Ingenieurie Medicale

–

De la recherche aux premieres utilisations chez l'humain

Anne Vanhoestenberghe

Manufacture of Active Implants and Surgical Instruments (MAISI)
School of Biomedical Engineering and Imaging Sciences King's College London

8 October 2024

Manufacture of
Active Implants &
Surgical Instruments

Impact of Healthcare Engineering Research

- Improve quality of life
- Improve healthcare services

- How?
  - New medical device: clinical adoption
  - New "basic science" device: new understanding of physiological process
  - New technology: used in novel medical or basic science devices

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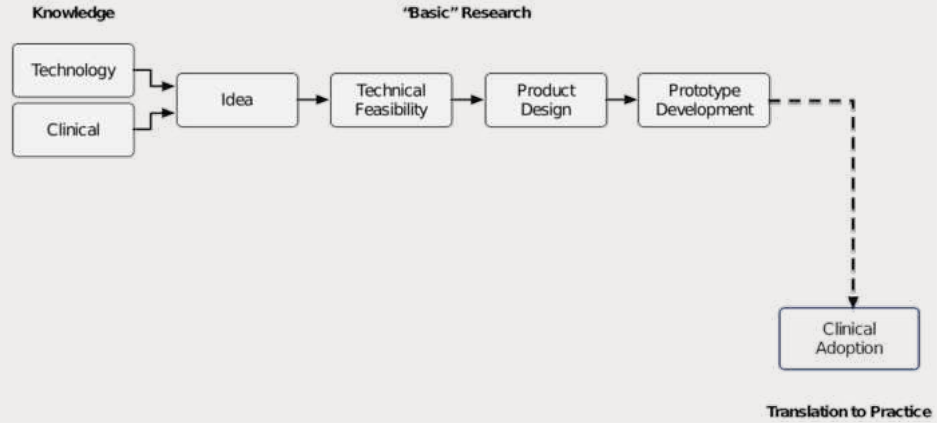
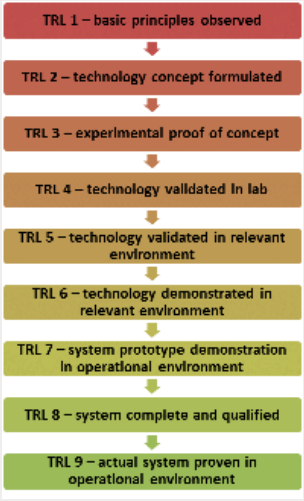
Healthcare Innovation

Healthcare Engineering translation pipeline.



Technology Readiness Levels?

- Early TRL: new material, new actuation method, new sensor, new algorithm...
- TRL 4-7: Validation, systematic testing, multiple batches, statistics
- Need system integration
- Progression through TRLs is not linear



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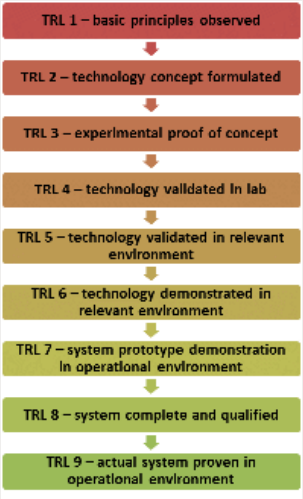

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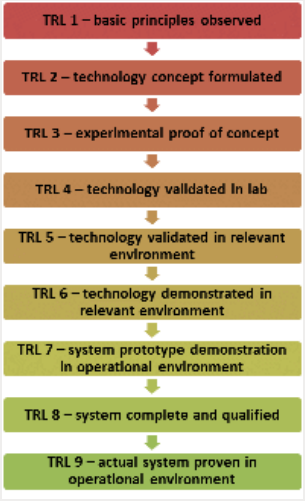

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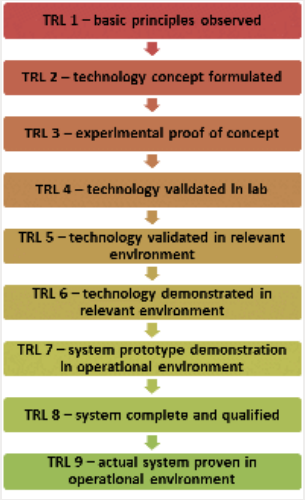

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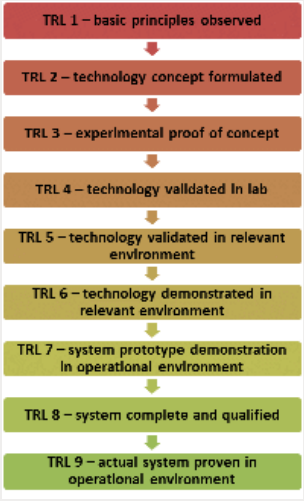

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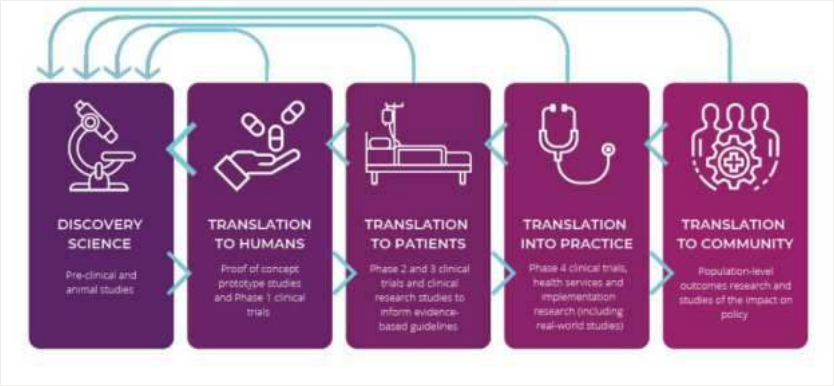
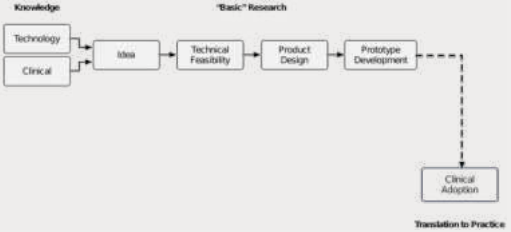
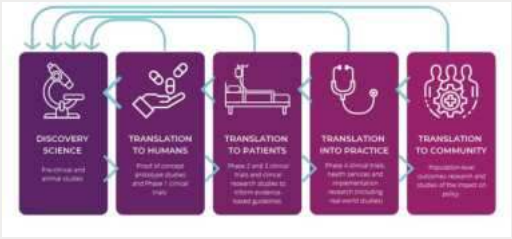


NCRI Beyond the Horizon - Bridging the translational Gap

Healthcare Innovation





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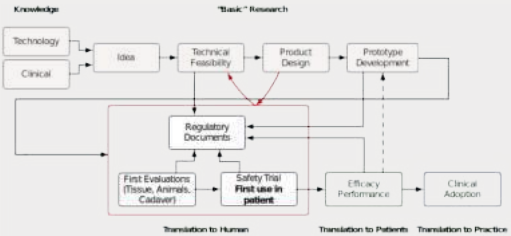

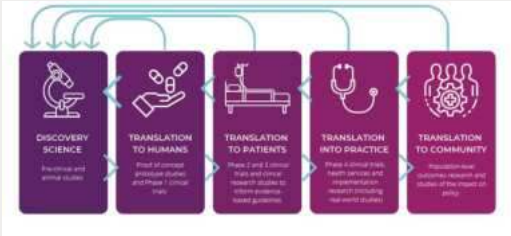

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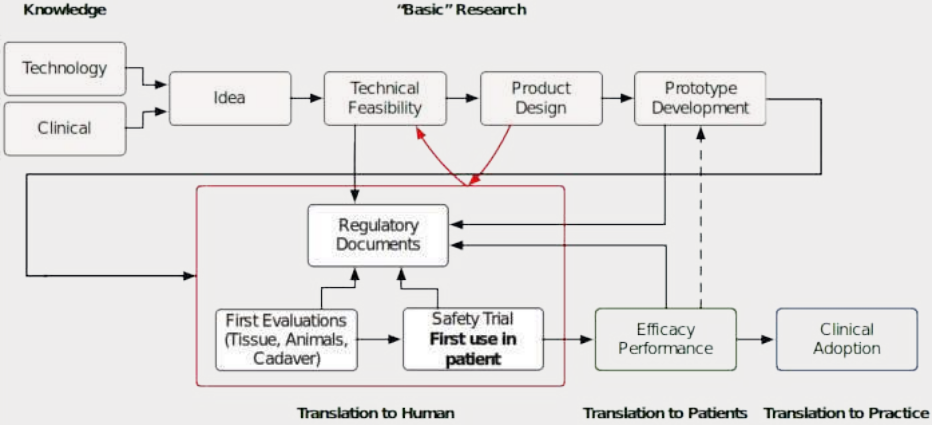

Translation: benefits of a culture change

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SYSTEMATIC REVIEW article

Front. Digit. Health, 03 August 2022
Sec. Health Technology Implementation
https://doi.org/10.3389/fdgth.2022.957367

Translational research in health technologies: A scoping review

Nadja N. V. Mayrink[1,2*], Luis Alcoforado[1,3], Arthur Chioro[4], Felipe Fernandes[5], Thaisa S. Lima[5], Erika B. Camargo[2] and Ricardo A. M. Valentim[2]

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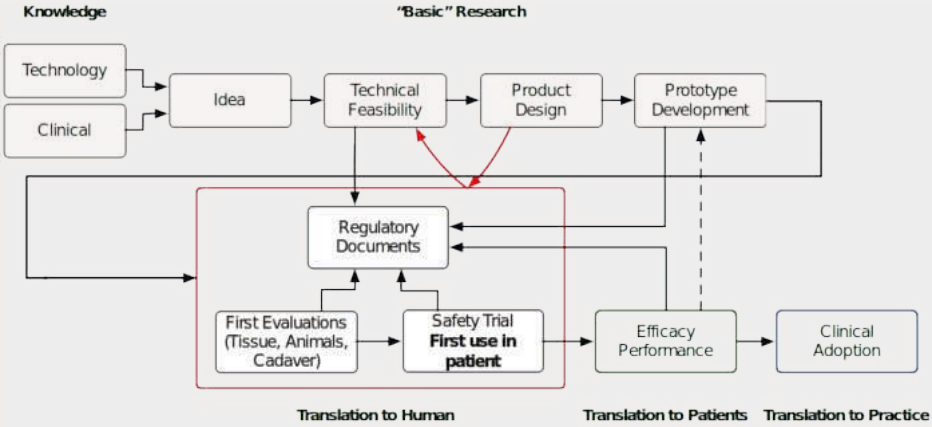

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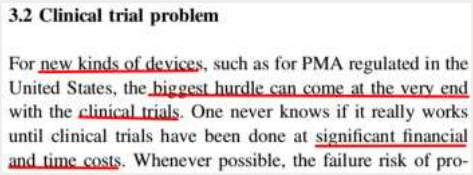

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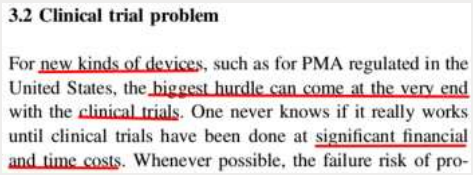

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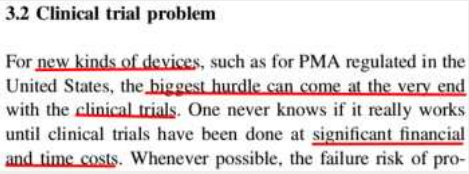

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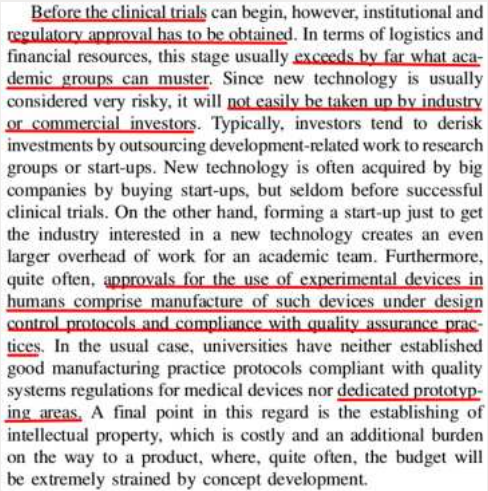

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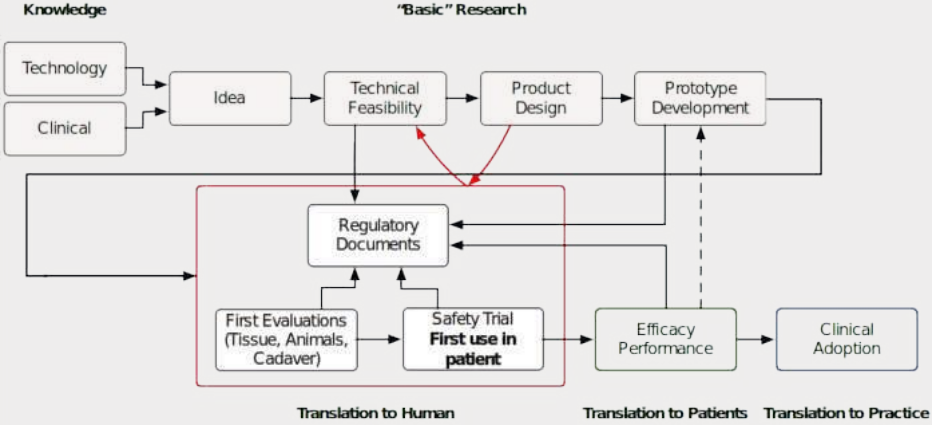

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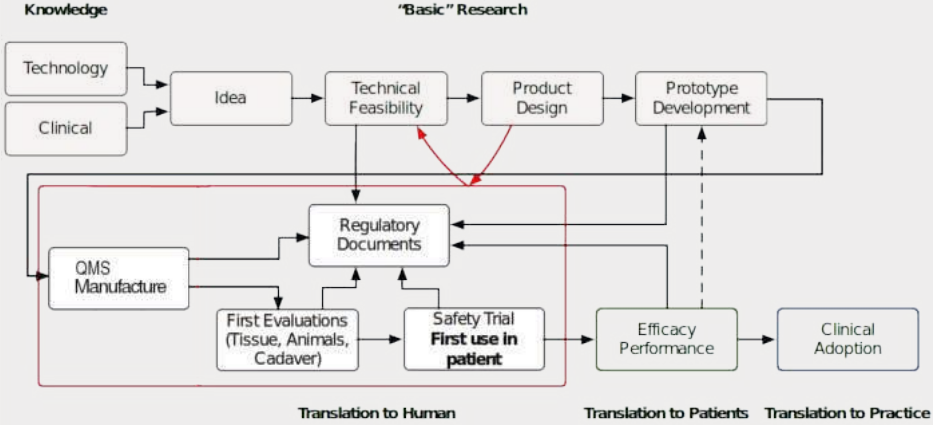

From translational pipeline to medical device lifecycle as seen by regulators...

Medical Device Life Cycle in the EU and UK

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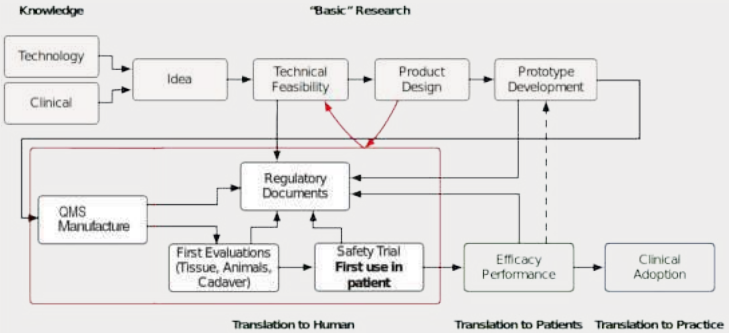

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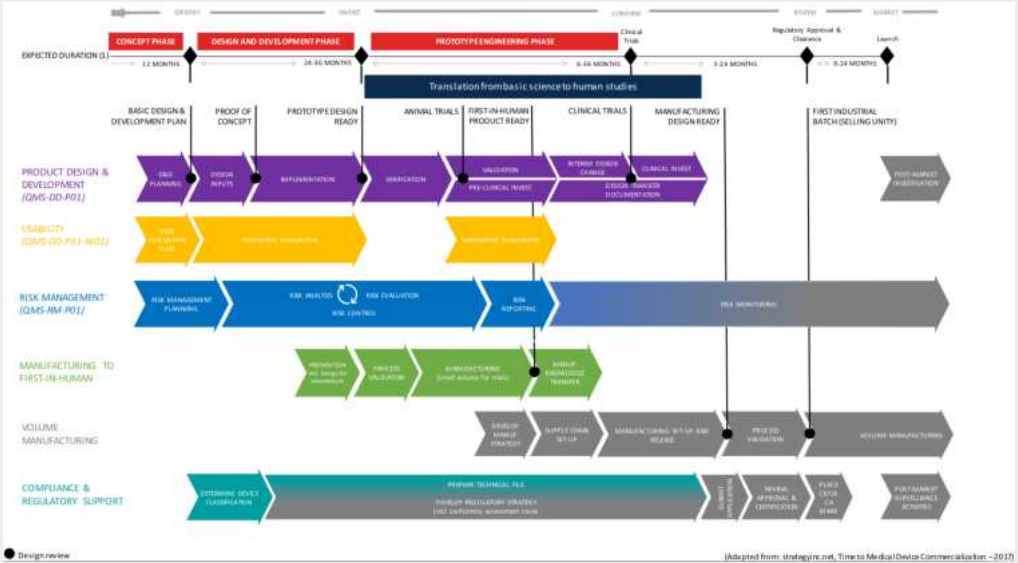
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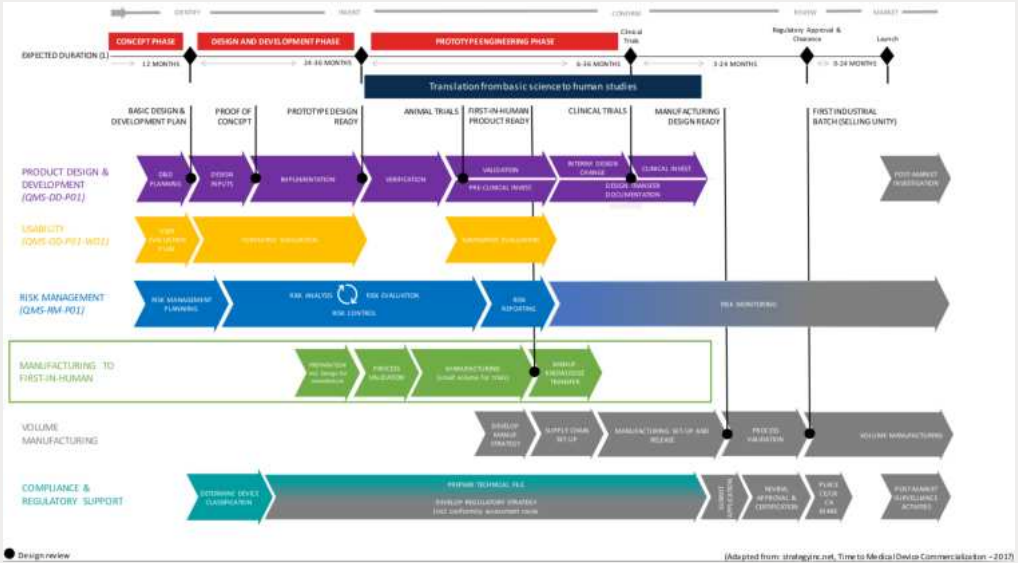
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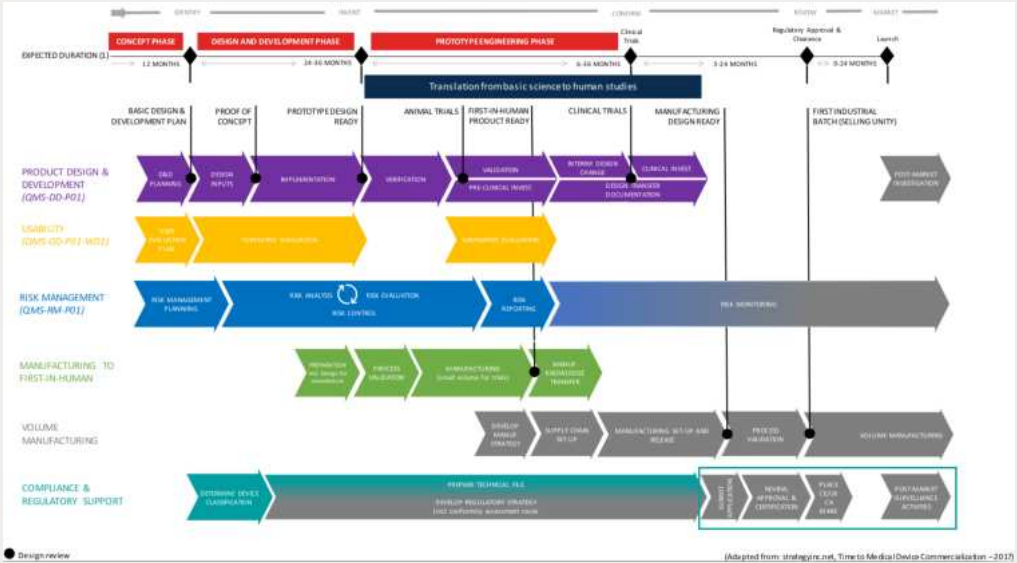
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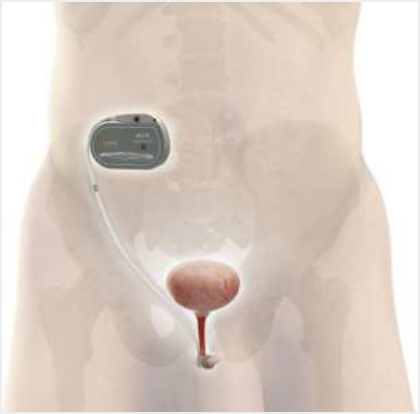

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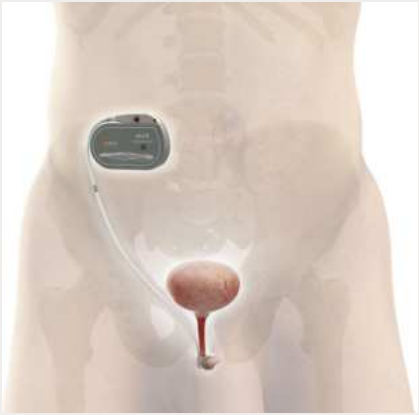
UroMems Initiates First-in-Human Study of Its Smart Implant to Treat Stress Urinary Incontinence

NEWS PROVIDED BY
UroMems →
Nov 29, 2022, 10:00 ET

SHARE THIS ARTICLE

This initial clinical trial is a key milestone in the development of its UroActive™ System

GRENOBLE, France, Nov. 29, 2022 /PRNewswire/ -- UroMems, a global company developing breakthrough, mechatronics technology to treat stress urinary incontinence (SUI), announced today that it has successfully completed the first-in-human implant of the UroActive™ System, the first smart automated artificial urinary sphincter (AUS) investigational device to treat SUI. This initial clinical study is a key milestone in the development of UroActive.



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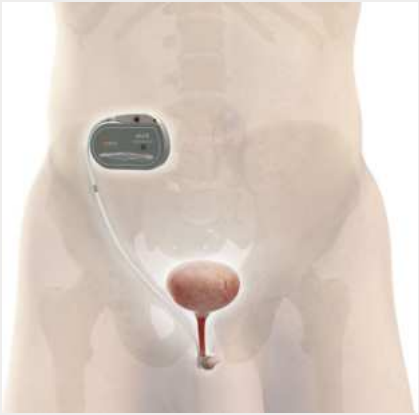
GRENOBLE, France, Nov. 29, 2022 /PRNewswire/ -- UroMems, a global company developing breakthrough, mechatronics technology to treat stress urinary incontinence (SUI), announced today that it has successfully completed the first-in-human implant of the UroActive™ System, the first smart automated artificial urinary sphincter (AUS) investigational device to treat SUI. This initial clinical study is a key milestone in the development of UroActive.

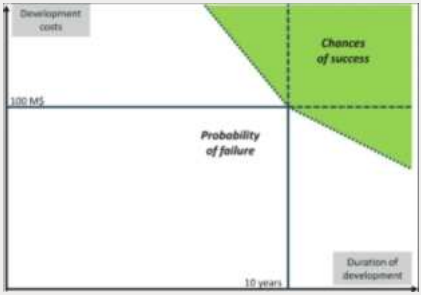
Philippe Cinquin, P. Mozer, H. Lamraoui, Agnès Bonvilain, G. Robain. Dispositif de prévention des fuites urinaires. France, N° de brevet: FR0757159. 2007. ⟨hal-00419384⟩



Translational funding

Translational funding

Clare Heaysman - KCL



Claude Clement - BCI presentation - 2022

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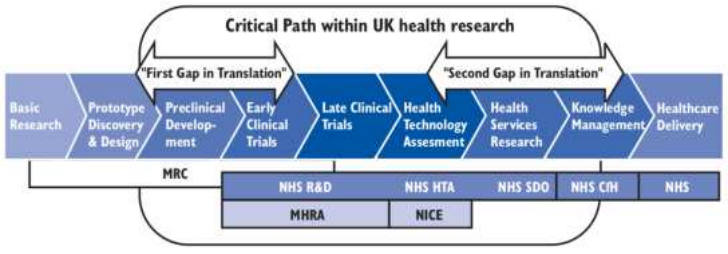

Cooksey report 2006

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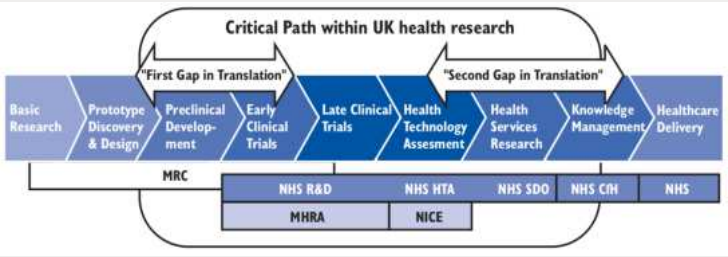
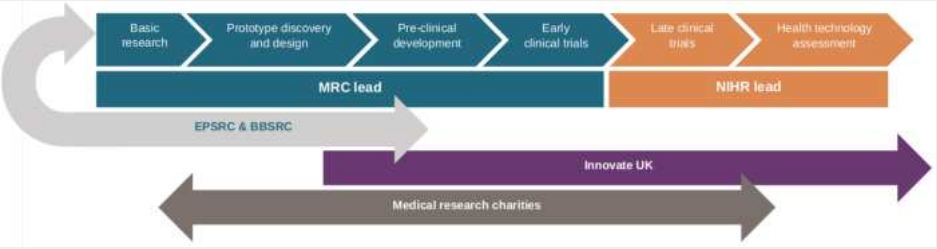


Cooksey report 2006



MRC report 2018

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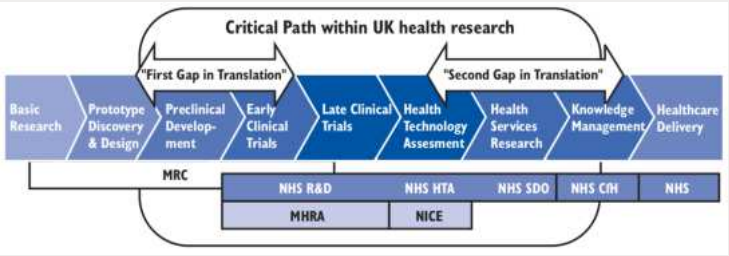

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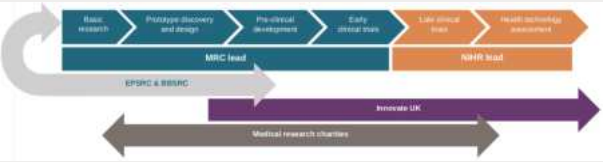

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Thank you for your attention

Any questions?

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