ANTIPSYCHOTIC QUALITY MEASURES: METABOLIC MONITORING IN CHILDREN TAKING ANTIPSYCHOTICS

BACKGROUND

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 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.

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.

Importance

Increasing concerns regarding obesity and diabetes emergence in younger populations[1] are heightened for youth prescribed antipsychotic medications due to adverse metabolic and other physical effects[2] 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[3].

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[4]. Monitoring of metabolic indices is important to ensure the appropriate management of side effect risk, especially in children and adolescents.

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[1] 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.

[2] 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.

[3] Andrade S, Lo J, Roblin D, Fouyazi H, Connor D, Penfold R, Chandra M, Reed G, Gurwitz J. (2011) antipsychotic medication use antipsychotic medication use among children and risk of diabestes mellitus. Pediatrics, 128, 1135-1141.

[4] Morrato E, Nicol G, Maahs D, Druss B, Hartung D, Valuck R et al. (2010). Metabolic screening in children receiving antipsychotic drug treatment. Arch Pediatr Adolesc Med, 164, 344-351.

Several AACAP practice parameters (including for treatment of schizophrenia and for the use of psychotropic medication) as well as the TRAAY guidelines (Treatment Recommendations for the Use Antipsychotics for Aggression in Youth, Part II, 2003) 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, the monitoring of metabolic indices is important to ensure appropriate management of side effect risk, especially in children and adolescents.

Previous studies have shown that children prescribed antipsychotic medications have a higher risk of diabetes compared to children not prescribed these medicines. Monitoring of metabolic indices such as glucose level and cholesterol level is important to ensure the appropriate management of risk of side effects in the children and adolescents who are prescribed antipsychotic medicines. The current report focuses on the National Collaborative for Innovation in Quality Measurement (NCINQ) measure - metabolic screening for children on antipsychotics.

METHODS

A retrospective analysis was conducted using Mississippi Medicaid medical and pharmacy claims data and beneficiary eligibility data for July 2013 through June 2014. Both fee-for-service (FFS) and managed care claims are used for the analysis. MS-DUR used the measure specifications provided by NCINQ in their April 2013 call for public feedback on proposed measures. This measure addresses "the percentage of children 0 to 20 years of age on any antipsychotic who had metabolic screening documented during the measurement year". Quality measures like this one are reported as percentages. In this case, higher numbers are better.

Denominator: The denominator contains beneficiaries between ages 0 and 21 as of June 30 2014, who were continuously enrolled for at least 3 months with medical and pharmacy benefits and were on any antipsychotic medication (Appendix Table 1).

The recommended measure included three numerators.

Numerator 1: Children and adolescents who had at least one test for blood glucose during measurement year (HbA1c test for children with diabetes and either HbA1c or blood glucose for children without diabetes) (Procedure codes listed in Appendix Table 2).

Numerator 2: Children and adolescents who had at least one cholesterol test during the measurement year (Procedure codes listed in Appendix Table 3).

Numerator 3: Children and adolescents who had both a test for blood glucose and cholesterol during the measurement year.

RESULTS

The percentage of children and adolescents enrolled in Medicaid taking antipsychotic medications who had at least one claim for a blood glucose and/or cholesterol tests are shown in Table 1.

Table 1: Metabolic Monitoring in Children Taking Antipsychotics		
	Total Number of Beneficiaries (N= 8,912)	
	No of Beneficiaries	Percentage of Beneficiaries
Blood glucose test	2669	29.9%
Cholesterol test	1261	14.1%
Both tests	1162	13.0%

In the NCINQ call for comments, they presented preliminary results for the proposed quality measures based on performance for 11 states using the Medicaid Analytic Extract files from 2008. Their preliminary results for the metabolic monitoring measure are reported in Table 2. Based on the rates provided by NCINQ, The Mississippi Medicaid program is currently performing just above the 25th percentile on this quality measure.

Table 2: Preliminary Results From NCINQ Analysis of 11 State Medicaid Programs (2008 data)							
		Distribution Across 11 States					
Measure	Overall Performance	Minimum	25th Percentile	Median	Mean	75th Percentile	Max
Blood glucose test	34.3%	11.8%	29.6%	36.8%	33.1%	38.0%	42.1%
Cholesterol test	18.9%	7.3%	13.3%	17.9%	18.2%	19.3%	33.8%
Both tests	17.5%	3.9%	12.6%	17.0%	16.4%	17.8%	32.7%

Table 3 shows performance rates on the three metabolic monitoring measures by health plan (Mississippi Medicaid fee-for-service (FFS), United Health Care (UHC), and Magnolia). The performance rates on the three measures does not meaningfully differ across the three plans in the Mississippi Medicaid program. This indicates that our current level of performance is primarily a factor of how practitioners in the state manage these patients.

Table 3 : Percent of Children Taking Antipsychotics Receiving Metabolic Monitoring By Health Plan								
	FFS (Denominator = 6,163)		**UHC (Denominator = 1,101)**			**Magnolia (Denominator = 1,648)**		
Measure	Beneficiaries Having Test		Beneficiaries Having Test			Beneficiaries Having Test		
Blood glucose test	1,867	30.3%	311	28.3%		491	29.8%	
Cholesterol test	892	14.5%	138	12.5%		231	14.0%	
Both tests	824	13.4%	126	11.4%		212	12.9%	

Table 4 shows performance rates for each plan broken down by age of the beneficiary. Again, performance rates did not meaningfully differ among the plans. Use of metabolic monitoring tests increases as the beneficiary becomes older. Since a major concern about the metabolic side effects has to do with the age when antipsychotic treatment is started and how long a beneficiary might remain on antipsychotic therapy, it would be ideal if monitoring began at an earlier age. Monitoring for all ages needs to be improved.

Table 4: Percent of Children Taking Antipsychotics Receiving Metabolic Monitoring - By Age and Health Plan

		FFS		UHC		Magnolia	
Measure	**Age Group**	Beneficiaries Taking Antipsychotics (Denominator)	% Having Test	Beneficiaries Taking Antipsychotics (Denominator)	% Having Test	Beneficiaries Taking Antipsychotics (Denominator)	% Having Test
Blood glucose test	<=5	151	22.5%	20	20.0%	40	22.5%
	6-11	2,162	22.4%	303	22.4%	447	19.9%
	12-17	3,267	34.0%	475	26.9%	763	30.0%
	18-20	583	41.0%	303	36.6%	398	41.2%
Cholesterol test	<=5	151	8.6%	20	5.0%	40	7.5%
	6-11	2,162	9.0%	303	9.6%	447	8.9%
	12-17	3,267	17.9%	475	14.1%	763	16.0%
	18-20	583	16.8%	303	13.5%	398	16.6%
Both tests	<=5	151	7.9%	20	5.0%	40	7.5%
	6-11	2,162	8.2%	303	8.6%	447	7.8%
	12-17	3,267	16.7%	475	12.2%	763	14.8%
	18-20	583	15.4%	303	13.5%	398	15.3%

CONCLUSION

Based on the performance ratings for the last year, the Mississippi Medicaid program currently has a performance rating on metabolic monitoring for children taking antipsychotic medications that is barely above the 25th percentile for Medicaid programs. Since this is an important quality of care measure being developed by CMS, some action is needed to improve our performance on this measure.

A hard clinical edit in the pharmacy point-of-sale (POS) system cannot be used to achieve improvement in this area. Since metabolic monitoring can occur at any time during the year, MS-DUR believes that the only practical way to achieve improvement in performance on this quality measure will be through provider education.

Recommendation:

MS-DUR recommends the following actions be undertaken in order to achieve improvement in metabolic monitoring for children taking antipsychotics.

1. MS-DUR should prepare an educational article about the importance of metabolic monitoring in children taking antipsychotics for distribution in quarterly electronic mailing.

2. MS-DUR should include an exception monitoring routine that will identify beneficiaries who have failed to meet this performance criteria during the last month and send educational letters to the prescribers of the antipsychotic medications. This exception monitoring will be targeted for intervention mailings for the next 6 months at which time performance will be reevaluated and reported to the DUR Board.

3. United Health Care and Magnolia will be encouraged to undertake a similar educational intervention.

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: 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 3: 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