Identifying Continence OptioNs after Stroke (ICONS): an evidence synthesis, case study and exploratory cluster randomised controlled trial of the introduction of a systematic voiding programme for patients with urinary incontinence after stroke in secondary care

Lois H Thomas,^{1*} Beverley French,¹ Christopher J Sutton,¹ Denise Forshaw,¹ Michael J Leathley,¹ Christopher R Burton,² Brenda Roe,³ Francine M Cheater,⁴ Jo Booth,⁵ Elaine McColl,⁶ Bernadette Carter,¹ Andrew Walker,⁷ Katie Brittain,⁸ Gemma Whiteley,⁹ Helen Rodgers,¹⁰ James Barrett¹¹ and Caroline L Watkins¹ on behalf of the ICONS project team and the ICONS patient, public and carer involvement groups

- ¹School of Health, University of Central Lancashire, Preston, UK
- ²School of Healthcare and Medical Science, Bangor University, Gwynedd, UK
 ³Evidence-Based Practice Research Centre, Edge Hill University, Ormskirk, UK
 ⁴School of Health Science, University of East Anglia, Norwich Research Park, Norwich, UK
- ⁵Department of Nursing and Community Health, Glasgow Caledonian University, Glasgow, UK
- ⁶Newcastle Clinical Trials Unit, Newcastle University, Newcastle upon Tyne, UK ⁷Robertson Centre for Biostatistics, Glasgow University, Glasgow, UK
- ⁸Institute of Health and Society and Institute for Ageing and Health, Newcastle University, Newcastle upon Tyne, UK
- ⁹Lancashire Teaching Hospitals NHS Foundation Trust, Royal Preston Hospital, Preston, UK
- ¹⁰Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UK
- ¹¹Wirral University Teaching Hospitals NHS Foundation Trust, Arrowe Park Hospital, Wirral, Merseyside, UK

*Corresponding author

Declared competing interests of authors: Elaine McColl is a member of the National Institute for Health Research (NIHR) Programme Grants for Applied Research subpanel and also a member of the NIHR Journals Editorial Board.

Published March 2015 DOI: 10.3310/pgfar03010

Plain English summary

Identifying Continence OptioNs after Stroke (ICONS) Programme Grants for Applied Research 2015; Vol. 3: No. 1 DOI: 10.3310/pgfar03010

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

Plain English summary

U rinary incontinence is common after stroke and can be very distressing for patients and their carers. We developed and tested a programme for assessing and treating incontinence while people are in hospital, designed to help them become continent again. The programme included bladder training, which encourages people to extend the time between voiding so that continence might be regained, and prompted voiding, which aims to improve bladder control using verbal prompts and positive reinforcement. Our study had two parts:

- 1. We developed the programme and tried it out in one stroke unit. We listened to what patients, families and clinical staff told us and made changes to improve the programme.
- 2. We tested if it was possible to recruit and retain patients, how best to deliver the programme and whether or not it was acceptable to patients and clinicians in a feasibility trial. In four of the units, we used *facilitation* as a strategy to support and enable staff to change their practice. We compared patients in these stroke units with those in four other units which did not introduce the programme.

We were able to recruit 413 patients and retain 85% and 88% at 6 and 12 weeks respectively. We found that patients who took part in the programme were no more likely to be continent 6, 12 or 52 weeks after the stroke than those who did not. However, we found that patients with urge incontinence were potentially more likely not to have urge incontinence at 12 weeks if they had received the programme.

We believe our programme may help some stroke survivors (particularly those with urge incontinence) to regain continence, so now we plan to test it further in a larger number of stroke services.

© Queen's Printer and Controller of HMSO 2015. This work was produced by Thomas *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health. 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.

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: nihredit@southampton.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 set up in 2006 to produce independent research findings that will have practical application for the benefit of patients and the NHS in the relatively near future. The Programme is managed by the NIHR Central Commissioning Facility (CCF) with strategic input from the Programme Director.

The programme is a national response mode funding scheme that aims to provide evidence to improve health outcomes in England through promotion of health, prevention of ill health, and optimal disease management (including safety and quality), with particular emphasis on conditions causing significant disease burden.

For more information about the PGfAR programme please visit the website: http://www.nihr.ac.uk/funding/programme-grants-for-applied-research.htm

This report

The research reported in this issue of the journal was funded by PGfAR as project number RP-PG-0707-10059. The contractual start date was in October 2008. The final report began editorial review in September 2013 and was accepted for publication in July 2014. As the funder, the PGfAR programme agreed the research questions and study designs in advance with the investigators. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The PGfAR 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, CCF, NETSCC, PGfAR or the Department of Health. 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.

© Queen's Printer and Controller of HMSO 2015. This work was produced by Thomas *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health. 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).

Programme Grants for Applied Research Editor-in-Chief

Professor Paul Little Professor of Primary Care Research, University of Southampton, UK

NIHR Journals Library Editor-in-Chief

Professor Tom Walley Director, NIHR Evaluation, Trials and Studies and Director of the HTA Programme, UK

NIHR Journals Library Editors

Professor Ken Stein Chair of HTA Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

Professor Andree Le May Chair of NIHR Journals Library Editorial Group (EME, HS&DR, PGfAR, PHR journals)

Dr Martin Ashton-Key Consultant in Public Health Medicine/Consultant Advisor, NETSCC, UK

Professor Matthias Beck Chair in Public Sector Management and Subject Leader (Management Group), Queen's University Management School, Queen's University Belfast, UK

Professor Aileen Clarke Professor of Public Health and Health Services Research, Warwick Medical School, University of Warwick, UK

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Peter Davidson Director of NETSCC, HTA, UK

Ms Tara Lamont Scientific Advisor, NETSCC, UK

Professor Elaine McColl Director, Newcastle Clinical Trials Unit, Institute of Health and Society, Newcastle University, UK

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

Professor Geoffrey Meads Professor of Health Sciences Research, Faculty of Education, University of Winchester, UK

Professor John Powell Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), 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 Institute of Child Health, UK

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

Please visit the website for a list of members of the NIHR Journals Library Board: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: nihredit@southampton.ac.uk