CHCS

Center for
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FACES OF MEDICAID
DATA SERIES

Multimorbidity Pattern Analyses and Clinical Opportunities: *Chronic Pain*

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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**.

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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 chronic pain for adult Medicaid-only beneficiaries with disabilities under the age of 65 and inventory potential clinical opportunities for addressing multimorbidity associated with chronic pain. 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 chronic pain. 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 chronic pain pattern, without additional comorbidities.
   - Beneficiaries who have the specific chronic pain 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 chronic pain and the identified comorbidities in the population.

2. ***Multimorbidity Pattern Table* (Table 2)**: This table details the 16 most prevalent multimorbidity patterns for chronic pain, 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. This information is aggregated into a table of clinical opportunities to help make the multimorbidity data actionable for Medicaid stakeholders responsible for care management program design. In addition to presenting actionable, clinical opportunities for Medicaid stakeholders responsible for care management program design, these clinical opportunities tables also help 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: Chronic Pain Multimorbidity Summary

This table lists the five most costly patterns of multimorbidity -- based on total annual costs, excluding long-term care expenditures -- for chronic pain. 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 chronic pain	Prevalence among overall population	Per capita cost	Percent of total annual costs among beneficiaries with chronic pain	Percent of total annual costs among overall population	Per capita hospitalizations
	Chronic Pain						
1	Chronic pain only (no comorbidities among conditions considered)	4.20%	0.75%	$7,140	1.83%	0.50%	0.21
		100.00%	17.81%	$16,401	100.00%	27.58%	0.84
2	+ Depressive disorders, Antipsychotic or mood stabilizer drugs	1.79%	0.32%	$12,571	1.37%	0.38%	0.19
		30.39%	5.41%	$22,036	40.83%	11.26%	1.14
3	+ Depressive disorders	2.22%	0.40%	$8,161	1.11%	0.31%	0.18
		60.97%	10.86%	$18,388	68.35%	18.85%	0.96
4	+ Depressive disorders, Back or spine disorders, Antipsychotic or mood stabilizer drugs	1.46%	0.26%	$11,232	1.00%	0.28%	0.20
		18.06%	3.22%	$21,145	23.28%	6.42%	1.15
5	+ Antipsychotic or mood stabilizer drugs	0.94%	0.17%	$13,973	0.80%	0.22%	0.24
		38.72%	6.90%	$21,230	50.12%	13.82%	1.07

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 chronic pain and the specified multimorbidity pattern (no other comorbidities).
- ☐ Beneficiaries with chronic pain, the specified multimorbidity pattern, and potentially other additional comorbidities, varying by individual.

Table 2: Chronic Pain Multimorbidity Patterns

This table presents the 16 most prevalent co-occurring conditions for chronic pain (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 rates. 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 chronic pain 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

	Chronic Pain +																									
	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	Personality disorders	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																				4.20%	4.20%	0.21	$7,140	1.83%	1.83%	3.28%	2.02%	8.81%
2	✓																			2.22%	6.42%	0.18	$8,161	1.11%	2.93%	1.86%	2.27%	11.70%
3					✓															2.09%	8.51%	0.16	$5,627	0.72%	3.65%	0.53%	1.62%	6.98%
4	✓					✓														1.79%	10.30%	0.19	$12,571	1.37%	5.02%	2.53%	3.24%	23.70%
5	✓				✓															1.64%	11.94%	0.14	$7,090	0.71%	5.73%	0.47%	1.53%	11.55%
6	✓				✓	✓														1.46%	13.40%	0.20	$11,232	1.00%	6.73%	0.73%	3.07%	25.15%
7		✓																		1.01%	14.41%	0.20	$6,326	0.39%	7.12%	0.49%	2.15%	8.07%
8						✓														0.94%	15.35%	0.24	$13,973	0.80%	7.92%	2.15%	3.55%	18.52%
9		✓			✓															0.82%	16.17%	0.13	$5,466	0.27%	8.19%	0.21%	1.38%	8.19%
10	✓	✓			✓															0.62%	16.79%	0.16	$7,573	0.29%	8.48%	0.15%	1.88%	11.88%
11			✓																	0.56%	17.35%	0.45	$8,544	0.29%	8.77%	0.34%	4.01%	12.29%
12	✓	✓																		0.55%	17.91%	0.21	$7,989	0.27%	9.04%	0.34%	2.32%	10.81%
13	✓				✓				✓											0.54%	18.45%	0.16	$6,578	0.22%	9.26%	0.07%	1.93%	10.58%
14					✓	✓														0.52%	18.97%	0.17	$9,461	0.30%	9.56%	0.25%	2.75%	14.59%
15				✓																0.52%	19.49%	0.28	$7,308	0.23%	9.79%	0.34%	2.76%	9.67%
16	✓				✓	✓			✓											0.51%	20.00%	0.29	$10,863	0.34%	10.13%	0.17%	4.02%	26.67%

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 chronic pain.
[2] $5.5 billion, excluding Long-Term Care costs, was spent by Medicaid on all 334,687 individuals in this population (disabled Medicaid non-duals with chronic pain).
[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: Chronic Pain Clinical Opportunities

The following table inventories evidence-based models of care for chronic pain 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 full citations 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
Chronic Pain + Depression, Antipsychotic or Mood Stabilizer Drugs, Anxiety			
Damush 2008. Baseline cross-sectional data from SCAMP trial suggests that among patients with chronic pain, those who are depressed employ different self-management strategies compared with those who are not depressed. May be useful in planning self-care strategies. Adapting depression screening for patients with pain may help target patient self-management plans.	Unutzer 2002. Main IMPACT study paper describing collaborative care management for late-life depression.	Kroenke 2009. SCAMP Trial. RCT of treatment with antidepressant and pain self-management program. Intervention group with reduction in depression severity, major depression, and pain. 12-month follow-up. Some minimal increase in service utilization.	Kroenke 2009. Pharmacotherapy of chronic pain: a synthesis of recommendations from systematic reviews. Discusses approach to treating specific types of pain and the use of antidepressants for pain control.
Ohayon 2003. Patients with chronic painful physical conditions have relatively high prevalence of depression and should be evaluated for depression.		Dobscha 2009. RCT of primary care-based intervention for patients with pain, consisting of patient education, activation, symptom monitoring, feedback and recommendations to clinicians. Decreased pain in intervention group. Patients with depression at baseline improved depression severity.	
		Karp 2010. Pilot study of antidepressants and pain care management had positive results.	
		Beesdo 2009. Post-hoc analysis of three duloxetine trials. Drug better than placebo in reducing anxiety and pain.	
		Lin 2006. IMPACT collaborative care model for depression treatment improved arthritis outcomes, including pain in certain patients.	
		Pariser 2005. RCT for patients with arthritis, pain, depression, fatigue. Consisted of a six-week telephone intervention, resulted in increase self-efficacy, decrease in pain and depression.	

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
Chronic Pain + Spine			
		Karjalainen 2000. Cochrane review of multidisciplinary biopsychosocial rehabilitation for subacute back pain in working age adults. Only two studies of sufficient quality to be reviewed. Moderate evidence to suggest that this approach can improve outcomes with earlier return to work, fewer sick leaves.	Kroenke 2009. Pharmacotherapy of chronic pain: a synthesis of recommendations from systematic reviews. Specific section on low back pain.