Preliminary Comments Development Team (PCDT) Presentation:

# Developing and Implementing Performance Measures for Population-Based Total Cost of Care (PB-TCOC) Models

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# Objectives of This Theme-Based Meeting

- Discuss performance measurement objectives for PB-TCOC models
- Determine how best to measure the desired outcomes of PB-TCOC models
- Discuss issues related to developing performance measures for PB-TCOC models – such as identifying the appropriate number and types of measures, and incorporating health equity and patient experience
- Discuss approaches for linking performance measures with payment and financial incentives in PB-TCOC models

Note: PTAC is using the following working definition for PB-TCOC models: A PB-TCOC model is an Alternative Payment Models (APM) in which participating entities assume accountability for quality and TCOC and receive payments for all covered health care costs for a broadly defined population with varying health care needs during the course of a year (365 days).

# Context for This Theme-Based Meeting

- PTAC has received 35 proposals for physician-focused payment models (PFPMs).
- PTAC has deliberated on the extent to which 28 proposed PFPMs met the Secretary's 10 regulatory criteria.
  - **Nearly all of the proposals that have been submitted to PTAC included information about proposed performance measures to some degree.**
  - The Committee found that at least 16 of the proposed models met both Criterion 2 (Quality and Cost) and Criterion 4 (Value over Volume)*



*Please see Appendix E for additional information.

# Agenda

**Background**

Landscape of Current Performance Measures

Challenges Related to Developing and Implementing Measures

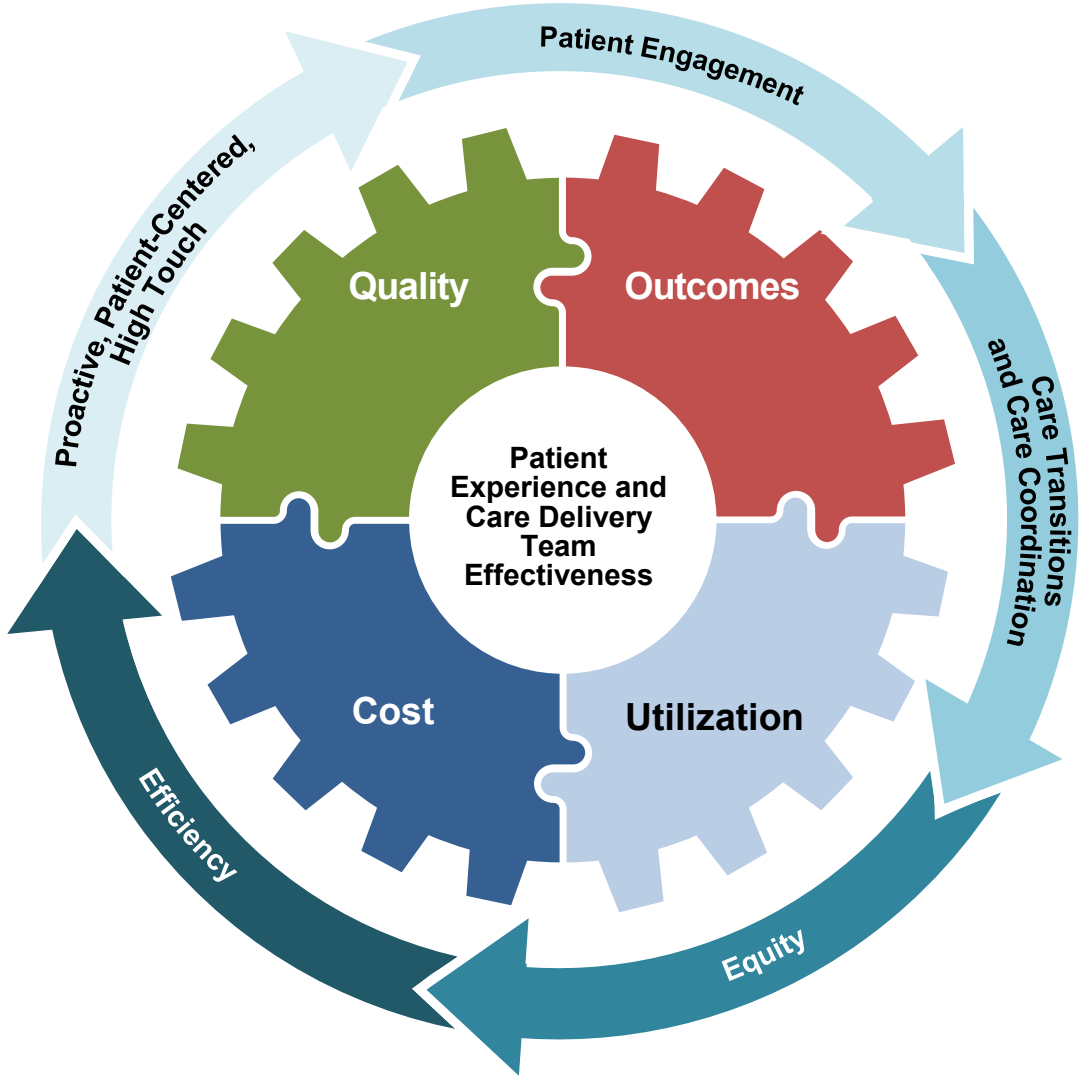
Challenges Related to Linking Measures to Payment

# PTAC's Working Definition of Performance Measures

- PTAC is using the following definition of performance measures:
  - Performance measures **assess and monitor all aspects of participants' performance in models** including quality (e.g., process and structure), outcomes, cost, and utilization.

Please see Appendix H for references.

# Relationship Between Guiding Principles and the Types of Performance Measures for PB-TCOC Models




**Quality**

- Patient Experience
- Timeliness of Access to Care
- Preventive Care Screening Rates
- Equity, HRSN and SDOH-Related Measures

**Outcomes**

- Mortality/ Morbidity Rates
- Chronic Condition Control Rates
- Health Status Outcomes
- Patient-Reported Outcomes

**Utilization**

- Inpatient vs Outpatient Services
- Avoidable Utilization

**Cost**

- Total Costs
- Disease-Based Costs

# Identifying Meaningful Performance Measures For PB-TCOC Models at Each Stage of the Patient's Care Journey – Example: Liver Disease

| | | Guiding Principles for PB-TCOC Models | | | | |
|---|---|---|---|---|---|---|
| **Patient Care Journey** | Condition | Proactive, Patient-Centered, High Touch | Patient Engagement | Care Transitions and Coordination | Equity | Efficiency |
| Health Maintenance | Elevated Liver Enzymes | Access to Preventative Screenings | Patient Understanding of Diagnosis | Timeliness of Consult | Screening Rates Across Populations | Lowered Alanine aminotransferase |
| Acute Exacerbation | Liver Failure | Proactive Monitoring | Advance Care Planning with Patient and Caretakers | Timely Access to Hepatologist | Treatment Rates Across Populations | Exacerbation Rate |
| Chronic Disease Maintenance | Liver Disease | Proactive Monitoring | Patient Satisfaction with Treatment | Sharing of Patient Data | Outcomes Across Populations | Ambulatory Sensitive Conditions |
| Palliative Care | End Stage Liver Disease | Touches with Care Team Members | Shared Decision-making | Successful Transition | Patient-Reported Comfort Across Populations | Reductions in Avoidable Hospitalizations |

Key: Quality | Outcomes | Utilization | Cost

# Agenda

Background

**Landscape of Current Performance Measures**

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Challenges Related to Linking Measures to Payment

# Process for Identifying Potential Performance Measures for PB-TCOC Models

# Overview of Current Performance Measures Used in Selected Medicare Payment Models and Programs

- An analysis of information in the CMS Measure Inventory Tool (CMIT) performance measure database for 24 Medicare pay-for-reporting and pay-for-performance models and programs found that:

- 618 current performance measures used by the 24 models/programs*
  - 375 measures (61%) are unique to a single model/program
  - 366 measures (59%) are not endorsed by the CMS consensus-based entity (CBE)

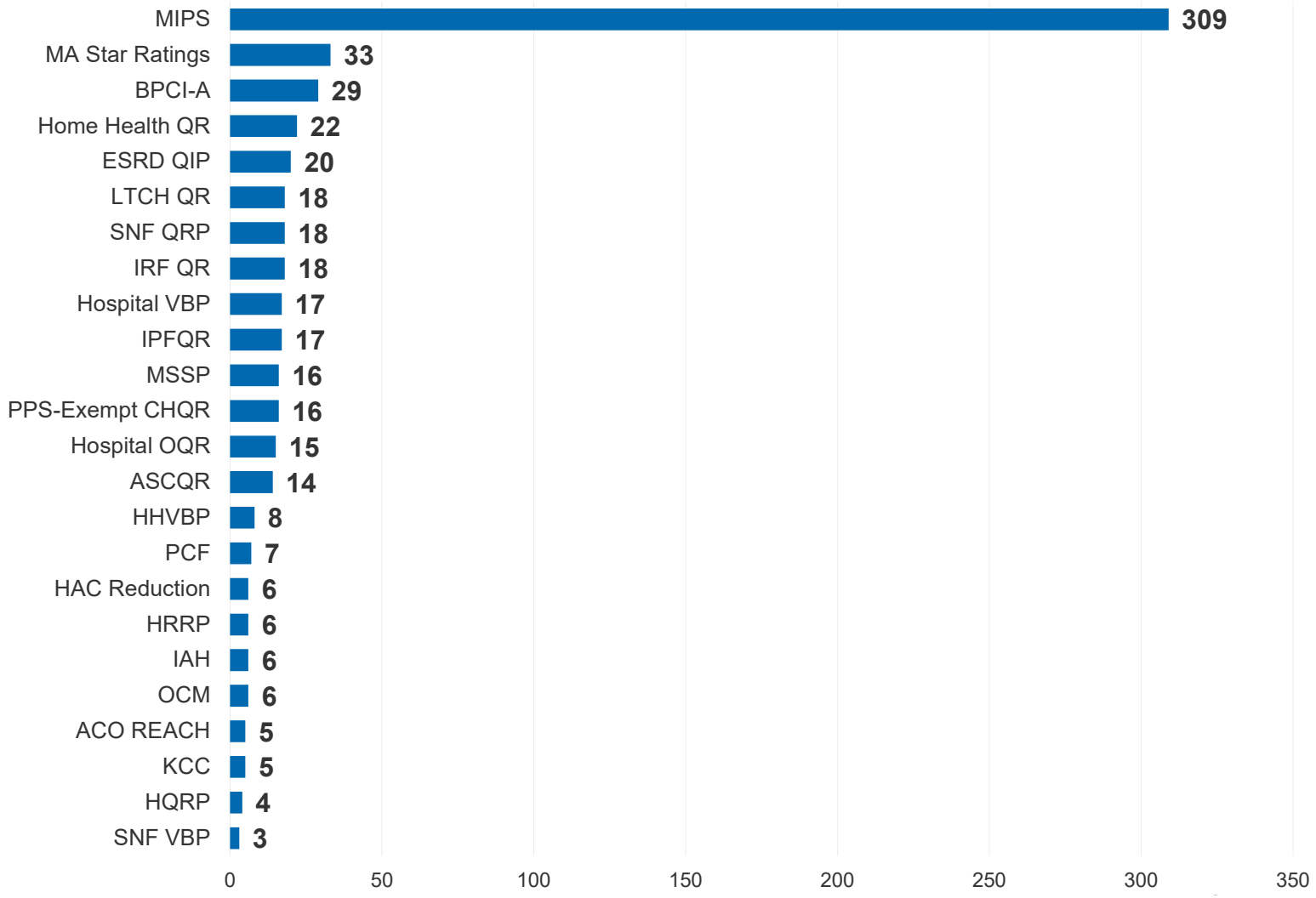
See Appendix A for a list of the programs and models that were included in the analysis.

* Current performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023. Source: CMIT database

# Current Number of Performance Measures Used in 24 Selected Medicare Programs and Models

MIPS (309 measures*) accounts for half of the 618 current measures in these programs and models.

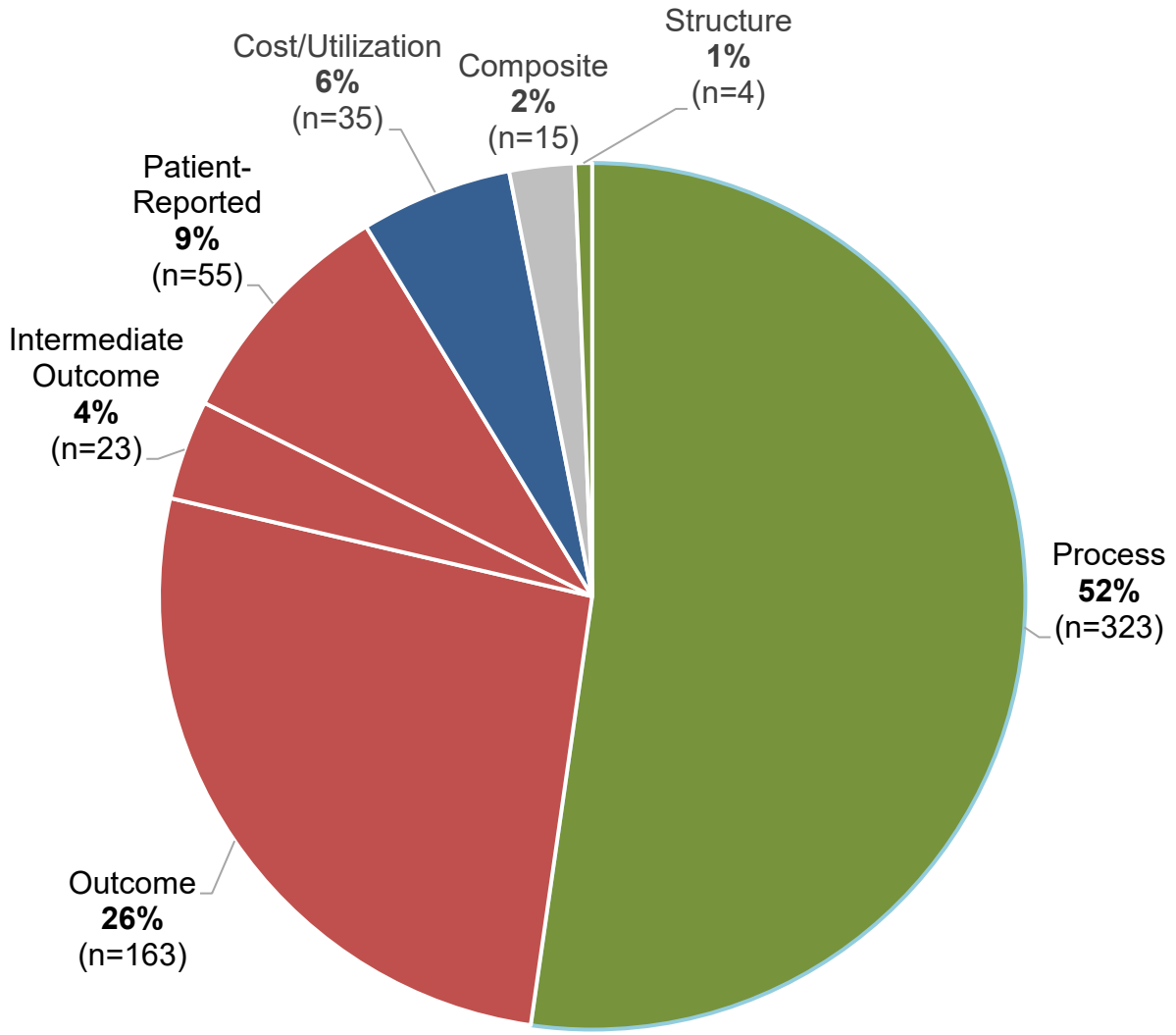
The number of current measures included in the other 23 programs/models ranges from 3-33.




* For MIPS, providers select at least six measures from a pool of 309 possible measures.
Note: Current performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023. Further, the Oncology Care Model (OCM) is an inactive model; the six measures tied to the OCM are inactive measures.

# Distribution of Current Performance Measures Used in 24 Medicare Programs and Models By Measure Type

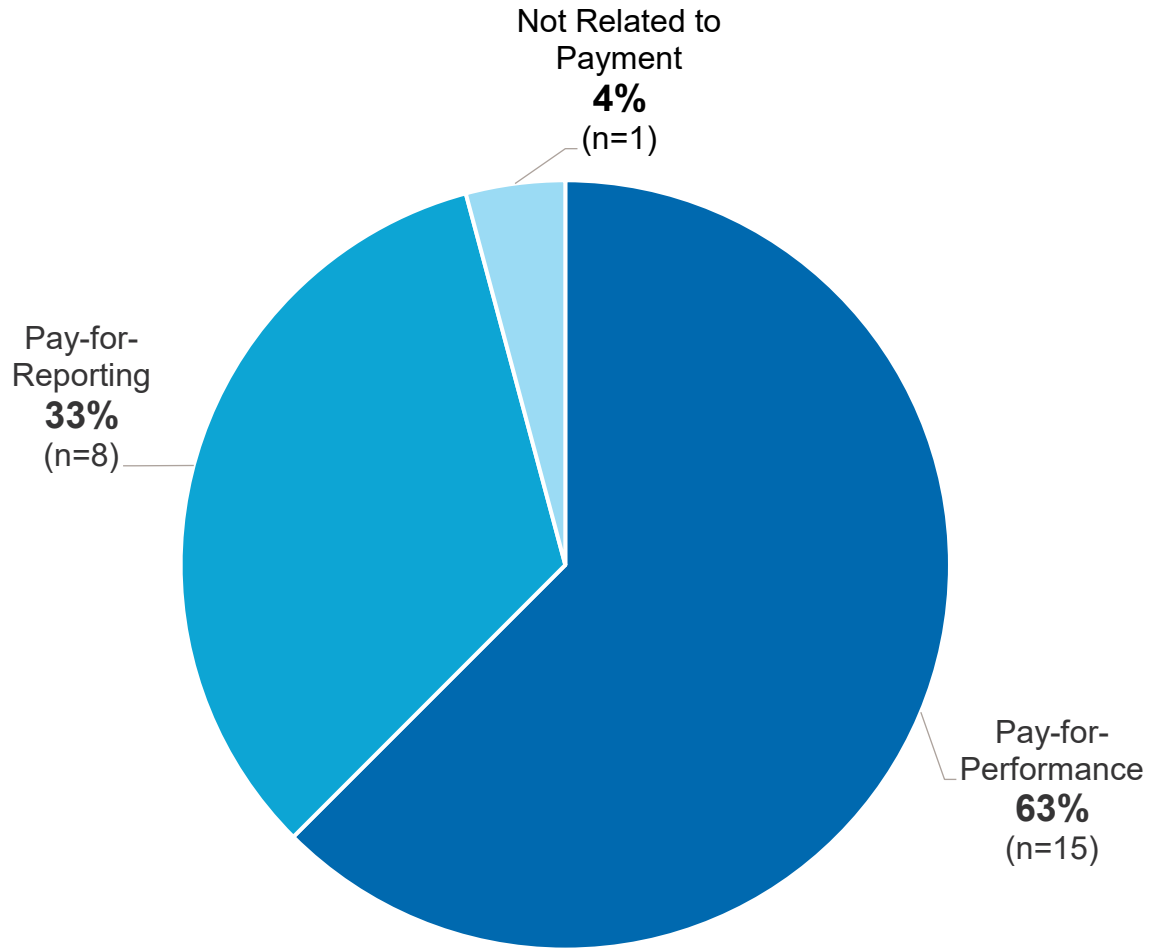
- CMS Measures Inventory Tool (CMIT) includes 7 types of performance measures:
  - **Quality**
    - Structure
    - Process
  - **Outcomes**
    - Intermediate outcome
    - Patient-reported outcome
    - Outcome
  - **Utilization & Cost**
    - Cost/utilization
    - Composite measures
- About half (52%) of the 618 existing performance measures are process measures.




Note: Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023.

# Distribution of How the 24 Programs/Models Tie Performance to Payment

- 2/3 of the 24 programs/models included in the analysis use pay-for-performance to tie quality to payment.
  - **Pay-for-Performance:** Payment is dependent on providers' performance compared with established benchmarks (63% of the selected programs/models, *n* = 15)
  - **Pay-for-Reporting:** Payment is dependent on whether providers are reporting performance measure data (33% of the selected programs/models, *n* = 8)
  - **Not related to payment** (4% of the selected programs/models, *n* = 1)



# Performance Measures and Financial Risk Across Selected Medicare Programs and Models

- There is no clear association between the number of performance measures and the percentage of financial risk across the 24 Medicare programs/models that were analyzed

| Medicare Program/Model | Number of Measures | Financial Risk Arrangement |
|---|---|---|
| Merit-Based Incentive Payment System (MIPS) | 6 measures* | Positive risk adjustment depending on the amount of funds CMS determines are available and a negative adjustment of up to 9% |
| Accountable Care Organization Realizing Equity, Access, and Community Health (ACO REACH) | 5 measures | Full (100%) financial risk arrangement option (upside and downside) |
| Bundled Payment for Care Improvement Advanced Model (BPCI-A) | 29 measures | Uses target prices and reconciliation to determine whether participants receive an additional reconciliation payment or repayment to CMS as well as up to 10% payment adjustment based on the composite quality score |



* For MIPS, providers select at least six measures from a pool of 309 possible measures.

# Examples of Linking Different Types of Performance Measures with Financial Incentives

| Measure Type | Focus / Relevance | Metric Example | What are Financial Incentives Based On? | P4P Model Example |
|---|---|---|---|---|
| **Quality (Process)** | Steps a provider takes to maintain or improve and coordinate health care | Advance care plan | Providers increasing the proportion of patients th at have a documented treatment plan | e.g., BCPI-A, part of composite quality score, payment adjustment up to 10% |
| **Outcomes** | Service or intervention's impact on patients' health status | Unplanned cardiovascular-related admission rates for patients with hear failure | Providers reducing the proportion of patients admitted for heart failure | e.g., MIPS, maximum of 10 points for a given measure, receive a combined score based on 6 measures, payment adjustment from 0-9% |

# Examples of Linking Different Types of Performance Measures with Financial Incentives, Continued

| Measure Type | Focus / Relevance | Metric Example | What are Financial Incentives Based On? | P4P Model Example |
|---|---|---|---|---|
| **Utilization** | Use of a single or a group of services | Acute care hospitalization during the first 60 days of home health | Providers reducing the number of inpatient stays | e.g., HHVBP, part of a total performance score, payment adjustment of 3%, 5%, 6%, or 7% based on score |
| **Cost** | Cost of health services for a population or event | Total spending for Medicare Parts A and B | Providers lowering Medicare patients' total cost of care | e.g., IAH, part of a total score based on 6 measures, eligible to receive 50% , 66.7%, 88.3% or 100% of shared savings for meeting performance requirements on 3, 4, 5, or all 6 measures, respectively |

# Agenda

Background

Landscape of Current Performance Measures

**Challenges Related to Developing and Implementing Measures**

Challenges Related to Linking Measures to Payment

# Challenges Related to Developing and Implementing Performance Measures

| | |
|---|---|
| **Meaningful measures** | • Ensuring measures are clinically meaningful to patients (e.g., improve functional status) and clinically relevant to providers (e.g., inform referral decisions)<br>• Determine measures that enhance value-based care |
| **Measure development process** | • Identifying approaches that are less cumbersome, costly, and slow |
| **Administrative feasibility** | • Ensuring measures can be implemented with minimal administrative burden on physicians and staff<br>• Optimizing consistency of measures across models/program |
| **Data collection infrastructure** | • Ensuring coordination with EHR vendors |
| **Availability and timeliness** of performance data | • Ensuring more real time data capture and ready access by providers |

Please see Appendix H for references.

# Meaningful Measures

- There is little evidence that public reporting of measures is linked to improved overall quality of care in the United States.
  - Public reporting of process measures for CMS' Hospital Compare program has had little impact on risk-adjusted mortality from heart attack, heart failure, and pneumonia. (e.g., heart attack risk-adjusted mortality percentage for 2018-2019 was 12.3%; for 2020-2021 it was 12.9%).
- Provider scores on performance measures are not necessarily associated with patient health outcomes
  - In MIPS, nearly one in five PCPs in 2019 received low performance measure scores although their health-related outcome scores were high
- Patient-Reported Outcome Measures (PROMs) are a promising approach to measure patient symptoms and health status
  - PROMs could help address gaps in feasibility, relevance to patients, and clinical relevance of population-based performance measures.

Please see Appendix H for references.

# Measure Development Process

- Development of new measures involves multiple steps that can take **up to 5-6 years** to complete:
  - Conducting research
  - Defining measurement concepts and specifications
  - Collecting data to pilot test measures
  - Conducting data validation
  - Completing the endorsement process
- Additional time and resources are required to adapt measures for use in value-based care programs
  - A 2021 GAO report showed that a stakeholder group worked with CMS for three years to convert seven pathology-specific registry measures for use in MIPS

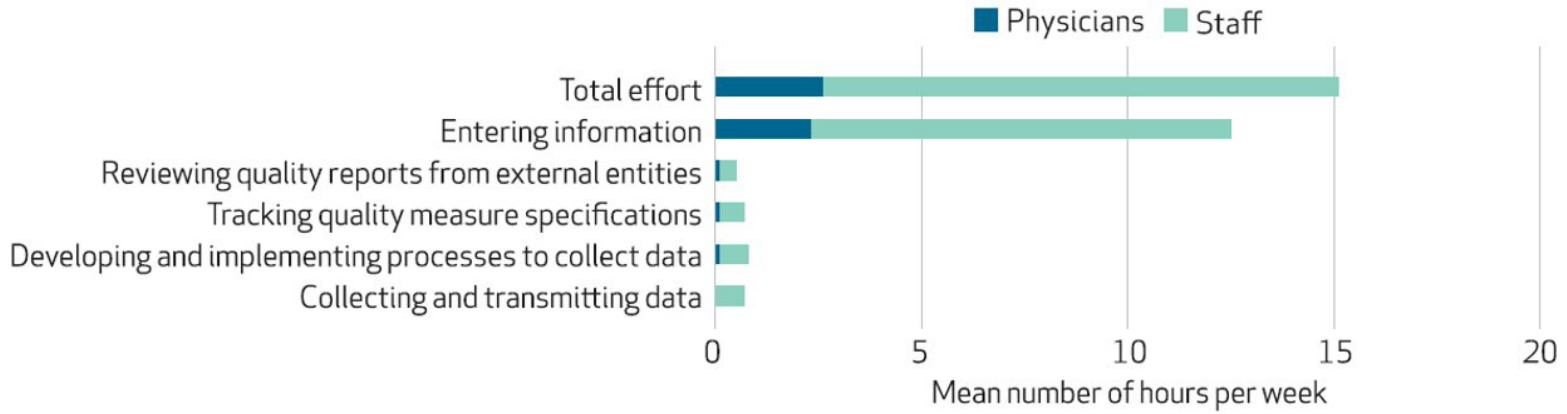
Please see Appendix H for references.

# Administrative Feasibility: Provider Burden

- Quality reporting places substantial administrative burden on physicians and staff.
  - Physicians and staff spent approximately **785.2 hours per physician annually** managing quality measures.
  - The greatest amount of time was spent on "entering information into the medical record only for the purpose of reporting for quality measures from external entities".
  - Total time coordinating and managing quality measures translated to an average annual cost of **$40,069 per physician**.

**EXHIBIT 1**

**Hours spent per physician per week dealing with external quality measures, 2014**




**SOURCE** Authors' analysis of responses to web-based survey of physician practices conducted for this research.

Please see Appendix H for references.

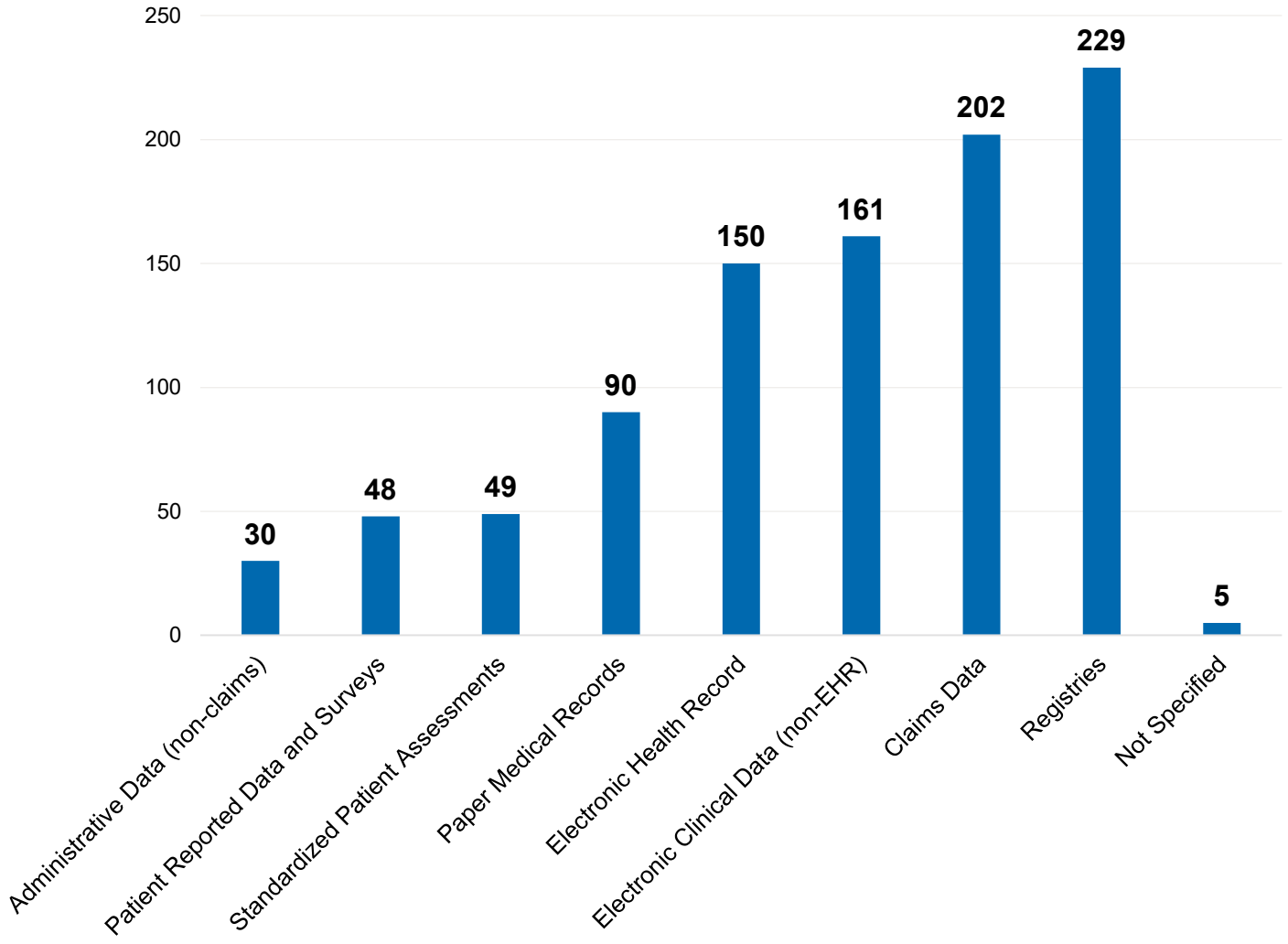
# Administrative Feasibility: Measure Consistency Across Programs

- In a national survey of physician practices, **46% of practice leaders reported that working with measures that were similar but not identical was a significant burden** and recommended addressing this challenge by using measures that are uniform across entities.
- The analysis of CMS Measures Inventory Tool (CMIT) data for 24 models/programs found that **26% of current performance measures are used by more than one program or model**, and may have different numerators, denominators, or denominator exclusions.

| Measure | Program/Model | Differences in Measure |
|---|---|---|
| **Colorectal Screening (Measure ID: 139)** | Medicare Advantage (MA) Star Ratings Program; Medicare Shared Savings Program (MSSP); Merit-Based Incentive Payment System (MIPS); Primary Care First (PCF) Model | MIPS uses a denominator that includes patients 50-75 years of age while the three other programs/models use a denominator that includes patients 45-75 years of age. |
| **Controlling Blood Pressure (Measure ID: 167)** | MSSP; MIPS; PCF | PCF differs in its denominator exclusion criteria from the other two programs: its denominator excludes pregnant women and does not exclude patients 81 years of age or older with an indication of frailty beyond those with advanced illness. |

# Data Collection Infrastructure

- The analysis of CMIT data for 24 models/programs found that **54% of current performance measures are from electronic sources**, including:
  - Claims data (21%)
  - EHR data (16%)
  - Non-EHR electronic clinical data (17%)
- **40% of current performance measures use multiple data sources**




Note: Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023. Because many measures use multiple data sources, there are a total of 964 data sources represented in the graph.

# Availability and Timeliness of Performance Data

- A single, available administrative database may provide insufficient data for providers to calculate reliable performance measures; the availability of multiple databases may be needed for aggregation
  - Almost 40% of current performance measures use more than one source (analysis of data in the CMS Measures Inventory Tool)
- It typically takes 5-6 months after the health care event to finalize Medicare administrative claims data, with updates continuing to be made beyond 12 months
- Utilization and cost data from the Healthcare Cost and Utilization Project (HCUP) is available approximately 18 months after the end of the year

Please see Appendix H for references.

# Agenda

Background

Landscape of Current Performance Measures

Challenges Related to Developing and Implementing Measures

**Challenges Related to Linking Measures to Payment**

# Challenges Related to Linking Performance Measures to Provider Payment

| | |
|---|---|
| **Meaningful incentives** for improvement | • Creating meaningful financial incentives for improvement that incentivize care that is high value and evidence based<br>• Ensuring timeliness in providing financial incentives to providers |
| **Ensuring equitable outcomes** | • Ensuring outcomes are equitable across patient subpopulations |
| **Preventing unintended consequences** | • Eliminating unintended consequences created by inclusion of financial incentives<br>• Identifying safety balancing measures |
| **Risk adjustment** | • Identifying clinically meaningful ways to risk adjust |
| **Benchmarking** | • Incentivizing participation and performance improvement |

Please see Appendix H for references.

# Meaningful Incentives for Improvement

- Characteristics of financial incentives that produce an impact on performance
  - **Pay for performance (P4P)** incentives can induce change in performance
    - In one study, clinics with P4P incentives increased the rate of recommendations for medications to prevent clotting to 12% compared with 6% for clinics without P4P
  - **Larger incentives** may have greater impact
    - P4P programs with over 5% of a salary or usual budget tied to performance measures had three times the effect of programs with smaller incentives
  - **More timely incentives** may have greater impact
    - Physicians significantly preferred a P4P payment bonus made every 6 months compared to an annual payment
  - **Financial penalties** may be more impactful than rewards
    - An analysis of studies examining the impact of P4P programs on surgical care found positive effects for programs that used penalties versus little to no positive effect for P4P programs that used rewards



Please see Appendix H for references.

# Ensuring Equitable Outcomes

- P4P programs may disproportionately penalize providers that serve lower SES or minority patients, thereby reducing resources and widening disparities
  - E.g., safety net hospitals were disproportionately penalized in CMS's Value-Based Purchasing (VBP) and Hospital Readmissions Reduction Program (HRRP)
  - HRRP introduced stratified benchmarks in 2019 to improve equity, which by 2022 resulted in reduced performance penalties for hospital treating larger proportions of minority patients
- Opportunities to reduce disparities in P4P programs include:
  - Risk adjustment and stratification
  - Exception reporting
  - Pay-for-improvement

Please see Appendix H for references.

# Prevention of Unintended Consequences

- P4P programs may evoke unintended consequences, such as:
  - Decreased focus on individual patient concerns and promotion of inappropriate care ("measure fixation")
  - Diversion of focus away from important areas of clinical care that are not subject to P4P incentives ("gaming the system")
  - Avoidance in treating disadvantaged, underserved, or high-cost patients ("patient dumping")



Please see Appendix H for references.

# Risk Adjustment

- Importance of using risk adjustment methods to account for underlying differences in patient populations (e.g., clinical conditions, practice size, geographic area)
  - 12 of 14 selected CMMI models* (86%) use a risk-adjustment methodology
    - Four (29%) apply CMS hierarchical condition categories (HCC) risk scores; the remaining eight (71%) use different risk stratification / risk adjustment methods
- Opportunity to risk adjust based on social risk data:
  - Use of a measure such as the Area Deprivation Index (ADI), or self-reported data on health and social needs via survey to create measures of individual risk
  - The ACO REACH Model uses the ADI in the calculation of health equity benchmarks

* Analysis based on 14 CMMI models that include at least one quality measure and one spending and/or utilization measure, and that was active within the last 5 years.

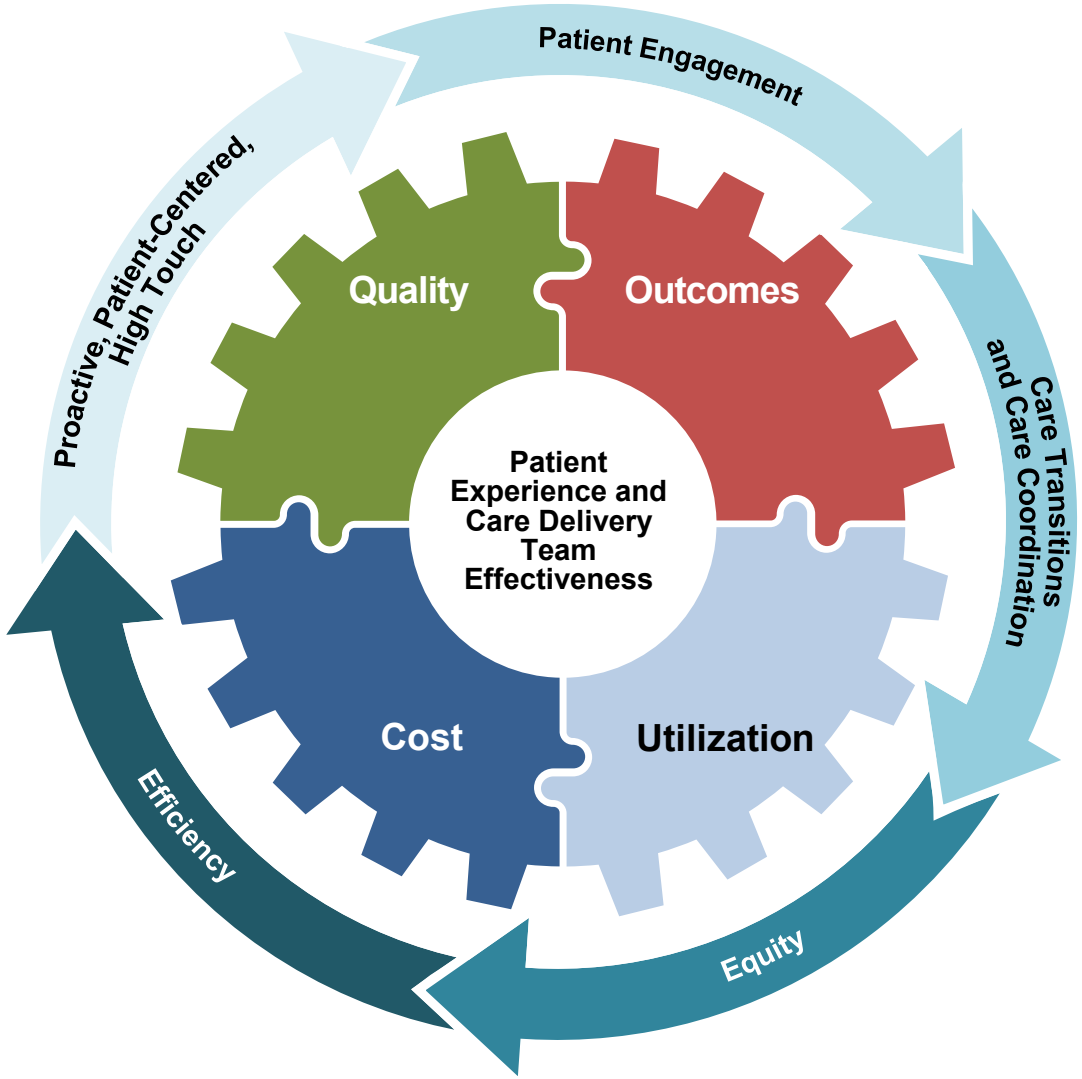
# Benchmarking

- National benchmarks do not account for geographic differences in patient populations and may unfairly penalize certain types of providers (e.g., rural)
  - Based on analysis of 14 selected CMMI models*, 43% use benchmarks based on national data rather than regional, local, or provider historical performance data
- Incentive payments may have different impacts depending upon the nature of the benchmark used
  - Absolute thresholds: consistent and transparent for all providers, but may not promote improvement for providers that already meet those thresholds
  - Relative thresholds: promote continuous improvement, but may reduce collaboration and retain performance gaps across providers
    - 12 of 14 selected CMMI models* (86%) include incentives for continuous improvement



* Analysis based on 14 CMMI models that include at least one quality measure and one spending and/or utilization measure, and that was active within the last 5 years.

# Relationship Between Guiding Principles and the Types of Performance Measures for PB-TCOC Models




**Quality**

- Patient Experience
- Timeliness of Access to Care
- Preventive Care Screening Rates
- Equity, HRSN and SDOH-Related Measures

**Outcomes**

- Mortality/ Morbidity Rates
- Chronic Condition Control Rates
- Health Status Outcomes
- Patient-Reported Outcomes

**Utilization**

- Inpatient vs Outpatient Services
- Avoidable Utilization

**Cost**

- Total Costs
- Disease-Based Costs

# PTAC Public Meeting Focus Areas

- Developing Objectives for Performance Measurement for PB-TCOC Models
- What Do We Want to Measure in PB-TCOC Models, and How?
- Issues Related to Selecting and Designing Measures for PB-TCOC Models
- Best Practices to Measure Spending and Quality Outcomes in PB-TCOC Models
- Linking Performance Measures with Payment and Financial Incentives

# Appendix A
# Additional Information From Analysis of Performance Measures in 24 Selected Medicare Programs and Models

# 24 Medicare Programs and CMMI Models Included in the Analysis of Current Performance Measures

- Accountable Care Organization (ACO) Realizing Equity, Access, and Community Health (REACH)
- Ambulatory Surgical Center (ASC) QRP
- Bundled Payment for Care Improvement Advanced (BPCI-A)
- End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP)
- Home Health VBP (HHVBP)
- Hospice Quality Reporting Program (HQRP)
- Hospital Acquired Conditions (HAC) Reduction
- Hospital Outpatient Quality Reporting (OQR)
- Hospital Readmission Reduction Program (HRRP)
- Hospital Value-Based Purchasing (VBP)
- Independence at Home (IAH) Demonstration
- Inpatient Psychiatric Facility (IPF) QRP
- Inpatient Rehabilitation Facility (IRF) QRP
- Kidney Care Choices (KCC)
- Long-Term Care Hospital (LTCH) Quality Reporting Program (QRP)
- Medicare Advantage (MA) Star Ratings
- Medicare Shared Savings Program (MSSP)
- Merit-Based Incentive Payment System (MIPS)
- Oncology Care Model (OCM)
- Primary Care First (PCF)
- Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting (CHQR)
- Skilled Nursing Facility (SNF) VBP
- Skilled Nursing Facility Quality Reporting Program

# Top 8 Performance Measures for 24 Selected Medicare Programs/Models

- The top 8 performance measures used most frequently across the 24 programs/models include 4 outcome measures, 3 process measures, and 1 cost/resource use measure.
- The most common measure used is COVID-19 Vaccination Coverage Among Healthcare Personnel (measure ID: 180), which is used in 8 of the programs/models.

| Measure ID | Measure Name | Measure Type | Number of Programs/ Models | Included Programs |
|---|---|---|---|---|
| 180 | COVID-19 Vaccination Coverage Among Healthcare Personnel | Process | 8 | LTCH QRP; PPS-Exempt CHQR; ASCQR; ESRD QIP; Hospital OQR; IPF QR; IRF QR; SNF QRP |
| 434 | Medicare Spending Per Beneficiary (MSPB) | Cost/ Resource Use | 6 | Hospital VBP; IRF QR; MIPS; LTCH QRP; SNF QRP; Home Health QR |
| 210 | Discharge to Community-Post Acute Care (PAC) | Outcome | 6 | Home Health VBP; Home Health QR; IRF QR; LTCH QR; SNF QRP; SNF VBP |
| 462 | National Health Safety Network (NHSN) Facility-Wide Inpatient Hospital-Onset Clostridium Difficile Infection (CDI) Outcome Measure | Outcome | 5 | HAC Reduction; Hospital VBP; IRF QR; LTCH QRP; PPS-Exempt CHQR |
| 459 | NHSN Catheter-Associated Urinary Tract Infection (UTI) Outcome Measure | Outcome | 5 | HAC Reduction; Hospital VBP; IRF QR; LTC QRP; PPS-Exempt CHQR |
| 356 | Hospital-Wide All-Cause Unplanned Readmission Measure (HWR) | Outcome | 5 | IAH Demonstration; ACO REACH; BPCI-A; MSSP; MIPS |
| 727 | Transfer of Health Information to the Patient Post-Acute Care (PAC) | Process | 5 | Home Health QR; LTCH QR; SNF QRP; IRF QR; IPF QR |
| 728 | Transfer of Health Information to the Provider PAC | Process | 5 | Home Health QR; LTCH QR; SNF QRP; IRF QR; IPF QR |

Please see Appendix H for references.
Batelle's Partnership for Quality Measurement (PQM) currently serves as the CMS CBE.
Note: Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023.

# Areas of Overlap in Existing Performance Measures Used in 24 Selected Medicare Programs and Models

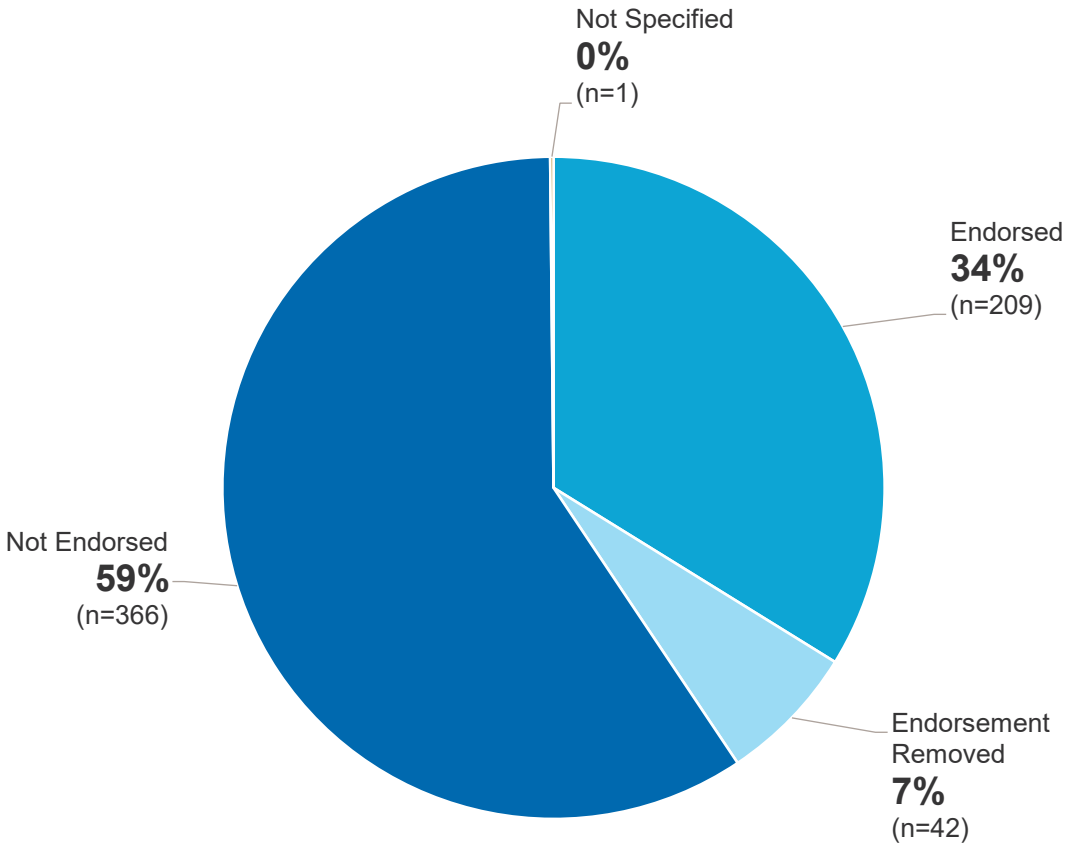
- The table below provides a summary of distinct measures focused on similar aspects of care. These groupings roll up many measures into high-level categories (e.g., screening measures include all types of screening, such as breast cancer screening and colorectal screening).

| Performance Measure Grouping | Number of Performance Measures | Percentage of Performance Measures (*N* = 455) |
|---|---|---|
| **Screening Measures** | 31 | 6.8% |
| **Therapy-Related Measures for Certain Chronic Conditions** | 29 | 6.4% |
| **Medication-Related Measures** | 21 | 4.6% |
| **Measures Related to Number/Rate of Admissions/Visits** | 20 | 4.4% |
| **Follow-up-Related Measures** | 15 | 3.3% |
| **Measures Related to Readmissions** | 14 | 3.1% |
| **Surgery-Related Measures** | 13 | 2.9% |
| **Immunization-Related Measures** | 12 | 2.6% |
| **Pain-Related Measures** | 11 | 2.4% |
| **Measures Related to Infections** | 10 | 2.2% |
| **Cost of Care Measures** | 7 | 1.5% |
| **Measures Related to Mortality Rates** | 6 | 1.3% |
| **Measures Related to Care Coordination** | 4 | 0.9% |

Note: These groupings do not capture all performance measures but offer a look at common measures used among these 24 Medicare programs and models. Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023.

# Distribution of Performance Measures by Endorsement Status for 24 Selected Medicare Programs and Models

- Distribution of the 618 total existing measures used in the 24 Medicare programs and models by CMS Consensus Based Entity (CBE) endorsements (approximate):
  - 34% (*n* = 209) are endorsed
  - 59% (*n* = 366) are not endorsed
  - 7% (*n* = 42) were removed

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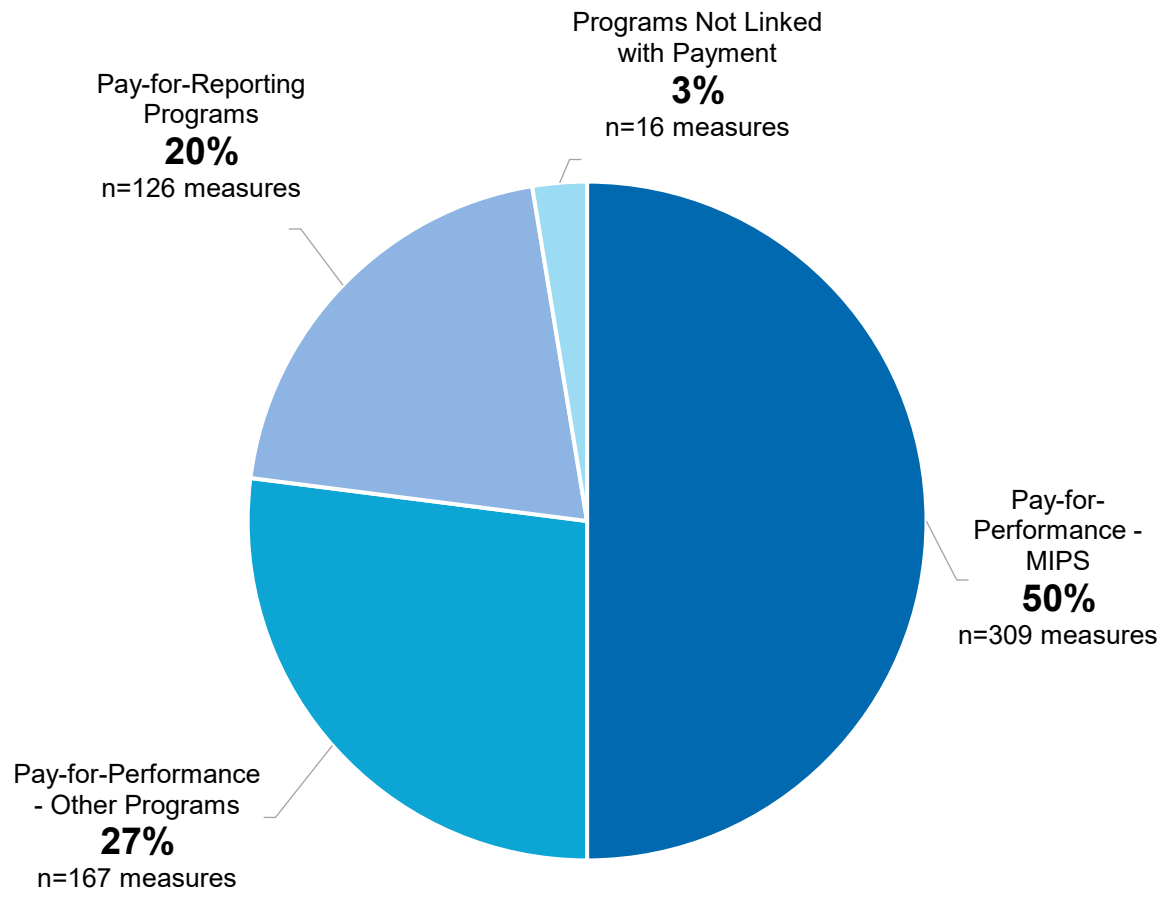
Note: Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023.

# Distribution of Performance Measures Based on How the 24 Selected Programs are Linked with Payment

- The analysis examined the distribution of the 618 performance measures based on how the corresponding programs/models are linked with payment:*
  - **77% of the measures correspond with the 15 pay-for performance programs/models** (50% with MIPS and 27% with the other 14 pay-for performance programs).
  - **20% of the measures correspond with the 8 pay-for-reporting programs**.
  - **3% of the measures correspond with the 1 program that is not linked with payment**.




* Limitations of this analysis: 1) Not all measures for a given program/model are necessarily tied to payment or required to be reported (e.g., some programs/models have many measures from which providers choose a set of measures). 2) Measure-specific requirements can change frequently. 3) Measures may be used differently in different programs/models.

Note: Performance measures include active, in-development, pending, and suspended measures listed in the CMIT as of October 2023.

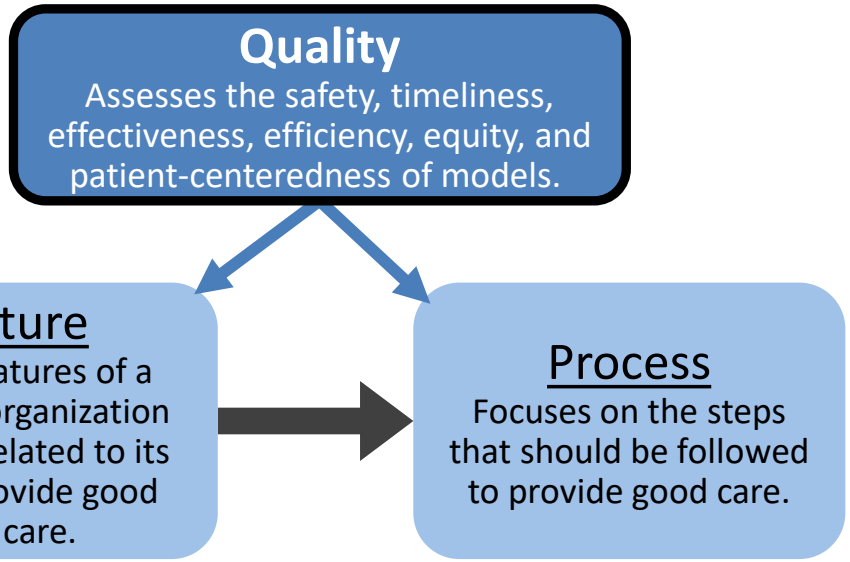
# Appendix B:
# Additional Background on Identifying Potential Performance Measures for PB-TCOC Models

# Goals of and Criteria for Performance Measurement in PB-TCOC Models

| Goals of Performance Measurement | Criteria for Identifying Appropriate Performance Measures |
|---|---|
| • Identify opportunities to improve health care and reduce avoidable health care expenditures<br>• "Create a system that promotes the best clinical standards and ensures the highest quality of patient care through transparency, accountability, and credibility" (Tooker, 2005) | • **Relevance** to measuring desired performance characteristics for PB-TCOC models<br>• Easily **linkable with payment and financial incentives**<br>• **Meaningful to providers** for improving care delivery<br>• **Meaningful to beneficiaries** for making choices<br>• **Implementability** – can be collected accurately at the provider level<br>• **Evidence base** demonstrating link with desired outcomes<br>• **Administrative Burden –** potential to utilize, modify, or combine existing performance measures |

Please see Appendix H for references.

# Types of Quality Measures




*Examples:*

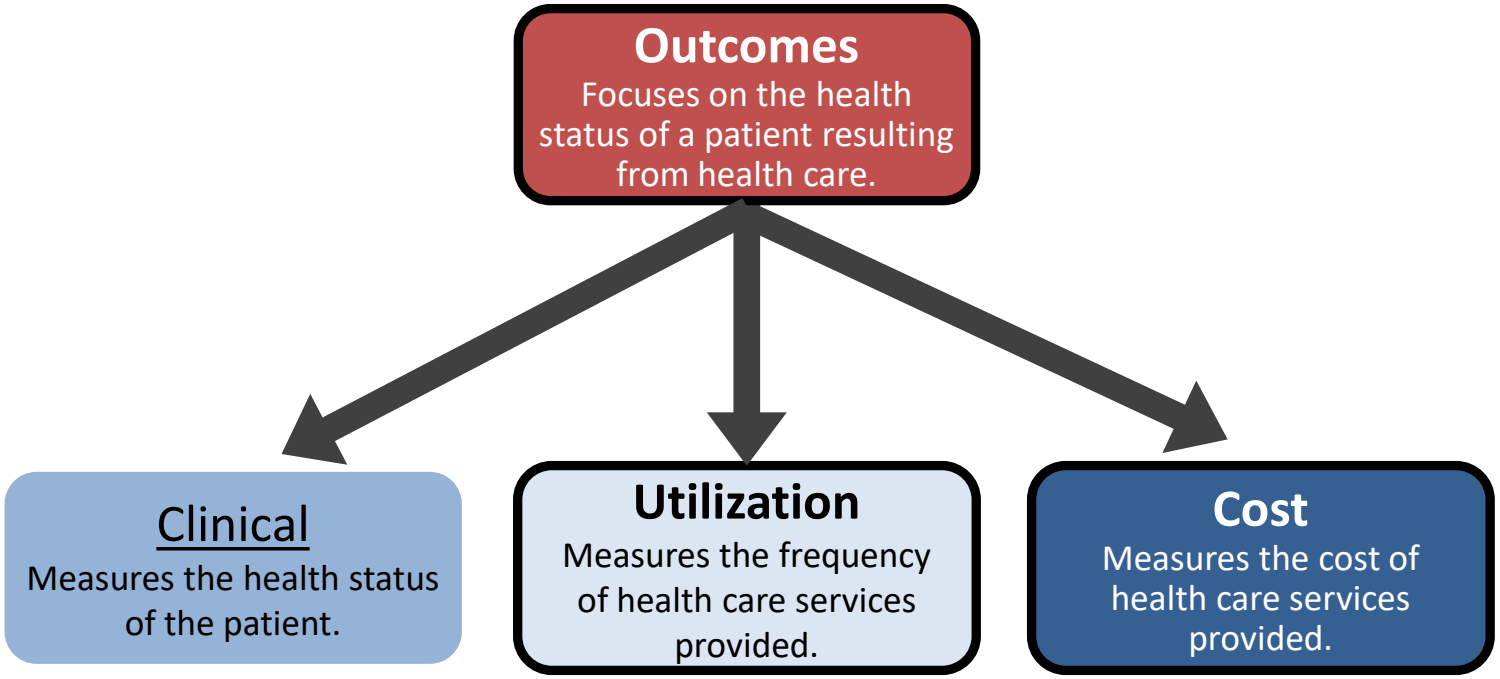
- Practice-level Health Screening Rate
- Continuity of Care Recall System
- Patients Left Without Being Seen

*Examples:*

- Advance Care Plan
- Adult Immunization Status
- Osteoporosis Management in Women Who Had a Fracture
- Patient-Reported Experience Measures (PREMs)
  - Patient Satisfaction with Care
  - Patient Interactions with Providers and Staff

Please see Appendix H for references.

# Types of Outcomes Measures




*Examples:*
- Patient HbA1c Level
- Influenza Rates
- Patient-Reported Outcome Measures (PROMs)
  - Patient-Reported Overall Physical Health Following Chemotherapy

*Examples:*
- Unplanned Readmissions for Cancer Patients

*Examples:*
- Total per Capita Cost
- Asthma/Chronic Obstructive Pulmonary Disease (COPD) Episode-Based Cost

Please see Appendix H for references.

# Process Measures Can Lead to Successful Outcomes

- Process measures can be sensitive indicators of quality of care and help to identify health care deficiencies
- Process measures can be readily measured and easily interpreted
- Process measures can lead to successful outcomes
  - E.g., regular mammogram screening in women 40 years and older reduces breast cancer mortality.

**Table 1 Health care deficiencies identified by process measures**

| |
|---|
| *Actions not taken* |
| Diagnosis delayed |
| Necessary investigations not made |
| Indicated treatment not given |
| Treatment not being adhered to |
| |
| *Inappropriate actions taken* |
| Wrong diagnosis |
| Inappropriate investigations requested |
| Inappropriate treatment given |

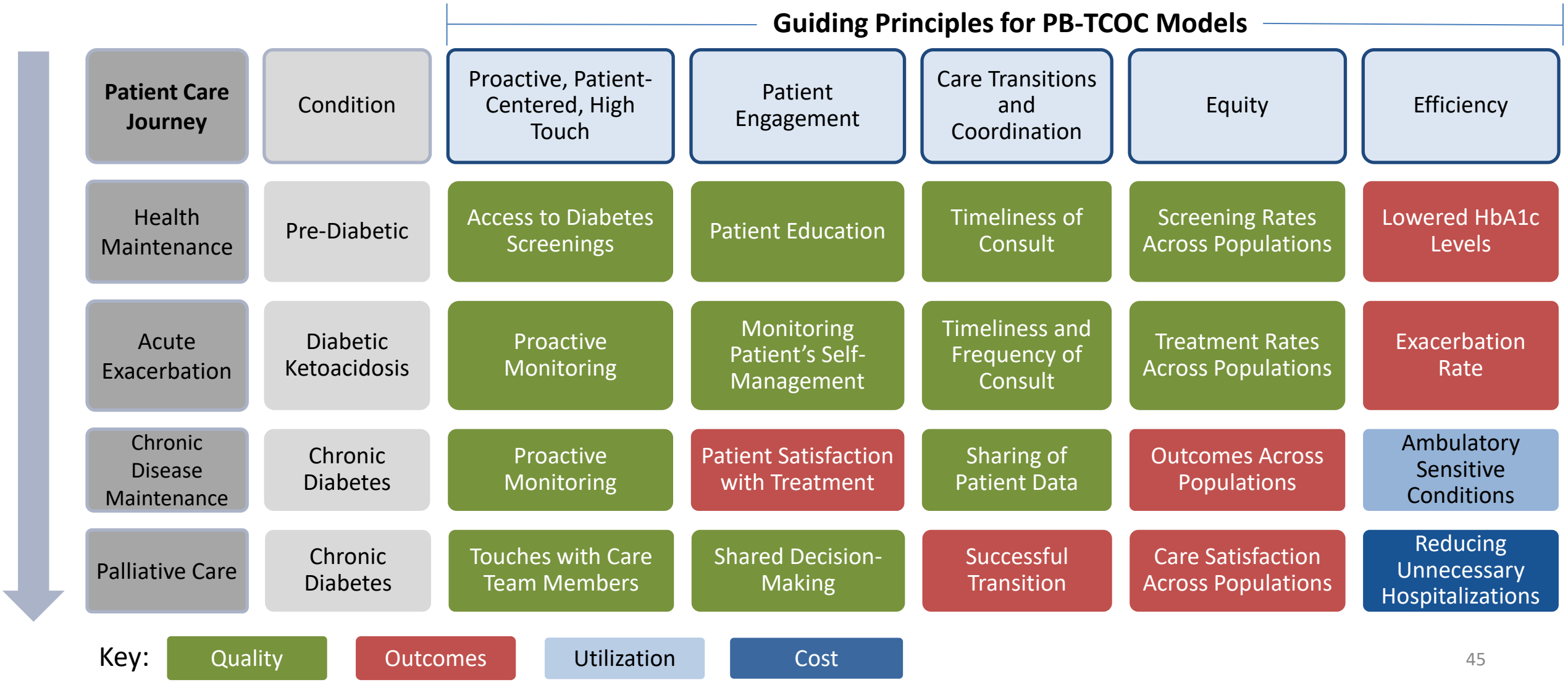
Please see Appendix H for references.

# Identifying Meaningful Performance Measures for PB-TCOC Models at Each Stage of the Patient's Care Journey – Example: Chronic Heart Failure

| | | Guiding Principles for PB-TCOC Models | | | | |
|---|---|---|---|---|---|---|
| **Patient Care Journey** | Condition | Proactive, Patient-Centered, High Touch | Patient Engagement | Care Transitions and Coordination | Equity | Efficiency |
| Health Maintenance | Elevated Blood Pressure | Proactive Monitoring | Developing a Care Plan with Patient | Timeliness of Consult | Screening Rates Across Populations | Exacerbation Rate |
| Acute Exacerbation | CHF Exacerbation (Stages A and B) | Proactive Monitoring | Patient Education on Self-Management | Timeliness and Frequency of Consult | Treatment Rates Across Populations | Exacerbation Rate |
| Chronic Disease Maintenance | CHF Stages C and D | Proactive Monitoring | Patient Satisfaction with Treatment | Sharing of Patient Data | Outcomes Across Populations | Ambulatory Sensitive Conditions |
| Palliative Care | CHF Stage D | Touches with Care Team Members | Shared Decision-making | Successful Transition | Care Satisfaction Rates Across Populations | Reductions in Inpatient Stays |

Key: Quality | Outcomes | Utilization | Cost

# Identifying Meaningful Performance Measures for PB-TCOC Models at Each Stage of the Patient's Care Journey – Example: Diabetes

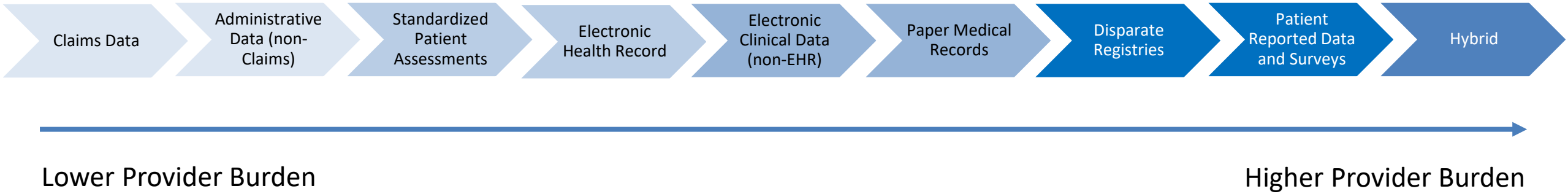


# Performance Measure Data Sources

| Data Source | Definition | Examples |
|---|---|---|
| Administrative data | Different types of information originally collected for administrative purposes. | Individual-level demographics obtained from eligibility or enrollment information; crime reports; census information; tax records |
| Claims data | Health care reimbursement and payment information from claims or providers' billing systems. | Admission and discharge dates; diagnoses; procedures; source of care |
| Disparate registries | A collection of clinical data used to assess clinical performance quality of care. Registries can be part of regional or national systems operating across clinicians or institutions. | Chest Pain – MI Registry™; Society of Thoracic Surgeons™ National Database; Paul Coverdell National Acute Stroke Registry |
| Electronic clinical data | Individual-level information that can be extracted or pushed into an electronic format. | Bedside vital sign data can be directly pushed to the EHR; personal health device data may be uploaded to the EHR |
| Paper medical records | A traditional paper source of clinical data for measures. | Clinical laboratory; imaging services; personal health records; pharmacy |
| Electronic health record | A digital source for measures rather than the traditional paper source of clinical data. | Clinical laboratory; imaging services; personal health records; pharmacy |
| Patient reported data and surveys | Surveys, questionnaires, and assessments completed by patients. Surveys collect concepts such as individuals' experiences; patient-reported outcomes include individuals' perspectives on their health, quality of life, and functional status. | Consumer Assessment of Healthcare Providers and Systems® surveys; pain assessments; quality of life indices |
| Standardized patient assessments | Data elements from health assessment instruments and question sets are used by CMS to provide the information needed to develop and calculate quality measures. | Long-Term Care Facility Resident Assessment Instrument; Outcome and Assessment Information Set; Inpatient Rehabilitation Facility Patient Assessment Instrument |

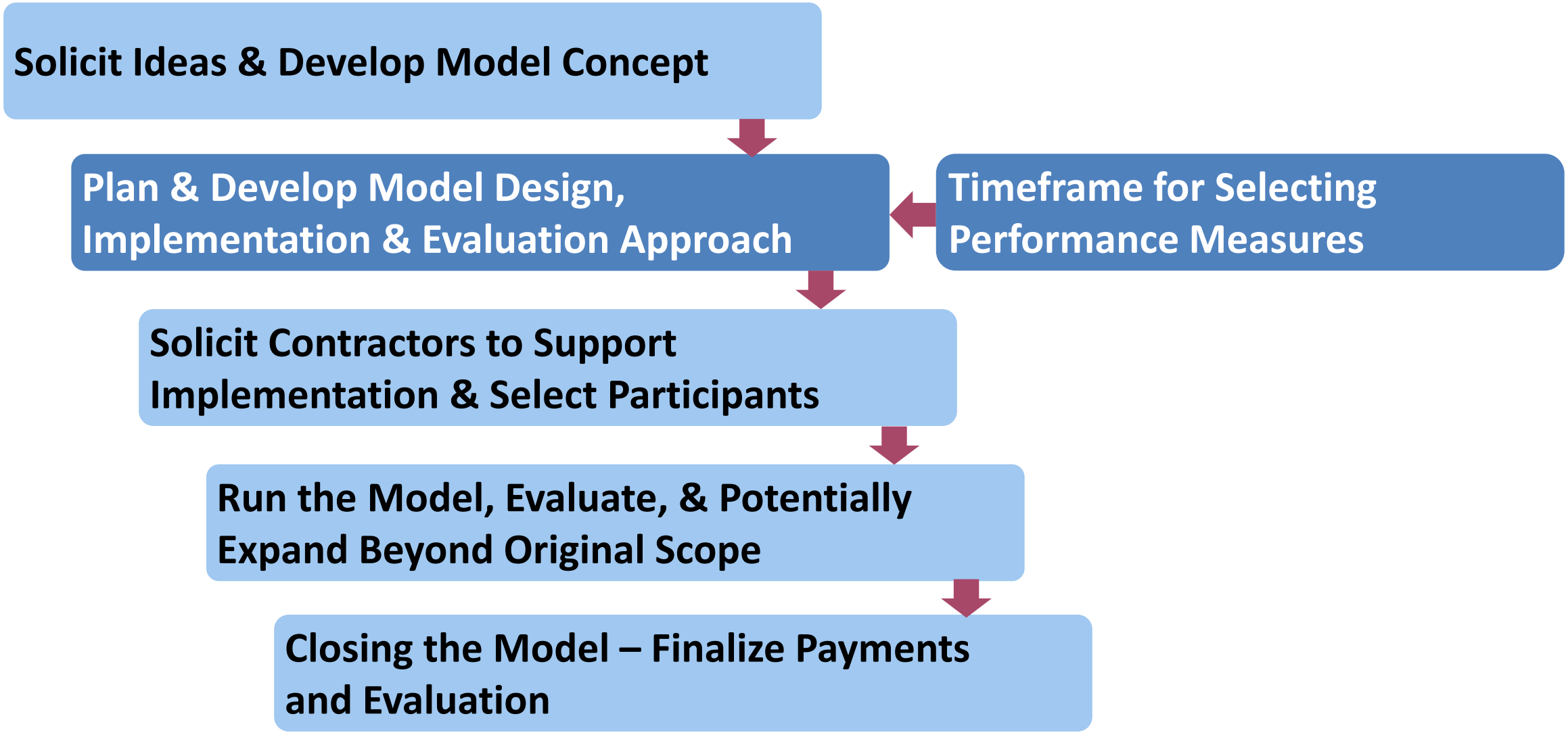
Please see Appendix H for references.

# Spectrum of Burden Associated with Different Data Sources for Performance Measures



# Appendix C
# CMMI Process for Model Development and Implementation

# CMMI Process for Model Development and Implementation: Selecting, Implementing and Evaluating Performance Measures



# Overview of Steps in the Model Development and Implementation Process

- **Solicit Ideas & Develop Model Concept**
  - Request ideas for new models from internal and external stakeholders.
  - Develop model concepts.
  - Assess model concepts from the perspective of the current models, administration priorities, and other criteria.
- **Plan & Develop Model Design, Implementation & Evaluation Approach**
  - Develop an Innovation Center Investment Proposal to include the model design and implementation approach and a general evaluation approach.
  - Proposals need to be approved by CMS, Department of Health and Human Services, and the Office of Management and Budget.
  - ***Select performance measures for program evaluation.***

# Overview of Steps in the Model Development and Implementation Process, Continued

- **Solicit Contractors to Support Implementation & Select Participants**
  - Select contractors to assess model implementation (e.g. information technology and learning systems).
  - Form agreements with participants.
- **Run the Model, Evaluate, & Potentially Expand Beyond Original Scope**
  - Implement model while contractor performs evaluation.
  - Duration and scope may be expanded beyond the model's original scope.
  - Begin data collection and evaluation of performance measures.
- **Closing the Model – Finalize Payments to Participants and Evaluation**
  - Finalize payments to participants and contractors.
  - Complete final evaluations and release publicly.

# Appendix D
# Performance Measurement Activities in CMMI Models

# How Payment is Adjusted for Performance Among Selected CMMI Models*

| Model | How Payment is Adjusted for Performance |
|---|---|
| **Bundled Payments for Care Improvement Advanced (BPCI-A)** | Participants receive a retrospective bundled payment or are required to pay a Repayment Amount based on reconciliation against the benchmark/target price. Participants receive a Composite Quality Score (CQS) based on selected quality measures and payment is adjusted by up to 10 percent for positive reconciliation amounts (where participant receives a payment) or negative reconciliation amounts (where participant is required to pay back). |
| **Comprehensive ESRD Care (CEC) Model** | The CEC Operations Contractor calculates the Shared Savings or Shared Losses at the end of each performance year. If the ESRD Seamless Care Organization (ESCO) met or exceeds the total performance score (TPS) minimum levels of attainment and the total quality score (TQS) minimum level of attainment (in PY1) or the TQS minimum performance threshold (in PY2 onward), CMS multiplies the total Medicare savings or losses by the ESCO TQS to determine the preliminary shared savings or preliminary shared losses payments. |
| **Comprehensive Primary Care Plus (CPC+)** | Practices receive performance-based incentive payments (PBIPs) based on patient experience, clinical quality, and utilization; practices retain all or a portion of the PBIP based on performance. The performance-based incentive payment (PBIP) is paid prospectively for the entire subsequent year based on the prior year's performance. Practices that do not meet the annual performance thresholds for clinical quality/patient experience or utilization are "at risk" for repaying all or a portion of the PBIP. |
| **Enhancing Oncology Model (EOM)** | Retrospective performance-based payment (PBP) or performance-based recoupment (PBR) based on quality and savings during the performance period (i.e., 6-month episodes of care). |
| **ESRD Treatment Choices (ETC) Model** | Participants receive a home dialysis payment adjustment (HDPA) and a performance payment adjustment (PPA). Medicare claim payments are increased for facilities and clinicians supporting dialysis at home and PPAs are either increased or decreased based on the rate of home dialysis and transplant rate, calculated as the sum of the transplant waitlist rate and the living donor transplant rate. |
| **Expanded Home Health Value-Based Purchasing Model (Expanded HHVBP)** | Home health agencies receive adjustments to their FFS payments based on their TPS, a composite score of an agency's quality measures, relative to peers' performance. Performance on quality measures impacts payment adjustments in a later year. |



* The selected CMMI models include at least one quality, utilization, spending, and patient experience measure in implementation and/or monitoring.

# How Payment is Adjusted for Performance Among Selected CMMI Models, Continued*

| Model | How Payment is Adjusted for Performance |
|---|---|
| **Global and Professional Direct Contracting (GPDC)/Accountable Care Organization Realizing Equity, Access, and Community Health (ACO REACH)** | CMS calculates the total cost of care at the end of the performance year. If the payments and additional FFS Medicare expenditures exceed the performance year benchmark, the Direct Contracting Entities (DCE)/ACO repays CMS the shared losses according to its risk sharing arrangement; otherwise, CMS pays shared savings to the DCE/ACO. Advanced Payment Option (APO) payments are also reconciled in a similar manner. |
| **Home Health Value-Based Purchasing (HHVBP) Model** | Medicare payments were adjusted upward or downward by up to 3 percent, 5 percent, 6 percent, or 7 percent based on the TPS, a composite score of an agency's quality achievement/improvement on the measure set and the performance year. |
| **Independence at Home (IAH) Demonstration** | Practices can receive 50 percent of shared savings for meeting/exceeding performance requirements on three measures, 66.7 percent of shared savings for four measures, 83.3 percent for five measures, and 100 percent for all six measures. |
| **Kidney Care Choices (KCC) Model** | The KCC model offers different payment mechanisms including the Kidney Care First (KCF) Option (i.e., adjusted capitated payments based on performance on quality measures, health outcomes, and utilization; bonus payments for successful kidney transplants); the Kidney Contracting Entities (KCEs) Option (i.e., adjusted capitated payments; shared savings based on spending and quality measures); the Comprehensive Kidney Care Contracting (CKCC) Graduated Option (i.e., one-sided risk track); the CKCC Professional Option (i.e., share in 50 percent of earnings or losses); and the CKCC Global Option (i.e., participants share in 100 percent of earnings or losses). |
| **Making Care Primary (MCP) Model** | Participants are eligible to receive upside-only Performance Incentive Payments (PIP) that reward participants for improving patient health outcomes and achieving savings. |
| **Next Generation Accountable Care Organization (NGACO)** | NGACOs participate in shared savings or losses based on performance year expenditures. NGACOs may receive an Earned Quality Bonus for meeting quality requirements. CMS uses a quality "withhold," in which a portion of an ACO's performance year benchmark is held "at-risk," contingent upon the ACO's quality score. |
| **Oncology Care Model (OCM)** | The amount of the performance-based payment is adjusted based on the participant's achievement on a range of quality measures. Once quality points are assigned, an Aggregate Quality Score (AQS) will be calculated and translated into a performance multiplier. This performance multiplier is used as part of the performance-based payment calculation. |
| **Primary Care First (PCF) Model Options** | A practice's payment amount depends on its performance compared to peer practices and its degree of improvement compared to its historical performance. Performance-based payment can be up to a 50 percent increase or a 10 percent decrease in total primary care payment revenue. |



* The selected CMMI models include at least one quality, utilization, spending, and patient experience measure in implementation and/or monitoring.

# Appendix E
# Performance Measurement Activities in PTAC Proposals

# Selected PTAC Proposals that Included Performance Measurement

Nearly all of the proposals that have been submitted to PTAC included information about proposed performance measures to some degree. The Committee found that 19 of the proposed models met both Criterion 2 (Quality and Cost) and Criterion 4 (Value over Volume).*

| PTAC Proposal | How Payment is Adjusted for Performance |
|---|---|
| **American Academy of Family Physicians (AAFP)** | • Provider repays incentive payments if they do not meet performance benchmarks. |
| **American College of Emergency Physicians (ACEP)** | • Performance on a set of quality measures determines eligibility for reconciliation payments and the size of discount built into each episode's target price. |
| **American College of Physicians-National Committee for Quality Assurance (ACP-NCQA)** | • Retrospective positive or negative payment adjustments made based on performance on financial benchmarks. |
| **The American College of Surgeons (ACS)** | • Payment is adjusted based on quality measures, incorporating two-sided risk. |
| **Avera Health (Avera Health)** | • Option 1: Payment adjustments based on performance on quality metrics (0%, 50%, or 100% of payment).<br>• Option 2: Shared savings only. |
| **Coalition to Transform Advanced Care (C-TAC)** | • Quality bonus funded by shared savings.<br>• Downside risk beginning in year 3. |
| **Hackensack Meridian Health and Cota, Inc. (HMH/Cota)** | • Upside only: Physicians will receive higher bundle compensation if performance metrics are achieved. |



*PTAC concluded that the criteria for PFPMs established by the Secretary are not applicable to this proposal.

# Selected PTAC Proposals that Included Performance Measurement

| PTAC Proposal | How Payment is Adjusted for Performance |
|---|---|
| **Johns Hopkins School of Nursing and the Stanford Clinical Excellence Research Center (Hopkins/Stanford)** | • Partial bundled payment with partial upside risk. |
| **Illinois Gastroenterology Group and SonarMD, LLC (IGG/SonarMD)** | • Payment adjustments are based on quality and financial performance, including shared savings and losses. |
| **Innovative Oncology Business Solutions, Inc. (IOBS)** | • Provider receives shared savings if quality parameters are met. |
| **Large Urology Group Practice Association (LUGPA)** | • Participants earn performance-based payments or owe performance-based repayments based on the number of quality performance targets achieved/exceeded. |
| **Icahn School of Medicine at Mount Sinai (Mount Sinai)** | • Shared savings and losses based on performance. |
| **New York City Department of Health and Mental Hygiene (NYC DOHMH)** | • Shared savings (and an annual bonus) and shared losses based on performance on the HCV SVR benchmark. |
| **Pulmonary Medicine, Infectious Disease and Critical Care Consultants Medical Group (PMA)** | • Two-sided risk arrangement with shared savings and losses based on performance. |
| **Personalized Recovery Care (PRC)** | • Shared savings; amount based on performance on five performance metrics (20% of savings per metric). |
| **Renal Physicians Association (RPA)** | • Quality scores determine physician's eligibility and amount of shared savings.<br>• Physicians can choose to participate in downside risk.<br>• One-time financial incentive/bonus payment for patient receiving a kidney transplantation. |
| **University of Chicago Medicine (UChicago)** | • Care continuity fee given to providers who meet benchmarks for providing their patients with both inpatient and outpatient care.<br>• Providers continue to be subject to financial incentives/penalties under their current model (e.g., MIPS, MSSP). |
| **The University of Massachusetts Medical School (UMass)** | • Shared savings based on performance on ED-avoidable visits and other quality performance.<br>• If providers do not meet performance thresholds, their financial loss will equal the minimum of 8% of performance year payments. |
| **The University of New Mexico Health Sciences Center (UNMHSC)** | • Performance measures are not linked to payment. |

# Appendix F
# Performance Measurement Activities in Several Other Medicare Programs

# Program Features, Technical Issues, and Potential Gaps Related to Current Performance Measures for the MSSP

| Program/Model Name | How Payment is Adjusted for Performance |
|---|---|
| **Medicare Shared Savings Program** (MSSP)<br><br>*Ongoing*<br><br>Years Active: 2012 – Present | ACOs are subject to an annual spending target (benchmark) and a series of quality thresholds. ACOs that spend less than the benchmark share the savings with CMS. There is a penalty for spending more than the threshold under the enhanced track. ACOs are subject to quality withholds from their shared savings if they do not meet quality benchmarks. |

# Program Features, Technical Issues, and Potential Gaps Related to Current Performance Measures for the MA Star Ratings Program

| Program/Model Name | How Payment is Adjusted for Performance |
|---|---|
| **Medicare Advantage Star Ratings Program** (MA Star Ratings Program)<br><br>*Ongoing*<br><br>Years Active: 2009 – Present | Star ratings (based on performance) are used to determine 1) whether a plan is eligible for a bonus payment; and 2) the percentage increase in payment benchmarks and rebate amounts. |

# Program Features, Technical Issues, and Potential Gaps Related to Current Performance Measures for Other Federal Programs

| Program/Model Name | How Payment is Adjusted for Performance |
|---|---|
| **Hospital Value-Based Purchasing Program** (Hospital VBP)<br><br>*Ongoing*<br><br>Years Active: 2013 – Present | Under the Inpatient Prospective Payment System (IPPS), payments are adjusted based on a total performance score that reflects relevant benchmarks, for each performance measure. |
| **Merit-Based Incentive Payment System** (MIPS)<br><br>*Ongoing*<br><br>Years Active: 2017 – Present | Payment adjustment applied to Medicare Part B claims based on performance. Performance is measured across 4 areas; quality, improvement activities, promoting interoperability, and cost. Participants receive a MIPS final score based on the four performance categories, which determines the payment adjustment. |

# Appendix G
# Consumer Assessment of Healthcare Providers and Systems (CAHPS) Survey

# CAHPS Survey

- CAHPS goals
  - CAHPS surveys allow organizations to learn about their patients' experiences and subsequently improve practices.
  - The main goal of the CAHPS surveys is to advance knowledge, measurement, and improvement of patients' experiences with health care.

- CAHPS surveys measure patients' experiences of care across four areas:
  - Providers (e.g., clinicians and medical groups, hospices, home health care, and surgical care)
  - Condition-specific care (e.g., cancer care and mental health care)
  - Facility-based care (e.g., hospitals, dialysis centers, nursing homes, and outpatient ambulatory surgical centers)
  - Health plans (e.g., health plans, dental plans, and home and community-based services)

Please see Appendix H for references.

# CAHPS Survey, Continued

- Domains not captured in the CAHPS
  - Telehealth services are not referenced as a specific domain within the CAHPS surveys.
  - Preventative measures and health equity measures are missing from CAHPS domains.

- CAHPS measures that are appropriate to use in PB-TCOC models
  - Receiving timely care, appointments, and information
  - Provider communication
  - Access to specialists
  - Health promotion and education
  - Shared decision-making
  - Health status/functional status

Please see Appendix H for references.

# Appendix H: References

# References


**Slide 4 – PTAC's Working Definition of Performance Measures**

- Agency for Healthcare Research and Quality. Types of Healthcare Quality Measures. 2015. https://www.ahrq.gov/talkingquality/measures/types.html
- Centers for Medicare & Medicaid Services. New to Measures. 2023. https://mmshub.cms.gov/about-quality/new-to-measures/what-is-a-measure
- National Quality Forum. Improving Healthcare Quality. https://www.qualityforum.org/Setting_Priorities/Improving_Healthcare_Quality.aspx

**Slides 14-15 – Examples of Linking Different Types of Performance Measures with Financial Incentives**

- Centers for Medicare and Medicaid Services. Centers for Medicare and Medicaid Innovation. Innovation Models. https://www.cms.gov/priorities/innovation/models#views=models

# References (cont.)


**Slide 17 – Challenges Related to Developing and Implementing Performance Measures**

- Health Care Payment Learning & Action Network. Accelerating and Aligning Population-Based Payment Models: Performance Measurement. *HCPLAN*; 2016. https://hcp-lan.org/pm-whitepaper/

**Slide 18 – Meaningful Measures**

- Yale New Haven Health Services Corporation. 2022 Condition-Specific Mortality Measures Updates and Specifications Report. April 2022. https://www.cms.gov/files/document/2022-condition-specific-mortality-measures-updates-and-specifications-report.pdf
- Bond AM, Schpero WL, Casalino LP, Zhang M, Khullar D. Association Between Individual Primary Care Physician Merit-based Incentive Payment System Score and Measures of Process and Patient Outcomes. *JAMA*. 2022;328(21):2136-2146. doi:10.1001/jama.2022.20619
- Basch E, Spertus J, Adams Dudley R, et al. Methods for Developing Patient-Reported Outcome-Based Performance Measures (PRO-PMs). Value in Health. 2015;18(4):493-504. doi:10.1016/j.jval.2015.02.018
- Greenhalgh J, Dalkin S, Gooding K, et al. Functionality and Feedback: A Realist Synthesis of the Collation, Interpretation and Utilisation of Patient-Reported Outcome Measures Data to Improve Patient Care. NIHR Journals Library; 2017. http://www.ncbi.nlm.nih.gov/books/NBK409450/

# References (cont.)

**Slide 19 – Measure Development Process**


- Damberg CL, Sorbero ME, Lovejoy SL, Martsolf GR, Raaen L, Mandel D. Measuring Success in Health Care Value-Based Purchasing Programs: Findings from an Environmental Scan, Literature Review, and Expert Panel Discussions. *Rand Health Q*. 2014;4(3):9.
- *CMS Quality Measure Development Plan: Supporting the Transition to the Merit-Based Incentive Payment System (MIPS) and Alternative Payment Models (APMs)*. Centers for Medicare & Medicaid Services; 2016. https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/value-based-programs/macra-mips-and-apms/final-mdp.pdf
- https://www.qualityforum.org/News_And_Resources/Press_Releases/2023/NQF_s_Aligned_Innovation_Initiative_to_Advance_Next_Generation_Measures_of_Outcomes_for_Behavioral_Health_and_Maternity_Care.aspx
- United States Government Accountability Office. *Medicare: Provider Performance and Experiences Under the Merit-Based Incentive Payment System*. United States Government Accountability Office; 2021. Accessed November 28, 2023. https://www.gao.gov/products/gao-22-104667

# References (cont.)


**Slide 20 – Administrative Feasibility: Provider Burden**

- Casalino LP, et al. US Physician Practices Spend More Than $15.4 Billion Annually To Report Quality Measures. *Health Affairs*. 2016;35(3):401-406.

**Slide 21 – Administrative Feasibility: Measure Consistency Across Programs**

- Casalino LP, et al. US Physician Practices Spend More Than $15.4 Billion Annually To Report Quality Measures. *Health Affairs*. 2016;35(3):401-406.
- https://cmit.cms.gov/cmit/#/MeasureInventory

# References (cont.)


**Slide 23 – Availability and Timeliness of Performance Data**

- Scholle SH, Roski J, Dunn DL, Adams JL, Dugan DP, Pawlson LG, Kerr EA. Availability of data for measuring physician quality performance. *Am J Manag Care*. 2009 Jan;15(1):67-72.
- Centers for Medicare & Medicaid Services: Measures Inventory Tool. https://cmit.cms.gov/cmit/#/MeasureSummary
- Chronic Conditions Warehouse White Paper: Medicare Claims Maturity. Chronic Condition Data Warehouse. 2017.
- Healthcare Cost and Utilization Project. User Support. HCUP Frequently Asked Questions. https://hcup-us.ahrq.gov/tech_assist/faq.jsp#general

# References (cont.)


**Slide 25 – Challenges Related to Linking Performance Measures to Provider Payment**

- CMS Quality Measure Development Plan: Supporting the Transition to the Merit-Based Incentive Payment System (MIPS) and Alternative Payment Models (APMs). Centers for Medicare & Medicaid Services; 2016. https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/value-based-programs/macra-mips-and-apms/final-mdp.pdf
- Measure Implementation. CMS Measures Management System (MMS). 2023. https://mmshub.cms.gov/measure-lifecycle/measure-implementation/overview
- Partnership for Quality Measurement. Endorsement and Maintenance (E&M) Guidebook. 2023. https://p4qm.org/sites/default/files/2023-10/Del-3-6-Endorsement-and-Maintenance-Guidebook-Final_0.pdf
- United States Government Accountability Office. Medicare: Provider Performance and Experiences Under the Merit-Based Incentive Payment System. United States Government Accountability Office; 2021. https://www.gao.gov/products/gao-22-104667

# References (cont.)


**Slide 26 – Meaningful Incentives for Improvement**

- Bardach NS, Wang JJ, De Leon SF, Shih SC, Boscardin WJ, Goldman LE, Dudley RA. Effect of pay-for-performance incentives on quality of care in small practices with electronic health records: A randomized trial. *JAMA*. 2013;310(10):1051-9. doi:10.1001/jama.2013.277353
- Scott A, Liu M, Yong J. Financial Incentives to Encourage Value-Based Health Care. *Medical Care Research and Review*. 2018;75(1):3-32.
- Kazungu JS, Barasa EW, Obadha M, Chuma J. What characteristics of provider payment mechanisms influence health care providers' behaviour? A literature review. Int J Health Plann Manage. 2018 Oct 1; 33(4): e892–e905. Published online 2018 Jul 8. doi: 10.1002/hpm.2565
- Kim KM, Max W, White JS, Chapman SA, Muench U. Do penalty-based pay-for-performance programs improve surgical care more effectively than other payment strategies? A systematic review. Ann Med Surg (Lond). 2020 Dec; 60: 623–630. Published online 2020 Nov 25. doi: 10.1016/j.amsu.2020.11.060

**Slide 27 – Ensuring Equitable Outcomes**

- Shakir M, Armstrong K, Wasfy JH. Could Pay-for-Performance Worsen Health Disparities? J Gen Intern Med. 2018 Apr; 33(4): 567–569. Published online 2018 Jan 4. doi: 10.1007/s11606-017-4243-3
- Conway A, Satin D. The role of pay-for-performance in reducing healthcare disparities: A narrative literature review. Preventive Medicine. Volume 164, November 2022. https://doi.org/10.1016/j.ypmed.2022.107274

# References (cont.)

**Slide 28 – Prevention of Unintended Consequences**


- Eijkenaar F. Key issues in the design of pay for performance programs. Eur J Health Econ. 2013 Feb;14(1):117-31. doi: 10.1007/s10198-011-0347-6. Epub 2011 Sep 1. PMID: 21882009; PMCID: PMC3535413.
- Kyeremanteng K, Robidoux R, D'Egidio G, Fernando SM, Neilipovitz D. An Analysis of Pay-for-Performance Schemes and Their Potential Impacts on Health Systems and Outcomes for Patients. Crit Care Res Pract. 2019 Jun 19;2019:8943972. doi: 10.1155/2019/8943972. PMID: 31321097; PMCID: PMC6607710
- Martin B, Jones J, Miller M, Johnson-Koenke R. Health Care Professionals' Perceptions of Pay-for-Performance in Practice: A Qualitative Metasynthesis. INQUIRY: The Journal of Health Care Organization, Provision, and Financing. 2020;57. doi:10.1177/0046958020917491
- Powell AA, White KM, Partin MR, Halek K, Christianson JB, Neil B, Hysong SJ, Zarling EJ, Bloomfield HE. Unintended consequences of implementing a national performance measurement system into local practice. J Gen Intern Med. 2012 Apr;27(4):405-12. doi: 10.1007/s11606-011-1906-3. Epub 2011 Oct 13. PMID: 21993998; PMCID: PMC3304045
- Li, X., Evans, J.M. Incentivizing performance in health care: a rapid review, typology and qualitative study of unintended consequences. *BMC Health Serv Res* **22**, 690 (2022). https://doi.org/10.1186/s12913-022-08032-z

# References (cont.)


**Slide 29 – Risk Adjustment**

- Centers for Medicare and Medicaid Services. Centers for Medicare and Medicaid Innovation. Innovation Models. https://www.cms.gov/priorities/innovation/models#views=models
- American Hospital Association. Rethinking the Hospital Readmissions Reduction Program. TrendWatch. March 2015. https://www.aha.org/system/files/research/reports/tw/15mar-tw-readmissions.pdf
- Zhu M, Japinga M, Saunders R, McClellan M. The Future of Risk Adjustment: Supporting Equitable, Comprehensive Health Care. The Duke Margolis Center for Health Policy. 2022. https://healthpolicy.duke.edu/sites/default/files/2022-06/Margolis%20Future%20Risk%20Adjustment%20Paper%20v3_0.pdf

**Slide 30 – Benchmarking**

- Centers for Medicare and Medicaid Services. Centers for Medicare and Medicaid Innovation. Innovation Models. https://www.cms.gov/priorities/innovation/models#views=models
- Eijkenaar F. Key issues in the design of pay for performance programs. Eur J Health Econ. 2013 Feb;14(1):117-31. doi: 10.1007/s10198-011-0347-6. Epub 2011 Sep 1. PMID: 21882009; PMCID: PMC3535413

# References (cont.)


**Slide 40 – Goals of and Criteria for Performance Measurement in PB-TCOC Models**

- American Academy of Family Physicians. Performance Measure Criteria. 2023. https://www.aafp.org/about/policies/all/performance-measures.html
- Tooker J. The importance of measuring quality and performance in healthcare. *MedGenMed*. 2005;7(2):49.

**Slide 41 – Types of Quality Measures**

- Centers for Medicare & Medicaid Services. New to Measures. October 2023. https://mmshub.cms.gov/about-quality/new-to-measures/types
- DeRosis. Performance measurement and user-centeredness in the healthcare sector: Opening the black box adapting the framework of Donabedian. November 2023. https://doi.org/10.1002/hpm.3732
- Agency for Healthcare Research and Quality. Types of Healthcare Quality Measures. July 2015. https://www.ahrq.gov/talkingquality/measures/types.html
- National Quality Forum. Improving Healthcare Quality. N.D. https://www.qualityforum.org/Setting_Priorities/Improving_Healthcare_Quality.aspx
- American Academy of Family Physicians. Quality Measures. N.D. https://www.aafp.org/family-physician/practice-and-career/managing-your-practice/quality-measures.html
- Partnership for Quality Management. Endorsement & Maintenance. N.D. https://p4qm.org/EM

# References (cont.)


**Slide 42 – Types of Outcome Measures**

- Centers for Medicare & Medicaid Services. New to Measures. October 2023. https://mmshub.cms.gov/about-quality/new-to-measures/types
- DeRosis. Performance measurement and user-centeredness in the healthcare sector: Opening the black box adapting the framework of Donabedian. November 2023. https://doi.org/10.1002/hpm.3732

**Slide 43 – Process Measures Can Lead to Successful Outcomes**

- Crombie IK, Davies HT. Beyond health outcomes: The advantages of measuring process. *Journal of Evaluation in Clinical Practice*. 1998;4(1):31-80.
- Myers ER, et al. Benefits and harms of breast cancer screening: A systematic review. *JAMA*. 2015;314(15):1615-34.

**Slide 46 – Performance Measure Data Sources**

- https://mmshub.cms.gov/measure-lifecycle/measure-specification

**Slide 49 – CMMI Process for Model Development and Implementation**

- https://mmshub.cms.gov/sites/default/files/Blueprint-CMS-CBE-Endorsement-Maintenance.pdf
- https://p4qm.org/about

**Slides 50-51 – Overview of Steps in the Model Development and Implementation Process**

- https://mmshub.cms.gov/sites/default/files/Blueprint-CMS-CBE-Endorsement-Maintenance.pdf
- https://p4qm.org/about

# References (cont.)


**Slides 53-54 – How Payment is Adjusted for Performance Among Selected CMMI Models**

- Centers for Medicare and Medicaid Services. Centers for Medicare and Medicaid Innovation. Innovation Models. https://www.cms.gov/priorities/innovation/models#views=models

**Slide 59 – Program Features, Technical Issues, and Potential Gaps Related to MSSP**

- https://www.cms.gov/medicare/payment/fee-for-service-providers/shared-savings-program-ssp-acos

**Slide 60 – Program Features, Technical Issues, and Potential Gaps Related to MA Star Ratings**

- https://www.cms.gov/newsroom/fact-sheets/2024-medicare-advantage-and-part-d-star-ratings

**Slide 61 – Program Features, Technical Issues, and Potential Gaps Related to Other Federal Programs**

- https://www.cms.gov/medicare/quality/value-based-programs/hospital-purchasing#:~:text=The%20Hospital%20VBP%20Program%20rewards,quality%20of%20care%20they%20deliver.
- https://qpp.cms.gov/mips/traditional-mips

# References (cont.)


**Slides 63-64 – CAHPS Survey**

- Bland C, Zuckerbraun S, Lines LM, et al. Challenges Facing CAHPS Surveys and Opportunities for Modernization. Research Triangle Park (NC): RTI Press; 2022 Nov. https://www.ncbi.nlm.nih.gov/books/NBK592584/
- Consumer Assessment of Healthcare Providers and Systems (CAHPS). Agency for Healthcare Research and Quality. https://www.ahrq.gov/cahps/index.html
- https://aspe.hhs.gov/sites/default/files/documents/1c798bdedb8cb881d82ae5b994368b3a/PTAC-Sep-19-SME-LS-Slides.pdf
- https://www.ahrq.gov/sites/default/files/wysiwyg/cahps/news-and-events/events/webinars/understanding-cahps-101-infographic.pdf
- https://www.ahrq.gov/cahps/surveys-guidance/index.html