

Roadmapping the Unmet Needs in the Brain Injury Patient Pathway



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What is the NIHR Brain Injury Healthcare Technology Co-operative (HTC)?

The NIHR Brain Injury HTC (www.brainhtc.org) is dedicated to identifying areas of unmet need susceptible to a technology-based solution amongst patients of all ages with Traumatic (TBI), Acquired (ABI) or Developed (DBI) Brain Injury.

Essentially, the NIHR Brain Injury HTC provides a 'go-to' centre of expertise for understanding care pathways.

The NIHR Brain Injury HTC works to support the development of new medical devices and healthcare technologies thus improving the effectiveness and quality of healthcare services. This work encompasses:

- Market evaluation
- Clinical research networks
- Innovation pathways
- Funding landscape
- Roadmapping
- Regulatory frameworks
- Public and patient involvement
- Patient-centred design
- Early phase evaluation

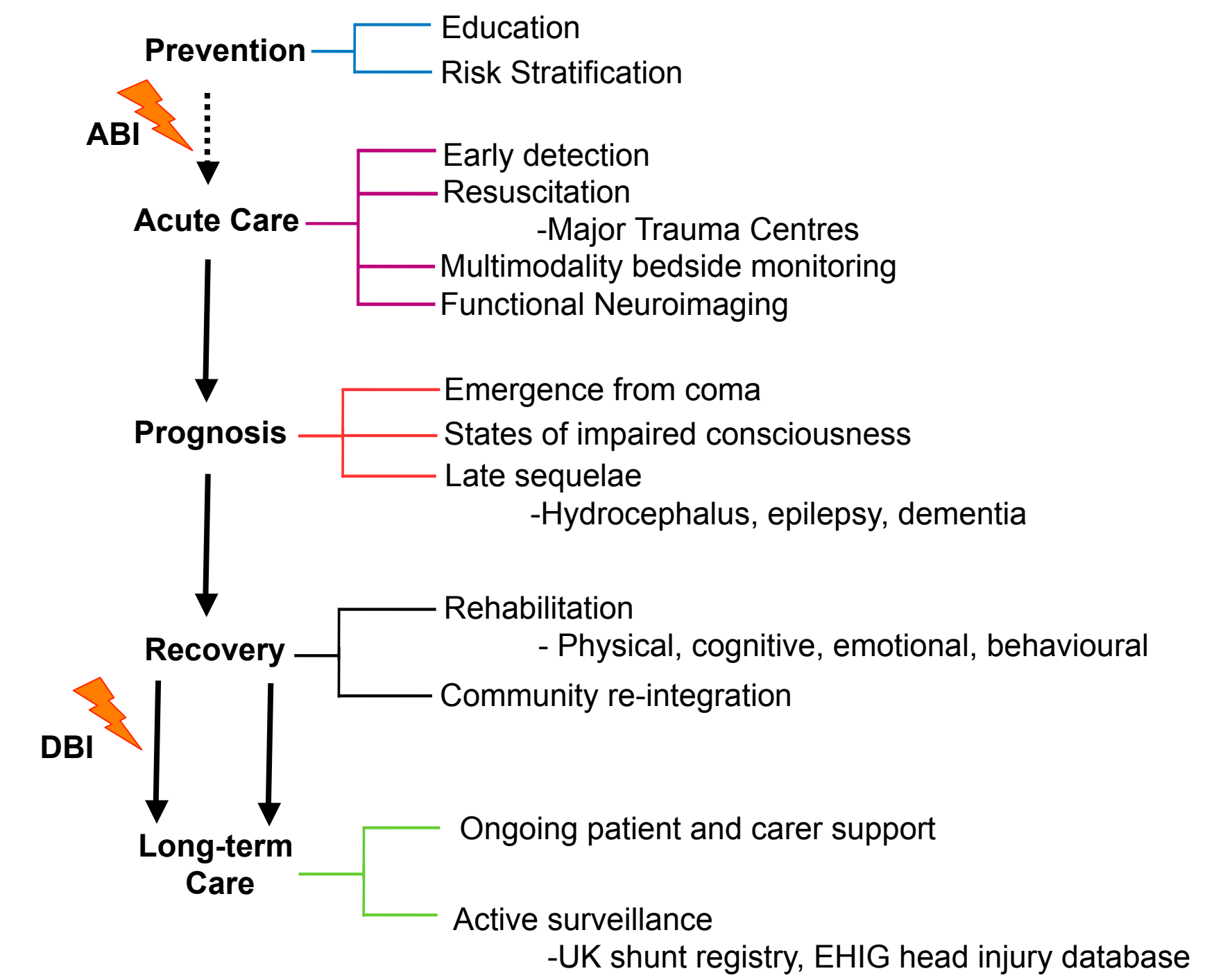


Fig 1: The Brain Injury Care Pathway

Background

A pilot session 'Roadmapping Unmet Needs in the Clinical and Patient Pathways for Brain Injury' was held in January 2014 and delivered by the Institute for Manufacturing, University of Cambridge.

This session was arranged to establish the potential benefit that the workshops can provide to any HTC. The aim is essentially to identify areas of unmet clinical need and develop the roadmap to deliver suitable solutions.

The targeted participants included: 22 senior representatives from the NHS England, NHS Trusts, Academia, Industry, NOCRI, KTN and patient representatives.

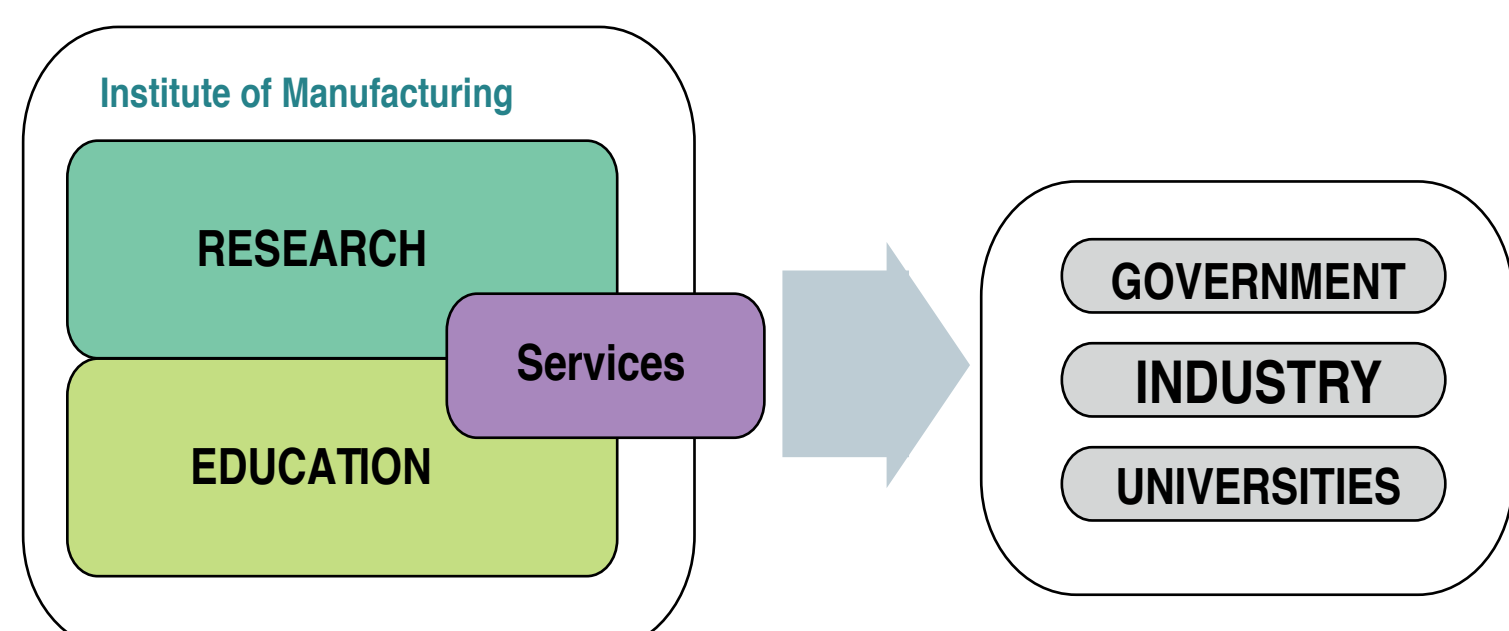


Fig 2: The Institute of Manufacturing linking Engineering, Management, Policy, Research and Practice

Following this session, a 2-day strategic roadmapping workshop (23-24 June 2014) focused on acute brain monitoring and tele-rehabilitation.

Representation included patients and carers, third sector, NHS, community services, commissioners, and academia.

This workshop was designed to enable the NIHR Brain Injury HTC to explore priorities and gaps in the areas of acute brain monitoring and Tele-Rehabilitation.

The event was particularly concerned with:



Fig 3: Landscape

- confirming unmet patient needs
- identifying possible collaborations between industry, patients, commissioners and researchers.

Strategic Roadmapping - Method

Strategic roadmapping can support innovation and business strategy. It builds consensus on priorities and actions required to move forward.

Roadmaps aim to capture a high level, integrated view of strategic plans in a simple diagrammatic or tabular format.

The Institute for Manufacturing's landscaping process employs individual reflection, group discussion and voting to generate information and ideas. These are then captured and developed on a large wallchart and ranked by voting. The three layers of the landscape are aggregated to identify linkages and clusters and hence possible priorities for action.

Topic/Research proposal	Team	Why should we do this?	Required outcome and timing	Current relevant research	Staged deliverables and dates	Critical gaps	Key Actions (including Expertise to engage)	Other Enablers	Other Barriers	We have a research need/opportunity for:	Because:	Actions to deliver:

Fig 5: Topic exploration template, Institute for Manufacturing

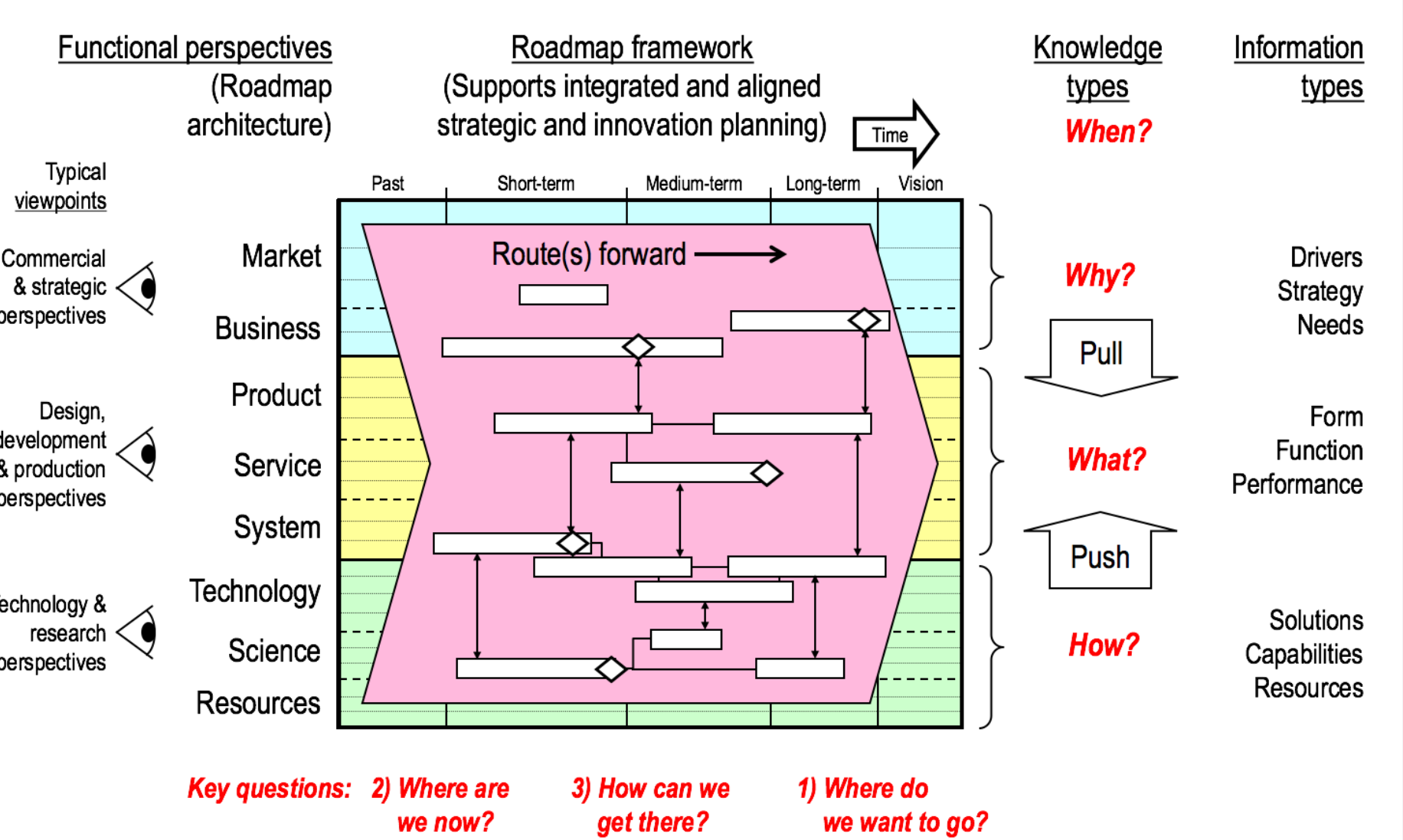


Fig 4: Roadmapping: structured depiction of strategy, Institute for Manufacturing

The three fundamental questions that roadmaps seek to answer are:

- Where do we want to go?
- Where are we now?
- How can we get there?

Three structured outputs that can be used to inform future strategic development and planning:

- Landscape development
- Topic Selection
- Topic Development

Results

The NIHR Brain Injury HTC has run seven roadmapping workshops to explore ways to improve outcomes across the patient journey, create outline ideas for future research and service-development projects, and encourage wider collaboration between brain injury professionals, service providers and patients.

- Roadmapping Unmet Needs in the Clinical and Patient Pathways for Brain Injury** (14.01.14)
- Acute Brain Monitoring Strategic Roadmapping** (23.06.14)
- Tele-rehabilitation Strategic Roadmapping** (24.06.14)
- Community Services Research Priorities:** In partnership with NIHR CLAHRC EoE (22.07.15)
- Acute Care: Brain Injury and Intensive Care** (10.11.15)
- Paediatric Neurorehabilitation: Finding and Filling the Gaps** (09.03.16)
- Patient Inspired Innovation: Neuro Intensive Care** (24.05.16)

Through these workshops, the NIHR Brain Injury HTC identified more than 30 unmet needs. Examples include 'Extended patient monitoring', 'Improving communication technology across NHS sites' and 'Setting up home assessment and monitoring services'.

The key findings have informed funding calls run internally by the NIHR Brain Injury HTC and externally by NHS England Small Business Research Initiative.



Fig 6: Community Services Research Priority Landscape

References

Robert Phaal, Clare Farrukh and David Probert, *Roadmapping for Strategy and Innovation: Aligning Technology and Markets in a Dynamic World*, University of Cambridge, Institute for Manufacturing, 2010