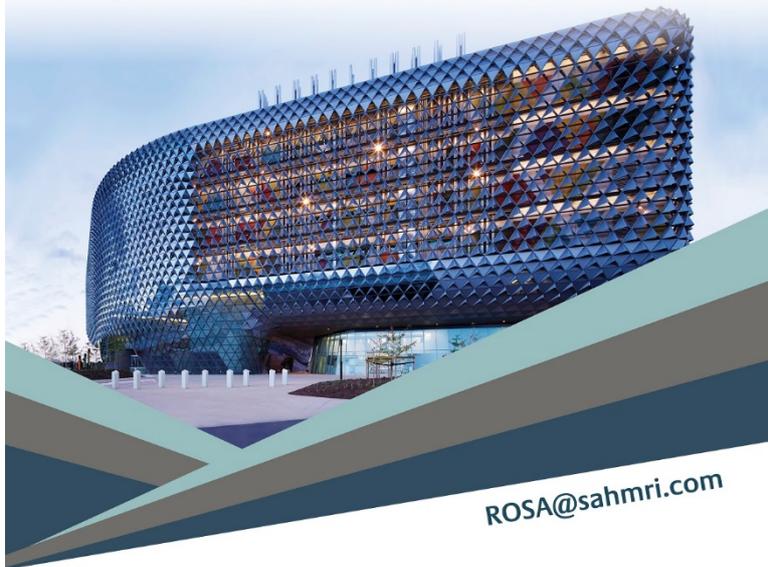


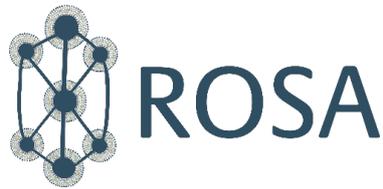
ROSA



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SUPPORTED BY THE HEALTHY AGEING RESEARCH CONSORTIUM MEMBERS





OVERVIEW OF ROSA

The Australian population is increasing, ageing, using more health care, and increasingly needing more aged care services. In 2007, 2.7 million Australians were older than 65 years and by 2017, that increased to 3.8 million. Our state of South Australia has one of the highest proportions of older people in the country (18% were over 65 and 2.6% were over 85 years old in 2016). This ageing population places high demands on the aged care and health sectors, creating a need to better coordinate and integrate information about people receiving aged care services in this state so that the needs of the people are aligned with the services they are receiving.

The **Registry of Senior Australians (ROSA)** is designed to monitor the health, service utilisation, medication use, mortality, and other outcomes of people receiving aged care services in South Australia. ROSA's efficient model leverages existing information, bringing together diverse datasets collected by different organisations, to provide us with a whole picture of the ageing pathway. ROSA also has a 'Living Lab' component, which will provide support and infrastructure for trialling innovative and emerging ideas to improve the health and wellbeing of older South Australians.

ROSA was developed by the **Healthy Ageing Research Consortium**, a cross-sectoral partnership of researchers, clinicians, aged care providers and consumer advocates from 13 organisations, coordinated under the auspices of the SA Academic Health Science and Translation Centre: SAHMRI, 3 universities (University of Adelaide, University of South Australia, and Flinders University), 5 industry partners (Helping Hand, ECH, Silver Chain, Adelaide PHN, Country SA PHN), 2 consumer health advocacy groups, SA NT DataLink, and SA Health.

ROSA's core Research Team, led by A/Prof Maria Inacio, is based at SAHMRI and currently includes postdoctoral researchers focusing on dementia (Dr Monica Cations), musculoskeletal conditions (Dr Tiffany Gill), health economics (Dr Jyoti Khadka), pharmacoepidemiology and pharmacology (Dr Janet Sluggett and Dr Gillian Caughey), epidemiology and biostatistics (Dr Azmeraw Amare and Dr Robert Jorissen), as well as a senior data scientist (Dr Max Moldovan). Our team is completed by an analytical and research management group (Dr Sarah Bray, Ms Catherine Lang and Ms Eliza Schioldann).

WHY CHOOSE TO JOIN THE ROSA RESEARCH TEAM?

THERE ARE MANY REASONS, INCLUDING:

- You will have the opportunity to work on a **unique data resource** that is of a scale that dwarfs many other '**big data**' projects in public health. E.g. our historical cohort includes almost 3 million Australians who were assessed for and/or received aged care services between 1997 and 2017.
- You will contribute to **fulfilling research** that will **make a real difference** to the lives of older Australians.
- We can supervise **Honours, Masters and PhD** students enrolled through the **University of Adelaide, University of South Australia or Flinders University**.
- You will be supported by a supervisory panel with the most relevant expertise drawn from ROSA's partner organisations.
- If you are interested in incorporating **industry engagement** into your PhD, we have strong active links with some of the leaders in the aged care industry (e.g. Helping Hand, ECH and Silver Chain) and would be happy to discuss ways you could be involved in research with an element of industry collaboration.
- ROSA also has a strong commitment to **consumer engagement**, with members of the community and consumer advocacy organisations (e.g. COTA SA and Health Consumers Alliance of SA) on our governance committees and providing input and guidance to help with developing research questions. We are also involved in a range of public outreach activities which you could take part in.
- You will be based at **SAHMRI** and be part of an **excellent cross-disciplinary research team**.



STUDENT PROJECTS

Here is a brief outline of some of the projects currently available. We also encourage YOU to propose YOUR OWN projects based on the ROSA data resource.

Project #1. The effect of frailty on the utilisation of aged care services- a population-based evaluation.

Frailty is a state of increased vulnerability to mortality and is estimated to be prevalent in 18-49% of older Australians. While frailty is known to disproportionately affect the utilisation of health care services of people, less is understood regarding its effect on the utilisation of aged care services in Australia.

Using the ROSA, this project will evaluate the effect of frailty on the utilisation of aged care services on the ROSA cohort from 2003 to 2014. It will describe how the cohort's frailty has changed over the study period and evaluate how it affects the utilisation of specific types of aged care services. Frailty will be measured using the recently developed ROSA Frailty Index. Aged care service utilisation will be measured by the types of aged care services received by the study cohort (i.e. permanent residential aged care, home care packages, transition care, and respite care).

Understanding the epidemiology of aged care services in frail people will inform the preparation of the aged care system regarding resource allocation, workforce preparation, and policy development. This is needed as our population continues to age, increasing demand on our system.

Project #2. Do the professions of assessors for aged care services eligibility affect the reporting of medical conditions and functional limitations and which services are recommended for older people in Australia?

Before people can receive government-subsidised aged care services, a detailed assessment is conducted with an aged care assessment team (ACAT). ACATs assess the individual's level of need for aged care services by reporting information such as the person's health conditions and functional limitations. The professions of the ACATs vary widely, from medical practitioners, health professionals, nursing professionals to social welfare professionals. The professions of the ACATs may influence the clinical judgement of whether to conduct a clinical assessment for certain health conditions or ability to refer to a specialist. Yet, it is unknown if the professions (and subsequent skill set) of the ACATs affects what is recorded during the assessment (including medical conditions and functional status) and what services are recommended for the individual.

This project will utilise the Historical ROSA cohort which includes information on 955,439 people who have had one or multiple ACAT assessments (2003-2014). Associations between the professions of the ACATs and the medical conditions and functional limitations reported, and services recommended will be examined.

Project #3. The burden of mental health disorders in older Australians.

In this project, we aim to evaluate the use of health services and medicines by individuals with mental health disorders such as depression, bipolar disorder, anxiety, and psychosis, in Australians aged 65 or older who receive aged care services. This will include an investigation into the change of trends in care of individuals, choices of pathways of aged care services (home care, permanent residential aged care, transition care, and respite care), and outcomes of those affected by these conditions.

Project #4. The effect of frailty on the outcomes of surgically treated osteoporotic fractures in residents of permanent residential aged care and those receiving home care packages

People with osteoporosis, a weakening of bones, are at increased risk of fracture after falls. Both osteoporosis and fracture after falling are more common in older people. Sites of osteoporotic fractures include the hip, vertebrae, forearm and wrist. Hip and vertebrae fractures, in particular, are associated with increased early mortality and reduced activity and independence. Factors associated with patient recovery from these fractures are therefore of interest.

Frailty is the decreased intrinsic capacity for older people to return to health after every day or acute stressors, including physical injury. Thus, we are interested in the relationship between pre-fracture frailty and the return to health or otherwise of older people who have suffered osteoporotic fractures. This project will examine if osteoporotic fracture patients have increased risk of poor, post-fracture outcomes if they had high frailty prior to their fracture, including early death, (early) re-hospitalisation and reduction in the ability to perform everyday activities.

ROSA is a unique registry containing data on almost all Australians receiving subsidised aged care services (including those at home and in permanent residential aged care), and includes longitudinal follow-up with minimal loss. The student will analyse data from the registry to examine how frailty is related to the outcomes of interests in osteoporotic fracture patients. The student will gain experience analysing data from a large dataset of relevant public health data in an epidemiological setting, and will have ready access to statistical expertise from within the ROSA group. The student will be supervised by an expert and experienced epidemiologist and a post-graduate statistician.

Project #5. Trends in eye disorders, eye health care utilisation and ophthalmic medication use among people accessing Australian aged care services

Age-related eye disorders are common and leading causes of visual impairment and blindness in older people. About 10% of the general population aged 55 or over are visually impaired in Australia. About 70% of the eye disorders (e.g. cataract, refractive error) in this age group are treatable and/or correctable. It is well documented that visual impairment is associated with increased risks of adverse outcomes such as falls, fractures, depression, reduced independence, poor social/emotional well-being, poor quality of life, hospitalisation and early institutionalisation.

As the Australian population is ageing rapidly, the number of people needing aged care services is increasing. Consequently, it is likely that a significant proportion of older Australians with eye disorders and visual impairment will enter/use aged care services. To the best of our best knowledge, population-based studies exploring trends in eye disorders have not been conducted. Therefore, using the largest population-based cohort of older Australians utilising aged care services, captured by the ROSA, this study aims to explore the burden of eye disorders, eye health service utilisation, ophthalmic medication use and adverse outcomes in the Australian aged care population. The study findings will inform a future study which aims to address unmet eye care needs among people who seek aged care services by developing a new and innovative eye care model. The eye care model aims to cater for unmet eye care needs for older Australians.

Project #6. Factors associated with transition of care from home to residential aged care services in Australia

Older people generally wish to remain living independently in their own homes, but this is not always possible due to deteriorating health condition/s, frailty, disability, unmet support needs and other personal circumstances. To accomplish the goal of staying at home for as long as possible, many older Australians rely on the support provided through home care packages. For a proportion of people who are already accessing home care packages, transition from home to residential care is an inevitable consequence of a deterioration of their condition beyond where they can continue living at home. As well as the emotional impact, this transition is often associated with significant public expenditures and costs to individuals and families.

Using the Historical ROSA cohort, this project will undertake a comprehensive and detailed exploration of the time-points at which, and the main factors that lead to, care transitions for older people from home to residential aged care. This study will therefore provide a significant opportunity to identify the types of interventions that may help older Australians stay at home for longer, and help them to avoid or delay moving to residential aged care facilities. Using economic modellings, the project will also quantify costs associated with care transitions and the cost implications of delay or avoidance of entry to residential aged care.

Project #7. Using computationally intensive analytical methods with big datasets

Some statistical and epidemiological methods are computationally intensive, and it takes significant resources to process even moderate sample sizes datasets of 20K-30K observations. It is not feasible to apply such methods to larger datasets (500K-10M observations) in a direct way. Using R statistical software, we can partition a dataset into several parts, process each part separately and then combine local estimates from each part into global estimates. Processing separate data parts can be implemented in parallel, utilising multi-core capabilities of modern computers.

By the end of the project a student will gain solid intermediate skills in programming and analysis with R, utilising large (1-50GB) datasets. The project should result in a series of R functions directly applicable to empirical ROSA data. This would be an excellent opportunity for students who wish to undertake a Master's degree or PhD relating to processing and analysis of empirical datasets.

Project #8. The use of rheumatological medications by people living with musculoskeletal conditions in aged care.

This project aims to examine the use of rheumatological medications by those reporting a musculoskeletal condition as part of their aged care assessment. The data are obtained from the Historical ROSA cohort and include the Aged Care Assessment Team assessment (ACAT), the Aged Care Funding Instrument (ACFI) and Pharmaceutical Benefits Scheme (PBS) datasets. These data can be compared to those that have an assessment but are not admitted to permanent residential aged care, to determine if any differences exist.

Come and join the ROSA Research Team at SAHMRI!



CONTACT US

Twitter: @ROSA_Project

Facebook: <https://www.facebook.com/RegistryofSeniorAustralians/>

Website: www.rosaresearch.org/

ROSA Research Team members:

<https://portal.sahmriresearch.org/en/organisations/registry-of-senior-australians>

Contact us for more info or to propose a project: Maria.Inacio@sahmri.com or ROSA@sahmri.com

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