

Finding Unmet Needs in Perinatal and Paediatric Brain Injury Care Pathway

An Inclusive and Evidence-based Approach

Innovation Partnership Zone:
Child Health Technology Conference 2021

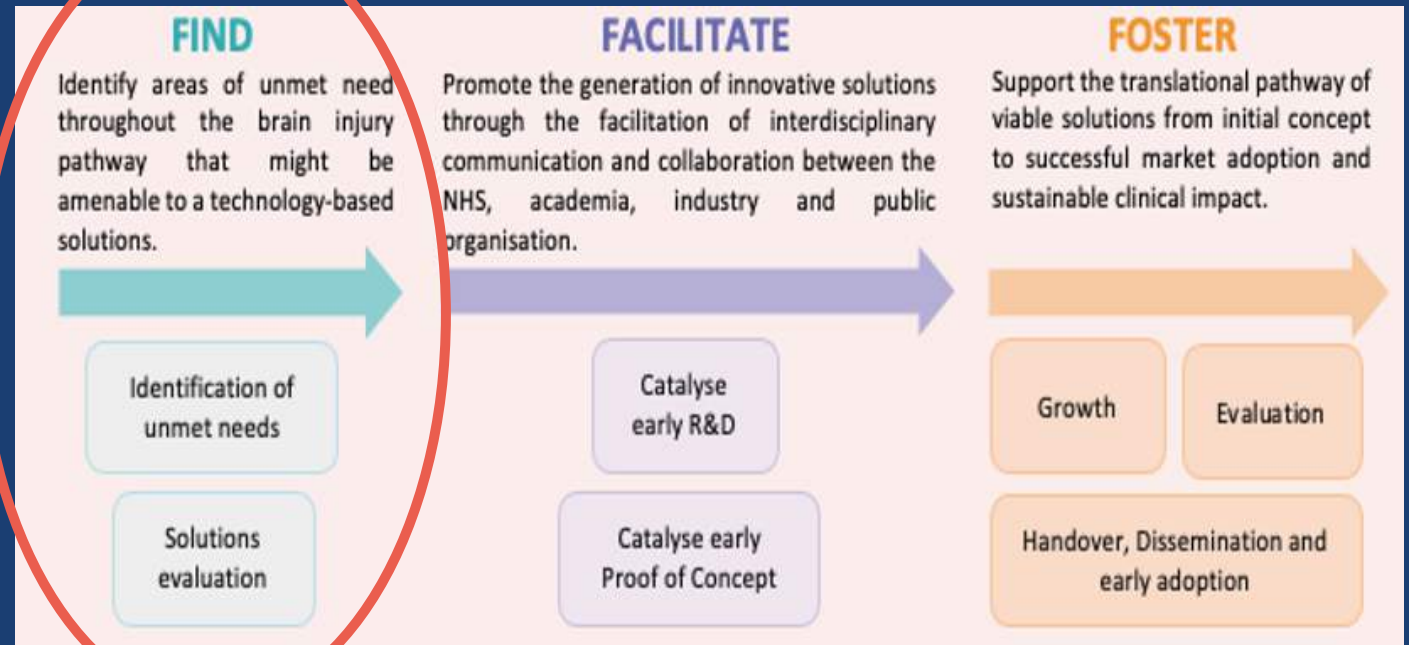
Visit: www.brainmic.nihr.ac.uk
Email: info@brainmic.org
Tweet: [@NIHRBrainMIC](https://twitter.com/NIHRBrainMIC)
Sign Up: <https://www.brainmic.nihr.ac.uk/rhite>



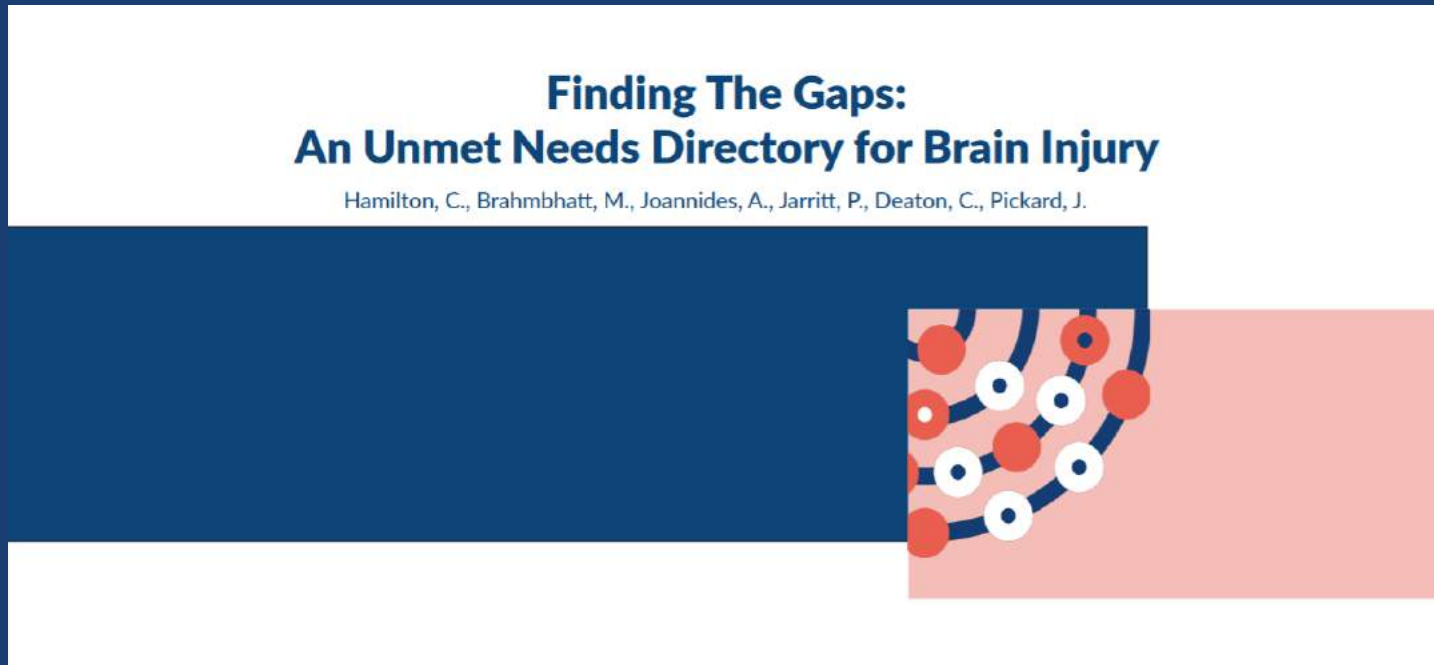
A Focus on Find...

The NIHR Brain Injury Healthcare MedTech Co-operative (MIC) was set up to “**Find, Facilitate and Foster**” the solving of problems for this patient group through technological solutions.

In order to “Find” these problems a wide range of activities were undertaken in order to develop a “Directory of Unmet Needs”.



Finding the Gaps: The Development of the Directory of Unmet Needs (DUN) for Brain Injury



To review the brochure, and find out more visit:

<https://www.brainmic.nihr.ac.uk/unmet-needs-directory>



Driver for Change - The Golden Window

Filmed on the Neonatal Intensive Care Unit in Cambridge over a 72 hour period, the Golden Window follows a baby being cooled and exploring the challenges faced by parents and staff looking after sick and preterm babies.

[Watch the trailer now](#)

The full film is available at:

<https://vimeo.com/111026340>



Providing the Case for Change

1. Designing the landscape for technological development in Neonatal Neurocritical Care

1. Strategic Roadmapping
2. Parent and Carers Surveys and Workshops
3. Publication & Integration with DUN

Hamilton C et al. <https://innovations.bmj.com/content/4/4/163>

2. Paediatric Neurorehabilitation: Finding and Filling the Gaps

1. Charities and Third Sector Needs Analysis
2. Parents and Professional Strategic Roadmapping
3. Publication & Integration with DUN

Hamilton C et al. *BMJ Innovations* 2017 doi:10.1136/bmjinnov-2017-000202

3. MedTech for One Healthy Baby

1. Review National Policy for Reducing Stillbirths and Neonatal Brain Injury
2. Ecosystem Modelling
3. Strategic Roadmapping

<https://www.brainmic.nihr.ac.uk/paediatrics-and-neuro-development>



ORIGINAL ARTICLE

Paediatric neurorehabilitation: finding and filling the gaps through the use of the Institute for Manufacturing strategic roadmapping method

Colin Hamilton,¹ Anna Maw,² Andrew Gill,³ Mita Brahmhatt,⁴ Robert Phaal,⁵ John Rickard⁶

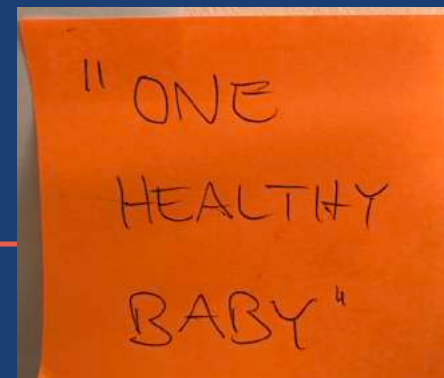
ABSTRACT
Introduction: Acquired brain injury (ABI) is a major cause of morbidity and mortality in childhood. Specialised rehabilitation services are often outdated for busy families and local services may be over-extended and fragmented. A strategic level of understanding is needed to improve patient care and outcomes. Roadmapping techniques are commonly used in industry settings to deliver and govern a systematic understanding of structures, however, they are rarely used in the healthcare setting. With consulting partners in healthcare systems worldwide, they provide an effective method for mapping services.
Methods: The Institute for Manufacturing (IfM) strategic roadmapping method was used to identify areas of difficulty and opportunities in paediatric neurorehabilitation. Participants included stakeholders from a wide range of professions and sectors who have treated children after ABI.
Results: Stakeholders identified a range of 'leaver' covering trends, drivers, current experience and current needs from these gaps. Two priorities were identified and further expanded. These included: 'access to medical and therapy expertise closest to home', 'shared understanding across family, school and health', 'early and professional assessment of resources and capacity' and 'establishing a centre for rehabilitation technology evaluation, advice and co-ordination of services and resources'.
Conclusion: The IfM strategic roadmapping method identified and developed key areas for development in the field of paediatric neurorehabilitation. Healthcare professionals looking at strategic level effectiveness should strongly consider the use of such systematic tools when evaluating areas of practice.

INTRODUCTION AND BACKGROUND
Acquired brain injury (ABI) is a major cause of death and disability in the UK and worldwide each year, approximately 23 000 children admitted following an ABI annually in the UK from non-traumatic causes alone.¹ Non-traumatic brain injuries are less commonly defined but are estimated to affect 2.5 children per 100 000 each year.² The acute management of these children has improved significantly in recent years.³ However, while there is agreement that rehabilitation is required after such an injury, services remain variable and the exact components of optimal clinical management are not well understood.⁴

Due to the complexity of the developmental childhood brain, the full extent of the functional impacts of the injury may not be evident until decades after initial onset.⁵ While historically patients who appeared on the surface unimpaired after an ABI would have been discharged rapidly from services and left with a possible lifetime of neurocognitive difficulties from what appeared to be a 'mild' brain injury, there is now a greater understanding about the importance of long-term follow-up and specialist input on people who suffer a brain injury in childhood at an increased risk of offending behaviours and mental illness.⁶

Key Messages
The IfM strategic roadmapping method identified and developed key areas for development in the field of paediatric neurorehabilitation. Healthcare professionals looking at strategic level effectiveness should strongly consider the use of such systematic tools when evaluating areas of practice.

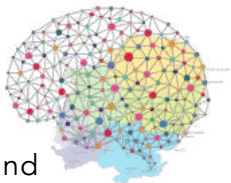
BMJ Number 1, 2017 | doi:10.1136/bmjinnov-2017-000202



Unmet Needs post Pandemic

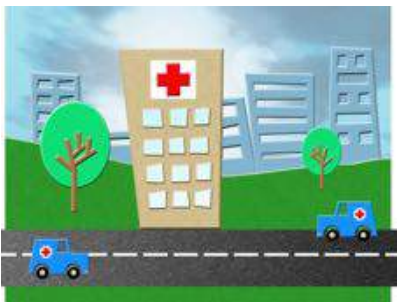
Real World Impact on Perinatal and Paediatrics



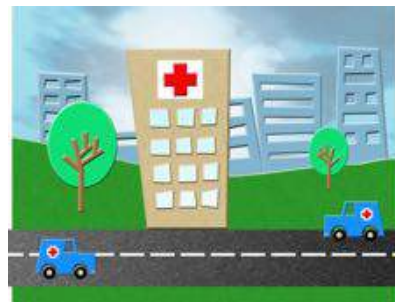
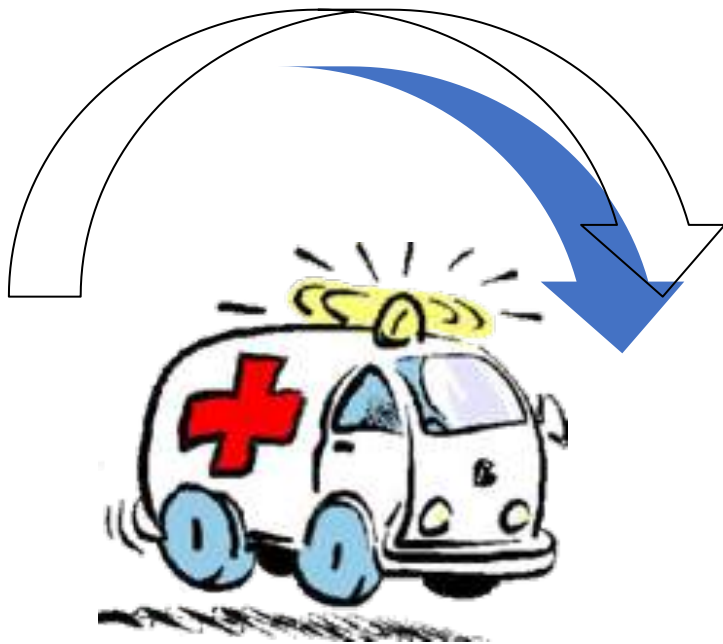


East of England
Neonatal Neuroprotection

The Problem



Local Hospital



Regional Hospital

What does the project aim to achieve?

- The aim is to **bring parents into the heart of their baby's management** during the critical first few days of life, even if they are in separate hospitals.
- *Parents have expressed the feeling that their baby was 'taken away from them', and that they 'didn't know what was going on'*
- By **embedding secure virtual communication tools**, we will enable parents to have access to their baby at all times and ensure appropriate and timely communication with the doctors and nurses.
- *Empowering parents in this way will mark a change from a 'paternalistic' style of medical management to a more collaborative approach*



How the pandemic may damage children's social intelligence

February 12, 2021 1.35pm GMT

“Brain development begins soon after conception and continues at least through young adulthood. It is shaped by a complex interplay between genes and the environment. There is evidence for critical periods in brain development, such as adolescence, when it comes to social cognition.”

Sahakian, B et al

Link to the article:

<https://theconversation.com/how-the-pandemic-may-damage-childrens-social-intelligence-154975>

Visit: www.brainmic.nihr.ac.uk

Email: info@brainmic.org

Tweet: [@NIHRBrainMIC](https://twitter.com/NIHRBrainMIC)

Sign Up: <https://www.brainmic.nihr.ac.uk/rhite>