

# National Allied Health Virtual Research Forum 2024

## Transforming pulmonary rehabilitation to enhance patient and health system outcomes

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# Pulmonary rehabilitation & chronic respiratory conditions

People with chronic respiratory conditions are vulnerable to poor outcomes<sup>1</sup>

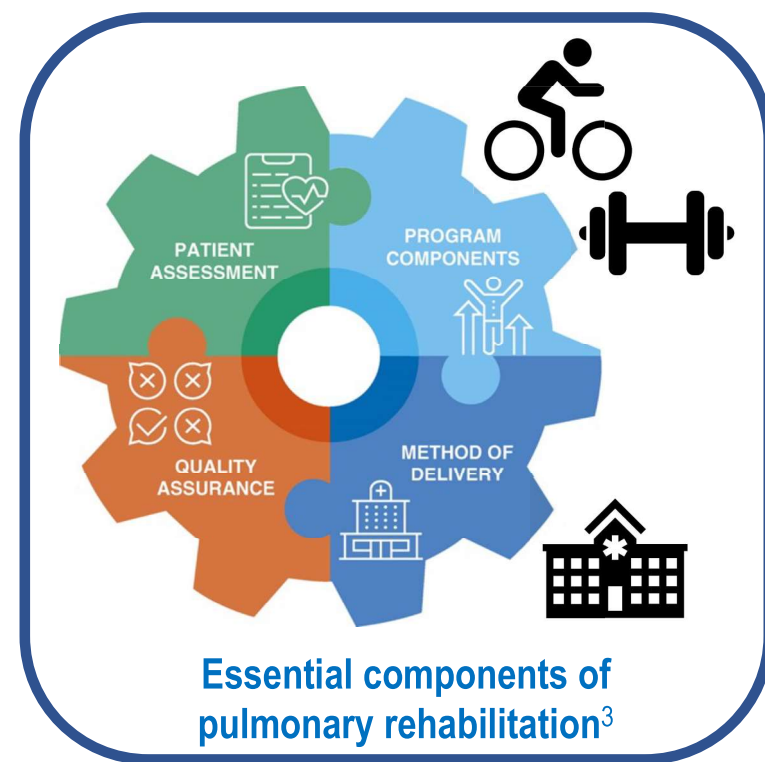
- Patients place greatest value on symptom relief & avoiding hospitalisations<sup>2</sup>

Pulmonary rehabilitation is an essential component of care<sup>1,3</sup>

*“comprehensive intervention of patient-tailored therapies that include exercise training, education & behaviour change, to improve the physical & psychological condition & to promote the long-term adherence to health-enhancing behaviours”<sup>4</sup>*

Strong evidence for improvements in symptoms, quality of life & fewer hospitalisations<sup>5</sup>

In Australia, usually offered as a twice-weekly 8-week outpatient centre-based (health service) program – with no funding model to support delivery in primary care.



<sup>1</sup>GOLD 2024; <sup>2</sup>Zhang Y 2018; <sup>3</sup>Holland AE 2021; <sup>4</sup>Spruit MA 2013; <sup>5</sup>McCarthy B Cochrane Database Syst Rev 2015, Puhan M 2016

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EDITORIAL

## This Cochrane Review is closed: deciding what constitutes enough research and where next for pulmonary rehabilitation in COPD

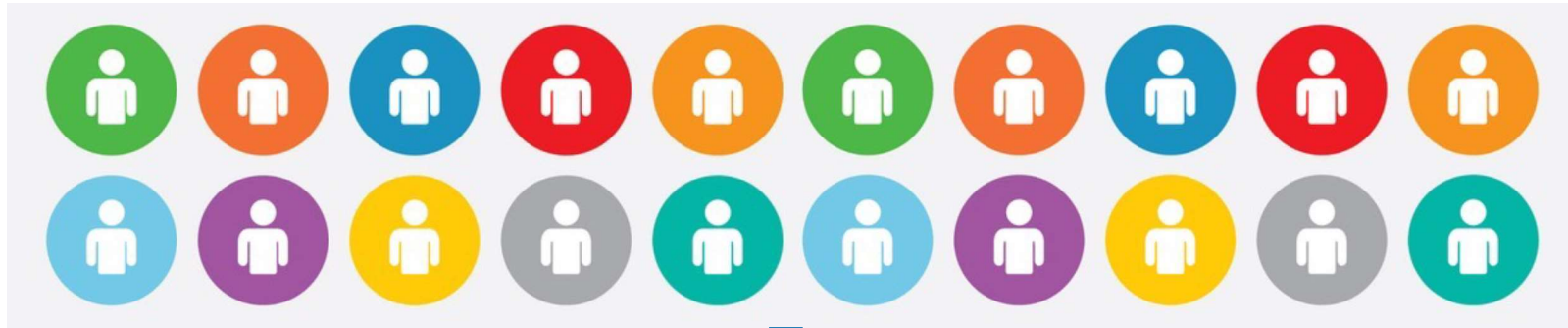
Yves Lacasse, Christopher J Cates, Bernard McCarthy, Emma J Welsh

*Cochrane Database of Systematic Reviews* 2015;(11):ED000107 <https://doi.org/10.1002/14651858.ED000107>

Publication date: 18 November 2015

of  
pulmonary rehabilitation<sup>3</sup>

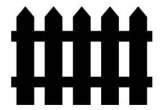
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## Barriers to accessing evidence-based healthcare

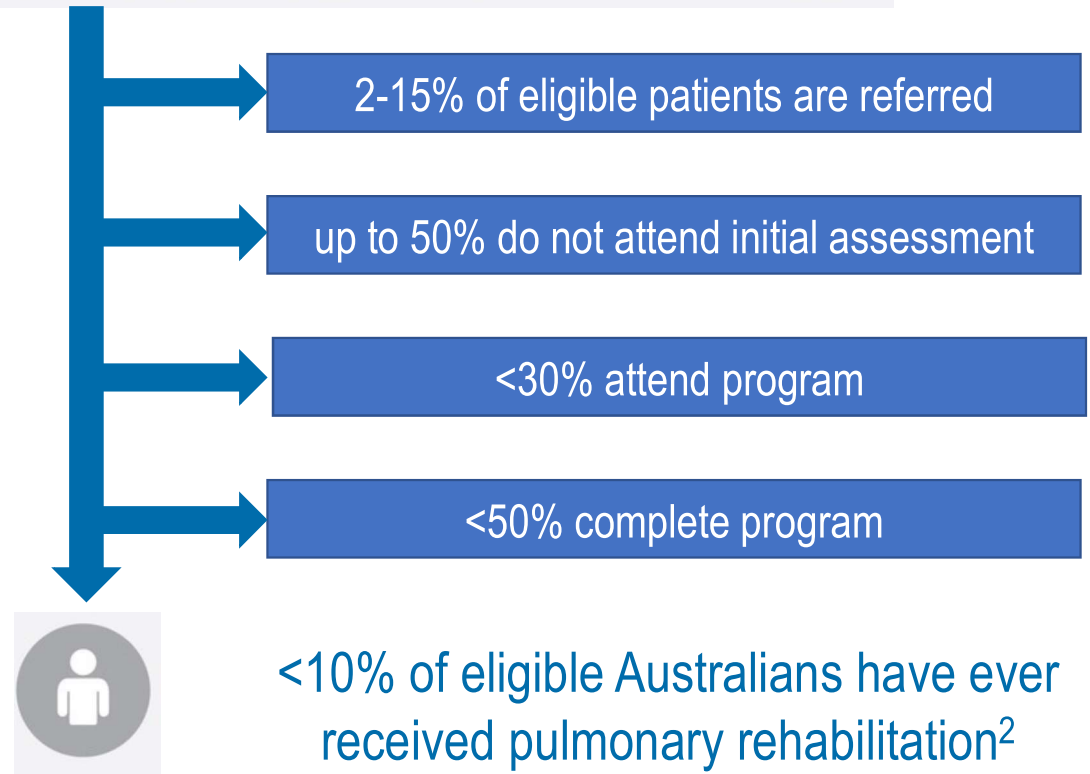


Program availability



Long-standing & well documented challenges to referral, attendance, uptake & completion<sup>1</sup>

- Patient- & system-level barriers



<sup>1</sup>Keating A 2011, Cox NS 2017; <sup>2</sup>Holland AE 2021, Marks G 2013

# Alternative models of pulmonary rehabilitation to overcome barriers



## Home-based program<sup>1</sup>

2 metropolitan sites  
166 people with COPD



## Telerehabilitation program<sup>2</sup>

3 metropolitan sites & 1 rural site  
142 people with chronic respiratory disease



## Centre-based



<sup>1</sup>Holland AE 2017; <sup>2</sup>Cox NS 2022

# Alternative models of pulmonary rehabilitation to overcome barriers



Home-based program<sup>1</sup>

2 metropolitan sites



Telerehabilitation program<sup>2</sup>

2 metropolitan sites & 1 rural site



- ✓ safe
- ✓ equivalent/clinically important clinical outcomes
- ✓ completion rates up to 94%



<sup>1</sup>Holland AE 2017; <sup>2</sup>Cox NS 2022



# Primary Care Plan: Reform Stream 1 Future focused health care

Supportive evidence from research for improvements in healthcare delivery

- **Increased access to care** with adoption of alternative models into usual clinical care<sup>1</sup>
  - 93% of home-based participants stated they would not have attended centre-based program
  - Upskill local workforce
- **Ensure safety and quality of care**
  - Nil intervention-related adverse events<sup>2</sup>
  - All program models align with international standards for program delivery<sup>3</sup>

- **Deliver care that is valuable to patients**

“I was able to go for a bush walk with friends and be able to talk as well as walk!... and keep up and they weren't waiting for me so that was fantastic”<sup>4</sup>

“I go up the street and... do my shopping and everything on my own, with my little oxygen bottle. Whereas before, I used to be terrified, I wouldn't go anywhere”<sup>5</sup>

<sup>1</sup>Bondarenko J 2021, Cox NS 2024; <sup>2</sup>Cox NS 2021; <sup>3</sup>Holland AE 2021, Dal Corso S 2024; <sup>4</sup>Lahham A 2018; <sup>5</sup>Cox NS 2023

## Reform Stream 2 Person-centred primary health care

Available evidence supports review of funding arrangements for allied health

*“move to payments incentivising quality & outcomes  
and ensuring access to quality care in areas of market failure” page 2 of plan*

Centre-based pulmonary rehabilitation is **inexpensive**<sup>1</sup>

- Direct program costs \$529 per participant <1 medical bed day (\$669 Victoria 2023/24)<sup>2</sup>

Home-based & telerehabilitation models are **cost-effective** alternatives<sup>1</sup>

- Trial-based economic analyses using individual patient-level data

People who completed pulmonary rehabilitation

- Were up to 56% less likely to be hospitalised<sup>3</sup> **important outcome for patients & health system**
- Demonstrated **lower health system costs** over 12 months (\$10,620 to \$17,960)<sup>1</sup>
  - Lower costs in every component **not just admission-related, includes MBS, PBS, outpatient**

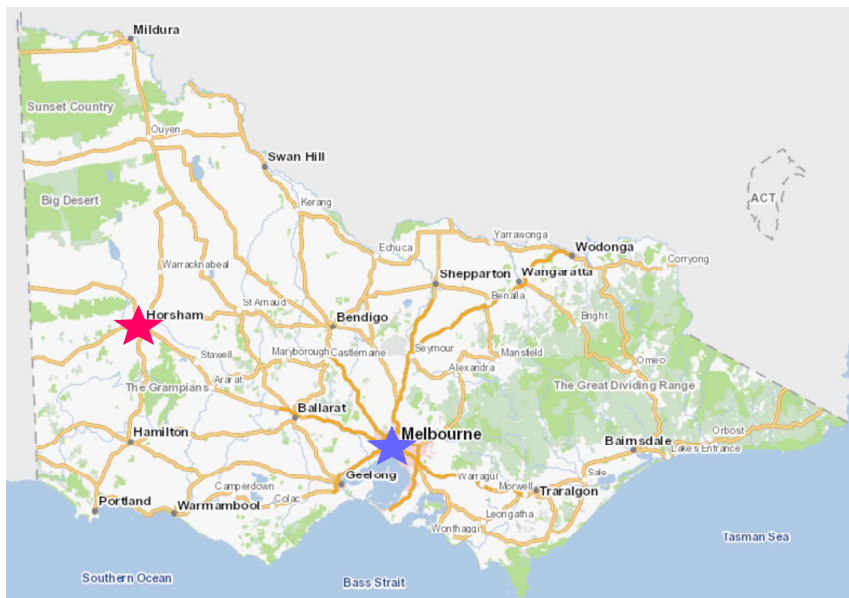
<sup>1</sup>Burge AT 2020, Burge AT 2023; <sup>2</sup><https://www.health.vic.gov.au/patient-fees-charges/overnight-stays>; <sup>3</sup>Holland AE 2017, Cox NS 2022



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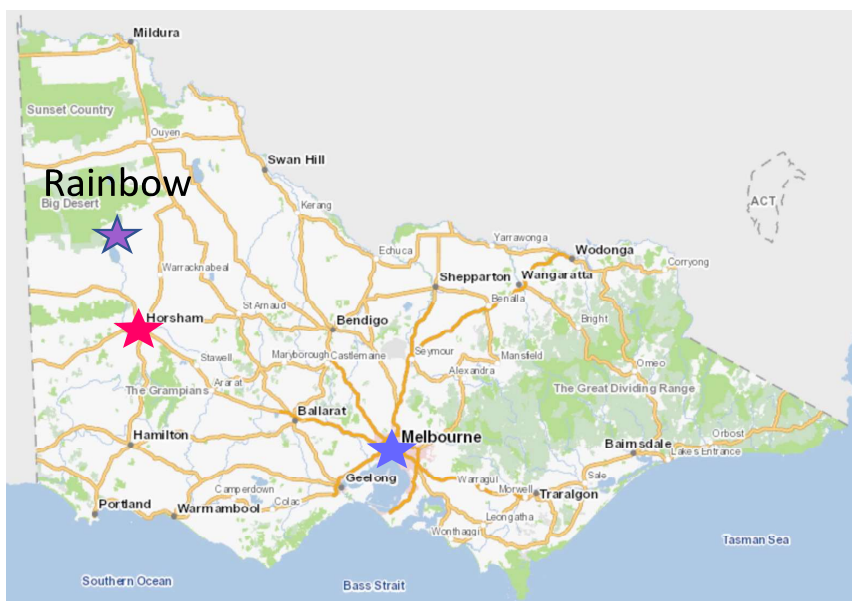
✓ Provision of alternative model options improves access to health care in rural & remote areas<sup>1</sup>

<sup>1</sup>May A 2024

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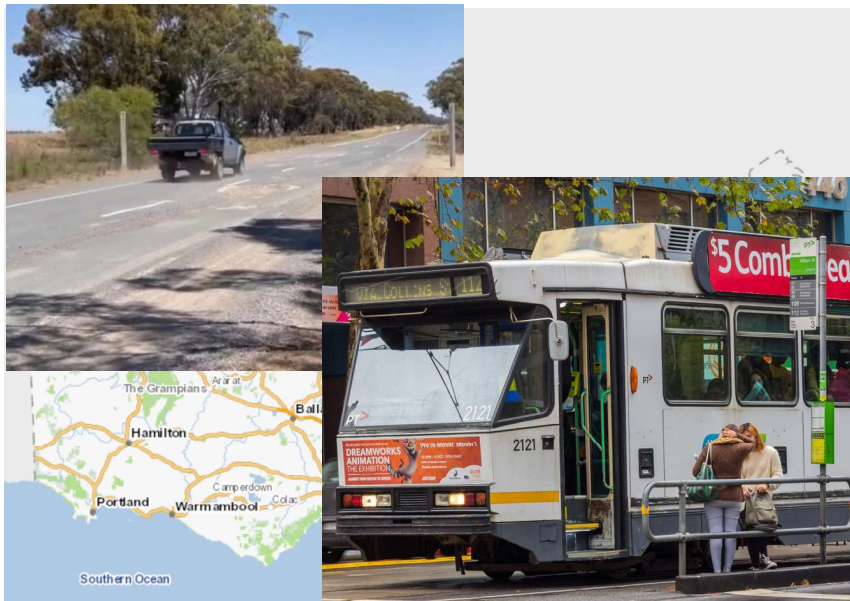
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# Reform Stream 2 Person-centred primary health care

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✓ Provision of alternative model options improves access to health care in rural & remote areas<sup>1</sup>

Barriers include travel distance but also cost

accessibility

symptom burden

time commitment

program timing

competing demands<sup>2</sup>

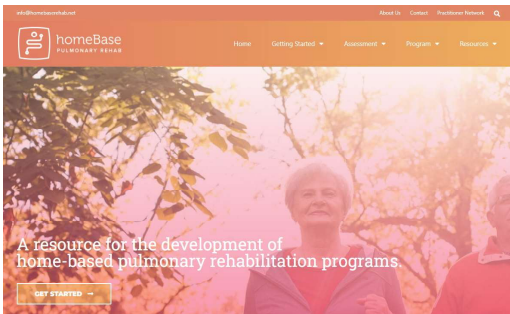
<sup>1</sup>May A 2024; <sup>2</sup>Cox NS 2017

# Reform Stream 3 Integrated care, locally delivered

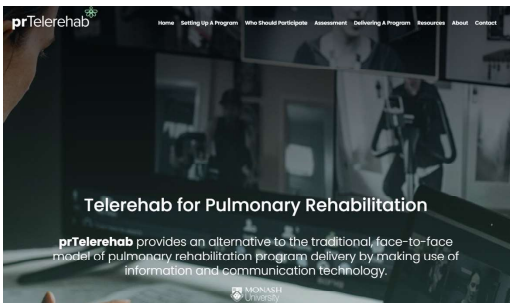


Address gaps in service delivery & develop locally integrated health service models through research collaborations: **identify & support local clinical solutions**

>20 metro & regional sites across Vic, NSW, Qld, NT, SA & Tas



[www.homebaserehab.net](http://www.homebaserehab.net)



[www.prtelerehab.com](http://www.prtelerehab.com)

Delivery of best-practice requires formalised training for healthcare providers<sup>1</sup>

- <1/3 of providers have model-specific training<sup>2</sup>
- **Opportunity for further development of resources**



<sup>1</sup>Holland AE 2021; <sup>2</sup>May A 2024

# Policy implications for real-world implementation

## Pulmonary rehabilitation programs in Australia

- Level 1 evidence for important benefits to patients & health system
- Provided in wide range of settings supported by ad hoc funding
- No funding pathways in primary care



Establishment of **sustainable funding mechanisms for pulmonary rehabilitation providers** in primary care would address the disconnect between research knowledge & clinical practice to drive better patient- & system-level outcomes



# Our team



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