ACT Government Health

ACT HEALTH VACATION STUDY PROGRAM

PROJECT SUMMARY

Project Title	**Mortality rates and modes of death related to left ventricular diastolic dysfunction in those with preserved ejection fraction: a sub-study of the Canberra Heart Study**
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Lead discipline (please select one)	
☐ **Nursing**	☐ **Health Economics**
☐ **Allied Health**	☐ **Biostatistics**
X Medicine	☐ **Value-based Healthcare**
☐ **Pre-clinical**	☐ **Epidemiology**

Outline of the project

This prospective cohort study will be conducted as a sub-study of the Canberra Heart Study. At the baseline study assessment in 2002/2003, the prevalence of left ventricular diastolic dysfunction with preserved left ventricular ejection fraction (DD-PEF) in a community-based sample of Canberra residents of age 60-85 years was estimated and correlated with clinical and demographic characteristics of the participants. I will be extending the study using longitudinal data to identify the mortality rates and the mode of death in patients with DD-PEF. These data will be used to elucidate the prognostic significance of mild left ventricular diastolic function, a common and frequently preclinical finding on echocardiography in older persons that is often overlooked by clinicians.

Proposed research methods

As a part of the original Canberra Heart Study, 2000 residents of Canberra aged 60-85 years were randomly selected from a population register (federal electoral roll, January 2002). Out of 2000 selected residents, 1388 were eligible for this study and were enrolled for this study between February 2002 - June 2003 (Figure 1). Participants who were institutionalised or moved away from ACT were excluded from this study. Ninety-two percent (1275) of 1388 participants completed the original study.

Baseline data on the following parameters have already been acquired: cardiovascular risk factors, echocardiographic assessment of cardiac structure and function; and clinical ascertainment of heart failure status.

All participants who completed the baseline assessment will be included in this study. Follow-up data was obtained from Australian Institute of Health and Welfare (AIHW) regarding vital status and the cause of death of the participants of the study on 16th November 2019.

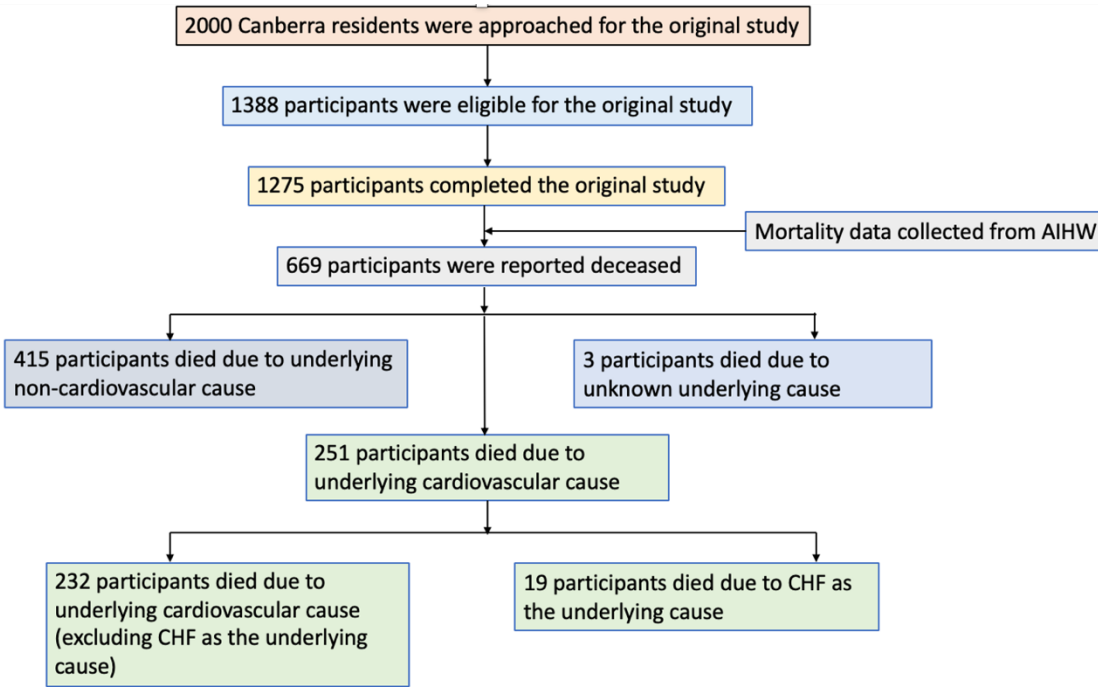

Figure 1: Data was collected from AIHW to assess vital status on 16th November 2019.

Cause of death of participants will be determined from the mortality data provided by AIHW. The cause of death will be categorised, according to the 2019 International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) codes. Causes of death will be divided into an underlying cause of death and 'other' causes of death. The underlying cause of death includes significant diseases, conditions or injuries that directly lead to the death of the participant. 'Other' causes of death include significant diseases, conditions or injuries that contributed to death but which did not result in the underlying cause of death. The underlying cause of death will be classified as either cardiovascular death or non-cardiovascular cause of death. If the AIHW attributed ICD-10 code for the underlying cause of death of the participant was within I00-I99 range, the cause of death was classified as cardiovascular death. The rest of the remaining participant deaths will be classified as non-cardiovascular death. Cardiovascular deaths will be further categorised as congestive heart failure (CHF) if AIHW attributed ICD-10 code for the underlying cause of death of the participant is either I500 or I110 (Figure 2).

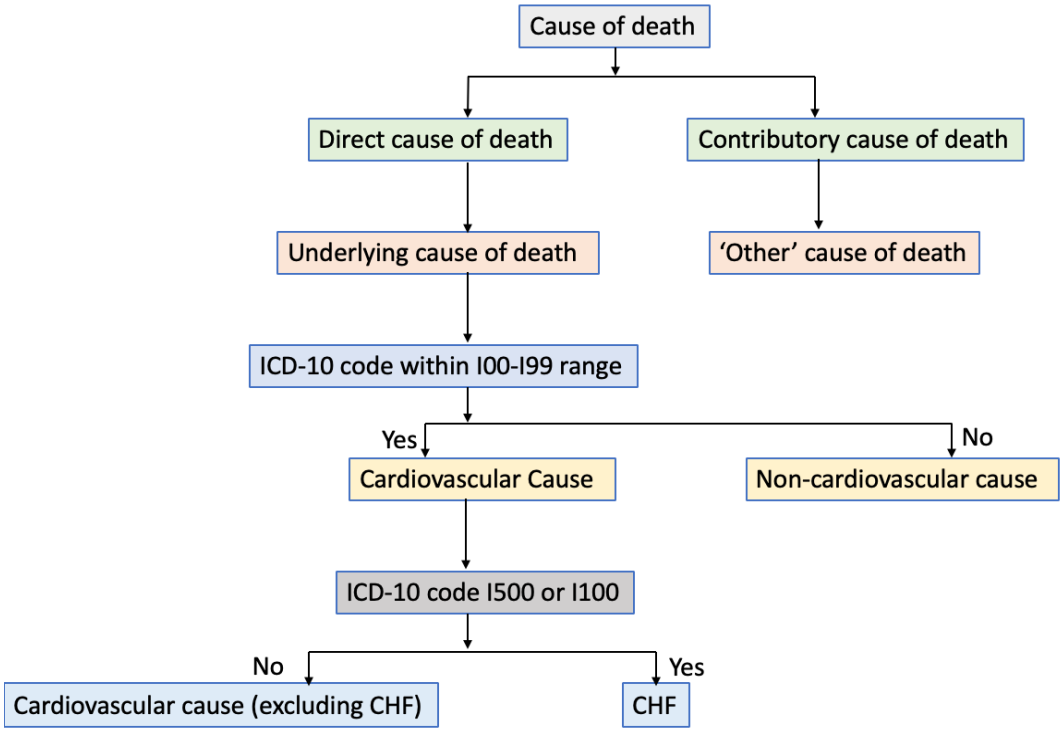

Figure 2: Cause of Death Classification in deceased participants. Cause of deaths were classified based on attributed ICD-10 codes. CHF; congestive heart failure.

Multi-variable Cox regression modelling will be used to quantitate the relationship between DD-PEF and cardiovascular (CHF and non-CHF) and all-cause mortality, adjusting for age, gender and other relevant confounders identified in the statistical analysis.

Preferred study discipline being undertaken by the student

Medicine

Potential benefits to the student and to the department

Benefits to the student:

1. Increase medical knowledge on topic of heart failure;
2. Increase skills in observational research methodology;
3. Increase knowledge on statistical analysis methodology and interpretation;
4. Increase skills in preparing a manuscript for publication;
5. Co-authorship on a peer-reviewed publication.

Benefits to the department:

1. Increasing research output in the hospital;
2. Building research capacity and competence in the hospital;
3. Attracting potential post-graduate clinical and research trainees to the hospital.

Department within ACT Health Directorate / Canberra Health Services where the student will be based
Clinical Trials Unit

Please submit form to preclinical.research@act.gov.au