

Health systems strive to enable persons with Alzheimer's and related dementias to remain at home to maximize their quality of life. There is limited evidence describing long-term trajectories of health system use by persons with dementia as they remain in the community over time. A cohort of 62,622 community-dwelling older adults was followed for seven years and matched to persons without dementia (controls) based on age, sex and comorbidities. Overall, persons with dementia were more likely than controls to use health services, particularly home care and hospitalizations with discharge delay; and were more likely to be admitted to a nursing home. As they remained in the community over time, persons with dementia used home care at an increasingly intensive rate. Our approach to examine trajectories of health system use among persons with dementia is of particular value to capacity planning initiatives to anticipate future health service needs of this population.

#### COMORBIDITY IN NEURODEGENERATIVE DISEASES AND MENTAL HEALTH CONDITIONS: IMPLICATIONS FOR HEALTH SYSTEM BURDEN

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Research suggests that older adults with neurodegenerative diseases are at increased risk of developing a subsequent neurodegenerative or comorbid psychiatric disorder or both. Depression and other psychiatric conditions, though prevalent, are often under-diagnosed and under-treated among those with neurodegenerative conditions potentially leading to more rapid disease progression, poorer health outcomes and increased health care use. Few population-based studies have comprehensively examined the risk and temporal ordering of common neurodegenerative and psychiatric conditions, including whether these associations differ by age or sex. Initial findings regarding the incidence of ordered pairs of neurological conditions (including dementia, Parkinson's disease and stroke) and psychiatric disorders (including mood and anxiety disorders, and schizophrenia) will be summarized. This population-based retrospective cohort study will provide essential data to allow policymakers, planners and providers to better anticipate the prognosis and care needs of older adults with comorbid neurodegenerative and psychiatric conditions.

#### CHALLENGES IN IDENTIFYING PERSONS WITH NEURODEGENERATIVE DISEASES USING HEALTH ADMINISTRATIVE DATABASES

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Health administrative databases can be used to quantify prevalence and incidence of neurodegenerative diseases and their impact on health service utilization outcomes at the population level. Algorithms based on diagnosis codes and health service patterns can be used to identify persons suspected to have a neurodegenerative disease. Previous studies have developed and validated algorithms to identify persons with Alzheimer's and related dementias using primary care medical records as the reference standard, however, little previous work has focused on developing algorithms for rare neurodegenerative diseases including amyotrophic lateral sclerosis (ALS). This session will discuss challenges in developing algorithms to identify persons with neurodegenerative diseases accurately and opportunities to improve existing definitions using novel data sources including electronic medical record databases. Preliminary findings regarding the development of an ALS algorithm will be presented.

#### UNDERSTANDING SEX DIFFERENCES IN OLDER PERSONS WITH NEURODEGENERATIVE DISEASES

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Sex differences in the incidence, prevalence, and clinical presentation of neurodegenerative diseases have been previously documented, however, sex differences in how individuals with neurodegenerative diseases access the health system remain understudied. Clinical trials and observational studies often do not report data stratified by sex, which limits the understanding of sex-related differences in persons with neurodegenerative diseases. This session will highlight both opportunities and methodological challenges researchers face when undertaking sex and gender research in persons with neurodegenerative diseases using two case studies: 1) sex differences in health service utilization prior to a diagnosis of Amyotrophic Lateral Sclerosis (ALS); and 2) sex differences in care needs and survival among persons who are admitted to a nursing home after a stroke. The findings of these studies may support the development of guidelines and care plans to meet the needs of men and women with neurodegenerative disorders in varied care settings.

#### WHAT'S OLD IS NEW: USING ARTIFICIAL INTELLIGENCE TO ACCELERATE DISCOVERY OF NEW TREATMENTS

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Given the high cost of drug development and low success rates, repurposing drugs already proven safe provides a promising avenue for identifying effective therapies with