



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to sub criterion 1b).

### Brief Measure Information

**NQF #:** 3205

**Corresponding Measures:**

**De.2. Measure Title:** Medication Continuation Following Inpatient Psychiatric Discharge

**Co.1.1. Measure Steward:** Centers for Medicare & Medicaid Services

**De.3. Brief Description of Measure:** This measure assesses whether patients discharged from an inpatient psychiatric facility (IPF) with major depressive disorder (MDD), schizophrenia, or bipolar disorder filled a prescription for evidence-based medication within 2 days prior to discharge and 30 days post-discharge. This measure evaluates admissions over a two-year period.

**1b.1. Developer Rationale:** The aim of the measure is to address gaps in continuity of pharmaceutical treatment during the transition from inpatient to outpatient care. Pharmacotherapy is the primary form of treatment for most patients discharged from an inpatient psychiatric facility (IPF) for bipolar disorder, major depressive disorder (MDD), or schizophrenia. The measure focuses on medication continuation because it is an essential step in medication adherence.

Medication continuation is particularly important in the psychiatric patient population because psychotropic medication discontinuation can have a range of adverse effects, from mild withdrawal to life-threatening autonomic instability and psychiatric decompensation (Ward & Schwartz, 2013). Patients with MDD who do not remain on prescribed medication are more likely to have negative health outcomes, such as relapse and readmission, decreased quality of life, and increased health care costs. If untreated, MDD can contribute to or worsen chronic medical disorders (Geddes et al., 2003; Glue et al., 2010). The literature shows that among patients with schizophrenia, those who were "good compliers" according to the Medication Adherence Rating Scale had better outcomes in terms of rehospitalization rates and medication maintenance (Jaeger et al., 2012). Among patients with bipolar disorder, medication adherence was significantly associated with reduction in manic symptoms (Sylvia et al., 2013), whereas nonadherence was associated with increased suicide risk (OR 10.8, CI 1.57–74.4; Gonzalez-Pinto et al., 2006). Our literature review from January 2016 through August 2020 did not reveal any new evidence regarding performance gaps since the initial endorsement submission.

Current facility-level performance indicates a clear quality gap. Using Medicare claims data from July 1, 2017, through June 20, 2019, the Medication Continuation measure rates ranged from 34.8 to 94.3%, with a median of 76.2%. There was a 21.3 percentage point difference between the 10th and 90th percentiles (63.4–84.7%). Using 2013–2014 Medicare claims data, there was a 21.6 percentage point difference between the 10th and 90th percentiles (66.7–88.3%) and a median score of 79.6%. By calculating the facility-level rates of medication continuation in Medicare fee-for-service (FFS) claims data, this measure can provide valuable information on areas where care transitions to the outpatient setting can be improved.

Literature about continuation of medication has identified effective interventions that facilities can employ to improve medication adherence among patients discharged from an IPF (Douaihy, Kelly, & Sullivan, 2013; Haddad, Brain, & Scott, 2014; Hung, 2014; Kasckow & Zisook, 2008; Lanouette, Folsom, Sciolla, & Jeste, 2009; Mitchell, 2007; Sylvia et al., 2013). Examples of these interventions include patient education, shared decision making, and text-message reminders. We envision the addition of this measure to the suite of measures for IPFs would help to create a comprehensive picture of the quality of care patients receive at those facilities.

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- \*Ward, M., & Schwartz, A. (2013). Challenges in pharmacologic management of the hospitalized patient with psychiatric comorbidity. *Journal of Hospital Medicine*, 8(9), 523–529. doi:10.1002/jhm.2059.

**S.4. Numerator Statement:** The numerator for the measure includes:

- Discharges with a principal diagnosis of MDD in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge
- Discharges with a principal diagnosis of schizophrenia in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge
- Discharges with a principal diagnosis of bipolar disorder in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge

**S.6. Denominator Statement:** The target population for this measure is Medicare fee-for-service (FFS) beneficiaries with Part D coverage aged 18 years and older discharged from an inpatient psychiatric facility with a principal diagnosis of MDD, schizophrenia, or bipolar disorder.

**S.8. Denominator Exclusions:** The denominator for this measure excludes discharged patients who:

- Received electroconvulsive (ECT) during the inpatient stay or follow-up period
- Received transcranial stimulation (TMS) during the inpatient stay or follow-up period
- Were pregnant at discharge
- Had a secondary diagnosis of delirium at discharge
- Had a principal diagnosis of schizophrenia with a secondary diagnosis of dementia at discharge

**De.1. Measure Type:** Process

**S.17. Data Source:** Claims

**S.20. Level of Analysis:** Facility

**IF Endorsement Maintenance – Original Endorsement Date:** Jun 28, 2017 **Most Recent Endorsement Date:** Jun 28, 2017

**IF this measure is included in a composite, NQF Composite#/title:**

**IF this measure is paired/grouped, NQF#/title:**

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?** Not applicable because this measure is not paired or grouped with another measure.

## 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all sub criteria to pass this criterion and be evaluated against the remaining criteria.**

**1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form**

[2020\\_Medication\\_Continuation\\_evidence\\_attachment.docx](#), [Updated\\_2020\\_Medication\\_Continuation\\_evidence\\_attachment.docx](#)

**1a.1 For Maintenance of Endorsement: Is there new evidence about the measure since the last update/submission?**

Do not remove any existing information. If there have been any changes to evidence, the Committee will consider the new evidence. Please use the most current version of the evidence attachment (v7.1). Please use red font to indicate updated evidence.

No

**1b. Performance Gap**

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- Disparities in care across population groups.

**1b.1. Briefly explain the rationale for this measure** (e.g., how the measure will improve the quality of care, the benefits or improvements in quality envisioned by use of this measure)

*If a COMPOSITE (e.g., combination of component measure scores, all-or-none, any-or-none), SKIP this question and answer the composite questions.*

The aim of the measure is to address gaps in continuity of pharmaceutical treatment during the transition from inpatient to outpatient care. Pharmacotherapy is the primary form of treatment for most patients discharged from an inpatient psychiatric facility (IPF) for bipolar disorder, major depressive disorder (MDD), or schizophrenia. The measure focuses on medication continuation because it is an essential step in medication adherence.

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- \*Ward, M., & Schwartz, A. (2013). Challenges in pharmacologic management of the hospitalized patient with psychiatric comorbidity. *Journal of Hospital Medicine*, 8(9), 523–529. doi:10.1002/jhm.2059.

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. (This is required for maintenance of endorsement. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.**

We calculated the measure scores at the facility level using Medicare FFS Part A and Part B claims data from July 1, 2017, through June 30, 2019. The testing data set included 308,556 discharges from 182,042 patients across 1,680 IPFs. For the Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program sponsored by the Centers for Medicare & Medicaid Services (CMS), the measure is calculated only for IPFs with at least 75 discharges eligible for the denominator. The testing data set included 1,066 IPFs and 268,673 discharges that fit this restriction.

The performance score statistics across all facilities in the data set follow, as well as for only those facilities with at least 75 discharges eligible for the denominator.

Medication continuation rate across all IPFs (n=1,680) in the data set:

Mean: 75.0%

Std dev: 12.8%

Min: 0.0%

Max: 100.0%

Interquartile range: 12.6%

Scores by decile:

10%: 61.7%

20%: 68.0%

30%: 71.4%

40%: 74.1%

50%: 76.8%

60%: 79.0%

70%: 81.4%

80%: 83.8%

90%: 87.5%

Medication continuation rate IPFs with at least 75 eligible cases in the denominator (n = 1,066):

Mean: 75.1%  
Std dev: 8.3%  
Min: 34.8%  
Max: 94.3%  
Interquartile range: 11.0%  
Scores by decile:  
10%: 63.4%  
20%: 68.4%  
30%: 70.2%  
40%: 74.5%  
50%: 76.2%  
60%: 78.1%  
70%: 80.0%  
80%: 82.2%  
90%: 84.7%

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

Not applicable

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (*This is required for maintenance of endorsement. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included.*) For measures that show high levels of performance, i.e., “topped out”, disparities data may demonstrate an opportunity for improvement/gap in care for certain sub-populations. This information also will be used to address the sub-criterion on improvement (4b1) under Usability and Use.**

Number of patients in the data: 182,042

Dates of data: July 1, 2017, through June 30, 2019

With large sample sizes, small differences that are statistically significant might not always be practically or clinically meaningful. Therefore, we also computed Cohen’s d effect size (the difference in mean scores divided by the pooled standard deviation). A d of 1 indicates the two groups differ by 1 standard deviation, a d of 2 indicates they differ by 2 standard deviations, and so on. Following Cohen’s (1988) definitions, we defined effect size values for dichotomous variables as small (0.2), medium (0.5), or large (0.8). For patient subgroups with more than two categories (age and diagnosis), we computed Eta-squared ( $\eta^2$ ) effect size to capture the overall difference in the measure rate between groups. We categorized corresponding effect size values as small (0.01), medium (0.06), or large (0.14).

Medication continuation rate across all IPFs (n = 1,680):

Sex, male: 72.1%

Sex, female: 77.9%

Effect size (Cohen’s d) for differences in means between patient groups: 0.39

Substance use disorder (SUD) diagnosis, diagnosed with SUD: 70.4%

SUD diagnosis, not diagnosed with SUD: 76.9%

Effect size (Cohen’s d) for differences in means between patient groups: 0.41

Dual status, dual: 77.4%

Dual status, not dual: 69.8%

Effect size (Cohen’s d) for differences in means between patient groups: 0.51

Race, non-White: 71.1%

Race, White: 76.2%

Effect size (Cohen’s d) for differences in means between patient groups: 0.31

Diagnosis, schizophrenia: 75.5%  
Diagnosis, major depressive disorder (MDD): 74.2%  
Diagnosis, bipolar disorder: 75.3%  
Effect size (Eta2) for differences in means between patient groups: 0.001

Age, 18–39: 74.0%  
Age, 40–59: 74.1%  
Age, 60 and older: 75.4%  
Effect size (Eta2) for differences in means between patient groups: 0.004

Medication continuation rate across IPFs with at least 75 eligible cases in the denominator (n = 1,066):

Sex, male: 72.2%  
Sex, female: 78.0%  
Effect size (Cohen's d) for differences in means between patient groups: 0.64

SUD diagnosis, diagnosed with SUD: 69.7%  
SUD diagnosis, not diagnosed with SUD: 77.4%  
Effect size (Cohen's d) for differences in means between patient groups: 0.74

Dual status, dual: 77.6%  
Dual status, not dual: 69.1%  
Effect size (Cohen's d) for differences in means between patient groups: 0.85

Race, non-White: 71.2%  
Race, White: 76.3%  
Effect size (Cohen's d) for differences in means between patient groups: 0.46

Diagnosis, schizophrenia: 76.1%  
Diagnosis, MDD: 73.2%  
Diagnosis, bipolar disorder: 75.2%  
Effect size (Eta2) for differences in means between patient groups: 0.013

Age, 18–39: 74.7%  
Age, 40–59: 74.8%  
Age, 60 and older: 74.9%  
Effect size (Eta2) for differences in means between patient groups: 0.000

Note on interpretation of effect size:  
Cohen's d: 0.2 is considered a small effect size, 0.5 is a medium effect size, and 0.8 is a large effect size  
Eta2: 0.01 is small, 0.06 is medium, and 0.14 is large

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b.4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations. Not necessary if performance data provided in 1b.4**  
Not applicable

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the sub criteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the

Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

**De.6. Non-Condition Specific**(check all the areas that apply):

**De.7. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

Measure-specific webpage not available at the time of the annual update submission.

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

This is not an eMeasure Attachment:

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [Med\\_Cont\\_Data\\_Dictionary\\_FY2021.xlsx](#)

**S.2c.** Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

No, this is not an instrument-based measure Attachment:

**S.2d.** Is this an instrument-based measure (i.e., data collected via instruments, surveys, tools, questionnaires, scales, etc.)? Attach copy of instrument if available.

Not an instrument-based measure

**S.3.1. For maintenance of endorsement:** Are there changes to the specifications since the last updates/submission. If yes, update the specifications for S1-2 and S4-22 and explain reasons for the changes in S3.2.

Yes

**S.3.2. For maintenance of endorsement,** please briefly describe any important changes to the measure specifications since last measure update and explain the reasons.

We removed the following from the measure's list of medications for treatment of bipolar disorder as they are not FDA-approved for treatment of bipolar disorder:

- Fluphenazine
- Molindone
- Perphenazine
- Pimozide
- Prochlorperazine
- Thioridazine
- Thiothixene
- Trifluoperazine
- Brexpiprazole
- Iloperidone
- Paliperidone
- Fluphenazine decanoate
- Paliperidone palmitate (1-month extended-release)
- Paliperidone palmitate (3-month extended-release)



This revision is harmonized with Adherence to Mood Stabilizers for Individuals with Bipolar I Disorder (NQF #1880), which does not include these medications as treatments for bipolar disorder.

We also removed paliperidone palmitate (3-month extended-release) from the measure's list of medications for treatment of schizophrenia due to its questionable clinical appropriateness to be used as the sole therapy for patients recently discharged from IPFs. This medication requires that the patient to be adequately treated with the 1-month extended-release injection for at least 4 months. Therefore, most patients who are admitted to IPFs for acute management of symptoms are unlikely to be candidates for this medication.

We added the International Classification of Diseases-10 (ICD 10) codes F53.0 (postpartum depression) and F53.1 (puerperal psychosis) to the list of codes that define the denominator exclusions. This modification was made because the 2019 code set revised the description for F53 (from "puerperal psychosis" to "mental and behavioral disorders associated with the puerperium, not elsewhere classified"), changed it to the parent code, and added the new codes F53.0 and F53.1. F53 is still in the measure along with F53.0 and F53.1 because all three codes are relevant for the performance period for FY2021 of the Inpatient Psychiatric Facility Quality Reporting (IPFQR) program.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome) DO NOT include the rationale for the measure.

*IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

The numerator for the measure includes:

- Discharges with a principal diagnosis of MDD in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge
- Discharges with a principal diagnosis of schizophrenia in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge
- Discharges with a principal diagnosis of bipolar disorder in the denominator population for which patients were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge

**S.5. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

*IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

The following are lists of evidence-based medications for the treatment of MDD, schizophrenia, and bipolar disorder:

#### Medications for MDD

- Monoamine Oxidase Inhibitors: isocarboxazid, phenelzine, selegiline (transdermal patch), tranylcypromine
- Selective Serotonin Reuptake Inhibitors (SSRI): citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline
- Serotonin Modulators: nefazodone, trazodone, vilazodone, vortioxetine
- Serotonin Norepinephrine Reuptake Inhibitors (SNRI): desvenlafaxine, duloxetine, levomilnacipran, venlafaxine
- Tricyclic and Tetracyclic Antidepressants: amitriptyline, amoxapine, clomipramine, desipramine, doxepin, imipramine, maprotiline, nortriptyline, protriptyline, trimipramine
- Other Antidepressants: bupropion, mirtazapine
- Psychotherapeutic Combinations: amitriptyline-chlordiazepoxide, amitriptyline-perphenazine, fluoxetine-olanzapine

#### Medications for Schizophrenia

- First-generation Antipsychotics: chlorpromazine, fluphenazine, haloperidol, haloperidol lactate, loxapine succinate, molindone, perphenazine, pimozide, prochlorperazine, thioridazine, thiothixene, trifluoperazine
- Second-generation (Atypical) Antipsychotics: aripiprazole, asenapine, brexpiprazole, cariprazine, clozapine, iloperidone, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, ziprasidone
- Psychotherapeutic Combinations: amitriptyline-perphenazine, fluoxetine-olanzapine



- Long-Acting (Depot) Injectable Antipsychotics: fluphenazine decanoate, haloperidol decanoate, aripiprazole, aripiprazole lauroxil, olanzapine pamoate, paliperidone palmitate (1-month extended-release injection, risperidone microspheres

#### Medications for Bipolar Disorder

- Anticonvulsants: carbamazepine, divalproex sodium, lamotrigine, valproic acid
- First-generation Antipsychotics: chlorpromazine, haloperidol, haloperidol lactate, loxapine succinate
- Second-generation (Atypical) Antipsychotics: aripiprazole, asenapine, cariprazine, clozapine, lurasidone, olanzapine, quetiapine, risperidone, ziprasidone
- Lithium Salts: lithium, lithium carbonate, lithium citrate
- Psychotherapeutic Combinations: fluoxetine-olanzapine
- Long-acting (depot) Injectable Antipsychotics: haloperidol decanoate, aripiprazole, aripiprazole lauroxil, olanzapine pamoate, risperidone microspheres

#### S.6. Denominator Statement *(Brief, narrative description of the target population being measured)*

The target population for this measure is Medicare fee-for-service (FFS) beneficiaries with Part D coverage aged 18 years and older discharged from an inpatient psychiatric facility with a principal diagnosis of MDD, schizophrenia, or bipolar disorder.

#### S.7. Denominator Details *(All information required to identify and calculate the target population/denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

*IF an OUTCOME MEASURE, describe how the target population is identified. Calculation of the risk-adjusted outcome should be described in the calculation algorithm (S.14).*

The denominator for this measure includes patients discharged from an IPF:

- With a principal diagnosis of MDD, schizophrenia, or bipolar disorder.
- 18 years of age or older at admission.
- Enrolled in Medicare fee-for-service Part A and Part B during the index admission and Parts A, B, and D at least 30-days post-discharge.
- Alive at discharge and alive during the follow-up period.
- With a discharge status code indicating that they were discharged to home or home health care.

The following are ICD-10-CM (clinical modification) diagnosis codes used to identify MDD, schizophrenia, or bipolar disorder:

MDD: F32.0, F32.1, F32.2, F32.3, F32.4, F32.9, F33.0, F33.1, F33.2, F33.3, F33.40, F33.41, F33.8, F33.9

Schizophrenia: F20.0, F20.1, F20.2, F20.3, F20.5, F20.81, F20.89, F20.9, F25.0, F25.1, F25.8, F25.9

Bipolar disorder: F30.10, F30.11, F30.12, F30.13, F30.2, F30.3, F30.4, F30.8, F30.9, F31.0, F31.10, F31.11, F31.12, F31.13, F31.2, F31.30, F31.31, F31.32, F31.4, F31.5, F31.60, F31.61, F31.62, F31.63, F31.64, F31.70, F31.71, F31.72, F31.73, F31.74, F31.75, F31.76, F31.77, F31.78, F31.81, F31.89, F31.9, F32.81, F32.89

#### S.8. Denominator Exclusions *(Brief narrative description of exclusions from the target population)*

The denominator for this measure excludes discharged patients who:

- Received electroconvulsive (ECT) during the inpatient stay or follow-up period
- Received transcranial stimulation (TMS) during the inpatient stay or follow-up period
- Were pregnant at discharge
- Had a secondary diagnosis of delirium at discharge
- Had a principal diagnosis of schizophrenia with a secondary diagnosis of dementia at discharge

#### S.9. Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, time period for data collection, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b.)*

See Exclusions tab of attached codebook for list of codes used to define exclusions.

#### S.10. Stratification Information *(Provide all information required to stratify the measure results, if necessary, including the stratification variables, definitions, specific data collection items/responses, code/value sets, and the risk-model covariates and coefficients for the clinically-adjusted version of the measure when appropriate – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b.)*

Not applicable. The measure is not stratified.

**S.11. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in measure testing attachment)

No risk adjustment or risk stratification

If other:

**S.12. Type of score:**

Rate/proportion

If other:

**S.13. Interpretation of Score** (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Higher score

**S.14. Calculation Algorithm/Measure Logic** (Diagram or describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; time period for data, aggregating data; risk adjustment; etc.)

Denominator:

1. Pull all IPF discharges from the Part A data.
2. Include IPF discharges for patients who were at least 18 years of age at admission.
3. Identify interim claims having the same beneficiary, provider, admission dates or having an admission date within one day of the discharge date of the previous claim and having a discharge status code of "Still patient." Collapse or combine the interim claims into one hospital stay using the admission date from the earliest claim and the discharge date from the latest claim. The data values from the latest claim are used for the newly combined hospital stay.
4. De-duplicate the IPF inpatient discharges dataset by Patient ID, Sex, Provider ID, Admission Date, and Discharge Date.
5. Remove the IPF inpatient discharges for patients who do not have Part A and Part B coverage at admission, during the entire stay, at discharge, and during the 30 days post-discharge.
6. Remove the IPF inpatient discharges who do not have a principal diagnosis of MDD, bipolar disorder, or schizophrenia using value sets containing ICD-10 codes for each of the disease conditions.
7. Remove the IPF inpatient discharges for patients who expired during the hospital stay or within 30 days of discharge.
8. Remove the IPF inpatient discharges for patients who do not have Part D coverage during the 30 days post-discharge.
9. Remove the IPF inpatient discharges for patients who were not discharged to home or home health.
10. Exclude IPF inpatient discharges who have a secondary diagnosis of pregnancy or delirium.
11. Exclude IPF inpatient discharges who have schizophrenia as the principal diagnosis with a secondary diagnosis of dementia.
12. Exclude IPF inpatient discharges who have ECT or TMS during the hospital stay or within 30 days post-discharge.

Numerator:

1. Pull all Part D claims for the evidence-based medications used for the treatment of MDD, schizophrenia, and bipolar disorder.
2. Pull all Part A and Part B claims for antipsychotic long-acting injectables (LAIs) and add them to the Part D medication claims for schizophrenia and bipolar disorder.
3. Compare the medication claims to the denominator file of eligible IPF inpatient discharges and remove any claims that occur more than two days prior to the discharge date.
4. Determine which claims occur within the follow-up period (two days prior to discharge through 30 days post-discharge) for each of the three disease conditions.
5. Total the denominator cases having at least one medication claim corresponding to the disease condition during the follow-up period.

**S.15. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

If an instrument-based performance measure (e.g., PRO-PM), identify whether (and how) proxy responses are allowed.

This measure is not based on a sample.

**S.16. Survey/Patient-reported data** (If measure is based on a survey or instrument, provide instructions for data collection and guidance on minimum response rate.)

Specify calculation of response rates to be reported with performance measure results.

This measure is not based on survey or patient-reported data.

**S.17. Data Source** (Check *ONLY* the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.18.

Claims

**S.18. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument (e.g. name of database, clinical registry, collection instrument, etc., and describe how data are collected.)

IF instrument-based, identify the specific instrument(s) and standard methods, modes, and languages of administration.

Medicare administrative data from Parts A, B, and D claims.

**S.19. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

No data collection instrument provided

**S.20. Level of Analysis** (Check *ONLY* the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility

**S.21. Care Setting** (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

Inpatient/Hospital

If other:

**S.22. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

Not applicable because this is not a composite performance measure.

## 2. Validity – See attached Measure Testing Submission Form

2020\_Med\_Cont\_testing\_form.docx, Updated\_2020\_Med\_Cont\_testing\_form.docx

### 2.1 For maintenance of endorsement

Reliability testing: If testing of reliability of the measure score was not presented in prior submission(s), has reliability testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

### 2.2 For maintenance of endorsement

Has additional empirical validity testing of the measure score been conducted? If yes, please provide results in the Testing attachment. Please use the most current version of the testing attachment (v7.1). Include information on all testing conducted (prior testing as well as any new testing); use red font to indicate updated testing.

Yes

### 2.3 For maintenance of endorsement

Risk adjustment: For outcome, resource use, cost, and some process measures, risk-adjustment that includes social risk factors is not prohibited at present. Please update sections 1.8, 2a2, 2b1, 2b4.3 and 2b5 in the Testing attachment and S.140 and S.11 in the online submission form. NOTE: These sections must be updated even if social risk factors are not included in the risk-adjustment strategy. You MUST use the most current version of the Testing Attachment (v7.1) -- older versions of the form will not have all required questions.

Yes - Updated information is included

## 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

### 3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

**3a.1. Data Elements Generated as Byproduct of Care Processes.**

Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score), Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)  
If other:

**3b. Electronic Sources**

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)** Update this field for **maintenance of endorsement**.

ALL data elements are in defined fields in electronic claims

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.** For **maintenance of endorsement**, if this measure is not an eMeasure (eCQM), please describe any efforts to develop an eMeasure (eCQM).

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL. Please also complete and attach the NQF Feasibility Score Card.**

Attachment:

**3c. Data Collection Strategy**

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Required for maintenance of endorsement. Describe difficulties (as a result of testing and/or operational use of the measure) regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF instrument-based,** consider implications for both individuals providing data (patients, service recipients, respondents) and those whose performance is being measured.

During measure testing, we found no cases of missing or unreliable data. The measure uses processed claims, and we do not expect missing or unreliable data to be an issue.

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).**

None

**4. Usability and Use**

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

**4a. Accountability and Transparency**

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

**4.1. Current and Planned Use**

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Specific Plan for Use	Current Use (for current use provide URL)
Public Reporting	
Payment Program	

**4a1.1 For each CURRENT use, checked above (update for maintenance of endorsement), provide:**

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included
- Level of measurement and setting

CMS, the measure's sponsor, has included the measure for use in the IPFQR program, a national pay-for-reporting program with publicly reported results at the facility level, for the first time for FY 2021.

**4a1.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)**

Not applicable

**4a1.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)**

Not applicable

**4a2.1.1. Describe how performance results, data, and assistance with interpretation have been provided to those being measured or other users during development or implementation.**

How many and which types of measured entities and/or others were included? If only a sample of measured entities were included, describe the full population and how the sample was selected.

IPFs nationwide will receive their measure scores, as well as mean state and national scores, via CMS's IPFQR program preview period this fall, and facility-level results will be publicly reported in 2021. CMS plans to monitor stakeholder feedback.

**4a2.1.2. Describe the process(es) involved, including when/how often results were provided, what data were provided, what educational/explanatory efforts were made, etc.**

CMS will supply IPFs with their measure scores in fall 2020 via a Microsoft Excel workbook that will provide detailed information on all discharges included in an IPF's measure score. CMS will release a user guide for the IPF report that explains all data provided to IPFs, and CMS plans to hold an on-demand webinar that will also explain all data provided.

**4a2.2.1. Summarize the feedback on measure performance and implementation from the measured entities and others described in 4d.1.**

Describe how feedback was obtained.

The measure is new to the IPFQR Program, IPFs have not yet received scores, and CMS plans to monitor stakeholder feedback going forward.

**4a2.2.2. Summarize the feedback obtained from those being measured.**

Not applicable

**4a2.2.3. Summarize the feedback obtained from other users**

Not applicable

**4a2.3. Describe how the feedback described in 4a2.2.1 has been considered when developing or revising the measure specifications or implementation, including whether the measure was modified and why or why not.**

Not applicable

### Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b1. Refer to data provided in 1b but do not repeat here. Discuss any progress on improvement (trends in performance results, number and percentage of people receiving high-quality healthcare; Geographic area and number and percentage of accountable entities and patients included.)**

**If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

As we note in Section 1b.1, measure rates for the performance period from July 1, 2017, through June 30, 2019, ranged from 34.8 to 94.3%, with a median of 76.2%. There was a 21.3 percentage point difference between the 10th and 90th percentiles (63.4%–84.7%). Using 2013–2014 Medicare claims data, there was a 21.6 percentage point difference between the 10th and 90th percentiles (66.7%–88.3%) and a median score of 79.6%.

This measure is new and is being implemented for the first time for FY 2021. By calculating the facility-level medication continuation scores in Medicare FFS claims data and providing them to facilities, CMS aims to encourage quality improvement, specifically relating to stronger care transitions to outpatient settings.

### 4b2. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4b2.1. Please explain any unexpected findings (positive or negative) during implementation of this measure including unintended impacts on patients.**

This measure is being implemented for the first time for FY 2021.

**4b2.2. Please explain any unexpected benefits from implementation of this measure.**

This measure is being implemented for the first time for FY 2021.

## 5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

### 5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

Yes

#### 5.1a. List of related or competing measures (selected from NQF-endorsed measures)

1879 : Adherence to Antipsychotic Medications for Individuals with Schizophrenia

1880 : Adherence to Mood Stabilizers for Individuals with Bipolar I Disorder

#### 5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

Antidepressant Medication Management (AMM) from the National Committee for Quality Assurance's (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) 2019

### 5a. Harmonization of Related Measures

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

**5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**

**Are the measure specifications harmonized to the extent possible?**

Yes

**5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

The numerator for the Medication Continuation measure has been harmonized with these measures when possible because the measure populations of the three related measures overlap with the patient population targeted by this measure and the measures share a similar clinical focus on medication use. We compared the medications included in the related measures with medications included in the Medication Continuation measure.

#### **5b. Competing Measures**

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

**5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**

**Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)**

The related measures that we identified are not competing measures because the Medication Continuation measure is for those with diagnoses of bipolar disorder, MDD, or schizophrenia.

## **Appendix**

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

No appendix Attachment:

## **Contact Information**

**Co.1 Measure Steward (Intellectual Property Owner):** Centers for Medicare & Medicaid Services

**Co.2 Point of Contact:** Helen, Dollar-Maples, Helen.Dollar-Maples@cms.hhs.gov, 410-786-7214-

**Co.3 Measure Developer if different from Measure Steward:** Mathematica

**Co.4 Point of Contact:** Jason, Smoot, jsmooot@mathematica-mpr.com, 734-205-3109-

## **Additional Information**

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

During initial measure development, the following groups provided input on design of the measure denominator, exclusions, and list of medications.

Inpatient Psychiatric Facility (IPF) Outcome and Process Measure Development and Maintenance Technical Expert Panel (TEP):

Alisa Busch, MD, MS

Director, Integration of Clinical Measurement & Health Services Research

Chief, Health Services Research Division, Partners Psychiatry and Mental Health

Assistant Professor of Psychiatry and Health Policy, Harvard Medical School

Kathleen Delaney, PhD, PMH-NP, RN

Professor, Rush College of Nursing



Jonathan Delman, PhD, JD, MPH

Assistant Research Professor, Systems and Psychosocial Advances Research Center, University of Massachusetts Medical School

Frank Ghinassi, PhD, ABPP

Vice President, Quality and Performance Measurement, Western Psychiatric Institute and Clinic

Associate Professor in Psychiatry, University of Pittsburgh

Eric Goplerud, PhD

Senior Vice President, Director of Public Health Department, NORC at the University of Chicago

Geetha Jayaram, MD

Associate Professor, Schools of Medicine, Health Policy and Management and the Armstrong Institute for Patient Safety, Johns Hopkins University

Charlotte Kauffman, MA, LCPC

Service Systems Coordinator, State of Illinois-Division of Mental Health

Tracy Lenzini, BS

Executive Director, Grand Traverse Health Advocates

Kathleen McCann, RN, PhD

Director of Quality and Regulatory Affairs, National Association of Psychiatric Health Systems

Gayle Olano-Hurt, MPH, CPHQ, PMC

Director Data Management, Outcomes Measurement & Research Administration, Sheppard Pratt Health System

Mark Olfson, MD, MPH

Professor of Psychiatry, Columbia University Medical Center Department of Psychiatry; New York State Psychiatric Institute

Irene Ortiz, MD, MSW

Medical Director, Molina Healthcare of New Mexico

Thomas Penders, MS, MD, DLFAPA

Medical Director, Inpatient Psychiatry, Vident Medical Center

Associate Professor, Brody School of Medicine Department of Psychiatry, East Carolina University

Lucille Schacht, PhD

Senior Director, Performance and Quality Improvement, National Association of State Mental Health Program Directors Research Institute, Inc.

Lisa Shea, MD

Medical Director, Butler Hospital

Thomedi Ventura, MS, MSPH

Program Evaluator, Telligen

Elvira Ryan, MBA, BSN, RN

Associate Project Director, Division of Healthcare Quality Evaluation, The Joint Commission

Measure work group members:

TEP members:

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Geetha Jayaram, MD

Charlotte Kauffman, MA

Kathleen McCann, PhD, RN

Gayle Olano-Hurt, MPH  
Thomedi Ventura, MSPH

UF members:

Regina Bussing, MD  
Professor and Chair, Department of Psychiatry, University of Florida College of Medicine

Mathew Nguyen, MD  
Assistant Professor and Medical Director, Department of Psychiatry, University of Florida College of Medicine

Gary Reisfield, MD  
Associate Professor, Department of Psychiatry, University of Florida College of Medicine

Almut Winterstein, PhD, RPh, FISPE  
Professor and Chair, Pharmaceutical Outcomes and Policy, University of Florida College of Medicine

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2 Year the measure was first released:** 2020

**Ad.3 Month and Year of most recent revision:**

**Ad.4 What is your frequency for review/update of this measure?** CMS plans to review and update this measure annually.

**Ad.5 When is the next scheduled review/update for this measure?** 2021

**Ad.6 Copyright statement:** None

**Ad.7 Disclaimers:** This performance measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications. The measure and specifications are provided without warranty. The measure specifications also contain limited proprietary coding. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets.

**Ad.8 Additional Information/Comments:** None.