Cue-based versus scheduled feeding for preterm infants transitioning from tube to oral feeding: the Cubs mixed-methods feasibility study

Alison McFadden,1* Bronagh Fitzpatrick,1 Shona Shinwell,1 Karen Tosh,1 Peter Donnan,2 Louise M Wallace,3 Emily Johnson,4 Steve MacGillivray,1 Anna Gavine,1 Albert Farre1 and Helen Mactier5

1School of Health Sciences, University of Dundee, Dundee, UK
2Tayside Clinical Trials Unit, University of Dundee, Dundee, UK
3School of Health, Wellbeing and Social Care, The Open University, Milton Keynes, UK
4Great Ormond Street Hospital, London, UK
5Princess Royal Maternity, NHS Greater Glasgow and Clyde, Glasgow, UK

*Corresponding author a.m.mcfadden@dundee.ac.uk

Declared competing interests of authors: Louise M Wallace was on the following committees during the conduct of the study: Health Services and Delivery Research (HSDR) Commissioned – Panel Members (November 2019 to present), but not as an active member, and HSDR Funding Committee (Seacole) (November 2020 to present), as an active member.

Disclaimers: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

Published December 2021
DOI: 10.3310/hta25740

Plain English summary

The Cubs mixed-methods feasibility study
Health Technology Assessment 2021; Vol. 25: No. 74
DOI: 10.3310/hta25740

NIHR Journals Library www.journalslibrary.nihr.ac.uk
Preterm babies who are ready to progress from tube feeding to oral feeding are usually fed according to a fixed schedule. Scheduled feeding protocols set a minimum corrected gestational age at which oral feeding may commence, and specify the rate of change from tube to oral feeding. Scheduled feeding also sets the volume and timing of each feed. A few small studies show that feeding babies according to their cues might have benefits for them and their parents; for example, babies may be discharged from hospital sooner. Cue-based feeding may help parents to understand the needs of their baby and be more involved in their care. Examples of hunger cues are mouthing movements, bringing hands to mouth and sucking. Examples of stop cues are falling asleep and stopping sucking.

We developed a cue-based feeding intervention and tested it in three neonatal units to see if a large trial could be done and if parents and staff liked the intervention. We reviewed previous research, visited three hospitals that use cue-based feeding and interviewed parents and staff about their experiences of feeding preterm babies. We developed the intervention with parents and staff. The intervention included a feeding protocol, training for parents and staff, and a feeding record.

Parents and staff liked most parts of the intervention. The training did not reach all staff, and staff and parents found it time-consuming to record every feed. Many parents and staff thought that cue-based feeding was better for babies, and parents thought that neonatal units should change to cue-based feeding. We discussed our findings with parents, staff and research experts. Based on their ideas, we recommend that the intervention is developed into an app (application) and that all neonatal units in the UK are surveyed to find out if they use cue-based feeding and if they would agree to be part of a large trial.
Health Technology Assessment

ISSN 1366-5278 (Print)
ISSN 2046-4924 (Online)
Impact factor: 4.014

Health Technology Assessment is indexed in MEDLINE, CINAHL, EMBASE, the Cochrane Library and Clarivate Analytics Science Citation Index.

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 HTA archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hta. 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 Technology Assessment journal

Reports are published in Health Technology Assessment (HTA) if (1) they have resulted from work for the HTA programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

Reviews in Health Technology Assessment are termed ‘systematic’ when the account of the search appraisal and synthesis methods (to minimise biases and random errors) would, in theory, permit the replication of the review by others.

HTA programme

Health Technology Assessment (HTA) research is undertaken where some evidence already exists to show that a technology can be effective and this needs to be compared to the current standard intervention to see which works best. Research can evaluate any intervention used in the treatment, prevention or diagnosis of disease, provided the study outcomes lead to findings that have the potential to be of direct benefit to NHS patients. Technologies in this context mean any method used to promote health; prevent and treat disease; and improve rehabilitation or long-term care. They are not confined to new drugs and include any intervention used in the treatment, prevention or diagnosis of disease.

The journal is indexed in NHS Evidence via its abstracts included in MEDLINE and its Technology Assessment Reports inform National Institute for Health and Care Excellence (NICE) guidance. HTA research is also an important source of evidence for National Screening Committee (NSC) policy decisions.

This report

The research reported in this issue of the journal was funded by the HTA programme as project number 16/144/05. The contractual start date was in May 2020. The draft report began editorial review in December 2020 and was accepted for publication in July 2021. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA 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 HTA 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 HTA programme or the Department of Health and Social Care.

Copyright © 2021 McFadden et al. This work was produced by McFadden et al. under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This is an Open Access publication distributed under the terms of the Creative Commons Attribution CC BY 4.0 licence, which permits unrestricted use, distribution, reproduction and adaption in any medium and for any purpose provided that it is properly attributed. See: https://creativecommons.org/licenses/by/4.0/. For attribution the title, original author(s), the publication source – NIHR Journals Library, and the DOI of the publication must be cited.

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