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EDITORIAL

Cardiac Rehabilitation Quality in Australia: Proposed National Indicators for Field-Testing

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Introduction

Comprehensive exercise-based cardiac rehabilitation (CR) has well-established efficacy and effectiveness for improving patients' outcomes [1,2]. However, delivery of CR programs varies substantially [3] and these beneficial results are only achieved by high performing programs that include most guideline-recommended components. CR programs that assess and address multiple risk factors (six or more) or oversee prescription and monitoring of cardioprotective medications reduce all-cause mortality (27% and 65% respectively), whereas programs that do not include such components have no effect on these outcomes [3]. Moreover, CR programs that monitor, promote and achieve high levels of exercise adherence by participants reduce all-cause and cardiovascular mortality (19% and 28% respectively), in contrast to the lack of effect of CR programs that have suboptimal exercise participation [4].

Assessment of quality plays a major role in achieving guideline-recommended standards. Most high-income countries conduct regular national-level assessment of the quality of CR delivery, including the United Kingdom [5], United States of America [6], Canada [7], Sweden [8] and many other European countries [9]. Australia is the exception. Cardiac rehabilitation quality assessment efforts in Australia currently provide only pieces of the jigsaw puzzle of the real world delivery of CR and include one-off national email-based surveys [10,11] and state-based audits [12–14]. A contributing factor to the lack of a unified assessment of CR quality is the use of inconsistent and diverse quality indicators (QI) for CR. A set of nationally-agreed, internationally-consistent, locally-relevant QIs is urgently needed. This priority was confirmed as the first essential step in improving the monitoring of CR across Australia at a Think Tank led by the Australian Cardiovascular Health and Rehabilitation Association (ACRA) and the National Heart Foundation of Australia (NHFA) and initiated and hosted by the South Australian Advanced Health Research and Translation Centre in September 2018 [15].

National Cardiac Rehabilitation Quality Indicator Development Process

Quality indicators are explicitly defined statements that aim to measure adherence to aspects of evidence-based care identified as necessary for reaching optimal patient outcomes [16]. The National Institute for Health and Care Excellence (NICE) UK provides useful guidance on the process for development of high-quality indicators relevant to Australian CR [17]. This process was adopted by our team and

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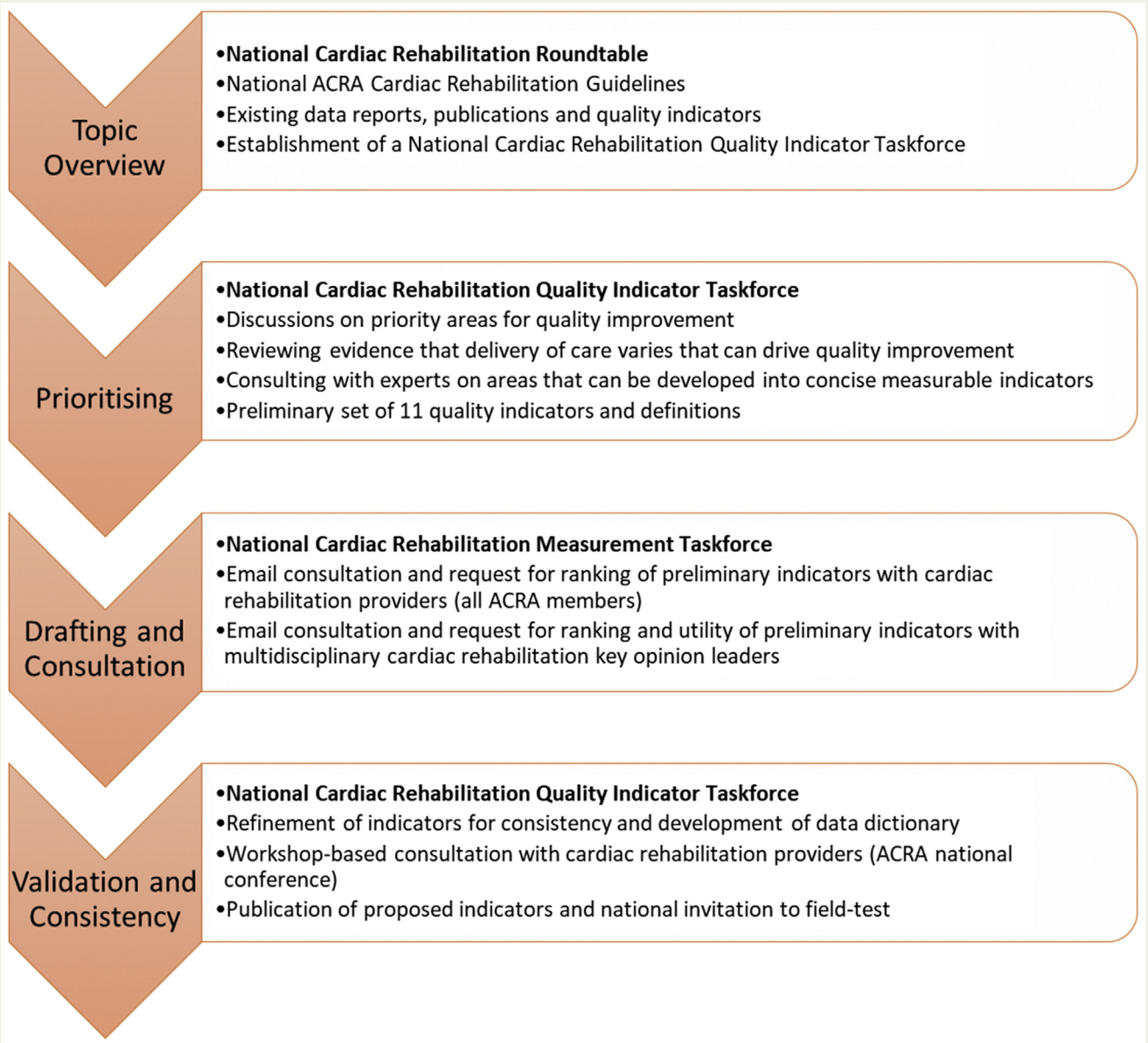

Figure 1 Quality Indicator Development Process Guided by the National Institute for Health and Care Excellence (NICE) UK; ACRA (Australian Cardiovascular Health and Rehabilitation Association).

includes the steps of topic overview, prioritising areas for quality improvement, drafting and consultation, validation and consistency checking illustrated in Figure 1.

At Step 1, the Topic Overview was undertaken during the preparation and consultation of the CR Think Tank process. Reference was made to evidence from the ACRA guidelines for CR [18], existing published data [10–13] and indicators [14], as well as reports from CR clinicians. A National Cardiac Rehabilitation Measurement (NCRM) Taskforce, co-chaired by the NHFA and ACRA, was established to progress the development of the quality indicators and CR monitoring more widely. The NCRM Taskforce then undertook the next three steps, which included determining the most important, useful and measurable QIs, for both processes and outcomes. These 11 preliminary QIs were circulated for ranking and comment to all ACRA members (predominately multidisciplinary CR providers), and to leading national multidisciplinary CR experts from cardiology, research, physiotherapy, nursing, epidemiology and registry development backgrounds. Ratings, comments and suggestions were collated and discussed by the NCRM Taskforce, and the indicators rated most important, useful and feasible were retained, resulting in 10 QIs. These 10 QIs were presented at the ACRA national conference and discussed at a workshop specific to this purpose. Based on the combined feedback and NCRM Taskforce discussions, the QIs were made clearer and an accompanying data dictionary was

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prepared ready for the final step in the development process of validation and field-testing.

Recommended Field-Testing and Implementation

The purpose of the 10 QIs detailed in Table 1 is to provide a minimum set of standardised national-level measures that should be collected and reported on by CR programs to determine the quality of delivery and associated outcomes, benchmark performance (both nationally and internationally), and support quality improvement processes. The indicators should be used in conjunction with the data dictionary (Supplementary Material), which provides specific guidance on the meaning of terms and the individual data that is required for each QI. The NCRM Taskforce invites Australian CR providers, researchers and register managers to field-test and report against these QIs to determine their validity and utility. The QIs may be used at the level of the individual site, health district, state and nation to enable benchmarking across existing boundaries and promote a shared understanding of CR performance.

The NCRM Taskforce has identified the next essential steps in a national CR monitoring strategy as including: 1) development of a web-based tool, and 2) establishment of a national governance committee comprising representation from key stakeholders including ACRA, NHFA, the Cardiac Society of Australian and New Zealand, and leading CR providers and researchers.

Development of a web-based tool at a national level with suitable, funded governance and stewardship would enable data entry and collaboration across multiple sites and has a strong potential to reduce data collection and entry burden. The latter is crucial as the responsibility for CR quality

Table 1 Cardiac rehabilitation quality indicators.

Australian Cardiac Rehabilitation Quality Indicators Summary
The below provides a summary of the 10 quality indicators for CR. Some indicators aim to evaluate processes of care (process indicators) while others evaluate the outcomes of CR (outcome indicators). These are colour co-ordinated as per the key below the figure.
QI-1. REFERRAL
Eligible in-patients are referred to cardiac rehabilitation within 3 calendar days of hospital discharge.
QI-2. TIME TO ENROLMENT
Eligible in-patients commence cardiac rehabilitation within 28 calendar days after hospital discharge.
QI-3. COMPREHENSIVE ASSESSMENT
Patients who commence CR receive a comprehensive assessment of cardiovascular risk factors.
QI-4. DEPRESSION SCREENING
Patients who commence CR are screened for depression at initial and re-assessment and offered counselling (or a referral to counselling) if symptoms are identified.
QI-5. ASSESSMENT OF SMOKING
Patients who commence CR are assessed for smoking use at initial assessment and offered smoking cessation counselling if they are a current or recent smoker.
QI-6. ASSESSMENT OF MEDICATION ADHERENCE
Patients who commence CR are assessed for medication adherence at initial and re-assessment.
QI-7. EXERCISE CAPACITY
Patients who commence CR have an initial assessment and re-assessment to determine exercise capacity change.
QI-8. HEALTH-RELATED QUALITY OF LIFE
Patients who commence CR have an initial assessment and re-assessment to determine any change to health-related quality of life.
QI-9. RE-ASSESSMENT
Patients who participate in CR receive a comprehensive re-assessment of their cardiovascular risk factors.
QI-10. CARE TRANSITION
Patients and ongoing care providers are provided with a report which outlines patient risk factors and an individualised ongoing management plan.

■ Process indicator ■ Outcome indicator

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improvement data collection and entry typically falls to CR clinicians who have substantial clinical duties. The QIs selected and associated variables represent a minimal data set, which deliberately minimises the burden of data collection and entry. A similar set of QIs has proven feasible and acceptable to cross-state and territory Australian CR coordinators (n=39) [19]. In this study, composed entirely of volunteers, additional methods were used to reduce burden including a restricted data collection time (snapshot) of 3 months and a simple standardised Microsoft Excel spreadsheet for data entry. Data collection and entry was estimated at an average 60 minutes/week during the study period depending on the size of the service. Reduced burden occurs when there is an existing electronic data collection system and the majority of the variables used for the QI are routinely collected, however, it is essential that field-testing should also gather data on workload [20]. While these methods are appropriate for initial work, a well-funded web-based registry with data linkage, such as the Queensland Cardiac Outcomes Registry (QCOR) would be the ultimate, though challenging, goal [21].

Quality indicator data collection and entry processes are a component of an overall framework to determine whether the QIs are reliable and valid proxies of quality CR delivery and implementation and monitoring of CR quality. The American College of Cardiology and the American Heart Association provide a suitable empirical field testing evaluation process for the suggested CR QIs [21] and a rating form is provided to also evaluate the utility and feasibility of implementation of the QIs [22]. Essential phases in implementation and monitoring for individual CR sites includes: scoping current data processes and determining additional data and workload required for the CR QIs; seeking quality improvement or human research ethics committee approval; staff training and commitment pre-implementation and data collection, entry, collation and reporting [19,20,23]. Cross-site multidisciplinary collaboration such as occurs in state-based clinical networks can reduce workload and costs and increases motivation for all phases in comparison to single site efforts, although governance must be considered [19].

The NCRM Taskforce is now engaged in Step 2, the establishment of a national governance committee which will have oversight of developing processes for implementation and monitoring. The NCRM Taskforce welcomes discussion of any of the points raised in this editorial and the opportunity to collaborate and support the field-testing processes identified above.

Conclusion

A minimum set of locally-relevant, internationally-recognised, national QIs for CR is now available for CR providers, health service managers and researchers in Australia. Field-testing and feedback will only improve the QIs. While the QIs would serve national interests best when incorporated within the National Cardiac Registry or state- and territory-level registries, the QIs will also be useful for site audits and have strong potential to be aggregated across sites, health districts and states. The definitive test of the QIs will be how useful they are for CR program coordinators and funders of such programs; a key consideration for building sustainable business models and ensuring long-term implementation effectiveness. The NCRM Taskforce anticipates that improvement in CR quality resulting from standardised methods of assessing and reporting will ultimately lead to improvement in CR referral and participation and clinical outcomes through CR program health service improvements nationally.

Appendices. Supplementary Data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.hlc.2020.02.014.

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