

Draft Measure Information Form (MIF)

Project Title:

Inpatient Psychiatric Facility (IPF) Outcome and Process Measure Development and Maintenance

Project Overview:

The Centers for Medicare & Medicaid Services (CMS) has contracted with HSAG to develop, maintain, reevaluate, and support the implementation of quality outcome and process measures for the CMS Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program. The contract name is Inpatient Psychiatric Facility Outcome and Process Measure Development and Maintenance. The contract number is HHSM-500-2013-13007I; HHSM-500-T0004.

Date:

Information included is current as of November 20, 2015.

Descriptive Information

Measure Name (Measure Title De.2.)

Thirty-day all-cause unplanned readmission following psychiatric hospitalization in an Inpatient Psychiatric Facility (IPF)

Measure Type De.1.

Outcome

Brief Description of Measure De.3.

This facility-level measure estimates an unplanned, 30-day, risk-standardized readmission rate for adult Medicare fee-for-service (FFS) patients with a principal discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease.

The performance period for the measure is 24 months.

If Paired or Grouped De.4.

Not applicable

Subject/Topic Areas De.5.

Behavioral Health: Behavioral Health

Crosscutting Areas De.6

Care Coordination

Care Coordination: Readmissions

Safety: Readmissions

Measure Specifications

Measure-Specific Web Page S.1.

Not applicable

If This is an eMeasure S.2a.

Not applicable

Data Dictionary, Code Table, or Value Sets S.2b.

Available in the MIF Data Dictionary.

For Endorsement Maintenance S.3.

Not applicable

Numerator Statement S.4.

The measure estimates the incidence of unplanned, all-cause readmissions to IPFs or short-stay acute care hospitals following discharge from an eligible IPF index admission. We defined readmission as any admission that occurs on or between Days 3 and 30 post-discharge, except those considered planned.

Time Period for Data S.5.

The performance period is 24 months. Data 12 months prior to the index admission and 30 days after discharge are needed to identify risk factors and readmissions.

Numerator Details S.6.

The risk-adjusted outcome measure does not have a traditional numerator and denominator. Here we describe the outcome being measured. A readmission is defined as any admission, for any reason, to an IPF or a short-stay acute care hospital (including critical access hospitals) that occurs within 30 days after the discharge date from an eligible index admission to an IPF, except those considered planned.

Planned Readmission Algorithm

The measure uses the CMS 30-day HWR Measure Planned Readmission Algorithm, version 3.0

Available at <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html>

The planned readmission algorithm follows two principles to identify planned readmissions:

- Select procedures and diagnoses such as transplant surgery, maintenance chemotherapy/radiotherapy/immunotherapy, rehabilitation, and forceps delivery are considered always planned (summarized in the MIF Data Dictionary, Tables PR1 and PR2).
- Some procedures such as colorectal resection or aortic resection, are considered either planned or unplanned depending on the accompanying principal discharge diagnosis (MIF Data Dictionary, Table PR3). Specifically, a procedure is considered planned if it does not coincide with a principal discharge diagnosis of an acute illness or complication (MIF Data Dictionary, Table PR4).

Denominator Statement S.7.

The target population for this measure is Medicare FFS beneficiaries aged 18 years and older discharged from an Inpatient Psychiatric Facility with a principal diagnosis of a psychiatric disorder. Eligible index admissions require enrollment in Medicare Parts A and B for 12 months prior to the index admission, the month of admission, and at least 30 days post discharge. Patients must be discharged alive to a non-acute setting (not transferred). A readmission within 30-days will also be eligible as an index admission, if it meets all other eligibility criteria.

Target Population Category S.8.

Population at Risk

Denominator Details S.9.

The risk-adjusted outcome measure does not have a traditional numerator and denominator. Here we describe the target population for measurement. The target population for this measure is adult Medicare FFS beneficiaries discharged from an IPF. The measure is based on all eligible index admissions from the target population. Patients may have more than one index admission within the measurement period.

An eligible index admission is defined as any IPF admission with the following:

- Admitted to an IPF
- Age 18 or older at admission;
- Discharged alive;
- Enrolled in Medicare FFS Parts A and B during the 12 months before the admission date, month of admission, and at least one month after the month of discharge from the index admission.

A readmission to an IPF is counted as another index admission if all denominator criteria are met; therefore, a patient may have multiple index admissions within a 30-day period.

Denominator Exclusions (NQF Includes “Exceptions” in the “Exclusion” Field) S.10.

The measure excludes admissions for patients with:

- Non-psychiatric principal discharge diagnosis (not included in CCS 650-670);
- Subsequent admission on day of discharge and following 2 days (transfers/interrupted stay period)
- Discharged against medical advice (AMA)
- With unreliable data (e.g. has a death date but also admissions afterwards)

Denominator Exclusion Details (NQF Includes “Exceptions” in the “Exclusion” Field) S.11.

The measure uses the Clinical Classification Software (CCS) developed by the Agency for Healthcare Research and Quality (AHRQ), available at <https://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>, to group ICD9-CM codes into clinically coherent groups. (See the MIF Data Dictionary, AHRQ CCS Psychiatric Principal Discharge Diagnoses for Inclusion in the Measure)

Non-psychiatric Principal Discharge Diagnosis

An index admission with a principal discharge diagnosis classified outside of CCS 650-670 is defined as non-psychiatric.

Transfers/Interrupted Stays

Index admissions that end in a transfer to another inpatient facility (IPF, short stay acute care, or critical access hospital) are excluded. Transfers are defined as a discharge from an IPF hospital (A) and an admission to the next hospital (B) on the same or next day (Day 0 and Day 1) or overlapping claims with discharge from IPF Hospital A occurring after admission to Hospital B. Admission to Hospital B is included as an index admission if Hospital B is an IPF.

Reimbursement policies define an interrupted stay as a discharge and readmission to the same or a different IPF before midnight on the third consecutive day. Billing procedures and coding practices do not allow for the definitive identification of an interrupted stay, which represents a discharge and readmission, from a planned leave of absence. Therefore, readmissions on Day 2 are excluded.

Discharge Against Medical Advice

Index admissions with a discharge status of “AMA” are excluded.

Unreliable Data

Index admissions with unreliable demographic and death information are excluded from the denominator. Unreliable demographic information is defined as age greater than 115 years or missing gender. Unreliable death information is defined as

- An admission with a discharge status of “dead” but the person has subsequent admissions;
- The death date is prior to the admission date; or
- The death date is within the admit and discharge dates for an admission but the discharge status is not “dead”.

Stratification Details/Variables S.12.

Not applicable

Risk Adjustment Type S.13.

Statistical risk model

Statistical Risk Model and Variables S.14.

Hierarchical logistic regression is used to estimate a risk standardized readmission rate.

Candidate and Final Risk Factor Variables

Four types of risk factors were considered based on empirical analysis, literature review, and clinical judgement:

1. Principal discharge diagnosis of the IPF index admission: Discharge diagnoses were summarized into 13 distinct principal discharge risk variables using a modified version of AHRQ CCS.
2. Comorbidity risk variables: Identified from secondary diagnoses of the index admission and primary or secondary diagnoses of in- and outpatient encounters during 12-month look-back period using modified CMS condition categories (CC)
3. Other risk factors variables from literature such as history of discharge AMA, aggression and self-harm.
4. Age and gender

Final Set of Risk-Adjustment Variables

Age (7 levels), gender

Principal discharge diagnoses (13)

- CCS 650 Adjustment disorder
- CCS 651 Anxiety
- CCS 652/654/655 ADD/Developmental/Childhood disorders
- CCS 653 Dementia
- CCS 656 Impulse control disorders
- CCS 657.1 Bipolar disorder
- CCS 657.2rc Depressive disorder
- CCS 658 Personality disorder
- CCS 659b Psychosis
- CCS 660 Alcohol disorder
- CCS 661 Drug Disorder
- CCS 670/663 Other mental disorder
- CCS 659a Schizo-affective disorder

Comorbidities: 26 non-psychiatric CC, 12 psychiatric CC groups

- AMI
- Anemia
- Arrhythmia
- Asthma
- COPD/Fibrosis
- Delirium
- Diabetes
- Diabetes complications
- Dialysis
- Endocrine disease
- Heart disease
- Heart failure
- Hematological disorder
- Infection
- Injury
- Liver disease

Lung problems
 Malnutrition
 Metastasis
 Organ transplant
 Other infection
 Pancreatic disease
 Peptic ulcer
 Seizures
 Uncompleted pregnancy
 Urinary tract disorder
 Adjustment disorder
 Anxiety
 Bipolar
 Depression
 Developmental disability
 Drug/alcohol disorder
 Intellectual disability
 Other psych disorders
 Personality disorder
 Psychosis
 PTSD
 Schizo-affective
 Discharged AMA in prior 12 months
 Suicide attempt/self-harm
 Aggression

Detailed Risk Model Specifications S.15.

Variables and coefficients are provided in the MIF Data Dictionary, Risk Adjustment Variables and Coefficients.

Type of Score S.16.

Rate/proportion

Interpretation of Score S.17.

Better quality = lower score

Calculation Algorithm/Measure Logic S.18.

Key Algorithm Steps:

1. Identify all IPF admissions in the performance period.
2. Apply inclusion/exclusion criteria to identify index admissions.
3. Identify readmissions to IPF or short stay acute care hospitals within 30 days of discharge.
4. Apply the planned readmission algorithm to identify unplanned readmissions.
5. Identify risk factors in the 12 months prior to index admission.
6. Run hierarchical logistic regression to compute RSSR for each IPF.

Hierarchical logistic regression is used to model the log-odds of readmission. The two-level specification allows reliable estimates for small-volume hospitals while accepting a certain amount of shrinkage toward the mean. The model includes risk factors as fixed effects and a hospital-specific intercept as random effect. The estimate of hospital-specific intercept reflects the quality of care received at an IPF after adjusting for case mix and the principal cause for hospitalization.

A standardized risk ratio (SRR), which is the “predicted” number of readmissions over the “expected” number of readmissions, is calculated for each IPF. The “predicted” number of readmissions is the number of readmissions, given the IPF’s performance and its observed case mix, which is calculated by summing the estimated probabilities of readmission for the index admissions contributing to the IPF, based on the IPF-specific intercept and all other risk

factors. The “expected” number of readmissions is the number of readmissions given the national performance and its observed case mix, which is calculated by summing the estimated probabilities of readmission for the index admissions contributing to the IPF, based on the average intercept and all other risk factors. The confidence interval of the SRR is calculated by bootstrapping. An SRR greater than 1 indicates worse quality of care compared to the national average. An SRR less than 1 indicates better quality of care. The RSRR will be calculated by multiplying SRR with the overall national readmission rate for better interpretation.

Calculation Algorithm/Measure Logic Diagram URL or Attachment S.19.

Not applicable

Sampling S.20.

Not applicable

Survey/Patient-Reported Data S.21.

Not applicable

Missing Data S.22.

Not applicable

Data Source S.23.

Administrative claims

Data Source or Collection Instrument S.24.

For measure calculation, the following Medicare files are required:

- Medicare Denominator tables
- Beneficiary cross reference file
- Institutional claims (Part A)
- Non-institutional claims (Part B)—physician carrier/non-DME

Index admissions and readmissions were identified in the Medicare Part A data. Comorbid conditions for risk adjustment were identified in the Medicare Part A and Part B data in the 12 months prior to and including hospital stay. Demographic and fee-for-service (FFS) enrollment information were identified in the Medicare Denominator tables.

Data Source or Collection Instrument (Reference) S.25.

No data collection instrument provided

Level of Analysis S.26.

Facility

Care Setting S.27.

Behavioral Health/Psychiatric: Inpatient

Composite Performance Measure S.28.

Not applicable

Rationale Supporting the Relationship Between the Health Outcome and Healthcare Structure, Process, Intervention , or Service

Focused primarily on systematic reviews of the evidence for interventions to prevent readmission, the following information supports the relationship between IPF processes of care and the outcome of readmission. Studies have demonstrated that improvements in the following areas can reduce readmissions:

- Connecting patients with severe mental illness to intensive case management (ICM) may help prevent readmissions. A systematic review of ICM for those with severe mental illness found that compared to

standard care, ICM reduced the average number of days in the hospital by 0.86 days per month.¹

- “Attending to stability of condition” at discharge was found to modestly prevent early readmission by a systematic review of literature on 30-90 day readmissions.² Administering effective, evidence-based treatments for psychiatric conditions (e.g., the Veterans Affairs/Department of Defense guideline for management of bipolar disorder)³ is a pre-requisite to stabilizing patients experiencing an acute episode of a psychiatric disorder and preventing readmissions after discharge.
- Connecting patients to services they will need post-discharge can help prevent readmission. In a study of 30-day behavioral health readmissions using a multistate Medicaid database, a 1% increase in the percent of patients receiving follow-up within seven days of discharge was associated with a 5% reduction in the probability of being readmitted.⁴
- Transitional interventions such as pre- and post-discharge patient education, structured needs assessments, medication reconciliation/education, transition managers, and inpatient/outpatient provider communication have been effective to reduce early psychiatric readmissions. A systematic review of such interventions observed reductions of 13.6% to 37.0%.⁵ The time period for counting readmissions varied across studies from 3-24 months post-discharge.
- Similarly, discharge planning in mental health was effective at reducing readmissions. In a systematic review, a meta-analysis of pooled data for 11 studies with a mean follow-up of 3.83 months demonstrated a 34% reduction in risk of readmission.⁶

1. Dieterich M, Irving CB, Park B, Marshall M. Intensive case management for severe mental illness. *The Cochrane database of systematic reviews*. 2010(10):Cd007906.
2. Durbin J, Lin E, Layne C, Teed M. Is readmission a valid indicator of the quality of inpatient psychiatric care? *J. Behav. Health Serv. Res.* 2007;34(2):137-150.
3. U.S. Department of Veterans Affairs, Department of Defense. *VA/DoD clinical practice guideline for management of bipolar disorder in adults*. Washington, DC: Department of Veterans Affairs, Department of Defense; 03/20/15 2010.
4. Mark T, Tomic KS, Kowlessar N, Chu BC, Vandivort-Warren R, Smith S. Hospital readmission among medicaid patients with an index hospitalization for mental and/or substance use disorder. *J. Behav. Health Serv. Res.* 2013;40(2):207-221.
5. Vigod SN, Kurdyak PA, Dennis CL, et al. Transitional interventions to reduce early psychiatric readmissions in adults: systematic review. *Br. J. Psychiatry*. 2013;202(3):187-194.
6. Steffen S, Kusters M, Becker T, Puschner B. Discharge planning in mental health care: a systematic review of the recent literature. *Acta Psychiatr. Scand.* 2009;120(1):1-9.