NBER | CENTER on the ECONOMICS of ALZHEIMER'S DISEASE / ADRD

Disparities in undiagnosed and misdiagnosed dementia and the impact on health care utilization and costs – a novel approach using probabilistic dementia Crest of the provided of the probabilistic dementia Cheryl Damberg, Maria DeYoreo, Gabriel Hassler, Michael Hurd, Hannah James, Jodi Liu, Susann Rohwedder, Debra Saliba, RAND Corporation NIA R01 #AG088896



Background

- Dementia often undiagnosed/misdiagnosed/diagnosed with delays – possibly more so in minority groups
- Leads to undertreatment, delays in care, underestimation of health care costs
- Medicare data has multiple dementia classifications (e.g., CCW), each with drawbacks, not known which is optimal
- Even less is known about of dementia classifications in Medicare Advantage





Research Objective

- Evaluate the accuracy of Medicare dementia classifications
- Derive novel probabilistic classifications of dementia and diagnostic errors in Medicare Fee for Services (FFS) and Medicare Advantage (MA)
- Study disparities by age, sex, race/ethnicity, urbanicity, etc.
- Study implications for health care utilization, costs, and mortality





Data Source & Study Population

- Health and Retirement Study linked to Medicare FFS (1999+) and MA (2015+)
- Full Medicare FFS (2008+) and MA (2015+)
- Restricted to age 65+ in each year





Key Measures & Outcomes

- Dementia outcomes: ADAMS & HCAP dementia diagnoses, other classifications (Langa-Weir, Hurd et al., Gianattasio et al., Hudomiet et al.)
- Dementia predictors in Medicare: ICD 9/10 codes, prescription drug use, sex, age, race/ethnicity, dual eligible status
- Other outcomes: Health care utilization, health care costs, mortality





Analytic Approach

- Dementia models:
 - Cross-sectional regression models of HRS dementia outcomes on Medicare predictors
 - Also considering Machine Learning models (e.g., LASSO)
- Health care utilization, costs, and mortality
 - Cross-sectional and fixed effects panel econometric models of outcomes on dementia, demographics, and comorbidities





Implications for the Economics of ADRD

- Better understanding of the accuracy of Medicare dementia diagnoses (CCW, Bynum, etc.), especially in MA data
- Novel probabilistic dementia classification in Medicare FFS & MA with improved accuracy in population subgroups
- Better understanding of the costs of dementia diagnosis and diagnostic errors





Leveraging the Coordinating Center

- We plan to share the novel dementia classifications with the Consortium and the public
 - Dementia diagnosis
 - Probability of dementia (actual vs. diagnosed)
 - Probability of undiagnosed dementia
 - Probability of misdiagnosed dementia
 - Probability of dementia diagnosed with delay



