# Options for possible changes to the blood donation service: health economics modelling

Richard Grieve, 1\* Sarah Willis, 1 Kaat De Corte, 1 M Zia Sadique, 1 Neil Hawkins, 1,2 Silvia Perra, 1 Mark Pennington, 1,3 Jenny Turner, 1 Carmel Moore, 4,5 Crispin Wickenden, 6 Catharina Koppitz, 6 Gavin Cho, 6 David J Roberts, 4,6,7 Gail Miflin 6 and John A Cairns 1

**Declared competing interests of authors:** Crispin Wickenden, Catharina Koppitz, Gavin Cho, David J Roberts and Gail Miflin are all employees of NHS Blood and Transplant. Richard Grieve is currently a member of the National Institute for Health Research Health Technology Assessment Commissioning Board.

#### **Published December 2018**

DOI: 10.3310/hsdr06400

## **Plain English summary**

### The HEMO study

Health Services and Delivery Research 2018; Vol. 6: No. 40

DOI: 10.3310/hsdr06400

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

<sup>&</sup>lt;sup>1</sup>Department of Health Services Research and Policy, London School of Hygiene & Tropical Medicine, London, UK

<sup>&</sup>lt;sup>2</sup>Institute of Health & Wellbeing, University of Glasgow, Glasgow, UK

<sup>&</sup>lt;sup>3</sup>Department of Health Services & Population Research, King's College London, London, UK

<sup>&</sup>lt;sup>4</sup>NIHR Blood and Transplant Research Unit in Donor Health and Genomics, Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK

<sup>&</sup>lt;sup>5</sup>INTERVAL Coordinating Centre, Department of Public Health and Primary Care, Cambridge, UK

<sup>&</sup>lt;sup>6</sup>NHS Blood and Transplant, London, UK

<sup>&</sup>lt;sup>7</sup>Radcliffe Department of Medicine, John Radcliffe Hospital, University of Oxford, Oxford, UK

<sup>\*</sup>Corresponding author richard.grieve@lshtm.ac.uk

# **Plain English summary**

Blood transfusions are important in many aspects of NHS care, including general surgery and organ transplantation. Overall demand for blood is decreasing, and demand for particular blood types is also growing. To increase the supply of high-demand blood, NHS Blood and Transplant is considering potential service changes to encourage donors to give blood more often. The separate INTERVAL study of 45,000 blood donors investigated the safety of donating blood more frequently than currently allowed.

This study looked at the costs of each potential service, and also surveyed 32,924 blood donors, to estimate the impact on the amount of blood collected. The study used data from these surveys, the INTERVAL study and donors' current donation records, as well as cost information, to report which possible service changes were best value for money.

Donors give blood at either a 'static donor centre' or a 'mobile session' (where blood is collected by a team who travel around to different venues). The study found that donors at static donor centres would donate more if centres were open on weekday evenings or at weekends, and this would be a relatively cost-effective way of increasing the supply of blood that is in high demand. Giving donors a health report (e.g. with measurements such as blood pressure or cholesterol) would not be cost-effective. Some donors said that they would stop donating if changes to the blood collection service meant that they had to travel for longer to donate blood.

Allowing donors to donate more often could increase the supply of blood in the short term. However, more donors would be turned away from appointments because of low iron, which may lead them to stop donating, and so it is unclear whether or not this would be a cost-effective way to increase the supply of blood in the long term.

## **Health Services and Delivery Research**

ISSN 2050-4349 (Print)

ISSN 2050-4357 (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 HS&DR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hsdr. 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 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 or programmes which preceded 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 Health Services and Delivery Research (HS&DR) programme, part of the National Institute for Health Research (NIHR), was established to fund a broad range of research. It combines the strengths and contributions of two previous NIHR research programmes: the Health Services Research (HSR) programme and the Service Delivery and Organisation (SDO) programme, which were merged in January 2012.

The HS&DR programme aims to produce rigorous and relevant evidence on the quality, access and organisation of health services including costs and outcomes, as well as research on implementation. The programme will enhance the strategic focus on research that matters to the NHS and is keen to support ambitious evaluative research to improve health services.

For more information about the HS&DR programme please visit the website: http://www.nets.nihr.ac.uk/programmes/hsdr

#### 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 13/54/62. The contractual start date was in May 2015. The final report began editorial review in May 2017 and was accepted for publication in November 2017. 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 2018. This work was produced by Grieve 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** Chair of HTA and EME Editorial Board and Professor of Public Health, University of Exeter Medical School, UK

#### **NIHR Journals Library Editors**

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

Professor Andrée Le May Chair of NIHR Journals Library Editorial Group (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 Scientific Advisor, NETSCC, 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 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 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 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