

VIEWPOINT

Cardiac Rehabilitation

A Global Perspective on Where We Have Come and Where We Must Go



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Cardiovascular diseases (CVDs) continue to be the leading cause of mortality globally, but are also the leading cause of disability in those over 50.¹ CVDs are becoming more preponderant in low- and middle-income countries (LMICs), where the need for care is greatest,² yet access is a great challenge. Cardiovascular rehabilitation (CR) is an established and comprehensive model of secondary preventive care, proven through rigorous Cochrane reviews to mitigate this burden through all the advances in interventional cardiology and pharmacotherapy from 2000 to present.³ CR has a long history since the mid-1940s, with more global diffusion since the 2000s.^{4,5}

Given the health benefits and cost-effectiveness of CR, cardiovascular clinical practice guidelines from around the world include recommendations for patient referral.⁶ Yet CR is known to be under-available and under-used when compared to other guideline-recommended therapies.⁷ The global CR community came together through a World Council of CR to

address this, but unfortunately, it folded into a subcommittee of one CR association around 2004.

Given the continued and growing need for CR,⁸ major CR societies initiated discussions almost 15 years ago to begin again to tackle the issues together. The International Council of Cardiovascular Prevention and Rehabilitation (ICCP)⁹ was founded, comprised of named board members of preventive cardiology-related clinical societies from around the world. Our network has continued to grow—now comprised of 43 societies, and 16 “friends” in countries where CR services are in development—with reach around the globe.

One of ICCPR’s priorities is promoting CR in LMICs.¹⁰

Upon consultation with members, one of our first initiatives was to determine the availability of CR globally in relation to need.⁵ Results revealed that as of 2017, only 111/203 countries globally had any CR, with about 6,000 programs operating around the world. We estimate there is only one CR “spot” for every 12 incidentally indicated patients per year. The gross inequity in care access was quantified, with results showing only 1 spot for every 66 patients in need in LMICs.

When we asked programs in the audit about their barriers to broader delivery, one of the major factors was lack of trained personnel.⁵ ICCPR thus developed a CR Foundations Certification.¹¹ Approximately 3,000 learners from ~35 countries have become certified, and we are now looking to leverage artificial intelligence to offer this training in more languages. Given the Audit identified the particularly great need in India and China, we implemented initiatives to engage physicians in these countries specifically. We also currently partner with our colleagues in Australia to offer scholarships to waive the \$100USD fee for

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FIGURE 1 Cardiac Rehabilitation: Where We Have Come and Where We Must Go

LMIC providers and trainees.¹² This training is applicable to low-resource settings and complements the more advanced training available from CR-related societies in the United States¹³ and Europe.¹⁴

Another key barrier identified by programs in the global audit⁵ was lack of patient referral and awareness about CR. Evidence for the effect of automatic or electronic CR referral in increasing CR access by 8 times is highly compelling, and there are now data also demonstrating feasibility and impact of this approach in low-resource settings.¹⁵ Moreover, the Cochrane review on interventions to increase CR use established the importance of patient CR encouragement at the bedside; a corresponding clinical guideline was developed by the ICCPR community, with a free online course for inpatient health care providers to support implementation.¹⁶ Our partners in the United States have been leaders globally in application, offering free modules on implementing automatic referral with patient encouragement/care co-ordination.¹⁷ ICCPR also seeks to promote equitable CR access in vulnerable patient populations, such as women.¹⁸

We also seek to support emerging CR programs to develop high-quality services. ICCPR recently launched an International CR Registry,¹⁹ which already contains data from over 2,000 patients in all regions of the globe. This is now the ninth active CR registry around the world,²⁰ but uniquely focuses on low-resource settings. Participating sites can be assessed for ICCPR Program Certification, demonstrating they meet internationally-agreed minimum standards.²¹ Again, this program certification is applicable to low-resource settings and complements the more advanced certifications available from our partners in the United States²² and Europe.²³

ICCPR is also supporting CR programs in delivering alternative, affordable models of CR; this is germane given an update of ICCPR's Global Audit at the beginning of the COVID-19 pandemic showed many programs had shifted to remote delivery.²⁴ While meta-analysis by our group has established the benefits of CR as delivered in LMICs,²⁵ further randomized trials of hybrid, technology-based CR are recently being undertaken in LMICs in connection with ICCPR,²⁶⁻²⁸ and efforts are underway to adapt the United Kingdom's arguably first evidence-based model of home-based CR for low-resource settings.²⁹

WHERE WE MUST GO

Figure 1 summarizes from where we have come to inform future directions.

Undoubtedly, the major challenge impeding capacity increases continues to be reimbursement parity of CR services with acute cardiac care—including remotely-delivered CR, given that it is now more commonly delivered but is less commonly reimbursed than center-based CR.²⁴ Back at ICCPR inception, advocacy tools to lobby for coverage were developed for members,³⁰ but while there have been some success stories (eg, Iran, Qatar, United States), admittedly not much progress has been made. ICCPR worked with the World Health Organization on the Package of Rehabilitation Interventions for ischemic heart disease (which is based on ICCPR recommendations for low-resource settings, among other guidelines).³¹ With its release in 2023, implementation by member states could certainly greatly increase CR provision globally. ICCPR is also a member of the recently-initiated World Rehabilitation Alliance, also working to move this agenda forward. Finally, it is hoped efforts to augment universal health care as part of the United Nations Sustainable Development Goals will also benefit CR access.

ICCPR will soon repeat their global audit, to ascertain the capacity of CR peri- or post-pandemic, including assessment of delivery modalities and their reimbursement sources as well as service comprehensiveness. We are also eagerly watching progress of the INTERASPIRE study, which includes assessment of secondary prevention including CR in 6,000 patients globally and will be combined with the results of EUROASPIRE to provide the most current and fulsome international snapshot of CVD patient care and outcomes to date.

We realize our efforts must span from the policy and health systems through health care provider and patient levels if we are to successfully improve access to quality CR services and optimize secondary prevention. There are some key factors we currently face at each level. For instance, accelerating climate change and associated causes also mean CR patients may have less access to clean air, temperate conditions, and green space for safe outdoor exercise. Data from the Prospective Urban Rural Epidemiology study demonstrate that patient access to and affordability of secondary preventive medications continues to be a major challenge for patients, particularly in LMICs. We must work together with governments as well as the medical and pharmaceutical communities to improve access to cardiovascular medication and

rehabilitation (which promotes adherence to medication as well as all other secondary prevention recommendations) so patient outcomes can be improved. Increases in the burden of mental health issues and broader recognition of their intersection with chronic disease and impact on patient outcomes underscore the need for more focus on psychosocial screening and treatment within CR. Our CR registries could tackle this through our quality initiatives. We are also assessing patients' CR barriers in all regions of the globe; recent results identify the top ones as lack of CR awareness, travel distance, and cost.

In just 2 more decades, we shall celebrate CR's centennial and hopefully ICCPR's 30-year anniversary. During this time, we will continue to work with the many others who are also dedicated to improving access to CR around the world. For example, ICCPR's program email distribution list reaches almost one-third of programs globally,³² and as such, it serves as an important forum to share CR initiatives and resources. Moreover, we are currently working closely with leaders in Africa to bolster their efforts in CR capacity-building. There remains much work to be done, so please join us.

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