Antipsychotic Medication Use Measures for Children and Adolescents

The Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) established the Pediatric Quality Measures Program (PQMP), an initiative funded by the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare & Medicaid Services (CMS) to support the development of new measures in child health care.

The CHIPRA PQMP established seven Centers of Excellence: multi-center collaboratives working to increase the portfolio of measures that can be used by states, consumers and policymakers to understand and improve the quality of health care for children in Medicaid and CHIP. The National Committee for Quality Assurance, together with its partners, leads one of these Centers: the *AHRQ-CMS CHIPRA National Collaborative for Innovation in Quality Measurement (NCINQ)*. Collaborating organizations include Nationwide Children's Hospital; New York University and the New York State Office of Mental Health; the National Partnership for Women & Families; the American Academy of Pediatrics; Rutgers, the State University of New Jersey; and a broad network of health plans, providers, and consumers.

Proposed Measures for Antipsychotic Medication Use

Antipsychotic medication use is an area of interest for measures development given their increased use in children and adolescents and potentially harmful health effects. While these medications offer the potential for effective treatment of psychiatric disorders, they can also increase a child's risk for developing health concerns such as metabolic and physical complications. Working in coordination with MEDNET, another AHRQ-funded effort to promote quality, NCQA developed a set of measures assessing the use of antipsychotic medications in a general population of children as well as those in the foster care system. The measures will be considered for use by state and federal programs.

NCINQ is seeking feedback to assess the measures' importance, usability and understandability. Attached specifications are for state-level reporting using administrative data. Measures assess whether needed follow-up care occurred in children who are taking antipsychotic medications as well as potential overuse of medications, which reflect concerns heard from stakeholders including state Medicaid directors, consumer advocates and families.

Measures to Assess Appropriateness/Overuse of Medications

1. Children on Higher than Recommended Doses of Antipsychotics
2. Use of Antipsychotics in Very Young Children
3. Use of Multiple Concurrent Antipsychotics in Children
4. Use of Antipsychotics in Children without a Primary Indication

Measures to Assess Use of Needed Services Associated with Medication Use

5. Follow-Up Care for Children on Antipsychotics
6. Metabolic Screening for Children on Antipsychotics
7. Access to Psychosocial Care for Children on Antipsychotics

About NCINQ's Measure Development Process

NCINQ employs a multi-step process that includes working with a wide range of stakeholders to prioritize measure topics and define and test measures. NCINQ considers the importance and prevalence of the condition being assessed, whether measures inform access to care or quality improvement efforts, and the feasibility of collecting and reporting the data. NCINQ's stakeholders include patients and families, clinicians, state Medicaid officials, and experts in the field of child health. This process ensures measures are reasonable and important to those using them.

Feedback Needed

While reviewing this measure set, questions to consider include the following.

- Are these measures important to inform state-level quality improvement activities?
- Do these measures address critical concerns for Medicaid and CHIP?
- Do these measures address critical concerns for children in the foster care system?
- Are the measure specifications clear and understandable?
- Is information required to calculate these measures available?
- Do these measures reflect realistic clinical processes and workflow?

Additional questions are listed in the draft specifications document.

Supporting Documents

Draft Specifications, Literature and Guideline Review, Preliminary Performance Results

NCINQ thanks its advisory panels for their input on this work.

Antipsychotic Medication Use in Children and Adolescents Evidence Scan

The purpose of this document is to describe the methods and findings of an evidence scan exploring the viability of measure concepts in the area of Antipsychotic Medication Use.

NCINQ conducted scans on the following measure concepts.

Measures to Assess Appropriateness/Overuse of Medications

1. Children on Higher than Recommended Doses of Antipsychotics
2. Use of Antipsychotics in Very Young Children
3. Use of Multiple Concurrent Antipsychotics in Children
4. Use of Antipsychotics in Children without a Primary Indication

Measures to Assess Use of Needed Services Associated with Medication Use

5. Follow-Up Care for Children on Antipsychotics
6. Metabolic Screening for Children on Antipsychotics
7. Access to Psychosocial Care for Children on Antipsychotics

Importance

Antipsychotic medications offer both the potential for effective treatment for psychiatric disorders in youth and the risk for development of significant health concerns. Three older (typical or conventional) antipsychotics are approved by the Food and Drug Administration (FDA) for treatment of behavioral disorders, hyperactivity with conduct disorder, and Tourette disorder. Four newer, atypical antipsychotics (aripiprazole, olanzapine, risperidone, and quetiapine) have been approved by the FDA for schizophrenia and bipolar I disorder in youth. Risperidone and aripiprazole are also approved for irritability in autism; and paliperidone for schizophrenia in adolescents (Correll et al., 2011). Reviews suggest that antipsychotic medications can be effective treatments for youth with bipolar disorder (Liu et al., 2011), schizophrenia (Armenteros & Davies, 2006), and aggression (Schur et al. 2003). The American Academy of Child and Adolescent Psychiatry (AACAP) recognizes antipsychotics as treatment options in its practice parameters for bipolar disorder (AACAP, 2007), schizophrenia (AACAP, 2001), oppositional defiant disorder (AACAP, 2007), and psychotic depression (AACAP, 2007). One study of privately insured children in the Midwest found that the most common diagnoses for children prescribed atypical antipsychotics were disruptive behavior disorders (67 percent), mood disorders (65 percent), and anxiety disorders (43 percent) (Halloran et al., 2010).

Data show that antipsychotic prescribing for children is increasing. The frequency of prescribing antipsychotics increased almost fivefold between 1996 to 2002, from 8.6 per 1000 children to 39.4 per 1000 (Seida et al., 2012). Data from a national prescription database showed that antipsychotic use among those aged 0-17 increased 51 percent, the largest increase of any age group (Cascade et al., 2006). A review of prescribing patterns in seven state Medicaid programs found that the percentage of youth aged 6-17 filling at least one antipsychotic prescription increased from 2.7 percent in 2001 to 4.2 percent in 2004 (Crystal et al., 2009). A study of 16 state Medicaid programs found that the percentage of enrollees under age 19 on an antipsychotic varied greatly according to eligibility category, ranging from 0.6 percent for state Children's Health Insurance Program (CHIP) enrollees to 13.4 percent for those eligible under Aged, Blind and Disabled provisions; the rate for foster care youth was 12.4 percent (Medicaid Medical Directors Learning Network and Rutgers Center for Education and Research on Mental Health Therapeutics, 2010).

While overall antipsychotic prescribing is increasing, use of atypical antipsychotics also saw dramatic increases in use. Atypical antipsychotics doubled their share of all psychotropic medication prescriptions among privately insured youth between 1997 and 2000, from 2.4 percent of all psychotropic prescriptions to 5.1 percent. Atypical antipsychotics also have the greatest mean prescription cost ($132) of any psychotropic medication (Martin & Leslie, 2003).

Analysis of the National Ambulatory Medical Care Survey found that predictors of antipsychotic use among youth included male sex, public insurance, and a diagnosis of psychosis, tic disorder, or pervasive development disorder or mental retardation (Olfson et al., 2006).

Opportunity for Improvement

The increase in antipsychotic prescribing among youth is associated with the availability of atypical antipsychotic medications, which have different side effect profiles from the conventional antipsychotics (Olfson et al., 2006). Atypical antipsychotics tend to be less sedating and pose a lower risk of movement disorders such as tardive dyskinesia; however these agents are more likely to be associated with metabolic side effects such as weight gain and diabetes (Correll et al., 2009; Toren et al., 2004). In addition to the concerns about side effects associated with antipsychotic medications, there is concern about the increasing use of these agents among young children. A study of youth with private insurance found that almost 25 percent of youth on an atypical antipsychotic were nine years old or younger (Curtis et al., 2005), and a study of preschoolers insured through Medicaid found that 17 percent of those on any psychotropic medication were on an antipsychotic, with 96 percent of those on an atypical antipsychotic (Zito et al., 2007). Studies have also shown that atypical antipsychotics are commonly used for conditions other than those approved by the FDA for children; in 2004, over 70 percent of youth on antipsychotics did not have a diagnosis associated with an approved FDA indication (Crystal et al., 2009). While some evidence supports the efficacy of antipsychotics in youth for certain narrowly defined conditions, less is known about the safety and effectiveness of antipsychotic prescribing patterns in community use (e.g., combinations of medications, off-label prescribing, or dosing outside of recommended ranges).

In the last ten years, the use of psychoactive medication among children and adolescents has increased, especially among those in foster care. According to one study, one in ten school-aged children (ages 6 to 11) and one in six adolescents (ages 12 to 18) were taking antipsychotics by 2007. The study looked at 686,000 foster-care children enrolled in Medicaid from 2002-2007 and saw that both overall psychoactive use and polypharmacy of psychoactive drugs increased from 2002 to 2004 but then declined from 2005 to 2007. However, prescriptions for antipsychotics increased each year from 2002 to 2007 (The Children's Hospital of Philadelphia, 2012).

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Methods

The evidence search focused on antipsychotic use among children and adolescents under the age of 18 years. The search was not restricted by care setting and included all conditions for which an AACAP practice parameter is available (e.g. schizophrenia, bipolar disorder, depression, conduct disorder, etc.).

Guidelines Search

To identify relevant guidelines, we searched primarily the National Guidelines Clearinghouse and Guidelines International Network. Out of scope and duplicate guidelines (e.g., guidelines that were published in multiple journals) were excluded. A summary of the search string for the guidelines search is provided in Table 1.

Table 1. Guideline search criteria

Database	Search string used	Inclusion criteria	Results
National Guidelines Clearinghouse (www.ngc.gov)	1. antipsychotic*: 96 results 2. antipsychotic* AND (youth OR child* OR adolescen*): 62 results, 4 relevant 3. (risperidone or olanzapine or aripiprazole or quetiapine) and (child* or youth or adolescen*): 27 results, none of which reflected guidelines not captured in search #2 above	English language guidelines published within 7 years. If fewer than 3 guidelines that meet this criterion: - English language guidelines from outside the United States - Guidelines published in the last 12 years	Total found: 96 Relevant: 4 Not Relevant:
Guidelines International Network (www.g-i-n.net)	1. antipsychotic*: 4 results, 1 relevant 2. antipsychotic* AND (youth OR child* OR adolescen*): 3 results, 1 relevant but duplicate of guideline identified in search #2 above	English language guidelines published within 7 years. If fewer than 3 guidelines that meet this criterion: - English language guidelines from outside the United States - Guidelines published in the last 12 years	Total found:4 Relevant:1 Not Relevant:

Systematic Review Search

Systematic reviews (including meta-analyses) for concepts with no guidelines with action-oriented statements were sought using PubMed, the Cochrane Database of Systematic Reviews, PsychInfo, and the Agency for Healthcare Research and Quality (AHRQ) Evidence Reports on mental health conditions and substance abuse. Out of scope or duplicate reviews were excluded (e.g., reviews that were published in multiple journals or found in multiple databases). A summary of the search string for the systematic review search is provided in Table 2.

Table 2. Systematic reviews (including meta-analyses) search results

Database	Search string	Inclusion criteria	Results
Pubmed (www.pubmed.gov)	1. (antipsychotic*) AND (youth OR child* OR adolescen*): 6216 results 2. ((antipsychotic) AND (child* or adolescent* OR youth)) AND "systematic review": 106 results, 25 pulled	• English language systematic reviews (including meta-analyses) published within the last 7 years	Total found: 6216 Relevant:13 Not Relevant:
Cochrane Database of Systematic Reviews (www.thecochranelibrary.com)	1. antipsychotic*: 402 results 2. antipsychotic* AND (youth OR child* OR adolescen*): 175 reviews, 4 relevant	• Reviews found by searching reference lists from publications that met inclusion criteria	Total found:402 Relevant:4 Not Relevant:
PsychInfo	antipsychotic AND (child* or youth) AND “systematic review”, Jan 2005 - June 2012: 25 results, all duplicative of searches conducted above		Total found:25 Relevant:0 (duplicates) Not Relevant:

Overall Results

Guidelines Search Results

The National Guideline Clearinghouse identified four practice parameters published by AACAP that reference antipsychotics for youth: obsessive compulsive disorder, bipolar disorder, oppositional defiant disorder, and depressive disorders. A search of the AACAP website yielded two additional practice parameters: schizophrenia (published 2001 and hence not included in the NCG search results) and the use of atypical antipsychotic medications (approved by the AACAP Council but not yet published and therefore not present in the NGC search results). The Guidelines International Network identified one guideline, the AHRQ “Off-label Use of Atypical Antipsychotic Drugs;” however upon review, this document is best characterized as an evidence review rather than a guideline and is not specific to

youth. Based on expert feedback, we also reviewed the Texas Department of Family and Protective Services' Psychotropic Medication Utilization Parameters for Foster Children (2010).

Systematic Review Results

Systematic reviews of antipsychotics published in the U.S. tended to focus on specific medications or disorders (e.g. Armenteros & Davies 2006 [schizophrenia], Chavez et al., 2006 [risperidone for autistic disorders], Liu et al., 2011 [bipolar disorder], Strawn et al., 2010 [PTSD], Stachnik & Nunn-Thompson 2007 [autistic disorder]). A Cochrane Review on antipsychotics for childhood-onset schizophrenia (Kennedy et al., 2007) concluded, "There are few relevant trials and, presently, there is little conclusive evidence regarding the effects of antipsychotic medication for those with early onset schizophrenia. Some benefits were identified in using the atypical antipsychotic clozapine compared with haloperidol but the benefits were offset by an increased risk of serious adverse effects. Larger, more robust, trials are required." We identified two published systematic reviews that address use of antipsychotics in youth more broadly (Jensen et al. 2007; Seida et al., 2012). These reviews focused on the efficacy of antipsychotic treatment. All note that the current body of evidence is "thin," with significant gaps. No reviews spoke to antipsychoitc polypharmacy, dose, or use in preschoolers. The authors of the most recent study (Seida et al., 2012) highlight the importance of studies to evaluate adverse events. Safety issues are also addressed in the Canadian Alliance for Monitoring Effectiveness and Safety of Antipsychotics in Children (CAMESA) recommendations for managing metabolic side effects in youth prescribed atypical antipsychotics (Ho et al., 2011; Pringsheim et al., 2011).

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Measure-Specific Results

In the sections below, we briefly describe each measure concept and the guidelines from our overall search results that apply. We also describe our preliminary conclusions and the implications considered during development.

MEASURE CONCEPT #1: Children on Higher than Recommended Doses of Antipsychotics

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year who received a higher than recommended dose based on Food and Drug Administration recommendations.

Importance

Worrisome adverse effects of atypical (second generation) antipsychotics have been documented even at low doses, including excessive weight gain resulting in obesity, large increases in prolactin, and higher risk of extrapyramidal side effects including tardive dyskinesia. Studies of atypical antipsychotics in youth have demonstrated equal or worsening response when higher doses are compared to lower doses (Haas et al., 2009; Schooler et al, 2005). As of March 1, 2012, 6.91 percent of youth under age 18 years in the New York State Medicaid behavioral health population (defined as at least one behavioral health service, diagnosis, or medication in the index year) on an antipsychotic were prescribed a higher than recommended dose.

Food and Drug Administration (FDA)-recommended doses for youth are available only for certain antipsychotics. Measures developed in New York State for the Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES) used a hierarchically determined maximum recommended dose based on 1) the FDA recommended maximum dose for children and/or adolescents, 2) the maximum dose specified in the Texas Department of Family Services Psychotropic Medication Utilization Parameters for Foster Children, 3) the maximum dose specified in a standard pediatric psychopharmacology textbook, 4) if no maximum recommended doses for children were found in the above sources, the FDA maximum recommended dose for adults was used. Weight-based measures used a standard calculation.

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
American Academy of Child and Adolescent Psychiatry (2011)	Not specified	Children and adolescents	AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents "Dosing of AAAs [atypical antipsychotics] should follow the 'start low and go slow' approach and seek to find the lowest effective dose."	Clinical Guidelines (based on strong empirical evidence and/or strong clinical consensus)
American Academy of Child and Adolescent Psychiatry (2001)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia: "… medication dosage should be periodically reassessed to ensure that the lowest effective dose is being used."	Not specified
TX Dept of Family and Protective Services (2010)	Foster care	Children (no age specified)	Psychotropic Medication Utilization Parameters for Foster Children "Psychotropic medication dose exceeds usual recommended doses" is a situation that "suggests the need for additional review of a patient's clinical status," and specifies recommended doses.	Expert consensus

*Guideline Organization's assessment of evidence specified in guideline

Conclusions

Most guidelines that address dosing of antipsychotics endorse the use of the lowest effective dose. AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents includes a recommendation (#4), "Dosing of AAAs [atypical antipsychotics] should follow the 'start low and go slow' approach and seek to find the lowest effective dose." The AACAP Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia calls for "adequate dosages" of antipsychotic medications and states that "Instituting large dosages during the early part of treatment generally does not hasten recovery … the medication dosage should be periodically reassessed to ensure that the lowest effective dose is being used." The Texas Psychotropic Medication Utilization Parameters for Foster Children includes "psychotropic medication dose exceeds usual recommended doses" as a situation that "suggests the need for additional review of a patient's clinical status" and specifies recommended doses.

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MEASURE CONCEPT #2: Use of Antipsychotics in Very Young Children

Draft Description: Children 5 years of age and younger who are on at least one antipsychotic medication during the measurement year.

Importance

During the past decade, rates of prescription of psychotropic medications to preschool children have risen for both Medicaid and privately insured groups. The rate of antipsychotic use in privately insured preschoolers more than doubled from 1999 to 2007 (Olfsen et al., 2010), and a study of preschoolers insured through Medicaid found that 17 percent of those on any psychotropic medication were on an antipsychotic, with 96 percent of those on an atypical antipsychotic (Zito et al., 2007). As of September 1, 2011, 2.0 percent of youth under age 18 in the New York State Medicaid behavioral health population on an antipsychotic were younger than 6 years old.

The effectiveness, safety, and appropriate dosing of antipsychotics in preschool children remain unknown. Worrisome adverse effects of atypical antipsychotics have been documented even at low doses, including excessive weight gain

resulting in obesity, large increases in prolactin, and higher risk of extrapyramidal side effects including tardive dyskinesia.

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
TX Department of Family and Protective Services (2010)	Foster care	Children (no age specified)	The Psychotropic Medication Utilization Parameters for Foster Children includes the condition, "Psychotropic medications are prescribed for children of very young age [for antipsychotics, less than 4 years of age]" as a situation that "suggests the need for additional review of a patient's clinical status," and specifies recommended doses.	Expert consensus
Preschool Psychopharmacology Working Group (2007)	Not specified	Children younger than 6	"Psychopharmacological intervention for behavior problems without psychotherapy is not recommended."	Not endorsed practice

*Guideline Organization's assessment of evidence specified in guideline

Conclusions

No guidelines provided an unqualified endorsement of the use of antipsychotics in very young children. The Preschool Psychopharmacology Working Group identifies certain antipsychotics as psychopharmacological interventions for specific disorders, including disruptive behaviors, bipolar disorder, and pervasive developmental disorders. However, "psychopharmacological intervention for behavior problems without psychotherapy is not recommended." The Texas Psychotropic Medication Utilization Parameters for Foster Children includes use of antipsychotics among children younger than 4 years of age" as a situation that "suggests the need for additional review of a patient's clinical status."

References

Olfson, M., et al., Trends in antipsychotic drug use by very young, privately insured children. *J Am Acad Child Adolesc Psychiatry* 2010. 49(1): p. 13-23.

Zito, J. M., Safer, D. J., Valluri, S., Gardner, J. F., Korelitz, J. J., & Mattison, D. R. (2007). Psychotherapeutic medication prevalence in medicaid-insured preschoolers. *Journal of Child and Adolescent Psychopharmacology, 17*(2), 195-203. doi:10.1089/cap.2007.0006

MEASURE CONCEPT #3: Use of Multiple Concurrent Antipsychotics in Children

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year who were on two or more concurrent antipsychotic medications for longer than 90 days.

Importance

Although there is little empirical evidence to support its use, the use of multiple concurrent antipsychotics is becoming an increasingly frequent practice in the mental health treatment of youth. One study of a large state Medicaid fee-for-service program found that 7 percent of children age 6-17 on any antipsychotic were prescribed two or more antipsychotics for longer than 60 days (Constantine et al., 2010). As of September 1, 2011, 4.1 percent of youth under age 18 in the New York State Medicaid behavioral health population on any antipsychotic were on two or more antipsychotics for longer than 90 days. Risks of multiple concurrent antipsychotics in comparison to monotherapy have not been systematically investigated; existing evidence appears largely in case reports, and includes increased risk of serious drug interactions, delirium, serious behavioral changes, cardiac arrhythmias, and death (Safer, Zito, & DosReis, 2003).

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
AACAP (2011)	Not specified	Children and adolescents	AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents, Recommendation 8: "The use of multiple AAAs [atypical antipsychotics] has not been studied rigorously and generally should be avoided."	Not endorsed (applied to practices that are known to be ineffective or contraindicated)
TX Dept of Family and Protective Services (2010)	Foster care	Children and adolescents	Psychotropic Medication Utilization Parameters for Foster Children: "two or more concomitant antipsychotic medications" is a situation that "suggests the need for additional review of a patient's clinical status."	Expert consensus

*Guideline Organization's assessment of evidence specified in guideline

Conclusions
None of the 10 AACAP practice parameters recommended concurrent use of multiple antipsychotic medications. The AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents states, "the use of multiple AAAs [atypical antipsychotics] has not been studied rigorously and generally should be avoided." The Texas Psychotropic Medication Utilization Parameters for Foster Children includes "two or more concomitant antipsychotic medications" as a situation that "suggests the need for additional review of a patient's clinical status."

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MEASURE CONCEPT #4: Use of Antipsychotics in Children without a Primary Indication

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year who do not have a primary (first line) indication for antipsychotic use.

Importance
Use of antipsychotics without a FDA indication is increasing, despite increased awareness of significant side effect burden associated with these medications. For instance, one analysis of NYS Medicaid data found that almost half of the individuals on antipsychotics did not have any claim with a diagnosis that included psychotic features or autism in the year prior (Finnerty et al., available upon request).

The use of antipsychotics for conditions without psychosis has limited evidence of effectiveness and is expensive (Alexander et al., 2011). A recent AHRQ Comparative Effectiveness Review update of off-label use of atypical antipsychotics concluded that the evidence of efficacy of atypical antipsychotics for off-label uses was insufficient to reach conclusions about the usefulness of these agents, particularly since there are few studies that detail the adverse side effect burden of atypical antipsychotics among children and adolescents (Magilone et al., 2011).

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
American Academy of Child and Adolescent Psychiatry (2011)	Not specified	Children and adolescents	AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents, Recommendation 2, "When selecting any AAA [atypical antipsychotic] for use in a child or adolescent, the clinical should follow the most current available evidence in the scientific literature, " includes the following statement: "[i]n the absence of specific FDA indications or substantial empirical support for the use of AAAs for other specific problems (e.g. disruptive behavior disorders) in populations of children and adolescents, clinicians should consider other pharmacological or psychosocial treatment modalities with more established efficacy and safety profiles prior to the onset of AAA use."	Clinical standard (based on rigorous empirical evidence and/or overwhelming clinical consensus)
AHRQ	Not specified	General	"The evidence of efficacy of atypical antipsychotics for off-label uses is insufficient to reach conclusions about the usefulness of these agents."	Varied from low to moderate depending on the specific agent and condition

*Guideline Organization's assessment of evidence specified in guideline

Conclusion
There is no consensus about the use of antipsychotics for children without a primary indication in general . To the extent this issue is addressed in guidelines, the focus is on the use of atypical antipsychotics. The AACAP Practice Parameter on the use of atypical antipsychotics encourages clinicians to consider other treatment modalities before initiating these medications in the absence of FDA indication. A review by AHRQ, though not restricted to youth, found that the evidence was insufficient to reach conclusions about the efficacy of atypical antipsychotics for off-label use.

References

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Maglione M, Ruelaz Maher A, Hu J, Wang Z, Shanman R, Shekelle PG, Roth B, Hilton L, Suttorp MJ, Ewing BA, Motala A, Perry T. Off-Label Use of Atypical Antipsychotics: An Update. Comparative Effectiveness Review No. 43. (Prepared by the Southern California Evidence-based Practice Center under Contract No. HHSA290-2007-10062-1.) Rockville, MD: Agency for Healthcare Research and Quality. September 2011. Available at: www.effectivehealthcare.ahrq.gov/reports/final.cfm.

MEASURE CONCEPT #5: Follow-Up Care for Children on Antipsychotics

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year who had at least one follow-up care visit with a prescriber within 30 days of that new prescription.

Importance

Given concerns addressed in other measure concepts regarding dose and metabolic monitoring, the NCINQ Measurement Advisory Panel recommended exploration of an additional measure concept related to care visits for medication management. A national study of privately-insured children found that fewer than 30 percent had a follow-up visit within 30 days following the first prescription of a psychotropic medication (Harpaz-Rotem & Rosenheck, 2006).

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
American Academy of Child and Adolescent Psychiatry (2009)	Not specified	Children and adolescents	Practice Parameter on the Use of Psychotropic Medication in Children and Adolescents, Principle 5, "The prescriber develops a plan to monitor the patient, short and long term," states that "the frequency of visits is determined by the need for dose titration, by the timing of onset of side effects, and to maintain the doctor-family-patient relationship."	Not specified
American Academy of Child and Adolescent Psychiatry (2011)	Not specified	Children and adolescents	AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents, Recommendation 10. "The acute and long-term safety of these medications [atypical antipsychotics] has not been fully evaluated and therefore careful and frequent monitoring of side effects should be performed."	Clinical guideline (based on strong empirical evidence and/or strong clinical consensus)
American Academy of Child and Adolescent Psychiatry (2001)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia: "During the acute psychotic phase, either frequent outpatient visits or hospitalization is needed … Once the patient is stabilized, the monitoring should first occur at least weekly … with the frequency then decreasing as clinically indicated."	Not specified
TX Department of Family and Protective Services (2010)	Foster care	Children (no age specified)	General Principles section includes the statement, "The frequency of clinician follow-up with the patient should be appropriate for the severity of the child's condition and adequate to monitor response to treatment including: symptoms, behavior, function, and potential medication side effects."	Not specified

*Guideline organization's assessment of evidence specified in guideline

Conclusions

Although there is no consensus in the literature on the appropriate number or time period for follow-up visits for youth prescribed antipsychotic medication, several published guidelines for youth mention the importance of monitoring for side effects, which suggests the need for follow-up care visits. The HEDIS measure of follow-up care for children prescribed ADHD medication has served as a model for children prescribed antipsychotics.

References

Gleason M, Egger H, Emslie G, Greenhill L, Kowatch R, Lieberman A, et al. (2007) Psychopharmacological treatment for very young children: Contexts and guidelines. *J Am Acad ChildAdolesc Psychiatry, 46,* 1532-1572.

Harris E, Sorbero M, Kogan JN, Schuster J, Stein BD. (2012) Concurrent mental health therapy among Medicaid-enrolled youths starting antipsychotic medications. *Psychiatr Serv* 63, 351-6. doi: 10.1176/appi.ps.201100329.

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Schimmelman B, Schmidt S, Carbon M, and Correll C. (2013). Treatment of adolescents with early-onset schizophrenia spectrum disorders: In search of a rational, evidence-informed approach. *Curr Opin Psychiatry, 26,* 219-230.

MEASURE CONCEPT #6: Metabolic Screening for Children on Antipsychotics

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year who had metabolic screening documented, including testing for blood glucose and cholesterol.

Importance

Increasing concerns regarding obesity and diabetes emergence in younger populations (Eisenmann, 2003) are heightened for youth prescribed antipsychotic medications due to adverse metabolic and other physical effects (Pringsheim et al., 2011). A multi-year study of youth enrolled in three health maintenance organizations found that exposure to atypical antipsychotics was associated with a fourfold risk of diabetes in the following year, compared to children not prescribed psychotropic medication (Andrade et al., 2011).

Despite these concerns, a study of Medicaid-enrolled children in three states found that only 31 percent of youth starting an atypical antipsychotic received a glucose test (Morrato et al., 2010). Monitoring of metabolic indices is important to ensure appropriate management of side effect risk, especially in children and adolescents.

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
The Canadian Alliance for Monitoring Safety and Effectiveness of Antipsychotics in Children (2011)	Not specified	Children	Guidelines for metabolic and neurological monitoring of children prescribed atypical antipsychotics.	Varies from low to strong depending on specific monitoring test.
Treatment Recommendations for the Use Antipsychotics for Aggression in Youth (TRAAY) Part II (2003)	Not specified	Children and adolescents	Recommendation 9: "Assess side effects routinely and systematically."	Not specified
American Academy of Child and Adolescent Psychiatry (2009)	Not specified	Children and adolescents	Practice Parameter on the Use of Psychotropic Medication in Children and Adolescents, Principle 5, "The prescriber develops a plan to monitor the patient, short and long term."	Not specified
American Academy of Child and Adolescent Psychiatry (2011)	Not specified	Children and adolescents	AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents, Recommendation 12. "Careful attention should be given to the increased risk of developing diabetes with the use of AAA [atypical antipsychotics], and blood glucose levels and other parameters should be obtained at baseline and monitored at regular intervals."	Clinical Standard (based on rigorous empirical evidence and/or overwhelming clinical consensus)
American Academy of Child and Adolescent Psychiatry (2001)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia The use of antipsychotics requires … documentation of any required baseline and follow-up laboratory monitoring, depending on the agent used."	Minimal Standard (based on substantial empirical evidence or overwhelming clinical consensus and expected to apply more than 95 percent of the time)

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
American Academy of Child and Adolescent Psychiatry (2007)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Bipolar Disorder, Recommendation 8: "Psychopharmacological interventions require baseline and follow-up symptom, side effect ...and laboratory monitoring as indicated."	Minimal Standard (based on substantial empirical evidence or overwhelming clinical consensus and expected to apply more than 95 percent of the time)
TX Department of Family and Protective Services (2010)	Foster care	Children (no age specified)	General Principles section includes the statement, "Appropriate monitoring of indices such as height, weight, blood pressure, or other laboratory findings should be documented."	Not specified

*Guideline organization's assessment of evidence specified in guideline

Conclusions

Several AACAP practice parameters (including for treatment of schizophrenia and for the use of psychotropic medication) as well as the TRAAY guidelines recommend careful monitoring of side effects. The Canadian Alliance for Monitoring Safety and Effectiveness of Antipsychotics in Children recently published evidence-based guidelines for metabolic and neurological monitoring of children prescribed atypical antipsychotics. 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.

References

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Eisenmann JC. Secular trends in variables associated with the metabolic syndrome of North American children and adolescents: a review and synthesis. *Am J Hum Biol*. 2003 Nov-Dec;15(6):786-94. Review. PubMed PMID: 14595870.

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Pringsheim T, Lam D, Ching H, Patten S. Metabolic and neurological complications of second-generation antipsychotic use in children: a systematic review and meta-analysis of randomized controlled trials. *Drug Saf*. 2011 Aug 1;34(8):651-68. doi: 10.2165/11592020-000000000-00000. Review. PubMed PMID: 21751826.

MEASURE CONCEPT #7: Access to Psychosocial Care for Children on Antipsychotics

Draft Description: Children and adolescents 20 years of age and younger on any antipsychotic medication during the measurement year with documentation of receiving any psychosocial care.

Importance

There is evidence for the efficacy of psychosocial interventions for youth with certain conditions who are frequently prescribed antipsychotics, including ADHD (e.g. Jensen et al., 2001) and early-onset schizophrenia (Schimmelman et al., 2013). However, research suggests that mental health services such as therapy are decreasing among youth, even as use of antipsychotic medications is increasing (Olfson et al., 2010). One study of Medicaid-enrolled children starting an antipsychotic medication found that almost one-third did not receive concurrent psychosocial therapy (Harris et al., 2012).

Current standards of care for several psychiatric conditions recommend the use of psychosocial interventions prior to or concurrent with pharmacological treatments. Monitoring the use of psychosocial interventions for youth prescribed antipsychotics may provide important information about access to evidence-based care for children and families.

Guidelines Found

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
Treatment Recommendations for the Use Antipsychotics for Aggression in Youth (TRAAY) Part II (2003)	Not specified	Children and adolescents	Recommendation 3: "Begin With Psychosocial and Educational Treatment: Structured psychosocial and educational interventions should be the first line of treatment and should be continued even if subsequently medications are initiated to manage aggression."	Not specified

Organization (Year)	Care Setting	Relevant Population	Recommendation	Grade*
American Academy of Child and Adolescent Psychiatry (2001)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Schizophrenia: "Adequate treatment requires the combination of psychopharmacological agents plus psychosocial interventions."	Minimal Standard (based on substantial empirical evidence or overwhelming clinical consensus and expected to apply more than 95 percent of the time)
American Academy of Child and Adolescent Psychiatry (2007)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Bipolar Disorder, Recommendation 10: "Psychotherapeutic interventions are an important component of a comprehensive treatment plan for early-onset bipolar disorder."	Minimal Standard (based on substantial empirical evidence or overwhelming clinical consensus and expected to apply more than 95 percent of the time)
American Academy of Child and Adolescent Psychiatry (2007)	Not specified	Children and adolescents	Practice Parameter for the Assessment and Treatment of Children and Adolescents with Oppositional Defiant Disorder, Recommendation 9: "Medications may be helpful as adjuncts to treatment packages, for symptomatic treatment and to treat comorbid conditions." Specifically states that medications should not be the only intervention for ODD.	Clinical Guideline (based on empirical evidence and/or strong clinical consensus and expected to apply more than 75 percent of the time)
TX Department of Family and Protective Services (2010)	Foster care	Children (no age specified)	General Principles section includes the statement, "The role of non-pharmacological interventions should be considered before beginning a psychotropic medication, except in urgent situations … when there is marked disturbance of psychophysiological functioning … or when the child shows marked anxiety, isolation, or withdrawal."	Not specified

*Guideline organization's assessment of evidence specified in guideline

Conclusions

Many guidelines endorse the use of psychosocial interventions for certain conditions prior to or concurrent with medications. American Academy of Child and Adolescent Psychiatry Practice Parameters for schizophrenia, bipolar disorder, and oppositional defiant disorder emphasize the importance of psychosocial interventions, as do the Treatment Recommendations for Aggression in Youth (Pappadopulos et al., 2003). One guideline for pharmacological treatments for very young children recommended that psychotherapy should generally be tried before medication, and should continue if pharmacological therapy is initiated (Gleason et al., 2007).

References

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Schimmelman B, Schmidt S, Carbon M, and Correll C. (2013). Treatment of adolescents with early-onset schizophrenia spectrum disorders: In search of a rational, evidence-informed approach. *Curr Opin Psychiatry, 26,* 219-230.

Summary of Measure Concept Evidence Scan Results

Potential Measure Concept	*Final Outcome of Algorithm	Summary
Children on Higher than Recommended Doses of Antipsychotics	Supported by guideline or systematic review	The AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents includes a recommendation (#4), "Dosing of AAAs [atypical antipsychotics] should follow the 'start low and go slow' approach and seek to find the lowest effective dose." The Texas Psychotropic Medication Utilization Parameters for Foster Children includes "psychotropic medication dose exceeds usual recommended doses" as a situation that "suggests the need for additional review of a patient's clinical status," and specifies recommended doses.
Use of Antipsychotic Medication in Very Young Children	Supported by guideline or systematic review	The Texas Psychotropic Medication Utilization Parameters for Foster Children states that prescription of antipsychotics to children younger than four "suggests the need for additional review of a patient's clinical status." The Preschool Psychopharmacology Working Group states "psychopharmacological intervention for behavior problems without psychotherapy is not recommended."
Use of Multiple Concurrent Antipsychotics in Children	Supported by guideline or systematic review	The AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents includes a recommendation (#8), "the use of multiple AAAs [atypical antipsychotics] has not been studied rigorously and generally should be avoided." The Texas Psychotropic Medication Utilization Parameters for Foster Children includes "two or more concomitant antipsychotic medications" as a situation that "suggests the need for additional review of a patient's clinical status."
Use of Antipsychotics in Children without a Primary Indication	Not supported by guideline or systematic review	An AHRQ review of the efficacy and comparative effectiveness of off-label use of atypical antipsychotics found "there is insufficient high-grade evidence to reach conclusions about the efficacy of atypical antipsychotic medications for any of the off-label indications." The AACAP Practice Parameters for the Use of Atypical Antipsychotic Medications in Children and Adolescents recommends that "[i]n the absence of specific FDA indications or substantial empirical support for the use of AAAs for other specific problems (e.g. disruptive behavior disorders) in populations of children and adolescents, clinicians should consider other pharmacological or psychosocial treatment modalities with more established efficacy and safety profiles prior to the onset of AAA use."
Follow-Up Care for Children on Antipsychotics	Supported by guideline or systematic review	Several AACAP practice parameters (including for treatment of schizophrenia, and the use of psychotropic medication and atypical antipsychotics) emphasize the importance of regular monitoring.
Metabolic Screening for Children on Antipsychotics	Supported by guideline or systematic review	Several AACAP practice parameters (including for treatment of schizophrenia and bipolar disorder, and for the use of psychotropic medication and atypical antipsychotics) recommend careful monitoring of side effects. The Canadian Alliance for Monitoring Safety and Effectiveness of Antipsychotics in Children recently published evidence-based guidelines for metabolic and neurological monitoring of children prescribed atypical antipsychotics.
Access to Psychosocial Care for Children on Antipsychotics	Supported by guideline or systematic review	Several AACAP practice parameters (including for treatment of schizophrenia, bipolar disorder, and oppositional defiant disorder) recommend the use of psychosocial interventions prior to or concurrent with medication treatment. The Preschool Psychopharmacology Working Group guidelines state that "psychopharmacological intervention for behavior problems without psychotherapy is not recommended." Both the Texas Psychotropic Medication Utilization Parameters for Foster Children and the Treatment Recommendations for Use of Antipsychotics in Youth (TRAAY) recommend starting psychotherapy prior to medication as a general rule.

National Collaborative for Innovation in Quality Measurement

Antipsychotic Medication Use in Children and Adolescents Measure Suite

State-Level Specifications Undergoing Testing

This suite contains the following measures for children and adolescents

Measures to Assess Appropriateness/Overuse of Medications

1. Children on Higher than Recommended Doses of Antipsychotics
2. Use of Antipsychotics in Very Young Children
3. Use of Multiple Concurrent Antipsychotics in Children
4. Use of Antipsychotics in Children without a Primary Indication

Measures to Assess Use of Needed Services Associated with Medication Use

5. Follow-Up Care for Children on Antipsychotics
6. Metabolic Screening for Children on Antipsychotics
7. Access to Psychosocial Care for Children on Antipsychotics

Questions for Commenters
NCINQ welcomes all comments on these draft specifications. For this process, commenters can comment on each individual measure.

In addition to comments on individual measures, we are seeking input on three global issues that would affect the measure set. Commenters can respond directly to these issues by selecting the relevant **"*Question*:"** items listed within the drop-down list of measure names.

Question 1. Eligibility
- We have specified a continuous eligibility requirement of three months but seek feedback on a continuous eligibility requirement of three months, twelve months or none.
- Medication related measures can be calculated without eligibility criteria - should this approach be used to be as inclusive as possible?

Question 2. Definition of antipsychotic medication use
- Options include basing denominator eligibility on the presence of at least one antipsychotic prescription OR a certain number of prescriptions during a period of time (e.g., at least two antipsychotic prescriptions within a 90 day period).

Question 3. Foster Care Population
- For example, should a different continuous eligibility requirement be used for children in foster care?
- Are there are other relevant issues that justify specifying the measures differently?

1. Children on Higher Than Recommended Doses of Antipsychotics

Rationale for Measure
Antipsychotic medications can cause serious adverse effects even at low doses and there is little evidence that the use of higher doses improves outcomes.

Measure Description
The percentage of children 0 to 20 years of age on any antipsychotic medication during the measurement year who received a higher than recommended dose of an antipsychotic medication.

Note: *While a rate of zero is not expected for this measure, a lower rate indicates better performance.*

Denominator
Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1)

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator
Those on a higher than recommended dose of an antipsychotic medication during the measurement year

Note: *Higher than recommended doses were identified for each antipsychotic based on 1) Food and Drug Administration maximum dose for the pediatric populations, 2) the maximum dose specified in the Texas Department of Family Services Psychotropic Medication Utilization Parameters for Foster Children, 3) the maximum dose specified in a standard pediatric psychopharmacology textbook, 4) if no maximum recommended doses for children were found in the above sources, the FDA maximum recommended dose for adults was used.*

Exclusions
None

2. Use of Antipsychotic Medication in Very Young Children

Rationale for Measure
Although certain antipsychotic medications have been identified as appropriate treatment for specific disorders in a younger population, the effectiveness, safety and appropriate dosing of antipsychotics in preschool aged children remain unknown, and guidelines discourage use.

Measure Description
The percentage of children 0 to 5 years of age who are on one or more antipsychotic medication during the measurement year.

Note: *While a rate of zero is not expected for this measure, a lower rate indicates better performance.*

Denominator
Ages 0 to < 6 years as of December 31 of the measurement year

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator
Those on any antipsychotic medication (Table 1) during the measurement year

Exclusions
None

3. Use of Multiple Concurrent Antipsychotics in Children

Rationale for Measure
Use of several antipsychotics at the same time is becoming more frequent in the mental health treatment of children and adolescents. However, there are clinical and safety concerns around this practice.

Measure Description
The percentage of children 0 to 20 years of age on any antipsychotic medication for longer than 90 days during the measurement year who were on two or more concurrent antipsychotic medications for longer than 90 days.

Note: *While a rate of zero is not expected for this measure, a lower rate indicates better performance.*

Denominator
Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1) for a period longer than 90 days

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator
Those on two or more concurrent antipsychotic medications (Table 1) for a period longer than 90 days during the measurement year

Exclusions
None

4. Use of Antipsychotics in Children without a Primary Indication

Rationale for Measure

The use of antipsychotic medications without a first-line indication (e.g., without psychosis, bipolar disorder, tic disorders) is increasing, despite increased awareness of the side effects associated with these medications.

Measure Description

The percentage of children 0 to 20 years of age on any antipsychotic during the measurement year who do not have a primary (first line) indication for antipsychotic use.

Note: *While a rate of zero is not expected for this measure, a lower rate indicates better performance.*

Denominator

Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1)

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator

Those without a primary (first-line) indication (Table 2) for an antipsychotic medication

Exclusions

None

5. Follow-Up Care for Children on Antipsychotics

Rationale for Measure
Given how little is known about the safety and effectiveness of antipsychotic medication use in children and adolescents, it's important they receive follow-up care to monitor them while on antipsychotics.

Measure Description
The percentage of children 0 to 20 years of age with a newly prescribed antipsychotic during the measurement year who had at least one follow-up care visit with a prescriber within 30 days of that new prescription.

Denominator
Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1)

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator
Those who have had at least one follow-up care visit with a prescriber (Table 3) within 30 days of a new prescription of an antipsychotic

Exclusions
None

6. Metabolic Screening for Children on Antipsychotics

Rationale for Measure
Increasing concerns regarding obesity and diabetes emergence in younger populations are heightened for children and adolescents prescribed antipsychotic medications due to adverse metabolic and other physical effects.

Measure Description
The percentage of children 0 to 20 years of age on any antipsychotic who had metabolic screening documented during the measurement year.

Denominator
Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1)

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical and Pharmacy

Numerator 1
Those who had at least one test for blood glucose [HbA1c test for children with diabetes (Table 4) and either HbA1c or blood glucose for children without diabetes] (Table 5) during the measurement year

Numerator 2
Those who had at least one cholesterol test (Table 6) during the measurement year

Numerator 3
Those who had both a test for blood glucose (Table 5) and cholesterol (Table 6) during the measurement year

Exclusions
None

7. Access to Psychosocial Care for Children on Antipsychotics

Rationale for Measure

Non-pharmacological treatment options, including psychosocial intervention, are an important part of treating children and adolescents with psychiatric disorders, even in cases where medication is the first-line strategy.

Measure Description

The percentage of children 0 to 20 years of age on any antipsychotic with documentation of receiving any psychosocial care during the measurement year.

Denominator

Ages 0 to < 21 years as of December 31 of the measurement year

AND

On any antipsychotics medication (Table 1)

AND

Continuously enrolled for at least 3 months

AND

Benefits: Medical, Pharmacy, and Behavioral Health

Numerator

Those who have documentation of receiving any psychosocial care (Table 7) during the measurement year

Exclusions

None

APPENDIX

Table 1. Antipsychotic Medications

Any 1st Generation Antipsychotic Medications
chlorpromazine hcl
fluphenazine hcl
fluphenazine decanoate
fluphenazine enanthate
haloperidol
haloperidol decanoate
haloperidol lactate
loxapine hcl
loxapine succinate
molindone hcl
perphenazine
pimozide
promazine hcl
thioridazine hcl
thiothixene
thiothixene hcl
trifluoperazine hcl
triflupromazine hcl
Any 2nd Generation Antipsychotic Medications
aripiprazole
clozapine
iloperidone
olanzapine
olanzapine pamoate
paliperidone
paliperidone palmitate
quetiapine fumarate
risperidone
risperidone microspheres
ziprasidone hcl
ziprasidone mesylate
Combinations
Olanzapine-fluoxetine hcl (Symbyax)
Perphenazine-amitriptyline hcl (Etrafon, Triavil (various))

Table 2. Codes to Identify Primary Indication for Antipsychotic Medication Use

Diagnostic Cluster	ICD-9 CM	Code Description
Schizophrenia Spectrum	295.xx	Schizophrenia
	297.xx	Delusional disorders
	298.xx	Other nonorganic psychoses
Bipolar Disorders (excludes cyclothymia)	296.0x	Manic disorder, single episode
	296.1x	Manic disorder, recurrent episode
	296.4x	Bipolar affective disorder, manic
	296.5x	Bipolar affective disorder, depressed
	296.6x	Bipolar affective disorder, mixed
	296.7x	Bipolar affective disorder, unspecified
	296.8x	Manic-depressive psychosis, other and unspecified
	295.xx	Manic disorder, single episode
	297.xx	Manic disorder, recurrent episode
	298.xx	Bipolar affective disorder, manic
Autism & Pervasive Developmental Disorders (PDD)	299.0-299.01	Autistic disorder
	299.1-299.11	Disintegrative Disorder
	299.8-299.81	Asperger's
	299.9-299.91	Unspecified Childhood Psychosis
Tic Disorders	3072	Tics
	30720	Tic Disorder, Unspecified
	30721	Transient Tic Disorder
	30722	Chronic Motor Or Vocal Tic Disorder
	30723	Tourette's Disorder
Depressive Disorders with Psychotic Symptoms	296.24	Major depressive disorder, single episode, severe with psychotic features
	296.34	Major depressive disorder, recurrent, severe with psychotic features

Table 3. Codes to Identify Follow-Up Visits

CPT Code	HCPCS Code	UB Revenue Code	
90804-90815, 96150-96154, 98960-98962, 99078, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99383, 99384, 99393, 99394, 99401-99404, 99411, 99412, 99510	G0155, G0176, G0177, G0409-G0411, H0002, H0004, H0031, H0034-H0037, H0039, H0040, H2000, H2001, H2010-H2020, M0064, S0201, S9480, S9484, S9485	0510, 0513, 0515-0517, 0519-0523, 0526-0529, 0900, 0902-0905, 0907, 0911-0917, 0919, 0982, 0983	
CPT Code		POS Code	
90801, 90802, 90816-90819, 90821-90824, 90826-90829, 90845, 90847, 90849, 90853, 90857, 90862, 90875, 90876		WITH	03, 05, 07, 09, 11, 12, 13, 14, 15, 20, 22, 33, 49, 50, 52, 53, 71, 72
99221-99223, 99231-99233, 99238, 99239, 99251-99255		With	52, 53

Table 4. Codes to Identify Diabetes

ICD-9-CM Diagnosis
250, 357.2, 362.0, 366.41, 648.0

Table 5. Glucose Laboratory Screening Tests Codes

CPT Code	Code Description
80047	From SSD HEDIS Measure
80048	Basic metabolic panel
80050	General health panel
80053	Comprehensive metabolic panel

80069	From SSD HEDIS Measure
82947	Glucose; quantitative, blood (except reagent strip)
82948	Glucose; quantitative, blood (reagent strip)
82950	Glucose; post glucose dose (includes glucose)
82951	Glucose; tolerance test (GTT), three specimens (includes glucose)
83036	Glycohemoglobin (A1c)
3044F	Most Recent Hemoglobin A1C (HbA1C) Level 7.0% (Dm)2,4
3046F	Most Recent Hemoglobin A1C Level > 9.0% (Dm)
3045F	Most Recent Hemoglobin A1C (HbA1C) Level 7.0 - 9.0 % (Dm)2,4

Table 6. Lipid Laboratory Screening Tests Codes

CPT Code	Code Description
80061	Lipid panel
82465	Cholesterol, serum or whole blood, total
83700	Lipoprotein, blood; electrophoretic separation and quantitation (form. 83715)
83701	Lipoprotein, blood; high resolution fractionation... (form. 83716)
83704	Lipoprotein, blood; quantitation of lipoprotein particle numbers and lipoprotein particle subclasses (e.g., by nuclear magnetic resonance spectroscopy)
83715	Lipoprotein, blood; electrophoretic separation and quantitation
83716	Lipoprotein, blood; high resolution fractionation...
83721	Lipoprotein, direct measurement, LDL cholesterol
84478	Triglycerides
3048F	Most Recent Ldl-C 100 Mg/Dl (Dm)
3049F	Most Recent Ldl-C 100-129 Mg/Dl (Dm)
3050F	Most Recent Ldl-C Greater Than Or Equal To 130 Mg/Dl (Dm)4

Table 7. Psychosocial Care Services

CPT Code	Code Description
90801	Psychiatric Diagnostic Interview Examination
90802	Interactive Psychiatric Diagnostic Interview Examination
90804	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 20-30 min.
90805	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 20-30 min. (w/eval. and mgmt.)
90806	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 45-50 min.
90807	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 45-50 min. (w/eval. and mgmt.)
90808	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 75-80 min.
90809	Office/OP Insight, Beh. Mod., or Supportive Psychotherapy, 75-80 min. (w/eval. and mgmt.)
90810	Office/OP Interactive Psychotherapy, 20-30 min.
90811	Office/OP Interactive Psychotherapy, 20-30 min. (w/eval. and mgmt.)
90812	Office/OP Interactive Psychotherapy, 45-50 min.
90813	Office/OP Interactive Psychotherapy, 45-50 min. (w/eval. and mgmt.)
90814	Office/OP Interactive Psychotherapy, 75-80 min.
90815	Office/OP Interactive Psychotherapy, 75-80 min. (w/eval. and mgmt.)
90816	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 20-30 min.
90817	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 20-30 min. (w/eval. and mgmt.)
90818	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 45-50 min.
90819	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 45-50 min. (w/eval. and mgmt.)
90821	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 75-80 min.
90822	IP, Partial Hosp. or Res. Insight, Beh. Mod., or Supportive Psychotherapy, 45-50 min. (w/eval. and mgmt.)
90823	IP, Partial Hosp. or Res. Interactive Psychotherapy, 20-30 min.

90824	IP, Partial Hosp. or Res. Interactive Psychotherapy, 20-30 min. (w/eval. and mgmt.)
90826	IP, Partial Hosp. or Res. Interactive Psychotherapy, 45-50 min.
90827	IP, Partial Hosp. or Res. Interactive Psychotherapy, 45-50 min. (w/eval. and mgmt.)
90828	IP, Partial Hosp. or Res. Interactive Psychotherapy, 75-80 min.
90829	IP, Partial Hosp. or Res. Interactive Psychotherapy, 75-80 min. (w/eval. and mgmt.)
90845	Other Psychotherapy, Psychoanalysis
90846	Other Psychotherapy, Family Psychotherapy (wo/patient present)
90847	Other Psychotherapy, Family Psychotherapy (w/patient present)
90849	Other Psychotherapy, Multiple-family Group Psychotherapy
90853	Other Psychotherapy, Group Psychotherapy (other than multiple family-group)
90857	Other Psychotherapy, Interactive Group Psychotherapy
90862	Other Services, Pharmacological Management
90875	Individual Psychophysiological Psychotherapy, 20-30 min.
90876	Individual Psychophysiological Psychotherapy, 45-50 min.
90880	Hypnotherapy
90882	Environ. Intervention for Medical Mgmt. Purposes
HCPCS Code	Code Description
H0031	Mental Health Assessment, By Non-Physician
H2000	Comprehensive Multidisciplinary Evaluation
H2017	Psychosocial Rehabilitation Services, Per 15 Minutes
H2018	Psychosocial Rehabilitation Services, Per Diem
H2019	Therapeutic Behavioral Services, Per 15 Minutes
H2020	Therapeutic Behavioral Services, Per Diem
H0032	Mental Health Service Plan Development By Non-Physician
H0033	Oral Medication Administration, Direct Observation
H0034	Medication Training and Support, Per 15 Minutes
H0035	Mental Health Partial Hospitalization, Treatment, Less Than 24 Hours
H0036	Community Psychiatric Supportive Treatment, Face-To-Face, Per 15 Minutes
H0037	Community Psychiatric Supportive Treatment Program, Per Diem
H0038	Self-Help/Peer Services, Per 15 Minutes
H0039	Assertive Community Treatment, Face-To-Face, Per 15 Minutes
H0040	Assertive Community Treatment Program, Per Diem
H0045	Respite Care Services, Not In Home, Per Diem
H0046	Mental Health Services, Not Otherwise Specified
H2001	Rehabilitation Program, Per 1/2 Day
H2010	Comprehensive Medication Services, Per 15 Minutes
H2011	Crisis Intervention Service, Per 15 Minutes
H2012	Behavioral Health Day Treatment, Per Hour
H2013	Psychiatric Health Facility Service, Per Diem

NCINQ

Proposed Measures for Antipsychotic Medication Use in Children and Adolescents
Preliminary Results: Aggregate Performance and State Level Perfomance Distribution for 11 States
Medicaid Analytic Extract files, 2008

4/30/13 (10:15AM): Corrected Preliminary Results Updated

Measure		Overall Performance			Distribution Across States (N=11 states)					
		Percent	Numerator	Denominator	Min	25th	Median	Mean	75th	Max
Measures to Assess Appropriateness/Overuse of Medications *While a rate of zero is not expected for these measures, a lower rate indicates better performance*										
Children on Higher than Recommended Doses of Antipsychotics		10.72%	20,847	194,464	6.40%	8.60%	9.40%	10.40%	10.90%	21.60%
Use of Antipsychotics in Very Young Children		0.01%	5,962	4,169,509	0.05%	0.12%	0.16%	0.20%	0.33%	0.34%
Use of Multiple Concurrent Antipsychotics in Children		6.60%	8,364	126,018	2.85%	3.72%	6.55%	6.00%	7.69%	9.44%
Use of Antipsychotics in Children without a Primary Indication		53.73%	104,487	194,464	44.70%	50.70%	52.30%	52.60%	56.40%	61.90%
Measures to Assess Use of Needed Services Associated with Medication Use *Higher rates indicate better performance*										
Metabolic Screening for Children on Antipsychotics (Three Rates)	Glucose Only	34.28%	66,654	194,464	11.80%	29.60%	36.80%	33.10%	38.00%	42.10%
	Lipids Only	18.94%	36,840	194,464	7.30%	13.30%	17.90%	18.20%	19.30%	33.80%
	Both Glucose and Lipids	17.46%	33,955	194,464	3.90%	12.60%	17.00%	16.40%	17.80%	32.70%
Access to Psychosocial Care for Children on Antipsychotics*		71.89%	86,528	120,367	68.30%	69.70%	72.20%	73.30%	76.80%	81.30%
Follow-Up Care for Children on Antipsychotics		53.50%	29,228	54,681	22.10%	57.70%	69.00%	62.70%	74.20%	80.00%

The Access to Psychosocial Care for Children on Antipsychotics measure excludes two states with carved out MH services.