positive performance***

** Health Care Quality Measures are based on a prior calendar year performance.*

*** For our quality scoring, we will utilize the most current, publicly available MIPS / MIPS APM measures available at the time of measurement. Current data can be found at https://data.medicare.gov/data/physician-compare.*

**** Participation counts for national designations and BCBSTX Value Based Care programs will be aggregated and normalized based on physician geographic distribution and specialty. We will use the most recently published BTE and BDC data and VBC physician rosters available at the time of measurement.*

Methodology

Physicians are measured against peers who practice in the same specialty and geographic market. Depending on the concentration of patients and physicians in a geographic area, a market region area can be limited to several zip codes. Otherwise, markets are based on Metropolitan Statistical Areas (MSA) as defined by the U.S. Office of Management and Budget. Physicians are measured using data from BCBSTX Health Maintenance Organization (HMO) and Preferred Provider Organization (PPO) products.

The physician's final score is a composite of all four components of the physician quality framework. An integrated view of the Health Care Quality Measures and MIPS/MIPS APM Quality Score is generated by calculating a weighted average of these components. In the event of missing values for either Health Care Quality Measures or MIPS/MIPS APM Quality Score, weights will be distributed proportionately. This methodology will be applied to all physicians, across all geographies and working specialties. Physicians with Annual Participation in National Designation and/or Annual Participation in a BCBSTX Value Based Care (VBC) program will be awarded bonus points that will be integrated into their final composite score.

Health Care Quality Measures

For each measure, patient compliance rates are aggregated at the National Provider Identifier (NPI) level. These aggregated rates are risk-adjusted based on patient comorbidities, demographics, disease severity, and disease category.

Measure specifications are taken from the National Quality Forum (NQF) and/or National Committee for Quality Assurance (NCQA) specifications, including recommended look-back periods.

See Appendix A for a list of measures for each specialty.

Each year, we evaluate the measures available for every specialty. As new measures become available for a given specialty, they will be calculated for one year before inclusion in results. Notifications of new or changed measures or methodology will be communicated to physicians.

CMS MIPS / MIPS APM Quality Score

MIPS / MIPS APM is a component of the composite Quality Measurement framework. This publicly available data is part of a consolidated incentive framework that represents the quality of care provided to a patient at the NPI level. This aggregated metric is weighted in the final analysis.

Quality Recognition Program

Participation in Bridges to Excellence or BCBSA BDC signals a physician's strong commitment to providing high quality health care. Participation positively impacts the physician's composite quality score.

Participation in BCBSTX Value Based Care Program

Participation in a BCBSTX Value Based Care Program is evidence of a physician's commitment to quality. Participation positively impacts the physician's composite quality score.

Attribution/Assignment

For Health Maintenance Organization (HMO) products, patients are assigned to the Primary Care Provider (PCP) they have selected. For Preferred Provider Organization (PPO) products, a patient's primary care attribution is derived from their historic claims data. Attributed patients must have a full year of coverage before they are included in measurement. For a PCP to be scored, they must meet a minimum patient volume threshold.

Patients are attributed to specialists based on claims data. Attributed patients must have a full year of coverage before they are included in measurement. For a specialist to be scored, they must meet a minimum patient volume threshold.

Current Specialties Measured for Quality

The quality component of the PEAQ program measures physicians across primary care, medical, and surgical specialties where there is sufficient share of practice. Measured specialties for the quality component of the PEAQ program are listed below:

Medical	Surgical	Primary Care*
Cardiology	Cardiothoracic Surgery	Family Medicine
Endocrinology	Ophthalmology	Internal Medicine
Gastroenterology	Orthopedic Surgery	Pediatrics
Nephrology	Urology	
Pulmonary	Vascular Surgery	
Rheumatology		
Obstetrics/Gynecology		

Physicians are measured on a range of endorsed specialty-specific quality measures across categories such as prevention and screening, guideline adherence, overuse, and/or availability of care. Measured specialties are subject to change annually.

**Geriatric Medicine and General Practice specialties are included in Family Medicine and Internal Medicine, respectively.*

V. Physician Review & Reconsideration Process

Physicians may receive information about their PEAQ designations via Availity starting in 2021. Physician-designated administrators can register for Availity for free at availity.com.

Physicians may request reconsideration of their PEAQ designation before results are finalized. Physicians will have 45 days following initial notification to submit a question or reconsideration request. Requests should be submitted to PEAQ_inquiries@bcbstx.com. Additional feedback or questions may be submitted after the 45 day reconsideration window.

Reconsideration requests will be reviewed by a panel including BCBSTX medical director(s), network representative(s), quality specialist(s) and data scientist(s). The physician will be notified of the response to the reconsideration request. Physicians can include supplemental information in their requests for reconsideration, which will be used as part of the review.

VI. Comments & Feedback

Comments and feedback are welcome and can be submitted to your local Blue Cross Blue Shield of Texas Network Representative or emailed to PEAQ_analytics@bcbstx.com.

VII. Appendix A: Measures

Listed below are two sets of measures. The first are quality measures included in the BCBSTX scoring model. The second are appropriateness measures included in the BCBSTX scoring model. MIPS measures are not listed as they are publicly available and self-reported by the physicians.

Set 1: Quality Measures

Measure	Description	Applicable Specialties
Adolescent Well-Care Visits (AWC)	Patient(s) 12-21 years of age who had one comprehensive wellcare visit with a PCP or an OB/GYN in the last 12 reported months.	**Pediatrics**
Adult Access to Preventive/Ambulatory Health Services	The percentage of patients 20 years and older who had an ambulatory or preventive care visit. The organization reports three separate percentages for each product line. • Medicaid and Medicare patients who had an ambulatory or preventive care visit during the measurement year. • Commercial patients who had an ambulatory or preventive care visit during the measurement year or the two years prior to the measurement year	**Family Medicine, Internal Medicine**
Appropriate Testing for Pharyngitis	The percentage of episodes for patients 3 years and older where the patient was diagnosed with pharyngitis, dispensed an antibiotic and received a group A streptococcus (strep) test for the episode.	**Pediatrics**
Appropriate Treatment for Upper Respiratory Infection	The percentage of episodes for patients 3 months of age and older with a diagnosis of upper respiratory infection (URI) that did not result in an antibiotic dispensing event. *Note: A lower rate indicates better performance.*	**Family Medicine, Pediatrics**
Asthma: Pharmacologic Therapy for Persistent Asthma	Percentage of patients aged 5 years and older with a diagnosis of persistent asthma who were prescribed long-term control medication	**Pulmonary Medicine**
Avoidance of Antibiotic Treatment for Acute Bronchitis (AAB)	The percentage of episodes for patients ages 3 months and older with a diagnosis of acute bronchitis/ bronchiolitis that did not result in an antibiotic dispensing event. *Note: A lower rate indicates better performance.*	**Family Medicine, Internal Medicine, Pediatrics, Pulmonary Medicine**
Breast Cancer Screening (BCS)	Patient(s) 52-74 years of age who had a screening mammogram in last 27 reported months.	**Family Medicine, Internal Medicine, Obstetrics and Gynecology**

Measure	Description	Applicable Specialties
Cataracts: Complications Within 30 Days Following Cataract Surgery Requiring Additional Surgical Procedures	Percentage of patients aged 18 years and older with a diagnosis of uncomplicated cataract who had cataract surgery and had any of a specified list of surgical procedures in the 30 days following cataract surgery which would indicate the occurrence of any of the following major complications: retained nuclear fragments, endophthalmitis, dislocated or wrong power IOL, retinal detachment, or wound dehiscence.	**Ophthalmology**
Cervical Cancer Screening (CCS)	Percentage of women 21–64 years of age who were screened for cervical cancer using either of the following criteria: *Women 21–64 years of age who had cervical cytology performed every 3 years. *Women 30–64 years of age who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years.	**Family Medicine, Internal Medicine, Obstetrics and Gynecology**
Childhood Immunization Status - Combo 10	The percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); three haemophilus influenza type B (HiB); three hepatitis B (HepB), one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (HepA); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine and nine separate combination rates.	**Pediatrics**
Children and Adolescents' Access to Primary Care Practitioners (CAP)	1. Patient(s) 12-24 months of age who had a PCP visit during the 12 months prior to the end of the report period. 2. Patient(s) 25 months to 6 years of age who had a PCP visit during the 12 months prior to the end of the report period. 3. Patient(s) 7-11 years of age who had a PCP visit during the 24-month report period. 4. Patient(s) 12-19 years of age who had a PCP visit during the 24-month report period.	**Pediatrics**
Chlamydia Screening in Women (CHL)	Percentage of women 16-24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement period.	**Obstetrics and Gynecology**
Colorectal Cancer Screening (COL)	Patient(s) 50-75 years of age who had appropriate screening for colorectal cancer.	**Family Medicine, Internal Medicine, Obstetrics and Gynecology**
Comprehensive Diabetes Care (CDC) – Medical Attention for Nephropathy	Patients 18–75 years of age with diabetes who had annual screening for nephropathy or evidence of nephropathy.	**Family Medicine, Internal Medicine, Endocrinology**
Comprehensive Diabetes Care (CDC): HbA1c in control (<8.0 Percent)	Patient(s) 18–75 years of age with evidence of diabetic control, defined as the most recent HbA1c result value less than 8.0 percent.	**Endocrinology**
Comprehensive Diabetes Care: Eye Exam	The percentage of patients 18–75 years of age with diabetes (type 1 and type 2) who had Eye exam (retinal) performed.	**Family Medicine, Internal Medicine, Endocrinology**
Comprehensive Diabetes Care: Hemoglobin A1c Testing	The percentage of patients 18–75 years of age with diabetes (type 1 and type 2) who had Hemoglobin A1c (HbA1c) testing.	**Family Medicine, Internal Medicine, Endocrinology**
Disease Modifying Anti-Rheumatic Drug Therapy for Rheumatoid Arthritis (ART)	The percentage of patients 18 years of age and older who were diagnosed with rheumatoid arthritis and who were dispensed at least one ambulatory prescription for a disease modifying antirheumatic drug (DMARD).	**Rheumatology**

Measure	Description	Applicable Specialties
Excess days in acute care (EDAC) after hospitalization for acute myocardial infarction (AMI)	This measure assesses days spent in acute care within 30 days of discharge from an inpatient hospitalization for AMI to provide a patient-centered assessment of the post-discharge period. This measure is intended to capture the quality of care transitions provided to discharged patients hospitalized with AMI by collectively measuring a set of adverse acute care outcomes that can occur post-discharge: emergency department (ED) visits, observation stays, and unplanned readmissions at any time during the 30 days post-discharge. In order to aggregate all three events, we measure each in terms of days.	**Cardiothoracic Surgery**
Excess days in acute care (EDAC) after hospitalization for heart failure (HF)	This measure assesses days spent in acute care within 30 days of discharge from an inpatient hospitalization for HF to provide a patient-centered assessment of the post-discharge period. This measure is intended to capture the quality of care transitions provided to discharged patients hospitalized with HF by collectively measuring a set of adverse acute care outcomes that can occur post-discharge: emergency department (ED) visits, observation stays, and unplanned readmissions at any time during the 30 days post-discharge. In order to aggregate all three events, we measure each in terms of days.	**Cardiothoracic Surgery**
Excess days in acute care (EDAC) after hospitalization for pneumonia	This measure assesses days spent in acute care within 30 days of discharge from an inpatient hospitalization for pneumonia, including aspiration pneumonia or for sepsis (not severe sepsis) with a secondary diagnosis of pneumonia coded in the claim as present on admission. This measure is intended to capture the quality of care transitions provided to discharge patients hospitalized with pneumonia by collectively measuring a set of adverse acute care outcomes that can occur post-discharge: emergency department (ED) visits, observation stays, and unplanned readmissions at any time during the 30 days post-discharge. In order to aggregate all three events, we measure each in terms of days.	**Pulmonary Medicine**
Follow-Up After Emergency Department Visit for People with Multiple High-Risk Chronic Conditions (COPD, Asthma, Heart failure, Acute myocardial infarction, Atrial fibrillation)	The percentage of emergency department (ED) visits for patients 18 years and older who have multiple high-risk chronic conditions who had a follow-up service within 7 days of the ED visit.	**Cardiology, Pulmonary Medicine**
Follow-Up Care for Children Prescribed ADHD Medication (ADD)	The percentage of children newly prescribed attention-deficit / hyperactivity disorder (ADHD) medication who had at least three follow-up care visits within a 10-month period, one of which was within 30 days of when the first ADHD medication was dispensed. • Continuation and Maintenance (C&M) Phase. The percentage of patients 6–12 years of age as of the IPSD with an ambulatory prescription dispensed for ADHD medication, who remained on the medication for at least 210 days and who, in addition to the visit in the Initiation Phase, had at least two follow-up visits with a practitioner within 270 days (9 months) after the Initiation Phase ended.	**Pediatrics**

Measure	Description	Applicable Specialties
Medication Management for People with Asthma (MMA) – 75 Percent Minimum	Patient(s) between the ages of 5 and 64 years of age compliant with prescribed asthma controller medication (minimum compliance 75 percent).	**Pediatrics, Pulmonary Medicine**
Non-Recommended Prostate Specific Antigen (PSA)-Based Screening in Older Men	The percentage of men 70 years and older who were screened unnecessarily for prostate cancer using prostate-specific antigen (PSA)-based screening. *Note: A lower rate indicates better performance.*	**Urology**
Osteoporosis Management in Women Who Had a Fracture (OMW)	The percentage of women age 50-85 who suffered a fracture in the six months prior to the performance period through June 30 of the performance period and who either had a bone mineral density test or received a prescription for a drug to treat osteoporosis in the six months after the fracture.	**Obstetrics and Gynecology, Rheumatology**
Persistence of Beta-Blocker Treatment After a Heart Attack (PBH)	Patients hospitalized with an acute myocardial infarction (AMI) persistently taking a beta-blocker for six months after discharge.	**Cardiology**
Pharmacotherapy Management of COPD Exacerbation (PCE) – Systemic Corticosteroid	Patient(s) 40 years of age and older with COPD exacerbation who received a systemic corticosteroid within 30 days of the hospital or ED discharge.	**Pulmonary Medicine**
Plan All-Cause Readmissions (PCR)	Unplanned hospital readmission within 30 days of principal procedure.	**Cardiothoracic Surgery, Orthopedic Surgery, Vascular Surgery**
Postpartum Care	The percentage of deliveries of live births on or between November 6 of the year prior to the measurement year and November 5 of the measurement year. For these women, the measure assesses the following facets of postpartum care. • Postpartum Care. The percentage of deliveries that had a postpartum visit on or between 21 and 56 days after delivery.	**Obstetrics and Gynecology**
Primary Open-Angle Glaucoma (POAG) – Optic Nerve Evaluation	Percentage of patients aged 18 years and older with a diagnosis of primary open-angle glaucoma (POAG) who have an optic nerve head evaluation during one or more office visits within 12 months.	**Ophthalmology**
Statin Therapy for Patients with Cardiovascular Disease (SPC) – Adherence	Patient(s) with cardiovascular disease taking statin medications who adhered to the prescribed statin medication regimen (proportion of days covered) at least 80 percent during the treatment period.	**Cardiology**
Statin Therapy for Patients with Cardiovascular Disease (SPC) –Treatment	Patient(s) with cardiovascular disease who received a high or moderate-intensity statin medication.	**Cardiology, Family Medicine**
Use of Imaging Studies for Low Back Pain- Imaging	The percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of the diagnosis. *Note: A lower rate indicates better performance.*	**Family Medicine, Internal Medicine**

Measure	Description	Applicable Specialties
Use of Spirometry Testing in the Assessment and Diagnosis of COPD (SPR)	The percentage of patients 40 years of age and older with a new diagnosis of COPD or newly active COPD, who received appropriate spirometry testing to confirm the diagnosis.	**Pulmonary Medicine**
Well-Child Visits in the First 15 Months of Life (W15)	Percentage of patients who turned 15 months old during the measurement year who had six or more well-child visits with a PCP during the first 15 months of life.	**Pediatrics**
Well-Child Visits in the Third, Fourth, Fifth and Sixth Years of Life (W34)	Patient(s) 3-6 years of age who had one well-child visit with a PCP in the last 12 reported months.	**Family Medicine, Pediatrics**

Set 2: Appropriateness Measures

Measure	Description	Applicable Specialties
PCI without Measurement of FFR/iFR	Percentage of patients who underwent percutaneous coronary intervention (PCI) without measurement of fractional flow reserve (FFR) or instantaneous wave-free ratio (iFR). *Note: A lower rate indicates better performance.*	**Cardiology**
Delayed PCI	Percentage of patients who underwent delayed/later-date percutaneous coronary intervention (PCI) after diagnostic angiography. *Note: A lower rate indicates better performance.*	**Cardiology**
Repeat PCI	Percentage of patients who underwent repeat percutaneous intervention (PCI) within 45 days of an index PCI. *Note: A lower rate indicates better performance.*	**Cardiology**
Preoperative Resting Electrocardiogram (ECG)	Percentage of low-risk patients who received resting electrocardiograms (ECGs) within 60 days of low-risk noncardiac surgery. *Note: A lower rate indicates better performance.*	**Cardiology**
Repeat Transthoracic Echocardiogram (TTE)	Percentage of patients who received repeat transthoracic echocardiography (TTE) during a 13-month period. *Note: A lower rate indicates better performance.*	**Cardiology**
Advanced Diagnostic Testing after Initial Visit	Percentage of low-risk patients who underwent advanced diagnostic testing (stress transthoracic echocardiography [TTE], nuclear imaging, computed tomography [CT] coronary angiography, or stress cardiac magnetic resonance imaging [MRI]). *Note: A lower rate indicates better performance.*	**Cardiology**

Measure	Description	Applicable Specialties
Advanced Diagnostic Testing after PCI	Percentage of patients who underwent advanced diagnostic testing (stress transthoracic echocardiography [TTE], nuclear imaging, computed tomography [CT] coronary angiography, stress cardiac magnetic resonance imaging [MRI], or cardiac catheterization) in the 12 months following percutaneous coronary intervention (PCI). *Note: A lower rate indicates better performance.*	**Cardiology**
Preoperative Advanced Diagnostic Testing	Percentage of low-risk patients who underwent advanced diagnostic testing (stress transthoracic echocardiography [TTE], nuclear imaging, or computed tomography [CT] coronary angiography) within 60 days of low-risk noncardiac surgery. *Note: A lower rate indicates better performance.*	**Cardiology**
Preoperative Resting Transthoracic Echocardiogram (TTE)	Percentage of patients who received a resting transthoracic echocardiography (TTE) for low-risk patients during the 60 days prior to low-risk noncardiac surgery. *Note: A lower rate indicates better performance.*	**Cardiology**
Carotid Artery Imaging for Simple Syncope	Percentage of patients who underwent carotid artery imaging (carotid artery duplex ultrasound) for simple syncope. *Note: A lower rate indicates better performance.*	**Cardiology, Internal Medicine, Family Medicine**
Stress Testing with Nuclear Imaging	Percentage of patients who underwent stress testing with nuclear imaging following cardiologist evaluation and management (E&M) visits. *Note: A lower rate indicates better performance.*	**Cardiology**
Coronary Angiography Without Prior Stress/ Functional Testing	Percentage of patients who underwent angiography who had not received prior noninvasive stress or functional testing (stress electrocardiography [ECG], stress transthoracic echocardiography [TTE], nuclear imaging, stress cardiac magnetic resonance imaging [MRI], or fractional flow reserve [FFR]). *Note: A lower rate indicates better performance.*	**Cardiology**
Stress Testing with Echocardiography	Percentage of patients who had stress tests performed within 30 days of a cardiology evaluation and management (E&M) visit that are stress transthoracic echocardiograms (TTEs). *Note: A lower rate indicates better performance.*	**Cardiology**
Coronary Angiography Not Leading to PCI	Percentage of patients who had angiography who do not receive subsequent percutaneous coronary intervention (PCI). *Note: A lower rate indicates better performance.*	**Cardiology**
Advanced Diagnostic Testing after Revascularization	Percentage of patients who had advanced diagnostic testing (stress transthoracic echocardiography [TTE], nuclear imaging, computed tomography [CT] coronary angiography, cardiac magnetic resonance imaging [MRI], or cardiac catheterization) who underwent revascularization (percutaneous coronary intervention [PCI] or coronary artery bypass grafting [CABG]) in the prior 12 months. *Note: A lower rate indicates better performance.*	**Cardiology**

Measure	Description	Applicable Specialties
Left Ventriculography Following Advanced Diagnostic Imaging	Percentage of patients who had left ventriculography following advanced diagnostic imaging in the prior 30 days. *Note: A lower rate indicates better performance.*	**Cardiology**
Repeat Coronary Angiography	Percentage of patients who underwent repeat coronary angiography within 18 months of an index coronary angiography for stable ischemic heart disease (IHD). *Note: A lower rate indicates better performance.*	**Cardiology**
Stress Testing with Imaging	Percentage of patients who received imaging stress tests out of all stress tests performed. *Note: A lower rate indicates better performance.*	**Cardiology**
Staged Upper and Lower Endoscopy	Percentage of patients who underwent upper and lower endoscopy on different days within a 45-day period. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Lower Endoscopy with Added Upper Endoscopy	Percentage of patients who underwent upper endoscopy on the same day as a lower endoscopy when the upper endoscopy was not indicated. *Note: A lower rate indicates better performance.*	**Gastroenterology**
EGD for GERD or Dyspepsia	Percentage of patients who underwent esophagogastroduodenoscopy (EGD) resulting in a diagnosis of gastroesophageal reflux disease (GERD) or dyspepsia. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Repeat Colonoscopy	Percentage of patients who underwent repeat colonoscopy within 13 months of an index colonoscopy. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Biopsy During Lower Endoscopy	Percentage of patients who underwent biopsy during lower endoscopy. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Repeat EGD for Barrett's Esophagus	Percentage of patients with nondysplastic Barrett's esophagus who underwent esophagogastroduodenoscopy (EGD) within 13 months of an index EGD. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Repeat EGD	Percentage of patients who underwent esophagogastroduodenoscopy (EGD) within 13 months of an index EGD. *Note: A lower rate indicates better performance.*	**Gastroenterology**
Repeat Colonoscopy after Polypectomy	Percentage of patients who underwent repeat colonoscopy within 13 months after a polypectomy. *Note: A lower rate indicates better performance.*	**Gastroenterology**

Measure	Description	Applicable Specialties
Advanced Imaging for Headache	Percentage of patients who underwent advanced brain imaging (CT, CTA, MRI, MRA) for uncomplicated headache. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Antibiotics for Conjunctivitis	Percentage of patients who were prescribed an antibiotic for uncomplicated conjunctivitis. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Antibiotics for Acute Bronchitis	Percentage of patients who were prescribed an antibiotic for uncomplicated acute bronchitis. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Antibiotics for Upper Respiratory Tract Infection	Percentage of patients who were prescribed an antibiotic for uncomplicated upper respiratory infection. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Imaging for Low Back Pain	Percentage of patients who underwent imaging (x-ray, CT, MRI) for acute uncomplicated low back pain. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Trial of Conservative Therapy Prior to Lower Back Imaging	Percentage of patients who underwent imaging (x-ray, CT, MRI) for lower back pain without a prior trial of conservative therapy. *Note: A lower rate indicates better performance.*	**Internal Medicine, Family Medicine**
Cervical Cytology or HPV Screening for Women ≥ 66 Years of Age	Percentage of women 66 years of age and older who undergo cervical cytology or HPV screening. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**
Cystoscopy during Pelvic Prolapse Surgery	Percentage of women who do not undergo cystoscopy to detect urinary tract injury during pelvic prolapse surgery. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**
Cancer Screening Prior to Obliterative Vaginal Surgery for Pelvic Prolapse	Percentage of women who do not undergo preoperative screening for uterine malignancy prior to obliterative vaginal surgery for pelvic prolapse. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**
Abdominal Hysterectomy Rate	Percentage of women who undergo abdominal hysterectomy rather than conventional, laparoscopic, or robot-assisted hysterectomy. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**
Appropriate Workup Prior to Endometrial Ablation	Percentage of women who undergo endometrial ablation without prior endometrial sampling or hysteroscopy with biopsy. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**
Biophysical Profile	Percentage of women with uncomplicated, non–high-risk pregnancies who undergo biophysical profile testing. *Note: A lower rate indicates better performance.*	**Obstetrics and Gynecology**

Measure	Description	Applicable Specialties
Receptor Testing in Breast Cancer	Percentage of patients newly diagnosed with invasive breast cancer who were not tested for receptor status (estrogen receptor, progesterone receptor, or human epidermal growth factor receptor 2). *Note: A lower rate indicates better performance.*	**Oncology**
Molecular Testing in Metastatic Colorectal Cancer	Percentage of patients newly diagnosed with metastatic colorectal cancer who did not undergo molecular testing (e.g., KRAS, NRAS, BRAF). *Note: A lower rate indicates better performance.*	**Oncology**
BRAF Testing in Melanoma	Percentage of patients newly diagnosed with melanoma who did not undergo BRAF testing. *Note: A lower rate indicates better performance.*	**Oncology**
Bone Scan after PET Scan in Lung Cancer Staging	Percentage of patients with lung cancer (small cell lung cancer or non–small cell lung cancer) who underwent a bone scan after PET scanning has been performed. *Note: A lower rate indicates better performance.*	**Oncology**
Use of Tumor Markers in Breast Cancer Surveillance	Percentage of patients who have been treated for breast cancer in whom tumor markers (e.g., CEA, CA15-3, CA125) were used to monitor for recurrence. *Note: A lower rate indicates better performance.*	**Oncology**
Antibiotics for Conjunctivitis	Percentage of patients who were prescribed antibiotics for acute uncomplicated conjunctivitis. *Note: A lower rate indicates better performance.*	**Ophthalmology**
Complete Blood Count before Cataract Surgery	Percentage of patients in whom a complete blood count (CBC) was ordered for routine preoperative screening prior to cataract surgery. *Note: A lower rate indicates better performance.*	**Ophthalmology**
Electrocardiogram before Cataract Surgery	Percentage of patients in whom an electrocardiogram (ECG) was ordered for routine preoperative screening prior to cataract surgery. *Note: A lower rate indicates better performance.*	**Ophthalmology**
Optic Nerve Evaluation for Primary Open-Angle Glaucoma	Percentage of patients with primary open-angle glaucoma who do not receive annual optic nerve evaluations. *Note: A lower rate indicates better performance.*	**Ophthalmology**
Fundus Photography for Diabetic Retinopathy	Percentage of patients with newly diagnosed diabetic retinopathy who did not receive fundus photography. *Note: A lower rate indicates better performance.*	**Ophthalmology**
Scatter Laser for Mild or Moderate Nonproliferative Diabetic Retinopathy	Percentage of patients with uncomplicated back pain who underwent magnetic resonance imaging (MRI). *Note: A lower rate indicates better performance.*	**Ophthalmology**

Measure	Description	Applicable Specialties
MRI for Uncomplicated Back Pain	Percentage of patients with uncomplicated back pain who underwent magnetic resonance imaging (MRI). *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**
PT before Lumbar Surgery	Percentage of patients who underwent lumbar surgery without a prior trial of physical therapy. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Physical Therapy before Cervical Spine Surgery	Percentage of patients who underwent cervical surgery without a prior trial of physical therapy. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
MRI for Shoulder Pain without Prior X-Ray	Percentage of patients who received shoulder magnetic resonance imaging (MRI) for shoulder pain without an x-ray in the prior six months. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**
MRI for Knee Pain without Prior X-Ray	Percentage of patients who received knee magnetic resonance imaging (MRI) for knee pain without an x-ray in the prior 6 months. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**
Nonoperative Care before Knee Arthroplasty	Percentage of patients who underwent total knee arthroplasty (TKA) without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Nonoperative Care before SAD Surgery	Percentage of patients who underwent subacromial decompression (SAD) surgery for shoulder pain without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Physical Therapy before Slap Repair	Percentage of patients who underwent superior labral anterior posterior (SLAP) repair without a prior trial of physical therapy. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Physical Therapy before Rotator Cuff Repair	Percentage of patients who underwent rotator cuff repair without a prior trial of physical therapy. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Nonoperative Care before Knee MRI for Knee Pain	Percentage of patients who underwent magnetic resonance imaging (MRI) for knee pain without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**
Nonoperative Care before Shoulder MRI for Shoulder Pain	Percentage of patients who underwent magnetic resonance imaging (MRI) for shoulder pain without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**

Measure	Description	Applicable Specialties
Nonoperative Care before Neck MRI for Neck Pain	Percentage of patients who underwent magnetic resonance imaging (MRI) for neck pain without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery, Internal Medicine, Family Medicine**
PT before Hip Arthroscopy	Percentage of patients who underwent hip arthroscopy without a prior trial of physical therapy. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Traditional Care before Neurostimulators	Percentage of patients who received neurostimulator implantation without a prior trial of nonoperative care or spine surgery. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Revision Slap Repair	Percentage of patients who underwent revision of superior labrum anterior posterior (SLAP) repair. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
SAD-Only Shoulder Surgery	Percentage of patients who underwent subacromial decompression (SAD) surgery without additional accompanying shoulder procedures. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Revision Rotator Cuff Repair	Percentage of patients who underwent revision rotator cuff repair. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Meniscectomy for Degenerative Meniscal Tears	Percentage of patients 55 years of age or older who underwent meniscectomy for degenerative meniscal tears. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**
Nonoperative Care before Meniscectomy	Percentage of patients 55 years of age or older who underwent meniscectomy for degenerative meniscal tears without a prior trial of nonoperative care. *Note: A lower rate indicates better performance.*	**Orthopedic Surgery**