CHCS

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FACES OF MEDICAID
DATA SERIES

Multimorbidity Pattern Analyses and Clinical Opportunities: *Dementia*

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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 Patterns to Improve Targeting and Delivery of Services for Medication 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 dementia for adult Medicaid-only beneficiaries with disabilities under the age of 65, and inventory potential clinical opportunities for addressing multimorbidity associated with dementia. 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. Specific 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 dementia. 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 dementia pattern, without additional comorbidities.
    - Beneficiaries who have the specific dementia 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 dementia and the identified comorbidities in the population.

2. ***Multimorbidity Pattern Table* (Table 2)**: This table details the 16 most prevalent multimorbidity patterns for dementia, including prevalence, cost, and hospitalization data for each. These 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: Dementia Multimorbidity Summary

This table lists the five most costly patterns of multimorbidity -- based on total annual costs, excluding long-term care expenditures -- for dementia. 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 dementia	Prevalence among overall population	Per capita cost	Percent of total annual costs among beneficiaries with dementia	Percent of total annual costs among overall population	Per capita hospitalizations
	Dementia						
1	+ Depressive Disorders, Antipsychotic or Mood Stabilizer Drugs, Anxiety Disorder or Benzodiazepam Use	1.84%	0.02%	$18,541	1.61%	0.04%	0.26
		25.18%	0.31%	$26,808	31.87%	0.78%	1.44
2	+ Depressive Disorders, Antipsychotic or Mood Stabilizer Drugs	2.38%	0.03%	$12,296	1.38%	0.03%	0.11
		45.19%	0.55%	$24,508	52.29%	1.28%	1.18
3	+ Antipsychotic or Mood Stabilizer Drugs	1.66%	0.02%	$15,366	1.20%	0.03%	0.12
		63.07%	0.77%	$23,521	70.04%	1.71%	1.08
4	Dementia only (no comorbidity among conditions considered)	2.40%	0.03%	$8,724	0.99%	0.02%	0.11
		100.00%	1.22%	$21,182	100.00%	2.44%	0.96
5	+ Depressive Disorders	1.68%	0.02%	$9,764	0.77%	0.02%	0.12
		64.45%	0.79%	$22,290	67.83%	1.66%	1.06

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

Table 2: Dementia Multimorbidity Patterns

This table presents the 16 most prevalent co-occurring conditions for dementia (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 dementia 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

	Dementia +																									
	Depressive disorders	Antipsychotic or mood stabilizer drugs	Hypertension	Coronary heart disease	Anxiety disorder or benzodiazepam use	Asthma and/or chronic obstructive pulmonary disease	Stroke	Diabetes	Drug and alcohol disorders	Back or spine disorders	Chronic pain	Congestive heart failure	Schizophrenia	Antiepileptic drugs	Hepatitis or chronic liver disease	Dizziness	Chronic renal failure/end stage renal disease	Prednisone use	HIV or AIDS	Home oxygen therapy	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																					2.40%	2.40%	0.11	$8,724	0.99%	0.99%	2.40%	0.91%	4.72%
2	✓	✓																			2.38%	4.78%	0.11	$12,296	1.38%	2.37%	1.75%	0.92%	17.77%
3	✓	✓			✓																1.84%	6.62%	0.26	$18,541	1.61%	3.98%	1.87%	4.02%	26.71%
4	✓																				1.68%	8.30%	0.12	$9,764	0.77%	4.76%	1.14%	1.81%	6.48%
5		✓																			1.66%	9.96%	0.12	$15,366	1.20%	5.96%	1.78%	1.57%	14.17%
6	✓				✓																0.78%	10.74%	0.06	$9,744	0.36%	6.32%	0.28%	0.00%	4.44%
7			✓																		0.75%	11.50%	0.19	$7,333	0.26%	6.58%	0.49%	1.73%	6.36%
8		✓			✓																0.74%	12.24%	0.29	$20,508	0.72%	7.30%	1.11%	4.12%	25.88%
9	✓	✓			✓								✓								0.64%	12.87%	0.68	$23,605	0.71%	8.01%	0.62%	10.27%	39.73%
10	✓	✓											✓								0.62%	13.49%	0.44	$20,461	0.60%	8.61%	0.76%	6.99%	32.87%
11		✓											✓								0.57%	14.07%	0.21	$14,757	0.40%	9.01%	0.58%	4.55%	20.45%
12	✓		✓																		0.50%	14.57%	0.11	$7,471	0.18%	9.18%	0.25%	0.00%	10.53%
13	✓	✓	✓																		0.48%	15.05%	0.20	$11,785	0.27%	9.45%	0.35%	1.80%	22.52%
14	✓	✓	✓		✓																0.38%	15.43%	0.45	$14,381	0.26%	9.71%	0.31%	6.90%	34.48%
15					✓																0.35%	15.78%	0.20	$14,322	0.24%	9.94%	0.38%	1.25%	13.75%
16		✓												✓							0.34%	16.12%	0.20	$16,639	0.27%	10.21%	0.50%	3.80%	24.05%

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 dementia.
[2] $486.4 million, excluding long-term care costs, was spent by Medicaid on 22,965 disabled Medicaid-only beneficiaries with dementia. Results are presented for the top 16 out of 8,053 total patterns observed for people with dementia.
[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: Dementia Clinical Opportunities

The following table inventories evidence-based models of care for dementia 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 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
Dementia + Antipsychotic or Mood Stabilizer Drugs			
Schneider 2005. The use of atypical antipsychotics among patients with dementia may be associated with an increased mortality risk. No evidence of different effects for the different antipsychotic drugs examined: aripiprazole, olanzapine, quetiapine, resperidone.	Vickrey 2006. Randomized trial of clinic-based disease management provided to patient-caregiver pairs for dementia. Used dementia guideline-based DM program. Resulted in improvements in quality of care, quality of life, caregiving quality.	Waldemar 2007. Clinical practice guideline for diagnosis and management of Alzheimer's disease and other disorders associated with dementia. Provides recommendations of treatment of behavioral and psychological symptoms in dementia including anxiety and psychotic symptoms.	Monette 2008. An interdisciplinary education program among nursing home residents with dementia resulted in discontinuation of antipsychotic medications in 49.4% and dose reductions in 13.6% with associated reductions in disruptive behaviors.
Kolanowski 2006. Administrative data from large healthcare insurer in U.S. examined outcomes of antipsychotic drug use among community-dwelling older adults with dementia. Twenty-seven percent of demented patients were prescribed antipsychotics. Patients on antipsychotics were more likely to experience delirium, depression, hip fracture, falls, and syncope.	Jansen 2005. Describes design of ongoing RCT of case management by district nurses among patients with dementia and their primary caregivers. When reported, the evaluation will include an economic analysis from a societal perspective. Economic analyses are often lacking in these studies.	Lyketsos 2006. Position statement from American Association of Geriatric Psychiatry. Describes approaches to managing noncognitive psychiatric symptoms in dementia patients.	Callahan 2006. Randomized trial of primary care-based collaborative care management by interdisciplinary care team. Intervention patients more likely to receive antidepressants and have fewer behavioral and psychological symptoms of dementia. Significant positive effects also on caregivers.
Passmore 2008. Review of recent data on safety and efficacy of atypical antipsychotics for management of dementia-related agitation. Describes alternatives including other medications and behavioral approaches.	Connor 2009. Examined care-management activity data and developed theoretical approach to dementia case management. Four case management domains identified: behavior management, clinical strategies and caregiver support, community agency, and safety.	Howard 2001. Guidelines for the management of agitation in dementia with general review of pharmacological and non-pharmacological approaches.	Brodaty 2003. Randomized study that compared three interventions for management of dementia complicated by depression or psychosis: psychogeriatric case management, GPs with specialist psychogeriatric consultation, and standard care for nursing home residents.
	Chien 2008. Controlled trial of dementia care management program for families of patients with dementia. Resulted in reduced caregiver burden, patient symptom severity, quality of life, and length of institutionalization at 12 months.	Kalapatapu 2009. Summary of recent guidelines on treatment of neuropsychiatric symptoms in dementia. Highlights general lack of efficacy data in this area.	Diwan 2001. Data on case management from Medicaid waiver-funded home and community-based services programs.
	Vernooij-Dassen 2004. Describes successful and unsuccessful approaches to personal disease management dementia care.	Ayalon 2006. Systematic review on effectiveness of nonpharmacologic interventions for management of neuropsychiatric symptoms in patients with dementia. Interventions that address behavioral issues are key.	

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
Dementia + Depressive Disorders			
Kolanowski 2006. See above.	Connor 2009. See above.	Waldemar 2007. See above.	Callahan 2006. See above.
	Chien 2008. See above.	Lyketsos 2006. See above	Brodaty 2003. See above.
		Thorpe 2001. Guideline from Canada describing the prevalence and rationale for treating depressive symptoms in patients with dementia.	
		Brown 2007. Clinical practice guideline on detection of depression in older adults with dementia.	
Dementia + Anxiety Disorder or Benzodiazepine Use			
Seignourel 2008. Review of key issues related to anxiety in dementia.	Connor 2009. See above.	Waldemar 2007. See above	Kraus 2008. Case reports of cognitive-behavioral therapy use in patients with Alzheimer's Disease and anxiety, with improvements in anxiety.
Starkstein 2007. Anxiety in Alzheimer's disease is a frequent comorbid condition of major depression.		Lyketsos 2006. See above	
		Alexopoulos 2005. Expert consensus guideline on treatment of dementia and behavioral disturbances. Information on antipsychotics predates more recent studies highlighting harms. Appropriate recommendations regarding anxiety and benzodiazepine use.	