CHCS

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Health Care Strategies, Inc.

FACES OF MEDICAID
DATA SERIES

Multimorbidity Pattern Analyses and Clinical Opportunities: *Developmental Disorders*

December 2010

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This set of tables is part of the analysis, *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*, which was undertaken by the Center for Health Care Strategies and The Johns Hopkins University School of Medicine and Bloomberg School of Public Health to help policymakers identify intervention strategies with the potential to both improve quality and reduce costs for Medicaid beneficiaries with multiple chronic conditions. For the full report, visit **www.chcs.org**.

Made possible through support from Kaiser Permanente.

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*The **Center for Health Care Strategies** (CHCS) is a nonprofit health policy resource center dedicated to improving health care quality for low-income children and adults, people with chronic illnesses and disabilities, frail elders, and racially and ethnically diverse populations experiencing disparities in care. CHCS works with state and federal agencies, health plans, providers and consumer groups to develop innovative programs that better serve Medicaid beneficiaries with complex and high-cost health care needs. Its program priorities are: enhancing access to coverage and services; improving quality and reducing racial and ethnic disparities; integrating care for people with complex and special needs; and building Medicaid leadership and capacity.*

Overview

This set of tables is part of the *Faces of Medicaid* analysis, *Clarifying Multimorbidity to Improve Targeting and Delivery of Clinical Services for Medicaid Populations*, undertaken by the Center for Health Care Strategies (CHCS) and The Johns Hopkins University School of Medicine and Bloomberg School of Public Health. The analysis sought to help policymakers identify intervention strategies with the potential to both improve quality and reduce costs for adult Medicaid beneficiaries with multiple chronic conditions.

The following tables summarize multimorbidity data on developmental disorders for adult Medicaid-only beneficiaries with disabilities under the age of 65, and inventory potential clinical opportunities for addressing multimorbidity associated with developmental disorders. For this analysis, "multimorbidity patterns" are defined as the specific and often multiple conditions that a person has (e.g., a person with depression, hypertension, chronic pain, and asthma), as opposed to a simple tally of the number of conditions that someone has (e.g., a person with five chronic conditions). The tables are intended to aid policymakers in identifying subgroups of Medicaid beneficiaries who stand to benefit from targeted care management and tailoring intervention strategies to improve health outcomes and reduce costs. Contents include:

1. ***Multimorbidity Summary Table* (Table 1)**: This table lists the five most costly patterns of multimorbidity (based on total annual costs, excluding long-term care expenditures) for developmental disorders. These data can be used to help prioritize care management opportunities to improve outcomes and control costs. Prevalence, costs, and hospitalization rates are summarized for:

    - Beneficiaries who *only* have the specific developmental disorders pattern, without additional comorbidities.
    - Beneficiaries who have the specific developmental disorders pattern *plus* potentially other comorbidities. In other words, all individuals represented in this group have the conditions specified in the stated multimorbidity pattern, but any individual may have other conditions as well. This broader approach has a greater likelihood of capturing all individuals with developmental disorders and the identified comorbidities in the population.

2. ***Multimorbidity Pattern Table* (Table 2)**: This table details the 16 most prevalent multimorbidity patterns for developmental disorders, including prevalence, cost, and hospitalization data for each. Data include beneficiaries who *only* have the specific conditions in each multimorbidity pattern.

3. ***Clinical Opportunities Table* (Table 3)**: A series of literature searches was conducted for the multimorbidity patterns that the analysis identified as high-priority opportunities from a prevalence, clinical, and cost perspective. In addition to presenting actionable, clinical opportunities for Medicaid stakeholders responsible for care management program design, this clinical opportunities table helps identify gaps in knowledge around clinical management of these conditions. Literature is categorized as follows:

    - Clinical "pearls" that offer recommendations relevant to an aspect of care for individuals with the specified multimorbidity pattern;
    - Single disease-specific models that address processes important to caring for individuals with multimorbidity, such as care coordination and medication management;
    - Relevant clinical practice guidelines and systematic reviews; and
    - Evidence-based models for the specific multimorbidity pattern.

Table 1: Developmental Disorders Multimorbidity Summary

This table lists the five most costly patterns of multimorbidity -- based on total annual costs, excluding long-term care expenditures -- for developmental disorders. These data can be used to help prioritize care management opportunities to improve outcomes and control costs.

Medicaid-Only Adult Beneficiaries with Disabilities, Under Age 65

	Multimorbidity Pattern	Prevalence among beneficiaries with developmental disorders	Prevalence among overall population	Per capita cost	Percent of total annual costs among beneficiaries with developmental disorders	Percent of total annual costs among overall population	Per capita hospitalizations
	Developmental Disorders						
1	None	26.20%	1.32%	$13,614	13.61%	1.70%	0.15
		100.00%	5.04%	$26,201	100.00%	12.47%	0.39
2	+Antipsychotic or Mood Stabilizer Drugs	10.54%	0.53%	$27,495	11.07%	1.38%	0.13
		53.41%	2.69%	$33,711	68.72%	8.57%	0.53
3	+Antipsychotic or Mood Stabilizer Drugs, Anxiety Disorder or Benzodiazepam Use, Depressive Disorders	6.12%	0.31%	$39,379	9.20%	1.15%	0.54
		12.93%	0.65%	$40,093	19.78%	2.47%	1.11
4	+Antipsychotic or Mood Stabilizer Drugs, Depressive Disorders	6.83%	0.34%	$32,987	8.60%	1.07%	0.25
		24.71%	1.25%	$36,819	34.72%	4.33%	0.79
5	+Antipsychotic or Mood Stabilizer Drugs, Anxiety Disorder or Benzodiazepam Use	5.10%	0.26%	$36,205	7.04%	0.88%	0.21
		22.97%	1.16%	$38,502	33.76%	4.21%	0.80

Co-occurring conditions that were considered include: Depressive disorders, hypertension, coronary heart disease, asthma and/or chronic obstructive pulmonary disease, back or spine disorders, antipsychotic or mood stabilizer drugs, drug and alcohol disorders, diabetes, anxiety disorder or benzodiazepam use, congestive heart failure, hepatitis or chronic liver disease, stroke, prednisone use, dizziness, gastrointestinal bleed, anticoagulation drugs (warfarin), chronic renal failure/end stage renal disease, HIV or AIDS, and personality disorders.

KEY

- Beneficiaries with only developmental disorders and the specified multimorbidity pattern (no other comorbidities).
- Beneficiaries with developmental disorders, the specified multimorbidity pattern, and potentially other additional comorbidities, varying by individual.

Table 2: Developmental Disorders Multimorbidity Patterns

This table presents the 16 most prevalent co-occurring conditions for developmental disorders (columns in the left half), and prevalence, hospitalization, and cost data for each pattern (columns in the right half). These data reveal patterns that are prime for targeted interventions across a number of variables of interest, including: population prevalence, per capita costs, and annual hospitalization rate. For each pattern, these variables are calculated for individuals who have the specified conditions and no other comorbidities. The condition columns are ordered from most prevalent (left) to least prevalent (right) in the developmental disorders population. A checkmark represents the presence of the specified condition. Unless noted, all cost estimates exclude long-term care costs.

Medicaid-Only Adult Beneficiaries with Disabilities, Under Age 65

	Developmental Disorders +														
	Antipsychotic or mood stabilizer drugs	Antiepileptic drugs	Anxiety disorder or benzodiazepam use	Depressive disorders	Gastrointestinal bleed	Schizophrenia	Pattern Prevalence, %[1]	Cumulative Prevalence, %	Annual Hospitalization Rate Per Capita	Per Capita Costs, excl. Long-term Care	% Total Annual Costs, excl. Long-term Care[2]	Cumulative % of Total Annual Costs, excl. Long-term Care	% Total Annual Long-term Care Costs	Very High-Cost Prevalence, %[3]	High-Cost Prevalence, %[4]
1							26.20%	26.20%	0.15	$13,614	13.61%	13.61%	28.57%	0.99%	4.86%
2	✓						10.54%	36.74%	0.13	$27,495	11.07%	24.68%	10.93%	1.75%	19.82%
3	✓			✓			6.83%	43.57%	0.25	$32,987	8.60%	33.28%	5.27%	3.69%	30.77%
4	✓		✓	✓			6.12%	49.69%	0.54	$39,379	9.20%	42.48%	4.53%	7.41%	39.99%
5	✓		✓				5.10%	54.79%	0.21	$36,205	7.04%	49.52%	6.36%	3.71%	30.44%
6	✓		✓	✓		✓	4.17%	58.96%	1.85	$39,599	6.30%	55.82%	2.01%	22.60%	48.75%
7				✓			4.04%	63.00%	0.29	$19,464	3.00%	58.82%	2.49%	2.27%	10.43%
8					✓		3.93%	66.93%	0.30	$24,975	3.75%	62.57%	6.65%	3.17%	9.93%
9	✓			✓		✓	2.81%	69.74%	0.79	$32,145	3.45%	66.02%	1.42%	10.50%	46.98%
10			✓				2.80%	72.55%	0.23	$21,834	2.34%	68.36%	2.82%	1.39%	7.34%
11			✓	✓			2.39%	74.93%	0.44	$21,270	1.94%	70.30%	1.12%	3.01%	13.22%
12	✓					✓	2.26%	77.19%	0.41	$26,059	2.25%	72.54%	1.38%	4.53%	35.39%
13	✓				✓		2.26%	79.45%	0.29	$33,556	2.89%	75.43%	2.98%	3.69%	23.14%
14	✓	✓					2.25%	81.70%	0.32	$24,291	2.09%	77.52%	2.25%	2.72%	25.66%
15		✓					2.04%	83.74%	0.25	$16,458	1.28%	78.80%	1.96%	1.71%	8.65%
16	✓		✓		✓		1.52%	85.26%	0.48	$39,721	2.31%	81.11%	2.39%	7.83%	33.26%

KEY

- Index condition with no comorbidity in identified conditions.
- Patterns with the top three highest total annual costs.
- Patterns with the top three highest annual hospitalization rates.
- Patterns with the top three high-cost prevalence rates.

[1] Prevalence of this pattern among beneficiaries with developmental disorders.
[2] $2.5 billion, excluding long-term care costs, was spent by Medicaid on 94,757 disabled Medicaid-only beneficiaries with developmental disorders. Results are presented for the top 16 out of 63 total patterns observed for people with developmental disorders
[3] The proportion of beneficiaries with this specific multimorbidity pattern who are represented among beneficiaries in the top 1st to 5th percentile of costs in the overall population of Medicaid-only adult beneficiaries with disabilities.
[4] The proportion of beneficiaries with this specific multimorbidity pattern who are represented among beneficiaries in the top 5.01st to 20th percentile of costs in the overall population of Medicaid-only adult beneficiaries with disabilities.

Table 3: Developmental Disorders Clinical Opportunities

The following table inventories evidence-based models of care for developmental disorders and associated multimorbid patterns, including references published since 2000. This resource provides an actionable complement to the multimorbidity cost and prevalence data presented earlier. It is intended to guide Medicaid stakeholders in tailoring implementation strategies to improve care for beneficiaries with these multimorbidity patterns.

A bibliography of citations alphabetized by author is available at **www.chcs.org**.

Clinical pearl for specific multimorbidity pattern	Single-disease focused clinical care delivery model for multimorbid patients	Clinical practice guidelines or systematic review for multimorbidity pattern	Model for specific multimorbidity pattern
Developmental Disorders + Antipsychotic or Mood Stabilizer Drugs			
		Antiochi 2003. Review of major studies of drug use in mental illness with developmental disorders.	Focht-New 2008. Expert review with recommendations about prescribing antipsychotic drugs.
		Aman 2004. Guidelines by special topic advisory panel sponsored by industry.	Ivanov 2006. Discussion of drug interactions.
		Findling 2005. Review of evidence on use of antipsychotics in children and adolescents with psychiatric disorder	
		Masi 2004. Review of literature on pharmacotherapy of pervasive developmental disorders, including antipsychotics.	
		Sabaawi 2006. Guidelines on use of clozapin in people with developmental disorders.	
Developmental Disorders + Anxiety Disorder or Benzodiazepine Use			
		Davis 2008. Literature on treatment of patients with developmental disorders and comorbid anxiety.	
Developmental Disorders + Depressive Disorders			
		Findling 2005. Review of evidence on use of antipsychotics in children and adolescents with psychiatric disorder.	