

The story of the PuRe trial

Co-designing a multi-national trial in low- and middle-income countries

Pinnock H, Habib M, Agarwal D, Engkasan J, Paul B, Hammersley V, Rabinovich R, and the teams from BPCRS, CMC, KEM, UM and UoE.

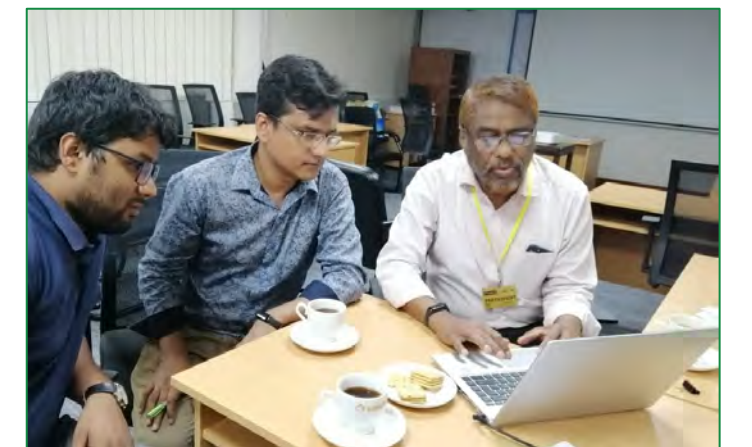
2. Systematic reviews

The evidence that PR improves exercise capacity and quality of life in chronic respiratory disease is mainly from high income countries.

Some evidence from LMICs – but studies are at high risk of bias

- Habib GM, et al. SR of clinical effectiveness and models of care of low-resource PR. *npjPrim Care Respir Med* 2020;30:52

Home-based PR is as effective as Centre-PR (In high income settings)



- Uzzaman et al. Effectiveness of home-based pulmonary rehabilitation: systematic review and meta-analysis. *Eur Respir Rev* 2022;31:220076

2
Establish the research gap

3. The PuRe manual

The core components of pulmonary rehabilitation were systematically adapted from global guidelines

- Habib GM. Adapting, evaluating and implementing pulmonary rehabilitation in Bangladesh. <https://era.ed.ac.uk/handle/1842/39322>

3
Adapt and define the intervention

Colleagues from all the centres are developing the PuRe Manual with details of all aspects of pulmonary rehabilitation.



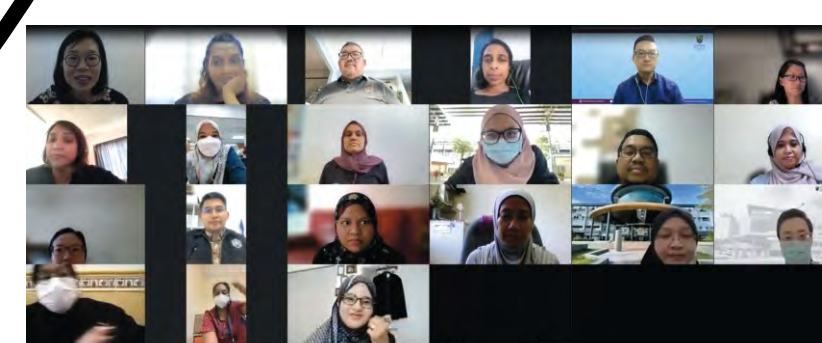
5. Embed capacity building

Diksha Singh and Soo Chin Chan, RESPIRE PhD students aligned with PuRe



Clinical training
E.g., 'Teach the Teacher' in Malaysia

- Chan SC, et al. Pulmonary Rehabilitation Capacity Building through a Teach-the-Teacher Programme: A Malaysian experience. *J Glob Health* 2023;13:03047



1. Stakeholder engagement

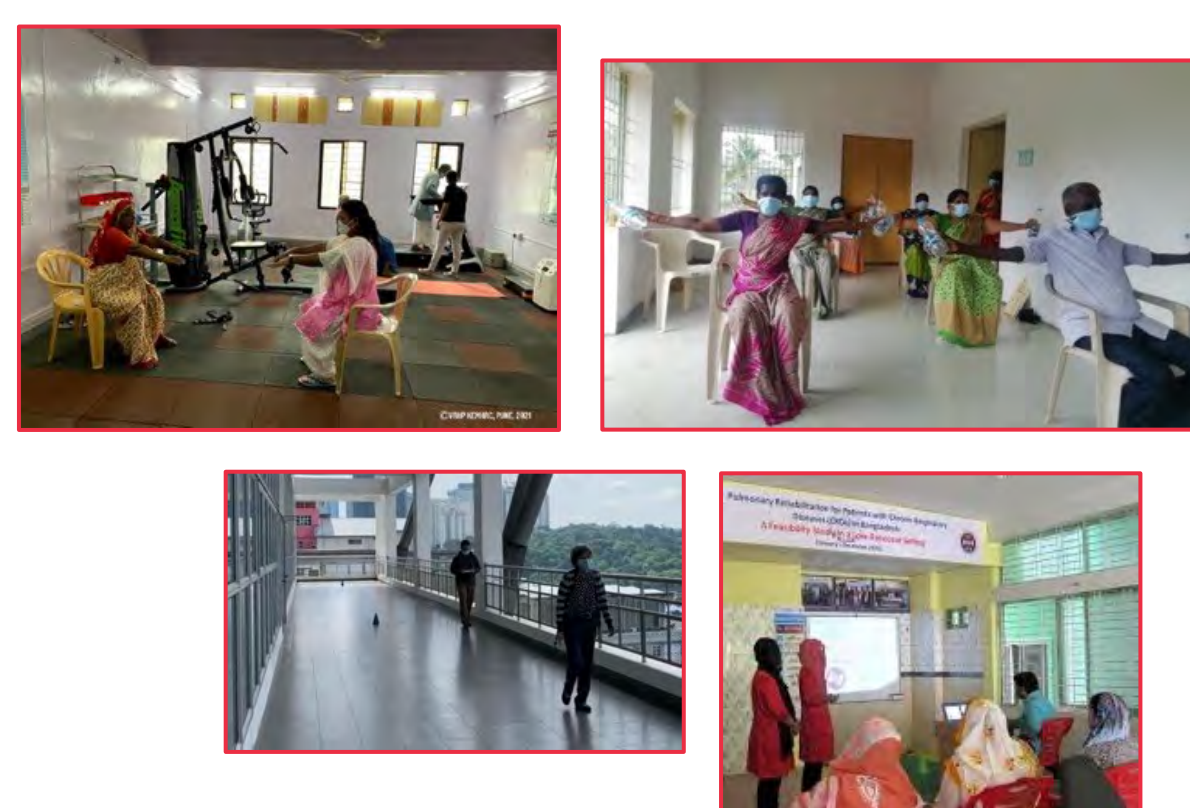
Community engagement work ensured the research question reflected local contexts and healthcare needs, optimising the relevance of the research to end-users.

- Habib GM, et al. Engaging with stakeholders to promote implementation of PR in Bangladesh. *J Glob Health* 2020;10:020384
- Chan SC, et al. Stakeholder Engagement to Promote Implementation of PR in Malaysia. *J Glob Health* 2021;11:02003

1
Identify the local need

4. Feasibility studies

Feasibility studies in the four centres explored a range of approaches to delivering pulmonary rehabilitation and confirmed practicability, acceptability and potential utility in the proposed settings.



- Habib GMM, et al. Exploring patient experience of living with Chronic Respiratory Diseases and the value of pulmonary rehabilitation in Bangladesh. *J Glob Health* 2024;14:04036
- Habib GMM, et al. Delivering remote pulmonary rehabilitation in Bangladesh: a mixed methods feasibility study. Being revised for *J Glob Health*
- Singh D, et al. Needs assessment for introducing PR for COPD management in a rural Indian setting: a qualitative study. *BMJ Open Respir Res* 2023;10:e001696
- Chan SC, et al. Home-Based Pulmonary Rehabilitation for Patients with Chronic Respiratory Diseases in Malaysia: A Mixed Method Feasibility Study. *J Glob Health* 2023;13:04099
- Chan SC, et al. Barriers and challenges of implementing pulmonary rehabilitation in Malaysia: Stakeholders' perspectives. *J Glob Health* 2021;11:02003



4
Undertake feasibility studies



Co-designing research with local stakeholders improves relevance of findings. Emerging from RESPIRE, our experience of designing the PuRe trial illustrates some key considerations



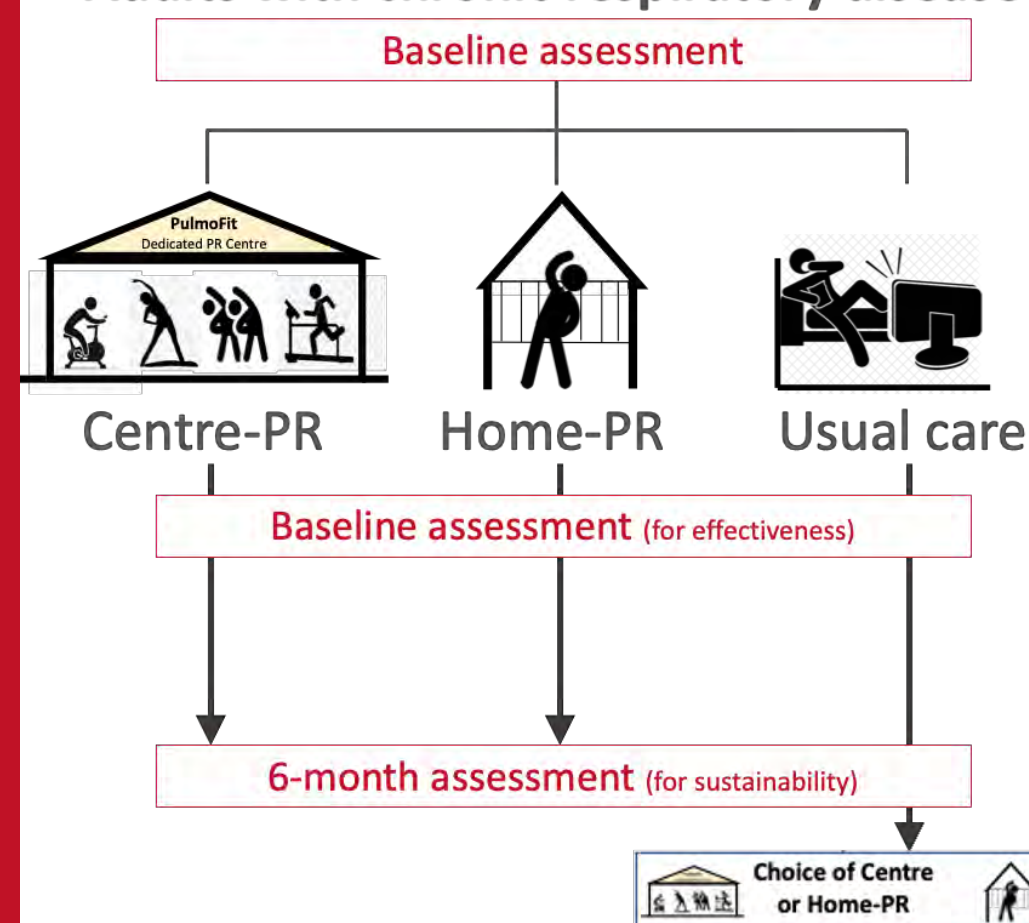
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465
Adults with chronic respiratory disease



The PuRe trial

Clinical effectiveness

Endurance shuttle walking test



St George's Respiratory Questionnaire

Health economic evaluation

Mixed methods process evaluation; exploring implementation

Stakeholder engagement