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1) The benefits of CR

- Globally, CR is recommended after patients have suffered from a wide range of heart conditions.
- Through a programme of exercise and information, patient recovery is expedited and future health improved.
- Large-scale systematic reviews have repeatedly shown strong evidence of benefit on outcomes including mortality.
- Due to the low cost and high potential gain it is considered a very cost-effective use of limited NHS resources by NICE (although the existing evidence is old and cost-effectiveness analysis of poor quality).

3) What have we done?

- Building on the latest large-scale systematic review we analysed the cost-effectiveness of CR in the UK.
- Incorporating the latest evidence on how deprivation affects cardiac health and how people engage with CR we explored the substantial impact of inequality on patient health.
- Using the latest estimates of the productivity of the NHS, from University of York led research, we calculated how much extra money could be spent to overcome the huge uptake issue.

8500 deaths could be delayed in a decade

5) What is the impact so far?

- The source of evidence for the 'reimagining rehabilitation services' point of the British Heart Foundation five point plan (below), covered on BBC Breakfast among others.
- Referenced as the justification for scaling up CR uptake in the NHS Long-Term Plan.

2) The challenge

- There have been no high quality assessments of the cost-effectiveness of CR using contemporary evidence.
- Uptake is very poor, ranging from 10 to 60% internationally.
- This is compounded by significant inequality in cardiac health, engagement in CR, and propensity to benefit.
- Despite policy suggestions on how to improve uptake and the issues of inequality there have been no attempts to quantify the impact of these issues on patient health.
- The Government aims to increase uptake from around 50% to 65% in the UK.

Deprived patients are living 1.37 years less

4) What did we find?

- The most deprived are 66% less likely to complete a CR programme than the least.
- Even if they complete CR the most deprived patients will live 1.37 years less than the least deprived (1.87 when you account for the quality of those years).
- Achieving the 65% target would reduce hospital admissions by 21,000 and deaths by 8,500 over 10 years. This increased to 50,000 and 20,000 with an 85% target.
- £68.4mn could be justified per year to achieve 65% uptake.

£68.4mn could be justified each year

4. Reimagine rehabilitation services

People recovering from a heart or circulatory event should be offered the support to help them live healthier, more active lives, protect against further harmful events and improve their quality of life.

What's more, rehabilitation services for cardiac, respiratory and stroke patients are separately delivered. Yet there are considerable synergies, and many patients have more than one of these conditions.

We should explore more joined up models like the 'breathlessness rehabilitation service' being trialled in Leicester. Common themes such as psychological support, return to work support and lifestyle adjustments could be developed into a more accessible recovery programme across a broader set of conditions.

Such services are proven to reduce hospital readmissions, and deliver better outcomes as well as value for money. But only just over half of those eligible take up these services. This compares poorly to some other countries in Europe where figures are as high as 90%. And we know uptake is particularly low among certain groups.

Achieving an uptake rate for cardiac rehabilitation of 65% in England could lead to nearly 20,000 fewer deaths and nearly 50,000 fewer hospital admissions over the next ten years, as well as saving tens of millions of pounds in future care costs.

But to do this we need a new offer, based around the person not the institution.

Personalised recovery services

Most cardiac rehabilitation is group-based and undertaken in a hospital setting. We know that certain groups (women, socially deprived, ethnic (BAME) communities, and people with heart failure) are less likely to take up services of this kind. An expansion of new models of delivery including digitally supported, home-based and more personalised menu-based approaches could help tackle this problem.

Innovation in digital recovery programmes

Activate Your Heart, University Hospitals of Leicester NHS Trust

Traditional cardiac rehabilitation is based on structured, group-based programmes, usually set in hospitals and leisure centres. Many patients are not accessing these services, despite evidence demonstrating their benefits.

Activate Your Heart is an interactive web-based cardiac rehabilitation service being trialled with 250 patients in Scotland. The programme offers 24/7 access to classes through patient computers or mobile devices, cutting out the need to travel to existing sites.

An evaluation of the programme in 2016 found that although recruitment could be challenging, for some patients it provides an effective option. A further study observed important improvements in exercise capacity, quality of life and dietary habits in participants.

Key Statistics:

- Achieving an uptake rate for cardiac rehabilitation of **85%** in England would lead to nearly **20,000** fewer deaths
- 50,000** fewer admissions over the next ten years, as well as saving tens of millions of pounds in future care costs.

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