Cynosure HQIC
Encyclopedia of Measures(EOM)

Version 3.2

Table of Contents

Version History

Version Number	Date Modified	Modified By	Description
1.0	01/12/2021	Cynosure Team	Preliminary Draft
1.1	02/10/2021	Cynosure Team	Updated Draft
1.2	02/25/2021	Cynosure Team	Final Version for Release
2.0	05/04/2021	Cynosure Team	Added New Opioid Measures
2.1	06/30/2021	Cynosure Team	Added New Measures and Measure Clarification
2.2	08/11/2021	Cynosure Team	Removed One Measure and Measure Clarification
2.3	12/23/2021	Cynosure Team	Added Three Measures and Measure Clarification
2.4	03/15/2022	Cynosure Team	Added Two Measures and Measure Clarification
2.5	07/18/2022	Cynosure Team	Added Six Measures and Measure Clarification
3.0	01/03/2022	Cynosure Team	Modified measurement periods for some measures Modified measure definitions and removed unused measures Reorganized Medicare FFS Measures
3.1	04/17/2023	Cynosure Team	Revised ICD-10 Codes for Four Measures Removed Eight Unused Measures
3.2	11/17/2023	Cynosure Team	Modified measurement periods for some measures

Summary of Changes

Version 1.2:

- First Release

Version 2.0:

- Added four new opioid-related measures:
  (1) 90 MME Discharges – Medicare Fee-for-Service
  (2) Opioid Poisoning among Hospital Inpatients – Medicare Fee-for-Service
  (3) Opioid-Related Deaths among Hospital Inpatients – Medicare Fee-for-Service
  (4) Surgical Discharges with 12 or Fewer Opioid Pills – Hospital Report

- References to “Convergence HQIC” modified to “Cynosure HQIC”

- Modified language in Data Source(s) for existing administrative measures from “Numerators and denominators will be reported by hospitals to, or obtained from administrative claims by, Convergence state/regional partner organizations “ to “Numerators and denominators will be reported by hospitals to Cynosure HQIC or obtained from administrative claims by Cynosure state/regional partner organizations”

- Modified language in Data Source(s) for NHSN measures to distinguish between hospitals that do and do not report to NHSN:
  - For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team

    - For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC

- Modified language in Data Source(s) for existing ADE measures from "Hospital-reported to Convergence HQIC state/regional partner association" to "Reported by hospitals or their state/regional partner organization to Cynosure HQIC"

Version 2.1:

- Added three new Medicare Fee-for-Service measures:
  (1) Pressure Ulcer Rate, Stage 3+ (PSI-03) – Medicare Fee-for-Service
  (2) Sepsis Mortality Rate – Medicare Fee-for-Service
  (3) Postoperative Sepsis Rate (PSI 13) – Medicare Fee-for-Service
- Added one new administrative measure reported by hospitals: Postoperative Sepsis Rate (PSI 13) – Hospital Report
- Modified language for administrative measures to indicate which are reported by hospitals and which are obtained from Medicare Fee-for-Service claims by the Cynosure Team
- Renamed NHSN measures Hospital-Acquired Infection measures
- Added two new hospital-acquired infection measures:
  (1) Hospital Onset Methicillin-Resistant *Staphylococcus aureus* (MRSA) LabID Event
  (2) Hospital Onset Methicillin-Resistant *Staphylococcus aureus* (MRSA) Standardized Infection Ratio
- Modified language for NHSN measures to indicate applicability to all hospital
- Modified the numerator description for the opioid measure, Surgical Discharges with 12 or Fewer Opioid pills to reflect the inclusion of patients with zero opioid pills prescribed
- Added suggested denominator exclusions for the opioid measure, Surgical Discharges with 12 or Fewer Opioid Pills
- Added new opioid-related measure, Overall Opioid Use in the Emergency Department
- Updated measure name in summary of changes for Version 2.0, Surgical Discharges with 12 or Fewer Opioid Pills

Version 2.2

- Removed administrative measure reported by hospitals: Postoperative Sepsis Rate (PSI 13) – Hospital Report; measure will be collected from Medicare Fee-for-Service only
- Modified language for two opioid-related measures, Surgical Discharges with 12 or Fewer Opioid Pills and Overall Opioid Use in the Emergency Department.

Version 2.3

- Added three new Medicare Fee-for-Service measures:
  (1) Insulin-Related Harm – Medicare Fee-for-Service
  (2) Anticoagulant-Related Harm – Medicare Fee-for-Service
  (3) Contrast Induced Nephropathy
- Added detail for the HQIC Overall Harm measure
- Modified the numerator and denominator descriptions for the measure 90 MME Discharges – Medicare Fee-for-Service
- Added units (10,000 patient days) for the calculation of CAUTI and CLABSI device utilization ratios
- Modified reporting period to begin September 2020, in line with CMS performance period definitions

Version 2.4

- Added definitions for two hospital-acquired infection measures:
  (1) NHSN Urinary Catheter Standardized Utilization Ratio (SUR)
  (2) NHSN Central Line Standardized Utilization Ratio (SUR)
- Updated All-Cause Harm measure definition per CMS guidance
- Added exclusion of patients with COVID-19 to Anticoagulant-Related Harm among Hospital Inpatients – Medicare Fee-for-Service and Insulin-Related Harm among Hospital Inpatients – Medicare Fee-for-Service

Version 2.5

- Revised list of ICD-10 codes identifying insulin-related harm to Insulin-Related Harm among Hospital Inpatients – Medicare Fee-for-Service
- Separated ICD-10 codes identifying insulin-related harm into separate components for hypoglycemia and hyperglycemia, creating two additional measures: Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients and Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients
- Created versions of the Medicare Fee-for-Service anticoagulation and glycemia-related adverse drug event measures including and excluding discharges with a COVID-19 diagnosis. Measures now include:
    - Anticoagulant-Related Harm among Hospital Inpatients – Medicare Fee-for-Service
    - Anticoagulant-Related Harm among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service
    - Insulin-Related Harm among Hospital Inpatients – Medicare Fee-for-Service
    - Insulin-Related Harm among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service

  - Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients – Medicare Fee-for-Service
  - Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service
  - Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients – Medicare Fee-for-Service
  - Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service

- Created versions of the Medicare Fee-for-Service sepsis mortality measure including and excluding discharges with a COVID-19 diagnosis. Measures now include:
  - Sepsis Mortality Rate – Medicare Fee-for-Service
  - Sepsis Mortality Rate among Patients without a COVID-19 Diagnosis – Medicare Fee-for-Service

Version 3.0

- Reorganized Medicare Fee-for-Service Measures into two categories
  - Administrative Measures Obtained from Medicare Fee-for-Service Claims by Cynosure Team
  - Adverse Drug Events Measures Obtained from Medicare Fee-for-Service Claims by Cynosure Team

- Split three Medicare Fee-for-Service Measures into patients with and without a COVID-19 diagnosis:
  (1) Pressure Ulcer Rate, Stage 3+ (PSI-03) – Medicare Fee-for-Service
  (2) Sepsis Mortality Rate – Medicare Fee-for-Service
  (3) Post-Operative Sepsis and Septic Shock Rate (PSI 13) – Medicare Fee-for-Service

- Added two new Medicare Fee-for-Service Measures:
  (1) Surgical Discharges with 12 or Fewer Opioid Pills – Medicare Fee-for-Service
  (2) Use of Social Determinants of Health Z-Codes in Hospital Inpatient Records – Medicare Fee-for-Service

- Removed three Medicare Fee-for-Service measures:
  (1) Insulin Related Harm among Hospital Inpatients – Medicare Fee-for-Service
  (2) Insulin Related Harm among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service
  (3) Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service

- Revised list of ICD-10 codes for five Medicare Fee-for-Service measures:
  (1) Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients
  (2) Anticoagulant-Related Harm among Hospital Inpatients – Medicare Fee-for-Service

(3) Anticoagulant-Related Harm among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service
(4) Opioid Poisoning among Hospital Inpatients – Medicare Fee-for-Service
(5) Opioid-Related Deaths among Hospital Inpatients – Medicare Fee-for-Service

- Removed HQIC Overall Harm Measure until such time that it can be reported and accurately documented
- Adjusted the Baseline Period to 10/1/2020 – 9/30/2021 per CMS guidance for the following measures:

(1) All CAUTI and urinary catheter utilization measures (7 measures)
(2) All CLABSI and central line utilization measures (7 measures)
(3) MRSA Rate and MRSA SIR measures

Version 3.1

- Revised list of ICD-10 codes for four Medicare Fee-for-Service measures:

(1) Opioid Poisoning among Hospital Inpatients – Medicare Fee-for-Service
(2) Opioid-Related Deaths among Hospital Inpatients – Medicare Fee-for-Service
(3) Anticoagulant-Related Harm among Hospital Inpatients – Medicare Fee-for-Service
(4) Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients – Medicare Fee-for-Service

- Removed Medicare Fee-for-Service measures for patients with and without a COVID-19 diagnosis:

(1) Sepsis Mortality Rate among Patients without a COVID-19 Diagnosis – Medicare Fee-for-Service
(2) Sepsis Mortality Rate among Patients with a COVID-19 Diagnosis – Medicare Fee-for-Service
(3) Pressure Ulcer Rate, Stage 3+ (PSI-03) among Patients without a COVID-19 Diagnosis – Medicare Fee-for-Service
(4) Pressure Ulcer Rate, Stage 3+ (PSI-03) among Patients with a COVID-19 Diagnosis – Medicare Fee-for-Service
(5) Post-Operative Sepsis and Septic Shock Rate (PSI 13) among Patients without a COVID-19 Diagnosis – Medicare Fee-for-Service
(6) Post-Operative Sepsis and Septic Shock Rate (PSI 13) among Patients with a COVID-19 Diagnosis – Medicare Fee-for-Service
(7) Anticoagulant-Related Harm among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service
(8) Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients without a COVID-19 Diagnosis – Medicare Fee-for-Service

Version 3.2

- Adjusted the Baseline Period to 10/1/2020 – 9/30/2021 per CMS guidance for the following measures:

    (1) Pressure Ulcer Rate, Stage 3+ (PSI-03) – Medicare Fee-for-Service
    (2) Sepsis Mortality Rate – Medicare Fee-for-Service
    (3) Post-Operative Sepsis and Septic Shock Rate (PSI 13) – Medicare Fee-for-Service
    (4) Pressure Ulcer Rate, Stage 3+ (PSI-03) – Hospital Report
    (5) Sepsis Mortality Rate – Hospital Report

Administrative Measures Obtained from Medicare Fee-for-Service Claims by Cynosure Team

Pressure Ulcer Rate, Stage 3+ (PSI-03) – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	AHRQ PSI-03 Pressure Ulcer (PrU) rate, Stage 3+ per 1,000 Discharges
Flat File Measure Name	PSI03_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Stage III, Stage IV, unstageable pressure ulcers or unstageable (secondary diagnosis) per 1,000 discharges among surgical or medical patients ages 18 years and older that are not present on admission. Excludes stays less than 3 days; cases with a principal stage III or IV (or unstageable) or deep tissue injury pressure ulcer diagnosis; cases with all secondary diagnosis of stage III or IV pressure ulcer (or unstageable) or deep tissue injury that is present on admission; obstetric cases; severe burns; exfoliative skin disorders.
Numerator	Number of patients with Stage III, Stage IV, or Unstageable Pressure Ulcers
Denominator	Number of surgical or medical discharges, for patients ages 18 years and older
Denominator Exclusions	• Length of stay less than 3 days. • Cases with a principal stage III or IV (or unstageable) or deep tissue injury pressure ulcer diagnosis • Cases with all secondary diagnosis of Stage III or IV pressure ulcer (or unstageable) or deep tissue injury that is present on admission. • Severe burns (>= 20% body surface area) • Exfoliative disorders of the skin (>=20% body surface area) • Obstetric cases
Rate Calculation	$\left(\frac{number\ of\ patients\ with\ stage\ III,\ IV,\ or\ unstageable\ pressure\ ulcers}{number\ of\ surgical\ or\ medical\ discharges\ for\ patients\ 18\ years\ and\ older} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Available from AHRQ (2020 version): PSI-03
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Sepsis Mortality Rate – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Sepsis Cases that Expired While in the Hospital
Flat File Measure Name	SEPSIS_MORTALITY_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of patient discharges with a principal or secondary diagnosis code from the SEP-1 inclusion criteria who have a discharge status of expired
Numerator	Number of patient discharges with sepsis diagnosis and discharge status of expired
Denominator	Number of patient discharges with any principal or secondary diagnosis code from SEP-1 inclusion criteria Table 4.01 (page 10)[1]
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ patient\ discharges\ with\ sepsis\ diagnosis\ and\ discharge\ status\ of\ "expired"}{number\ of\ inpatient\ discharges\ with\ sepsis\ diagnosis}\right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	ICD-10: See codes: Table 4.01
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

[1] Any code on the list is included. Does not require R6520 or R6521 and another code.

Post-Operative Sepsis and Septic Shock Rate (PSI 13) – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Patient Safety Indicator 13 (PSI 13) Postoperative Sepsis Rate
Flat File Measure Name	PSI13_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Postoperative sepsis cases (secondary diagnosis) per 1,000 elective surgical discharges for patients ages 18 years and older. Excludes cases with a principal diagnosis of sepsis, cases with a secondary diagnosis of sepsis present on admission, cases with a principal diagnosis of infection, cases with a secondary diagnosis of infection present on admission (only if they also have a secondary diagnosis of sepsis), obstetric discharges.
Numerator	Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with any secondary ICD-10-CM diagnosis codes for sepsis
Denominator	Elective surgical discharges for patients ages 18 years and older, with any-listed ICD-10-PCS procedure codes for an operating room procedure. Elective surgical discharges are defined by specific MS-DRG codes with admission type recorded as elective.
Denominator Exclusions	Exclude cases: • with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for sepsis, among patients otherwise qualifying for numerator • with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for infection, among patients otherwise qualifying for numerator • MDC 14 (pregnancy, childbirth, and puerperium) • with missing gender, age, quarter, year, or principal diagnosis
Rate Calculation	$\left(\frac{number\ of\ patients\ with\ any\ secondary\ diagnosis\ of\ sepsis}{number\ of\ elective\ surgical\ discharges\ for\ patients\ 18\ years\ and\ older} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Available from AHRQ (2020 version): PSI13
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Hospital-Wide All-Cause Readmission Rate – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	30-day All-Cause Readmission Rate per 100 Admissions (Medicare Fee-for-Service)
Flat File Measure Name	READM_30DAY_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of all-cause, unplanned readmissions for all patients 18 years of age and older that arise from acute clinical events requiring urgent rehospitalization within 30 days of discharge. For HQIC, there will be no risk adjustment.
Numerator	Number of inpatients returning as an acute care inpatient within 30 days of date of discharge – unplanned
Denominator	Number of at-risk inpatient discharges
Denominator Exclusions	Listed within the below reference document
Rate Calculation	$\left(\frac{number\ of\ unplanned\ readmissions\ within\ 30\ days}{number\ of\ at\text{-}risk\ discharges}\right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	The Cynosure Team will follow specifications available at QualityNet here: 2020 All-Cause Hospital-Wide Measure Updates and Specifications Report: Hospital-Wide Readmission (05/01/20)
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Contrast-Induced Nephropathy among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Contrast Induced Nephropathy among Hospital Inpatients
Flat File Measure Name	CIN_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of patients discharged with a diagnosis code for contrast-induced nephropathy that was not present on admission, per acute inpatient hospital discharges
Numerator	Number of patients with a diagnosis code for contrast-induced nephropathy that was not present on admission
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ patients\ discharged\ with\ diagnosis\ code\ for\ contrast-induced\ nephropathy\ not\ POA}{Number\ of\ patients\ discharged} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with contrast-induced nephropathy include those with ICD-10 code N990 or both N141 and T508XA/D not present on admission
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Use of Social Determinants of Health Z-Codes in Hospital Inpatient Records – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Use of Social Determinants of Health (SDOH) Z-Codes in Hospital Inpatient Records
Flat File Measure Name	Z_CODES
Measure Type	Process
Measure Description	Rate of patients discharged with a diagnosis code for social determinants of health
Numerator	Count of hospital acute inpatient discharges with one or more SDOH Z-codes on the claim.
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ patients\ discharged\ with\ diagnosis\ code\ for\ social\ determinants\ of\ health}{Number\ of\ patients\ discharged} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	SDOH Z-codes include all ICD-10 codes occurring within Z55-Z65 and Z75 (all subcodes in these categories)
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Adverse Drug Events Obtained from Medicare Fee-for-Service Claims by Cynosure Team

Discharges with Opioids Totaling Over 90 MME per Day – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Discharges with Opioids Totaling Over 90 MME per Day
Flat File Measure Name	90_MME _DISCHARGE_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of patients filling opioid prescriptions within 7 days after discharge exceeding 90 Milligram Morphine Equivalent (MME) per day per live acute inpatient hospital discharges with opioid prescription filled.
Numerator	Number of patients receiving opioid prescriptions at discharge exceeding 90 MME per day
Denominator	Number of inpatient beneficiaries with Part D coverage discharged with an opioid prescription billed to Medicare Part D within 7 days of discharge
Denominator Exclusions	• Patients with active cancer • Patients with sickle cell disease • Patients discharged from hospital to hospice
Rate Calculation	$\left(\frac{number\ of\ hospital\ discharges\ with\ opioids\ totaling > 90\ MME\ per\ day}{number\ of\ non\text{-}cancer, non\text{-}hospice, non\text{-}sickle\ cell\ patients\ discharged\ alive} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Patients with active cancer include those with the following ICD-10 codes: C00-D09, D10-D3A, and D37-D49. Patients with sickle cell disease include those with the following ICD-10 codes: D570-D578
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Surgical Discharges with Opioids Totaling Over 90 MME per Day – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Surgical Discharges with Opioids Totaling Over 90 MME per Day
Flat File Measure Name	90_MME _DISCHARGE_FFS_MEDICARE_PROC
Measure Type	Outcome
Measure Description	Rate of patients filling opioid prescriptions within 7 days after discharge exceeding 90 Milligram Morphine Equivalent (MME) per day per surgical hospital discharges with opioid prescription filled.
Numerator	Number of patients receiving opioid prescriptions at discharge exceeding 90 MME per day
Denominator	Number of surgical beneficiaries with Part D coverage discharged with an opioid prescription billed to Medicare Part D within 7 days of discharge
Denominator Exclusions	• Patients with active cancer • Patients with sickle cell disease • Patients discharged from hospital to hospice
Rate Calculation	$\left(\frac{number\ of\ surgical\ discharges\ with\ opioids\ totaling > 90\ MME\ per\ day}{number\ of\ non\text{-}cancer, non\text{-}hospice, non\text{-}sickle\ cell\ surgical\ patients\ discharged\ alive} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Patients with active cancer include those with the following ICD-10 codes: C00-D09, D10-D3A, and D37-D49. Patients with sickle cell disease include those with the following ICD-10 codes: D570-D578
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Surgical Discharges with 12 or Fewer Opioid Pills – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Surgical Discharges with 12 or Fewer Opioid Pills Prescribed
Flat File Measure Name	12_PILL_DISCHARGE_ FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of surgical patients discharged with opioid prescriptions totaling 12 pills or fewer or no opioid prescription
Numerator	Number of patients with 12 or fewer opioid pills prescribed at discharge*
Denominator	Number of live surgical acute inpatient hospital discharges reviewed
Denominator Exclusions	• Orthopedic patients • Under 18 years of age • Patients with active cancer based on problem list** (C codes) • Patients with sickle cell disease based on problem list** (D57 codes) • Patients enrolled in hospice
Rate Calculation	$\left(\frac{number\ of\ surgical\ acute\ hospital\ inpatients\ discharged\ with\ opioids\ totaling\ \leq 12\ pills\ or\ no\ opioid\ prescription}{number\ of\ live\ surgical\ acute\ inpatient\ hospital\ discharges\ reviewed} \right) x\ 100$
Data Source(s)	Numerators and denominators will be reported by hospitals to Cynosure HQIC based on discharge prescriptions, patient problem list, and discharge count. Sample of 10 patients a month can be used to reduce burden if manual process is required. Rates will be calculated by the Cynosure Team.
Specifications/Definitions	* Patients with zero opioid pills prescribed at discharge are included in the numerator.
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Opioid Poisoning among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Opioid Poisoning among Hospital Inpatients
Flat File Measure Name	OPIOID_POISONING_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of patients with opioid poisoning, not present on admission, per acute inpatient hospital discharges
Numerator	Number of acute inpatient hospital discharges with a diagnosis of opioid poisoning that was not present on admission
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ hospital\ discharges\ with\ diagnosis\ code\ for\ opioid\ poisoning\ not\ POA}{number\ of\ hospital\ discharges} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with opioid poisoning include those with ICD-10 codes T402X1A, T402X4A, T402X5A, T403X1A, T403X4A, T403X5A, T40411A, T40414A, T40415A, T40421A, T40424A, T40425A, T40491A, T40494A, T40495A, T404X1A, T404X4A, T404X5A, T40601A, T40604A, T40605A, T40691A, T40694A, T40695A not present on admission
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Opioid-Related Deaths among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Opioid-Related Deaths among Hospital Inpatients
Flat File Measure Name	OPIOID_DEATH_FFS_MEDICARE
Measure Type	Outcome
Measure Description	Rate of patients discharged expired per number of hospital inpatients discharged with a diagnosis code for opioid poisoning that was not present on admission
Numerator	Number of patients discharged expired
Denominator	Number of acute inpatient hospital discharges with a diagnosis code of opioid poisoning, not present on admission
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ patients\ discharged\ expired\ with\ diagnosis\ code\ for\ opioid\ poisoning\ not\ POA}{number\ of\ patients\ discharged\ with\ diagnosis\ code\ for\ opioid\ poisoning\ not\ POA} \right) x\ 100$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with opioid poisoning include those with ICD-10 codes T402X1A, T402X4A, T402X5A, T403X1A, T403X4A, T403X5A, T40411A, T40414A, T40415A, T40421A, T40424A, T40425A, T40491A, T40494A, T40495A, T404X1A, T404X4A, T404X5A, T40601A, T40604A, T40605A, T40691A, T40694A, T40695A not present on admission
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Anticoagulant-Related Harm among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Anticoagulant-Related Harm among Hospital Inpatients
Flat File Measure Name	ADE_ANTICOAG
Measure Type	Outcome
Measure Description	Rate of patients with anticoagulant-related harm, not present on admission, per 1,000 acute inpatient hospital discharges
Numerator	Number of acute inpatient hospital discharges with a diagnosis of anticoagulant-related harm that was not present on admission
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ hospital\ discharges\ with\ diagnosis\ code\ for\ anticoagulant-related\ harm\ not\ POA}{number\ of\ hospital\ discharges} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with anticoagulant harm include those with ICD-10 codes T45511A, T45514A, T45515A not present on admission.
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Hypoglycemia-Related Adverse Drug Event Rate among Hospital Inpatients
Flat File Measure Name	ADE_HYPOGLYCEMIA
Measure Type	Outcome
Measure Description	Rate of patients with hypoglycemia-related adverse drug events, not present on admission, per 1,000 acute inpatient hospital discharges
Numerator	Number of acute inpatient hospital discharges with a diagnosis of hypoglycemia-related adverse drug event that was not present on admission
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ hospital\ discharges\ with\ diagnosis\ code\ for\ hypoglycemia-related\ adverse\ drug\ event\ not\ POA}{number\ of\ hospital\ discharges} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with diabetes harm include those with ICD-10 codes T383X1A, T383X4A, T383X5A not present on admission.
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients – Medicare Fee-for-Service

All Facilities (Collected and Calculated by Cynosure Team)

Measure Name	Hyperglycemia-Related Adverse Drug Event Rate among Hospital Inpatients
Flat File Measure Name	ADE_HYPERGLYCEMIA
Measure Type	Outcome
Measure Description	Rate of patients with hyperglycemia-related adverse drug events, not present on admission, per 1,000 acute inpatient hospital discharges
Numerator	Number of acute inpatient hospital discharges with a diagnosis of hyperglycemia-related adverse drug event that was not present on admission
Denominator	Number of acute inpatient hospital discharges
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ hospital\ discharges\ with\ diagnosis\ code\ for\ hyperglycemia-related\ adverse\ drug\ event\ not\ POA}{number\ of\ hospital\ discharges} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be obtained from Medicare Fee-for-Service claims by the Cynosure Team. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Hospital patients with diabetes harm include those with ICD-10 codes E0800, E0801, E0810, E0811, E0865, E0900, E0901, E0910, E0911, E0965, E1010, E1011, E1065, E1100, E1101, E1165, E1310, E1311, E1365, T383X6A not present on admission.
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Administrative Measures Reported by Hospitals or State/Regional Partner Organizations

Pressure Ulcer Rate, Stage 3+ (PSI-03) – Hospital Report

All Facilities (Hospital Report)

Measure Name	AHRQ PSI-03 Pressure Ulcer (PrU) rate, Stage 3+ per 1,000 Discharges
Flat File Measure Name	PSI03
Measure Type	Outcome
Measure Description	Stage III, Stage IV, unstageable pressure ulcers or unstageable (secondary diagnosis) per 1,000 discharges among surgical or medical patients ages 18 years and older that are not present on admission. Excludes stays less than 3 days; cases with a principal stage III or IV (or unstageable) or deep tissue injury pressure ulcer diagnosis; cases with all secondary diagnosis of stage III or IV pressure ulcer (or unstageable) or deep tissue injury that is present on admission;
Numerator	Number of patients with Stage III, Stage IV, or Unstageable Pressure Ulcers
Denominator	Number of surgical or medical discharges, for patients ages 18 years and older
Denominator Exclusions	• Length of stay less than 3 days. • Cases with a principal stage III or IV (or unstageable) or deep tissue injury pressure ulcer diagnosis • Cases with all secondary diagnosis of Stage III or IV pressure ulcer (or unstageable) or deep tissue injury that is present on admission. • Severe burns (>= 20% body surface area) • Exfoliative disorders of the skin (>=20% body surface area) • Obstetric cases
Rate Calculation	$\left(\frac{\text{number of patients with stage III, IV, or unstageable pressure ulcers}}{\text{number of surgical or medical discharges for patients 18 years and older}} \right) x\ 1{,}000$
Data Source(s)	Numerators and denominators will be reported to Cynosure HQIC by hospitals or obtained from administrative claims by Cynosure state/regional partner organizations. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	Available from AHRQ (2020 version): PSI-03
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Sepsis Mortality Rate – Hospital Report

All Facilities (Hospital Report)

Measure Name	Sepsis Cases that Expired While in the Hospital
Flat File Measure Name	SEPSIS_MORTALITY
Measure Type	Outcome
Measure Description	Rate of patients with a principal or secondary diagnosis code from the SEP-1 inclusion criteria who have a discharge status of expired
Numerator	Number of patients with sepsis diagnosis and discharge status of expired
Denominator	Number of patients with any principal or secondary diagnosis code from SEP-1 inclusion criteria Table 4.01 (page 10)[2]
Denominator Exclusions	Patients with COVID-19 diagnosis (ICD-10 Code U071)
Rate Calculation	$\left(\frac{number\ of\ patients\ with\ sepsis\ diagnosis\ and\ discharge\ status\ of\ "expired"}{number\ of\ inpatients\ with\ sepsis\ diagnosis} \right) x\ 100$
Data Source(s)	Numerators and denominators will be reported by hospitals to, or obtained from administrative claims by, Cynosure state/regional partner organizations. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	ICD-10: See codes: Table 4.01
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

[2] Any code on the list is included. Does not require R6520 or R6521 and another code.

Hospital-Wide All-Cause Readmission Rate – Hospital Report

All Facilities (Hospital Report)

Measure Name	30-day All-Cause Readmission Rate per 100 Admissions (Hospital Reporting)
Flat File Measure Name	READM_30DAY_HOSP_REPORT
Measure Type	Outcome
Measure Description	Rate of all-cause readmissions for all patients 18 years of age and older that arise from acute clinical events requiring urgent rehospitalization to the same hospital within 30 days of discharge. For HQIC, there will be no risk adjustment.
Numerator	Number of inpatients returning as an acute care inpatient within 30 days of date of discharge. Patients admitted to a different level of care (e.g., rehabilitation facilities, hospice) are not counted as readmissions.
Denominator	Patients discharged alive.
Denominator Exclusions	Patients that expired in the index stay.
Rate Calculation	$\left(\frac{number\ of\ all\text{-}cause, acute\ care\ readmissions\ within\ 30\ days}{number\ of\ at\text{-}risk\ inpatient\ discharges} \right) x\ 100$
Data Source(s)	Numerators and denominators will be reported to Cynosure HQIC by hospitals or obtained from administrative claims by Cynosure state/regional partner organizations. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	No additional specifications
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Adverse Drug Events Reported by Hospitals or State/Regional Partner Organizations

Excessive Anticoagulation with Warfarin (Inpatients)

All Facilities (Hospital Report)

Measure Name	Excessive Anticoagulation with Warfarin (Inpatients)
Flat File Measure Name *(select **one** applicable measure based on hospital critical value)*	INR3.5 INR4 INR5 INR6
Measure Type	Outcome
Measure Description	Adverse Drug Events (ADEs) related to Anticoagulation Safety: Inpatients experiencing excessive anticoagulation with warfarin
Numerator	Number of inpatients experiencing excessive anticoagulation with warfarin (INR greater than hospital critical value of 3.5, 4, 5 or 6)
Denominator	Number of inpatients receiving warfarin anticoagulation therapy
Denominator Exclusions	Patients with INR greater than critical value, present on admission
Rate Calculation	$\left(\frac{number\ of\ patients\ with\ INR > [critical\ value]}{number\ of\ patients\ receiving\ warfarin\ anticoagulation\ therapy} \right) x\ 100$
Data Source(s)	Reported by hospitals or their state/regional partner organization to Cynosure HQIC Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	No additional specifications.
Baseline Period	Calendar year 2019 or hospital-specific
Reporting Period	Monthly, beginning September 2020

Note: See Appendix A for more information on data collection

Hypoglycemia in Inpatients Receiving Insulin

All Facilities (Hospital Report)

Measure Name	Rate of Hypoglycemia in Inpatients Receiving Insulin
Flat File Measure Name *(select <u>one</u> applicable measure based on hospital critical value)*	HYPOGLYCEMIA40 HYPOGLYCEMIA50 HYPOGLYCEMIA70
Measure Type	Outcome
Measure Description	Adverse Drug Events (ADE) related to glycemic management: hypoglycemia in inpatients receiving insulin
Numerator	Those patients receiving insulin who experience a hypoglycemic event (hypoglycemia defined as plasma glucose concentration of determined by the hospital critical value, e.g., 50 mg per dl or less for HYPOGLYCEMIA50)
Denominator	Number of inpatients receiving insulin
Denominator Exclusions	• Patients with hypoglycemia present on admission • Non-insulin receiving patients
Rate Calculation	$\left(\frac{number\ of\ patients\ with\ blood\ glucose <\ [critical\ value]}{number\ of\ patients\ receiving\ insulin}\right) x\ 100$
Data Source(s)	Reported by hospitals or their state/regional partner organization to Cynosure HQIC Rates will be calculated by the Cynosure Team
Specifications/Definitions/ Recommendations	Patients with multiple blood glucose levels at the determined value or less during an admission count only once.
Baseline Period	Calendar year 2019 or hospital-specific
Reporting Period	Monthly, beginning September 2020

Note: See Appendix B for more information on data collection

Adverse Drug Event due to Opioids

All Facilities (Hospital Report)

Measure Name	Rate of Naloxone Administration in Patients
Flat File Measure Name	NALOXONE
Measure Type	Outcome
Measure Description	Adverse Drug Events (ADE) related to opioids: patients administered naloxone after onsite treatment with opioids (any route)
Numerator	Number of encounters where the patient was administered a reversal agent (naloxone)
Denominator	Number of patients administered an opioid onsite (any route) (See example medications in Appendix C)
Denominator Exclusions	• Obstetric Patients • Emergency Department • Free-Standing/Independent Surgery Centers • Hospice/Respite Care Patients
Rate Calculation	$\left(\frac{\textbf{number of encounters where the patient was administered a reversal agent}}{\textbf{number of patients administered an opioid onsite}} \right) \textbf{x 100}$
Data Source(s)	Reported by hospitals or their state/regional partner organization to Cynosure HQIC Rates will be calculated by the Cynosure Team

Specifications/Definitions/ Recommendations	Measure encompasses:
	• All inpatients
	  ○ Excluding OB
	• Observation Beds
	• Outpatient Procedure Services
	  ○ Excluding those at free-standing/independent surgery centers
	  ○ Excluding ED
	
	Multiple doses of naloxone to the same patient during a hospital stay count as one event.

Baseline Period	Calendar year 2019 or hospital-specific
Reporting Period	Monthly, beginning September 2020

Note: See Appendix C for more information on data collection

Surgical Discharges with 12 or Fewer Opioid Pills

All Facilities (Hospital Report)

Measure Name	Surgical Discharges with 12 or Fewer Opioid Pills Prescribed
Flat File Measure Name	12_PILL_DISCHARGE_HOSP_REPORT
Measure Type	Outcome
Measure Description	Rate of surgical patients discharged with opioid prescriptions totaling 12 pills or fewer or no opioid prescription
Numerator	Number of patients with 12 or fewer opioid pills prescribed at discharge*
Denominator	Number of live surgical acute inpatient hospital discharges reviewed
Suggested Denominator Exclusions**	• Orthopedic patients • Under 18 years of age • Patients with active cancer based on problem list*** (C codes) • Patients with sickle cell disease based on problem list*** (D57 codes) • Patients enrolled in hospice
Rate Calculation	$\left(\frac{number\ of\ patients\ discharged\ with\ opioids\ totaling\ \leq 12\ pills\ or\ no\ opioid\ prescription}{number\ of\ live\ surgical\ acute\ inpatient\ hospital\ discharges\ reviewed}\right)$
Data Source(s)	Numerators and denominators will be reported by hospitals to Cynosure HQIC based on discharge prescriptions, patient problem list, and discharge count. Sample of 10 patients a month can be used to reduce burden if manual process is required. Rates will be calculated by the Cynosure Team.
Specifications/Definitions/ Recommendations	* Note: Patients with zero opioid pills prescribed at discharge should be included in the numerator. While this measure focuses on patients discharged from the hospital after an inpatient stay, we invite you to include patients undergoing same day surgeries and/or patients held for observation in this measure if this data is easier to pull and/or it supports your hospital's QI efforts. In that case, the denominator would include all live non-orthopedic surgical discharges reviewed. Consistently report this information month over month. **The list of suggested denominator exclusions is provided so that we can hone in on inappropriate opioid administration & prescribing wherever, whenever possible. This is more important in hospitals with higher surgical volume. We acknowledge that it is not always easy to disaggregate the data accordingly so select the denominator exclusions that are right for your hospital and easy to retrieve. Consistently report this information month over month. ***The problem list should include a diagnosis of cancer or sickle cell disease. Administrative data should not be required to identify patients with cancer or sickle cell disease. If the diagnosis is uncertain, the patient should not be excluded.
Baseline Period	January – March 2021
Reporting Period	Monthly, beginning August 2021

Overall Opioid Use in the Emergency Department

All Facilities (Hospital Report)

Measure Name	Overall Opioid Use in the Emergency Department
Flat File Measure Name	ED_OPIOID
Measure Type	Outcome
Measure Description	Total morphine milligram equivalents units (MMEs) per Emergency Department visit
Numerator	Total MMEs* administered to patients in the Emergency Department for use in the Emergency Department
Denominator	Number of Emergency Department visits
Suggested Denominator Exclusions**	• Under 18 years of age • Patients with active cancer based on problem list*** (C codes) • Patients with sickle cell disease based on problem list*** (D57 codes) • Patients enrolled in hospice • Patients administered buprenorphine or methadone • Patients administered fentanyl for procedural sedation
Rate Calculation	$\left(\frac{Total\ MMEs\ administered\ in\ the\ Emergency\ Department}{Number\ of\ Emergency\ Department\ Visits}\right)$
Data Source(s)	Numerators and denominators will be reported by hospitals to Cynosure HQIC. Reports may originate from manual data collection, automated drug cabinet systems, and electronic medical records. For ideas on how to access this data in your hospital check out our short list of common pathways to pull this data. These pathways were provided by HQIC hospitals participating in the Opioid Measurement SPRINT. Rates will be calculated by the Cynosure Team.
Specifications/Definitions / Recommendations	*Opioids all routes (excluding oral liquid). To determine MMEs: 1. Determine the total amount of each opioid administered. 2. Convert each opioid administered to MMEs using the conversion factors in the table below. 3. Add the converted MMEs from each opioid together.

<table>
<tr>
<td>Specifications/Definitions/ Recommendations (continued)</td>
<td>
<table>
<tr><th colspan="2">MME Conversion Table</th></tr>
<tr><th>Opioid</th><th>MME per mg‡</th></tr>
<tr><td>Codeine</td><td>0.15</td></tr>
<tr><td>Fentanyl (in mcg)‡</td><td>0.1</td></tr>
<tr><td>Hydrocodone</td><td>1.0</td></tr>
<tr><td>Hydromorphone</td><td>4.0</td></tr>
<tr><td>Levorphanol</td><td>11.0</td></tr>
<tr><td>Meperidine</td><td>0.1</td></tr>
<tr><td>Morphine</td><td>1.0</td></tr>
<tr><td>Oxycodone</td><td>1.5</td></tr>
<tr><td>Oxymorphone</td><td>3.0</td></tr>
<tr><td>Tapentadol</td><td>0.4</td></tr>
<tr><td>Tramadol</td><td>0.1</td></tr>
</table>
Questions about MME conversions and standards? Check out our MME calculators here.

‡ Note: Fentanyl is dosed in mcg and not mg.

**The list of suggested denominator exclusions is provided so that we can hone in on inappropriate opioid administration & prescribing wherever, whenever possible. This is more important in larger Emergency Departments. We acknowledge that it is not always easy to disaggregate the data accordingly, so select the denominator exclusions that are right for your hospital and easy to retrieve. Consistently report this information month over month.

***The problem list should include a diagnosis of cancer or sickle cell disease. Administrative data should not be required to identify patients with cancer or sickle cell disease. If the diagnosis is uncertain, the patient should not be excluded.
</td>
</tr>
<tr><td>Baseline Period</td><td>January – March 2021</td></tr>
<tr><td>Reporting Period</td><td>Monthly, beginning August 2021</td></tr>
</table>

Hospital-Acquired Infection Measures Reported by Hospitals to the National Health Safety Network (NHSN) or Cynosure HQIC

Hospital Onset *Clostridium difficile* (*C. diff*) LabID Event

All Facilities

Measure Name	Rate of hospital onset *Clostridium difficile* (*C.diff*) per 10,000 patient days
Flat File Measure Name	CDIFF_RATE
Measure Type	Outcome
Measure Description	The number hospital onset *C.diff* per 10,000 patient days
Numerator	Number of hospital onset LabID *C.diff* events
Denominator	Number of patient days
Denominator Exclusions	• Inpatient rehab facilities or inpatient psychiatric facilities with separate CCN • All NICU locations
Rate Calculation	$\left(\frac{number\ of\ C.\ \text{diff}\ HO\ LabID\ events}{number\ of\ patient\ days}\right) x\ 10{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Report	Rate Table for CDIF LabID Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	Calendar year 2019
Reporting Period	Monthly, beginning September 2020

Hospital Onset *Clostridium difficile* (*C. diff*) Standardized Infection Ratio (SIR)

All Facilities

Measure Name	Hospital Onset *Clostridium difficile* (*C.diff*) Standardized Infection Ratio
Flat File Measure Name	CDIFF_SIR
Measure Type	Outcome
Measure Description	The number of hospital onset *C.diff* observed infections divided by the number of predicted infections
Numerator	Number of observed infections
Denominator	Number of predicted infections
Denominator Exclusions	• Predicted infection count less than one • No data reported during baseline period
Rate Calculation	$\left(\frac{\boldsymbol{number\ of\ observed\ (O)\ infections}}{\boldsymbol{number\ of\ predicted\ (P)\ infections}}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SIR - ACH CDI FacwideIN LabID Data SIR - CAH CDI FacwideIN LabID Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	Calendar year 2019
Reporting Period	Quarterly, beginning October 2020

Hospital Onset Methicillin-Resistant *Staphylococcus aureus* (MRSA) LabID Event

All Facilities

Measure Name	Rate of hospital onset MRSA per 10,000 patient days
Flat File Measure Name	MRSA_RATE
Measure Type	Outcome
Measure Description	The number hospital onset MRSA per 10,000 patient days
Numerator	Number of hospital onset LabID MRSA events
Denominator	Number of patient days
Denominator Exclusions	• Inpatient rehab facilities or inpatient psychiatric facilities with separate CCN • All NICU locations
Rate Calculation	$\left(\frac{number\ of\ MRSA\ HO\ LabID\ events}{number\ of\ patient\ days}\right) x\ 10{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Report	Rate Table for MRSA LabID Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Hospital Onset Methicillin-Resistant *Staphylococcus aureus* (MRSA) Standardized Infection Ratio (SIR)

All Facilities

Measure Name	Hospital Onset MRSA Standardized Infection Ratio (SIR)
Flat File Measure Name	MRSA_SIR
Measure Type	Outcome
Measure Description	The number of hospital onset MRSA observed infections divided by the number of predicted infections
Numerator	Number of observed infections
Denominator	Number of predicted infections
Denominator Exclusions	• Predicted infection count less than one • No data reported during baseline period
Rate Calculation	$\left(\frac{\boldsymbol{number\ of\ observed\ (O)\ infections}}{\boldsymbol{number\ of\ predicted\ (P)\ infections}}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SIR - ACH MRSA FacwideIN LabID Data SIR - CAH MRSA FacwideIN LabID Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Quarterly, beginning October 2021

Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR) – Two Measures

All Facilities

Measure Names	(1) Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR) – ICU, excluding NICU (2) Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR) – ICU + Other Units, excluding NICU
Flat File Measure Names	(1) CDC_CAUTI_ICU_I (2) CDC_CAUTI_ICU_P
Measure Type	Outcome
Measure Description	Number of observed CAUTIs per number of predicted infections
Numerator	Number of observed infections
Denominator	Number of predicted infections
Denominator Exclusions	All NICU locations
Rate Calculation	$\left(\frac{number\ of\ observed\ (O)\ infections}{number\ of\ predicted\ (P)\ infections}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SIR - Acute Care Hospital CAU Data SIR - Critical Access Hospitals CAU Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Catheter-Associated Urinary Tract Infection (CAUTI) Rate – Two Measures

All Facilities

Measure Name	(1) Catheter-Associated Urinary Tract Infection (CAUTI) Rate – ICU, excluding NICU (2) Catheter-Associated Urinary Tract Infection (CAUTI) Rate – ICU + Other Units, excluding NICU
Flat File Measure Names	(1) CDC_CAUTI_RATE_ICU_I (2) CDC_CAUTI_RATE_ICU_P
Measure Type	Outcome
Measure Description	Number of healthcare associated CAUTIs per 1,000 catheter days
Numerator	Number of observed healthcare associated CAUTIs among patients in bedded inpatient care locations
Denominator	Number of indwelling urinary catheter days for each location under surveillance for CAUTI during the data period
Denominator Exclusions	All NICU locations
Rate Calculation	$\left(\frac{number\ of\ CAUTI}{number\ of\ urinary\ catheter\ days}\right) x\ 1{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Report	Rate Table - CAU Data for ICU Other/SCA/ONC
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Urinary Catheter Device Utilization Ratio – Two Measures

All Facilities

Measure Name	(1) Urinary Catheter Device Utilization Ratio – ICU, excluding NICU (2) Urinary Catheter Device Utilization Ratio – ICU + Other Units, excluding NICU
Flat File Measure Names	(1) CDC_CAUTI_DU_I (2) CDC_CAUTI_DU_P
Measure Type	Process
Measure Description	Number of urinary catheter days per 10,000 of patient days
Numerator	Number of indwelling urinary catheter days for bedded inpatient care locations
Denominator	Number of patient days for bedded inpatient care locations
Denominator Exclusions	All NICU locations
Rate Calculation	$\left(\frac{number\ of\ urinary\ catheter\ days}{number\ of\ patient\ days}\right) x\ 10{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Report	Rate Table - CAU Data for ICU Other/SCA/ONC
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Urinary Catheter Standardized Utilization Ratio (SUR)

All Facilities

Measure Name	Urinary Catheter Standardized Utilization Ratio
Flat File Measure Name	CDC_CAUTI_UR
Measure Type	Process
Measure Description	The number of observed urinary catheter device days divided by the number of predicted urinary catheter device days
Numerator	Number of observed urinary catheter device days
Denominator	Number of predicted urinary catheter device days
Denominator Exclusions	• Predicted device days less than one • No data reported during baseline period
Rate Calculation	$\left(\frac{\boldsymbol{number\ of\ observed\ (O)\ device\ days}}{\boldsymbol{number\ of\ predicted\ (P)\ device\ days}}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SUR – Acute Care Hospital Catheter Device Use SUR – Critical Access Hospitals Catheter Device Use
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Central Line-Associated Blood Stream Infection (CLABSI) Standardized Infection Ratio (SIR) – Two Measures

All Facilities

Measure Name	(1) Central Line-Associated Blood Stream Infection (CLABSI) Standardized Infection Ratio (SIR) – ICU (2) Central Line-Associated Blood Stream Infection (CLABSI) Standardized Infection Ratio (SIR) – ICU + Other Units
Flat File Measure Names	(1) CDC_CLABSI_ICU_I (2) CDC_CLABSI_ICU_P
Measure Type	Outcome
Measure Description	Number of observed CLABSIs per number of predicted infections
Numerator	Number of observed infections
Denominator	Number of predicted infections
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ observed\ (O)\ infections}{number\ of\ predicted\ (P)\ infections}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SIR - Acute Care Hospitals CLAB Data SIR - Critical Access Hospitals CLAB Data
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Central Line-Associated Blood Stream Infection (CLABSI) Rate – Two Measures

All Facilities

Measure Name	(1) Central Line-Associated Blood Stream Infection (CLABSI) Rate – ICU (2) Central Line-Associated Blood Stream Infection (CLABSI) Rate – ICU + Other Units
Flat File Measure Names	(1) CDC_CLABSI_RATE_ICU_I (2) CDC_CLABSI_RATE_ICU_P
Measure Type	Outcome
Measure Description	Number of observed healthcare associated CLABSIs per 1,000 central line days
Numerator	Number of observed healthcare associated CLABSI among patients in inpatient care locations
Denominator	Number of central line days for each location under surveillance for CLABSI during the data period
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ CLABSI}{number\ of\ central\ line\ days}\right) x\ 1{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	Rate Table - CLAB Data for ICU-Other Rate Table - CLAB Data for NICU
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Central Line Utilization Ratio – Two Measures

All Facilities

Measure Name	(1) Central Line Utilization Ratio – ICU (2) Central Line Utilization Ratio – ICU + Other Units
Flat File Measure Names	(1) CDC_CLABSI_UR_I (2) CDC_CLABSI_UR_P
Measure Type	Process
Measure Description	Number of central line days per 10,000 patient days
Numerator	Number of central line days for bedded inpatient care locations
Denominator	Number of patient days for bedded inpatient care locations
Denominator Exclusions	None
Rate Calculation	$\left(\frac{number\ of\ central\ line\ days}{number\ of\ patient\ days}\right)\ x\ 10{,}000$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	Rate Table - CLAB Data for ICU-Other Rate Table - CLAB Data for NICU
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Central Line Standardized Utilization Ratio (SUR)

All Facilities

Measure Name	Central Line Standardized Utilization Ratio
Flat File Measure Name	CDC_CLABSI_UR
Measure Type	Process
Measure Description	The number of observed central line device days divided by the number of predicted central line device days
Numerator	Number of observed central line device days
Denominator	Number of predicted central line device days
Denominator Exclusions	• Predicted device days less than one • No data reported during baseline period
Rate Calculation	$\left(\frac{\boldsymbol{number\ of\ observed\ (O)\ device\ days}}{\boldsymbol{number\ of\ predicted\ (P)\ device\ days}}\right)$
Data Source(s)	• For hospitals that report to NHSN, numerators and denominators will be obtained from NHSN by Cynosure state/regional partner organizations or by the Cynosure Team. • For hospitals that do not report to NHSN, numerators and denominators will be reported by hospitals to Cynosure HQIC. Rates will be calculated by the Cynosure Team.
NHSN Source Reports	SUR – Acute Care Hospital Central Line Device Use SUR – Critical Access Hospitals Central Line Device Use
Specifications/Definitions/ Recommendations	Available from CDC NHSN
Baseline Period	10/1/2020 – 9/30/2021
Reporting Period	Monthly, beginning October 2021

Appendices

Appendix A: Additional Information for Excessive Anticoagulation with Warfarin (Inpatients)

Very few clinical situations other than a warfarin adverse event can cause an INR > critical value (unless a facility is a liver transplant center or deal with other special patient populations not typically targeted for this measure). For this reason, it is acceptable for general acute care facilities to assume that all excessive INR results are from patients on warfarin. It is not necessary to cross check records to confirm patients were on warfarin for the purposes of this data submission.

These data elements shall be submitted monthly by all hospitals to Cynosure HQIC. Data can be collected through laboratory systems, pharmacists' intervention data, medical records or administrative data.

Data Collection Tips:

- Create/utilize laboratory reports for INRs greater than agreed upon value for inpatients receiving warfarin therapy.
- Connect with pharmacists; they may already be collecting these data.
- Partner with IT and pharmacy to create electronic reports for real-time monitoring and improvement.
- Patients with multiple INRs above threshold during an admission, only count as one event.
- For purposes of HQIC data submission, consider assuming that all high INRs are from patients receiving warfarin. The lab should be able to provide the numerator and pharmacy can provide the denominator. Be sure to keep your data collection metrics and scope consistent through the year.
- If collecting house-wide data is not currently possible, focus on collecting data from just those units where warfarin is most often administered, and then work towards collecting house-wide.

Appendix B: Additional Information for Hypoglycemia in Inpatients Receiving Insulin

These data elements shall be submitted monthly by all hospitals to Cynosure HQIC. Data can be collected through laboratory systems, pharmacists' intervention data, medical records or administrative data.

Data Collection Tips:

- Partner with pharmacy, laboratory staff and/or Information Technology.
- Connect with pharmacists or Endocrine service as they may already be collecting these data.
- Create/utilize laboratory/EHR hypoglycemia documentation reports for blood glucose levels at or below value set by the hospital.
- Implement a notification process: identifying paper/stickers attached to IV Dextrose 50% bags or Glucagon for periodic retrieval.
- If collecting house-wide data is not currently possible, focus on **collecting** data from just those units where insulin is most often administered, and then work towards collecting house-wide.

Appendix C: Additional Information for Opioids: Rate of Naloxone Administration in Patients

These data elements shall be submitted monthly by all hospitals to Cynosure HQIC. Data can be collected through laboratory systems, pharmacists' intervention data, medical records, or administrative data.

Opioids: (any form of, including combinations): *codeine, fentanyl, hydrocodone, hydromorphone, levorphanol, meperidine, methadone, morphine sulfate, oxycodone, oxymorphone, tapentadol, tramadol*

Data Collection Tips:

- Partner with pharmacy, procedural area staff and/or Information Technology.
- Connect with pharmacists as they may already be collecting these data.
- Implement a notification process: identifying paper/stickers attached to naloxone vials for periodic retrieval.
- Multiple doses of naloxone to the same patient during a hospital stay count as one event.
- Consider non-traditional data collection sources: rapid response team event reports, medication dispensing cabinet reports, RASS or MOSS sedation assessment documentation.