

D1

STEAMing ahead for Innovation: Lab4Life



Rob Evans, Ed Cole
Paul Chamberlain & Heather Elphick

PraxisUnico. *auril*
Conference 2017

Sheffield Children's **NHS**
NHS Foundation Trust



TECHNOLOGY AND DESIGN IN CHILD HEALTH

TITCH
Technology innovation
transforming child health



Prof Heather Elphick
Consultant in Paediatric Respiratory Medicine
Sheffield Children's Hospital

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TITCH
Technology innovation
transforming child health

Alder Hey Children's **NHS**
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Devices for Dignity
Healthcare Technology
Co-operative

Guy's and St Thomas'
NHS Foundation Trust **NHS**

NHS
National Institute for
Health Research

Great Ormond Street
Hospital for Children
NHS Trust

D4D

Sheffield
Hallam
University

WoundTec

Birmingham Children's Hospital
NHS Foundation Trust

TRUSTECH

MindTech Healthcare
Technology Co-operative

National Institute for
Health Research

Central Manchester
and Manchester
University Hospitals
NHS Trust

MEDILINK

City Hospitals
Manchester
NHS Foundation Trust

mhabitat

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THE INNOVATION-RESEARCH PIPELINE

Unmet
need

Inventi
on

Proof of
concept

Prototyp
e

Product
develop
ment

• EVALUATION

• DIFFUSION

• ADOPTION

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DEFINING NEEDS





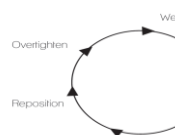



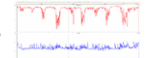

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CLINICAL NEED FOR IMPROVED NIV MASKS



Alarm

The mask becomes dislodged every 2 hours most nights leading to staff having to get up repeatedly to put it back on.

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QUOTES:

"I would feel less guilty about making him wear something which hurts his skin. I would get more undisturbed sleep with less leaks/hose dramas. Which in turn might help me to be able to reduce my anti-anxiety meds."

"It would be amazing if we could have the chance of a made-to-measure mask. The main thing I would do is give "J" comfort and in doing that improve her sleep giving her a better quality of life, something we all strive for."

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USER INVOLVEMENT

Requirements in order of importance

- Easy to put on
- Easy to adjust
- Independence
- Soft
- Kind to skin
- Non-leaky
- Easy pressure/no pressure points
- Adjustable (no cutting)
- Easy to clean (no rating)
- Flexibility (no rating)
- Low/neutral odour (no rating)
- No touch on the face (niche)
- Form (niche)

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BACKGROUND WORK: PROOF OF CONCEPT

Custom interface achieves better seal than standard interface with 19% lower total facial loads for same strap tension

Custom interface

Standard interface

Load test results

Zero reading @ 500g applied strap load indicates no contact i.e. leak.

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UNDERSTANDING THE CLINICAL PATHWAY

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THE FINAL OUTCOME

www.titch.org.uk

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<https://www.youtube.com/watch?v=36SWu3asS9o>

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