



The Infant **M**ortality & **M**orbidity **S**tudies

Modelling neonatal care pathways

A national study of the neonatal care pathways received by newborn babies admitted to the neonatal unit after birth.

Sarah Seaton

Dr. Bradley Manktelow

Prof. Keith Abrams

Prof. Elizabeth Draper

The Infant Mortality and Morbidity Studies,
University of Leicester

Prof. Neena Modi

Neonatal Data Analysis Unit

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These techniques will allow consideration of levels of neonatal care, and investigation of both babies that survive and those that die during their stay in hospital simultaneously.

Sample size

There is no formal sample size for this project. Where possible, all babies with collected data will be included in the study.

Impact on Clinical Practice

This study will investigate the neonatal care pathways taken by newborn babies who require neonatal care after birth. It will allow estimation of the length of stay potentially expected at each level of care, which will help inform clinicians about future resource use and improve counselling of families.

Further Information

If you require further information on this study, please contact Sarah Seaton (sarah.seaton@le.ac.uk)

Research funding

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Aim

To investigate the neonatal care pathways taken by babies admitted to a neonatal unit after birth.

Objectives

1. To determine the length of stay, at the various levels of care, within the neonatal unit following birth. This will be investigated for babies that survive to discharge or die during their neonatal stay.
2. To compare neonatal networks to investigate whether there are differences in care between networks which treat similar groups of babies.
3. To undertake a preliminary health economics analysis to investigate methods for allocating costs within neonatal care.

The National Neonatal Research Database (NNRD)

The National Data Analysis Unit (NDAU) is an independent academic unit based at the Chelsea & Westminster campus of Imperial College London. NDAU receives electronic data from contributing neonatal units and has permission to hold these in a National Neonatal Research Database (NNRD). The NNRD is a resource for research and service evaluations to improve newborn care. Contributing neonatal units form the UK Neonatal Collaborative. The National Research Ethics Service (ref 10/H0803/151) and the Ethics & Confidentiality Committee of the National Information Governance Board (ref ECC 8-05(f)/2010) have approved the use of the NNRD for NHS service evaluations and research.



Donovan James Lynch, born at 31 weeks on 15/03/2010. Photos reproduced with kind permission of his father, Jim Lynch.

Methods

Babies born from 01/01/2010 onwards will be identified from the NNRD. Anonymised data on all babies will be extracted.

Information will be extracted on daily events throughout the babies' time in hospital, in particular the level of neonatal care received on each day. Anonymised information related to the baby and the parents will be used.

No additional data collection will be required as part of this study. A full list of variables being extracted is available upon request.

Within neonatal medicine there are three broad levels of care as defined by the British Association of Perinatal Medicine (BAPM):

intensive, high dependency and standard care. This research aims to estimate the length of time a baby will spend at each of these levels of care and the total amount of time they will spend in hospital.

Survival analysis is an area of statistics which estimates the amount of time which passes before an event (usually death) occurs. An extension of this method is used in this project: multistate modelling. This method also calculates the amount of time which passes before an event occurs, but it allows consideration of what happens before the event, for example, the types of care received. It also allows the consideration of multiple potential outcomes, for example death during hospital stay or survival to discharge.

