# A complex intervention to reduce avoidable hospital admissions in nursing homes: a research programme including the BHiRCH-NH pilot cluster RCT

Murna Downs,<sup>1\*</sup> Alan Blighe,<sup>1</sup> Robin Carpenter,<sup>2</sup> Alexandra Feast,<sup>3</sup> Katherine Froggatt,<sup>4</sup> Sally Gordon,<sup>5</sup> Rachael Hunter,<sup>2</sup> Liz Jones,<sup>1</sup> Natalia Lago,<sup>2</sup> Brendan McCormack,<sup>6</sup> Louise Marston,<sup>2</sup> Shirley Nurock,<sup>7</sup> Monica Panca,<sup>2</sup> Helen Permain,<sup>8</sup> Catherine Powell,<sup>1</sup> Greta Rait,<sup>2</sup> Louise Robinson,<sup>9</sup> Barbara Woodward-Carlton,<sup>7</sup> John Wood,<sup>2</sup> John Young<sup>10,11</sup> and Elizabeth Sampson<sup>3,12</sup>

<sup>&</sup>lt;sup>1</sup>Centre for Applied Dementia Studies, University of Bradford, Bradford, UK

<sup>&</sup>lt;sup>2</sup>Department of Primary Care and Population Health and Priment Clinical Trials Unit, University College London, London, UK

<sup>&</sup>lt;sup>3</sup>Marie Curie Palliative Care Research Department, Division of Psychiatry, University College London, London, UK

<sup>&</sup>lt;sup>4</sup>International Observatory on End of Life Care, Lancaster University, Lancaster, UK

<sup>&</sup>lt;sup>5</sup>National Institute for Health Research Clinical Research Network Yorkshire and Humber, York Teaching Hospital NHS Foundation Trust, York, UK

<sup>&</sup>lt;sup>6</sup>Division of Nursing and Division of Occupational Therapy and Arts Therapies, School of Health Sciences, Queen Margaret University, Edinburgh, UK

<sup>&</sup>lt;sup>7</sup>Alzheimer's Society, London, UK

<sup>&</sup>lt;sup>8</sup>Research Department, Harrogate and District NHS Foundation Trust, Harrogate, UK <sup>9</sup>Institute for Ageing and Institute of Health & Society, Newcastle University,

Newcastle upon Tyne, UK

<sup>&</sup>lt;sup>10</sup>Academic Unit of Elderly Care and Rehabilitation, University of Leeds, Leeds, UK

<sup>&</sup>lt;sup>11</sup>Bradford Institute for Health Research, Bradford, UK

<sup>&</sup>lt;sup>12</sup>Barnet Enfield and Haringey Mental Health Trust Liaison Psychiatry Team, North Middlesex University Hospital, London, UK

<sup>\*</sup>Corresponding author m.downs@bradford.ac.uk

**Declared competing interests of authors:** Robin Carpenter reports grants from the National Institute for Health Research (NIHR) Programme Grants for Applied Research (PGfAR) programme during the conduct of the study, and the creation of www.psychin.co.uk. It has made no profit and has no customers; therefore, it is not classified as a company. Psych-In was created to help the general public understand the latest research, in the form of monthly e-mails; therefore, Robin can see how it would be perceived as conflict of interest. However, as the website has no users, and has never had users, in reality it is not. Louise Robinson reports grants from the NIHR Senior Investigator Award and a PGfAR grant from the NIHR Supporting Excellence in End of life care in Dementia (SEED programme) (RP-PG-0611-20005) outside the submitted work. Brendan McCormack is a member of Health Services and Delivery Research Researcher-Led Panel (February 2020 to present) and Greta Rait is a member of the Health Technology Assessment Commissioning Committee (2017 to present).

Published February 2021 DOI: 10.3310/pgfar09020

# Plain English summary

Reducing avoidable hospital admissions in nursing homes

Programme Grants for Applied Research 2021; Vol. 9: No. 2

DOI: 10.3310/pgfar09020

NIHR Journals Library www.journalslibrary.nihr.ac.uk

# **Plain English summary**

The aim of this study was to improve the quality of health care for nursing home residents and reduce avoidable hospital admissions. Based on previous research, and working with people with diverse expertise, we identified key actions for nursing home staff to take to prevent illnesses becoming so severe that hospitalisation is necessary, including:

- care assistants to record early changes in residents' health, prompted by family carers as necessary
- nurses to document their investigations about what might be causing the changes
- nurses to use a structured approach to reporting this information to primary care.

Nurses were best placed to facilitate the introduction of this complex and nuanced intervention into the context of their homes because of their expert knowledge of care practice and change management in nursing homes. This ensured local ownership of approaches to early detection, assessment and communication with primary care.

In a trial run, we supported nurse champions in two nursing homes to introduce these new procedures. We collected information about what helped or hindered the use of the procedures. The findings helped us to refine the tools and the way we collect information about their use and impact.

In the larger study, we collected information from 14 homes over 6 months; two homes dropped out, leaving 12 homes, of which five were asked to use the tools, and seven to continue as usual. Information about using the tools was gathered from staff and family carers using questionnaires and interviews, and information was also gathered from care record reviews.

We found few hospitalisations in the 12 homes and little use of the tools. Staff told us they were already recording this information, but in a different way. We saw no evidence of this. We concluded that staff did not need or want to use the tools. Therefore, a larger study of them is not warranted.

Assistance with recruitment, training, analysis and dissemination was provided through patient and public involvement.

## **Programme Grants for Applied Research**

ISSN 2050-4322 (Print)

ISSN 2050-4330 (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: journals.library@nihr.ac.uk

The full PGfAR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/pgfar. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

### Criteria for inclusion in the Programme Grants for Applied Research journal

Reports are published in *Programme Grants for Applied Research* (PGfAR) if (1) they have resulted from work for the PGfAR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

### **Programme Grants for Applied Research programme**

The Programme Grants for Applied Research (PGfAR) programme, part of the National Institute for Health Research (NIHR), was established in 2006 to fund collaborative, multidisciplinary programmes of applied research to solve health and social care challenges. Findings are expected to provide evidence that lead to clear and identifiable patient benefits, in the relatively near future.

PGfAR is researcher led and does not specify topics for research; however, the research must be in an area of priority or need for the NHS and the social care sector of the Department of Health and Social Care, with particular emphasis on health and social care areas that cause significant burden, where other research funders may not be focused, or where insufficient funding is available.

The programme is managed by the NIHR Central Commissioning Facility (CCF) with strategic input from the Programme Director. For more information about the PGfAR programme please visit the website: https://www.nihr.ac.uk/explore-nihr/funding-programmes/programme-grants-for-applied-research.htm

### This report

The research reported in this issue of the journal was funded by the PGfAR programme as project number RP-PG-0612-20010. The contractual start date was in March 2015. The draft report began editorial review in August 2019 and was accepted for publication in July 2020. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The PGfAR editors and publisher have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the PGfAR programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the PGfAR programme or the Department of Health and Social Care.

© Queen's Printer and Controller of HMSO 2021. This work was produced by Downs *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).

### NIHR Journals Library Editor-in-Chief

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

### **NIHR Journals Library Editors**

**Professor John Powell** Chair of HTA and EME Editorial Board and Editor-in-Chief of HTA and EME journals. Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK, and Professor of Digital Health Care, Nuffield Department of Primary Care Health Sciences, University of Oxford, UK

**Professor Andrée Le May** Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals) and Editor-in-Chief of HS&DR, PGfAR, PHR journals

**Professor Matthias Beck** Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin Senior Scientific Advisor, Wessex Institute, UK

Dr Peter Davidson Consultant Advisor, Wessex Institute, University of Southampton, UK

Ms Tara Lamont Senior Scientific Adviser (Evidence Use), Wessex Institute, University of Southampton, UK

Dr Catriona McDaid Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

Professor William McGuire Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads Emeritus Professor of Wellbeing Research, University of Winchester, UK

**Professor James Raftery** Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts Professor of Child Health Research, UCL Great Ormond Street Institute of Child Health, UK

Professor Jonathan Ross Professor of Sexual Health and HIV, University Hospital Birmingham, UK

**Professor Helen Snooks** Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

**Professor Jim Thornton** Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Please visit the website for a list of editors: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: journals.library@nihr.ac.uk