A rapid mixed-methods evaluation of remote home monitoring models during the COVID-19 pandemic in England

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Disclosure of interests of authors

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Primary conflicts of interest: Professor Fulop is an NIHR senior investigator and was a member of the NIHR Health Services and Delivery Research (HS&DR) Programme Funding Committee (2013–18), HS&DR Evidence Synthesis Sub Board (2016). She was a trustee of Health Services Research UK (to November 2022). She is the UCL-nominated non-executive director for Whittington Health NHS Trust (2018–) and non-executive director on the board of Covid Bereaved Families for Justice. Professor Morris was formerly a member of the NIHR HS&DR Programme Funding Committee (2014–16), the NIHR HS&DR Evidence Synthesis Sub Board (2016), the NIHR Unmet Need Sub Board, the NIHR HTA Clinical Evaluation and Trials Board (2007–9), the NIHR HTA Commissioning Board (2009–13), the NIHR PHR Research Funding Board (2011–17), and the NIHR Programme Grants for Applied Research expert subpanel (2015–19). The remaining authors have no competing interests to declare.

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Plain language summary

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The problem

COVID-19 patients can experience very low oxygen levels, without feeling breathless. Patients may not realise there is a problem until they become extremely unwell, risking being admitted to hospital too late.

To address this, COVID-19 remote home monitoring services were developed and later rolled out across England. Patients monitored oxygen levels at home using an 'oximeter' (a small device which clips on to your finger) and sent these readings to providers via phone or technology (e.g. an app). Patients could access further care if needed.

We did not know whether these services worked, or what people felt about them.

We looked at

- How services were set up and used in England.
- Whether services work (e.g. by reducing deaths and length of hospital stay).
- How much they cost.
- What patients, carers and staff think about these services (including differences between groups and telephone vs. technology).

What we did

We looked at available existing evidence and collected data from eight services operating in the first wave of the pandemic. During the second wave of the pandemic, we used data available at a national level and conducted surveys (28 sites) and interviews (17 sites) with staff, patients and individuals involved in developing/leading services nationally.

What we found

These services have been used worldwide, but they vary considerably. We found many things that help these services to be used (e.g. good communication) but also things that get in the way (e.g. unclear referrals).

Our findings did not show that services reduce deaths or time in hospital. But these findings are limited by a lack of data.

Staff and patients liked these services, but we found some barriers to delivering and using the service. Some groups found services harder to use (e.g. older patients, those with disabilities and ethnic minorities).

Using technology helped with large patient groups, but it did not completely replace phone calls.

Conclusion:

Better information is needed to know whether these services work. Staff and patients liked these services. However, improvements may make them easier to deliver and use (e.g. further staff training and giving additional support to patients who need it).

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This report

The research reported here is the product of an HSDR Rapid Service Evaluation Team, contracted to undertake real time evaluations of innovations and development in health and care services, which will generate evidence of national relevance. Other evaluations by the HSDR Rapid Service Evaluation Teams are available in the HSDR journal.

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RSET: The Rapid Service Evaluation Team

The Rapid Service Evaluation Team ('RSET'), comprising health service researchers, health economists and other colleagues from University College London and the Nuffield Trust, have come together to rapidly evaluate new ways of providing and organising care. We have been funded by the National Institute for Health Research (NIHR) Health Service and Delivery Research (HS&DR) programme for five years, starting on April 1st 2018.

RSET are completing rapid evaluations with respect to:

1. The impact of services on how well patients do (e.g. their quality of life, how likely patients are to recover);
2. Whether services give people the right care at the right time;
3. Whether these services are good value for money;
4. how changes are put into practice, and what patients, carers, and staff think about how the changes happened and whether they think the changes made a difference;
5. What lessons there are for the rest of the NHS and care.

BRACE: The NIHR Birmingham, RAND and Cambridge Rapid Evaluation Centre

The NIHR BRACE Rapid Evaluation Centre (National Institute for Health Research Birmingham, RAND and Cambridge Evaluation Centre) is a collaboration between the Health Services Management Centre at the University of Birmingham, the independent research organisation RAND Europe, the Department of Public Health and Primary Care at the University of Cambridge, and National Voices. BRACE carries out rapid evaluations of innovations in the organisation and delivery of health and care services. Its work is guided by three overarching principles:

1. Responsiveness. Ready to scope, design, undertake and disseminate evaluation research in a manner that is timely and appropriately rapid, pushing at the boundaries of typical research timescales and approaches, and enabling innovation in evaluative practice.
2. Relevance. Working closely with patients, managers, clinicians and health care professionals, and others from health and care, in the identification, prioritisation, design, delivery and dissemination of evaluation research in a co-produced and iterative manner.
3. Rigour. All evaluation undertaken by the team is theoretically and methodologically sound, producing highly credible and timely evidence to support planning, action and practice.