

# Metabolic Screening for Children and Adolescents Newly on Antipsychotics

## Section 1. Basic Measure Information

### 1.A. Measure Name

Metabolic Screening for Children and Adolescents Newly on Antipsychotics

### 1.B. Measure Number

0149

### 1.C. Measure Description

**Please provide a non-technical description of the measure that conveys what it measures to a broad audience.**

The percentage of children and adolescents 1 to 20 years of age newly prescribed an antipsychotic medication who had baseline metabolic screening.

Note: A higher rate indicates better performance.

### 1.D. Measure Owner

The measure owner is the National Committee for Quality Assurance (NCQA).

The measure was developed through the National Collaborative for Innovation in Quality Measurement (NCINQ) and the Rutgers University-based multi-State MEDNET consortium.

### 1.E. National Quality Forum (NQF) ID (if applicable)

Not applicable.

### 1.F. Measure Hierarchy

**Please note here if the measure is part of a measure hierarchy or is part of a measure group or composite measure. The following definitions are used by AHRQ:**

- 1. Please identify the name of the collection of measures to which the measure belongs (if applicable). A collection is the highest possible level of the measure hierarchy. A collection may contain one or more sets, subsets, composites, and/or individual measures.**

Not applicable.

- 2. Please identify the name of the measure set to which the measure belongs (if applicable). A set is the second level of the hierarchy. A set may include one or more subsets, composites, and/or individual measures.**

Safe and Judicious Use of Antipsychotics in Children and Adolescents.

- 3. Please identify the name of the subset to which the measure belongs (if applicable). A subset is the third level of the hierarchy. A subset may include one or more composites, and/or individual measures.**

Not applicable.

- 4. Please identify the name of the composite measure to which the measure belongs (if applicable). A composite is a measure with a score that is an aggregate of scores from other measures. A composite may include one or more other composites and/or individual measures. Composites may comprise component measures that can or cannot be used on their own.**

Not applicable.

### **1.G. Numerator Statement**

One or more tests for blood glucose and one or more tests for cholesterol in the 106-day period from 90 days prior to 15 days after the new start of an antipsychotic medication

### **1.H. Numerator Exclusions**

None.

### **1.I. Denominator Statement**

Children aged 1 to 20 years with a new prescription for antipsychotic medication during the measurement year.

Continuous Eligibility: 4 months prior through 15 days after the new prescription.  
Benefit: Medical and Pharmacy.

### **1.J. Denominator Exclusions**

Exclude individuals who had an acute inpatient encounter for mental health or chemical dependency during the 90 days prior to 15 days after the start of a new antipsychotic medication.

### **1.K. Data Sources**

**Check all the data sources for which the measure is specified and tested.**

Administrative data (e.g., claims data).

**If other, please list all other data sources in the field below.**

Not applicable.

## **Section 2: Detailed Measure Specifications**

Provide sufficient detail to describe how a measure would be calculated from the recommended data sources, uploading a separate document (+ Upload attachment) or a link to a URL. Examples of detailed measure specifications can be found in the CHIPRA Initial Core Set Technical Specifications Manual 2011 published by the Centers for Medicare & Medicaid Services. Although submission of formal programming code or algorithms that demonstrate how a measure would be calculated from a query of an appropriate electronic data source are not requested at this time, the availability of these resources may be a factor in determining whether a measure can be recommended for use.

Please see the Supporting Documents for detailed measure specifications.

## **Section 3. Importance of the Measure**

In the following sections, provide brief descriptions of how the measure meets one or more of the following criteria for measure importance (general importance, importance to Medicaid and/or CHIP, complements or enhances an existing measure). Include references related to specific points made in your narrative (not a free-form listing of citations).

### **3.A. Evidence for General Importance of the Measure**

Provide evidence for all applicable aspects of general importance:

- Addresses a known or suspected quality gap and/or disparity in quality (e.g., addresses a socioeconomic disparity, a racial/ethnic disparity, a disparity for Children with Special Health Care Needs (CSHCN), a disparity for limited English proficient (LEP) populations).
- Potential for quality improvement (i.e., there are effective approaches to reducing the quality gap or disparity in quality).
- Prevalence of condition among children under age 21 and/or among pregnant women.
- Severity of condition and burden of condition on children, family, and society (unrelated to cost).
- Fiscal burden of measure focus (e.g., clinical condition) on patients, families, public and private payers, or society more generally, currently and over the life span of the child.
- Association of measure topic with children's future health – for example, a measure addressing childhood obesity may have implications for the subsequent development of cardiovascular diseases.
- The extent to which the measure is applicable to changes across developmental stages (e.g., infancy, early childhood, middle childhood, adolescence, young adulthood).

Antipsychotic medication use is an important area of interest for pediatric measures development, given the growing use in children and adolescents. While antipsychotics offer the potential for effective treatment of psychiatric disorders in children, these medications are associated with a number of potentially adverse impacts, including weight gain (Correll, Manu, Olshanskiy, et al., 2009), diabetes (Andrade, Lo, Roblin, et al. 2011; Bobo, Cooper, Stein, et al., 2013) and cardiovascular problems (Baker, Olesen, Sorensen, 2007; Srinivasan, Myers, Berenson, 2002). Due to the potential negative health consequences associated with children developing cardiometabolic side effects from an antipsychotic, it is important to establish a baseline and continuously monitor metabolic indices to ensure appropriate management of side-effects. Thus, this measure assesses whether youth newly prescribed antipsychotics received a baseline metabolic screening.

This measure is part of a set that assesses the safe and judicious use of antipsychotics in children and adolescents; the set includes a measure that separately assesses whether youth with ongoing use of antipsychotics received metabolic monitoring.

### **Prevalence of Antipsychotic Prescribing and Health Impact**

Antipsychotic prescribing for children has increased rapidly in recent decades, driven both by new prescriptions as well as longer duration of use. The frequency of prescribing antipsychotics among youth increased almost five-fold from 1996 (8.6 per 1,000 children) to 2002 (39.4 per 1,000 children).

Antipsychotics are associated with metabolic concerns. For example, a multi-year study of youth enrolled in three health maintenance organizations found that exposure to atypical antipsychotics was associated with a four-fold risk of diabetes in the following year, compared with children not prescribed a psychotropic medication, the broader class of medications under which antipsychotics fall (Andrade, et al., 2011). Another study of youth enrolled in a State Medicaid plan found that those starting an antipsychotic had three times the risk of developing diabetes, compared with youth starting other psychotropic medications (Bobo, et al., 2013). The association of atypical antipsychotics with diabetes has been found to be greater among children and adolescents than among adults (Hammerman, Dreier, Klang, et al., 2008). Research also suggests that metabolic problems in childhood and adolescence are associated with poor cardiometabolic outcomes (Srinivasan, et al., 2002). The long-term consequences of pediatric obesity and other metabolic disturbances include a higher risk of heart disease in adulthood (Baker, et al., 2007).

### **Fiscal Burden**

Although there is little research available on the fiscal burden associated with the adverse effects of antipsychotic use among children and adolescents, one study of Medicaid-enrolled youth on antipsychotics found that health care costs for patients who developed cardiometabolic side effects were 34 percent higher than for those who did not (Jerrell, McIntyre, 2009). Proper screening and monitoring can contribute to early detection and management of cardiometabolic side effects and thus reduce long-term costs. Further, diabetes is one of the most expensive chronic conditions in children (Imperatore, Boyle, Thompson, et al., 2012), and the association of atypical antipsychotics with diabetes has been found to be greater among children and adolescents than adults (Hammerman, et al., 2008).

## **Opportunity for Improvement**

Despite publication of guidelines by the American Diabetes Association and American Psychiatric Association that recommend metabolic screening and monitoring for individuals prescribed atypical antipsychotics regardless of age, screening rates for children and adolescents are lower than those of adults. A study of Medicaid-enrolled children in three States found that only 31 percent of youth starting an atypical antipsychotic received a glucose test, and only 14 percent received a lipid test—far lower than rates reported for adults (Morrato, Nicol, Maahs, et al., 2010).

## **Health Care Disparities**

There is little research on potential disparities in metabolic screening and monitoring for youth prescribed antipsychotics. One study found that race/ethnicity was not associated with glucose or lipid screening rates (Morrato, et al., 2010). However, among adults, in general, minority groups are at greater risk for diabetes than whites (Centers for Disease Control and Prevention, 2011).

## **3.B. Evidence for Importance of the Measure to Medicaid and/or CHIP**

**Comment on any specific features of this measure important to Medicaid and/or CHIP that are in addition to the evidence of importance described above, including the following:**

- **The extent to which the measure is understood to be sensitive to changes in Medicaid or CHIP (e.g., policy changes, quality improvement strategies).**
- **Relevance to the Early and Periodic Screening, Diagnostic and Treatment benefit in Medicaid (EPSDT).**
- **Any other specific relevance to Medicaid/CHIP (please specify).**

The use of antipsychotic medications is greater and increasing more rapidly in youth enrolled in the Medicaid program than among those who have private insurance (Crystal, Olfson, Huang, et al., 2009). Low-income youth, who are already at greater risk for both physical and mental health problems, may be additionally susceptible to side effects associated with antipsychotic medications. A study of Medicaid-enrolled children in three States found that only a third of youth starting an atypical antipsychotic received a glucose test, and just 14 percent received a lipid test (Morrato, et al., 2010).

## **3.C. Relationship to Other Measures (if any)**

**Describe, if known, how this measure complements or improves on an existing measure in this topic area for the child or adult population, or if it is intended to fill a specific gap in an existing measure category or topic. For example, the proposed measure may enhance an existing measure in the initial core set, it may lower the age range for an existing adult-focused measure, or it may fill a gap in measurement (e.g., for asthma care quality, inpatient care measures).**

This measure is similar to an existing measure for adults, Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications, which is used in the HEDIS® Health Plan Measures Set and is endorsed by the National Quality Forum.

## Section 4. Measure Categories

CHIPRA legislation requires that measures in the initial and improved core set, taken together, cover all settings, services, and topics of health care relevant to children. Moreover, the legislation requires the core set to address the needs of children across all ages, including services to promote healthy birth. Regardless of the eventual use of the measure, we are interested in knowing all settings, services, measure topics, and populations that this measure addresses. These categories are not exclusive of one another, so please indicate "Yes" to all that apply.

Does the measure address this category?

- a. Care Setting – ambulatory: Yes.
- b. Care Setting – inpatient: No.
- c. Care Setting – other – please specify: No.
- d. Service – preventive health, including services to promote healthy birth: No.
- e. Service – care for acute conditions: No.
- f. Service – care for children with special health care needs/chronic conditions: Yes.
- g. Service – other (please specify): No.
- h. Measure Topic – duration of enrollment: No.
- i. Measure Topic – clinical quality: Yes.
- j. Measure Topic – patient safety: No.
- k. Measure Topic – family experience with care: No.
- l. Measure Topic – care in the most integrated setting: No.
- m. Measure Topic other (please specify): No.
- n. Population – pregnant women: No.
- o. Population – neonates (28 days after birth) (specify age range): No.
- p. Population – infants (29 days to 1 year) (specify age range): No.
- q. Population – pre-school age children (1 year through 5 years) (specify age range):  
Yes; ages 1-5 years.
- r. Population – school-aged children (6 years through 10 years) (specify age range):  
Yes; ages 6-11 years.
- s. Population – adolescents (11 years through 20 years) (specify age range): Yes; ages 12-17 years.
- t. Population – other (specify age range): Yes; ages 18-20 years.
- u. Other category (please specify): No.

## Section 5. Evidence or Other Justification for the Focus of the Measure

The evidence base for the focus of the measures will be made explicit and transparent as part of the public release of CHIPRA deliberations; thus, it is critical for submitters to specify the scientific evidence or other basis for the focus of the measure in the following sections.

## **5.A. Research Evidence**

**Research evidence should include a brief description of the evidence base for valid relationship(s) among the structure, process, and/or outcome of health care that is the focus of the measure. For example, evidence exists for the relationship between immunizing a child or adolescent (process of care) and improved outcomes for the child and the public. If sufficient evidence existed for the use of immunization registries in practice or at the State level and the provision of immunizations to children and adolescents, such evidence would support the focus of a measure on immunization registries (a structural measure).**

**Describe the nature of the evidence, including study design, and provide relevant citations for statements made. Evidence may include rigorous systematic reviews of research literature and high-quality research studies.**

Several guidelines address metabolic screening for children prescribed antipsychotics, with consensus that metabolic screening is a standard of care for this population. Several American Academy of Child and Adolescent Psychiatry (AACAP) practice parameters (including for treatment of schizophrenia and for the use of psychotropic medication) as well as the TRAY guidelines recommend careful monitoring of side effects. The Canadian Alliance for Monitoring Safety and Effectiveness of Antipsychotics in Children published evidence-based guidelines for metabolic and neurological monitoring of children prescribed atypical antipsychotics (Pringsheim, Panagiotopoulos, Davidson, et al., 2011). Given the documented metabolic risks of antipsychotic medications, monitoring of metabolic indices is important to ensure appropriate management of side effect risk, especially in children and adolescents (see Supporting Documents for Appendix 1, Clinical Guideline Tables).

## **5.B. Clinical or Other Rationale Supporting the Focus of the Measure (optional)**

**Provide documentation of the clinical or other rationale for the focus of this measure, including citations as appropriate and available.**

This measure assesses whether children and adolescents received metabolic screening following a new start of an antipsychotic medication. Metabolic screening is an important aspect of proper medication management in this population, in particular because antipsychotic medications have been associated with adverse metabolic effects. This measure is intended for use by States and health plans to encourage proper establishment of baseline indices in order to enable ongoing monitoring for potential side effects.

## **Section 6. Scientific Soundness of the Measure**

**Explain the methods used to determine the scientific soundness of the measure itself. Include results of all tests of validity and reliability, including description(s) of the study sample(s) and methods used to arrive at the results. Note how characteristics of other data systems, data sources, or eligible populations may affect reliability and validity.**

## Methods

NCINQ employed a multi-step process that included working with a wide range of stakeholders to define measure specifications and review testing results. We tested the measure in a population of children and adolescents in Medicaid, and we present results at both a State and health plan level. While key findings are presented here, measure-specific data results tables are described in Appendix 1 (see Supporting Documents). Findings across the measures set for eligible population, performance rates, reliability, and validity are described in the Antipsychotics Testing Summary (see Supporting documents).

As an additional analysis at the end, we tested the feasibility of the measures for commercial health plans. We show the means and ranges of the eligible population and performance rates in the Antipsychotics Testing Summary (see Supporting Documents).

Our research questions were as follows:

1. What is the eligible population for each measure?
2. What is the distribution of performance rates at the State and health plan levels?
3. How does performance vary for important subpopulations?
4. What is the validity and reliability of each measure?

We tested the measures in the following administrative data sources:

- 2008 claims data from the Medicaid Analytic eXtract (MAX) for 11 States.
- 2011 claims data from two MEDNET States.
- 2012 claims data from one MEDNET State.
- 2009 claims data from 17 New York State Medicaid health plans.
- 2013 claims data from 73 commercial health plans nationwide.

Our study population comprised children up to age 20 years as of December 31 of the measurement year. We examined performance separately for children with foster care experience, defined as those with a MAX eligibility code for foster care in their last month within the study period. This population included children receiving adoption benefits and older youth who had aged out of the foster care system. It also includes children who were placed in group homes and other out-of-home placements.

### 6.A. Reliability

**Reliability of the measure is the extent to which the measure results are reproducible when conditions remain the same. The method for establishing the reliability of a measure will depend on the type of measure, data source, and other factors.**



**Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., the Kappa statistic). Provide appropriate citations to justify methods.**

Our results showed that this measure was reliable at the State and plan levels. The measure had an average plan-level reliability of 0.95 and State-level reliability of 0.99 (see Testing Summary in the Supporting Documents for full reliability results).

## **6.B. Validity**

**Validity of the measure is the extent to which the measure meaningfully represents the concept being evaluated. The method for establishing the validity of a measure will depend on the type of measure, data source, and other factors.**

**Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., R2 for concurrent validity).**

Face validity refers to whether the measure plausibly represents the concept being evaluated in the judgment of likely users of the measure. To assess different perspectives on the measure's validity, NCINQ reviewed the specifications and field test results with our NCINQ advisory panels and other stakeholders. NCINQ's stakeholders include patients and families, clinicians, and State Medicaid officials, as well as experts in the field of child health, foster care, and measure development (i.e., individuals well-positioned to speak to this measure's face validity). This process ensures measures are reasonable and important to those using them. Our advisory panels concluded that this measure is a valid way to assess receipt of metabolic screening to establish a baseline index for ongoing monitoring. Stakeholders recommended specifying the screening to occur prior to the prescription or immediately after starting the prescription (within 15 days, before indices can change due to medication).

For construct validity, we assessed the correlation between this measure and other measures in the antipsychotics set. Among Medicaid plans, there was a moderate negative correlation between the Metabolic Screening and Higher-than-Recommended Doses measures, indicating plans that performed well on metabolic screening (higher rates indicate better performance) also performed well on avoiding higher-than-recommended dosing (lower rates indicate better performance). Among both Medicaid and commercial plans there was a strong positive correlation between the Metabolic Screening and Metabolic Monitoring measures, indicating plans that perform well on initial screenings also perform well on ongoing monitoring.

In addition, rankings among measures in the antipsychotic measures set showed that plans and states can be approximately ranked based on profiles of performance across the measures. See Testing Summary attachment for full validity results.

## **Section 7. Identification of Disparities**

**CHIPRA requires that quality measures be able to identify disparities by race, ethnicity, socioeconomic status, and special health care needs. Thus, we strongly encourage nominators to have tested measures in diverse populations. Such testing provides evidence**

**for assessing measure’s performance for disparities identification. In the sections below, describe the results of efforts to demonstrate the capacity of this measure to produce results that can be stratified by the characteristics noted and retain the scientific soundness (reliability and validity) within and across the relevant subgroups.**

### **7.A. Race/Ethnicity**

Using the MAX data files, NCINQ was able to collect race and ethnicity data for five categories: white non-Hispanic, black non-Hispanic, Hispanic, other, and unknown.

In the general population, rates of metabolic screening were slightly lower among white non-Hispanic children (5.7 percent) and black non-Hispanic children than among Hispanic children and adolescents (10.3 percent). The same pattern was seen in the foster care population, with Hispanic children and adolescents receiving the highest rates of metabolic screening,

### **7.B. Special Health Care Needs**

NCINQ explored the relationship between the general population of children and children in the foster care system, defined as children who had spent any period of time in the foster care system.

Children in the general and foster care populations showed similar rates of metabolic screening (around 6 percent). Results are presented in Table 2 in Appendix 1 (see Supporting Documents).

### **7.C. Socioeconomic Status**

We used Medicaid data only and were unable to assess socioeconomic status information.

### **7.D. Rurality/Urbanicity**

We assessed rurality/urbanicity using 2003 Rural-Urban Continuum Codes from the Area Resource File, which provides a wide range of county-level data collected from a number of sources. We merged these codes with the MAX data. Metropolitan is defined as counties in metro areas; Non-Metropolitan is defined as urban populations of at least 2,500 population, adjacent or not adjacent to a metro area; and Rural is defined as completely rural or less than 2,500 urban population, either adjacent or not adjacent to a metro area.

For both the general population and the foster care population, rates of metabolic screening were slightly higher in metropolitan areas than in non-metropolitan or rural areas. Results are presented in Table 3 in Appendix 1 (see Supporting Documents).

### **7.E. Limited English Proficiency (LEP) Populations**

We were unable to assess information on LEP.

## Section 8. Feasibility

**Feasibility is the extent to which the data required for the measure are readily available, retrievable without undue burden, and can be implemented for performance measurement. Using the following sections, explain the methods used to determine the feasibility of implementing the measure.**

### 8.A. Data Availability

#### **1. What is the availability of data in existing data systems? How readily are the data available?**

As specified, all data needed to calculate the Metabolic Screening measure are present in administrative claims data.

Although this measure has been developed and tested for claims data only, it is likely highly feasible to implement it in an electronic medical record or e-prescribing program. The value of this approach would be to increase opportunities for interventions at the point of service through decision support.

A similar measure being used in the HEDIS Health Plan Measures Set assesses metabolic screening in adults with schizophrenia and bipolar disorder.

#### **2. If data are not available in existing data systems or would be better collected from future data systems, what is the potential for modifying current data systems or creating new data systems to enhance the feasibility of the measure and facilitate implementation?**

Not applicable.

### 8.B. Lessons from Use of the Measure

#### **1. Describe the extent to which the measure has been used or is in use, including the types of settings in which it has been used, and purposes for which it has been used.**

The estimated required sample size needed to gain adequate numbers of observations was 71 for Medicaid plans and 90 for States. This calculation is based on the Spearman-Brown prediction formula to achieve reliability of 0.70.

Because this measure focuses on the rate of providing a recommended service, a higher rate indicates better performance. Among health plans, the mean performance rate for baseline glucose and lipid screening was 10.3 percent, with variability (minimum 0.2 percent, maximum 17.8 percent), indicating room for improvement. Among States, the mean performance rate was 6.4 percent among the general population of children, with a range of 0.4 to 14.0 percent. For children in foster care, the average rate was 56.3 percent, with a range of 38.8 to 68.9 percent.

See Tables 4 and 5 in Appendix 1 for full performance rates and the Testing Summary for details on estimated sample size (see Supporting Documents).

**2. If the measure has been used or is in use, what methods, if any, have already been used to collect data for this measure?**

Not applicable.

**3. What lessons are available from the current or prior use of the measure?**

Not applicable.

## **Section 9. Levels of Aggregation**

**CHIPRA states that data used in quality measures must be collected and reported in a standard format that permits comparison (at minimum) at State, health plan, and provider levels. Use the following table to provide information about this measure's use for reporting at the levels of aggregation in the table.**

**For the purpose of this section, please refer to the definitions for provider, practice site, medical group, and network in the Glossary of Terms.**

**If there is no information about whether the measure could be meaningfully reported at a specific level of aggregation, please write "Not available" in the text field before progressing to the next section.**

*Level of aggregation (Unit) for reporting on the quality of care for children covered by Medicaid/ CHIP†:*

*State level\* Can compare States*

**Intended use: Is measure intended to support meaningful comparisons at this level?  
(Yes/No)**

Yes.

**Data Sources: Are data sources available to support reporting at this level?**

Yes.

**Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**

Sample size is 90.

**In Use: Have measure results been reported at this level previously?**

No.

**Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**

No.

***Unintended consequences:*** What are the potential unintended consequences of reporting at this level of aggregation?

None.

***Other geographic level:*** Can compare other geographic regions (e.g., MSA, HRR)

***Intended use:*** Is measure intended to support meaningful comparisons at this level?  
(Yes/No)

Yes.

***Data Sources:*** Are data sources available to support reporting at this level?

Yes.

***Sample Size:*** What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

***In Use:*** Have measure results been reported at this level previously?

No.

***Reliability & Validity:*** Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

***Unintended consequences:*** What are the potential unintended consequences of reporting at this level of aggregation?

Limited denominator size may affect reliability.

***Medicaid or CHIP Payment model:*** Can compare payment models (e.g., managed care, primary care case management, FFS, and other models)

***Intended use:*** Is measure intended to support meaningful comparisons at this level?  
(Yes/No)

Yes.

***Data Sources:*** Are data sources available to support reporting at this level?

Yes.

***Sample Size:*** What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

***In Use:*** Have measure results been reported at this level previously?

No.

**Reliability & Validity:** Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

**Unintended consequences:** What are the potential unintended consequences of reporting at this level of aggregation?

None.

**Health plan\*:** *Can compare quality of care among health plans.*

**Intended use:** Is measure intended to support meaningful comparisons at this level?

(Yes/No)

Yes.

**Data Sources:** Are data sources available to support reporting at this level?

Yes.

**Sample Size:** What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Sample size is 71.

**In Use:** Have measure results been reported at this level previously?

No.

**Reliability & Validity:** Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

**Unintended consequences:** What are the potential unintended consequences of reporting at this level of aggregation?

None.

**Provider Level**

**Individual practitioner:** *Can compare individual health care professionals*

**Intended use:** Is measure intended to support meaningful comparisons at this level?

(Yes/No)

No.

**Data Sources:** Are data sources available to support reporting at this level?

No.

**Sample Size:** What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

***In Use:*** Have measure results been reported at this level previously?

No.

***Reliability & Validity:*** Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

***Unintended consequences:*** What are the potential unintended consequences of reporting at this level of aggregation?

Limited denominator size may affect reliability.

***Provider Level***

***Hospital:*** Can compare hospitals

***Intended use:*** Is measure intended to support meaningful comparisons at this level?

(Yes/No)

No.

***Data Sources:*** Are data sources available to support reporting at this level?

No.

***Sample Size:*** What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

***In Use:*** Have measure results been reported at this level previously?

Not applicable.

***Reliability & Validity:*** Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

Not applicable.

***Unintended consequences:*** What are the potential unintended consequences of reporting at this level of aggregation?

Not applicable.

***Provider Level***

***Practice, group, or facility:\*\* Can compare:*** (i) practice sites; (ii) medical or other professional groups; or (iii) integrated or other delivery networks

***Intended use:*** Is measure intended to support meaningful comparisons at this level?

(Yes/No)

No.

***Data Sources:*** Are data sources available to support reporting at this level?

No.

**Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**

Not applicable.

**In Use: Have measure results been reported at this level previously?**

Not applicable.

**Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**

Not applicable.

**Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?**

Limited denominator size may affect reliability.

## **Section 10. Understandability**

**CHIPRA states that the core set should allow purchasers, families, and health care providers to understand the quality of care for children. Please describe the usefulness of this measure toward achieving this goal. Describe efforts to assess the understandability of this measure (e.g., focus group testing with stakeholders).**

NCINQ specifically sought to assess the understandability of the measures from a wide range of stakeholders, including purchasers, families, and providers. We convened an overall, multi-stakeholder advisory panel to assess all measures developed by our Center. This panel included representation from consumers, pediatricians, family physicians, adolescent medicine physicians, health plans, State Medicaid agencies, and researchers. In addition to our multi-stakeholder panel, we convened the following targeted panels:

- State Advisory Panel.
- Consumer Advisory Panel.
- Mental Health Technical Subgroup.

We also convened two panels with particular relevance to antipsychotic measures: (1) a Foster Care Panel with representatives from State child welfare and behavioral health services, Medicaid officials, the Administration on Children, Youth and Families, and foster care alumni; and (2) the Center for Health Care Strategies Improving the Use of Psychotropic Medications among Children in Foster Care Workgroup, a six-State collaborative working with cross-agency teams to improve issues around the use of psychotropic medications among youth. Input from these groups, in particular our targeted panels, were instrumental in ensuring these measures addressed the needs of children in Medicaid and the foster care system. Throughout the measure development process, we presented the measures to these panels and solicited feedback on importance, understandability, and usability.



In addition, we posted the measures for public comment to obtain feedback from an even wider audience. In addition to our usual questions around importance of the topic, usability, and feasibility of implementation, we specifically sought feedback on the appropriateness of our continuous eligibility definitions, how we defined antipsychotic “use,” and appropriateness of the specifications for foster care populations.

All comments received for the Metabolic Screening measure either supported the measure as specified or supported it with suggested modifications. There were some suggestions to add more measurements of metabolic issues, such as weight gain or gynecomastia. Our advisory panels concluded that glucose and lipid testing are sufficient as minimum tests to require for tracking metabolic issues in children and are also feasible to collect from claims data.

This measure was prioritized as an important measure both through public comment and by NCINQ advisory panels. Stakeholders noted the measure is important because baseline indices are critical to being able to monitor and track any changes in metabolic values over time. Final measure specifications were informed by commenters’ and advisory panel feedback.

## **Section 11. Health Information Technology**

**Please respond to the following questions in terms of any health information technology (health IT) that has been or could be incorporated into the measure calculation.**

### **11.A. Health IT Enhancement**

**Please describe how health IT may enhance the use of this measure.**

This measure has been specified and tested in claims data only. This measure could benefit from incorporation in health IT, as it would allow screening tests to be tracked if tied to laboratory data.

### **11.B. Health IT Testing**

**Has the measure been tested as part of an electronic health record (EHR) or other health IT system?**

The measure has not been tested in an EHR. However, a similar claims- and encounter-based measure is being implemented by New York State in a Web-based application to support clinical decision making and quality improvement, the Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES). PSYCKES is being used in settings that include Medicaid providers in hospitals, clinics, health homes, county mental health departments, and Medicaid managed care plans. Measures flag individual Medicaid enrollees with a quality alert to support clinical review.

**If so, in what health IT system was it tested and what were the results of testing?**

Not applicable.

### **11.C. Health IT Workflow**

**Please describe how the information needed to calculate the measure may be captured as part of routine clinical or administrative workflow.**

As currently specified, measure elements are derived from claims/encounter data, and necessary data elements are generated when a prescription is filled at a pharmacy. For an EHR- or e-prescribing-based measure, data elements would be generated automatically when a prescription is written; no change in clinician workflow would be required.

### **11.D. Health IT Standards**

**Are the data elements in this measure supported explicitly by the Office of the National Coordinator for Health IT Standards and Certification criteria (see [healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_\\_standards\\_ifr/1195](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__standards_ifr/1195))?**

Both Stage 2 of Meaningful Use and the 2014 edition of the ONC Certification of EHR technology require the electronic capture of medication order/prescription data in ambulatory settings.

**If yes, please describe.**

Not applicable.

### **11.E. Health IT Calculation**

**Please assess the likelihood that missing or ambiguous information will lead to calculation errors.**

Calculation errors are unlikely for this measure.

### **11.F. Health IT Other Functions**

**If the measure is implemented in an EHR or other health IT system, how might implementation of other health IT functions (e.g., computerized decision support systems in an EHR) enhance performance characteristics on the measure?**

E-prescribing platforms can be designed to feed databases that can be used for performance reporting but also could be used to provide decision support to the prescriber.

## **Section 12. Limitations of the Measure**

**Describe any limitations of the measure related to the attributes included in this CPCF (i.e., availability of measure specifications, importance of the measure, evidence for the focus of the measure, scientific soundness of the measure, identification of disparities, feasibility, levels of aggregation, understandability, health information technology).**

One limitation of the measure is that the evidence around the exact tests to use for metabolic screening is limited. Therefore, the measure allows for any type of testing for glucose and lipids in order to encourage establishment of baseline values.

## Section 13. Summary Statement

**Provide a summary rationale for why the measure should be selected for use, taking into account a balance among desirable attributes and limitations of the measure. Highlight specific advantages that this measure has over alternative measures on the same topic that were considered by the measure developer or specific advantages that this measure has over existing measures. If there is any information about this measure that is important for the review process but has not been addressed above, include it here.**

This measure assesses whether children and adolescents who are newly prescribed antipsychotic medications received baseline metabolic screening. Antipsychotics are associated with potentially adverse metabolic impacts such as weight gain, diabetes, and cardiovascular concerns. Given the potential impact of these issues on a child's developmental trajectory, it is critical to monitor metabolic indices. The measure is part of a set that assesses the safe and judicious use of antipsychotics in children and adolescents; the set also includes a measure that assesses whether youth with ongoing use of antipsychotics received metabolic monitoring.

This measure is specified for administrative claims and is intended for use by States and health plans. Testing results suggest the measure is highly feasible, valid, and reliable at both the State and health plan levels. Testing also showed poor performance among both plans and States, suggesting room for improvement. Feedback from multiple and varied stakeholders found the measure to be understandable and meaningful. Targeted feedback from stakeholders with a particular interest in antipsychotics, including State Medicaid directors and those working within the foster care system, indicated the measure is a high priority in this population.

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## **Section 14: Identifying Information for the Measure Submitter**

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**The CHIPRA Pediatric Quality Measures Program (PQMP) Candidate Measure Submission Form (CPCF) was approved by the Office of Management and Budget (OMB) in accordance with the Paperwork Reduction Act.**

The OMB Control Number is 0935-0205 and the Expiration Date is December 31, 2015.

## **Public Disclosure Requirements**

Each submission must include a written statement agreeing that, should U.S. Department of Health and Human Services accept the measure for the 2014 and/or 2015 Improved Core Measure Sets, full measure specifications for the accepted measure will be subject to public disclosure (e.g., on the Agency for Healthcare Research and Quality [AHRQ] and/or Centers for Medicare & Medicaid Services [CMS] websites), except that potential measure users will not be permitted to use the measure for commercial use. In addition, AHRQ expects that measures and full measure specifications will be made reasonably available to all interested parties. "Full measure specifications" is defined as all information that any potential measure implementer will need to use and analyze the measure, including use and analysis within an electronic health record or other health information technology. As used herein, "commercial use" refers to any sale, license or distribution of a measure for commercial gain, or incorporation of a measure into any product or service that is sold, licensed or distributed for commercial gain, even if there is no actual charge for inclusion of the measure. This statement must be signed by an individual authorized to act for any holder of copyright on each submitted measure or instrument. The authority of the signatory to provide such authorization should be described in the letter.

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