maryland
health services
cost review commission

Hospital Clinical Adverse Events (CAEM) Subgroup

June 24, 2026

HSCRC Quality Team

Meeting Agenda

- CAEM Goals and Work to Date
- Digital measures overview
- Mortality measures
  - Sepsis mortality
- PPC-PSI overlap updated analysis
- Measures of interest Matrix: complications measures
- CAEM next steps

CAEM Members

Kelly	Arthur	Qlarant
Sophia	Batallas	Adventist Health Care
Kaitlyn	Beeman	Western MD
Teresa	Brown	MHCC
Zahid	Butt	Digital Measures SME
Samantha	Crandall	GBMC
Jacqueline	Hartford	MD Pt Safety Center
Sofia	Liarakos	Lifebridge
Chris	Mccoy	UMS
Ashka	Mehta	Maryland MCH REP
Jonathan	Patrick	MedStar
Rebecca	Perlmutter	MPH, CIC MDH, HAI Infec Program Coordinator
Edward	Seferian	JHHS
Geeta	Sood	Infectious Disease SME
Michael	Staley	Meritus

Workgroup Learning Agreements

- **Be Present** – Make a conscious effort to know who is in the room, become an active listener. Refrain from multitasking and checking emails during meetings.
- **Call Each Other In As We Call Each Other Out** – When challenging ideas or perspectives give feedback respectfully. When being challenged - listen, acknowledge the issue, and respond respectfully.
- **Recognize the Difference of Intent vs Impact** – Be accountable for our words and actions.
- **Create Space for Multiple Truths** – Seek understanding of differences in opinion and respect diverse perspectives.
- **Notice Power Dynamics** – Be aware of how you may unconsciously be using your power and privilege.
- **Center Learning and Growth** – At times, the work will be uncomfortable and challenging. Mistakes and misunderstanding will occur as we work towards a common solution. We are here to learn and grow from each other both individually and collectively.

REMINDER: These workgroup meetings are recorded.

CAEM Goals and Recap

CAEM Goals

1. Recommend ***complications (MHAC), safety (QBR), and mortality (QBR)*** measures for:
    a. RY2029 (CY2027) Maryland Hospital Acquired Conditions program and Quality-Based Reimbursement, and
    b. Incubator that can be considered in future years, including:
        i. Measures that are not yet ready for payment that are either under consideration by CMS or measures that are important for MD under an all-payer quality program such as maternal health measures.
2. Recommend criteria for measure selection that can be used in future years and any payment considerations for PMWG
    a. For example: Maintain rewards in RY2029 if program includes measures beyond CMS portfolio.

Sources for Candidate Complication, Safety, and Mortality Measures

- Maryland Hospital Acquired Conditions Measures (MHAC) Measures
- CMS Hospital Acquired Complications Reduction Program Measures
- Complications/Mortality Measures Under Maryland Quality Based Reimbursement
- Complications/Mortality Measures Under CMS Hospital Value Based Purchasing
- CMS Inpatient Quality Reporting measures
- CMS Measures Under Consideration list for 2025
- CMS Electronic Clinical Quality Measures (eCQMs)
- Others?

Complications Recap

RY2028 MHAC

- Subset of PPCs in composite, weighted at 5/6th of score
- All-Payer AHRQ PSI, weighted 1/6th of score
- State performance standards, 2% scaled rewards and penalties

FY2028 HACRP

- NHSN Healthcare Associated Infections, weighted 5/6th of score
- Medicare AHRQ PSI, weighted 1/6th
- National performance standards, 1% penalty for worst quartile

CAEM Measure-Related Discussion to Date

Continue PPCs?

- Discussed concern on proprietary costs and lack of alignment with CMS. Today we will discuss overlap with PSI and populations excluded if PPCs discontinued.

Add NHSN measures?

- CAEM discussed concerns about these surveillance measures and duplication in multiple programs. Other concerns include small cell sizes, lack statistical differences over time and between hospitals, and ????.

Identify Incubator Measures for future rate years to justify program rewards

- CAEM has discussed inclusion criteria for measure and developed matrix for input from CAEM members and stakeholders.
- Today we will discuss specific areas/populations for non-Medicare HGBs as we discuss areas included with PPCs that are not as represented in the Medicare measures.

Safety Recap

FY2028 HVBP

- Sep 1 bundle process measure
- CDC NHSN HAI CLABSI, CAUTI, C Diff, MRSA and SSI (colon and hysterectomy)
- National performance standards, 2% rewards or penalties, not revenue neutral, Safety domain weighted 31%

FY2028 HVBP

- Sep 1 bundle process measure
- CDC NHSN HAI CLABSI, CAUTI, C Diff, MRSA and SSI (colon and hysterectomy)
- National performance standards, 2% rewards or penalties, revenue neutral, Safety domain weighted 25%

CAEM Measure-Related Discussion to Date

Continue Sep 1 bundle and CDC NHSN HAI measures in QBR

- Discussed concerns about Sep 1 measure being one size fits all in QBR RY 2028 policy but CMS alignment was deemed important for the policy
- Discussed concerns related to low numbers and reliability of NHSN measures

Identify Incubator measures for adoption and use when fully developed

- CAEM discussed Hospital Onset Bacteremia HOB measure
- Today we will identify options for adopting measures for Non-Medicare hospital GBRs

Mortality Measures Recap

RY2028 Maryland QBR

- Clinical Outcomes Domain
- All-Payer, all-condition, all-cause mortality measures, inpatient and 30-day
- Total hip/knee arthroplasty complications
- State performance standards, 2% scaled rewards and penalties, domain weighted at 31%

FY2028 HVBP

- Clinical Outcomes Domain
- All-cause 30-day condition specific mortality for AMI, CABG, COPD, CHF and Pneumonia.
- Total hip/knee arthroplasty complications
- National performance standards, 2% scaled rewards, revenue neutral with domain weighted at 25%

CAEM Measure-Related Discussion to Date

Align with CMS exactly on mortality measures

- Discussed consensus to not adopt condition specific in QBR
- Current options is to retain all payer 30-day and inpatient mortality measures
- Today we will discuss the capture of sepsis in our current mortality measures and implications

Maintain alignment with CMS with use of THK complications measure

- Discussed concerns related to majority of procedures having moved to out-patient
- Today we will discuss whether to recommend retaining this measure after RY 2028

Identify Incubator measures for future adoption

- CAEM has discussed Adult Community Onset Sepsis 30-day mortality measure and HWM hybrid measure
- Today we will discuss options for timing of measure adoption for Non-Medicare hospital GBRs

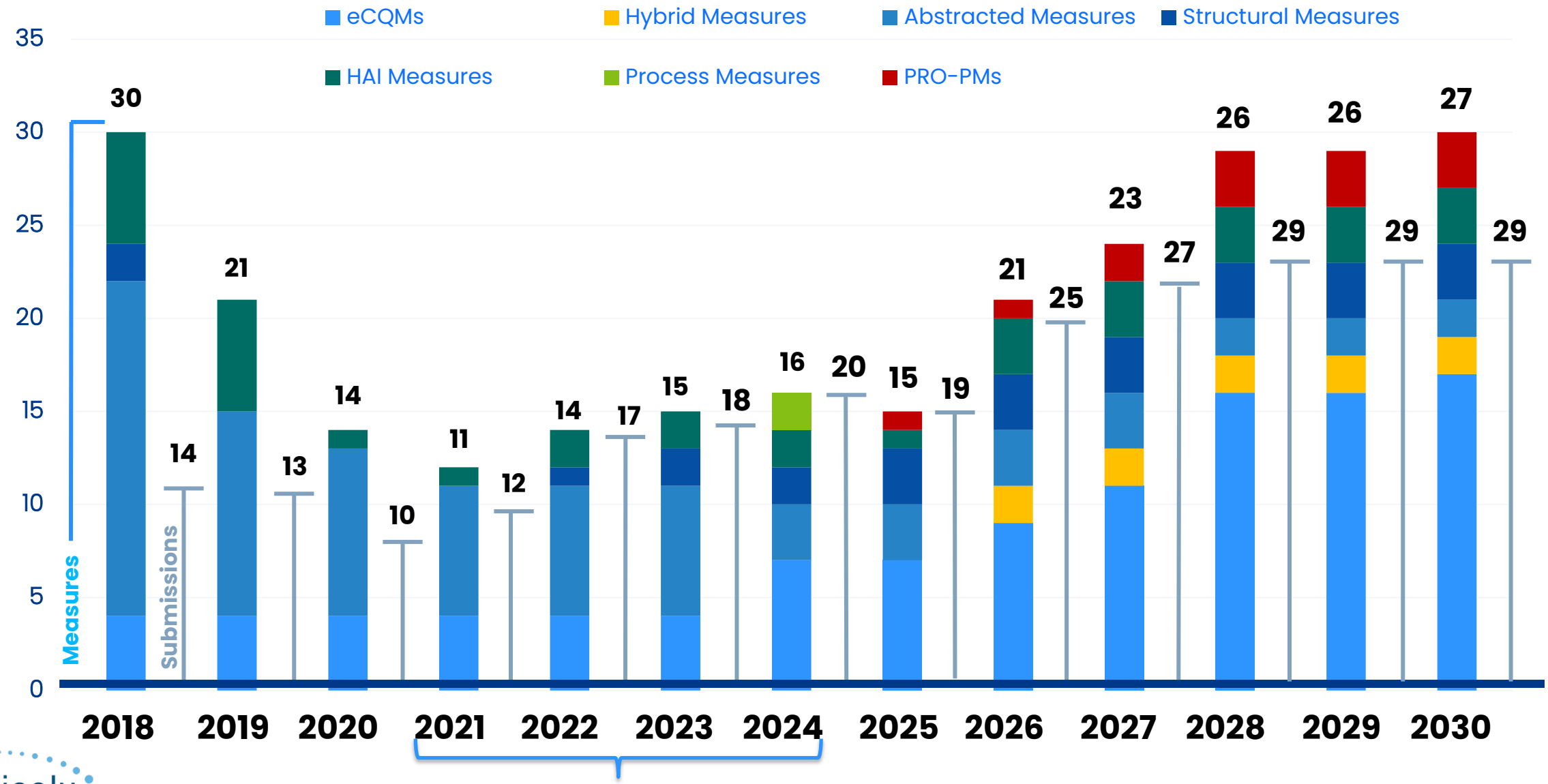
Digital Measures Overview

Zahid Butt

Digital Quality Measures Overview
HSCRC: CAEM Workgroup

June 24, 2026

CMS Quality & Safety Reporting Programs



Current Public Reporting Reflects 2021 – 2024 Performance Yrs

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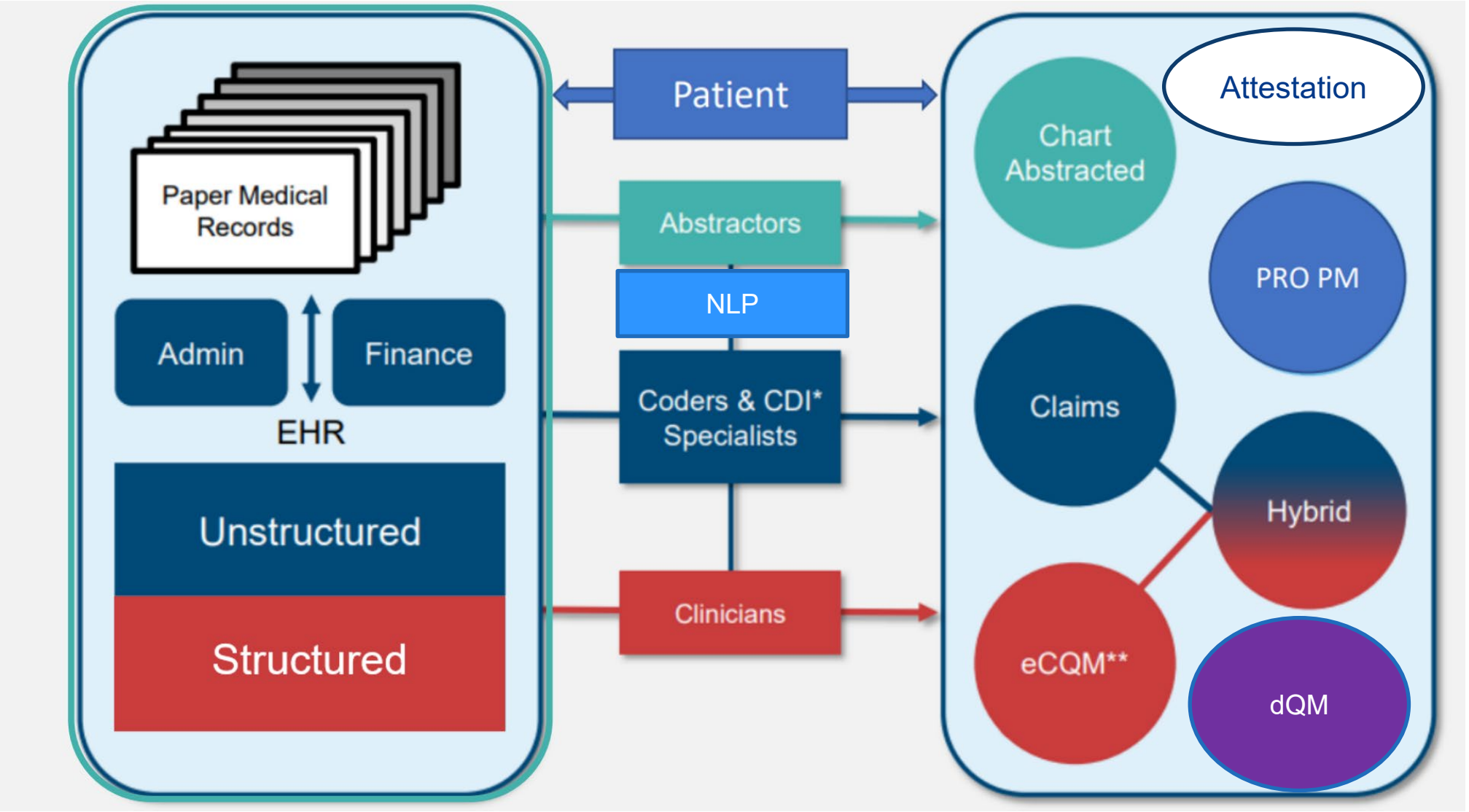
Types of Quality Measures in CMS Programs



Fact Sheets Jul 13, 2010

CMS AND ONC FINAL REGULATIONS DEFINE MEANINGFUL USE AND SET STANDARDS FOR ELECTRONIC HEALTH RECORD INCENTIVE PROGRAM

eHealth Policy Legislation

Share

CMS AND ONC FINAL REGULATIONS DEFINE MEANINGFUL USE AND SET STANDARDS FOR ELECTRONIC HEALTH RECORD INCENTIVE PROGRAM

The Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health Information Technology (ONC) today announced two complementary final rules to implement the electronic health records (EHR) incentive program under the Health Information Technology for Economic and Clinical Health (HITECH) Act.

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Related Releases

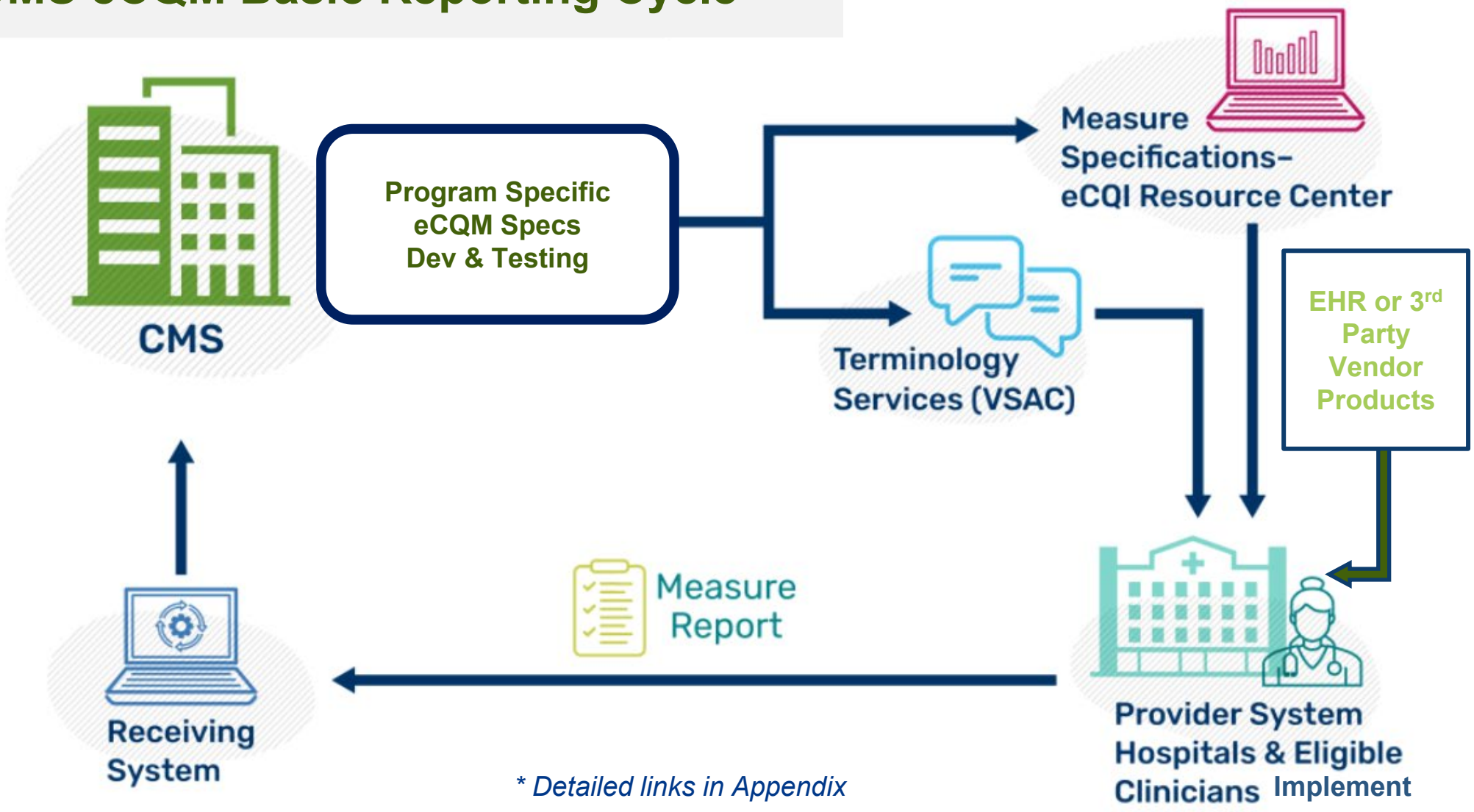
Press Releases
Mar 09, 2020

HHS Finalizes Historic Rules to Provide Patients More Control of Their Health Data

Press Releases Nov 01, 2019

Trump Administration Strengthens Medicare by Reducing Provider Burden and Valuing Time Spent with Patients

CMS eCQM Basic Reporting Cycle*



** Detailed links in Appendix*

eCQM Title	**Hospital Harm - Opioid-Related Adverse Events**		
CMS ID	819	**eCQM Version Number**	4.2.000
CBE Number	3501e	**GUID**	cb58c1ef-e8a9-4a8d-af83-760d354077db
Measurement Period	January 1, 2026 through December 31, 2026		
Measure Steward	Centers for Medicare & Medicaid Services (CMS)		
Measure Developer	Mathematica		
Endorsed By	CMS Consensus Based Entity		
Description	This measure assesses the number of inpatient hospitalizations for patients age 18 and older who have been administered an opioid medication outside of the operating room and are subsequently administered a non-enteral opioid antagonist outside of the operating room within 12 hours, an indication of an opioid-related adverse event		
Copyright	Limited proprietary coding is contained in the Measure specifications for user convenience. Users of proprietary code sets should obtain all necessary licenses from the owners of the code sets. Mathematica disclaims all liability for use or accuracy of any third-party codes contained in the specifications. LOINC(R) copyright 2004-2024 Regenstrief Institute, Inc. This material contains SNOMED Clinical Terms(R) (SNOMED CT[R]) copyright 2004-2024 International Health Terminology Standards Development Organisation. ICD-10 copyright 2024 World Health Organization. All Rights Reserved.		
Disclaimer	This performance measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications. THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. Due to technical limitations, registered trademarks are indicated by (R) or [R] and unregistered trademarks are indicated by (TM) or [TM].		
Measure Scoring	Proportion		
Measure Type	Outcome		
Stratification	None		
Risk Adjustment	None		
Rate Aggregation	None		

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Rationale	Opioids are often the foundation for sedation and pain relief. Opioid-based analgesia continues to be the most commonly used treatment in postoperative pain management, with more than 95% of surgical patients receiving opioids during their hospitalization (Baker et al., 2020). However, use of opioids can also lead to serious adverse events, including constipation, over sedation, delirium, and respiratory depression (Urman et al., 2021a). Opioid-related adverse events (ORADE) have both patient-level and financial implications. The presence of an ORADE was associated with a 55% longer postoperative length of stay, 29% lower odds of discharge home, and 2.9 times the odds of death (Urman et al., 2021b). For surgical patients, occurrence of opioid-related adverse events was associated with an increase of 1.6 days in length of stay (LOS) and $8225 more in cost for the index hospitalization. Patients who experienced ORADEs while in a hospitalized setting were more likely to have received a higher total dose of opioids during hospitalization (Cone et al., 2023; Shafi et al., 2018). Numerous studies report the additive (risk-adjusted) hospitalization cost burden of surgical patients with ORADEs to be between $4350–$8225, representing a 27–47% increase in (risk-adjusted) admission costs (Khanna et al., 2021). Most opioid-related adverse events are preventable. Each year, adverse drug events (ADE) account for nearly 700,000 emergency department visits and 100,000 hospitalizations (AHRQ, 2019). An estimated one-third of all adverse events that occur in the inpatient setting are adverse drug events (ODPHP, 2020). Additionally, in a closed-claims analysis, 97% of adverse events were judged preventable with better monitoring and response (Lee et al., 2015). Naloxone administration is often used as an indicator of a severe opioid-related adverse event, and implementation of this measure can advance safe use of opioids in hospitals and prevent these serious and potentially lethal adverse drug events.
Clinical Recommendation Statement	Naloxone is an opioid reversal agent typically used for severe opioid-related adverse events. Naloxone administration has been used in a number of studies as an indicator of opioid-related adverse events (Yiu, et al., 2022; Lynn & Galinkin, 2017; Nwulu et al., 2013). From Section 10 of the 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care (Lavonas et al., 2015), the following recommendation is listed for use of naloxone: Naloxone is a potent opioid receptor antagonist in the brain, spinal cord, and gastrointestinal system. Naloxone has an excellent safety profile and can rapidly reverse central nervous system (CNS) and respiratory depression in a patient with an opioid-associated resuscitative emergency. The 2020 American Heart Association guidelines update for cardiopulmonary resuscitation continue to recommend naloxone for a patient with suspected opioid overdose who has a definite pulse but no normal breathing or only gasping (i.e., a respiratory arrest), in addition to providing standard Pediatric Basic Life Support (PBLS) or Pediatric Advanced Life Support (PALS), it is reasonable for responders to administer intramuscular or intranasal naloxone. These recommendations are identical for adults (American Heart Association, 2020). In February 2022, the Food and Drug Administration (FDA) approved its abbreviated new drug application for nalmefene hydrochloride injection, 2mg/2mL (1mg/1mL). Nalmefene is an opioid antagonist indicated for the complete or partial reversal of opioid drug effects, including respiratory depression, induced by either natural or synthetic opioids, and in the management of known or suspected opioid overdose (FDA, 2022). In contrast to naloxone, the long half-life of nalmefene is similar to or greater than that of many opioid receptor agonists (Britch & Walsh, 2022), which could decrease the need for repeat drug administration. In May 2023, FDA approved nalmefene hydrochloride nasal spray that delivers 2.7 milligrams (mg) of nalmefene into the nasal cavity (FDA, 2023).

Improvement Notation	Decreased score indicates improvement
Reference	Reference Type: Citation Reference Text: 'Agency for Healthcare Research and Quality (AHRQ). (2019). Medication errors and adverse drug events. Rockville: US Department of Health & Human Services. Retrieved from https://psnet.ahrq.gov/primer/medication-errors-and-adverse-drug-events'
Reference	Reference Type: Citation Reference Text: 'American Heart Association. (2020). Highlights of the 2020 American Heart Association's guidelines for CPR and ECC. https://cpr.heart.org/-/media/cpr-files/cpr-guidelines-files/highlights/hghlghts_2020_ecc_guidelines_english.pdf'
Reference	Reference Type: Citation Reference Text: 'Baker, J., Brovman, E.Y., Rao, N., Beutler, S.S., & Urman, R.D. (2020). Potential opioid-related adverse drug events are associated with decreased revenue in hip replacement surgery in the older population. Geriatric Orthopaedic Surgery & Rehabilitation. doi:10.1177/2151459320915328'
Reference	Reference Type: Citation Reference Text: 'Britch, S.C., & Walsh, S.L. (2022). Treatment of opioid overdose: current approaches and recent advances. Psychopharmacology (Berl). 2022;239(7):2063-2081. doi:10.1007/s00213-022-06125-5'
Reference	Reference Type: Citation Reference Text: 'Cone, A.C., Sanchez, M., Morrison, H., & Fier, A. (2023). Multimodal analgesia's impact on opioid use and adverse drug effects in a multihospital health system. Hospital Pharmacy. 58(2):158-164. doi: 10.1177/00185787221122655.'
Reference	Reference Type: Citation Reference Text: 'Food and Drug Administration (FDA). (2022). Nalmefene hydrochloride injection 2mg/2mL (1mg/1mL) Purdue Pharma L.P. https://www.accessdata.fda.gov/spl/data/d4bb0797-a4ed-4ed4-9904-604433eea4ff/d4bb0797-a4ed-4ed4-9904-604433eea4ff.xml'
Reference	Reference Type: Citation Reference Text: 'Food and Drug Administration (FDA). (2023). FDA approves prescription nasal spray to reverse opioid overdose: Nalmefene hydrochloride product in nasal spray form provides additional tool for harm reduction groups and first responders. https://www.fda.gov/news-events/press-announcements/fda-approves-prescription-nasal-spray-reverse-opioid-overdose'
Reference	Reference Type: Citation Reference Text: 'Khanna, A.K., Saager, L., Bergese, S.D., Jungquist, C.R., Morimatsu, H., Uezono, S., Ti, L.K., Soto, R., Jiang, W., & Buhre, W. (2021). Opioid-induced respiratory depression increases hospital costs and length of stay in

Definition	This measure defines the indication of a harm for an opioid-related adverse event by assessing administration of an opioid antagonist. Inpatient hospitalizations: Includes time in the emergency department and observation when the transition between these encounters (if they exist) and the inpatient encounter are within an hour or less of each other.
Guidance	Qualifying encounters (denominator) include all patients 18 years of age or older with at least one opioid medication administered outside of the operating room. To create the numerator: 1. First, start with those encounters meeting denominator criteria. 2. Next, remove all events where an opioid or opioid antagonist was administered in the operating room. Opioid antagonist administrations in the operating room are excluded because they could be part of the sedation plan as administered by an anesthesiologist. Encounters that include use of opioid antagonists for procedures and recovery outside of the operating room (e.g., bone marrow biopsy and PACU) are included in the numerator, as it would indicate the patient was over-sedated. Note that should a facility not utilize temporary patient locations, alternative times may be used to determine whether a patient is in the operating room during opioid antagonist administration. Since anesthesia end time could represent the time the anesthesiologist signed off, and thus may include the patient's time in the PACU, this should be avoided. 3. Next, remove all events where the opioid antagonist was administered via an enteral route. Only opioid antagonists given by a non-enteral (i.e., intravenous, intramuscular, subcutaneous, intranasal, inhalation) route are considered. 4. Finally, remove all administrations of opioid antagonist that were given greater than 12 hours following hospital administration of an opioid medication. This eCQM is an episode-based measure. An episode is defined as each inpatient hospitalization or encounter that ends during the measurement period. This version of the eCQM uses QDM version 5.6. Please refer to the eCQI resource center https://ecqi.healthit.gov/qdm) for more information on the QDM.
Transmission Format	TBD

Initial Population	Inpatient hospitalizations that end during the measurement period for patients age 18 and older and at least one opioid medication administration starts during the hospitalization outside of the operating room
Denominator	Equals Initial Population
Denominator Exclusions	None
Numerator	Inpatient hospitalizations where a non-enteral opioid antagonist administration starts during the hospitalization outside of the operating room and 12 hours or less following an opioid medication administered outside of the operating room. The route of administration of the opioid antagonist must be by intranasal spray, inhalation, intramuscular, subcutaneous, or intravenous injection. Only one numerator event is counted per encounter.
Numerator Exclusions	None
Denominator Exceptions	None
Supplemental Data Elements	For every patient evaluated by this measure also identify payer, race, ethnicity and sex

Table of Contents

Population Criteria

Initial Population

"Encounter with Opioid Administration Outside of Operating Room"

Denominator

"Initial Population"

Denominator Exclusions

None

Terminology

- code "Operating Room/Suite" ("HSLOC Code (1096-7)")
- valueset "Emergency Department Visit" (2.16.840.1.113883.3.117.1.7.1.292)
- valueset "Encounter Inpatient" (2.16.840.1.113883.3.666.5.307)
- valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
- valueset "Federal Administrative Sex" (2.16.840.1.113762.1.4.1021.121)
- valueset "Observation Services" (2.16.840.1.113762.1.4.1111.143)
- valueset "Opioid Antagonist" (2.16.840.1.113762.1.4.1248.119)
- valueset "Opioids, All" (2.16.840.1.113762.1.4.1196.226)
- valueset "Payer Type" (2.16.840.1.114222.4.11.3591)
- valueset "Race" (2.16.840.1.114222.4.11.836)
- valueset "Routes of Administration for Opioid Antagonists" (2.16.840.1.113762.1.4.1248.187)

Data Criteria (QDM Data Elements)

- "Encounter, Performed: Emergency Department Visit" using "Emergency Department Visit (2.16.840.1.113883.3.117.1.7.1.292)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient (2.16.840.1.113883.3.666.5.307)"
- "Encounter, Performed: Observation Services" using "Observation Services (2.16.840.1.113762.1.4.1111.143)"
- "Medication, Administered: Opioid Antagonist" using "Opioid Antagonist (2.16.840.1.113762.1.4.1248.119)"
- "Medication, Administered: Opioids, All" using "Opioids, All (2.16.840.1.113762.1.4.1196.226)"
- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer Type" using "Payer Type (2.16.840.1.114222.4.11.3591)"
- "Patient Characteristic Race: Race" using "Race (2.16.840.1.114222.4.11.836)"
- "Patient Characteristic Sex: Federal Administrative Sex" using "Federal Administrative Sex (2.16.840.1.113762.1.4.1021.121)"

Supplemental Data Elements

SDE Ethnicity

["Patient Characteristic Ethnicity": "Ethnicity"]

SDE Payer

["Patient Characteristic Payer": "Payer Type"]

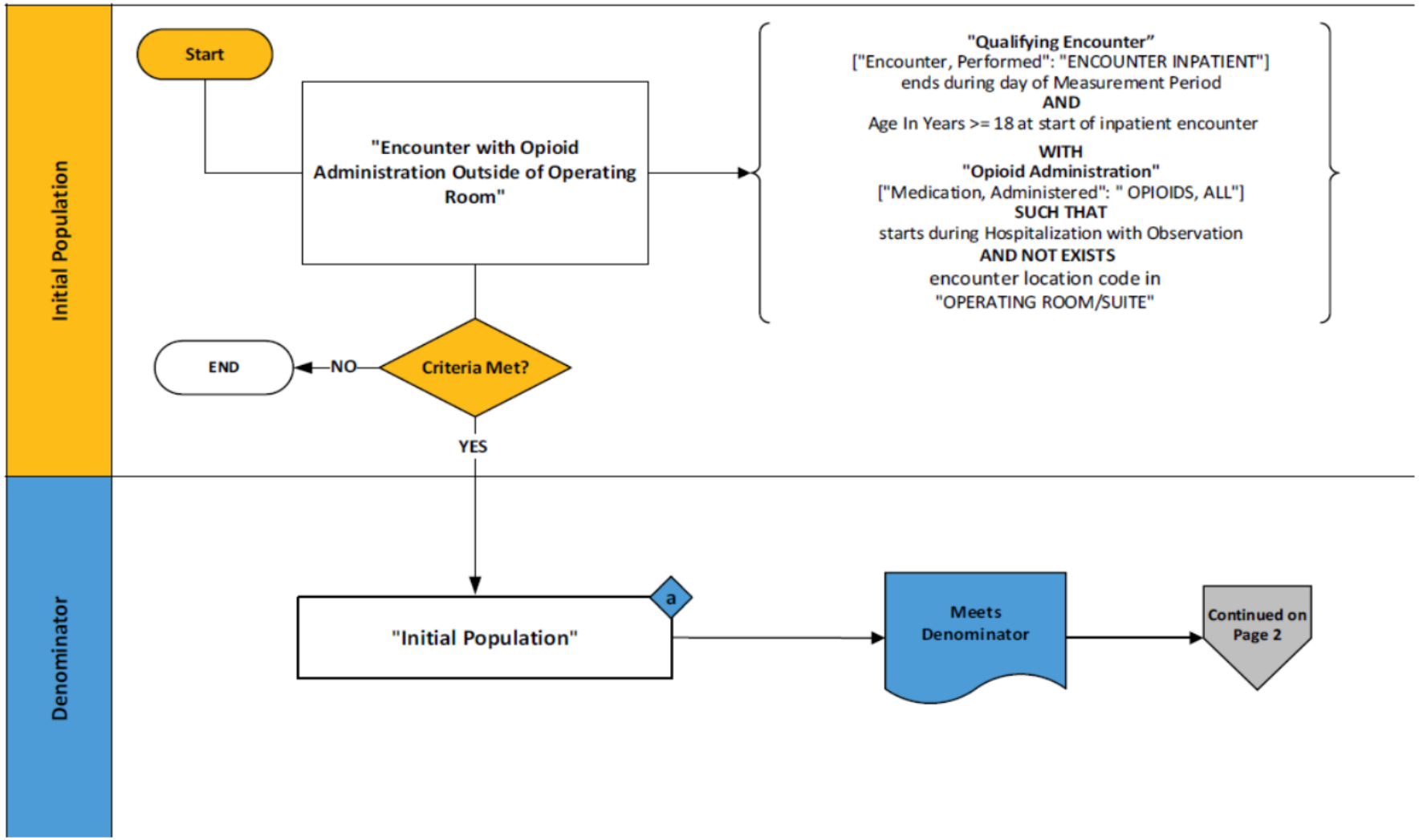
SDE Race

["Patient Characteristic Race": "Race"]

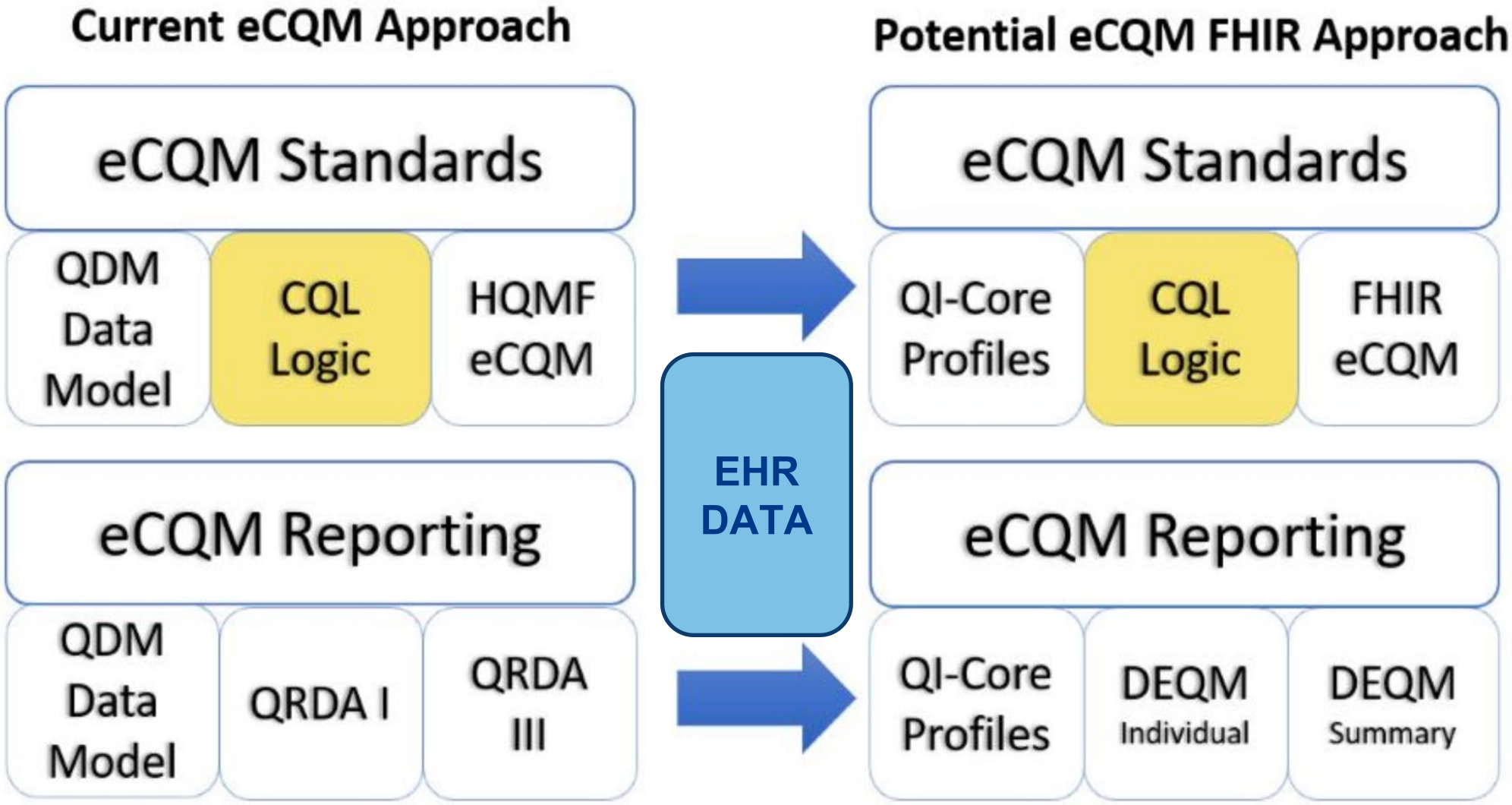
SDE Sex

["Patient Characteristic Sex": "Federal Administrative Sex"]

Initial Population



eCQM vs “FHIR eCQM” vs dQM



AT A GLANCE: DEFINITIONS *(AI Generated)*

eCQM

ESTABLISHED

Electronic Clinical Quality Measures

Standardized tools that use data extracted from **certified EHRs (CEHRT)** to assess clinical quality. A **mature, widely deployed** subset of digital measures used across CMS reporting programs including MIPS, Hospital IQR, OQR, and Medicaid Core Sets.

QDM V5.6 | HQMF / QRDA | CEHRT | CQL | RETROSPECTIVE

VS

dQM

CMS FUTURE DIRECTION

Digital Quality Measures

A **broader category** that uses **standardized digital data** from **multiple source types** — including EHRs, administrative systems, HIEs, wearables, and patient-reported data. The CMS strategic direction for **ALL future quality measures**, leveraging FHIR APIs and real-time data pipelines.

FHIR R4 | QI-CORE | DEQM IG | CQL | REAL-TIME | MULTI-SOURCE

eCQMs are a subset of dQMs — not a parallel category.

Standards & Interoperability

Technical Standards Overview *(AI Generated)*

EACH CARD: eCQM dQM

DATA MODEL

ECQM

QDM v5.6Quality Data Model — structured clinical data elements mapped from EHR fields

DQM

QI-Core FHIR-based profiles extending US Core — standardized, computable clinical resources

MEASURE FORMAT

ECQM

HQMF (XML)Health Quality Measure Format — HL7 v3 XML-based measure specification standard

DQM

FHIR Measure Resource (R4) Machine-readable measure definition using FHIR R4 Measure & Library resources

LOGIC LANGUAGE

SHARED STANDARD

ECQM

CQL: Clinical Quality Language — human-readable, machine-executable logic layer

DQM

CQL: CQL logic language retained, enabling incremental eCQM → dQM migration

DATA EXCHANGE

ECQM

QRDA I / QRDA III XML-based reporting formats — patient-level (Cat I) and aggregate (Cat III)

DQM

FHIR APIs + DEQM IG Data Exchange for Quality Measures IG — REST API exchange in JSON/XML via MeasureReport

TERMINOLOGY

ECQM

VSAC Value Sets SNOMED CT · LOINC · RxNorm · ICD-10-CM — managed via NLM VSAC repository

DQM

Same as ECQM + USCDI+ Quality All eCQM terminologies plus USCDI+ Quality Data Elements for expanded data coverage

INTEROPERABILITY

ECQM

HL7 v3 / C-CDA Document-centric exchange; limited cross-system integration — vendor mapping required

DQM

HL7 FHIR R4 REST APIs Broad cross-system interoperability — machine-to-machine, standardized, scalable

CQL is the key bridge — Clinical Quality Language is the only standard fully shared across both eCQM and dQM, making the transition evolutionary rather than a wholesale replacement.

Data Sources

(AI Generated)

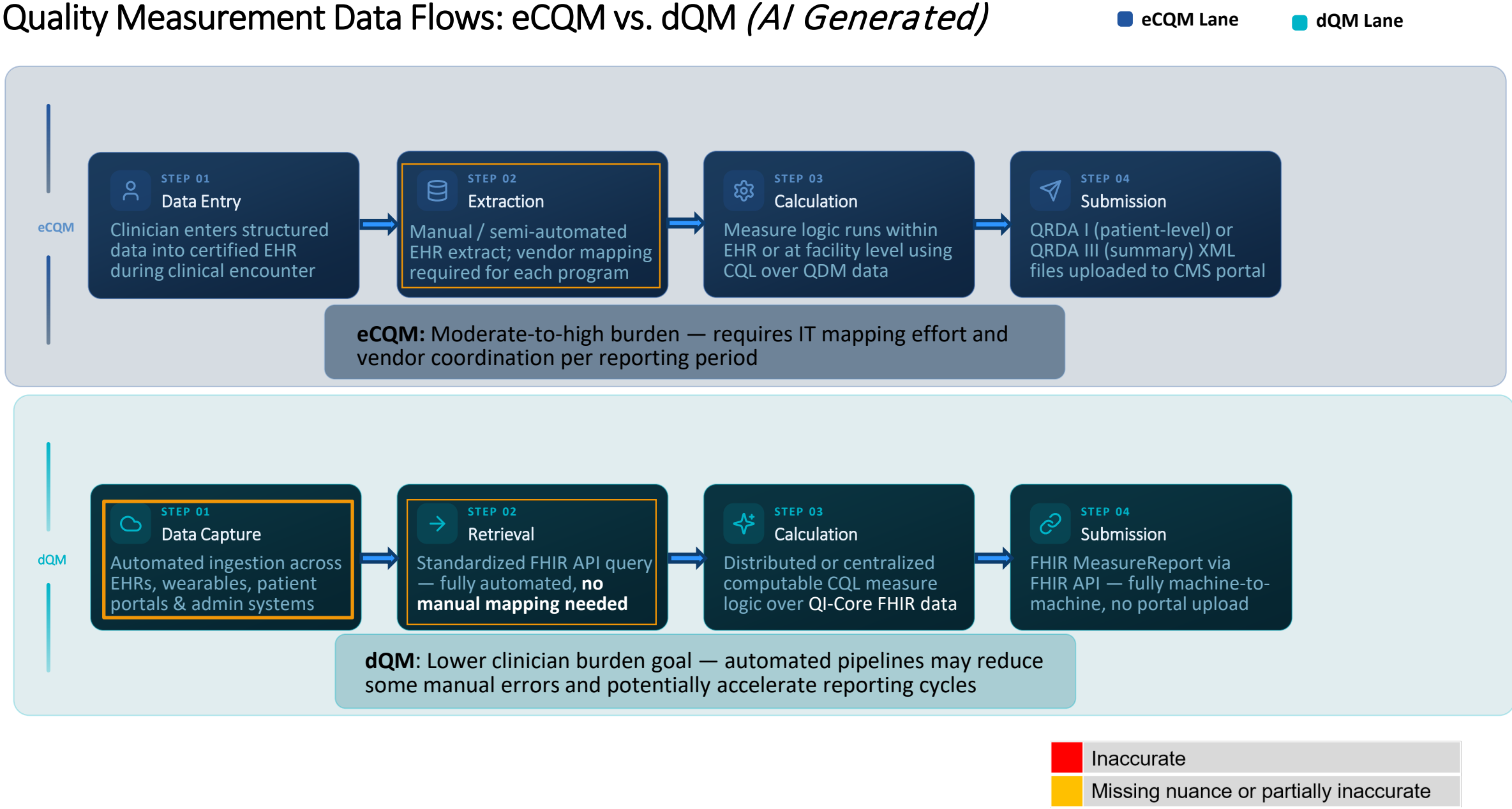
	eCQM	dQM
PRIMARY SOURCE	**Certified EHRs (CEHRT)** mandated source system	**EHRs, HIEs, clinical registries, administrative systems** Multi-system, federated data landscape
PATIENT DATA	Limited: Not typically included	Structured and Unstructured clinical data captured during clinical care plus Patient Generated: Wearables, home monitors, patient portals, PROs
ADMIN DATA	Limited administrative context	Full claims, enrollment, encounter & vital records
SDOH	Not captured Outside eCQM scope	Social needs assessments included
TIMING	**Retrospective extraction** At measurement period end	**Measure results + reusing same CQL logic for real-time & near-real-time Clinical Decision Support via FHIR APIs**

Inaccurate

Missing nuance or partially inaccurate

dQMs expand data diversity across every dimension — from single-source EHR extraction to real-time, multi-system digital data pipelines

Quality Measurement Data Flows: eCQM vs. dQM *(AI Generated)*



Quality Measurement & The Learning Health System

Internal Improvement

Regulatory Reporting

Value-Based Payments

Public Reporting

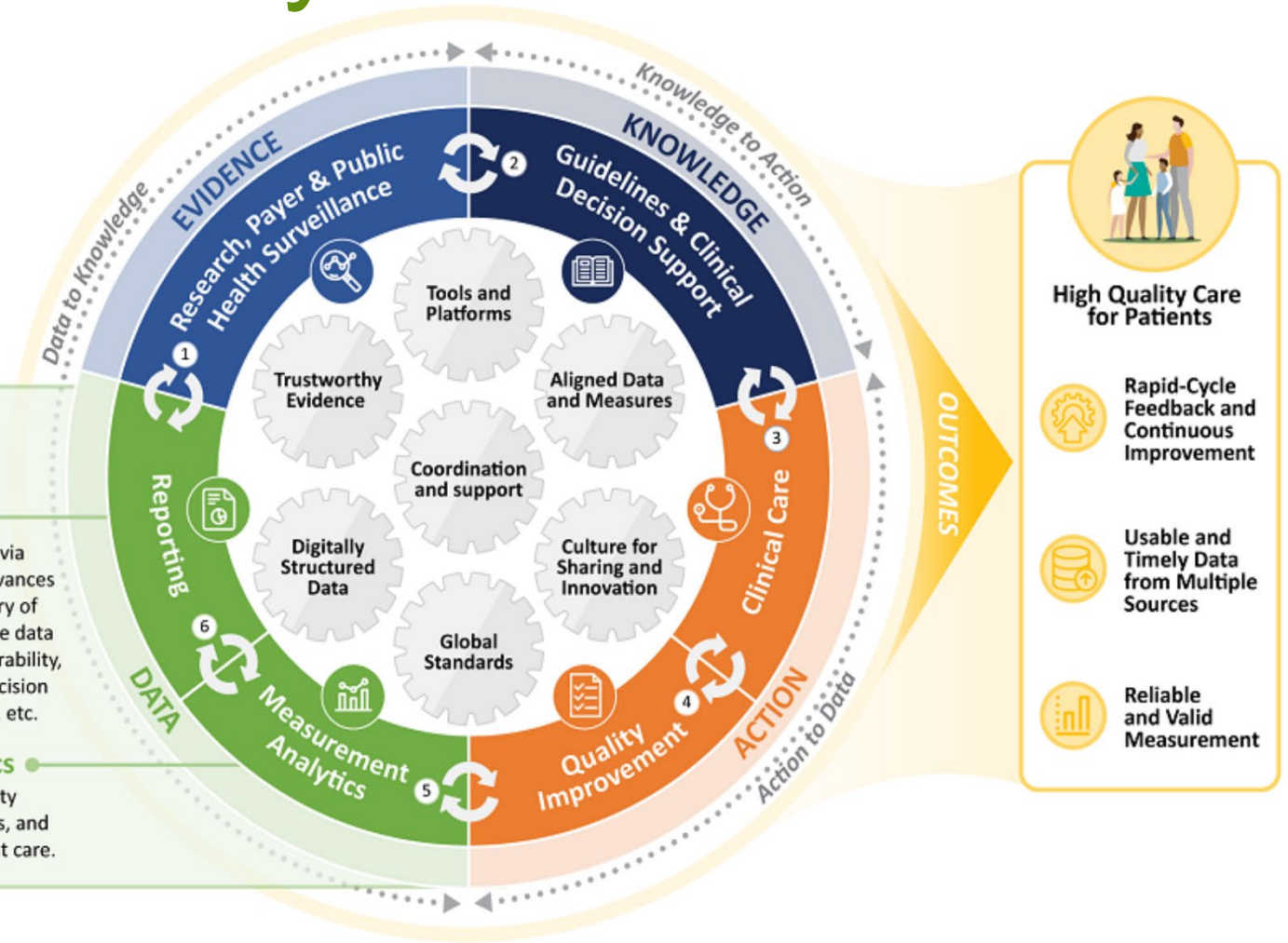
Digital Quality Measurement

Reporting

Quality measurement reporting via digital quality measurement advances CMS's goal of supporting delivery of high quality care, using the same data elements that support interoperability, quality improvement, clinical decision support, research, public health, etc.

Measurement Analytics

Digital data is also used for quality improvement activities, analytics, and measurement to improve patient care.



Adapted from HL7 Clinical Quality Information (CQI) Workgroup by Maria Michaels, Centers for Disease Control and Prevention

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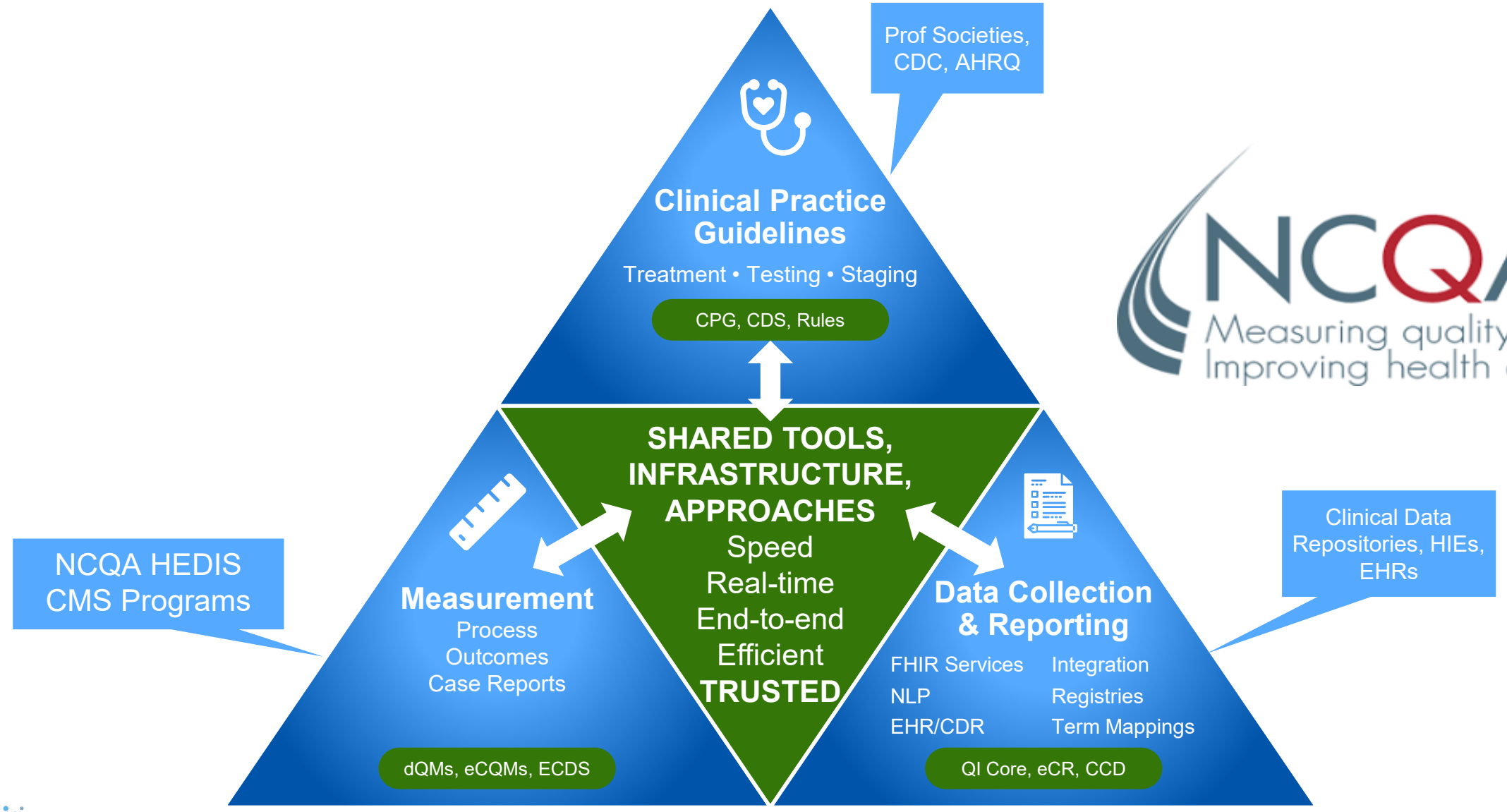
Supporting NCQA's Vision for Digital HEDIS & FHIR dQM



NCQA
Measuring quality. Improving health care.

The Path from eCQM to dQM

CMS/NCQA TRANSITION ROADMAP · QUALITY MEASUREMENT EVOLUTION *(Top Row AI Generated)*

- CMS IPPS
- "Respecified" eCQMs
- *"De Novo"* eCQM
- CMS QPP/MIPS
- 40+ eCQMs
- CMS OPPS
  - Few eCQM's

- Patient Safety eCQMs
- New eCQMs
- AHRQ PSI transition from claims to eCQM
- eCQM Public Reporting
- CMS FHIR eCQM Specs developed for IPPS/MIPS
- Potential production testing
- CDC NHSN dQM Pilot
  - Sepsis Mortality Rate
  - Severe Hypoglycemia

Source: CMS eCQI Resource Center · CMS Digital Quality Measurement Strategic Roadmap · HL7 FHIR R4

Thank You

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APPENDIX

- CMS Patient Safety eCQM

- CMS eCQM ANNUAL CYCLE LINKS

2027 IPPS Proposed Rule: Electronic Clinical Quality Measures

Short Name	2026	2027	2028	2029	2030
PC-02	Required	Required	Required	Required	Required
PC-07 *	Required	Required	Required	Required	Required
CMS506	Required	Required	Required	Required	Required
HH-Hyper	Required	Required	Required	Required	Required
HH-Hypo	Required	Required	Required	Required	Required
HH-ORAE	Available	Required	Required	Required	Required
HH-PI	Available	Available	Required	Required	Required
HH-AKI *	Available	Available	Required	Required	Required
HH-RF *	Available	Used for TEAM	Required	Required	Required
HH-FI	Available	Used for TEAM	Required	Required	Required
HH-VTE	-	-	Available	Available	Required
STK-02	Available	Available	-	-	-
STK-03	Available	Available	Available	Available	Available
STK-05	Available	Available	Available	Available	Available
VTE-1	Available	Available	-	-	-
VTE-2	Available	Available	-	-	-
MCS	Available	Available	Required	Required	Required
IP-ExRad	Available	Available	Available	Available	Available
Advance Care Plan	-	-	Available	Available	Available

CMS eCQM Annual Cycle: 1st Quarter

- **eCQM**
- CMS Measures Inventory Tool Updated
- CMS Quality Reporting Document Architecture I Implementation Guide Public Comments
- Draft Electronic Clinical Quality Measure Specifications Posted in ONC Project Tracking System (Jira) for Public Testing and Comments
- **Reporting**
- Inpatient Quality Reporting Submission Closed*
- MIPS Quality Measure Benchmarks
- Quality Payment Program Reporting Submission Open and Closed*
- **Rule**
- Pre-Rulemaking: Measures Under Consideration Opens for New Measures
- Pre-Rulemaking: Pre-Rulemaking Measure Review Publishes Final Report

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CMS eCQM Annual Cycle: 2nd Quarter

- **CQM**
- CMS Measures Inventory Tool Updated
- CMS Quality Reporting Document Architecture I Implementation Guide Updated
- CMS Quality Reporting Document Architecture III Implementation Guide Public Comments
- Electronic Clinical Quality Measure Annual Update Published
- MADiE
- **Reporting**
- Not Applicable
- **Rule**
- Inpatient Prospective Payment System (Inpatient Quality Reporting and Promoting Interoperability) Proposed Rule
- Pre-Rulemaking: Measures Under Consideration Closed

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CMS eCQM Annual Cycle: 3rd Quarter

- **eCQM**
- CMS Measures Inventory Tool Updated
- CMS Quality Reporting Document Architecture III Implementation Guide Updated
- Cypress Updated
- Eligible Clinician Electronic Clinical Quality Measure Flows
- Hospital Electronic Clinical Quality Measure Flows
- **Reporting**
- Inpatient Quality Reporting Submission Open*
- **Rule**
- Inpatient Prospective Payment System (Inpatient Quality Reporting and Promoting Interoperability) Final Rule
- Outpatient Prospective Payment System (Outpatient Quality Reporting) Proposed Rule
- Physician Fee Schedule (Quality Payment Program) Proposed Rule

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CMS eCQM Annual Cycle: 4th Quarter

- **eCQM**
- CMS Measures Inventory Tool Updated
- Measures Under Consideration (MUC) List
- **Reporting**
- Inpatient Quality Reporting QRDA Testing*
- Inpatient Quality Reporting Submission*
- Quality Payment Program Reporting Tool Testing Open
- **Rule**
- Outpatient Prospective Payment System (Outpatient Quality Reporting) Final Rule
- Physician Fee Schedule (Quality Payment Program) Final Rule
- Pre-Rulemaking: Pre-Rulemaking Measure Review Meeting and Call for Public Comment

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Periodic/Ad Hoc

- **eCQM**
- CMS Call for Measures
- CMS Measures Management System Hub and Blueprint Content Updated
- Electronic Clinical Quality Measure Technical Expert Panels
- Individual Electronic Clinical Quality Measure Public Comment

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PPC PSI-Overlap Analysis

PPCs and PSIs Have Differences in Numerators and Denominators

- There is significant variability in the Numerator and Denominator populations and for each “overlapping” set of PSI/PPC combinations
- Some of this variability is attributable to known differences in populations and specification logic.
  - For example, both PSI 13 and PPC 38 measure Sepsis rates, however, PSI 13 is limited to postoperative Sepsis while PPC 38 covers all inpatient Sepsis cases.
  - Other differences include Age and Major Diagnostic Category (MDC) variables.
  - Data suggest the measure specifications are not sufficiently aligned for PSIs and PPCs to be considered comparable across most of the “overlapping” measure sets
    - Measures within each measure set should be compared to their own historical performance rates in order to understand trends.
    - This has implications if the PSIs were to replace PPCs
  - While PPCs are more comprehensive in some of their constructs, they lack national comparative performance data and benchmarks.
- Staff believes that inclusion of both PPCs and PSIs provides for comprehensive measurement of complications acquired in the hospital while making progress toward aligning with the HACRP program.

PSI-PPC Numerator and Denominator Overlap

Highlight Indicates Payment PPC

Measures Compared	Measure Inclusion	Numerator Cases		Denominator Cases	
		Frequency	Percent	Frequency	Percent
PSI 03: Pressure Ulcer PPC 31: Pressure Ulcers	PSI and PPC	305	42.10%	307,871	56.60%
	PSI Only	85	11.70%	221,786	40.80%
	PPC Only	334	46.10%	14,388	2.60%
PSI 06: Iatrogenic Pneumothorax Rate PPC 49: Iatrogenic Pneumothorax	PSI and PPC	52	26.90%	574,470	66.10%
	PSI Only	44	22.80%	123,661	14.20%
	PPC Only	97	50.30%	171,304	19.70%
PSI 08: In Hospital Fall with Hip Fracture Rate PPC 28: In-Hospital Trauma and Fractures	PSI and PPC	135	57.00%	727,412	81.90%
	PSI Only	4	1.70%	113	0.00%
	PPC Only	98	41.40%	160,956	18.10%
PSI 09: Perioperative Hemorrhage or Hematoma Rate PPC 41: Peri-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D Procedure	PSI and PPC	45	16.50%	97,744	46.10%
	PSI Only	182	66.90%	24,721	11.70%
	PPC Only	45	16.50%	89,447	42.20%

PSI-PPC Numerator and Denominator Overlap

Highlight Indicates Payment PPC

Measures Compared	Measure Inclusion	Numerator Cases		Denominator Cases	
		Frequency	Percent	Frequency	Percent
PSI 11: Postoperative Respiratory Failure Rate	PSI and PPC	23	2.20%	52,099	10.00%
PPC 03: Acute Pulmonary Edema and	PSI Only	392	37.20%	13,759	2.60%
Respiratory Failure without Ventilation	PPC Only	639	60.60%	454,842	87.40%
PSI 11: Postoperative Respiratory Failure Rate	PSI and PPC	59	10.20%	55,750	10.70%
PPC 04: Acute Pulmonary Edema and	PSI Only	356	61.40%	10,108	1.90%
Respiratory Failure with Ventilation	PPC Only	165	28.40%	454,682	87.30%
PSI 12: Perioperative Pulmonary Embolism or	PSI and PPC	144	21.20%	118,992	17.10%
Deep Vein Thrombosis Rate	PSI Only	405	59.60%	40,983	5.90%
PPC 07: Pulmonary Embolism	PPC Only	130	19.10%	536,775	77.00%
PSI 12: Perioperative Pulmonary Embolism or	PSI and PPC	48	8.10%	73,951	15.70%
Deep Vein Thrombosis Rate	PSI Only	501	84.50%	86,024	18.20%
PPC 16: Venous Thrombosis	PPC Only	44	7.40%	312,272	66.10%

PSI-PPC Numerator and Denominator Overlap

Highlight Indicates Payment PPC

Measures Compared	Measure Inclusion	Numerator Cases		Denominator Cases	
		Frequency	Percent	Frequency	Percent
PSI 13: Postoperative Sepsis Rate PPC 35: Septicemia & Severe Infections	PSI and PPC	47	6.80%	16,421	5.60%
	PSI Only	221	32.10%	48,771	16.70%
	PPC Only	420	61.00%	226,453	77.60%
PSI 14: Postoperative Wound Dehiscence Rate PPC 37: Post-Procedural Infection and Deep Wound Disruption without Procedure	PSI and PPC	12	3.00%	24,354	16.40%
	PSI Only	71	17.70%	18,155	12.20%
	PPC Only	319	79.40%	105,763	71.30%
PSI 14: Postoperative Wound Dehiscence Rate PPC 38: Post-Procedural Infection and Deep Wound Disruption with Procedure	PSI and PPC	18	9.10%	24,562	16.60%
	PSI Only	65	33.00%	17,947	12.10%
	PPC Only	114	57.90%	105,849	71.30%
PSI 15: Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate PPC 42: Accidental Puncture/Laceration During Invasive Procedure	PSI and PPC	109	61.90%	131,525	14.40%
	PSI Only	21	11.90%	1,331	0.10%
	PPC Only	46	26.10%	782,256	85.50%

Service Line Analysis of PPC Cases Not Overlapping with "Paired" PSI

PPC	Paired PSI	PSI Filter Applied	CASE_TYPE	Analysis Population Cases	Obstetric N	Obstetric %	Surgical N	Surgical %	Medical N	Medical %
PPC3-Resp Failure, no vent	PSI11	Y	DENOMINATOR	454842	120714	26.54%	21571	4.74%	244251	53.70%
PPC3	PSI11	Y	NUMERATOR	639	25	3.91%	152	23.79%	422	66.04%
PPC4-Resp failure, vent	PSI11	Y	DENOMINATOR	454682	120707	26.55%	23372	5.14%	242627	53.36%
PPC4	PSI11	Y	NUMERATOR	165	1	0.61%	43	26.06%	110	66.67%
PPC7-- Pulm embolism	PSI12	Y	DENOMINATOR	536775	119033	22.18%	10988	2.05%	337675	62.91%
PPC7	PSI12	Y	NUMERATOR	130	5	3.85%	19	14.62%	82	63.08%
PPC9-Shock	PSI13	Y	DENOMINATOR	568178	121439	21.37%	26657	4.69%	342214	60.23%
PPC9	PSI13	Y	NUMERATOR	699	7	1.00%	218	31.19%	386	55.22%
PPC16-VTE	PSI12	Y	DENOMINATOR	312272	34472	11.04%	6849	2.19%	214632	68.73%
PPC16	PSI12	Y	NUMERATOR	44	0	0.00%	1	2.27%	35	79.55%
PPC28-In hop trauma, fx	PSI08	Y	DENOMINATOR	160956	121509	75.49%	5596	3.48%	25758	16.00%
PPC28	PSI08	Y	NUMERATOR	98	2	2.04%	17	17.35%	61	62.24%

Service Line Analysis of PPC Cases Not Overlapping with “Paired” PSI

PPC	Paired PSI	PSI Filter Applied	CASE_TYPE	Analysis Population Cases	Obstetric N	Obstetric %	Surgical N	Surgical %	Medical N	Medical %
PPC35-Sepsis	PSI13	Y	DENOMINATOR	226453	12836	5.67%	15113	6.67%	148811	65.71%
PPC35	PSI13	Y	NUMERATOR	420	11	2.62%	76	18.10%	272	64.76%
PPC37-Postop infec w/o proc	PSI14	Y	DENOMINATOR	105763	26825	25.36%	25572	24.18%	43582	41.21%
PPC37	PSI14	Y	NUMERATOR	319	0	0.00%	174	54.55%	104	32.60%
PPC41-Peri op Hem w/ control procedure	PSI09	Y	DENOMINATOR	89447	43578	48.72%	13667	15.28%	26320	29.43%
PPC41	PSI09	Y	NUMERATOR	45	3	6.67%	20	44.44%	17	37.78%
PPC42- Acc punc and lac	PSI15	Y	DENOMINATOR	782256	123212	15.75%	51048	6.53%	482910	61.73%
PPC42	PSI15	Y	NUMERATOR	46	3	6.52%	22	47.83%	11	23.91%
PPC47-Encephalopathy	UNMAPPED	N	DENOMINATOR	430050	120207	27.95%	56428	13.12%	192249	44.70%
PPC47	UNMAPPED	N	NUMERATOR	187	1	0.53%	46	24.60%	128	68.45%
PPC49- Iatro pneumothorax	PSI06	Y	DENOMINATOR	171304	122436	71.47%	2236	1.31%	21793	12.72%
PPC49	PSI06	Y	NUMERATOR	97	0	0.00%	8	8.25%	83	85.57%

Mortality Measures:

- MD mortality measures sepsis cases capture analysis

Mortality Analysis

- Sepsis Mortality- Approximately 1.7 million adults in the U.S. and 30,000 Marylanders develop sepsis each year accounting for 350,000 deaths in the U.S. and 1,100 in Maryland annually. *, ** ; It is the leading cause of hospitalization and mortality, with one in three people who die in the hospital having sepsis during their stay.
  - Sepsis mortality using the AHRQ definition is included in the HSCRC Sepsis Dashboard on CRISP Reporting Services
  - The CDC is developing and piloting a Adult Community Onset Sepsis digital hybrid mortality measure.
  - HSCRC/MPR has begun analyzing to what extent the HSCRC Inpatient and 30-Day Mortality measures capture sepsis cases as defined by the AHRQ method in order to inform next steps on mortality measures/measurement.

* Found at: https://www.cdc.gov/sepsis/about/index.html. last accessed 8/6/2025.

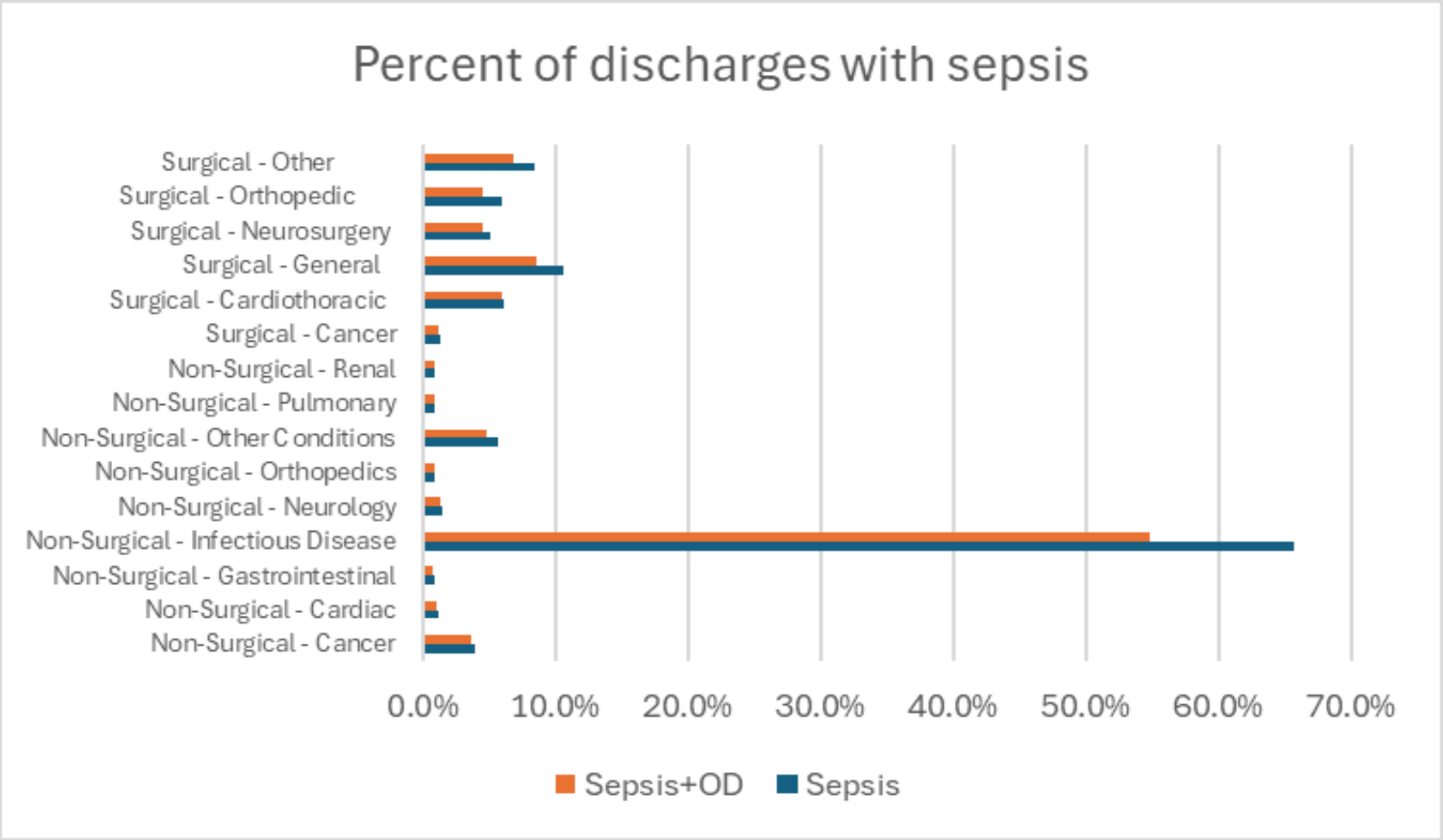
**Found at: https://health.maryland.gov/newsroom/Pages/Sepsis-Awareness-Month-Highlights-Leading-Cause-Of-Deaths-In-US-Hospitals.aspx. last accessed 8/6/2025.

Sepsis and mortality measures: Service Line Breakdown

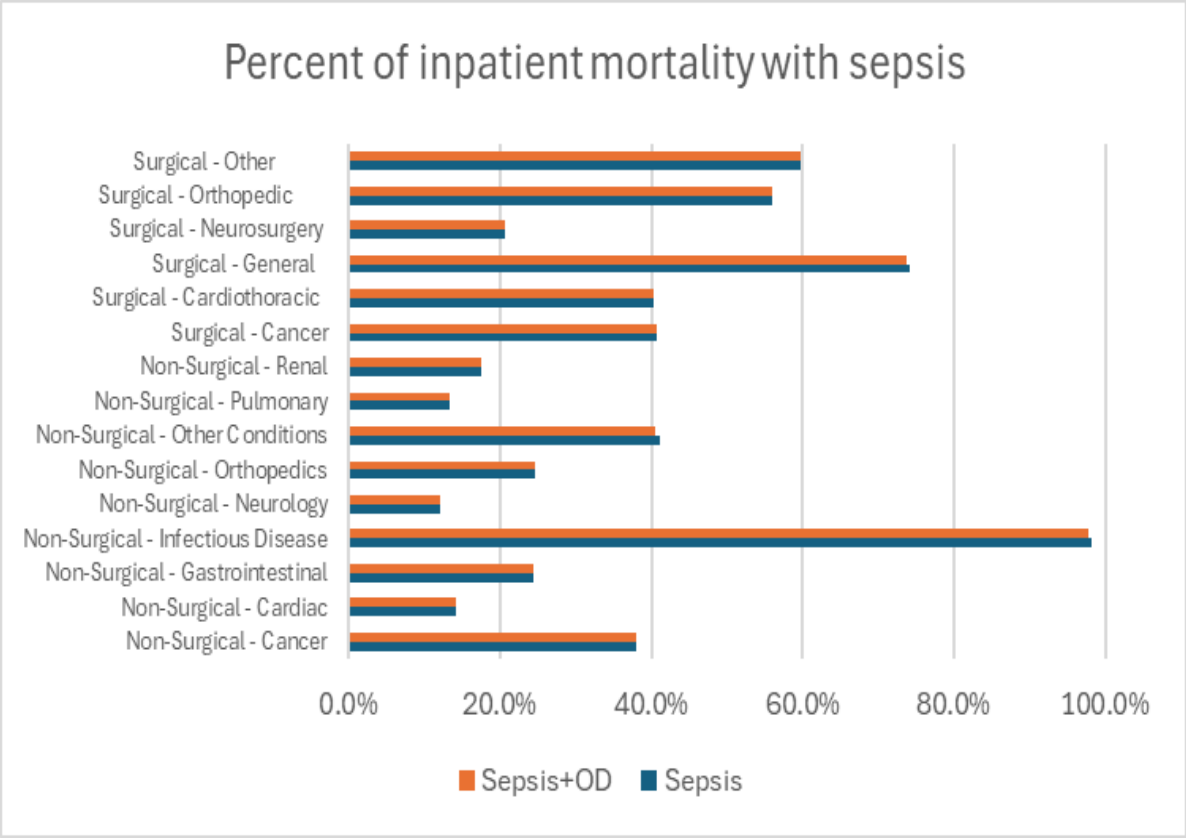
Sepsis and mortality measures: Methods

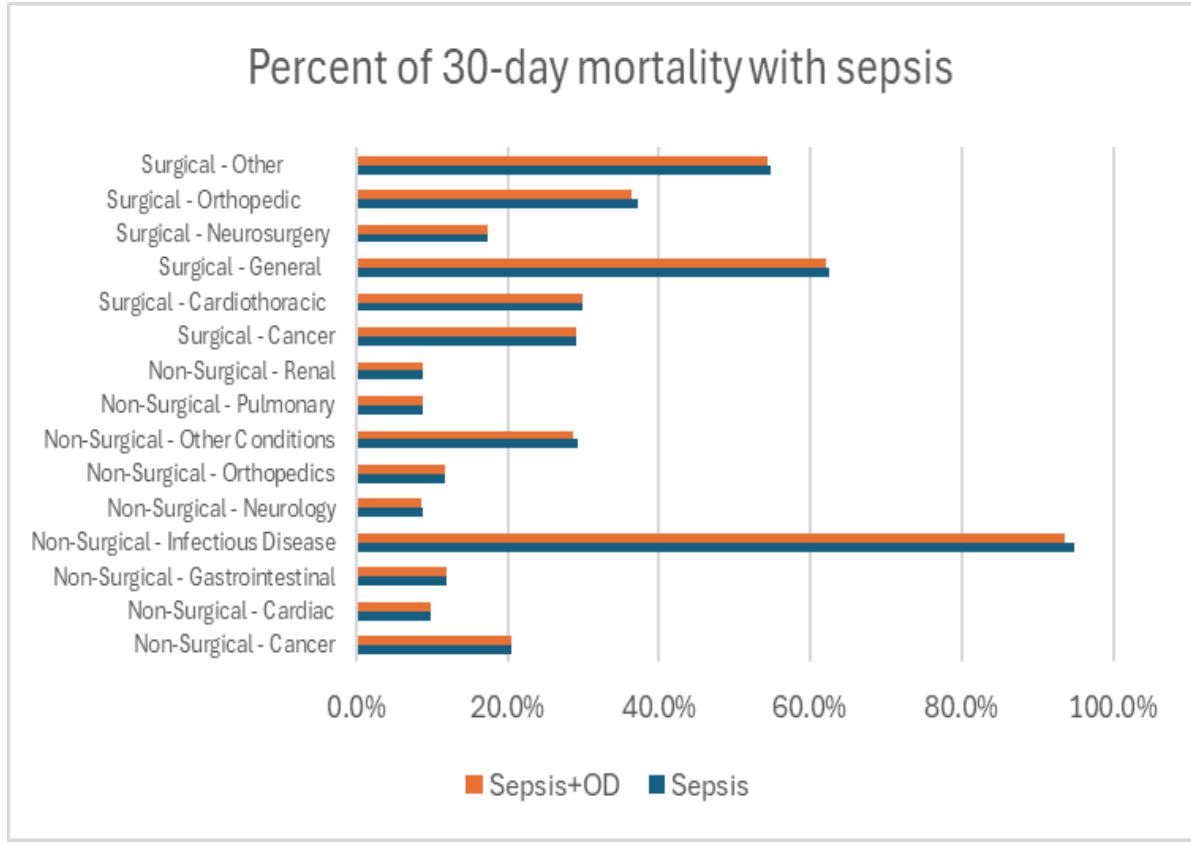
- **Relation of sepsis to 30-day and inpatient mortality measures measured as proportion by service line of discharges, inpatient and 30-day mortality with sepsis diagnoses**
- **Service lines are those assigned to produce 30-day mortality measure**
  - Analyzed data from 2023 that was used to develop Sepsis Dashboard (which includes present on admission flags)
  - Applied exclusions for 30-day mortality measure, including randomly excluded admissions for patients with multiple stays and patients with high probability of mortality
  - Measured proportions of sepsis, sepsis with organ dysfunction, and healthcare associated sepsis infections compared to infection present on admission
- **Compared hospitals' 30-day mortality excluding sepsis cases to their overall 30-day mortality for 2025**
- **Compared results for discharges included in 30-day measure to overall results**

Patients with sepsis by service line: All sepsis and sepsis with organ dysfunction

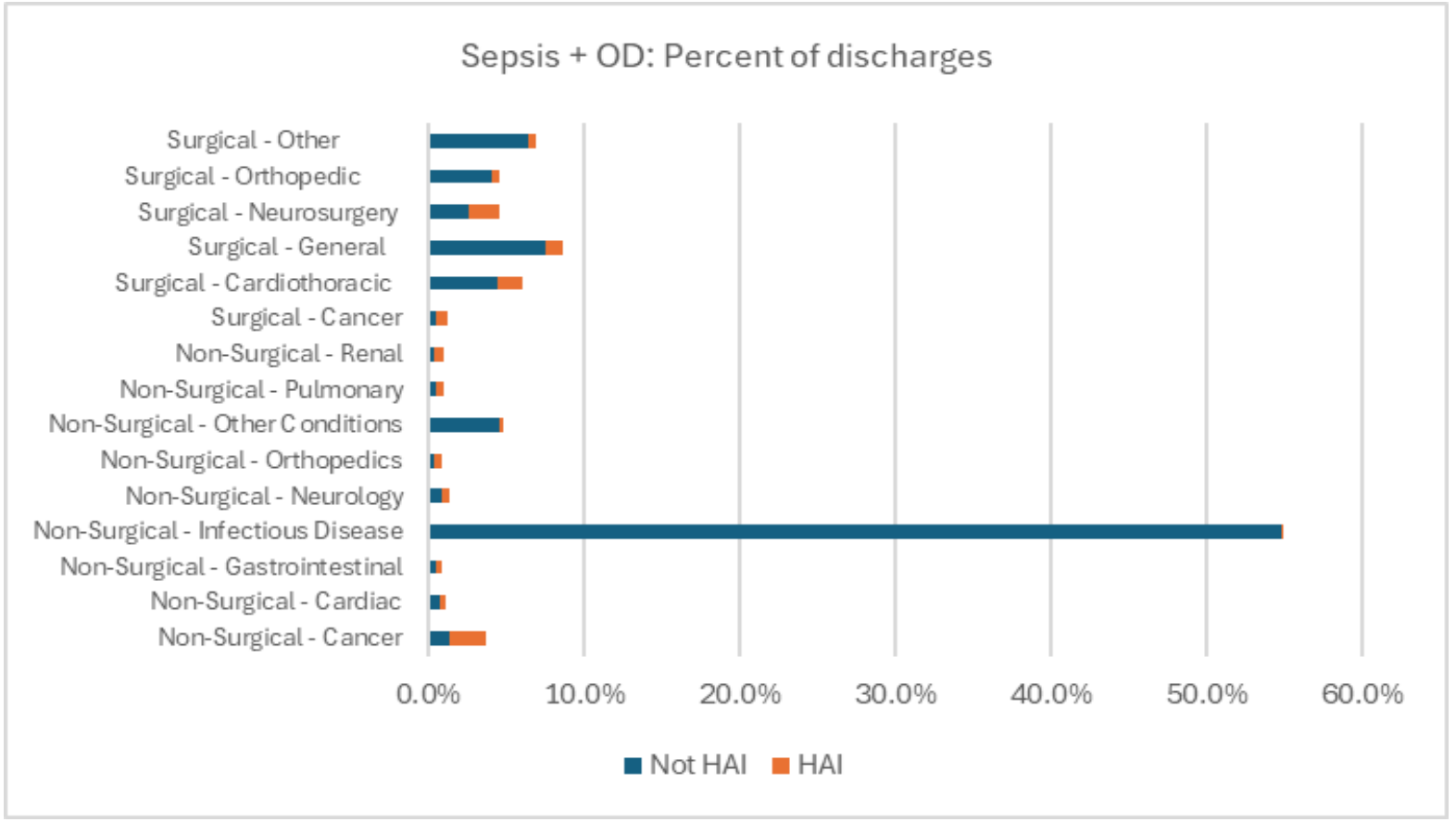


Sepsis share of mortality, by service line

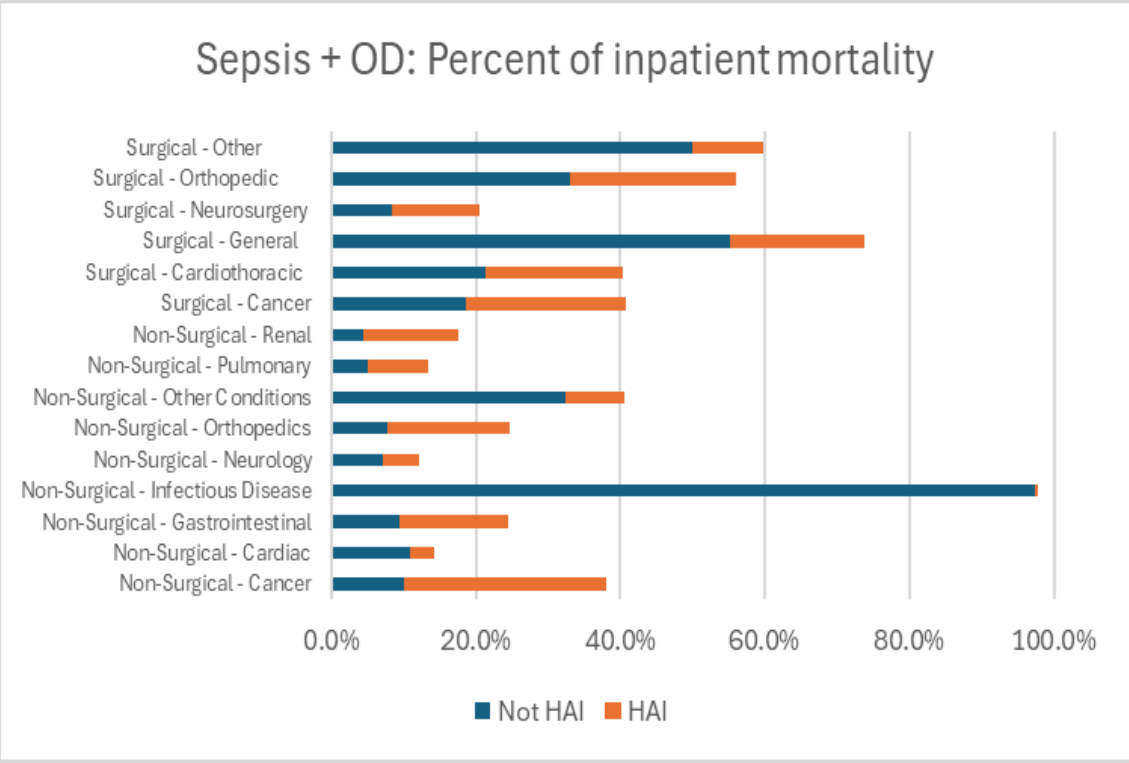


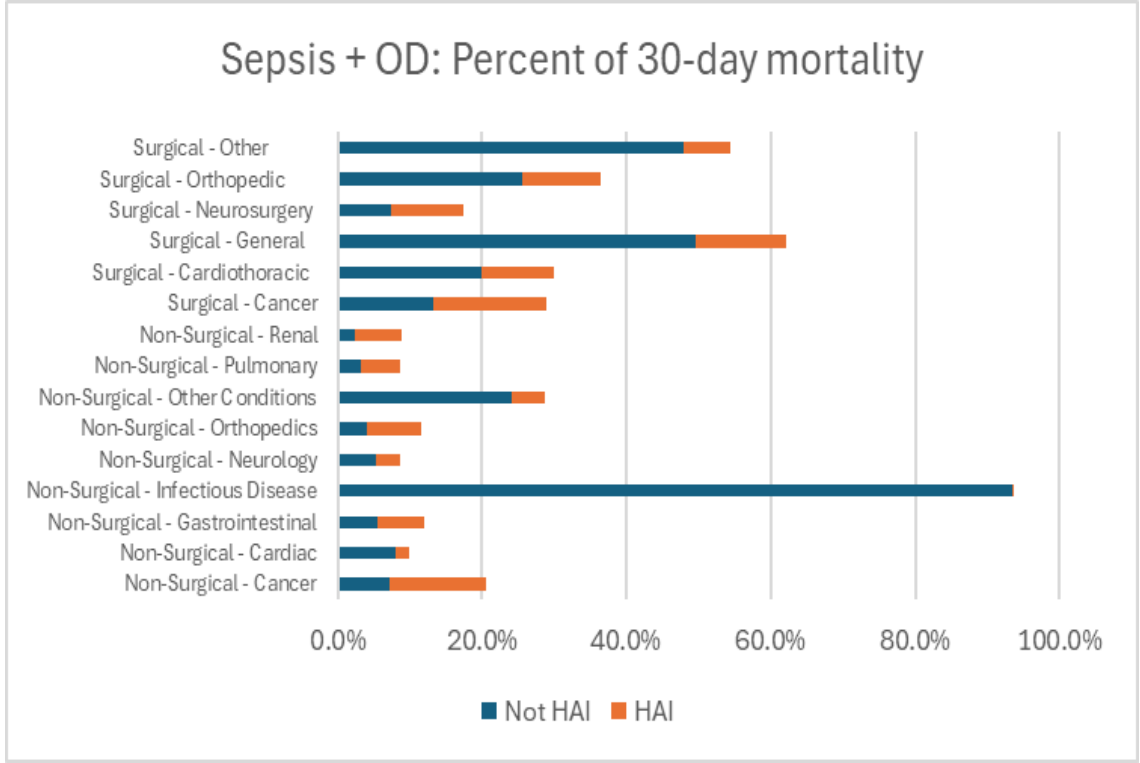


Sepsis (with organ dysfunction) as healthcare associated infection vs sepsis present on admission

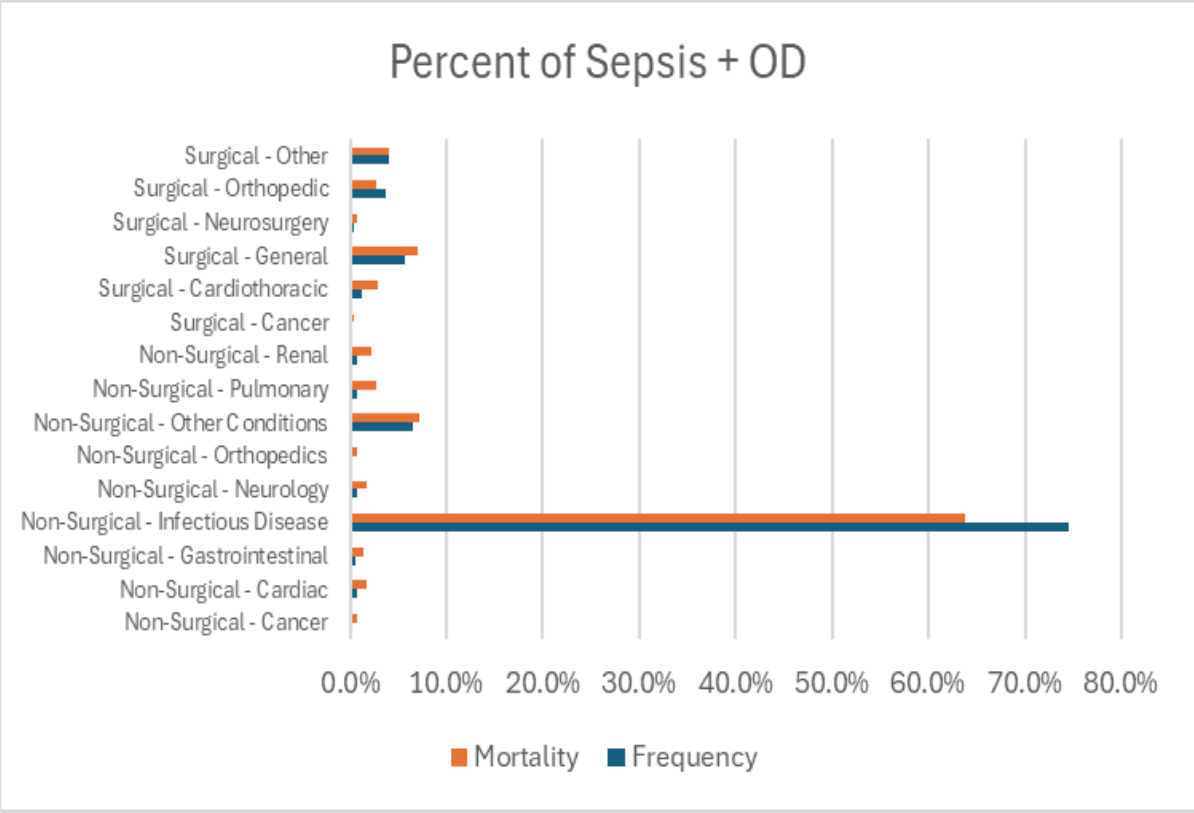


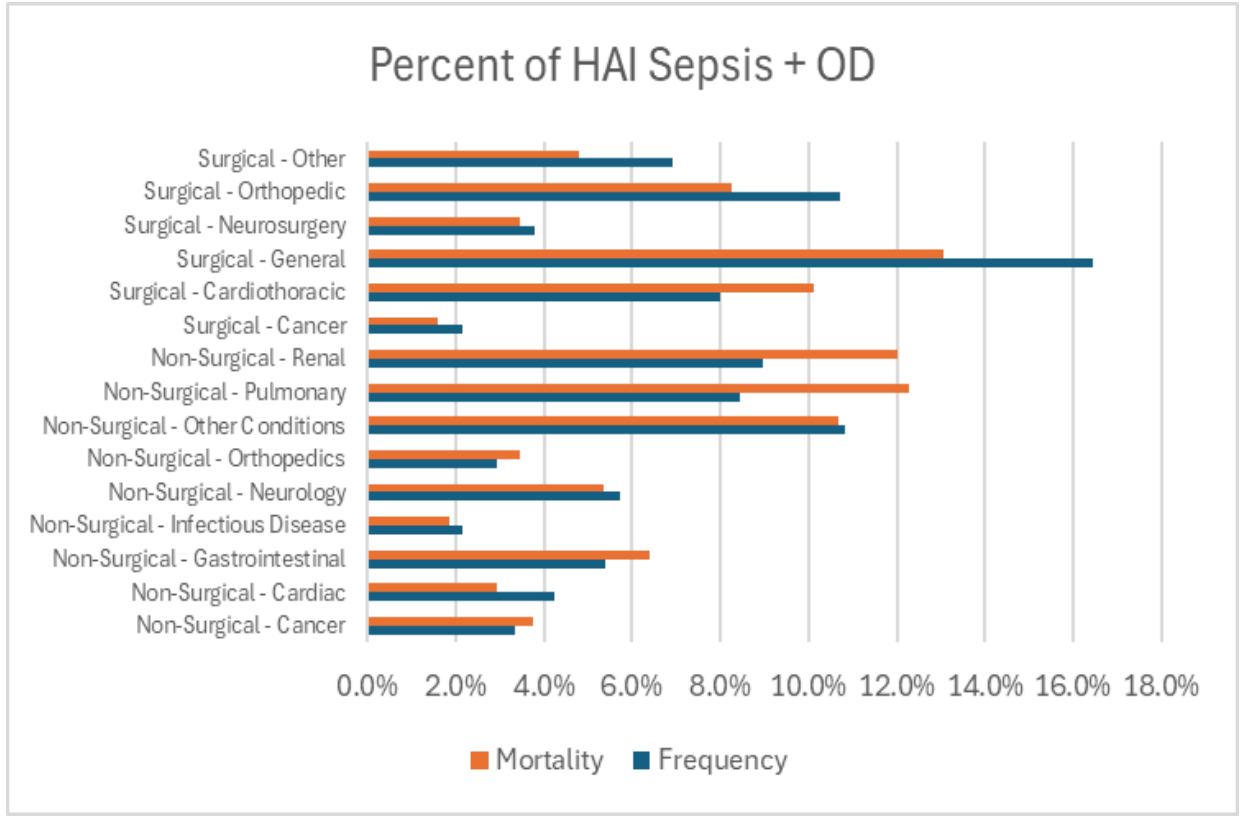
Role of healthcare associated sepsis infections in mortality, by service line



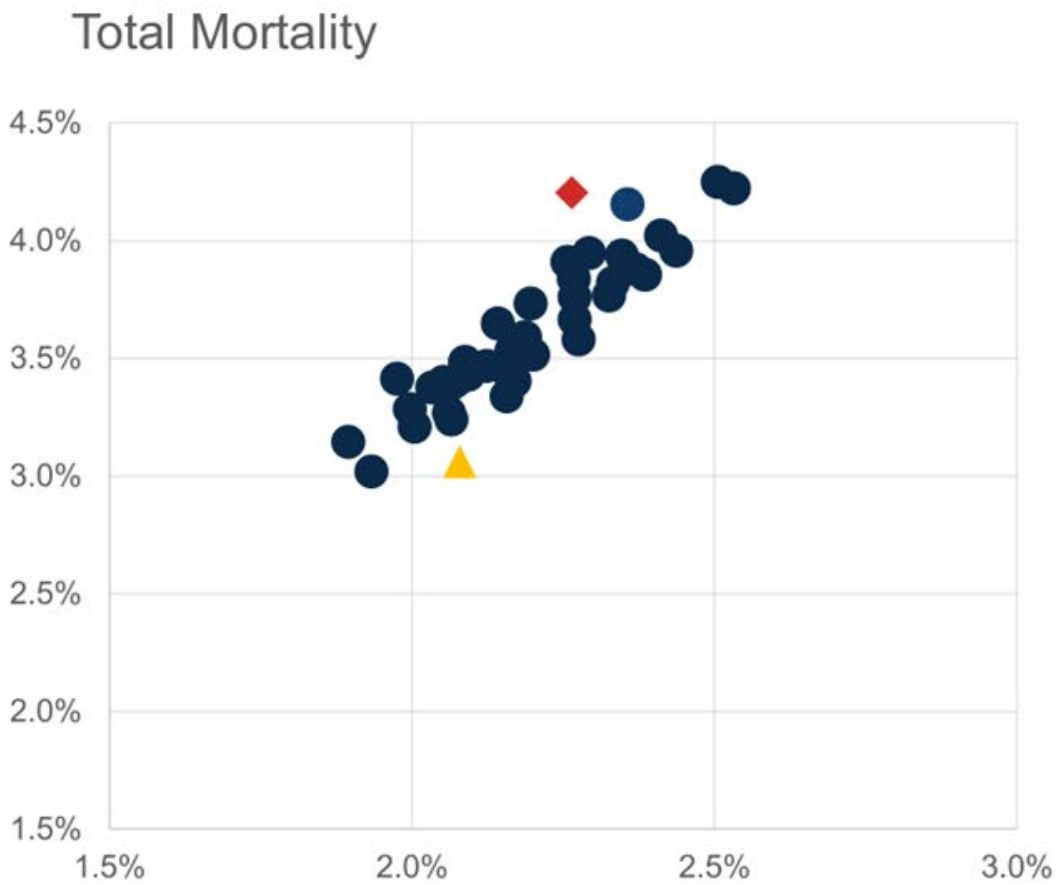


Service line share of sepsis (with organ dysfunction) and share of sepsis inpatient mortality



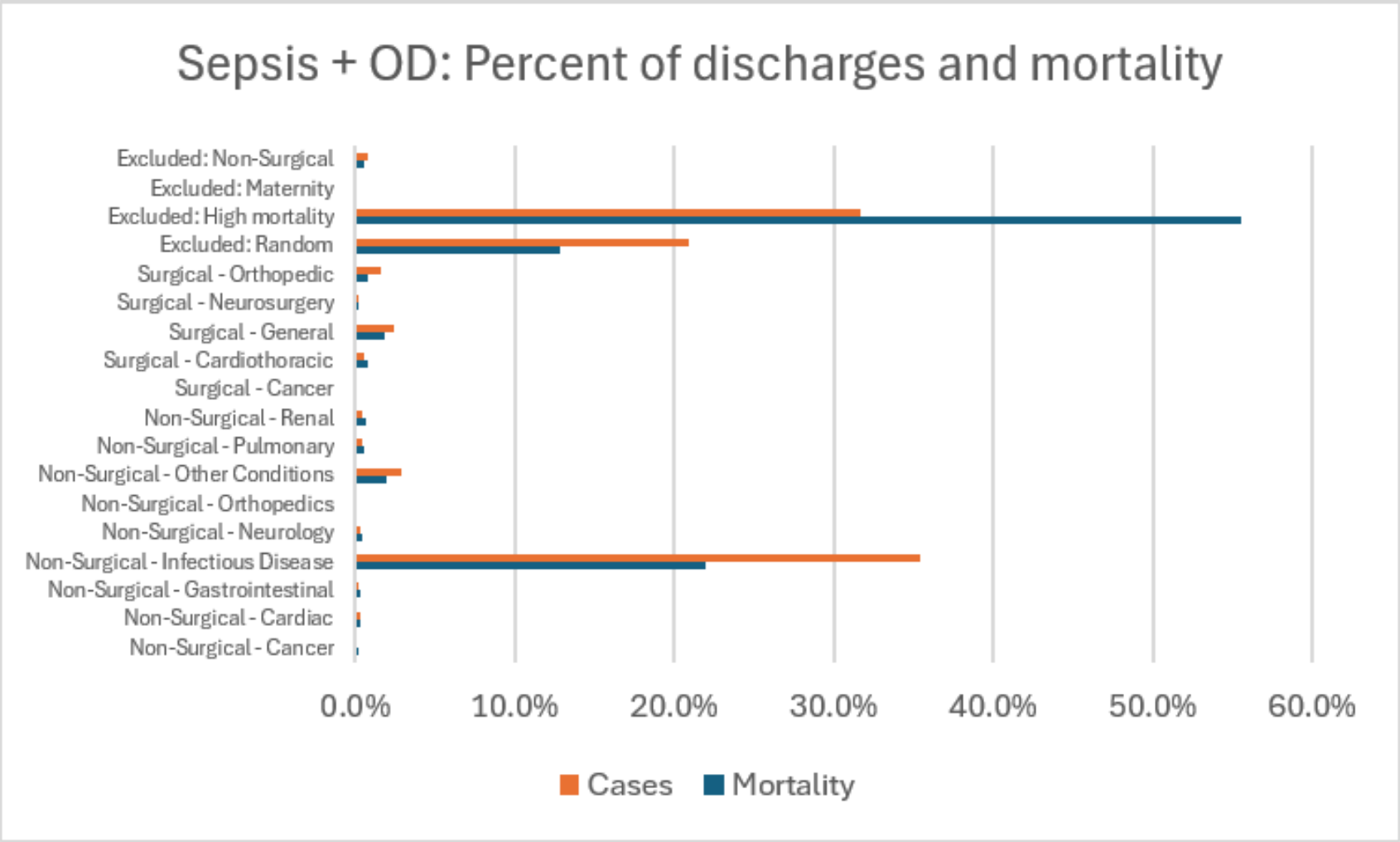


Risk adjusted 30-day mortality with and without sepsis

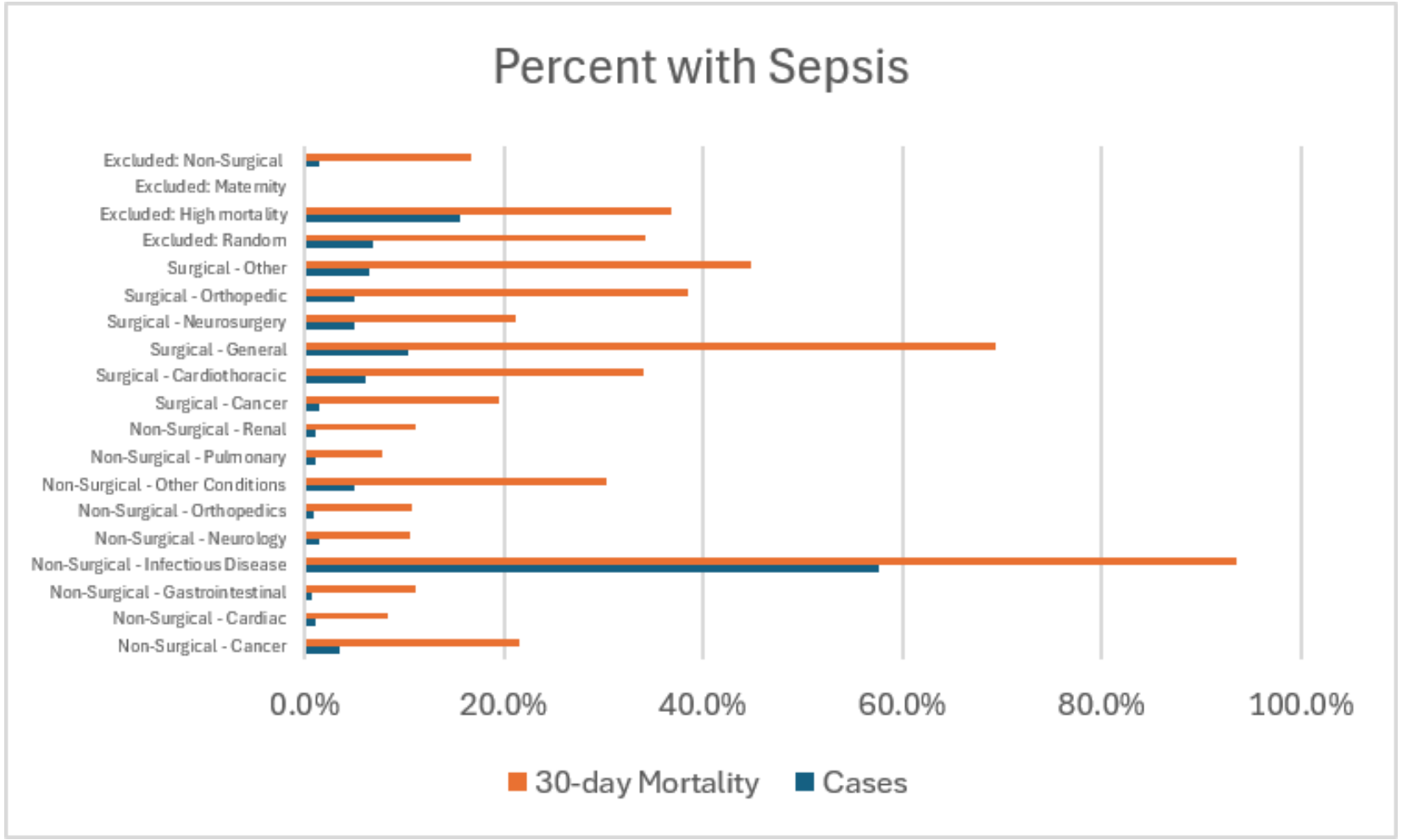


- **Hospitals' total mortality vs mortality excluding sepsis + OD**
- **Hospital with relatively high sepsis mortality (diamond)**
- **Hospital with relatively low sepsis mortality (triangle)**

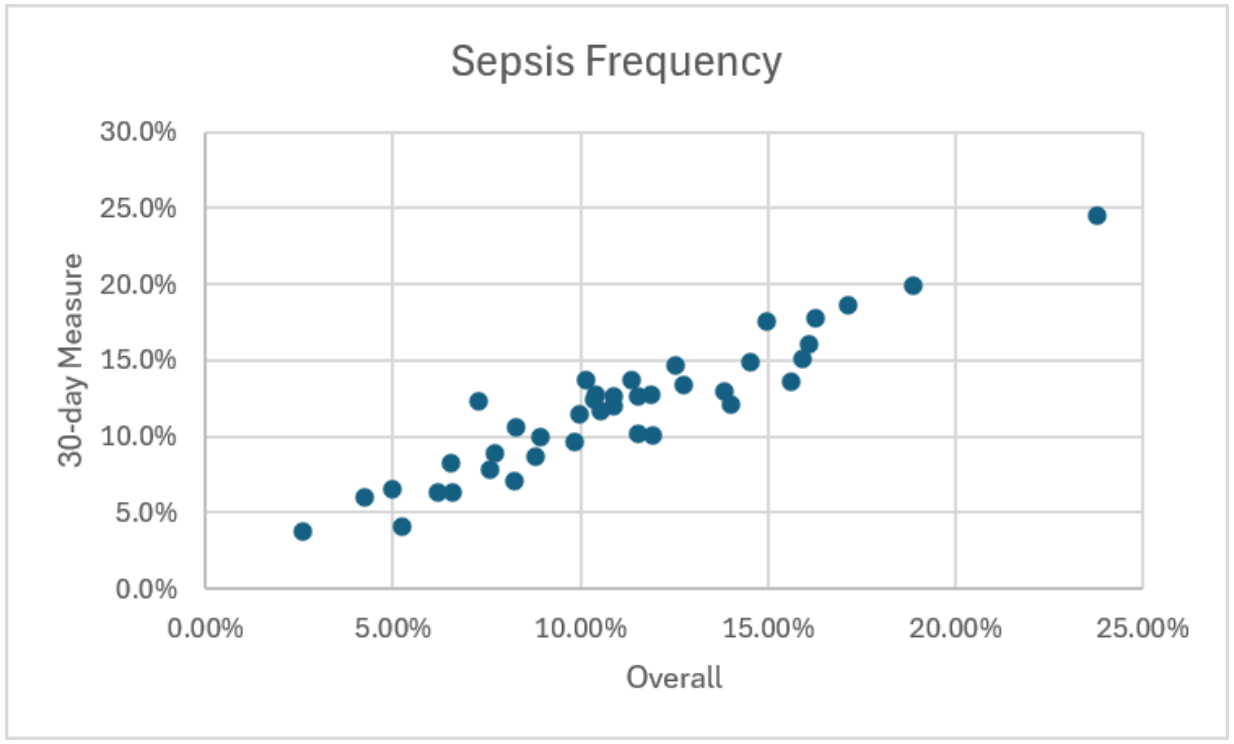
Share of Sepsis + OD Frequency and 30-Day Mortality by Service Line and Exclusion

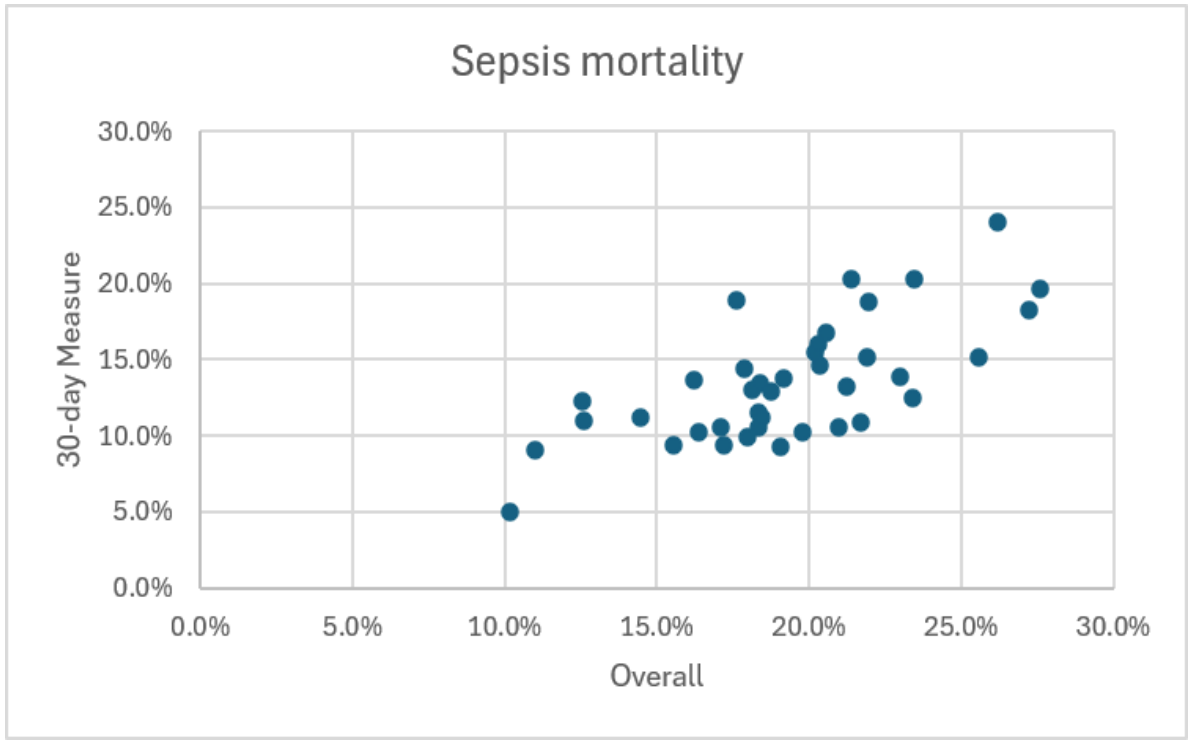


Share of Sepsis + OD in Discharges and 30-day Mortality



Sepsis + Organ Dysfunction by Hospital: Overall vs Dashboard 30-day Measure





Conclusions

- **Over 60% of discharges for the infectious disease service line in 2023 were patients with sepsis**
  - Over half were for sepsis + OD
- **Between 4% and 10% of discharges in surgical service lines involved sepsis + OD**
- **Over 90% of infectious disease mortality was for patients with sepsis**
  - Almost all sepsis mortality includes organ dysfunction
- **For most surgical service lines, over 40% of inpatient mortality was incurred by sepsis patients**
  - The sepsis share of 30-day mortality is less than its share of inpatient mortality
- **Almost all infectious disease sepsis was present on admission; for other service lines, a substantial share was HAI**

Conclusions (continued)

- **Among discharges included in the 30-day measure, over 70% of sepsis + OD discharges were in the infectious disease service line, accounting for over 60% of sepsis mortality**
  - Surgical discharges and the non-surgical – other service line accounted for most remaining sepsis discharges and mortality
- **General surgery accounted for the greatest share of HAI sepsis discharges and mortality**
  - HAI sepsis and sepsis mortality were spread across many service lines; the shares were least for infectious disease and cancer surgery
- **In 2025, 30-day mortality including sepsis cases was strongly correlated with 30-day mortality excluding them (r=0.90)**
- **Over a third of sepsis cases and over half of sepsis mortality are excluded from the 30-day measure**
- **Of high mortality cases excluded from the 30-day measure, under 20% were sepsis cases and under 40% of mortality was among sepsis cases**
- **The frequency of sepsis in the overall hospital population is highly correlated with its frequency in the 30-day measure (r=0.94); mortality in the overall population is moderately correlated with mortality in the 30-day measure (r=0.70)**

Mortality Measure Questions for Discussion

- HSCRC is continuing work on risk adjusting our claims-based 30-day mortality measure using the Core Clinical Data Elements.
  - Thoughts about migrating to a state hybrid 30-day Mortality?
  - Are there additional considerations or analyses that should be done related to Hybrid CMS vs Maryland measure inclusions, exclusions?
- How should we proceed to maximize our measurement of Sepsis mortality?
  - What additional analysis should we do?
  - Should we consider the option to use the AHRQ definition used in the HSCRC Sepsis Dashboard on CRISP Reporting Services
  - Should we adjust the current HSCRC measures to better account for sepsis cases?
  - Should we consider migrating to the CDC the Adult Community Onset Sepsis digital hybrid mortality measure when available?

Measures of Interest Matrix: Discussion

Candidate Measures of Interest Endorsed by P4QM

- CMS Pay for Performance Measures
  - Total Hip Knee Arthroplasty
  - Centers for Disease Control National Health Safety Network Healthcare Associated Infection (CDC NHSN HAI) Measure
- Required Digital Measures (eCQMs)
  - Cesarean Section (PC 02)
  - Severe Obstetric Complications (PC 07)
  - Severe Hyperglycemia (eCQM)
  - Severe Hypoglycemia (eCQM)
  - Safe Opioid Use Concurrent Prescribing (eCQM)
- Measures under development or consideration
  - Hospital Onset Bacteremia and Fungemia (CDC NHSN HAI)

SEE MEASURES EXCEL WORKBOOK FOR DETAILED SPECIFICATIONS AND TECHNICAL FINDINGS REGARDING THE MEASURES

Hospital Onset Bacteremia (HOB)

- CBE ID 3686
- Title CDC, National Healthcare Safety Network (NHSN) Hospital-Onset Bacteremia & Fungemia Outcome Measure
- Endorsement Status: Endorsed , 7/24/2023 (no conditions)
- Next Maintenance Cycle: Fall 2028
- Measure Description: Risk-adjusted ratio of observed bacteremias and fungemias to predicted bacteremias and fungemias among patients previously admitted to acute care hospitals.
- Numerator: Observed bacteremia and fungemia among patients previously admitted to acute care hospitals.
- Denominator: The HOB measure denominator is the predicted number of HOB events in an acute care hospital based on predictive models using facility-level and patient-level factors.

Updated Measure Evaluation and Selection Criteria

- Data Analysis/Statistics
  - Variation across hospitals
  - Reliable and Valid*
  - Not topped off
  - Improvement is needed
- Additional Considerations
  - Clinical significance^
  - Coding: Supports coding practice improvements/not subject to known coding changes or concerns
  - Opportunity for improvement/actionability*^
  - Measure overlaps, e.g., PPC-PSI
  - All-payer
  - Feasible
- New Proposed Criteria
  - National CMS alignment; consider CMS and MUC measures*
  - Addresses state priorities for quality and population health improvement
  - Cost of Proprietary systems*^
  - Adequate risk adjustment*
  - Digitally specified*

***Emphasized by subgroup**
^Emphasized by PMWG

CAEM Next Steps

THANK YOU!

Next Meeting (Tentative): July 22, 2026

Appendix

CMS Measures

THK Arthroplasty P4QM Maintenance Review Fall 2024*

Following Committee review, P4QM staff assessment concluded:

- The Feasibility criteria was met
- The following criteria were not met but deemed addressable:
  - Importance
  - Closing the care gap
  - Scientific Acceptability
  - Use and Usability

Public comment stated endorsement should be removed because of the following concerns:

- Exclusion of patients receiving outpatient surgery
- Exclusion of Medicare patients during first year of Medicare eligibility
- Failure to Adjust for Low Income Status
- Inappropriate Adjustment for Type of Insurance
- Inadequate Assessment of Model Fit
- Poor Reliability of the Measure
- Lack of Business Case for Using the Measure and Undesirable Effects of Doing So

***Refer to THK Arthroplasty Measure detailed endorsement information on the P4QM Website using the link in the title.**

PUBLIC COMMENT Fall 2024

Center for Healthcare Quality and Payment Reform

The developer did not report how many hospitals would be classified as different from the national average using the proposed measure. However, the Measure Update Report for the current version of the measure (which uses data only for Original Medicare beneficiaries) indicates that the measure was only able to determine that ***27 hospitals out of 3,257 hospitals performed "Better Than the National Rate," and only 8 performed "Worse Than the*** National Rate." *1,724 hospitals were classified as "No Different Than the National Rate," and 1,498 had too few cases (less than 25) to make a determination of whether the hospital was better or worse than average.*

THK Arthroplasty P4QM Maintenance Review

CBE ID	Title	Steward	Endorsement Cycle Status	Previous Endorsement Cycle
1550	Hospital-Level, Risk-Standardized Complication Rate (RSCR) Following Elective Primary Total Hip Arthroplasty (THA) and/or Total Knee Arthroplasty (TKA)	Centers for Medicare & Medicaid Services	Endorsed with Conditions	Fall 2024

E&M Committee Rationale/Justification

After the endorsement meeting, the developer of CBE #1550 submitted an appeal due to the following rationales:

1. Procedural error in the endorsement process; excessive focus on outpatient setting exclusion, outside scope of IP measure.
2. Misapplication of measure evaluation criteria, particularly risk adjustment.

The Appeals Committee voted to uphold the appeal based on both rationales above. Measure' Endorsed with Conditions. When the measure returns for maintenance (5 years), the measure developer should have:

- Explored the proportion of procedures done in the ASC/HOPD* setting and evaluate the need for adjustment (e.g., risk, stratification) based on impact to case mix.
- Explored additional approaches to the reliability assessment to account for low volume facilities (e.g., borrowing strength).

CDC NHSN HAI Measures: MRSA and CDiff Endorsement Status

CBE #1716 – Methicillin-resistant Staphylococcus Aureus (MRSA) Bacteremia LabID Event Standardized Infection Ration (SIR) [CDC NHSN] – Maintenance

Endorsed with Conditions: Fall 2025.

When the measure comes back for maintenance in 3 years, the developer will have: Explored the possibility of using other all-payer data sources to expand the use of patient- level factors in the risk adjustment model and reduce reliance on facility-level factors.

Vote Count: Endorse (2 votes; 10%), Endorse with Conditions (14 votes; 70%), Remove Endorsement (4 votes; 20%)

Summary of Public Comments: Battelle received one comment from the University of California Davis Health prior to the meeting. University of California Davis Health argued that the measure fails PQM Reliability criterion (>50% of facilities are below the threshold of 0.6), likely violates Poisson assumptions (overdispersion), and requires a longer performance period or higher minimum denominator for reliability.

CBE #1717 – Clostridium difficile (CDI) LabID Event Standardized Infection Ratio (SIR) [CDC NHSN] – Maintenance

Endorsed with Conditions: Fall 2025.

When the measure comes back for maintenance in 3 years, the developer will have: Explored the possibility of using other all-payer data sources to expand the use of patient- level factors in the risk adjustment model and reduce reliance on facility-level factors.

Vote Count: Endorse (1 vote; 6%), Endorse with Conditions (14 votes; 78%), Remove Endorsement (3 votes; 17%)

CDC NHSN HAI CLABSI and CAUTI Measures: Endorsement Status

Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio. CBE ID: 0139

1.5 Project: Management of Acute Events, Chronic Disease, Surgery, and Behavioral Health.

Endorsement Status: Endorsed with Conditions (Spring 2025) **E&M Committee Rationale/Justification:** When the measure returns for maintenance (3 years), the measure developer should have explored the possibility of using other all-payer data sources to expand the use of patient-level factors in the risk-adjustment model and reduce reliance on facility-level factors.

Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio. CBE ID: 0138

1.5 Project: Management of Acute Events, Chronic Disease, Surgery, and Behavioral Health .

Endorsement Status: Endorsed with Conditions (Spring 2025) **E&M Committee Rationale/Justification:** When the measure returns for maintenance (3 years), the measure developer should have explored the possibility of using other all-payer data sources to expand the use of patient-level factors in the risk adjustment model and reduce reliance on facility-level factors.

Public comment: …"In the Inpatient Rehabilitation Facilities (IRF) space, 757 hospitals were designated on Care Compare as 'Not Applicable,' 54% are IRFs that had infections. Instead of being designated as the safest care providers related to catheter associated urinary tract infections on IRF Compare for consumer comparison, they are not displayed with a comparative category at all, effectively misrepresenting which IRF providers are, in fact, "better" with not only fewer infections – but zero, as "Not Applicable."

CDC NHSN HAI SSI Measures: Endorsement Status

30-Day Post-Operative Colon Surgery (COLO) and Abdominal Hysterectomy (HYST) Surgical Site Infection (SSI) Standardized Infection Ratio (SIR). CBE ID: 0753

1.5 Project: Management of Acute Events, Chronic Disease, Surgery, and Behavioral Health

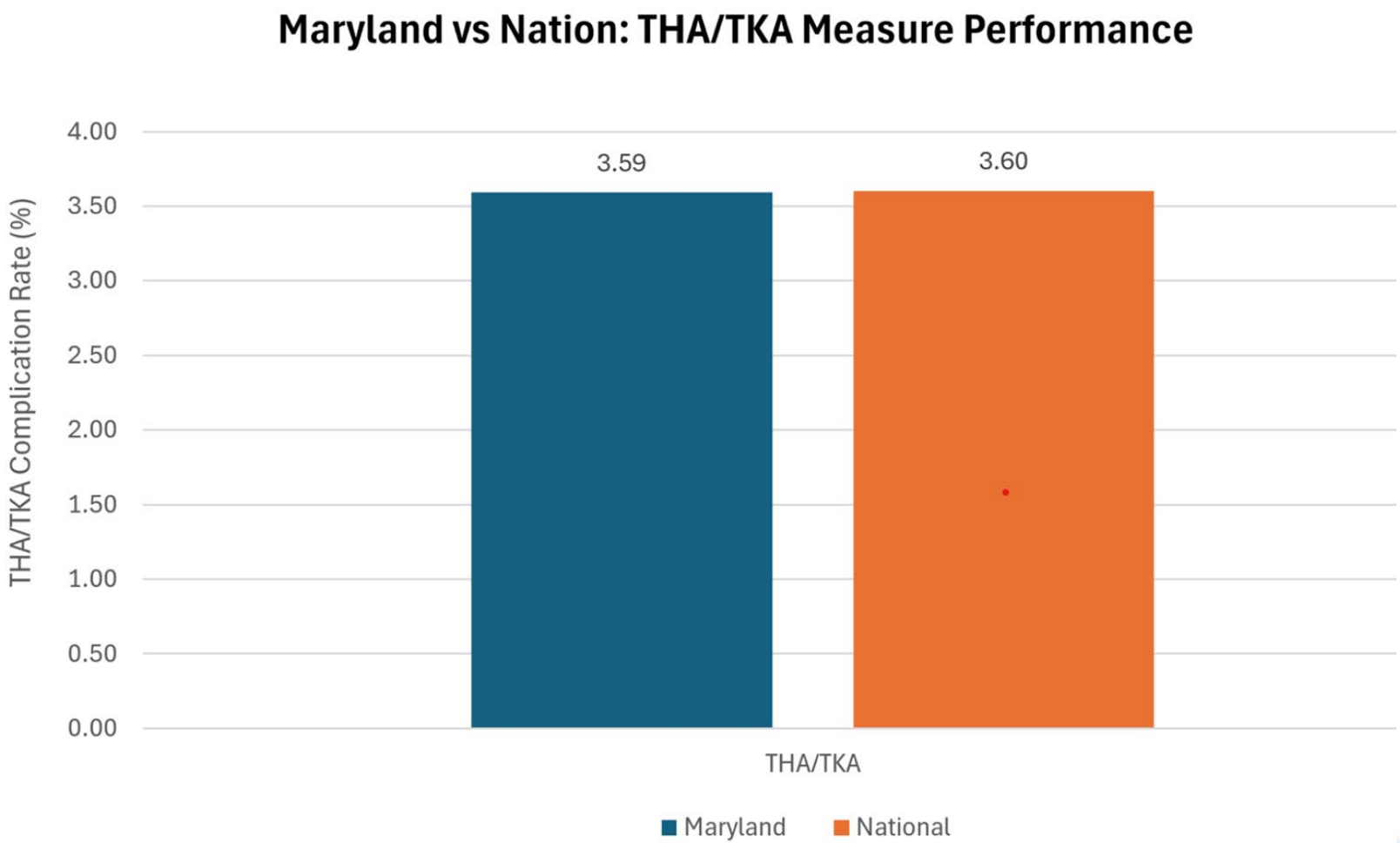
Endorsement Status: Endorsed with Conditions (Spring 2025)

E&M Committee Rationale/Justification

When the measure returns for maintenance (3 years), the measure developer should have:

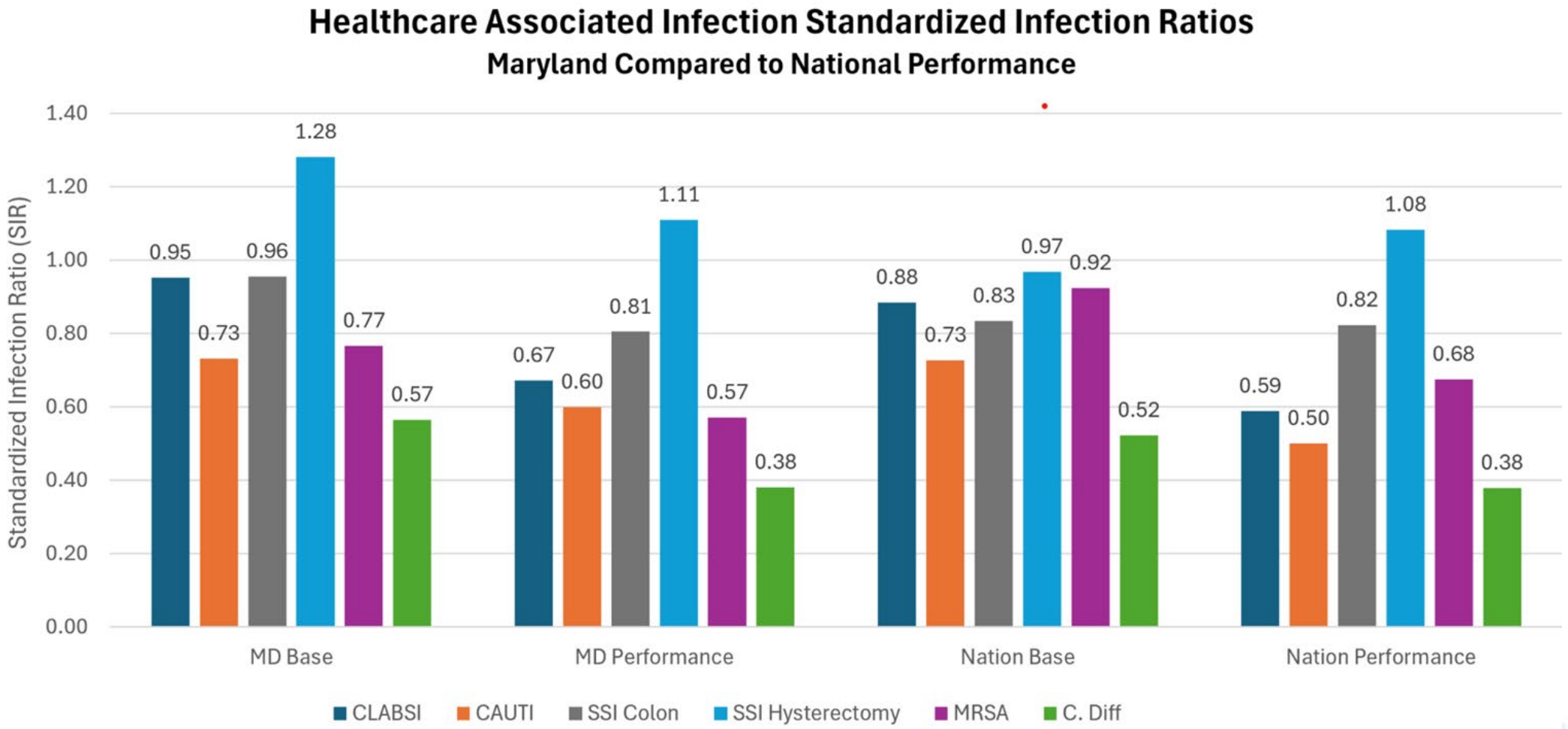
- Explored the possibility of using other all-payer data sources to expand the use of patient-level factors in the risk-adjustment model and reduce reliance on facility-level factors.
- Explored the exclusion of the patient-level factors such as procedure duration and American Society of Anesthesiologists (ASA) score, while also considering the inclusion of procedure complexity and patient comorbidities.
- Explored stratification of trauma cases rather than include as a risk-adjustment variable.

Maryland Performance is Comparable to the Nation THK Arthroplasty Complications



Data Period: July 1, 2021 – June 30, 2024
Source: CMS Care Compare (May 2026 Release)

Maryland Performance is Comparable to the Nation on CDC NHSN HAI Pay for Performance Measures



Data Time Periods: Baseline (CY2022) | Performance (Jul 2024 – Jun 2025)
Source: CMS Care Compare (May 2026 Release)

Electronic Clinical Quality Measures (eCQMs)- Another potential source of Measures

eCQM Endorsement Status (See Workbook for Measure Specifications)

Rate of severe hypoglycemia among hospitalized patients. CBE ID:3503e

1.5 Project: Management of Acute Events, Chronic Disease, Surgery, and Behavioral Health

Endorsement Status: Endorsed with Conditions Spring 2025

E&M Committee Rationale/Justification: By measure maintenance (5 years), the developer will have considered the potential for risk adjustment through empirical analysis.

Hospital Harm - Severe Hyperglycemia. CBE ID: 3533e

1.5 Project: Management of Acute Events, Chronic Disease, Surgery, and Behavioral Health

Endorsement Status: Endorsed with Conditions Spring 2025

E&M Committee Rationale/Justification: When the measure returns for maintenance review in 5 years, the developer will have: Considered the potential for risk adjustment through empirical analysis.

Safe Use of Opioids – Concurrent Prescribing. CBE ID: 3316e. **1.5 Project:** Primary Prevention. **Endorsement Status:** Endorsed with Conditions Fall 2023. **E&M Committee Rationale/Justification:**

- Expand reliability and validity testing to ensure a more diverse population and explore regional diversity within testing.
- Explore new versus current users of opioids and benzodiazepines on admission, and stratify by these populations.

ePC-07 Severe Obstetric Complications. CBE ID: 3687e. **Endorsement Status:** Approved for Trial Use ..**1.0 New or Maintenance:** New. **Next Maintenance Cycle:** Spring 2027. **Known Issues with POA submission on secondary Dx codes.**

ePC-02 Cesarean Birth. CBE ID: 0471e. **1.5 Project:** Perinatal and Women's Health. **Endorsement Status:** Endorsed Spring 2022. **Next Maintenance Cycle:** Spring 202

ePC-02 Cesarean Birth Endorsed Measure

Planned Use

Measure Currently in Use

Public Reporting

6.1.2 Current or Planned Use(s)

Measure Currently in Use

Public Reporting

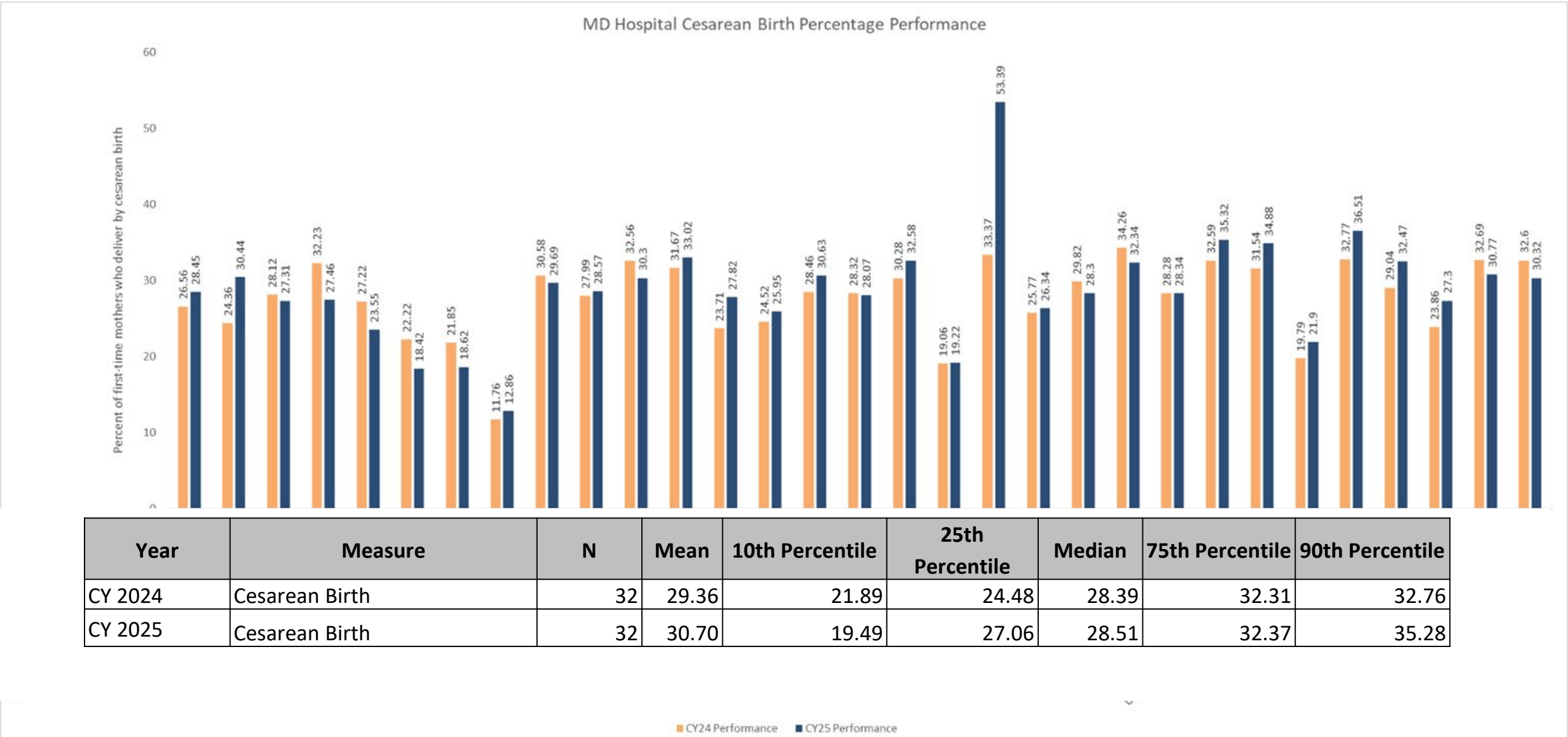
Quality Improvement (Internal to the specific organization)

Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

Regulatory and Accreditation Programs

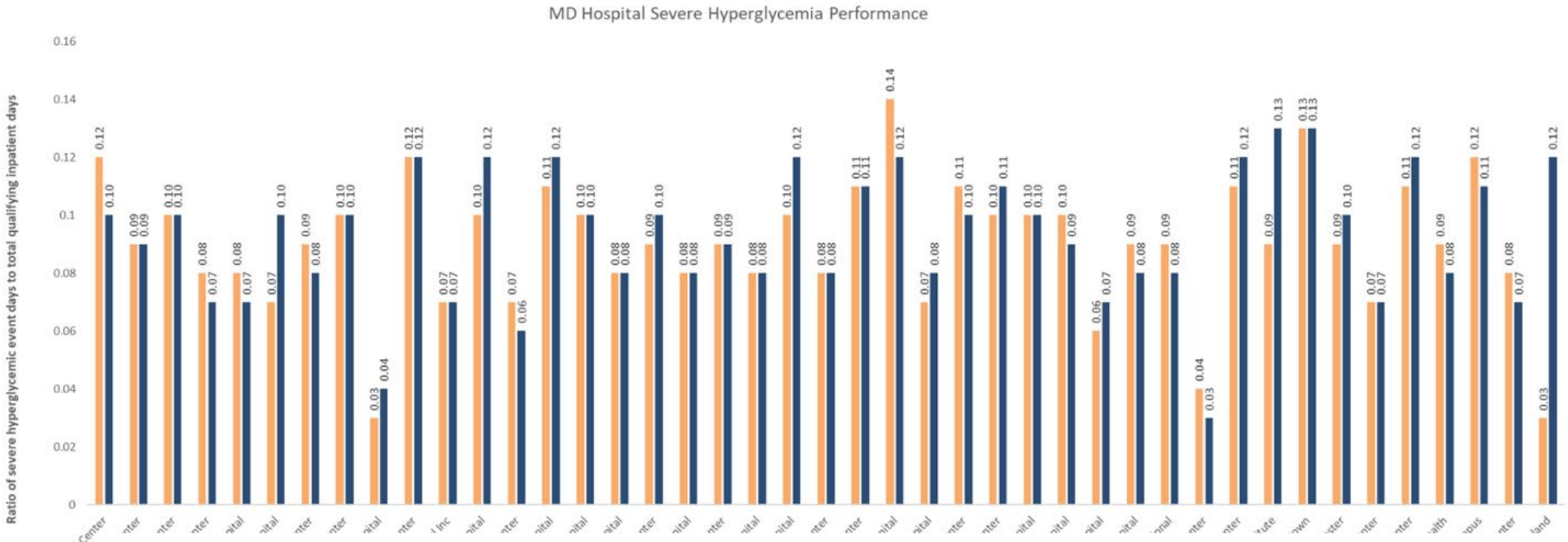
SEE ATTACHED PDF FILE WITH MEASURE TECHNICAL DETAILS SUBMITTED TO NQF IN 2022 FOR ENDORSEMENT CONSIDERATION.

PC 02- Cesarean Section (CMS334)



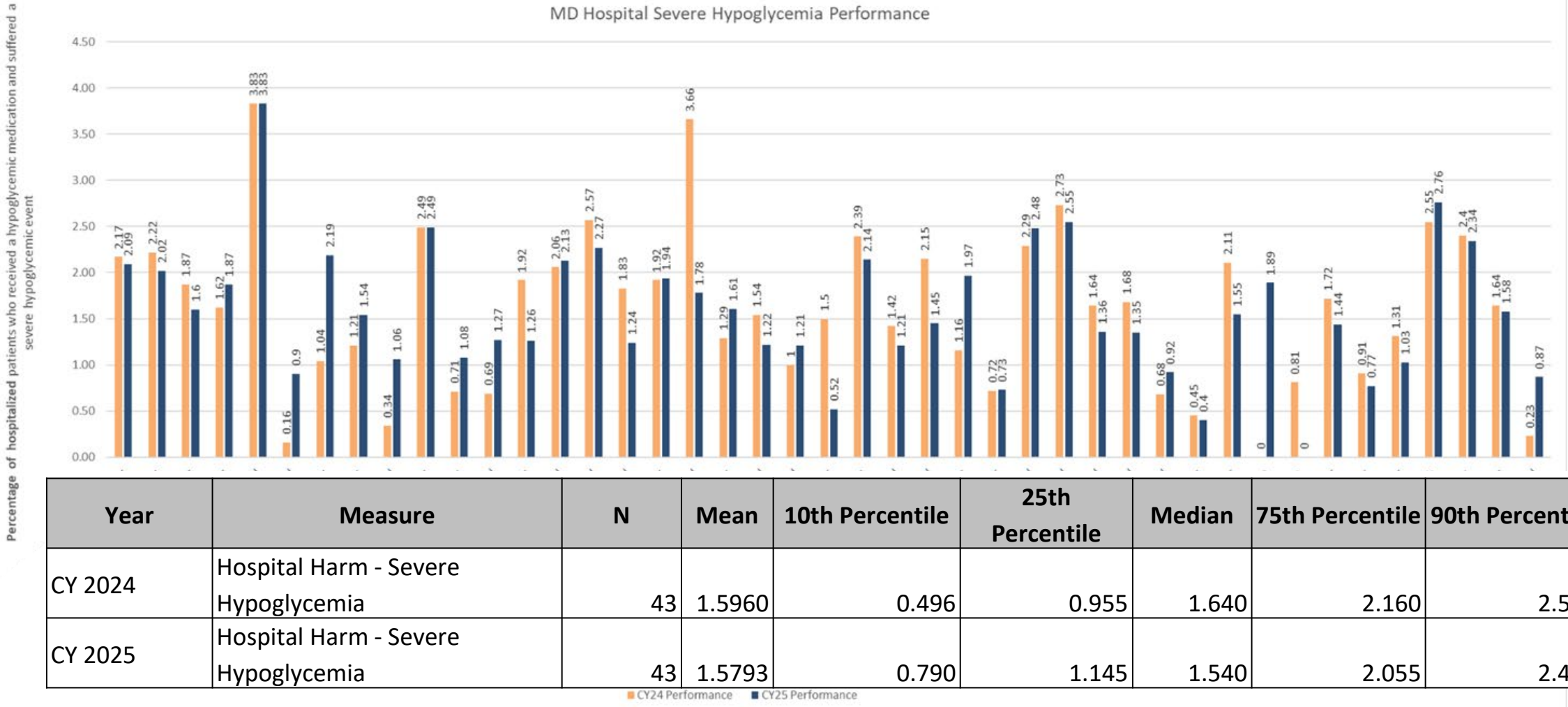
Year	Measure	N	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
CY 2024	Cesarean Birth	32	29.36	21.89	24.48	28.39	32.31	32.76
CY 2025	Cesarean Birth	32	30.70	19.49	27.06	28.51	32.37	35.28

HH Hyper- Hospital Harm Severe Hyperglycemia (CMS871)



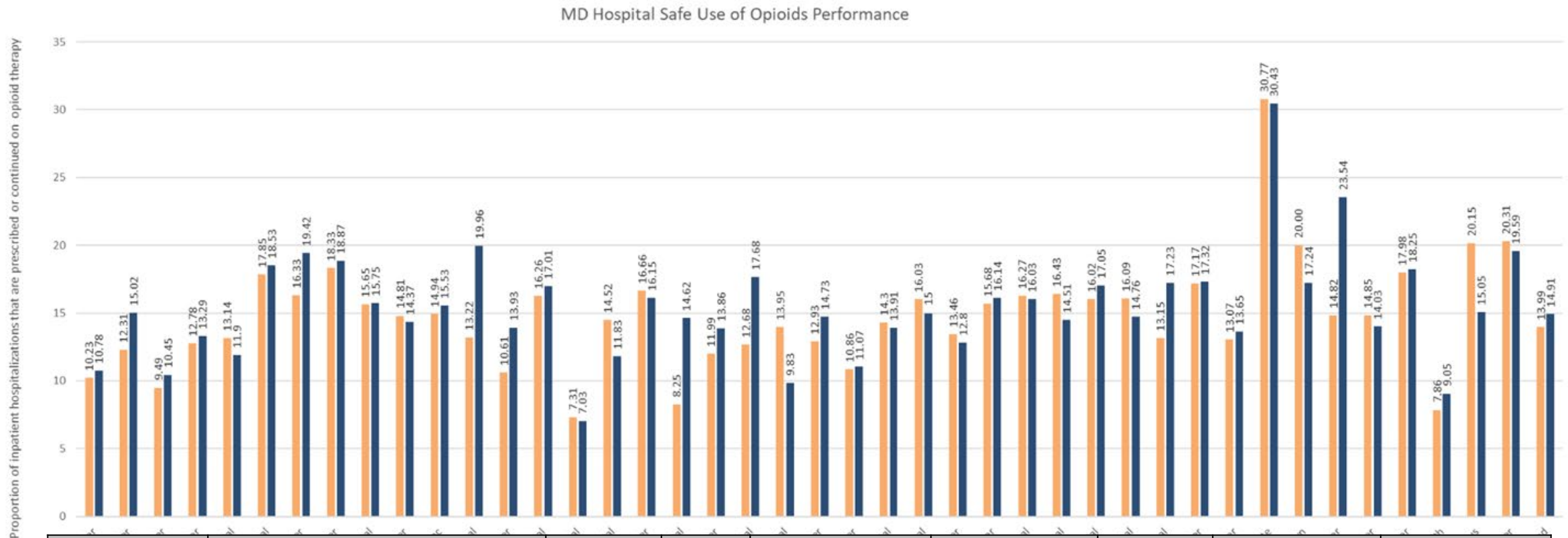
Year	Measure	N	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
CY 2024	Hospital Harm - Severe Hyperglycemia	43	0.0898	0.070	0.080	0.090	0.100	0.118
CY 2025	Hospital Harm - Severe Hyperglycemia	43	0.0928	0.070	0.080	0.100	0.110	0.120

HH Hypo- Hospital Harm Severe Hypoglycemia (CMS816)



Year	Measure	N	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
CY 2024	Hospital Harm - Severe Hypoglycemia	43	1.5960	0.496	0.955	1.640	2.160	2.538
CY 2025	Hospital Harm - Severe Hypoglycemia	43	1.5793	0.790	1.145	1.540	2.055	2.452

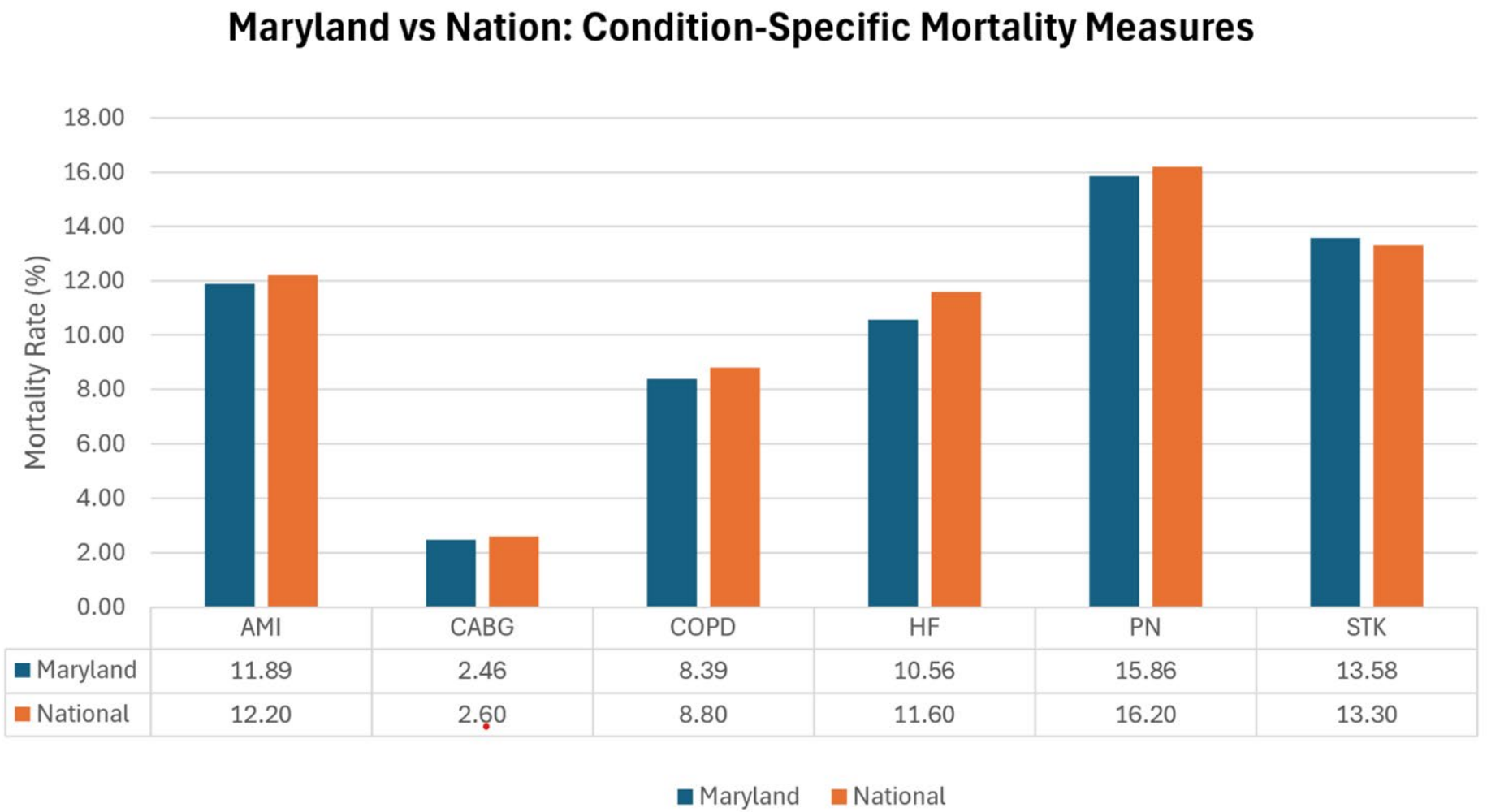
Safe Use of Opioids (CMS506)



Year	Measure	N	Mean	10th Percentile	25th Percentile	Median	75th Percentile	90th Percentile
CY 2024	Safe Use of Opioids - Concurrent Prescribing	43	14.73	10.31	12.86	14.81	16.30	18.26
CY 2025	Safe Use of Opioids - Concurrent Prescribing	43	15.40	10.84	13.76	15.00	17.24	19.31

CMS Performance Results
COND SPEC MORT, SEP 1

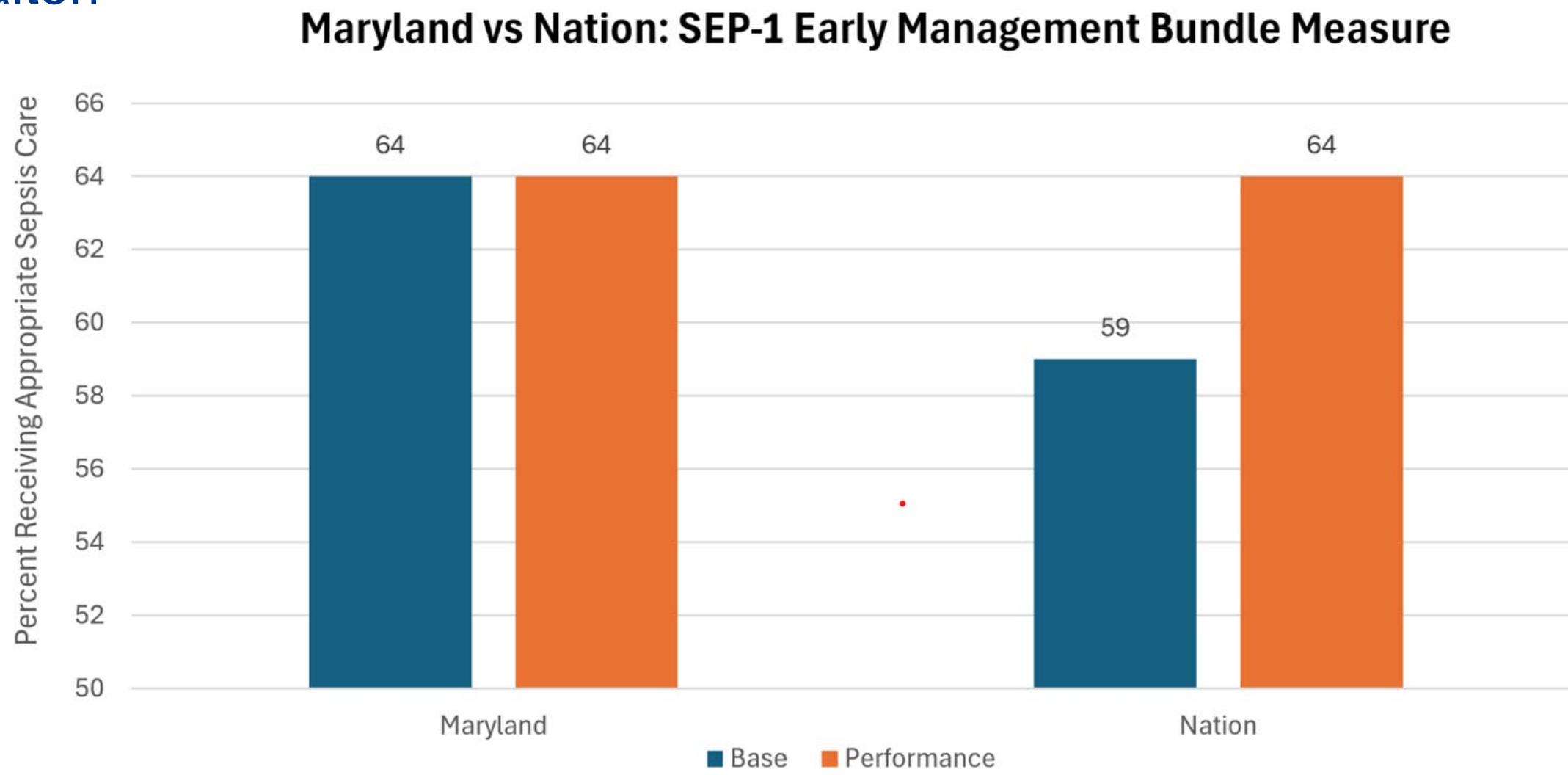
Maryland Performance is Slightly Better than the CMS 3-Day Condition Specific Mortality Measures with Exception of Stroke



	AMI	CABG	COPD	HF	PN	STK
Maryland	11.89	2.46	8.39	10.56	15.86	13.58
National	12.20	2.60	8.80	11.60	16.20	13.30

Data Period: July 1, 2021 – June 30, 2024
Source: CMS Care Compare (May 2026 Release)

Maryland Performance on the Sep-1 Measure is Comparable to the Naiton



Data Time Periods: Baseline (CY2022) | Performance (Jul 2024 – Jun 2025)
Source: CMS Care Compare (May 2026 Release)

Sepsis Mortality Measure Comparison

Definition of Sepsis

Measure	Sepsis Definition
CDC Adult Community-Onset Standardized Sepsis Mortality Ratio (SMR)	**Present on admission determination:** Uses present on admission (POA) logic that identifies community onset sepsis as follows: diagnosis that is present on the day of admission to an inpatient location (calendar day 1), the 2 days before admission, or the calendar day after admission (POA time period). **Inpatient mortality:** Patients who die during the hospital stay or are discharged to hospice. **Sepsis events** are identified from electronic health records (EHR) using a combination of clinical indicators of presumed serious infection and evidence of organ dysfunction documented during hospitalization. Indicators of presumed infection include the collection of blood cultures and the initiation of new antimicrobial therapy. Evidence of organ dysfunction may include abnormalities in laboratory results, initiation of supportive therapies, or other indicators consistent with acute physiologic deterioration. Timing relationships between infection indicators and organ dysfunction indicators determine whether a qualifying sepsis event has occurred. Event identification is based on the temporal association of these elements as documented in the EHR.
HSCRC 30-day sepsis mortality	**Present on admission determination:** POA codes identify sepsis that was identified during the course of the stay and not found to be present on admission (healthcare-associated infection or HAI) . Both community acquired and HAI are included; the HAI indicator in HSCRC's Sepsis Dashboard can be used to stratify unadjusted results. **30-day mortality:** Patients who die within 30 days of being admitted to a hospital. **Sepsis events** are identified based on ICD-10 diagnoses codes indicating sepsis and confirmed by ICD-10 codes for organ dysfunction (Dombrowsky method). 30-day sepsis mortality rates are calculated for the following two **service lines**: surgical and non-surgical.

Overview of sepsis mortality measures

Measure	Data Source	Current use	Measure
CDC Adult Community-Onset Standardized Sepsis Mortality Ratio (SMR)	Claims and EHR	Measure being developed and could be used in CMS programs in future	Annual risk-adjusted standardized mortality ratio (SMR) of adult inpatients with community-onset sepsis. SMR is calculated as the observed-to-predicted ratio of adult community-onset sepsis in-hospital deaths or discharges to hospice.
HSCRC 30-day sepsis mortality rate	Casemix	HSCRC Sepsis Dashboard	Risk-adjusted 30-day mortality ratio calculated as the mean predicted probability over the mean expected probability of death within 30-days of being admitted to a hospital among patients with a diagnosis of sepsis. Two separate risk-adjusted mortality rates are calculated for the **surgical service line** and **non-surgical service line**.

Overview of sepsis mortality measures

Measure	Initial Population	Numerator Exclusions	Denominator Exclusions
CDC Adult Community-Onset Standardized Sepsis Mortality Ratio (SMR)	All encounters for patients of any age in an ED, observation, or inpatient location	• Patients <18 years of age • Length of hospitalization >120 days • Patients with prior enrollment in hospice • Patients that transferred to another acute care hospital	None
HSCRC 30-day sepsis mortality rate	Patients ages 95 and younger residing in Maryland and treated in Maryland hospitals	None	• Patients enrolled in hospice before, during, or within 30 days after admission • Maternal, neonatal, and ungroupable admissions • Transfers, Left Against Medical Advice, Inconsistent vital status (death prior to admission or prior to discharge if discharged alive) • Any diagnosis of metastatic cancer or a principal diagnosis indicating low survival probability • After these exclusions are imposed, a random admission is selected for each patient with multiple stays and other admissions are excluded

Overview of sepsis mortality measures

Measure	Numerator	Denominator
CDC Adult Community-Onset Standardized Sepsis Mortality Ratio (SMR)	Number of annually observed adults with community- onset sepsis who died during hospitalization or were discharged to hospice.	Number of annually predicted adults with community- onset sepsis who died during hospitalization or were discharged to hospice.
HSCRC 30-day sepsis mortality rate	Hospital-specific predicted probability of death within 30 days of being admitted to the hospital among patients with sepsis	Hospital-specific expected probability of death within 30 days of being admitted to the hospital among patients with sepsis

Overview of risk adjustment

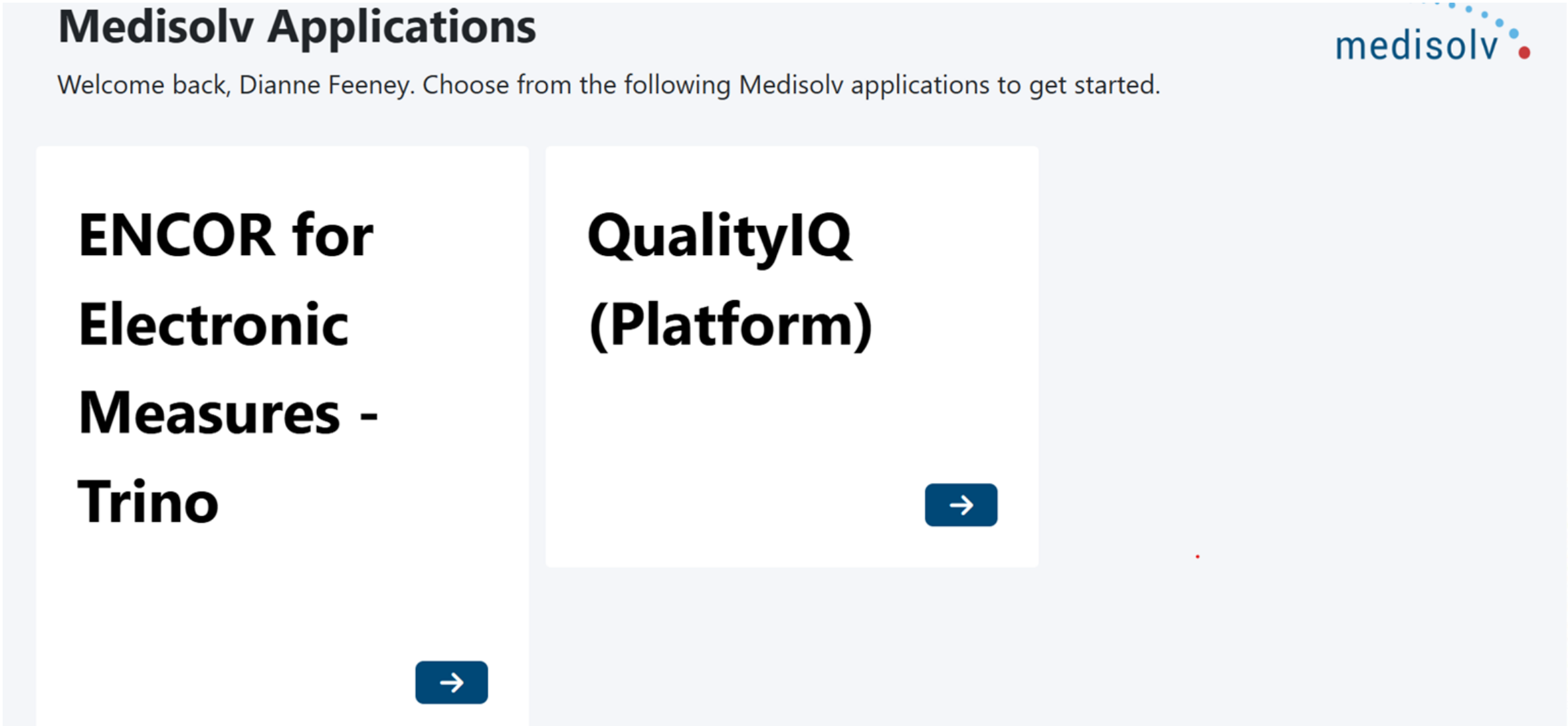
Measure	Risk Adjustment
CDC Adult Community-Onset Standardized Sepsis Mortality Ratio (SMR)	The regression-based risk adjustment model calculates the predicted number of adults with community-onset sepsis who died during hospitalization or were discharged to hospice. Risk adjustment model includes variables from EHR, claims and NHSN survey. From EHR: Sex; Age; admission from a facility or hospital transfer; patient-level physiology on admission; blood pressure; lactate; creatinine; platelets; white count; anion gap; hematocrit; ALT; bilirubin; sodium; albumin; hypothermia; vasopressors; BMI. From claims: comorbidities; present on admission codes for pulmonary, genitourinary, skin; procedure codes for mechanical ventilation. From NHSN survey: hospital size.
HSCRC 30-day sepsis mortality rate	Predicted probability is calculated as the probability of mortality projected from the model including the hospital's intercept, while expected probability is projected without that intercept. The model includes age, sex, indication of palliative care and APR-DRG-ROM

Medisolv Digital Measures to Quality IQ Platform on CRISP (See Appendix for login tips)

Link to Webinar Demo on Using the Medisolv Digital Measures Quality IQ Platform (may be prompted to register):

https://event.on24.com/wcc/r/5257402/95F7D05A99E38B7DD00225E0BB0387FD

Quality IQ Plagform



The Quality IQ URL is https://qualityiq.medisolvcloud.com/measures