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Developing a systems approach for healthcare improvement in LMIC

Professor John Clarkson FREng

ENGLISH ELECTRIC VALVE CO LTD

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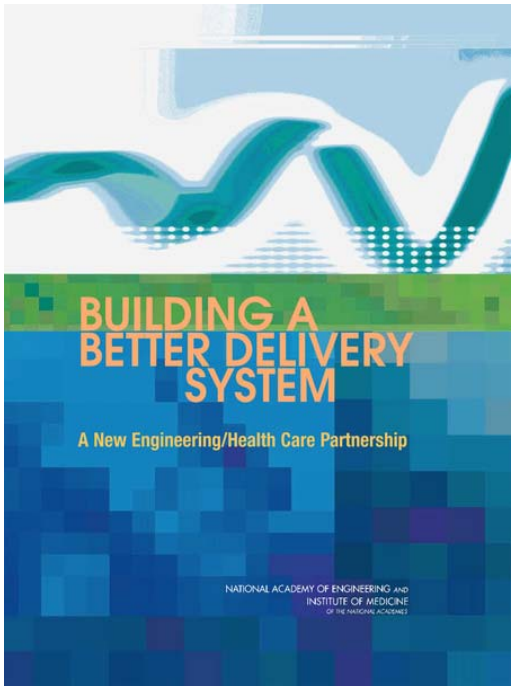
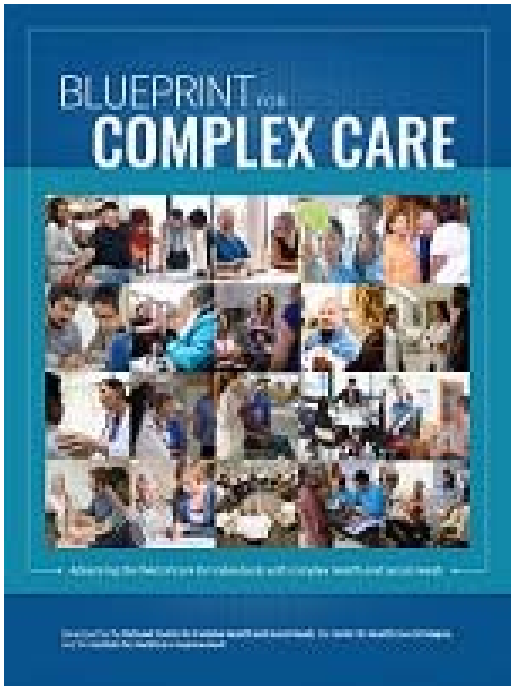
How can we do it better?

What could possibly go wrong?

NHS
Cambridge University Hospitals
NHS Foundation Trust

NHS
Cambridge
University Hospitals
NHS Foundation Trust





ROYAL ACADEMY OF ENGINEERING

To work with the health and care professions to explore how engineers can add to current understanding and practice of systems engineering in quality improvement and healthcare design

Royal College of Physicians

The Academy of Medical Sciences

ROYAL ACADEMY OF ENGINEERING

Systems Approach

"Systems that work do not just happen – they have to be planned, designed and built"

(Creating systems that work: Principles of engineering systems for the 21st century, Royal Academy of Engineering, 2007)

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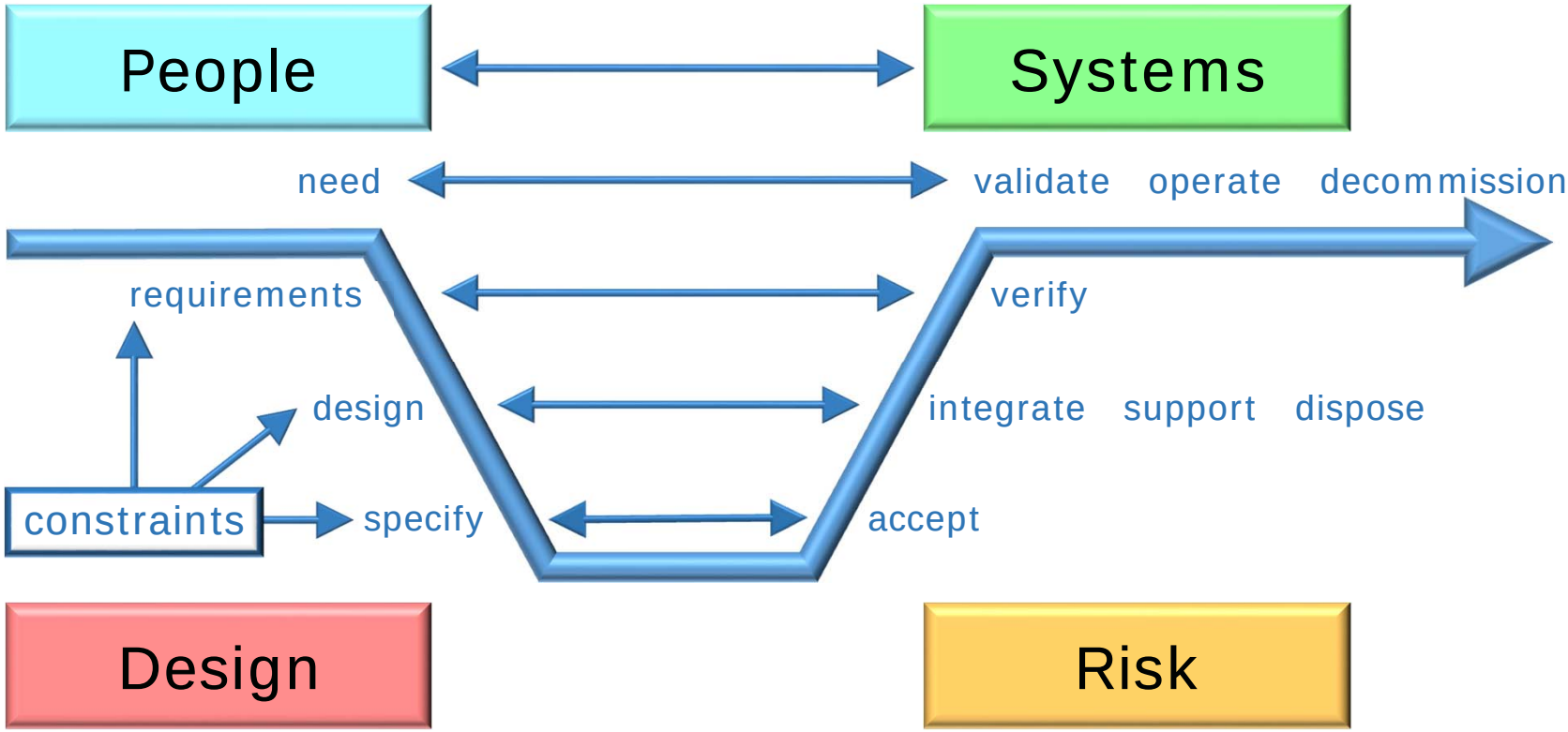


ROYAL ACADEMY OF ENGINEERING

ROYAL ACADEMY OF ENGINEERING

Systems

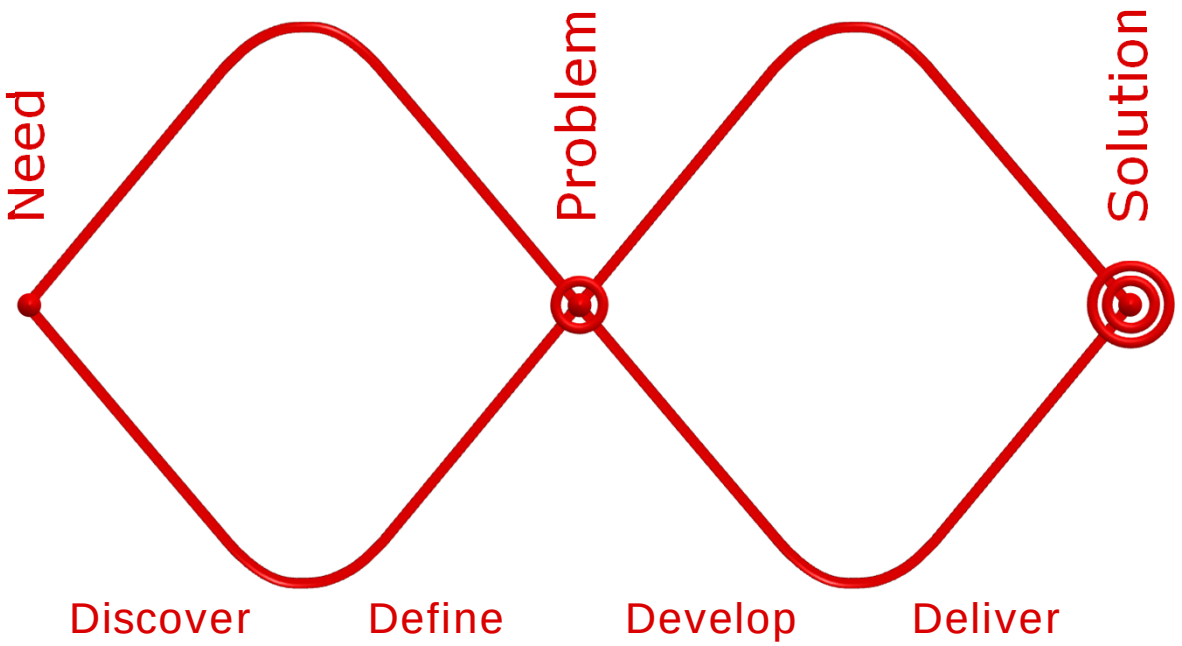
ROYAL ACADEMY OF ENGINEERING

Systems

- Who are the stakeholders?
- What are the elements?
- How does the system perform?

ROYAL ACADEMY OF ENGINEERING

Design



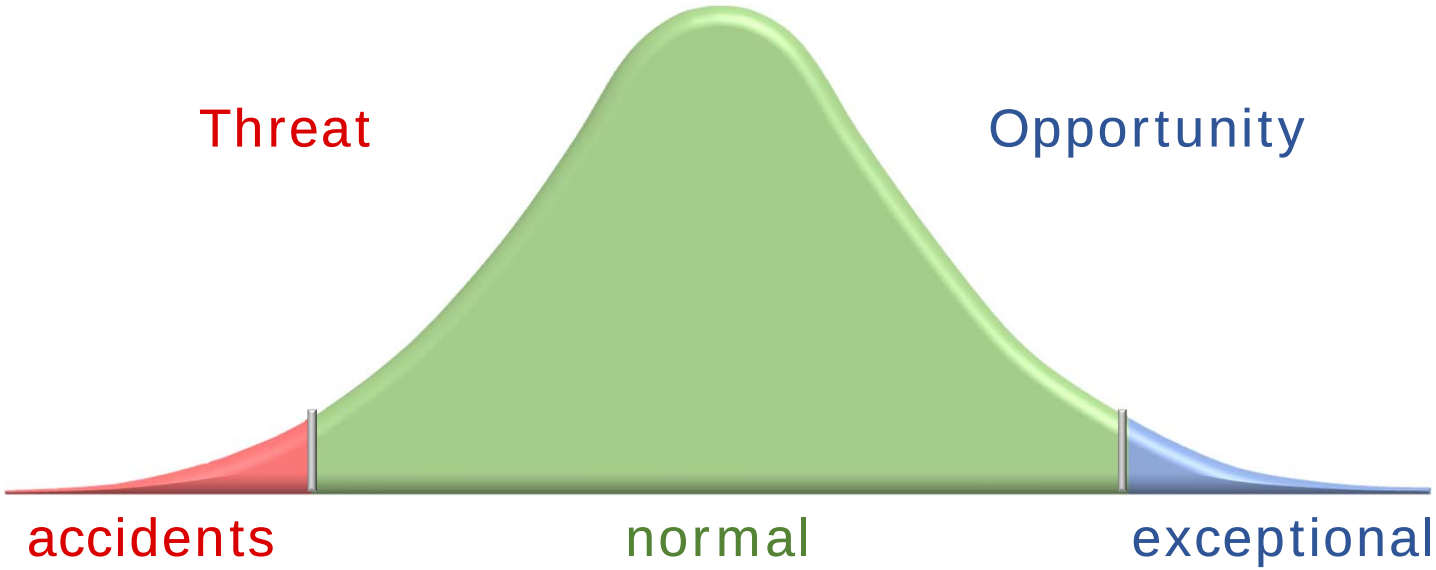
ROYAL ACADEMY OF ENGINEERING

Design

- What are the needs?
- How can the needs be met?
- How well are the needs met?

ROYAL ACADEMY OF ENGINEERING

Risk



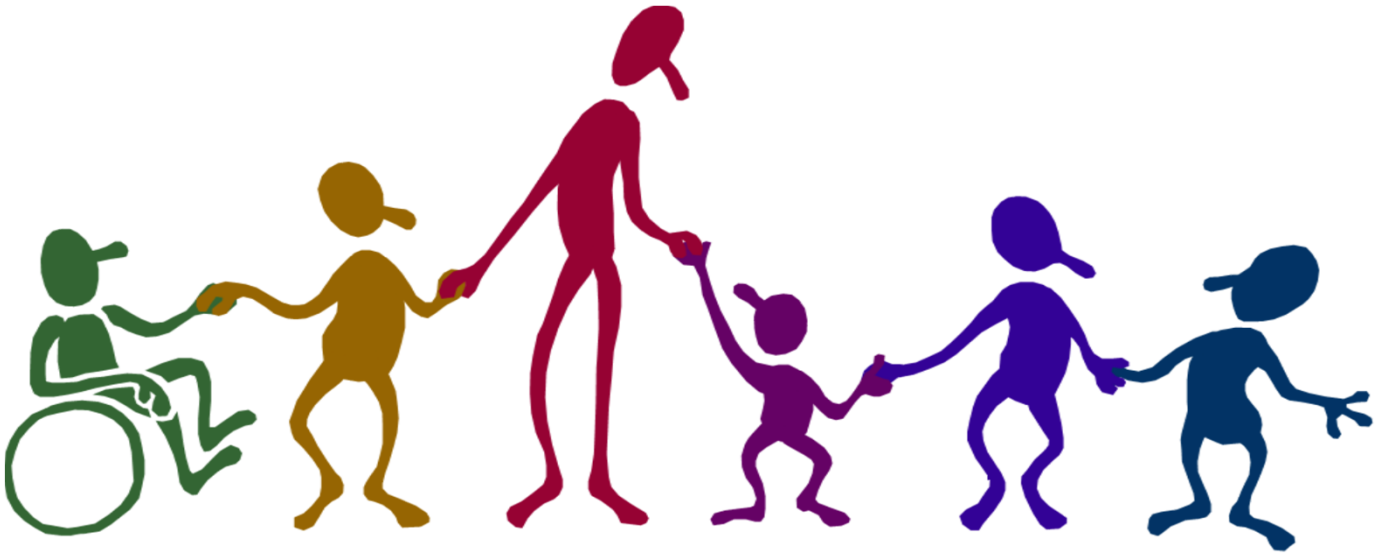
ROYAL ACADEMY OF ENGINEERING

Risk

- What is going on?
- What could go wrong? / What do we do well?
- How can we make it better?

ROYAL ACADEMY OF ENGINEERING

People

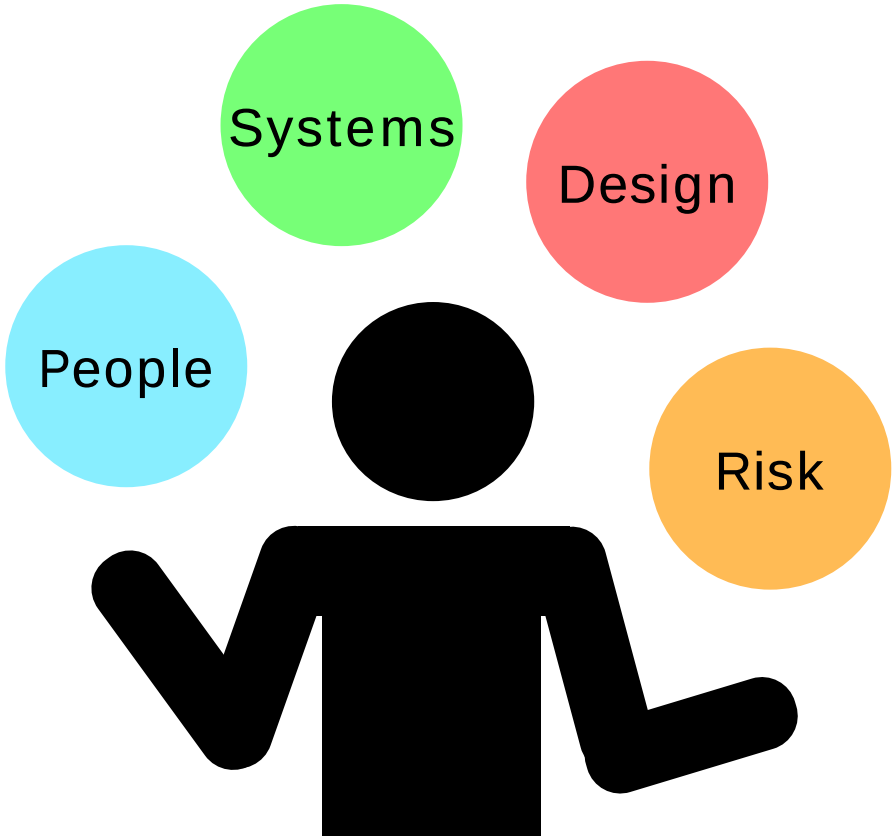


ROYAL ACADEMY OF ENGINEERING

People

- Who will use the system?
- Where is the system?
- What affects the system?

ROYAL ACADEMY OF ENGINEERING



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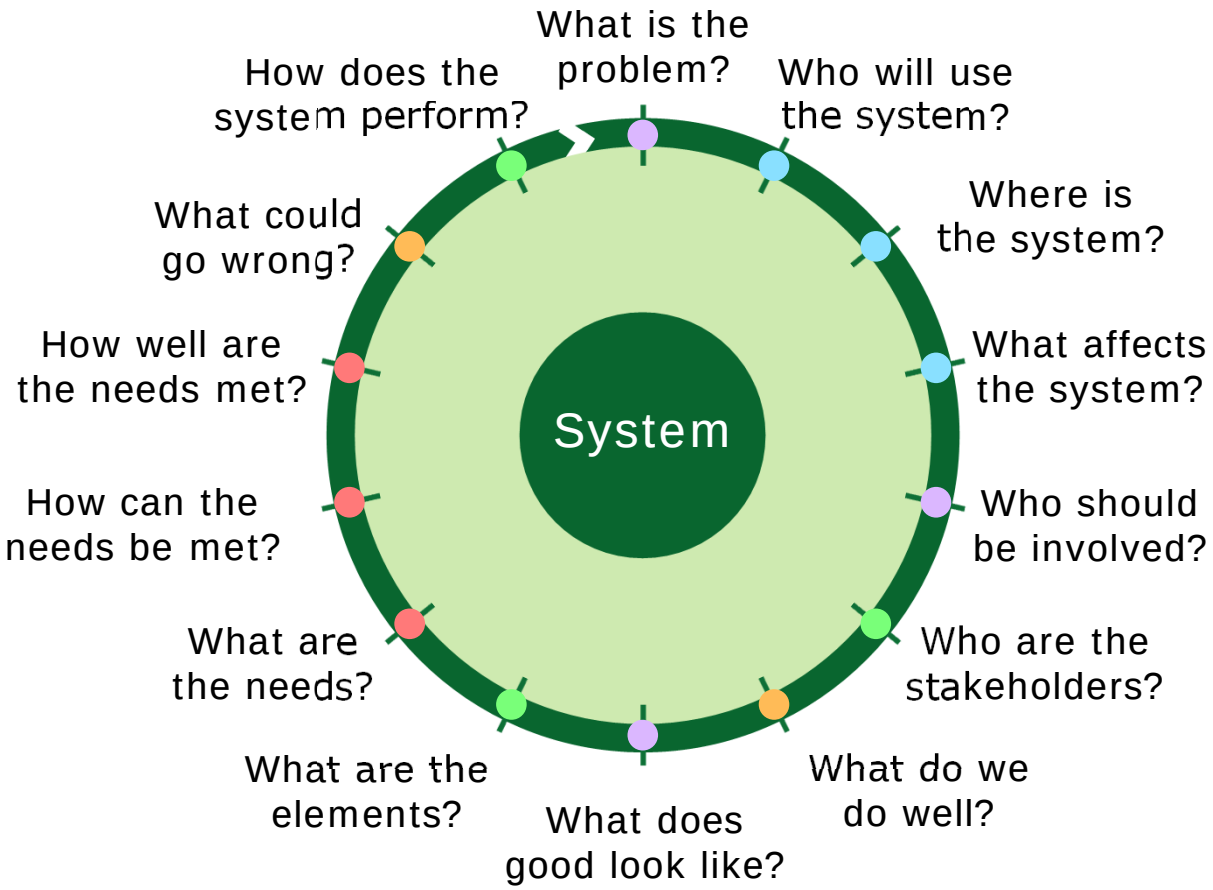

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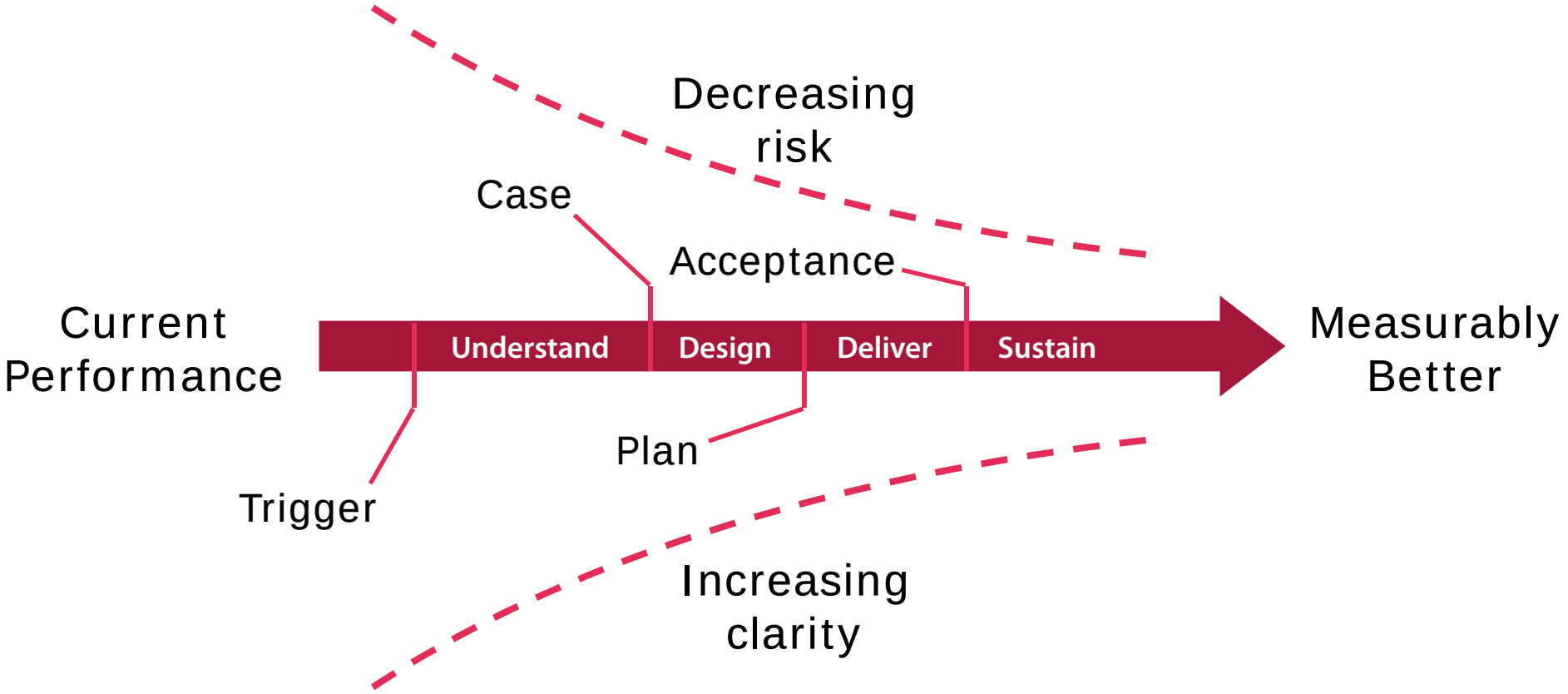

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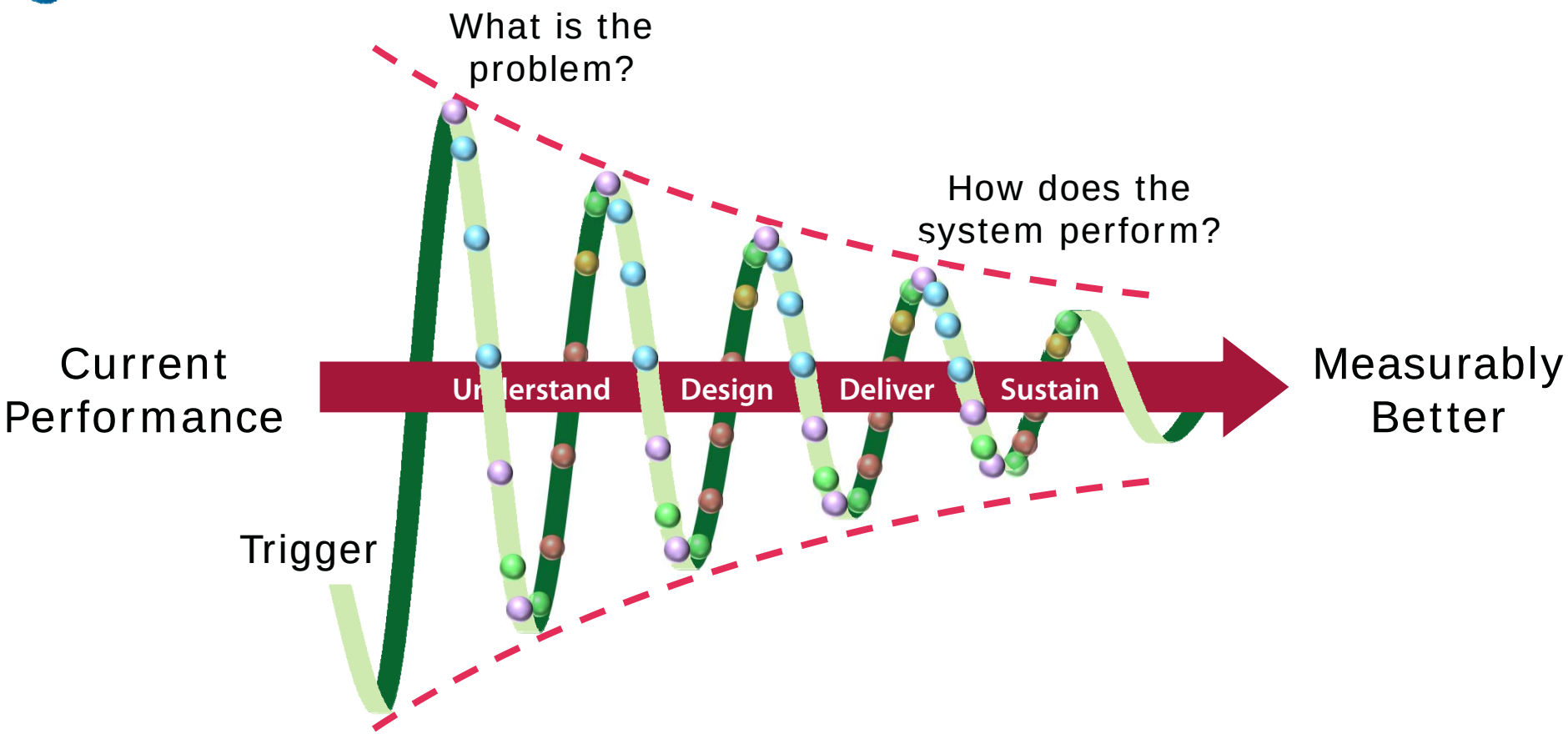

ROYAL ACADEMY OF ENGINEERING

Radical thinking:

- Engineers think about people
- Iteration before implementation
- Design is an exploratory process
- Risk management is a proactive process
- Thinking changes practice, process helps
- Common sense is not common

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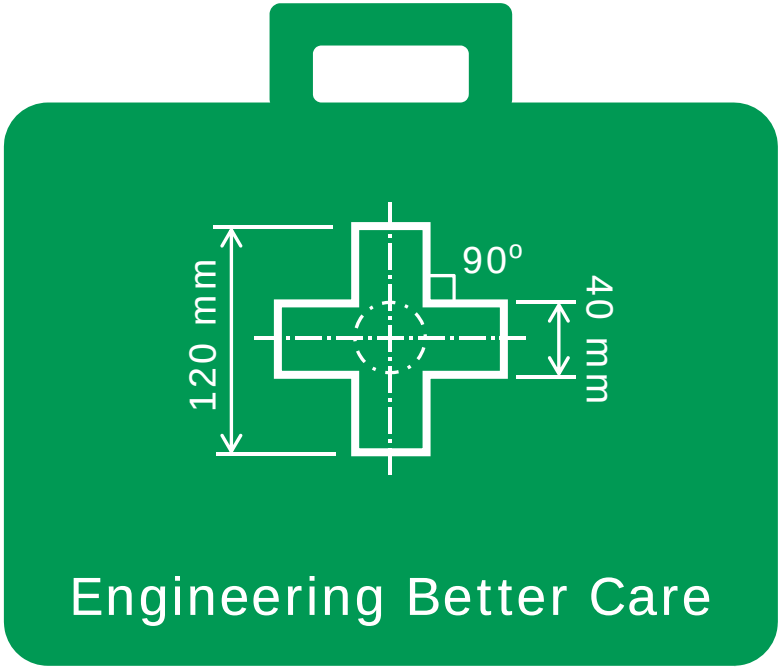
ROYAL ACADEMY OF ENGINEERING

Royal College of Anaesthetists

How can we do it better?



What could possibly go wrong?

Royal College of Physicians

The Health Foundation

The Academy of Medical Sciences

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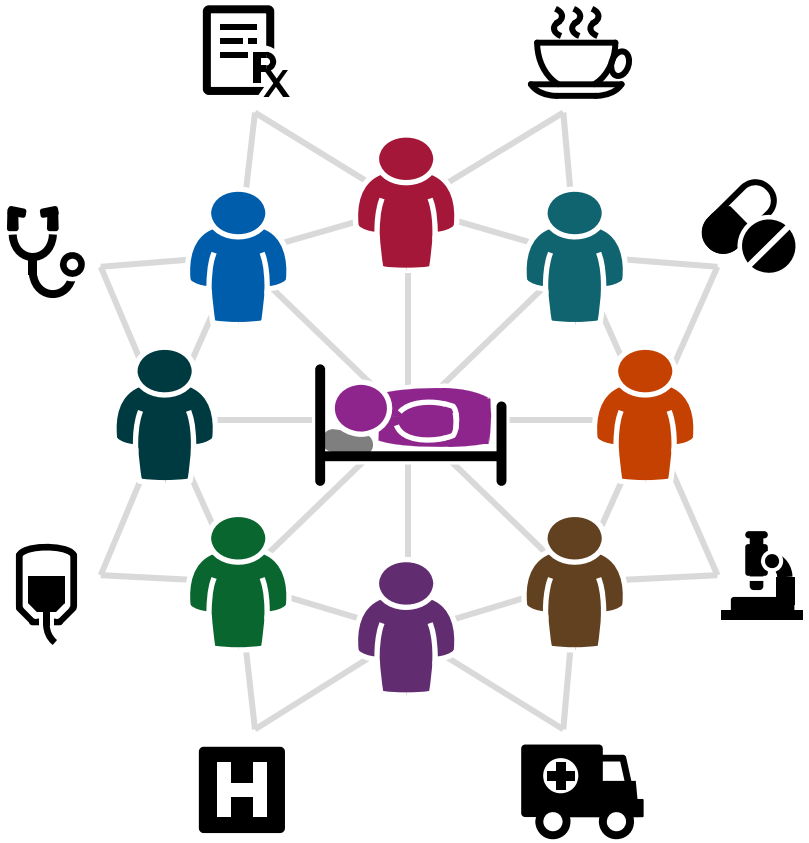

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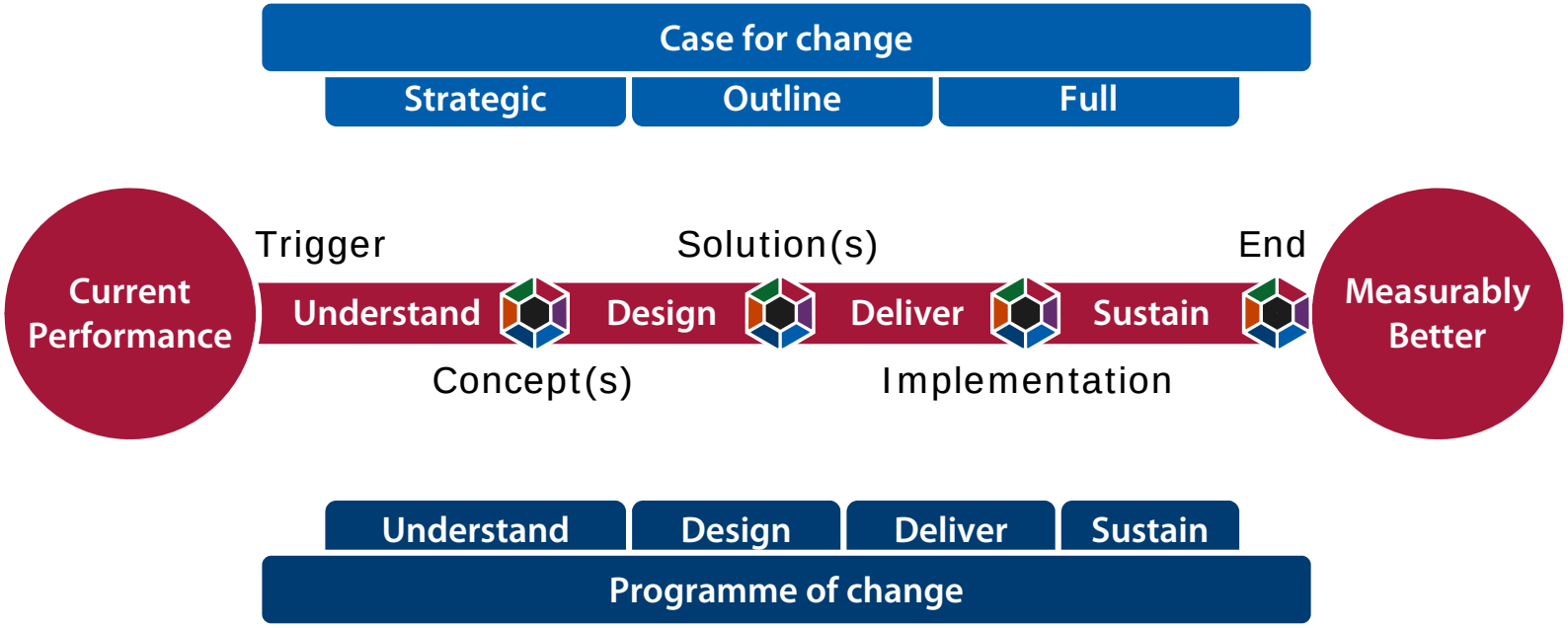

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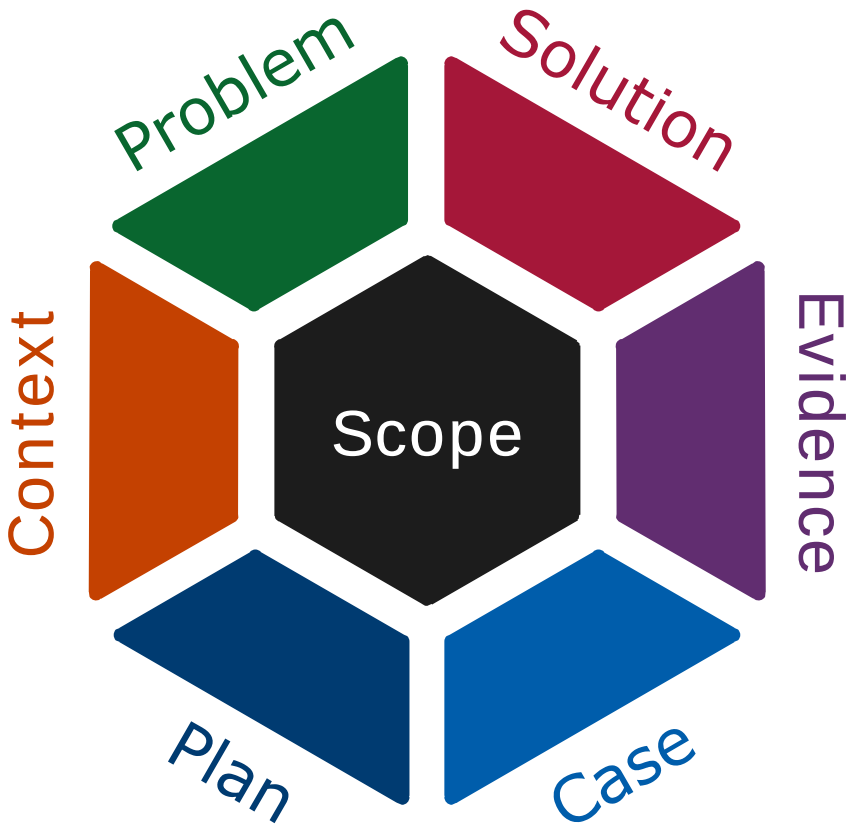

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Global Health
Research Group
on Neurotrauma

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Challenges

- Language & construct
- Culture & context
- Politics & Power

Global Health Research Group on Neurotrauma

Response

- Clinical focus of TBI
- Qualitative research
- Participatory approach
- Embedded researchers
- Local leadership
- Longstanding partnership

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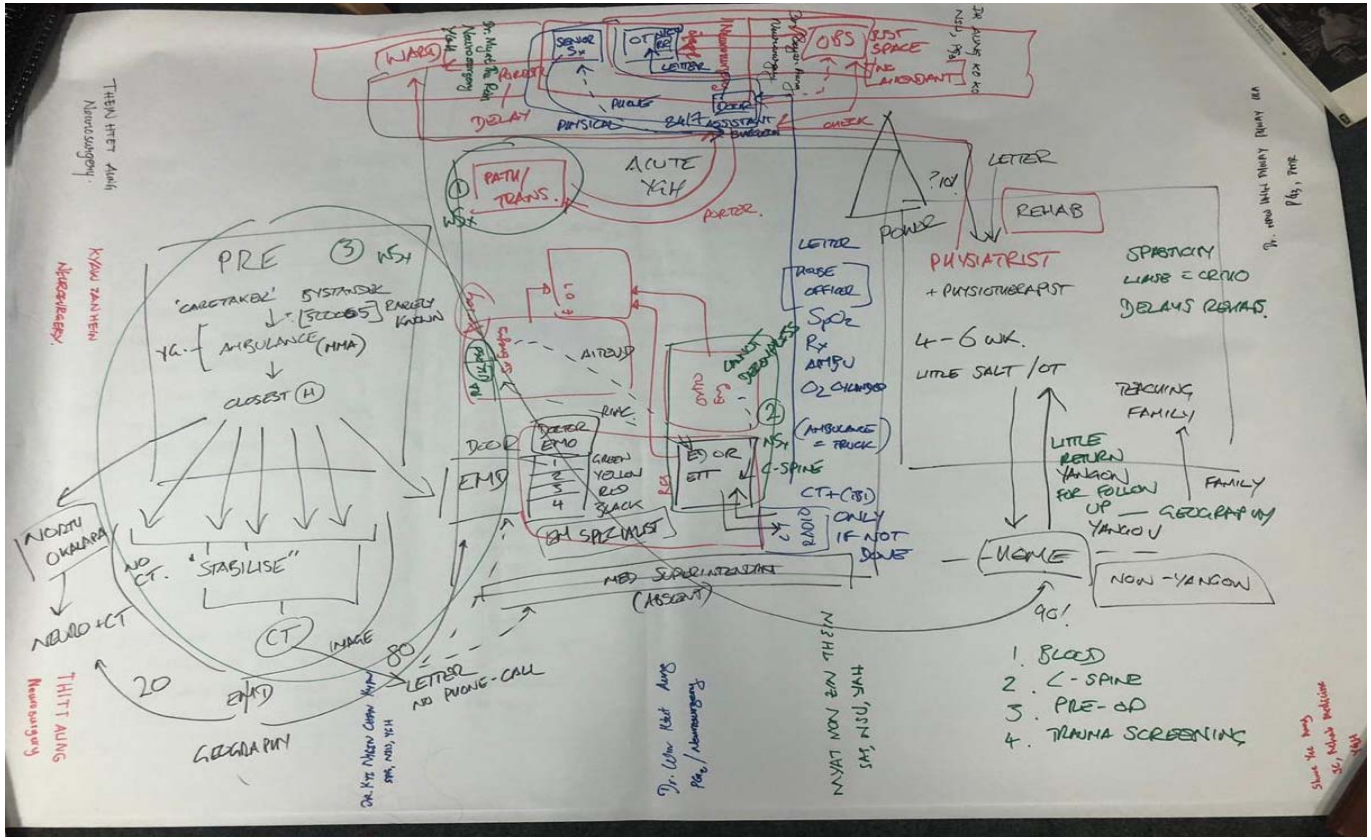

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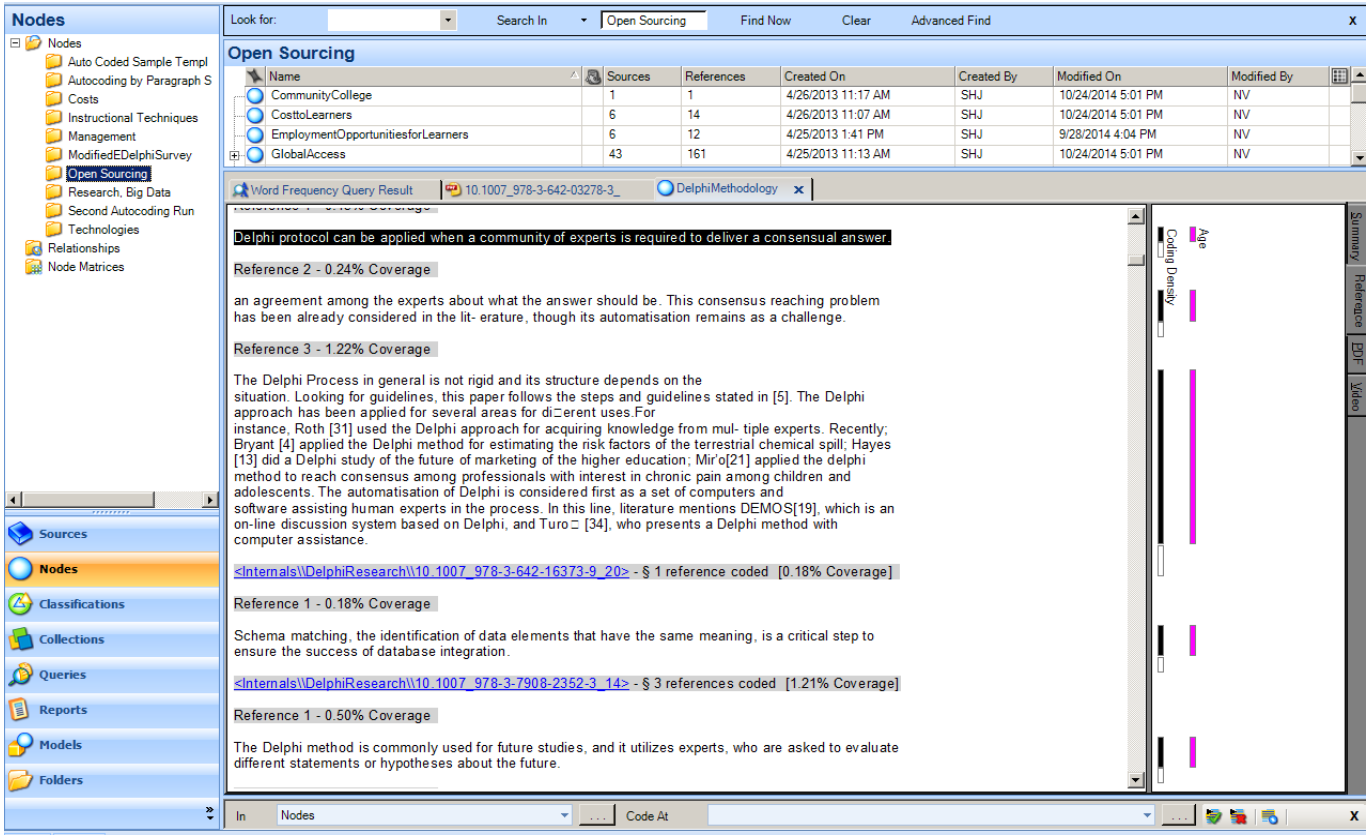

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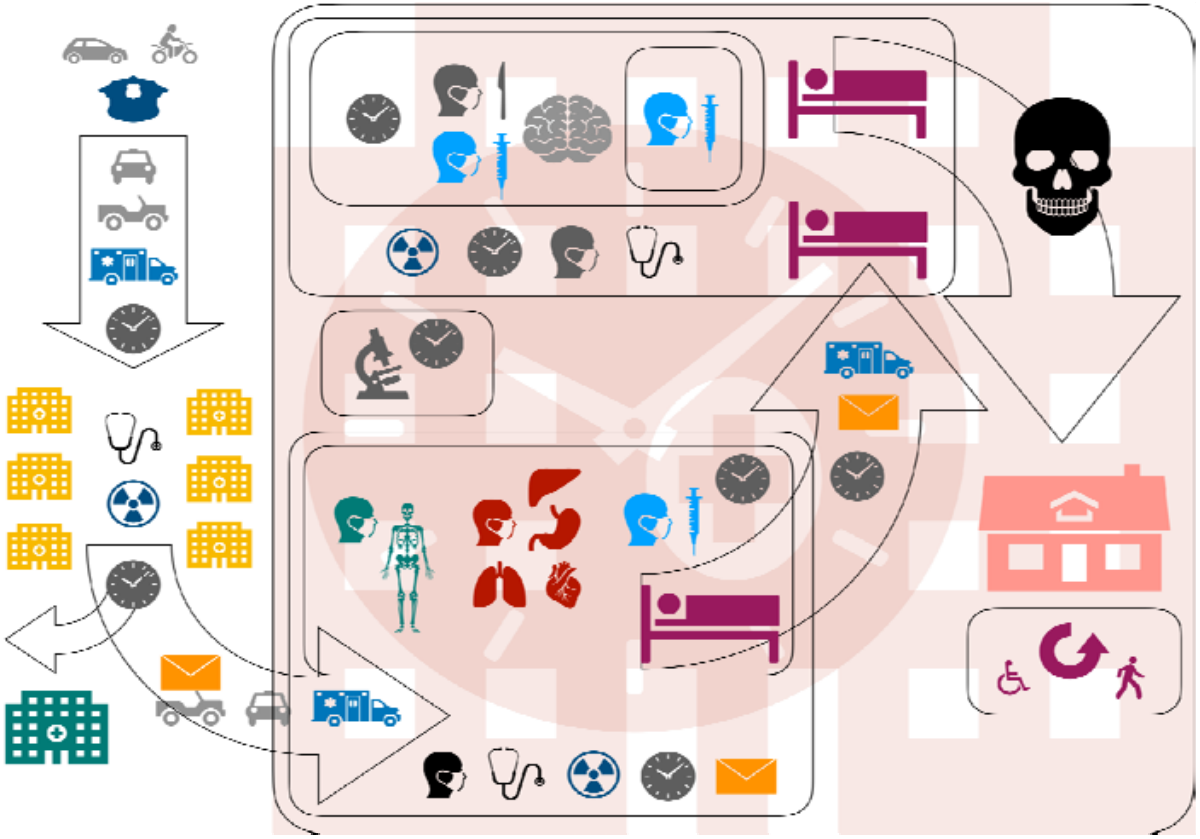

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THET

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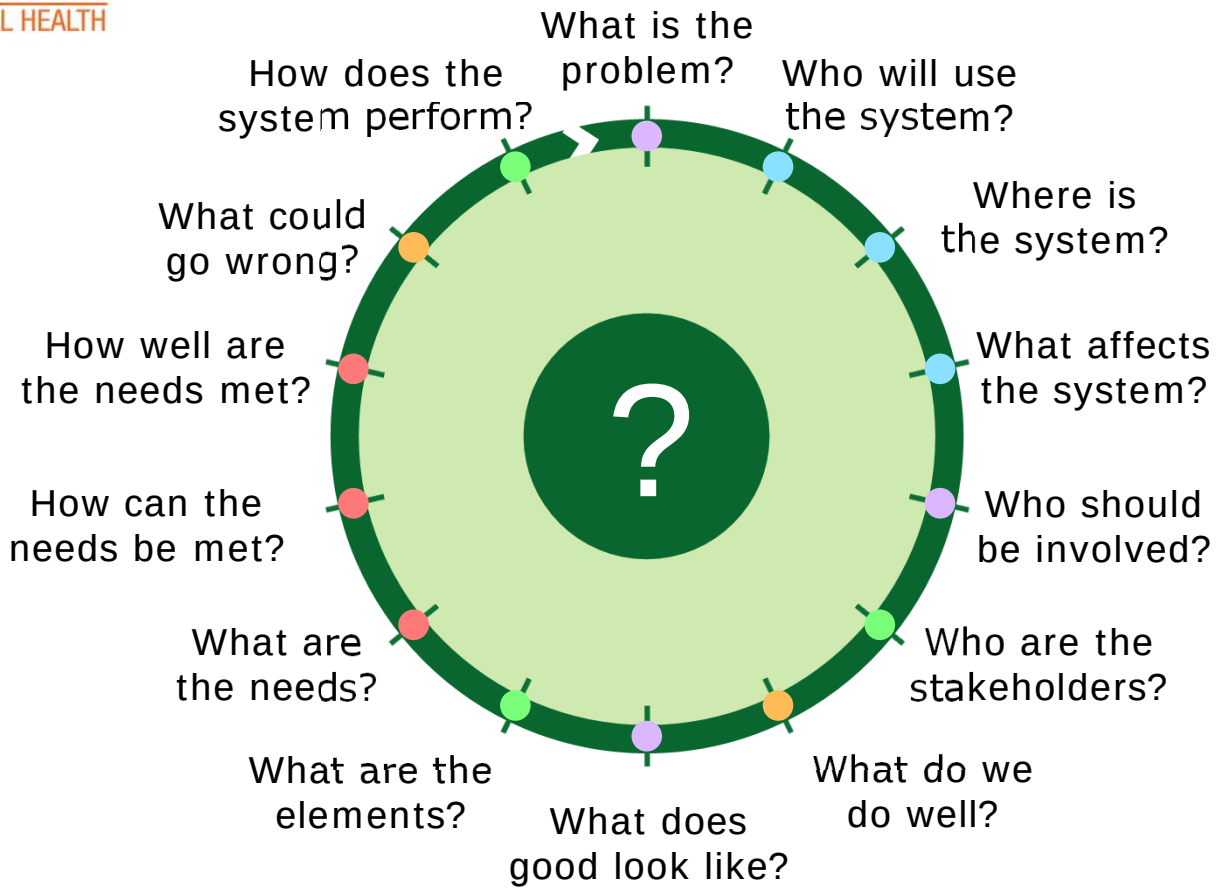

Systems Approach

"If there's mutual trust and a willingness on both sides to learn from each other, a readiness to adapt and a readiness to try new things then good work will happen"

Professor Sir Eldryd Parry - Founder of THET

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