A multifaceted intervention to reduce antimicrobial prescribing in care homes: a non-randomised feasibility study and process evaluation

Carmel Hughes,1* David Ellard,2 Anne Campbell,1 Rachel Potter,2 Catherine Shaw,1 Evie Gardner,3 Ashley Agus,3 Dermot O’Reilly,4 Martin Underwood,2 Mark Loeb,5 Bob Stafford6 and Michael Tunney1

1School of Pharmacy, Queen’s University Belfast, Belfast, UK
2Warwick Clinical Trials Unit, University of Warwick, Coventry, UK
3Northern Ireland Clinical Trials Unit, The Royal Hospitals, Belfast, UK
4Centre for Public Health, Queen’s University Belfast, Belfast, UK
5Department of Pathology and Molecular Medicine, McMaster University, Hamilton, ON, Canada
6Orchard Care Homes, Harrogate, UK

*Corresponding author c.hughes@qub.ac.uk

Declared competing interests of authors: Carmel Hughes is a member of the Health Services and Delivery Research Commissioned Panel. Mark Loeb has worked for the World Health Organization as a consultant to develop antibiotics for an essential list of medicines and algorithms for appropriate antibiotic use. Martin Underwood is a member of National Institute for Health Research (NIHR) Journals Library Editors Group. He was chairperson of the National Institute for Health and Care Excellence accreditation advisory committee from 2013 until March 2017, for which he received a fee. He is chief investigator or co-investigator on multiple previous and current research grants from NIHR and Arthritis Research UK and is a co-investigator on grants funded by Arthritis Australia, Australian National Health and the Medical Research Council. He has received travel expenses for speaking at conferences from the professional organisations hosting the conferences. He is a director and shareholder of Clinvivo Ltd (Tenterden, UK), which provides electronic data collection for health services research. He is part of an academic partnership with Serco Ltd (Hook, UK) related to return-to-work initiatives. He is an editor of the NIHR journal series, for which he receives a fee. He has accepted an honorarium for advice on Research Excellence Framework submission from Queen Mary University of London. He is co-investigator on an Efficacy and Mechanism Evaluation grant, receiving support in kind from Orthospace Ltd (Caesarea, Israel).

Published February 2020
DOI: 10.3310/hsdr08080
Plain English summary

Intervention to reduce antimicrobial prescribing in care homes
Health Services and Delivery Research 2020; Vol. 8: No. 8
DOI: 10.3310/hsdr08080

NIHR Journals Library www.journalslibrary.nihr.ac.uk
Plain English summary

There have been concerns about the levels of prescribing of drugs that kill bacteria (sometimes called antimicrobials or antibiotics) in care homes for older people. A Canadian study found that using a tool to help staff decision-making on how to best manage a resident with an infection, together with an education and training programme, was useful in reducing antibiotic prescribing in Canadian care homes. This study is based on this work. Six care homes were recruited to the study: three in Northern Ireland and three in the West Midlands, England. The most up-to-date research on how to manage infections in care home residents was read. The Canadian tool to help decision-making was then amended so that it would be suitable for UK care homes. Care home staff, family members of residents and general practitioners were asked what they thought about the tool. A training programme was developed and care home staff were trained on how to use the tool. The tool was then tested in the six care homes for 6 months to ensure that it was practical and feasible to use. Information was collected about the numbers and types of antimicrobials that were prescribed for care home residents and staff were asked what they thought about the training and the tool. A survey was carried out with care home managers to find out if they would be interested in taking part in a larger study. Staff enjoyed the training and used the tool with residents, but they were concerned about the amount of paperwork required for the study. As this was a small study, it is uncertain if it had an effect on the prescribing of antimicrobials, so a larger study is being considered, and the survey results suggest that care home managers will be interested in this.
Criteria for inclusion in the Health Services and Delivery Research journal
Reports are published in Health Services and Delivery Research (HS&DR) if (1) they have resulted from work for the HS&DR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

HS&DR programme
The HS&DR programme funds research to produce evidence to impact on the quality, accessibility and organisation of health and social care services. This includes evaluations of how the NHS and social care might improve delivery of services.

For more information about the HS&DR programme please visit the website at https://www.nihr.ac.uk/explore-nihr/funding-programmes/health-services-and-delivery-research.htm

This report
The research reported in this issue of the journal was funded by the HS&DR programme or one of its preceding programmes as project number 13/97/12. The contractual start date was in April 2016. The final report began editorial review in May 2018 and was accepted for publication in November 2018. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HS&DR editors and production house have tried to ensure the accuracy of the authors’ report and would like to thank the reviewers for their constructive comments on the final report 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 HS&DR 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 HS&DR programme or the Department of Health and Social Care.

© Queen’s Printer and Controller of HMSO 2020. This work was produced by Hughes 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 Senior Clinical Researcher, 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  Director, NIHR Dissemination Centre, 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  Professor of Wellbeing Research, University of Winchester, UK

Professor John Norrie  Chair in Medical Statistics, University of Edinburgh, 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

Professor Martin Underwood  Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

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

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