

# Appendix A: Encyclopedia of Measures (EOM)

## Hospital Improvement Innovation Network (HIIN) – Program Evaluation Measures

*Adapted from Version 1.0 – AHA/HRET HEN 2.0*

### Summary of 8/9/2018 updates (v3.0)

- Updated specification/source links for AHRQ PSIs to align with AHRQ software version 2018
- Post-op Sepsis: Added a new resource - Appendix F (Infection Diagnosis Codes)
- ADE-2: updated the ISMP Trigger Alert list as previous link was broken
- Provided definitions for sub-measures within the two aggregate VAE Measures, to include each of the 3 underlying tiers
  - Ventilator-Associated Condition – VAC
  - Infection-related Ventilator-Associated Complication – IVAC
  - Possible VAP – PVAP
- Added Exclusion Criteria for VAE Measures. The exclusion criteria have not changed; however, they were not previously listed in the EOM.

### Summary of 5/17/2018 Updates (v.2.6)

- HRM Denominator changed to use MRSA Patient Days (from CDI Patient Days)
- Clarifications made around MRSA and CDI rate denominators
  - FacWideln denominator surveillance being used – specifications and additional details provided

### Summary of the 3/15/2018 Updates (v.2.5.1)

- ADE-3: Re-Added Glucometer as an acceptable source of data
  - EOM v. 2.5 incorrectly removed this
- HIIN Reliability Measure (HRM)
  - Survey portion updated to separate Critical Access Hospitals (CAH) and Non-CAHs into two surveys

### Summary of 1/30/2018 Updates (v.2.5)

- Clarified CLABSI NICU Exclusion
  - NICU exclusion was not consistently applied throughout the definitions. No CLABSI measure should include NICU events.
- Readmissions clarification regarding which version of the AHRQ software is being used
- HIIN Reliability Metric – **new measure added** (see page 7)
- ADE-3: Removed Glucometer as an acceptable source of data
- SSI-2 a – d
  - KDS Survey Name has been updated
  - Exclusion Criteria have been updated to match SSI-1

### Summary of 9/14/17 Updates (v.2.1)

- CLABSI Measures (all)
  - Added Exclusion
    - Level II/III & Level III NICU locations
- ADE-4 (opioids)
  - Updated Exclusion Criteria to include “hospice/respice” care patients
- CDiff SIR – **new measure added**
- PFE Measures (all)
  - Data collection frequency has changed from semi-annually to monthly.
- Clarification provided regarding data collection, baseline, and performance time periods for each of the measures. Some data collection start dates will align with the baseline evaluation time period, while others may differ
  - Added: Data collection start date
    - When we are contractually obligated to start data collection per CMS HIIN contract (2014 where applicable)
  - Changed: Baseline period → Baseline evaluation period
    - Instead of being the start of data collection, we have now updated it to clearly indicate what your baseline time period is. This will be compared to performance to calculate improvement to date.
  - Changed: Data collection period → Performance evaluation period
    - Instead of being the window where performance data is collected, it now more clearly indicates what data we consider to be performance data. This will be compared to baseline to calculate improvement to date.

#### Summary of 3/30/17 Updates (v.2.0)

- ADE-2 (Anticoagulation)
  - Added “Please Note” under table indicating all INR > 6 should be reported for this measure if the patient is receiving warfarin, as the clinical situations where INR > 6 occurs *not* due to warfarin is rare
- ADE-3 (Glucose)
  - Added Exclusion
    - Non-insulin receiving patients
  - Clarified Numerator
    - Verbiage changed from “number of patients experiencing a hypoglycemic event” to “those patients receiving insulin who experience a hypoglycemic event”
- ADE-4 (Opioids)
  - Updated Exclusion Criteria to include “Free Standing/Independent Surgery Centers”
  - Clarified Specifications for included/excluded unit types
- NHSN Rates & Device Utilization Ratios
  - Added note to the bottom indicating hospitals who submit directly to KDS rather than NHSN are still expected to follow CDC recommendations for surveillance and reporting
- NHSN SIRs (CAUTI, CLABSI, SSI)
  - Clarified use of NHSN’s updated baseline (CY 2015) to calculate SIRs
- MRSA
  - Changed measure to focus on LabID events isolated from blood specimens only

- Multiplier changed from 100 to 1,000 to reflect change from prevalent rate to incident rate
- *C.diff*
  - Changed measure to focus on Hospital Onset LabID events only
  - Multiplier changed from 100 to 10,000 to reflect change from prevalent rate to incident rate
- Updates to “PfP Measure Name” field
  - KDS-HIIN-CAUTI-2a
    - CDC\_CAUTI\_RATE\_ICU\_P → CDC\_CAUTI\_RATE\_HW
  - KDS-HIIN-CLABSI-2a
    - CDC\_CLABSI\_RATE\_P → CDC\_CLABSI\_RATE\_HW
  - KDS-HIIN-CLABSI-2b
    - CDC\_CLABSI\_RATE\_I → CDC\_CLABSI\_RATE\_ICU\_I
- PFE-4 (PEFC Committee)
  - Verbiage related to “do we meet the metric” updated based on feedback from PFE Contractor

#### Summary of 12/12/16 Updates (v.1.3)

- Readmissions
  - Specified exclusion criteria are listed within the included reference
  - Modified footnote to include age restriction (> 17 years)
  - Removed AHIMA FAQ resource
- PFE Planning Checklist
  - Replaced reference to ‘Hospital Engagement Network’ with ‘Hospital Improvement Innovation Network’
- Sepsis Measures
  - Updated KDS Measure Names
    - KDS-HIIN-SEP-1 → KDS-HIIN-SEPSIS-1
    - KDS-HIIN-SEP-2 → KDS-HIIN-SEPSIS-2

#### Summary of 11/14/16 Updates (v.1.2)

- Insertion of EOM Definition Change Table - HEN 2.0 to HIIN
- Readmissions
  - Updated Specification Source Link
- Updated PfP Measure Names
- Falls with Injury
  - Removed attribution of falls and patient days to month of patient discharge. Should be attributed to the month in which they occurred

#### Summary of 10/12/16 Updates

- Readmissions
  - Added readmission measure is using CMS HWR 5.0 specifications
  - Clarified readmissions for ALL Payers not just Medicare FFS
  - No Risk Adjustment on rates

#### Summary of 10/10/16 Updates

- Manual Entry Measures
  - Baselines updated
  - KDS survey name updated

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## EOM Definition Changes: HEN 2.0 to HIIN

For measure changes that have occurred within HIIN, please refer to Update Summary on pages 1 and 2.

Removed		
ADE-1	Manifestations of poor glycemic control	
OB-1	PSI-17 Birth trauma – injury to neonate	
OB-2	PSI-18 Vaginal delivery with instrument	
OB-3	PSI-19 Vaginal delivery without instrument	
OB-4	Preeclampsia	
OB-5	Early Elective Delivery	
OB-6	Post-Partum Hemorrhage	
Added		
CDIFF-2	Hospital Onset (HO) C. difficile (CDI) Standardized Infection Ratio (SIR)	
PFE-1	PFE Planning Checklist	
PFE-2	PFE Shift change huddles	
PFE-3	PFE Leader	
PFE-4	PFEC Committee	
PFE-5	Patient on advisory board	
SEP-2	Sepsis Mortality rate	
Modified		
VTE-1	PSI-12 Perioperative PE or DVT	Changed wording from “post-operative” to “perioperative” to reflect definitional change made by AHRQ
ADE-3	Hypoglycemia in Inpatients receiving insulin	Denominator changed from “number of inpatients receiving insulin and other glycemic agents” to “number of inpatients receiving insulin”
ADE-4	ADEs due to Opioids	Changed source of opioid administration from “IV” to “any route”
SEPSIS-1	Post-operative sepsis	Added exclusion criteria <ul style="list-style-type: none"> <li>- Principal diagnosis of sepsis</li> <li>- Cases with a secondary diagnosis of sepsis present on admission</li> <li>- Cases with a principal diagnosis of infection</li> <li>- Cases with a secondary diagnosis of infection present on admission (only if they also have a secondary diagnosis of sepsis)</li> <li>- Obstetric discharges</li> </ul>
FALLS-1	Falls with injury	Added verbiage to indicate included unit types and patient populations (patients on observation units)
CLABSI SIR	CLABSI standardized infection ratio	Removed NICU from exclusion criteria – NICUs are <i>not</i> excluded for CLABSI as they are for CAUTI
READ	Readmissions	Clarified readmission measure uses CMS HWR 5.0 specifications; all payer, not just Medicare FFS; no risk adjustment

## HIIN Reliability Measure

### HIIN Reliability Measure All Facilities

GLPP HIIN Aggregate Measure of Patient Harms	
Total rate of patient harm across 16 HIIN Measures	
Measure type	Outcome
Numerator	<p>Cumulative total of 16 HIIN Measure numerators:</p> <ol style="list-style-type: none"> <li>1. KDS-HIIN-ADE-2: # of patients with warfarin related ADE</li> <li>2. KDS-HIIN-ADE-3: # of patients with insulin related ADE</li> <li>3. KDS-HIIN-ADE-4: # of patients with opioid related ADE</li> <li>4. KDS-HIIN-CAUTI-2a: # of patients with CAUTI</li> <li>5. KDS-HIIN-CDIFF-1: # of patients with Clostridium difficile infection</li> <li>6. KDS-HIIN-CLABSI-2a: # of patients with CLABSI</li> <li>7. KDS-HIIN-Falls-1: # of falls with injury</li> <li>8. KDS-HIIN-MRSA-1: # of patients with MRSA</li> <li>9. KDS-HIIN-PrU-1: # of patients with stage III or greater pressure ulcer</li> <li>10. KDS-HIIN-SEPSIS-1: # of patients with postoperative sepsis</li> <li>11. KDS-HIIN-SSI-2a: # of colon surgeries with SSI</li> <li>12. KDS-HIIN-SSI-2b: # of abdominal hysterectomies with SSI</li> <li>13. KDS-HIIN-SSI-2c: # of knee replacements with SSI</li> <li>14. KDS-HIIN-SSI-2d: # of hip replacement with SSI</li> <li>15. KDS-HIIN-VAE-2: # of patients with a ventilator associated complication</li> <li>16. KDS-HIIN-VTE-1: # of perioperative patients with PE or DVT</li> </ol>
Denominator	<p>Total Patient Days <i>(as calculated for KDS-HIIN-MRSA-1 [MRSA rate] denominator)*</i> <b>Denominator will be calculated for NON-Critical Access Hospitals ONLY</b></p>
Exclusions	Any exclusions that apply within each individual measure numerator.
Rate calculation	$\frac{\text{number of harms (numerators) from all 16 measures above}}{\text{number of MDRO** FacWideIN patient days}} \times 1,000$
Specifications/definitions Sources/Recommendations	See individual measures for additional details
Data source (s)	Administrative Claims data, NHSN, Keystone Data System (KDS)
Automatic transfer from	N/A - Data will be filled in within KDS once all contributing measures are complete
Data collection start date	2015 Q4
Baseline evaluation period	2016 Q4
Performance evaluation period	Monthly, beginning 2017 Q1
KDS Survey Name	HIIN Reliability Measure HIIN Reliability Measure – CAH Only
KDS Measure ID(s)	KDS-HIIN-HRM-1

Note - continued on page 7.

The HRM is not recommended to be used as a benchmark figure, but can be used for internal comparisons to your own hospital. You can use this aggregate harm measure to help staff and leaders understand if your overall rate of harm is increasing or decreasing. The HRM aggregate does not replace the need to continue to monitor the individual measures of harm which will be independently contributing to your HRM. Please reach out to your state hospital association with any questions.

\* For reporting patient days at facility-wide inpatient level (FacWideIN) for MRSA, please report all inpatient locations physically located in the hospital **minus** inpatient rehabilitation facility (IRF) and inpatient psychiatric facility (IPF) with separate CCNs.

## Administrative Claims Data

### Pressure Ulcer Rate, Stage 3+ (PSI-03)

#### All Facilities

Pressure Ulcer: CMS HIIN Evaluation Measure (AHRQ PSI-03)	
Pressure Ulcer Rate, Stages 3+	
Measure type	Outcome
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
Exclusions	<ul style="list-style-type: none"> <li>- Stays less than 3 days</li> <li>- Cases with a principal diagnosis of pressure ulcer</li> <li>- Cases with a secondary diagnosis of Stage III or IV pressure ulcer or unstageable that is present on admission</li> <li>- Cases with major skin disorders</li> <li>- Obstetric cases</li> <li>- Cases with hemiplegia, paraplegia, quadriplegia, spina bifida, or anoxic brain damage</li> <li>- Cases in which debridement or pedicle graft is the only operating room procedure</li> <li>- Discharges with debridement or pedicle graft before or on the same day as the major operating room procedure</li> <li>- Transfers from another facility</li> </ul>
Rate calculation	$\frac{\text{number of patients with stage III, IV or unstageable pressure ulcers}}{\text{number of surgical or medical discharges}} \times 1,000$
Specifications/definitions	Available from AHRQ: <a href="#">PSI-03</a>
Sources/Recommendations	Medical Discharge Specifications: <a href="#">PSI Appendix C</a> Surgical Discharge Specifications: <a href="#">PSI Appendix E</a>
Data source (s)	Administrative Claims data
Automatic transfer from	Inpatient databases (MI, IL, WI)
Data collection start date	Calendar year 2014
Baseline evaluation period	2015 Q4 – 2016 Q3
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	Pressure Ulcers PSI
KDS Measure ID(s)	KDS-HIIN-PrU-1
PfP Measure Name	PSI03



## Readmission within 30 Days (All Cause) Rate All Facilities

Readmission: MHA/IHA/WHA HIIN Evaluation Measure	
<i>Readmission within 30 Days (All Cause/HWR)</i>	
<ul style="list-style-type: none"> <li>• Readmissions to the same facility</li> <li>• Readmissions to any facility</li> </ul>	
Measure type	Outcome
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
Exclusions	Listed within the below reference document
Rate calculation	$\frac{\text{number of unplanned readmissions within 30 days}}{\text{number of at risk discharges}} \times 100$
Specifications/definitions Sources/Recommendations	Facilities should follow the CMS HWR 6.0 definition for ICD-10 discharges and CMS HWR 5.0 definition for ICD-9 discharges of an unplanned readmission – <a href="#">Yale</a>
Data source (s)	Administrative Claims data
Automatic transfer from	Inpatient databases (MI, IL, WI)
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2014
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	Readmissions
KDS Measure ID(s)	KDS-HIIN-READ-1 (same facility) KDS-HIIN-READ-2 (any facility)
PfP Measure Name	READM_30DAY_INDEX READM_30DAY

Note: The CMS definition only includes Medicare FFS patients but for the HIIN we will include all patients > 17 years of age, regardless of payer.

No risk adjustment for the rates.

Post-Operative Sepsis (PSI-13)  
All Facilities

Sepsis: MHA/IHA/WHA HIIN Evaluation Measure (AHRQ PSI 13)	
<i>Postoperative sepsis cases (secondary diagnosis) per 1,000 elective surgical discharges for patients ages 18 years and older</i>	
Measure type	Outcome
Numerator	Number of discharges with diagnostic code for sepsis in any secondary diagnosis field
Denominator	Number of elective surgical discharges age 18 and older defined by administrative codes for an operating room procedure
Exclusions	<ul style="list-style-type: none"> <li>- Principal diagnosis of sepsis</li> <li>- Cases with a secondary diagnosis of sepsis present on admission</li> <li>- Cases with a principal diagnosis of infection</li> <li>- Cases with a secondary diagnosis of infection present on admission (only if they also have a secondary diagnosis of sepsis)</li> <li>- Obstetric discharges</li> </ul>
Rate calculation	$\frac{\text{number of discharges with a sepsis diagnosis}}{\text{number of elective surgical discharges}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from AHRQ: <a href="#">PSI-13</a> Surgical Discharge Specifications: <a href="#">PSI Appendix E</a> Operating Room Procedure Codes: <a href="#">PSI Appendix A</a> Infection Diagnosis Codes: <a href="#">PSI Appendix F</a>
Data source (s)	Administrative Claims data
Automatic transfer from	Inpatient databases (MI, IL, WI)
Data collection start date	Calendar year 2014
Baseline evaluation period	2015 Q4 – 2016 Q3
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	Sepsis PSI
KDS Measure ID(s)	KDS-HIIN-SEPSIS-1
PfP Measure Name	PSI13

## Sepsis Mortality Rate All Facilities

Sepsis: MHA/IHA/WHA HIIN Evaluation Measure	
<i>Severe Sepsis/Septic Shock Mortality Rate</i>	
Measure type	Outcome
Numerator	Number of patients with discharge status of expired
Denominator	Number of patients with principle or secondary diagnosis code of Severe Sepsis or Septic Shock
Exclusions	None
Rate calculation	$\frac{\text{number of patients with a discharge status of "expired"}}{\text{number of inpatients with severe sepsis or septic shock diagnosis}} \times 100$
Specifications/definitions Sources/Recommendations	Patient Discharge Status Codes: <a href="#">DHHS &amp; CMS</a> ICD-9 and ICD-10: See codes below
Data source (s)	Administrative Claims data
Automatic transfer from	Inpatient databases (MI, IL, WI)
Data collection start date	Calendar year 2014
Baseline evaluation period	2015 Q4 – 2016 Q3
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	Sepsis Mortality
KDS Measure ID(s)	KDS-HIIN-SEPSIS-2
PfP Measure Name	SEP_MORTALITY

**Numerator Code:**

Patient Discharge Status – 20

- **Expired:** This code is used only when the patient dies

**Denominator Codes:**

(Baseline) ICD-9: 995.92 or 785.52

(Performance) ICD-10: R65.20 or R65.21

Perioperative PE or DVT (PSI-12)  
All Facilities

PE/DVT: CMS HIIN Evaluation Measure (AHRQ PSI 12)	
<i>Number of surgical patients that develop a perioperative PE or DVT</i>	
Measure type	Outcome
Numerator	Number of discharges with administrative codes for deep vein thrombosis (DVT) or pulmonary embolism (PE) in any secondary diagnosis field
Denominator	Number of surgical discharges age 18 and older defined by specific DRGs or MS-DRGs and an administrative code for an operating room procedure
Exclusions	<ul style="list-style-type: none"> <li>- Cases with principal diagnosis for pulmonary embolism or proximal deep vein thrombosis</li> <li>- Cases with secondary diagnosis for pulmonary embolism or proximal deep vein thrombosis present on admission</li> <li>- Cases in which interruption of vena cava occurs before or on the same day as the first operating room procedure</li> <li>- Obstetric discharges</li> </ul>
Rate calculation	$\frac{\text{number of discharges with code for DVT or PE}}{\text{number of surgical discharges}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from AHRQ: <a href="#">PSI-12</a> Surgical Discharge Specifications: <a href="#">PSI Appendix E</a> Operating Room Procedure Codes: <a href="#">PSI Appendix A</a>
Data source(s)	Administrative Claims data
Automatic transfer from	Inpatient databases (MI, IL, WI)
Data collection start date	Calendar year 2014
Baseline evaluation period	2015 Q4 – 2016 Q3
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VTE PSI
KDS Measure ID(s)	KDS-HIIN-VTE-1
PfP Measure Name	PSI12

## National Healthcare Safety Network (NHSN)

### Hospital Onset Clostridium difficile (C. diff) LabID Event All Facilities

C. diff: MHA/IHA/WHA HIIN Evaluation Measure	
<i>Hospital Onset (HO) C. diff LabID events at facility-wide inpatient level</i>	
Measure type	Outcome
Numerator	Number of Hospital Onset LabID C. diff Events
Denominator	Number of patient days at Facility-wide inpatient level*
Exclusions	- Inpatient rehab facilities or inpatient psychiatric facilities with separate CCN - NICU/baby locations
Rate calculation	$\frac{\text{number of C. diff HO LabID events}}{\text{number of CDI FacWideIN patient days}} \times 10,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a> and <a href="#">CMS Hospital Compare</a>
Data source (s)	NHSN
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	C.DIFF
KDS Measure ID(s)	KDS-HIIN-CDIFF-1
PfP Measure Name	CDIFF_RATE

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report the number of C.Diff Lab events and number of patient days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

\* For reporting patient days at facility-wide inpatient level (FacWideIN) for CDI, please report all inpatient locations physically located in the hospital **minus** inpatient rehabilitation facility (IRF) and inpatient psychiatric facility (IPF) with separate CCNs, and baby-based locations (NICU, well-baby nursery, etc.).

## Hospital Onset Clostridium difficile (C. diff) Standardized Infection Ratio (SIR) NHSN Reporting Facilities ONLY

<b>C. diff: MHA/IHA/WHA HIIN Evaluation Measure – NHSN Reporting Facilities ONLY</b>	
<i>Hospital Onset (HO) C. difficile (CDI) Standardized Infection Ratio (SIR)</i>	
Measure type	Outcome
Numerator	Number of observed infections
Denominator	Number of predicted infections
Exclusions	- Predicted infection count less than one - No data reported during baseline period
Rate calculation	$\frac{\text{number of observed infections}}{\text{number of predicted infections}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (all inpatient locations)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Quarterly beginning 2016 Q4
KDS Survey Name	C.DIFF SIR (Quarterly)
KDS Measure ID(s)	KDS-HIIN-CDIFF-2
PfP Measure Name	CDIFF_SIR

Data elements to calculate this ratio will be extracted from NHSN for hospitals which confer rights to WHA, IHA or MHA Keystone Center. Hospitals are expected to confer rights to all inpatient locations. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN will not be required to submit this measure.

**Note:** Only those locations for which baseline data have been published will be included in the SIR calculations.

## Methicillin-resistant Staphylococcus aureus (MRSA) LabID Blood Event All Facilities

MRSA: MHA/IHA/WHA HIIN Evaluation Measure	
<i>MRSA Blood Events at facility-wide inpatient level</i>	
Measure type	Outcome
Numerator	Number of MRSA Blood Events
Denominator	Number of patient days at Facility-wide inpatient level*
Exclusions	Inpatient rehab facilities or inpatient psychiatric facilities with separate CCN number
Rate calculation	$\frac{\text{number of MRSA LabID blood events}}{\text{number of MDRO** FacWideIN patient days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a> and <a href="#">CMS Hospital Compare</a>
Data source (s)	NHSN
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	MRSA
KDS Measure ID(s)	KDS-HIIN-MRSA-1
PfP Measure Name	MRSA_RATE

Data elements to calculate this rate will be extracted from NHSN for hospitals which confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report the number of MRSA events and patient days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

\* For reporting patient days at facility-wide inpatient level (FacWideIN) for MRSA, please report all inpatient locations physically located in the hospital **minus** inpatient rehabilitation facility (IRF) and inpatient psychiatric facility (IPF) with separate CCNs.

\*\* The MRSA patient day denominator will be used, however the field within NHSN Summary Data is labeled as 'MDRO' patient days.

## Catheter-Associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR)

### NHSN Reporting Facilities ONLY

CAUTI: CMS HIIN Evaluation Measure – NHSN Reporting Facilities ONLY	
<p><i>Catheter-associated Urinary Tract Infection (CAUTI) Standardized Infection Ratio (SIR)</i></p> <ul style="list-style-type: none"> <li>All: ICUs + Other Inpatient Units</li> <li>ICU: ICUs excluding NICUs</li> </ul>	
Measure type	Outcome
Numerator	Number of observed infections
Denominator	Number of predicted infections
Exclusions	<ul style="list-style-type: none"> <li>- Non-indwelling catheters</li> <li>- Level II/III &amp; Level III NICU locations</li> <li>- Predicted infection count less than one</li> <li>- No data reported during baseline period</li> </ul>
SIR calculation	$\frac{\text{number of observed (O) infections}}{\text{number of predicted (P) infections}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Quarterly, beginning 2016 Q4
KDS Survey Name	CAUTI SIR (Quarterly)
KDS Measure ID(s)	KDS-HIIN-CAUTI-1a (all units) KDS-HIIN-CAUTI-1b (ICUs excluding NICUs)
PfP Measure Name	CDC_CAUTI_ICU_P CDC_CAUTI_ICU_I
Notes	<p>This measure is only collected for hospitals submitting data to NHSN and conferring rights to WHA, IHA or MHA Keystone Center.</p> <p>NHSN updated baseline of 2015 will be used for SIR calculation.</p>

Data elements to calculate this ratio will be extracted from NHSN for hospitals which confer rights to WHA, IHA or MHA Keystone Center. Hospitals are expected to confer rights to all inpatient locations excluding Neonatal Intensive Care Units (NICUs). IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN will not be required to submit this measure.

**Note:** Only those locations for which baseline data have been published will be included in the SIR calculations.



## Catheter-Associated Urinary Tract Infection (CAUTI) Rate All Facilities

CAUTI: CMS HIIN Evaluation Measure – All Facilities	
<i>Catheter-associated Urinary Tract Infection (CAUTI) Rate</i>	
<ul style="list-style-type: none"> <li>All: ICUs + Other Inpatient Units</li> <li>ICU: ICUs excluding NICUs</li> </ul>	
Measure type	Outcome
Numerator	Number of observed healthcare-associated CAUTI 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
Exclusions	- Level II/III & Level III NICU locations
Rate calculation	$\frac{\text{number of CAUTI}}{\text{number of catheter days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	CAUTI
KDS Measure ID(s)	KDS-HIIN-CAUTI-2a (all units) KDS-HIIN-CAUTI-2b (ICUs excluding NICUs)
PfP Measure Name	CDC_CAUTI_RATE_HW CDC_CAUTI_RATE_ICU_I

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. Hospitals are expected to confer rights to all inpatient locations excluding Neonatal Intensive Care Units (NICUs). IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report number of CAUTIs, patient days, and urinary catheter days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

## Urinary Catheter Utilization Ratio All Facilities

CAUTI: CMS HIIN Evaluation Measure – All Facilities	
<i>Urinary Catheter Utilization Ratio</i>	
<ul style="list-style-type: none"> <li>• ICUs + Other Inpatient Units</li> <li>• ICUs excluding NICUs</li> </ul>	
Measure type	Process
Numerator	Number of indwelling urinary catheter days for bedded inpatient care locations
Denominator	Number of patient days for bedded inpatient care locations
Exclusions	- Level II/III & Level III NICU locations
Rate calculation	$\frac{\text{number of urinary catheter days}}{\text{number of patient days}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	CAUTI
KDS Measure ID(s)	KDS-HIIN-CAUTI-3a (all units) KDS-HIIN-CAUTI-3b (ICUs excluding NICUs)
PfP Measure Name	CDC_CAUTI_DU_P CDC_CAUTI_DU_I

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. Hospitals are expected to confer rights to all inpatient locations excluding Neonatal Intensive Care Units (NICUs). IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report number of CAUTIs, patient days, and urinary catheter days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

## Central Line-Associated Blood Stream Infection (CLABSI) Standardized Infection Ratio (SIR)

### NHSN Reporting Facilities ONLY

CLABSI: CMS HIIN Evaluation Measure – NHSN Reporting Facilities ONLY	
<p><i>Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (SIR)</i></p> <ul style="list-style-type: none"> <li>All: ICUs + Other Inpatient Units</li> <li>ICU: ICUs excluding NICUs</li> </ul>	
Measure type	Outcome
Numerator	Number of observed infections
Denominator	Number of predicted infections
Exclusions	<ul style="list-style-type: none"> <li>- Predicted infection count less than one</li> <li>- No data reported during baseline period</li> <li>- Level II/III &amp; Level III NICU locations</li> </ul>
SIR calculation	$\frac{\text{number of observed (O) infections}}{\text{number of predicted (P) infections}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (all inpatient locations)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Quarterly, beginning 2016 Q4
KDS Survey Name	CLABSI SIR (Quarterly)
KDS Measure ID(s)	KDS-HIIN-CLABSI-1a (all units) KDS-HIIN-CLABSI-1b (ICUs excluding NICUs)
PfP Measure Name	CDC_CLABSI_ICU_P CDC_CLABSI_ICU_I
Notes	<p>This measure is only collected for hospitals submitting data to NHSN and conferring rights to WHA, IHA or MHA Keystone Center.</p> <p>NHSN updated baseline of 2015 will be used for SIR calculation.</p>

Data elements to calculate this ratio will be extracted from NHSN for hospitals which confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals not reporting to NHSN will **not** be required to submit this measure.

**Note:** Only those locations for which baseline data have been published will be included in the SIR calculations.

## Central Line-Associated Blood Stream Infection (CLABSI) Rate All Facilities

CLABSI: CMS HIIN Evaluation Measure - All Facilities	
<i>Central Line-Associated Bloodstream Infection (CLABSI) Rate</i>	
<ul style="list-style-type: none"> <li>All: ICUs + Other Inpatient Units</li> <li>ICU: ICUs excluding NICUs</li> </ul>	
Measure type	Outcome
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
Exclusions	- Level II/III & Level III NICU locations
Rate calculation	$\frac{\text{number of CLABSI}}{\text{number of central line days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	CLABSI
KDS Measure ID(s)	KDS-HIIN-CLABSI-2a (all units) KDS-HIIN-CLABSI-2b (ICUs excluding NICUs)
PfP Measure Name	CDC_CLABSI_RATE_HW CDC_CLABSI_RATE_ICU_I

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report number of CLABSIs, number of central line days, and number of patient days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

## Central Line Utilization Ratio

### All Facilities

CLABSI: CMS HIIN Evaluation Measure	
<i>Central Line Utilization Ratio</i>	
<ul style="list-style-type: none"> <li>• ALL: ICUs + Other Inpatient Units</li> <li>• ICU: ICUs excluding NICUs</li> </ul>	
Measure type	Process
Numerator	Number of central line days for bedded inpatient care locations
Denominator	Number of patient days for bedded inpatient care locations
Exclusions	- Level II/III & Level III NICU locations
Rate calculation	$\frac{\text{number of central line days}}{\text{number of patient days}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	CLABSI
KDS Measure ID(s)	KDS-HIIN-CLABSI-3a (all units) KDS-HIIN-CLABSI-3b (ICUs excluding NICUs)
PfP Measure Name	CLABSI_UR_P CLABSI_UR_I

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report number of CLABSIs, number of central line days, and number of patient days through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

## Surgical Site Infection (SSI) Standardized Infection Ratio (SIR) NHSN Reporting Facilities ONLY

SSI: CMS HIIN Evaluation Measure – NHSN Reporting Facilities ONLY (NQF 0753)	
<i>Surgical Site Infection (SSI) Standardized Infection Ratio (SIR)</i>	
<ul style="list-style-type: none"> <li>• Colon Surgeries (COLO)</li> <li>• Abdominal hysterectomies (HYST)</li> <li>• Total knee replacements (KPRO)</li> <li>• Total hip replacements (HPRO)</li> </ul>	
Measure type	Outcome
Numerator	Number of observed infections
Denominator	Number of predicted infections
Exclusions	Number of predicted infections less than one, or no data reported during baseline period.
SIR calculation	$\frac{\text{number of observed (O) infections}}{\text{number of predicted (P) infections}}$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source (s)	NHSN (all inpatient locations)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Quarterly, beginning 2016 Q4
KDS Survey Name	SSI SIR (Quarterly)
KDS Measure ID(s)	KDS-HIIN-SSI-1a (COLO) KDS-HIIN-SSI-1b (AB HYS) KDS-HIIN-SSI-1c (KNEE) KDS-HIIN-SSI-1d (HIP)
PfP Measure Name	SSI_COLO_SIR SSI_HYST_SIR SSI_KPRO_SIR SSI_HPRO_SIR
Notes	This measure is only collected for hospitals submitting data to NHSN and conferring rights to WHA, IHA or MHA Keystone Center.  NHSN updated baseline of 2015 will be used for SIR calculation.

Data elements to calculate this ratio will be extracted from NHSN for hospitals which confer rights to IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN will **not** be required to submit this measure.

**Note:** Only those locations for which baseline data have been published will be included in the SIR calculations.

## Surgical Site Infection (SSI) Rate All Facilities

SSI: MHA/IHA/WHA HIIN Evaluation Measure	
<p><i>Surgical Site Infection (SSI) Rate for each of following procedures:</i></p> <ul style="list-style-type: none"> <li>• <i>Colon Surgeries (COLO)</i></li> <li>• <i>Abdominal hysterectomies (HYST)</i></li> <li>• <i>Total knee replacements (KPRO)</i></li> <li>• <i>Total hip replacements (HPRO)</i></li> </ul>	
Measure type	Outcome
Numerator	Number of surgical site infections based on CDC NHSN definition
Denominator	Number of patients having any of the inpatient procedures included in the selected NHSN operative procedure category(s)
Exclusions	Number of predicted infections less than one, or no data reported during baseline period.
Rate calculation	$\frac{\text{number of SSIs}}{\text{number of operating room procedures}} \times 100$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN*</a>
Data source (s)	NHSN (Keystone Data System for non-NHSN users)  * For those who use NHSN but prefer to submit HPRO & KPRO to KDS directly, that option is available.
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	SSI - Colon Surgeries (COLO) SSI - Abdominal hysterectomies (HYST) SSI - Total knee replacements (KPRO) SSI - Total hip replacements (HPRO)
KDS Measure ID(s)	KDS-HIIN-SSI-2a (COLO) KDS-HIIN-SSI-2b (AB HYS) KDS-HIIN-SSI-2c (KNEE) KDS-HIIN-SSI-2d (HIP)
PfP Measure Name	SSI_COLO_RATE SSI_HYST_RATE SSI_KPRO_RATE SSI_HPRO_RATE

\*Operative Procedure Codes to determine which cases are included in this rate can be found on page 9-3 of the above source document

**Note - continued on page 24**

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report the number of SSIs and number of operative procedures, for each of the four procedure categories through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

- For facilities who are manually submitting SSI Data into KDS, please continue doing so as you have been



**Total Ventilator-Associated Condition (VAC) – (VAC, IVAC, PVAP)**  
**All Facilities with ventilated inpatients**

VAE: CMS HIIN Evaluation Measure	
<i>Total Ventilator-Associated Condition (VAC)</i>	
Measure type	Outcome
Numerator	Number of events that meet the criteria of VAC; including those that meet the criteria for infection-related ventilator-associated complication (IVAC) and possible ventilator-associated pneumonia (PVAP)
Denominator	Number of ventilator days
Exclusions	<ul style="list-style-type: none"> <li>- Patients under 18 years of age</li> <li>- Pediatric and neonatal locations</li> <li>- Patients receiving high frequency ventilation or extracorporeal life support</li> </ul>
Rate calculation	$\frac{\text{number of events meeting VAC criteria (VAC, IVAC, PVAP)}}{\text{number of ventilator days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source(s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VAE
KDS Measure ID(s)	KDS-HIIN-VAE-1
PfP Measure Name	Total VAE

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report the number of VACs and number of ventilator days for each month through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

## Total Infection-Related Ventilator-Associated Complication (IVAC) – (IVAC, PVAP)

### All Facilities with ventilated inpatients

VAE: CMS HIIN Evaluation Measure	
<i>Total Infection-Related Ventilator-Associated Complication (IVAC)</i>	
Measure type	Outcome
Numerator	Number of events that meet the criteria of infection-related ventilator-associated complication (IVAC); including those that meet the criteria for Possible VAP (PVAP)
Denominator	Number of ventilator days
Exclusions	<ul style="list-style-type: none"> <li>- Patients under 18 years of age</li> <li>- Pediatric and neonatal locations</li> <li>- Patients receiving high frequency ventilation or extracorporeal life support</li> </ul>
Rate calculation	$\frac{\text{number of events meeting IVAC criteria (IVAC, PVAP)}}{\text{number of ventilator days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source(s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VAE
KDS Measure ID(s)	KDS-HIIN-VAE-2
PfP Measure Name	Total IVAC Plus

Data elements to calculate this rate will be extracted from NHSN for hospitals who confer rights to WHA, IHA or MHA Keystone Center. IHA or MHA Keystone Center Critical Access Hospitals and those not reporting to NHSN are required to report the number of IVACs and number of ventilator days for each month through the MHA Keystone Data System.

If reporting directly to KDS, hospitals are required to follow the same specifications as hospitals who are reporting to NHSN. Please refer to the above CDC source link for more information.

Ventilator-Associated Condition (VAC)

**All Facilities with ventilated inpatients**

VAE: CMS HIIN Evaluation Measure	
<i>Ventilator-Associated Condition (VAC)</i>	
Measure type	Outcome
Numerator	Number ventilator-associated conditions (VACs)
Denominator	Number of ventilator days
Exclusions	<ul style="list-style-type: none"> <li>- Patients under 18 years of age</li> <li>- Pediatric and neonatal locations</li> <li>- Patients receiving high frequency ventilation or extracorporeal life support</li> </ul>
Rate calculation	$\frac{\text{number of events that meet only VAC criteria}}{\text{number of ventilator days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source(s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VAE
KDS Measure ID(s)	KDS-HIIN-VAE-3a
PfP Measure Name	VAC

Infection-Related Ventilator-Associated Complication (IVAC)

**All Facilities with ventilated inpatients**

VAE: CMS HIIN Evaluation Measure	
<i>Infection-Related Ventilator-Associated Complication (IVAC)</i>	
Measure type	Outcome
Numerator	Number of infection-related ventilator-associated complications (IVAC)
Denominator	Number of ventilator days
Exclusions	<ul style="list-style-type: none"> <li>- Patients under 18 years of age</li> <li>- Pediatric and neonatal locations</li> <li>- Patients receiving high frequency ventilation or extracorporeal life support</li> </ul>
Rate calculation	$\frac{\text{number of events that meet only IVAC criteria}}{\text{number of ventilator days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source(s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VAE
KDS Measure ID(s)	KDS-HIIN-VAE-3b
PfP Measure Name	IVAC

Possible Ventilator-Associated Pneumonia (PVAP)

**All Facilities with ventilated inpatients**

VAE: CMS HIIN Evaluation Measure	
<i>Possible Ventilator-Associated Pneumonia (PVAP)</i>	
Measure type	Outcome
Numerator	Number of possible ventilator-associated pneumonias (PVAP)
Denominator	Number of ventilator days
Exclusions	<ul style="list-style-type: none"> <li>- Patients under 18 years of age</li> <li>- Pediatric and neonatal locations</li> <li>- Patients receiving high frequency ventilation or extracorporeal life support</li> </ul>
Rate calculation	$\frac{\text{number of events that meet only PVAP criteria}}{\text{number of ventilator days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">CDC NHSN</a>
Data source(s)	NHSN (Keystone Data System for non-NHSN users)
Automatic transfer from	NHSN- for hospitals conferring rights to WHA, IHA or MHA Keystone Center
Data collection start date	Calendar year 2014
Baseline evaluation period	Calendar year 2015
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	VAE
KDS Measure ID(s)	KDS-HIIN-VAE-3c
PfP Measure Name	PVAP

## Keystone Data System (KDS)

### Adverse Drug Event – Excessive Anticoagulation with Warfarin – Inpatients All Facilities

ADE: MHA/IHA/WHA HIIN Evaluation Measure	
<i>Adverse Drug Events (ADE) related to Anticoagulation Safety: Inpatients experiencing excessive anticoagulation with warfarin</i>	
Measure type	Outcome
Numerator	Number of inpatients experiencing excessive anticoagulation with warfarin (INR greater than 6)
Denominator	Number of inpatients receiving warfarin anticoagulation therapy
Exclusions	Patients with INR greater than 6, present on admission
Rate calculation	$\frac{\text{number of patients with INR} > 6}{\text{number of patients receiving warfarin anticoagulation therapy}} \times 100$
Specifications/definitions Sources/Recommendations	Available from <a href="#">ISMP Trigger Alert List</a>
Data source (s)	<b>Hospital Reported:</b> Submit to Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection start date	2016 Q1
Baseline evaluation period	Returning HEN 2.0 Hospitals: 2016 Q1 New GLPP HIIN Hospitals: 2016 Q4
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	ADE – Anticoagulation & Glucose
KDS Measure ID(s)	KDS-HIIN-ADE-2
PfP Measure Name	INR_6

**Please Note:** Very few clinical situations other than a warfarin adverse event can cause an INR >6 (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 the MHA Keystone Data System. Data can be collected through laboratory systems, pharmacists' intervention data, medical records or administrative data.

For manually entered measures, the discharge date indicates the month where the safety event and the patient days are attributed.

**e.g.:** If a patient is admitted on 9/25, had an event on 9/28, and discharged on 10/1, both the event and number of patient days will be attributed to the numerator and denominator for October, not September.

#### Data Collection Tips:

- Create/utilize laboratory reports for INRs greater than 6 for inpatients receiving warfarin therapy.
- Connect with pharmacists; they may already be collecting this 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 HIIN 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.

## Adverse Drug Event – Hypoglycemia in Inpatients Receiving Insulin All Facilities

ADE: MHA/IHA/WHA HIIN Evaluation Measure – All Facilities	
<i>Adverse Drug Events (ADE) related to Glycemic Management: Hypoglycemia in inpatients receiving insulin</i>	
Measure type	Outcome
Numerator	Those patients receiving insulin who experience a hypoglycemic event (e.g. hypoglycemia defined as plasma glucose concentration of <b>50 mg per dl</b> or less)
Denominator	Number of inpatients receiving insulin identified as warranted
Exclusions	- Patients with hypoglycemia present on admission - Non-insulin receiving patients
Rate calculation	$\frac{\text{number of patients with hypoglycemia (50 mg/dl or less)}}{\text{number of inpatients receiving insulin}} \times 100$
Specifications/definitions Sources/Recommendations	Available from <a href="#">ASHP Safe Use of Insulin</a> Patients with multiple blood glucose levels 50 mg/dL or less during an admission count only once.
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection start date	2016 Q1
Baseline evaluation period	Returning HEN 2.0 Hospitals: 2016 Q1 New GLPP HIIN Hospitals: 2016 Q4
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	ADE – Anticoagulation & Glucose
KDS Measure ID(s)	KDS-HIIN-ADE-3
PfP Measure Name	BG_50

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

For manually entered measures, the discharge date indicates the month where the safety event and the patient days are attributed.

**e.g.:** If a patient is admitted on 9/25, had an event on 9/28, and discharged on 10/1, both the event and number of patient days will be attributed to the numerator and denominator for October, not September.

### Data Collection Tips:

- Partner with pharmacy, laboratory staff and/or Information Technology.
- Connect with pharmacists or Endocrine service as they may already be collecting this data.
- Create/utilize laboratory/glucometer/EHR hypoglycemia documentation reports for blood glucose levels of 50 mg/dL or less.
- 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.



## Adverse Drug Event – ADEs due to Opioids All Facilities

ADE: MHA/IHA/WHA HIIN Evaluation Measure – All Facilities	
<i>Adverse Drug Events (ADE) related to Opioids: Patients receiving naloxone after treatment with opioids (any route)</i>	
Measure type	Outcome
Numerator	Number of patients treated with opioids (any route) who received a reversal agent (naloxone)
Denominator	Number of patients who received an opioid (See example medications below)
Exclusions	<ul style="list-style-type: none"> <li>- Obstetric Patients</li> <li>- Emergency Department</li> <li>- Free-Standing/Independent Surgery Centers</li> <li>- Hospice/Respite Care Patients</li> </ul>
Rate calculation	$\frac{\text{number of patients treated with opioids who received naloxone}}{\text{number of patients who received an opioid}} \times 100$
Specifications/definitions Sources/Recommendations	<p>Measure encompasses:</p> <ul style="list-style-type: none"> <li>- All inpatients               <ul style="list-style-type: none"> <li>o Excluding OB</li> </ul> </li> <li>- Outpatients; limited to               <ul style="list-style-type: none"> <li>o Outpatient Surgery                   <ul style="list-style-type: none"> <li>▪ Excluding those at free-standing/independent surgery centers</li> </ul> </li> <li>o Endoscopy                   <ul style="list-style-type: none"> <li>▪ Excluding ED</li> </ul> </li> </ul> </li> </ul> <p>Multiple doses of naloxone to the same patient during a hospital stay count as one event.</p>
Data source (s)	<b>Hospital Reported:</b> Submit to the MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection start date	2016 Q4
Baseline evaluation period	2016 Q4
Performance evaluation period	Monthly, beginning 2017 Q1
KDS Survey Name	ADE – Opioid-related
KDS Measure ID(s)	KDS-HIIN-ADE-4
PfP Measure Name	NARCAN_ADMIN

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

For manually entered measures, the discharge date indicates the month where the safety event and the patient days are attributed.

**e.g.:** If a patient is admitted on 9/25, had an event on 9/28, and discharged on 10/1, both the event and number of patient days will be attributed to the numerator and denominator for October, not September.

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

Data Collection Tips:

- Partner with pharmacy, procedural area staff and/or Information Technology.
- Connect with pharmacists as they may already be collecting this 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.

Falls with Injury (NQF 0202)  
All Facilities

Falls: CMS HIIN Evaluation Measure (NQF 0202)	
<i>All Documented Patient Falls with an Injury Level of Minor or Greater</i>	
Measure type	Outcome
Numerator	Number of patient falls of injury level minor or greater (whether or not assisted by a staff member) in eligible units.*
Denominator	Number of patient days in eligible units during the measurement period
Exclusions	Non-eligible unit types: pediatric, psychiatric, obstetrical, etc.
Rate calculation	$\frac{\text{number of falls with injury}}{\text{number of patient days}} \times 1,000$
Specifications/definitions Sources/Recommendations	Available from <a href="#">NQF 0202</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection start date	2016 Q1
Baseline evaluation period	Returning HEN 2.0 Hospitals: 2016 Q1 New GLPP HIIN Hospitals: 2016 Q4
Performance evaluation period	Monthly, beginning 2016 Q4
KDS Survey Name	Falls
KDS Measure ID(s)	KDS-HIIN-Falls-1
PfP Measure Name	FALL_INJURY

These data elements shall be submitted monthly by all hospitals to the MHA Keystone Data System.

The total patient days can be collected from billing systems.

The number of patient falls can be collected from electronic clinical data or medical records, fall surveillance systems, injury reports, event tracking systems or other similar sources.

\*Eligible patients include inpatients, short stay patients, observation patients and same day surgery patients in the following inpatient unit types: adult critical care, step-down, medical, surgical, medical-surgical combined, critical access, adult rehabilitation in-patient.

## Person and Family Engagement: Planning Checklist

### **PFE 1: Planning checklist for scheduled admissions**

(Implementation of a planning checklist for patients known to be coming to the hospital)

“Prior to admission, hospital staff provides and discusses a planning checklist with every patient that has a scheduled admission, allowing for questions or comments from the patient or family”

#### **Do We Meet the Metric? YES, if:**

- Hospital sends a pre-admissions checklist to patients with scheduled admissions.
- At admission, hospital staff discuss checklist with patient and family.

#### **Alternative: When Admissions Are Not Scheduled**

If a hospital only schedules only a minimum of admissions per year, these few admissions should employ a planning checklist and conversation and will fulfill the implementation of the metric.

If a hospital does not conduct any scheduled admissions, the Hospital Improvement Innovation Network should reduce the total number of hospitals reporting the metric and recalculate the percentage of hospitals implementing the metric so that it is based only on the hospitals in the HEN who conduct scheduled admissions.

Specifications/definitions	<b>Available from:</b> <a href="#">HRET</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	Data will be rolled over from month to month within KDS. The only time you will need to edit your facilities data is when something has changed.
Data collection period	Monthly, beginning Q1 2017
KDS Survey Name	Patient and Family Engagement (PFE)
KDS Measure ID(s)	KDS-HIIN-PFE-1
PfP Measure Name	PFE_CHECKLIST

## Person and Family Engagement: Shift Change Huddles

### **PFE 2: Shift change huddles / bedside reporting with patients and families**

(Conducting shift change huddles and bedside reporting with patients and families)

“Hospital conducts shift change huddles and bedside reporting with patients and family members in all feasible cases.”

#### **Do We Meet the Metric? YES, if:**

- In as many units as possible, but in a minimum of at least one unit, nurse shift change huddles or clinician reports occur at the bedside and involves the patient and/or family members.

#### **Alternative: None.**

This engagement activity should be possible in all hospital types and structures. However, a hospital may need to review and adjust their staffing models to better accommodate patient and family availability (e.g., adjust the time of shift changes).

While the intent of the activity is to involve the patient in as many clinician interactions that discuss an aspect of the patient’s care, the metric can be considered to be met if the hospital conduct shift change huddles OR bedside reporting with patients and families.

Specifications/definitions	<b>Available from:</b> <a href="#">HRET</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection period	Monthly, beginning Q1 2017
KDS Survey Name	Patient and Family Engagement (PFE)
KDS Measure ID(s)	KDS-HIIN-PFE-2
PfP Measure Name	PFE_HUDDLES

## Person and Family Engagement: PFE Leader

### **PFE 3: PFE leader or function area exists in the hospital**

(Designation of an accountable leader in the hospital who is responsible for patient and family engagement.)

“Hospital has a person or functional area, who may also operate within other roles in the hospital, that is dedicated and proactively responsible for Patient & Family Engagement and systematically evaluates PFE activities (i.e., open chart policy, PFE trainings, establishment and dissemination of PFE goals).”

#### **Do We Meet the Metric? YES, if:**

- There is a named hospital employee who is responsible for PFE efforts at the hospital either in a full-time position or as a percentage of time within their current position, AND appropriate hospital staff and clinicians can identify the person named as responsible for PFE at the hospital, AND/OR there is a functional area that is responsible for PFE efforts and appropriate hospital staff and clinicians can name the functional area and identify specific individuals who work in that area.

#### **Alternative: None.**

Given the wide range of options possible for accomplishing this metric, there is no need for alternatives. This activity should be possible in all hospital types and structures.

Specifications/definitions	<b>Available from:</b> <a href="#">HRET</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection period	Monthly, beginning Q1 2017
KDS Survey Name	Patient and Family Engagement (PFE)
KDS Measure ID(s)	KDS-HIIN-PFE-3
PfP Measure Name	PFE_LEADER

## Person and Family Engagement: PFEC Committee

### **PFE 4: PFEC or Representative on hospital committee**

(Hospitals having an active Patient and Family Engagement Committee (PFEC) or other committees where patients are represented.)

“Hospital has an active Patient & Family Engagement Committee OR at least one former patient that serves on a patient safety or quality improvement committee or team.”

#### **Do We Meet the Metric? YES, if:**

- Patient and/or family representative(s) from the community have been formally named as a member of a PFAC or other hospital committee.
- Meetings of the PFAC or other committees with patient and family representative(s) have been scheduled and conducted.

#### **Alternative:**

While a Patient and Family Engagement Committee or a Patient and Family Advisory Council is the recommended best practice to accomplish the intention of this metric, a hospital may wish to begin by identifying a smaller number of patient and family advisors from the community to serve on existing hospital committees such as the hospital’s Patient Education, Patient Safety, or Quality Improvement committees. These patient representatives should have all the same rights and privileges of all other committee members, and efforts should be made to enable these representatives to share their unique perspective as patients or family members at meetings.

Specifications/definitions	<b>Available from:</b> <a href="#">HRET</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection period	Monthly, beginning Q1 2017
KDS Survey Name	Patient and Family Engagement (PFE)
KDS Measure ID(s)	KDS-HIIN-PFE-4
PfP Measure Name	PFE_COMMITTEE

## Person and Family Engagement: Patient on Advisory Board

### **PFE 5: Patient and family on hospital governing and/or leadership board (hospital governance)** (One or more patient representatives serving on the hospital Board of Directors)

“Hospital has at least one or more patient(s) who serve on a Governing and/or leadership board and serves as a patient representative.”

**Do We Meet the Metric? YES, if:**

- The hospital has at least one position on the Board designated for a patient or family member who is appointed to represent that perspective.
- If a specific board representative is not possible, an alternative exists to work with patients and families when making hospital governance decisions.

**Alternative:** While designating at least one patient representative on the board is the preferred mechanism to ensure co-governance, certain laws or policies may not allow the formation of a patient or family representative seat on the Board. Until these laws change, alternatives that meet the intent of the metric include:

- Asking for PFEC input on matters before the Board, and incorporating a PFEC report into the Board agenda.
- Identifying elected or appointed Board members to serve in a specific role, with a written role definition, as representing the patient and family voice on all matters before the Board.
- Requiring all Board members to conduct activities that connect them closer to patients and families, such as visiting actual care units in the hospital two times per year and/or attending two PFEC meetings per year.

Specifications/definitions	<b>Available from:</b> <a href="#">HRET</a>
Data source (s)	<b>Hospital Reported:</b> Submit to MHA Keystone Data System (KDS)
Automatic transfer from	n/a
Data collection period	Monthly, beginning Q1 2017
KDS Survey Name	Patient and Family Engagement (PFE)
KDS Measure ID(s)	KDS-HIIN-PFE-5
PfP Measure Name	PFE_ADVISOR