NIHR | Applied Research Collaboration Greater Manchester

Rapid Evidence Synthesis to support decision making in health and care

Evaluation Theme
Gill Norman & Chunhu Shi

gill.norman@manchester.ac.uk

Evidence summaries driven by decision-makers needs

Ensure decisions about innovation adoption are evidence-informed

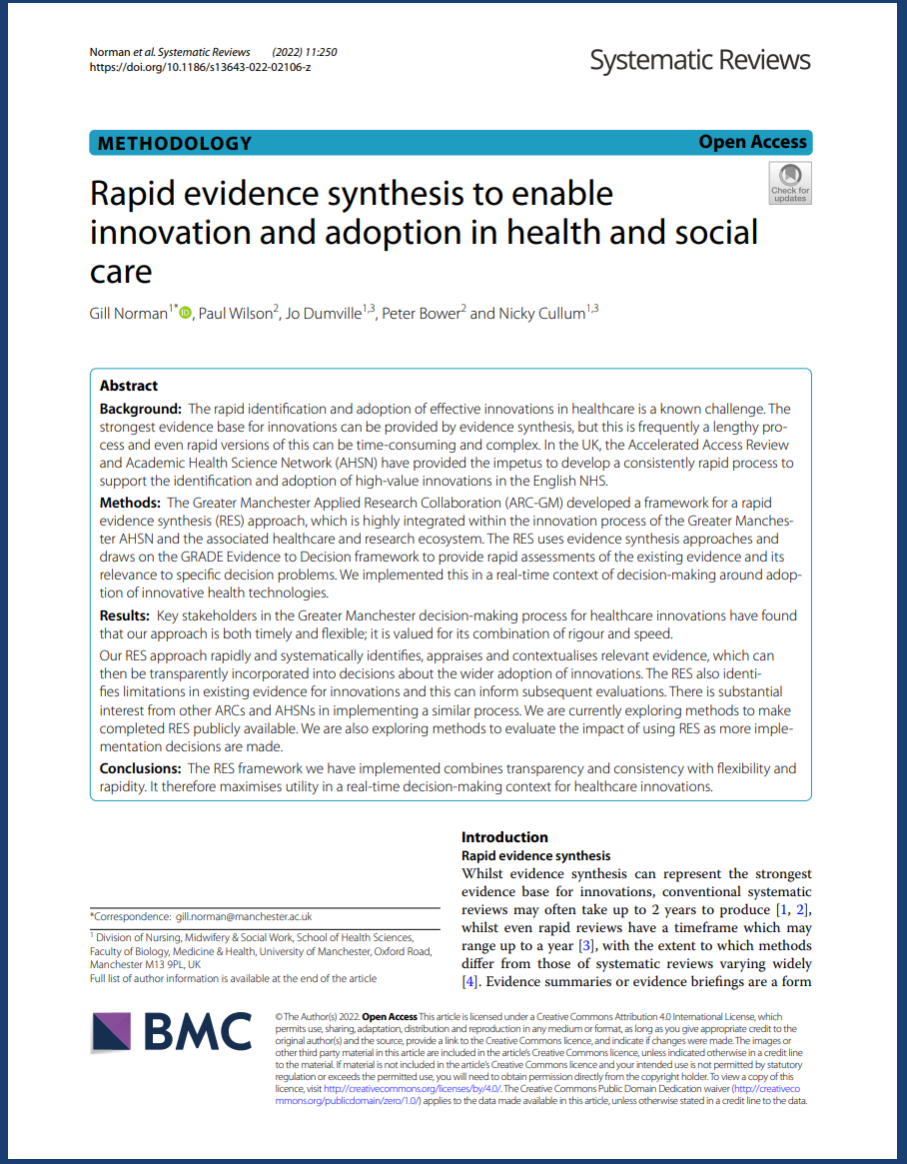
Use a transparent approach based on systematic review methods

Offer a flexible approach to questions

Take into account certainty and relevance of evidence

Provide a “good-enough” answer even when evidence is limited

Are accessible to non-researchers



Norman *et al. Systematic Reviews* (2022) 11:250
https://doi.org/10.1186/s13643-022-02106-z

Systematic Reviews

METHODOLOGY Open Access

Rapid evidence synthesis to enable innovation and adoption in health and social care

Gill Norman[1*], Paul Wilson[2], Jo Dumville[1,3], Peter Bower[2] and Nicky Cullum[1,3]

Abstract

Background: The rapid identification and adoption of effective innovations in healthcare is a known challenge. The strongest evidence base for innovations can be provided by evidence synthesis, but this is frequently a lengthy process and even rapid versions of this can be time-consuming and complex. In the UK, the Accelerated Access Review and Academic Health Science Network (AHSN) have provided the impetus to develop a consistently rapid process to support the identification and adoption of high-value innovations in the English NHS.

Methods: The Greater Manchester Applied Research Collaboration (ARC-GM) developed a framework for a rapid evidence synthesis (RES) approach, which is highly integrated within the innovation process of the Greater Manchester AHSN and the associated healthcare and research ecosystem. The RES uses evidence synthesis approaches and draws on the GRADE Evidence to Decision framework to provide rapid assessments of the existing evidence and its relevance to specific decision problems. We implemented this in a real-time context of decision-making around adoption of innovative health technologies.

Results: Key stakeholders in the Greater Manchester decision-making process for healthcare innovations have found that our approach is both timely and flexible; it is valued for its combination of rigour and speed.

Our RES approach rapidly and systematically identifies, appraises and contextualises relevant evidence, which can then be transparently incorporated into decisions about the wider adoption of innovations. The RES also identifies limitations in existing evidence for innovations and this can inform subsequent evaluations. There is substantial interest from other ARCs and AHSNs in implementing a similar process. We are currently exploring methods to make completed RES publicly available. We are also exploring methods to evaluate the impact of using RES as more implementation decisions are made.

Conclusions: The RES framework we have implemented combines transparency and consistency with flexibility and rapidity. It therefore maximises utility in a real-time decision-making context for healthcare innovations.

*Correspondence: gill.norman@manchester.ac.uk

[1] Division of Nursing, Midwifery & Social Work, School of Health Sciences, Faculty of Biology, Medicine & Health, University of Manchester, Oxford Road, Manchester M13 9PL, UK
Full list of author information is available at the end of the article

Introduction

Rapid evidence synthesis

Whilst evidence synthesis can represent the strongest evidence base for innovations, conventional systematic reviews may often take up to 2 years to produce [1, 2], whilst even rapid reviews have a timeframe which may range up to a year [3], with the extent to which methods differ from those of systematic reviews varying widely [4]. Evidence summaries or evidence briefings are a form

© The Author(s) 2022. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/. The Creative Commons Public Domain Dedication waiver (http://creativecommons.org/publicdomain/zero/1.0/) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

NIHR | Applied Research Collaboration Greater Manchester

Feedback on Rapid Evidence Synthesis (RES)

"The RES was a really interesting read and seems to suggest we are on the right track with our interventions….." Mary Aziz, Programme Development Lead

"Very, very useful and interesting as always ..... there's some very helpful findings." Bradley Quinn, Associate Director of Insight

"The review was extremely helpful in its objectivity and I have already sent over to the commercial team at HInM who are working with the company." Paula Bennett, Chief Nurse

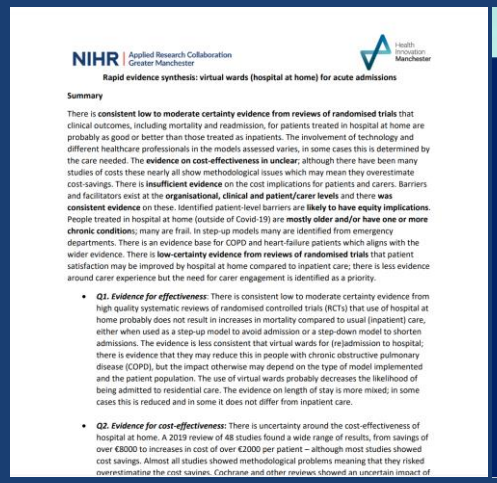
Impact example: Virtual Wards

“a safe and efficient alternative to NHS bedded care that is enabled by technology”

April 2022
Rapid Evidence Synthesis

May-Aug 2022
Talks, BGS blog, Preprint

Jan 2023
Journal Publication


NIHR | Applied Research Collaboration Greater Manchester

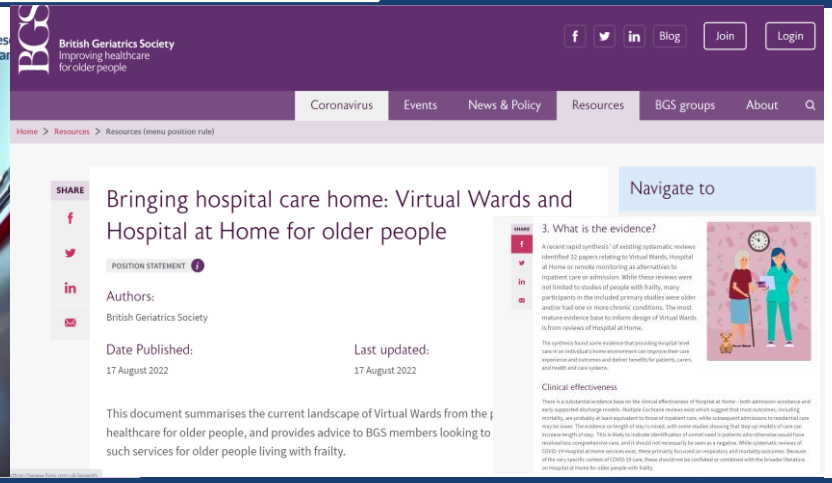
Health Innovation Manchester

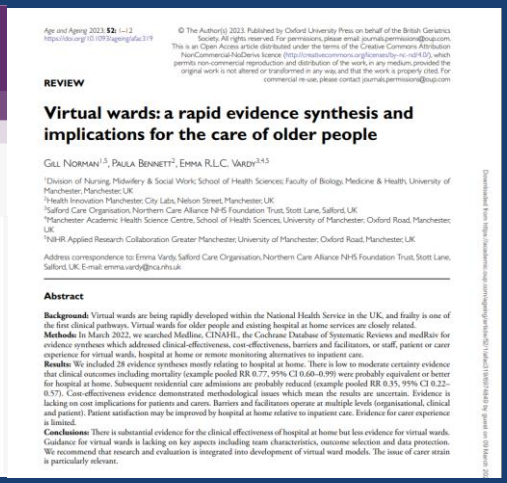
Rapid evidence synthesis: virtual wards (hospital at home) for acute admissions

Summary

There is **consistent low to moderate certainty evidence from reviews of randomised trials** that clinical outcomes, including mortality and readmission, for patients treated in hospital at home are probably as good or better than those treated as inpatients. The involvement of technology and different healthcare professionals in the models assessed varies, in some cases this is determined by the care needed. The **evidence on cost-effectiveness in unclear**; although there have been many studies of costs these nearly all show methodological issues which may mean they overestimate cost-savings. There is **insufficient evidence** on the cost implications for patients and carers. Barriers and facilitators exist at the **organisational, clinical and patient/carer levels** and there **was consistent evidence** on these. Identified patient-level barriers are **likely to have equity implications**. People treated in hospital at home (outside of Covid-19) are **mostly older and/or have one or more chronic conditions**; many are frail. In step-up models many are identified from emergency departments. There is an evidence base for COPD and heart-failure patients which aligns with the wider evidence. There is **low-certainty evidence from reviews of randomised trials** that patient satisfaction may be improved by hospital at home compared to inpatient care; there is less evidence around carer experience but the need for carer engagement is identified as a priority.

- ***Q1. Evidence for effectiveness***: There is consistent low to moderate certainty evidence from high quality systematic reviews of randomised controlled trials (RCTs) that use of hospital at home probably does not result in increases in mortality compared to usual (inpatient) care, either when used as a step-up model to avoid admission or a step-down model to shorten admissions. The evidence is less consistent that virtual wards for (re)admission to hospital; there is evidence that they may reduce this in people with chronic obstructive pulmonary disease (COPD), but the impact otherwise may depend on the type of model implemented and the patient population. The use of virtual wards probably decreases the likelihood of being admitted to residential care. The evidence on length of stay is more mixed; in some cases this is reduced and in some it does not differ from inpatient care.
- ***Q2. Evidence for cost-effectiveness:*** There is uncertainty around the cost-effectiveness of hospital at home. A 2019 review of 48 studies found a wide range of results, from savings of over €8000 to increases in cost of over €2000 per patient – although most studies showed cost savings. Almost all studies showed methodological problems meaning that they risked overestimating the cost savings. Cochrane and other reviews showed an uncertain impact of




REVIEW

Virtual wards: a rapid evidence synthesis and implications for the care of older people

Gill Norman[1,5], Paula Bennett[2], Emma R.L.C. Vardy[3,4,5]

[1]Division of Nursing, Midwifery & Social Work; School of Health Sciences; Faculty of Biology, Medicine & Health, University of Manchester, Manchester, UK
[2]Health Innovation Manchester, City Labs, Nelson Street, Manchester, UK
[3]Salford Care Organisation; Northern Care Alliance NHS Foundation Trust, Stott Lane, Salford, UK
[4]Manchester Academic Health Science Centre, School of Health Sciences, University of Manchester, Oxford Road, Manchester, UK
[5]NIHR Applied Research Collaboration Greater Manchester, University of Manchester, Oxford Road, Manchester, UK

Address correspondence to: Emma Vardy, Salford Care Organisation, Northern Care Alliance NHS Foundation Trust, Stott Lane, Salford, UK. E-mail: emma.vardy@nca.nhs.uk

Abstract

Background: Virtual wards are being rapidly developed within the National Health Service in the UK, and frailty is one of the first clinical pathways. Virtual wards for older people and existing hospital at home services are closely related.
Methods: In March 2022, we searched Medline, CINAHL, the Cochrane Database of Systematic Reviews and medRxiv for evidence syntheses which addressed clinical-effectiveness, cost-effectiveness, barriers and facilitators, or staff, patient or carer experience for virtual wards, hospital at home or remote monitoring alternatives to inpatient care.
Results: We included 28 evidence syntheses mostly relating to hospital at home. There is low to moderate certainty evidence that clinical outcomes including mortality (example pooled RR 0.77, 95% CI 0.60–0.99) were probably equivalent or better for hospital at home. Subsequent residential care admissions are probably reduced (example pooled RR 0.35, 95% CI 0.22–0.57). Cost-effectiveness evidence demonstrated methodological issues which mean the results are uncertain. Evidence is lacking on cost implications for patients and carers. Barriers and facilitators operate at multiple levels (organisational, clinical and patient). Patient satisfaction may be improved by hospital at home relative to inpatient care. Evidence for carer experience is limited.
Conclusions: There is substantial evidence for the clinical effectiveness of hospital at home but less evidence for virtual wards. Guidance for virtual wards is lacking on key aspects including team characteristics, outcome selection and data protection. We recommend that research and evaluation is integrated into development of virtual ward models. The issue of carer strain is particularly relevant.

Next steps

Undertaking evaluations informed by RES

Making completed RES publicly available

Working with other partners to provide RES

Exploring the impact RES has on decisions

> The RES …[is] helping us to distinguish (and prioritise) which elements of an evaluation will be most valuable….
>
> OC Theme Deputy Lead

> The aim is to incorporate the moderate strength findings into our planning.
>
> HInM Chief Nurse

Outputs

Norman G, Wilson P, Dumville J, Bower P, Cullum N. Rapid evidence synthesis to enable innovation and adoption in health and social care. Systematic Reviews 2022; 11, 250. https://systematicreviewsjournal.biomedcentral.com/articles/10.1186/s13643-022-02106-z

Norman G, Bennett P, Vardy E. Virtual wards: A rapid evidence synthesis and implications for the care of older people. Age and Ageing 2023; 52 (1) https://doi.org/10.1093/ageing/afac319

British Geriatrics Society. Bringing hospital care home: Virtual Wards and Hospital at Home for older people. August 2022. https://www.bgs.org.uk/virtualwards

For more information contact: cristianne.bukhari@manchester.ac.uk