

Hospital and Emergency Department Use by People With Cognitive Impairment: Community, Nursing Homes, and Residential Care Facilities

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Coauthors, Acknowledgement, and Disclaimer

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Background

- People with Alzheimer's disease/cognitive impairment/dementia have high health care utilization and costs
- Hospitalizations and emergency department (ED) use are of particular concern
 - Markers of quality of care
 - Implications for quality of life
 - Impacts on costs for public payers

Study Goals

- For people living in the community, in residential care facilities, and in nursing homes, to examine ***patterns of hospital and ED use*** among people with ADRD/cognitive impairment/dementia compared to those without those conditions
- For people living in the community and in nursing homes, to estimate amount of ***potentially avoidable hospitalizations and ED use*** among people with ADRD/cognitive impairment/dementia compared to those without those conditions

Data Source: Study #1

- Health and Retirement Study (HRS), 2000-2008
- Medicare claims data, 2000-2008
- Study population
 - Medicare fee-for-service beneficiaries aged 65+
 - Community vs. nursing home

Key Variables: Study #1

- Outcomes (dependent variables): Dichotomous
 - *Hospitalizations* – overall and potentially avoidable
 - *ED visits* – overall
- Definition of CI
 - Hybrid measure combining Medicare claims ADRD indicator and validated HRS cognitive measure from self and proxy survey data
 - Focus on severe CI consistent with dementia

Prevalence of CI: Study #1

Setting	Prevalence of Cognitive Impairment (%)
Community	11.6
Nursing Homes	64.3
Total	15.5

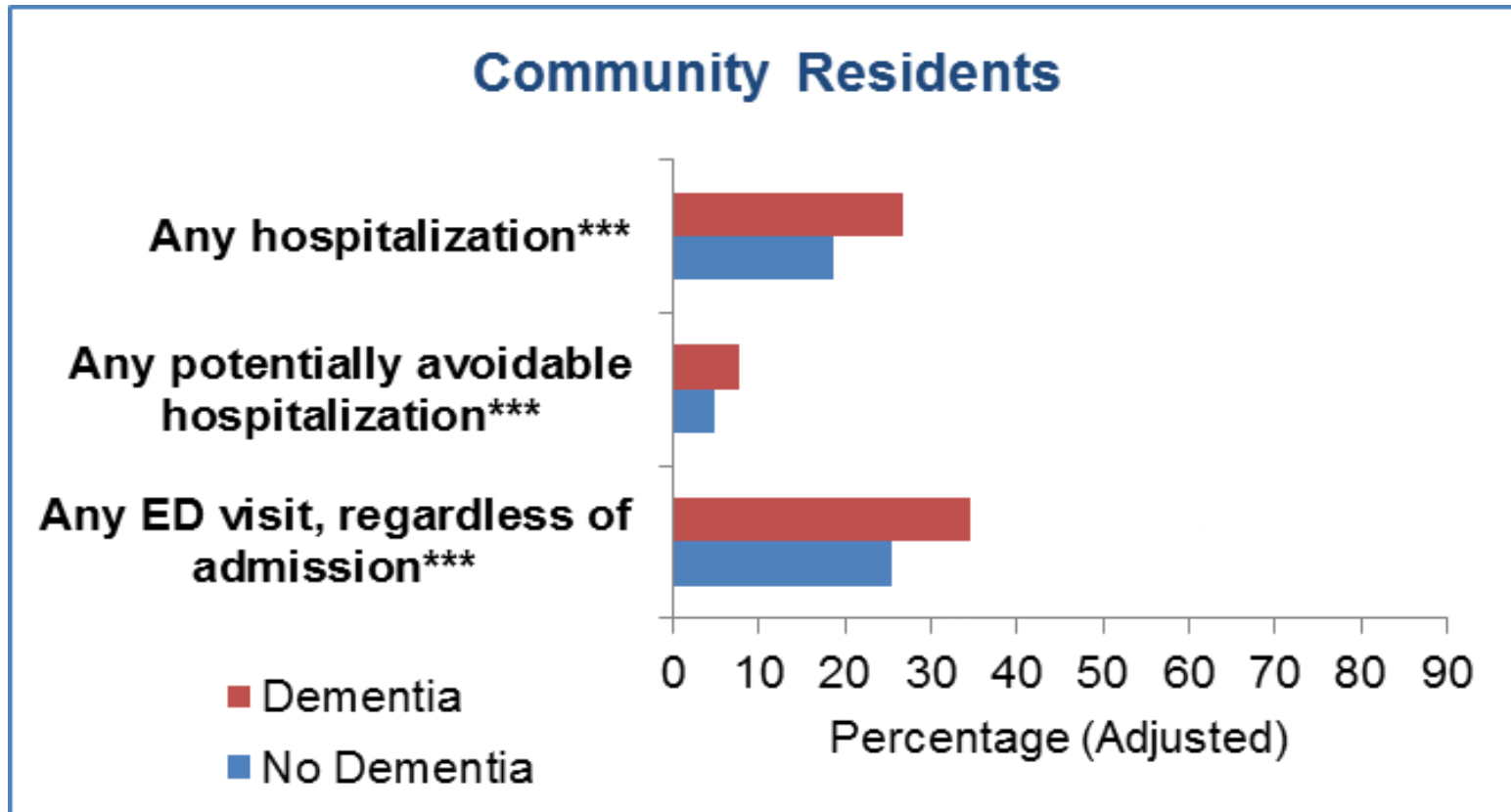
Utilization Patterns: Study #1:

Effects of CI on Hospitalization and ED Use: HRS Medicare Beneficiaries

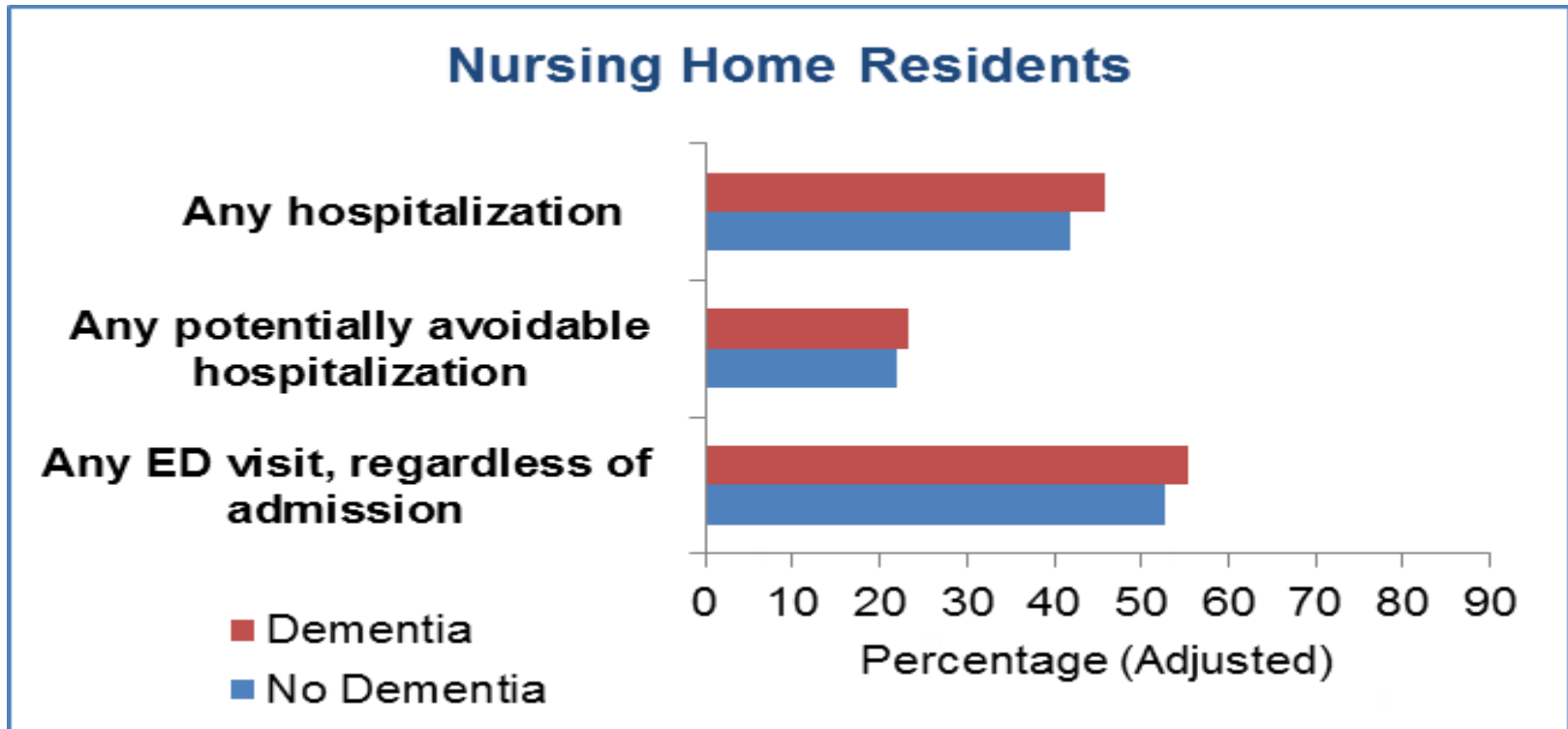
<i>Utilization outcome, annually</i>	<u>Community</u> Adj. Odds Ratios (CI vs. Non-CI)	<u>Nursing Home</u> Adj. Odds Ratios (CI vs. Non-CI)
Any hospitalization	1.680 ***	1.040
Any potentially avoidable hospitalization	1.844 ***	1.161
Any ED visit	1.656 ***	1.138

ED=Emergency department; HRS=Health and Retirement Study; CI=Cognitive impairment. Statistical significance: * $p < .05$; ** $p < .01$; *** $p < .001$. SOURCE: RTI analysis of HRS data linked with Medicare claims, 2000-2008.

Adjusted Percentages for Community Residents: Study #1



Adjusted Percentages for Nursing Home Residents: Study #1



Study Limitations: Study #1

- Data for FFS Medicare beneficiaries only
- Hybrid definition of CI is a strength, but underdiagnosis or misclassifications still possible
- Definition of potentially avoidable ED visits not validated

Data Source: Study #2

- 2010 National Survey of Residential Care Facilities
- Must have four or more beds and provide 24-hour supervision, help with personal care or health-related tasks, and at least two meals a day
- Excludes facilities that exclusively serve people with learning disabilities or severe mental illness
- Study population: Residents aged 65+

Key Variables: Study #2

- Outcomes (dependent variables): Dichotomous
 - *Hospitalizations* – Any hospital stay over the last 12 months
 - *ED visits* – Any ED visit over the last 12 months
- Definition of severe CI
 - Diagnosis of Alzheimer's disease or dementia
 - 3 of 7 memory impairments, confusion, or problems with orientation
- Special care units or facilities that only serve people with Alzheimer's disease

Results: Any Hospitalization in Past 12 Months: Study #2

Variable	Model 1		Model 2	
	Odds Ratio	95% CI	Odds Ratio	95% CI
Severe cognitive impairment	0.852*	(0.709, 1.024)	0.902	(0.749, 1.085)
Lives in a special care unit or facility that only serves people with Alzheimer's disease	–	–	0.710**	(0.545, 0.926)
* p<0.10 ** p< 0.05				

Any Emergency Department Use: Study #2

Predictive Variable	Model 1		Model 2	
	Odds Ratio	95% CI	Odds Ratio	95% CI
Severe cognitive impairment	0.858*	(0.729, 1.009)	0.907	(0.769, 1.069)
Lives in a special care unit or facility that only serves people with Alzheimer's disease	–	–	0.714***	(0.564, 0.905)
* p<0.10 ** p<0.05 ***<0.01				

Limitations: Study #2

- Report by staff, no claims data
- Not able to do potentially avoidable hospitalizations
- Categorization of severe cognitive impairment not definitive
- No data on number of hospitalizations or expenditures

Summary

- 12% of community-dwelling FFS beneficiaries age 65+ had CI; 64% of those in nursing homes; and 51% of those in RCFs
- Among community-dwelling beneficiaries, individuals with CI are significantly *more* likely to have hospitalizations and ED visits, both overall and potentially avoidable

Summary (cont.)

- Among nursing home residents, *no* significant difference by CI status in hospitalization, either overall or potentially avoidable. Residents with CI are *not* more likely to have any ED visit.
- Among people living in RCFs, residents with CI are *less likely (marginal statistical significance)* to have any hospitalization or ED visit. However, CI is *no longer significant* when special care unit or Alzheimer's facility entered into equation.

Summary (cont.)

- Among people living in an RCF, living in a special care unit or facility that only serves people with Alzheimer's disease *decreases* the risk of hospitalization or ED visit

Conclusions

- Hospitalizations and ED visits lead to adverse outcomes for CI patients.
- Substantial portion of hospitalizations and ED visits is potentially avoidable
- Not clear how special care units or living in Alzheimer's disease-only facilities in RCFs decreases hospitalizations and ED visits
- Efforts to reduce hospitalizations in U.S. have not focused on people with CI

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