The epidemiology, management and impact of surgical wounds healing by secondary intention: a research programme including the SWHSI feasibility RCT

Ian Chetter,1,2* Catherine Arundel,3 Kerry Bell,3 Hannah Buckley,3 Karl Claxton,4 Belen Corbacho Martin,3 Nicky Cullum,5 Jo Dumville,5 Caroline Fairhurst,3 Eileen Henderson,2 Karen Lamb,6 Judith Long,2 Dorothy McCaughan,7 Elizabeth McGinnis,8 Angela Oswald,2 Pedro Saramago Goncalves,4 Laura Sheard,7 Marta O Soares,4 Nikki Stubbs,6 David Torgerson3 and Nicky Welton9

1Hull York Medical School, University of York, York, UK
2Hull University Teaching Hospitals NHS Trust, Hull, UK
3York Trials Unit, Department of Health Sciences, University of York, York, UK
4Centre for Health Economics, University of York, York, UK
5Division of Nursing, Midwifery and Social Work, School of Health Sciences, University of Manchester, Manchester, UK
6Leeds Community Healthcare NHS Trust, Leeds, UK
7Department of Health Sciences, University of York, York, UK
8Leeds Teaching Hospitals NHS Trust, Leeds, UK
9School of Social and Community Medicine, University of Bristol, Bristol, UK

*Corresponding author ian.chetter@hey.nhs.uk

Declared competing interests of authors: Karl Claxton reports personal fees from F. Hoffmann-La Roche Ltd (Basel, Switzerland) and personal fees from HERON (Parexcel, Walton, MA, USA), outside the submitted work. Nicky Cullum reports non-financial support from Kinetic Concepts, Inc. (KCI; San Antonio, TX, USA), outside the submitted work. David Torgerson reports grants from the National Institute for Health Research (NIHR), outside the submitted work, and is director of a clinical trial unit funded by NIHR. Nicky Welton reports grants from NIHR, during the conduct of the study, and she is principal investigator for a research grant jointly funded by the Medical Research Council and Pfizer Inc. (New York, NY, USA), outside the submitted work.

Published September 2020
DOI: 10.3310/pgfar08070
Plain English summary

The SWHSI research programme and feasibility RCT
Programme Grants for Applied Research 2020; Vol. 8: No. 7
DOI: 10.3310/pgfar08070

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

Surgical wounds healing by secondary intention are open wounds that are left to heal from the base up. At the start of this work, there was little information on these wounds, their management, impact on patients and which treatments offered best value for money. The overall aim of this research was therefore to describe, characterise and identify the nature and impact of surgical wounds healing by secondary intention and the current evidence for effective treatments.

This research found the following:

- Surgical wounds healing by secondary intention are very common and affects approximately 4 out of 10,000 adults in the general population.
- Patients may have their wound for a long time and this has an impact on their well-being and daily life.
- Patients are often shocked when they first see their wound and are concerned about what others think of it.
- Several factors are associated with delayed wound healing (e.g. wound infections and wound size).
- Wound dressings are often used as the first treatment, but sometimes a vacuum device called negative-pressure wound therapy is used. Health professionals are using this treatment more frequently.
- This research looked at how NHS patients receiving negative-pressure wound therapy fared when compared with patients receiving standard dressings. This research was not experimental: health professionals and patients chose the treatments they received.
- Definitive evidence about the comparative effects of negative-pressure wound therapy and standard dressing may still be required in the form of a large randomised clinical trial; our small pilot study has shown that such a study is possible.
- Further studies are required to assess other treatments for other surgical wounds healing by secondary intention and to improve patient well-being and care.
- Specialised analysis methods showed that negative-pressure wound therapy was less effective and did not offer value for money compared with standard wound dressings. It is possible that these findings are due to differences between the people receiving the different treatments, rather than the treatments themselves.
Programme Grants for Applied Research

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 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-0609-10171. The contractual start date was in June 2011. The final report began editorial review in May 2017 and was accepted for publication in May 2019. 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 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 2020. This work was produced by Chetter 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  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  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