

## Optimizing Chronic Disease Prevention and Management in Advanced Dementia

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### Description

Prior research shows that almost 40% of nursing home residents with advanced dementia are treated with medications (e.g., lipid-lowering and osteoporosis drugs) that are potentially inappropriate for their care because they are unlikely to improve the patient's quantity or quality of life. Use of these medications by nursing home residents with advanced dementia is often inconsistent with patient care goals, increases the risk of adverse drug events and drug interactions, and is costly without clear health benefits. This study evaluated the prevalence, cost, and patient and facility factors associated with inappropriate medication use in nursing home residents with advanced dementia. Results provide evidence to guide the therapeutic and preventive treatment for this vulnerable and understudied population.

### Specific Aims

1. Evaluate the prevalence and cost of inappropriate medication use among nursing home residents with advanced dementia.
2. Identify nursing home resident and facility characteristics associated with use of inappropriate medication for nursing home residents with advanced dementia.
3. Construct a sample of nursing home residents with advanced dementia and cardiovascular disease to test the hypothesis that statin use does not improve 12-month mortality and hospitalization for these patients.

### Findings

- In 2009, the majority (59%) of nursing home residents with advanced dementia used at least one medication that was of questionable benefit to their care.

### Main Objective

Evaluate the prevalence, cost, and patient and facility factors associated with inappropriate medication use in nursing home residents with advanced dementia.

### Chronic Conditions Considered

Dementia  
Cardiovascular Disease

### Study Design & Methods

Analytic Epidemiologic Study

Propensity score adjustment, comparator group restriction, and self-controlled case-series.

### Data Sources & Sample Size

More than 95,000 nursing home residents with advanced dementia, taken from the Minimum Data Set file for Nursing Home Residents with Cognitive Impairment between 2007 and 2008, linked with Medicare Parts A and D claims data, and the Medicare Denominator File.

### Strategies Addressed from the HHS Strategic Framework on Multiple Chronic Conditions

- 3.A. Identify best practices and tools
- 4.C. Increase clinical research

## Optimizing Chronic Disease Prevention and Management in Advanced Dementia (continued)

- Based on the average wholesale price of medications, the mean spending for questionably beneficial medications ranged from \$1,972 to \$3,421 per resident per year (or 16%-30% of average annual medication expenditures per resident).
- In a cohort of 11,786 nursing home residents with advanced dementia, 17% were using statins when their dementia became advanced.
  - This is concerning because these patients were very sick:
    - 44% of these patients had left more than 25% of their meals uneaten, 61% had chewing problems, and 62% had swallowing problems.
    - 63% had a do-not-resuscitate order, 19% had feeding restrictions, and 10% had a do-not-hospitalize order.
    - These patients were taking an average of 10.2 medications daily (SD +/- 4.7), and were suffering from a number of comorbid conditions: hypertension – 78%; diabetes mellitus – 42%; stroke or transient ischemic attack (“mini-stroke”) – 34%; heart failure – 23%.
  - After developing advanced dementia, 32.4% of these patients stopped taking statins. Of these, 93% also stopped taking other medications at the same time.

### Implications

Because of the disproportionate burden and cost of medication use and the high frequency of adverse drug events among nursing home residents, it is important to identify and potentially discontinue unnecessary medications in this setting.

### Publications (as of September 2013)

Tjia J, Gurwitz JH, and Briesacher BA. Challenge of changing home prescribing culture. *Am J Geriatr Pharmacother*. Feb; 10(1):37-46.

(Additional publications currently in preparation).

### Posters and Presentations

Tjia J. Optimizing chronic disease prevention and management in advanced dementia. Poster presented at: Leveraging Knowledge and Action to Improve Health Care Quality. 6th Annual Conference of the Agency for Healthcare Research and Quality; 2012 Sept 18-21; Bethesda, MD.

Checchi J, Peterson D, Tjia J. The burden of comorbid conditions and symptoms affecting quality of life of nursing home patients with dementia. Poster presented at: Patient Safety and Quality. What Geriatrics has to Offer. The 2012 Annual Scientific Meeting of the American Geriatrics Society; 2012 May 3-5; Seattle, WA.

Tjia J. Optimizing disease prevention and management in advanced dementia. Poster presented at: Yale Program on Aging Seminar; 2011 Nov 2; New Haven, CT.

Tjia J. Optimizing disease prevention and management in advanced dementia. Poster presented at: Yale Program in Aging Seminar; 2011 Nov 2; New Haven, CT, and Baystate Medical Center Research in Progress; 2011 Oct 5; Springfield, MA.

## Optimizing Chronic Disease Prevention and Management in Advanced Dementia (continued)

Tjia J. Use of questionably beneficial medications by nursing home residents with advanced dementia. Poster presented at: Leading Through Innovation & Collaboration. 5th Annual Conference of the Agency for Healthcare Research and Quality; 2011 Sept 18-21; Bethesda, MD.