

The development of a Technology Research Platform on Medical Devices



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Challenges Facing Child Health Technology Development

- Lack of targeted health technology for children
- Fragmentation and scale
- Repurposing of adult technologies – suboptimal results
- Children with long-term conditions are surviving for longer
- Improved future opportunities



A UK Perspective



[ABOUT](#) [OBJECTIVES](#) [PROCESS](#) [ACHIEVEMENTS](#) [AMBASSADOR](#) [CONNECT](#)

TITCH NETWORK

A national network dedicated to transforming child health through technology and innovation



Leveraged >£6 million in funding for
child health technology development



EUROPEAN PAEDIATRIC TRANSLATIONAL RESEARCH INFRASTRUCTURE



NIHR Children and Young People MedTech Cooperative

NIHR | Children and Young People
MedTech Co-operative

www.cypmedtech.nihr.ac.uk

SURGICAL TECHNOLOGIES

LEAD: MR IAIN HENNESSAY
ALDER HEY CHILDREN'S HOSPITAL

CANCER

CO-LEADS: DR QUENTIN CAMPBELL HEWSON
& DR GAIL HALLIDAY
THE GREAT NORTH CHILDREN'S HOSPITAL

RESPIRATORY AND SLEEP

LEAD: PROFESSOR HEATHER ELPHICK
SHEFFIELD CHILDREN'S HOSPITAL

TRANSITION

CO-LEAD: DR PRIYA NARULA
SHEFFIELD CHILDREN'S HOSPITAL
CO-LEAD: DR HELENA GLEESON
QUEEN ELIZABETH HOSPITAL

RARE DISEASES

LEAD: DR LARISSA KEREKUK
BIRMINGHAM CHILDREN'S HOSPITAL

VENTILATION

LEAD: DR RICHARD ILES
EVELINA CHILDREN'S HOSPITAL

EPILEPSY, MOVEMENT & MUSCLE DISORDERS

LEAD: PROFESSOR HELEN CROSS
GREAT ORMOND STREET HOSPITAL

ePTRI

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The idea of a dedicated Technology Research Platform on Medical Devices

Currently

- Few medical devices are designed specifically for children
- Repurposing from adult applications
- Produced for more uses than the agreed.

A strong interest in paediatric medical devices has been also shown in the Stakeholder survey

Breadth of community

Combination of multiple experts and competences from paediatricians, pharmaceutical technologist, IT experts, AI experts, nano-technologists, bio-engineers, manufacturers and regulators is required for the development of medical devices

Developing a dedicated platform on medical devices (MD) has been evaluated. The platform will represent the **hub for linking people and resources** and **offer new ideas and solutions** and **foster the research** in this field

Needs to be addressed for paediatric MD development



Development

- Support focus on dedicated paediatric medical devices
- Industry and institutional culture change



Regulations

- Master regulations across countries
- Reference point for academics and industry

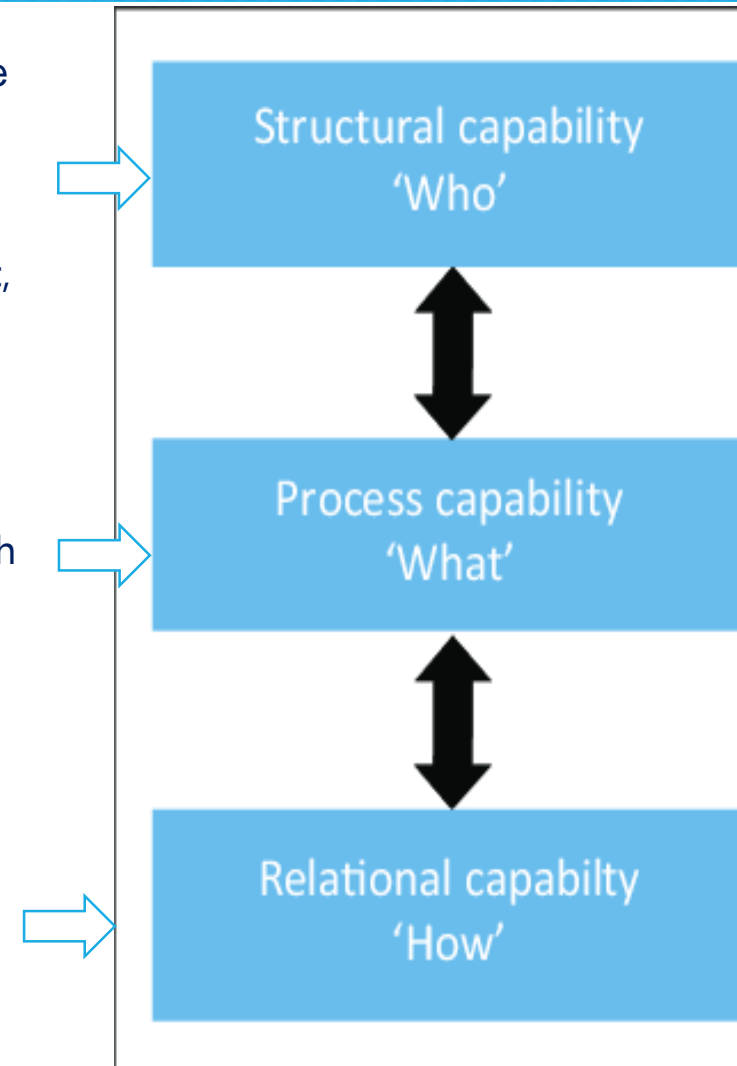


Knowledge transfer

- Facilitate MD research through collaboration
- Dedicated training MD training programmes

Steps for the development of a Technology Research Platform on Medical Devices

- Identification of the key experts in paediatric medical device development
- Establish a network of partners - clinical, industry, academic, patient and families - is this a network of networks? - scoping
- Establish unmet needs through surveys and workshops both from patients and researchers point of view
- Establish within EPTRI a platform dedicated to foster medical device research in paediatrics
- Collaboration with funders to establish funding stream



Platform Actions

- Strategic aims and objectives – short, medium and long term plan
- Research strategy
- Regulatory framework strategy



Objectives of Platform Development

- Identify centres with expertise in the development of child health technology: design innovation pathway approach development, prototype analysis, validation and end-user/usability assessment
- Create a 3-D institutional CV
- Foster paediatric research in the field of development of new or established medical devices
- Support knowledge transfer for MD experts
- Support the authorisation and regulatory processes including CE marking
- Promote the development a funding roadmap for research
- Develop an education programme for child health technology



The Development of a 3D-Platform CV

- Gain an understanding of the expertise in technology development areas across Europe
- Establish a Pan-European profile and CV - patient and industry facing
- Create an open-space for technology collaboration across complimentary specialist areas



The Development of a 3D-Platform CV

Scope of Institutional Expertise

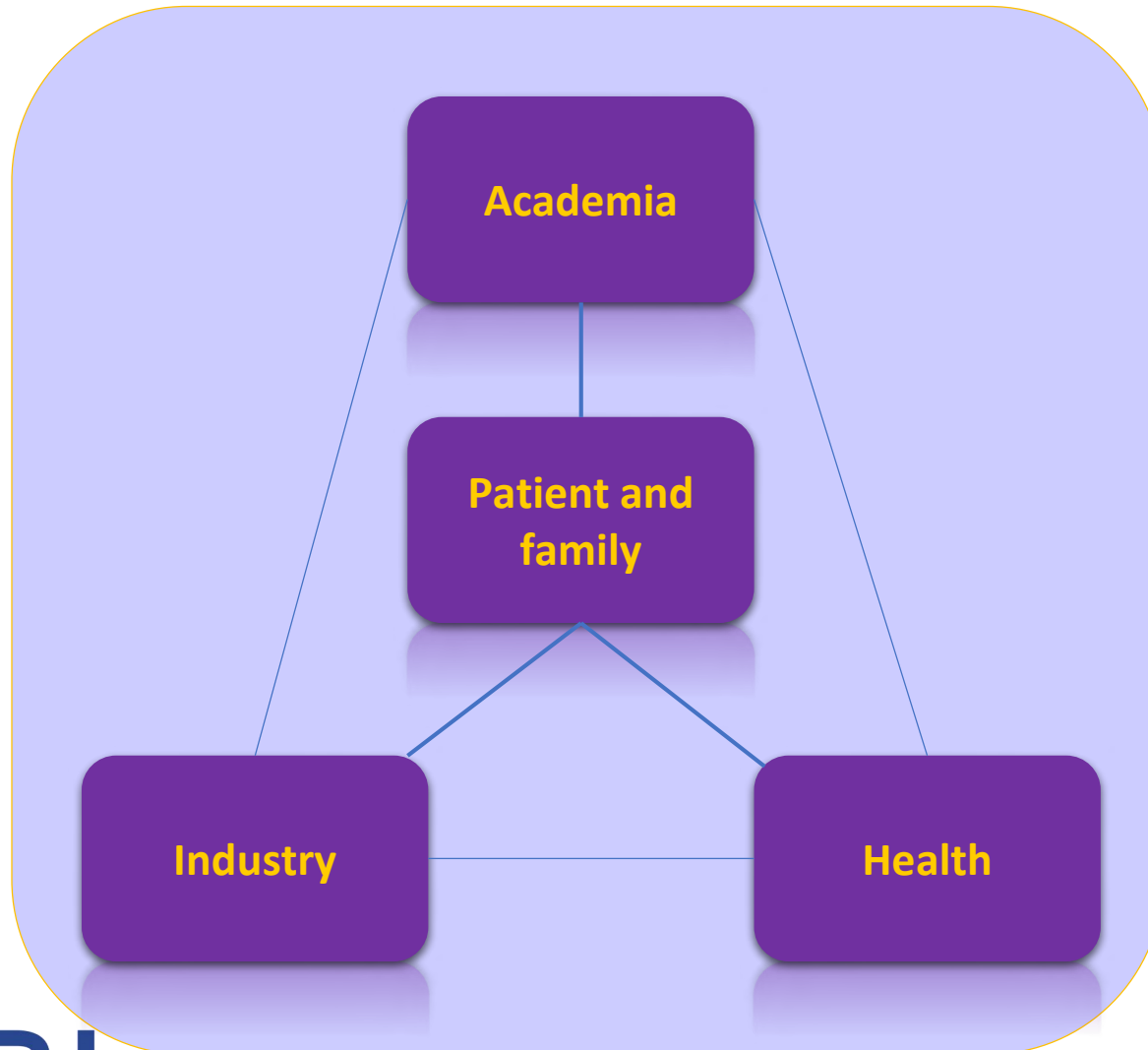
THE INNOVATION PIPELINE



How to define unmet needs

- Collation of known areas of unmet needs across European Centres - define common themes
- Workshops to define future work streams
- Align unmet needs with funding opportunities – funding roadmap
- Develop educational framework
- Centralised co-ordination of work-packages/work-streams

User-centred innovation through integration



Summary

- Aim to develop a Pan-European Technology Research Platform for Medical Devices
- A strategic framework fundamental in defining and developing the Platform
- Alignment of expertise with unmet needs and funding roadmap across the innovation pathway
- Ethos of user-centred innovation through true participation
- Provide an open space for cooperation and exchange of knowledge for MD experts through EPTRI

