Background
Low socioeconomic status (LSES) and rurality are associated with poor cardiovascular outcomes and reduced cardiac rehabilitation (CR) participation.

Aims
To investigate CR utilization and effectiveness, factors, needs and barriers associated with non-completion among patients of LSES in rural Australia.

Methods
- Mixed methods with a quantitative and qualitative study
- LSES defined as Index of Relative Socioeconomic Advantage and Disadvantage score within the 2 lowest deciles

Quantitative study
- Retrospective cohort study for investigation of clinical effectiveness according to CR utilisation and factors associated with non-completion
- Eligibility criteria: <=18 years; Referrals to CR through the Integrated Cardiovascular Network (iCCnet) Country Access to Cardiac Health (CATCH) central referral system due to coronary heart disease, revascularization procedures, heart failure, atrial fibrillation, arrhythmias management or valve procedures; LSES
- Primary outcomes: Composite outcome all cause-death and CV readmission; CR attendance/completion
- Data linkage; inverse probability weighting
- Statistical analysis: Cox regression models stratified (clinical outcomes as response variables). All models were adjusted for clinical and socioeconomic characteristics.

Qualitative study
- Investigation of barriers and needs to CR completion
- Focus groups, interviews
- Thematic analysis

Results
- 16,159 eligible separations
- Mean age 68.9 (SD 14.3) years; 40.9% female
- Acute myocardial infarction (n= 1,773; 11.0%) and percutaneous coronary intervention (n=806; 4.9%)
- CR utilization: 44.3% referred; 33.4% of the referred commenced CR and 74.6% of the ones commencing, 1,806 (74.6%) completed the program.
- Completing CR (HR 0.65; 95%CI 0.57-0.74; p<0.001) was associated with a lower risk of cardiovascular readmission/death (Figure 1)

Factors associated with non-completion
- Living alone (OR 1.38; 95%CI 1.00-1.89; p=0.048
- Diabetes (OR 1.48; 95%CI 1.02-2.13; p=0.037
- Depression (OR 1.54; 95%CI 1.14-2.08; p=0.005
- Telehealth program (OR 0.26; 95%CI 0.18-0.38; p<0.001).

Themes related to barriers to CR completion
- Social support

You’ve got all that, those people around you treating you and you know, doing things for you and then you’re on your own. I found that once I got home, because I live alone also.

- Transition of care challenges

There should be somebody calling you while you go home in the beginning... I didn’t speak to anybody.

- Lack of care integration

I find my experience is that there’s a disconnect between the cardiologist, the general practice community health. They don’t seem to talk to each other. And it’s not, I don’t think it’s a cohesive thing that is happening.

- Lack of person-centeredness

Maybe because nurses and doctors don’t have time, I don’t know. To me it’s annoying when all of a sudden of all people, a friend who also had heart surgery about 10, 15 years ago was actually telling me more than my doctor told me

Conclusion:
Completion of CR is associated with better clinical outcomes. However, barriers need to be addressed to increase CR completion which remains low among people of LSES living in rural South Australia.

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Contact: alline.beleigoli@flinders.edu.au