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A trial of a virtual ward programme for patients with acute exacerbations of respiratory disease

Submission date 16/10/2025	**Recruitment status** Recruiting	[ ] Prospectively registered [ ] Protocol
Registration date 24/11/2025	**Overall study status** Ongoing	[ ] Statistical analysis plan [ ] Results
Last Edited 07/11/2025	**Condition category** Respiratory	[ ] Individual participant data [X] Record updated in last year

Plain English summary of protocol

Background and study aims

This study is looking at a new way of caring for people with a lung condition called COPD (Chronic Obstructive Pulmonary Disease). Instead of staying in hospital, some patients may be able to receive hospital-level care in their own homes through a service called a “virtual ward”. This is made possible by new digital technologies that allow doctors and nurses to monitor patients remotely and stay in touch with them. The aim is to see whether this approach can help free up hospital beds and improve patient experience, while still providing safe and effective care. The study will also look at how well the virtual ward programme works when it is introduced across the Birmingham and Solihull area.

Who can participate?

Patients with COPD who are referred through different parts of the healthcare system—such as their GP, hospital teams, or community health services—may be eligible to take part. Participation will depend on when their GP practice becomes part of the study.

What does the study involve?

If a patient is eligible, they may be offered care through the virtual ward programme. This means they will receive support and monitoring at home instead of staying in hospital. Clinical staff will stay in contact with them remotely using digital tools. The study will use information from routine healthcare records to understand how the programme affects patient care and outcomes. Patients do not need to do anything extra to take part.

What are the possible benefits and risks of participating?

Being cared for at home may be more comfortable and convenient for patients, and could help reduce time spent in hospital. The study will help researchers understand whether this approach is safe and effective. As with any healthcare service, there may be risks, such as needing to return to hospital if a patient’s condition worsens. All care will continue to be provided by trained clinical staff.

Where is the study run from?

University of Birmingham (UK)

When is the study starting and how long is it expected to run for?
October 2025 to March 2027.

Who is funding the study?
Trial's existence confirmed by the National Institute for Health and Care Research (NIHR) (UK).

Who is the main contact?
s.m.choudhury.1@bham.ac.uk
s.i.watson@bham.ac.uk

Contact information

Type(s)
Public

Contact name
Mrs Sopna Choudhury

ORCID ID
https://orcid.org/0000-0001-5017-6977

Contact details
Room 117
Murray Learning Centre
University of Birmingham
Edgbaston
Birmingham
United Kingdom
B15 2TT
+44 1214147864
s.m.choudhury.1@bham.ac.uk

Type(s)
Scientific, Principal investigator

Contact name
Prof Samuel Watson

ORCID ID
https://orcid.org/0000-0002-8972-769X

Contact details
Murray Learning Centre
University of Birmingham
Edgbaston
Birmingham
United Kingdom
B15 2TT
+44 7502457817
s.i.watson@bham.ac.uk

Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Protocol serial number
NIHR174496

Study information

Scientific Title
A stepped-wedge cluster randomized trial of a virtual ward programme for patients with acute exacerbations of respiratory disease: the BRIDGE study

Acronym
BRIDGE

Study objectives
The objective of this project is to evaluate the effectiveness and implementation of the new service incorporating virtual wards (the intervention) versus the usual care system with no virtual ward care (the control) for patients with COPD experiencing an acute exacerbation.
The primary trial aims are:
1. [Implementation] To estimate the average difference in total inpatient bed days per 1,000 patient-months for patients with COPD in the intervention versus usual care.
2. [Effectiveness] To estimate the average difference in risk of readmission (to hospital or virtual ward) within 30 days in the intervention versus usual care pathways.
The primary implementation outcome captures changes to both volumes of referrals and the lengths of stay of those referrals and is critical for informative economic evaluation at the system level. The primary effectiveness aim considers the health outcomes of patients. If the intervention functions as desired then the intervention should be non-inferior to usual care for both of these outcomes. Any benefits of the intervention should then be evident in terms of cost-effectiveness, patient and clinician experience, and equity outcomes. The secondary trial aims are therefore:
3. To estimate the average difference, among those with an acute COPD exacerbation referred from clinics with access to a virtual ward system compared to standard of care, in:
a. [Effectiveness] Risk of mortality within 30 days;
b. [Effectiveness/Implementation] Outpatient primary care consultation rate;
c. [Implementation] The prescribing volume during an inpatient stay;
4. To estimate differences in effectiveness and implementation between key patient groups, particularly by socioeconomic status and ethnicity.

Ethics approval required
Ethics approval required

Ethics approval(s)
notYetSubmitted, Ethics committee name not provided (Address not provided, City not provided, Zip/postal code not provided, United Kingdom; Telephone number not provided; Email not provided), ref: Reference number not provided

Study design

A pragmatic, stepped-wedge cluster randomized trial of a care pathway incorporating virtual ward care versus standard of care for COPD patients experiencing acute exacerbations.
The clusters will be GP practices, which will be randomly allocated using a constrained randomization procedure.

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Chronic obstructive pulmonary disease (COPD)

Interventions
New service incorporating virtual wards (the intervention) versus the usual care system with no virtual ward care (the control) for patients with COPD experiencing an acute exacerbation.

This is virtual ward system that is going to be rolled out to COPD patients in the Birmingham area regardless of whether this study goes ahead. All GP practices in the study area (n=178) will serve as the clusters, which will be randomised to one of eleven trial sequences that will serve as the basis to expand eligibility to the intervention to patients in a random, staggered order between December 2025 and April 2027.
The random roll out order will be generated using covariate constrained randomisation scheme run by an independent statistician and then implemented by the service provider who will determine eligibility at the point of patient referral.

Intervention Type
Other

Primary outcome(s)
1. Total inpatient bed days per 1,000 patient-months for patients with COPD is measured using routine care data collected retrospectively at baseline and throughout the study period
2. Readmission to inpatient care either in hospital or virtual ward within 30 days is measured using routine care data collected retrospectively at baseline and within 30 days post-discharge

Key secondary outcome(s))
1. Risk of mortality within 30 days of a hospital admission is measured using routine care data collected retrospectively at baseline and within 30 days post-admission
2. Outpatient primary care consultations per 100 patient-months for patients with COPD is measured using routine care data collected retrospectively at baseline and throughout the study period
3. Number of antibiotic prescriptions per patient per week admitted to hospital or virtual ward is measured using routine care data collected retrospectively at baseline and throughout the study period

Completion date
18/05/2027

Eligibility

Key inclusion criteria
All patients on the COPD register for each GP in the catchment area for the data analysis will be included in the study. The intervention is being rolled out in all GPs in BCHC so there are no other inclusion criteria.

Participant type(s)
Patient, Service user

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
There are no exclusion criteria for either clusters or individuals. However, we provide a mechanism for patients to withdraw access to their data on request.

Date of first enrolment
01/11/2025

Date of final enrolment
31/03/2027

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Birmingham Community Healthcare NHS Trust
Trust HQ3, Priestley Wharf, 20 Holt Street
Birmingham
United Kingdom
B7 4BN

Sponsor information

Organisation
University of Birmingham

ROR
https://ror.org/03angcq70

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be stored in a publicly available repository.

IPD sharing plan summary
Stored in publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet		17/07/2025	07/11/2025	No	Yes