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

Laura C. Maclagan,[1] Serena Soleimani,[2] Agessandro Abrahao,[3] Lorne Zinman,[3] Michael A. Campitelli,[4] Liisa Jaakkimainen,[4] Colleen J. Maxwell,[5] and Susan E. Bronskill[4], *1. Institute for Clinical Evaluative Sciences (ICES), Toronto, Ontario, Canada, 2. Institute of Medical Science, University of Toronto, Toronto, Ontario, Canada, 3. Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada, 4. ICES, Toronto, Ontario, Canada, 5. University of Waterloo, Waterloo, Ontario, Canada*

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

Michael A. Campitelli,[1] Laura C. Maclagan,[2] Christina Diong,[2] Longdi Fu[2] Amy Y. Yu,[3] Lorne Zinman,[3] Rick Swartz[3] and Susan E. Bronskill[2], *1. Institute for Clinical Evaluative Sciences (ICES), Toronto, Ontario, Canada, 2. ICES, Toronto, Ontario, Canada, 3. Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada*

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

Connie Marras[1] Laura C. Maclagan,[2] Yi Cheng[2] Naomi Visanji[3] Mina Tadrous[4] and Susan E. Bronskill[2], *1. Krembil Research Institute, University Health Network, Toronto, Ontario, Canada, 2. ICES, Toronto, Ontario, Canada, 3. Toronto Western Hospital, University Health Network, Toronto, Ontario, Canada, 4. St Michael's Hospital, Toronto, Ontario, Canada*

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

additional indications. The IBM Watson artificial intelligence system was used to search 1.3 million Medline abstracts to prioritize medications that may be potentially disease-modifying in Parkinson's disease. We assessed patterns of use of the top 50 Watson-ranked drugs among 14,866 adults with Parkinson's disease aged 70 and older who were matched to persons without Parkinson's disease on age, sex, and comorbidity. Sociodemographic characteristics, chronic conditions, and use of other medications were compared using standardized differences. Patterns of potentially disease-modifying drug use were examined prior to and following ascertainment of Parkinson's disease. Preliminary findings from multivariable conditional logistic regression models on the association between previous exposure to potentially disease-modifying drugs and Parkinson's disease diagnosis will be presented.

# SESSION 560 (SYMPOSIUM)

## PRODUCTIVE AND ACTIVE RURAL AGING: TOWARD CRITICAL PERSPECTIVES

Chair: Mark Skinner, *Trent University, Peterborough, Ontario, Canada*
Co-Chair: Rachel Winterton, *La Trobe University, Bendigo, Victoria, Australia*
Discussant: Kieran Walsh, *NUI Galway, Galway, Ireland, Ireland*

Despite global trends in rural population ageing, relatively little attention within research and policy has been directed to understanding what it means for rural people, communities and institutions to be at the forefront of twenty-first century demographic change. To build understanding of rural ageing, this symposium draws together papers from four countries to provide insights in the gaps in rural ageing research – specifically the in context of productive and active rural ageing by examining rural work, retirement and volunteering through the critical perspectives of citizenship, contestation and complexity. Winterton and Warburton will explore how active citizenship trends among rural older adults support or hinder the capacity of rural settings to support health ageing. Colibaba and Skinner will discuss the contestation of rural ageing by examining a volunteer-based rural library and the emergent 'contested spaces of older voluntarism' whereby older volunteer negotiate their rights and responsibilities associated with ageing and volunteering in rural communities. Duvvury and Ni Leime will examine the interactions between the twin phenomena of feminisation of agriculture and the feminisation of ageing in the consequent implications for rural women's work and retirement. Skinner and Joseph offer a critical perspective on voluntarism in ageing rural communities by examining volunteer leadership biographies as another means of understanding the contribution of older rural adults.

## CRITICAL PERSPECTIVES ON VOLUNTARISM IN AGING RURAL COMMUNITIES: VOLUNTEER LEADERSHIP BIOGRAPHIES

Mark Skinner[1] Alun Joseph[2], *1. Trent University, Peterborough, Ontario, Canada, 2. University Of Guelph, Guelph, Ontario, Canada*

Voluntarism has been portrayed as a productive and even transformative process whereby rural communities, households and older residents are able to meet the challenges of changing rural demographics. Yet, little attention has been paid to building a critical perspective on the complex and often-contested expectations placed on older rural volunteers. This paper focuses on the particular gap in understanding the contributions of older rural adults as a crucial resource in creating opportunities for aging in place and sustainable rural community development. Drawing on research into voluntarism in Canada's aging resource communities, this paper presents qualitative findings from innovative 'volunteer leadership biographies' with older residents who were involved in key voluntary sector initiatives to improve community development. The findings show how older volunteer leadership is embedded in both place (residency) and time (life course), revealing new dimensions to the problem of understanding volunteer leadership in an era of rural population change.

## DEFINING THE RELATIONSHIP BETWEEN ACTIVE CITIZENSHIP AND HEALTHY RURAL AGING: A CRITICAL APPROACH

Rachel Winterton[1], *1. La Trobe University, Bendigo, Victoria, Australia*

Active citizenship is romanticized in policy for its role in keeping older adults healthy, and rural communities sustainable. However, as proportions of older adults resident in rural communities continue to increase, the gerontological literature has begun to highlight challenges associated with both the capacity and desire of rural older adults to be active citizens. Through an integrative review of the international literature, this paper interrogates how active citizenship trends among rural older adults support or hinder healthy aging in rural settings. Findings indicate that active citizenship among older adults can increase rural age-friendliness and facilitate individual wellbeing. However, practices associated with active citizenship among this cohort can disenfranchise certain groups of older adults, through reshaping societal norms relating to citizenship, age-friendliness and rurality. These findings indicate that programs designed to promote active citizenship must both consider, and account for, diverse capacities and desires for active citizenship among rural older adults.

## RURAL LIBRARIES AS CONTESTED SPACES OF OLDER VOLUNTARISM IN AGING RURAL COMMUNITIES

Amber Colibaba,[1] and Mark Skinner[1], *1. Trent University, Peterborough, Ontario, Canada*

Recent efforts to better understand voluntarism as fundamental to how rural communities are meeting the challenges of population ageing have highlighted ageing rural volunteers, and the attendant burden of older voluntarism, as key issues for ageing in place of rural residents and ageing rural community sustainability. Drawing on a case study of a volunteer-based rural library in Ontario, Canada, this study examines the experiences of older volunteers, the challenges of sustaining volunteer programs, and the implications of older voluntarism for rural community development. Findings from interviews and focus groups with library volunteers, staff, board members and community stakeholders demonstrate