

# Engineering Better Care: Systems that work do not just happen

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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





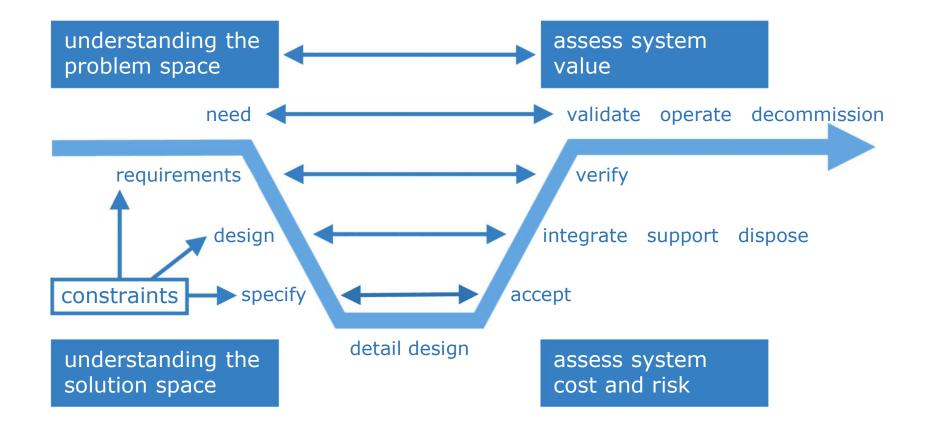


Systems Approach

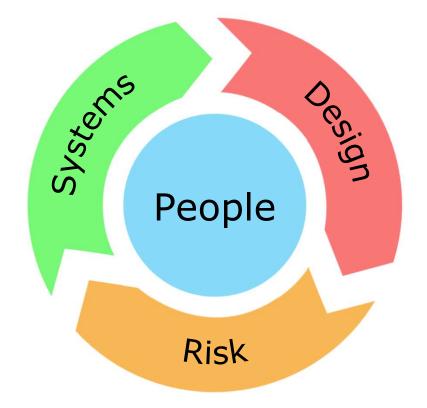
"Systems that work do not just happen – they have to be planned, designed and built"

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



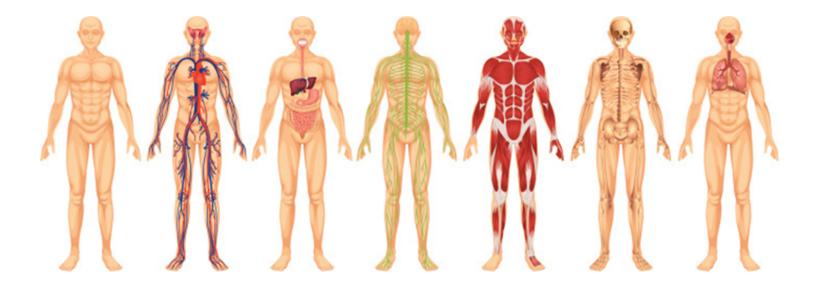








# Systems













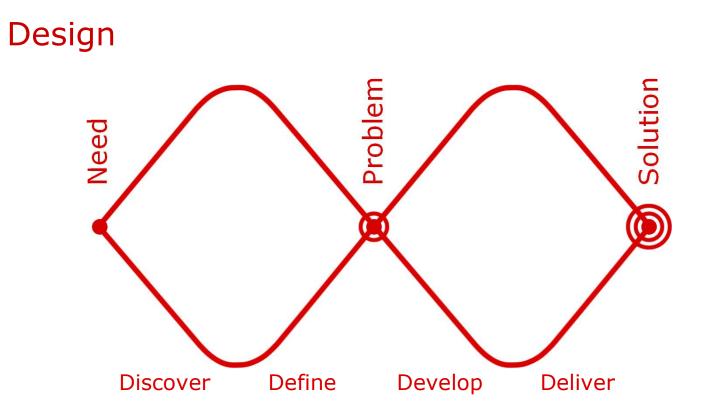




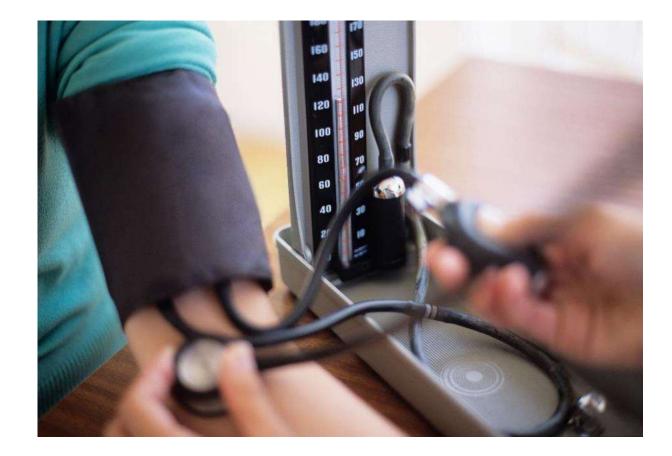
# Systems

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













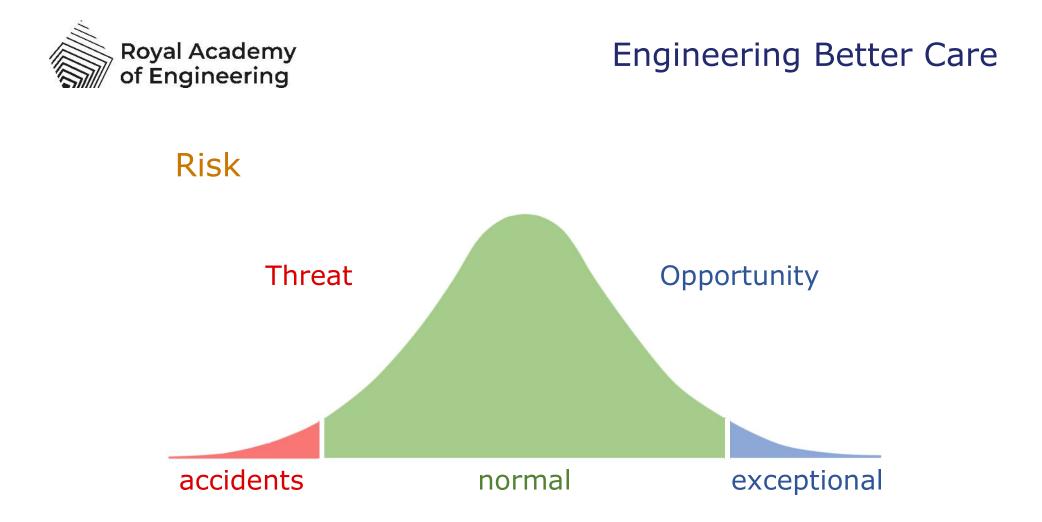




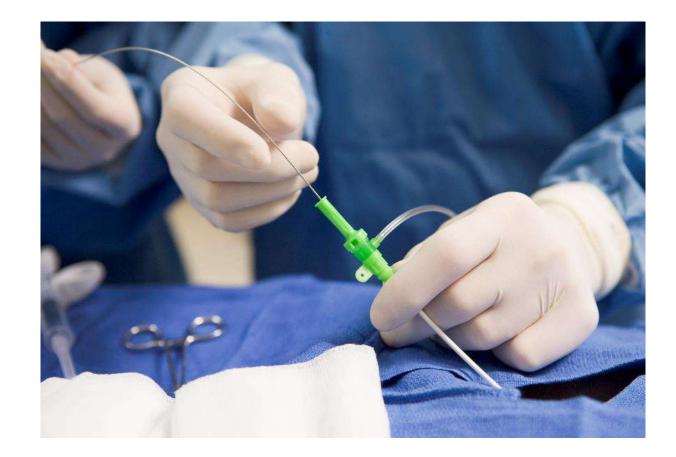


## Design

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















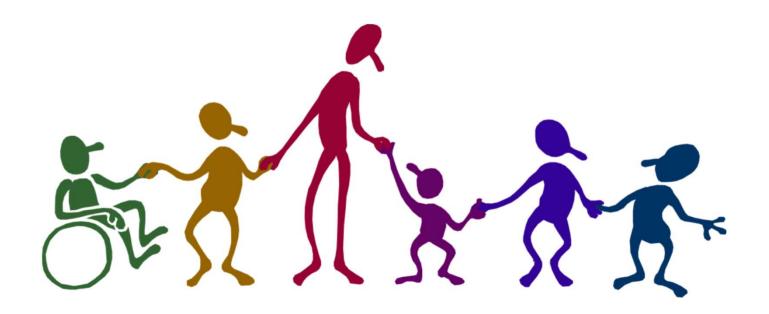


## Risk

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



### People



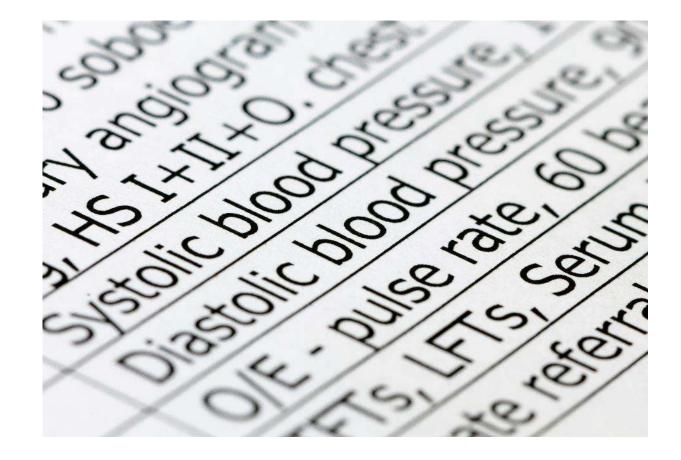










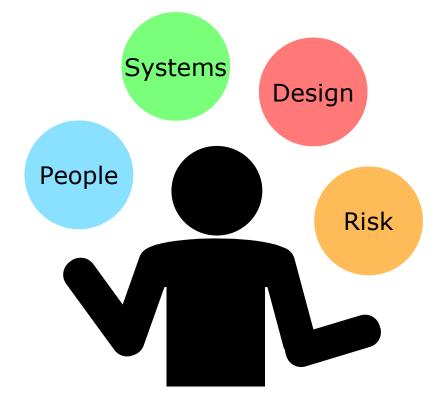




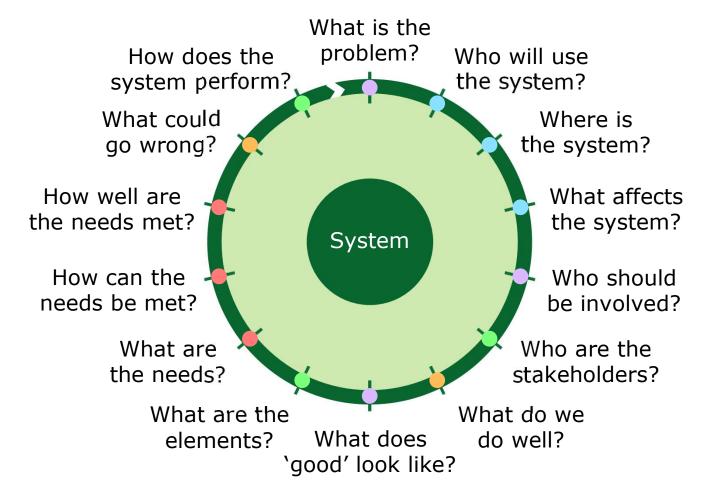
## People

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

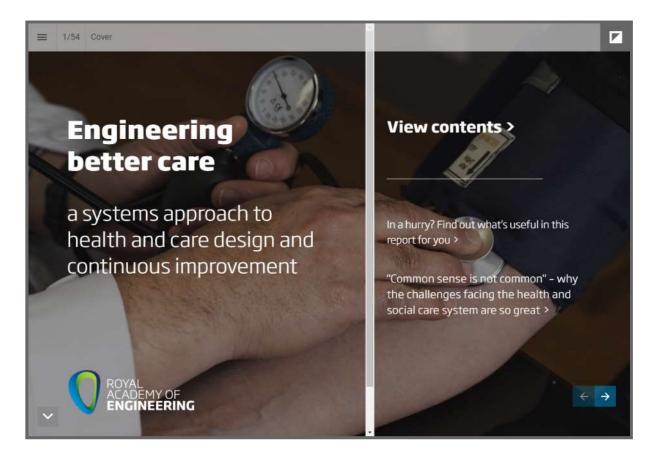








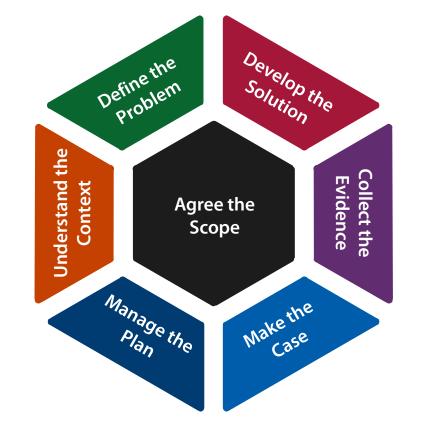




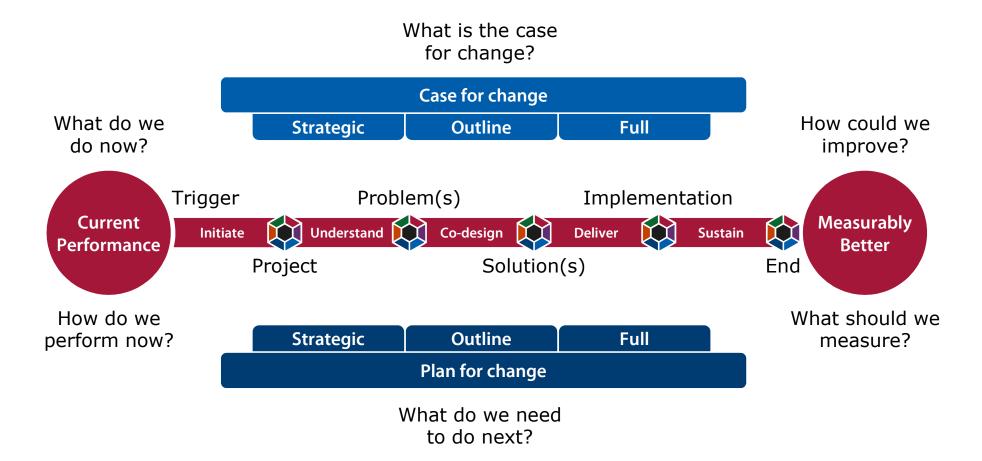




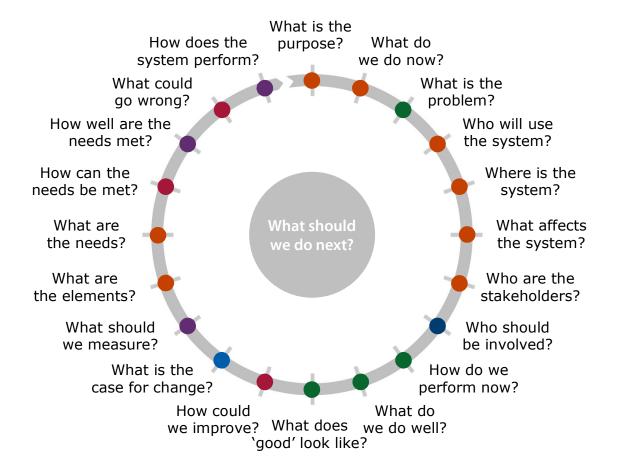




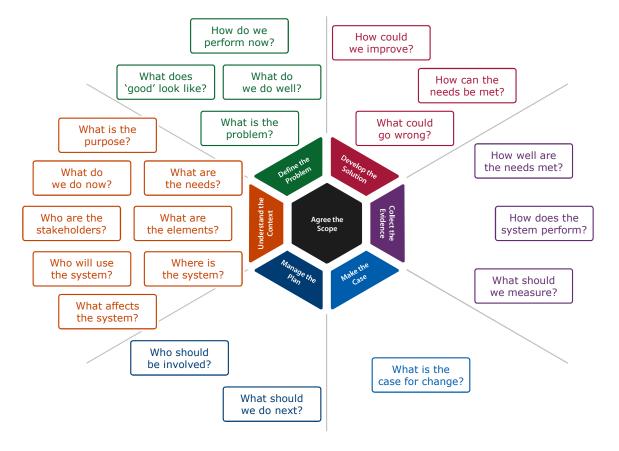




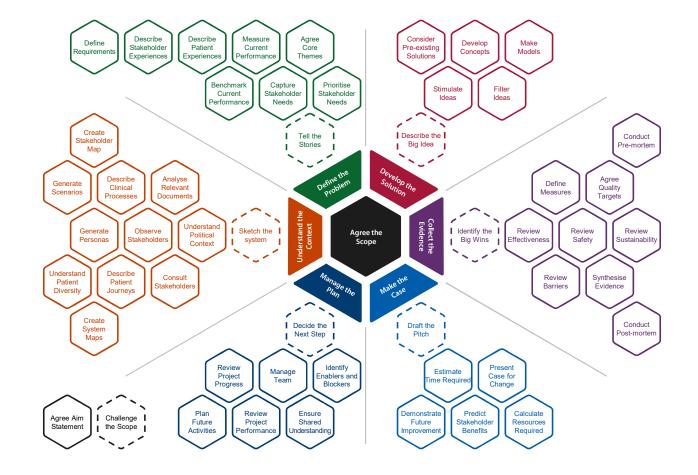




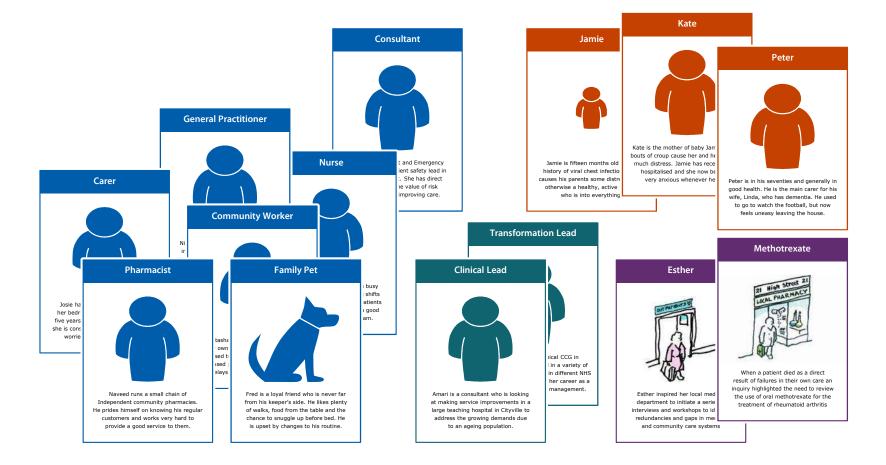




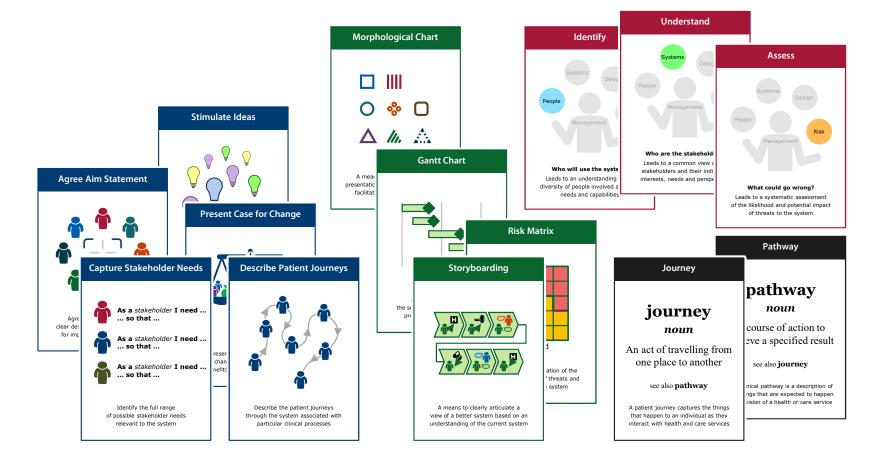








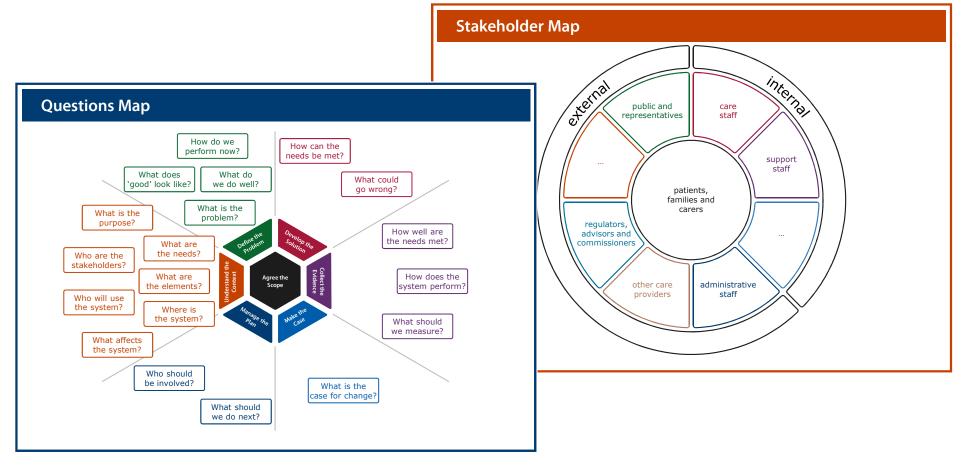




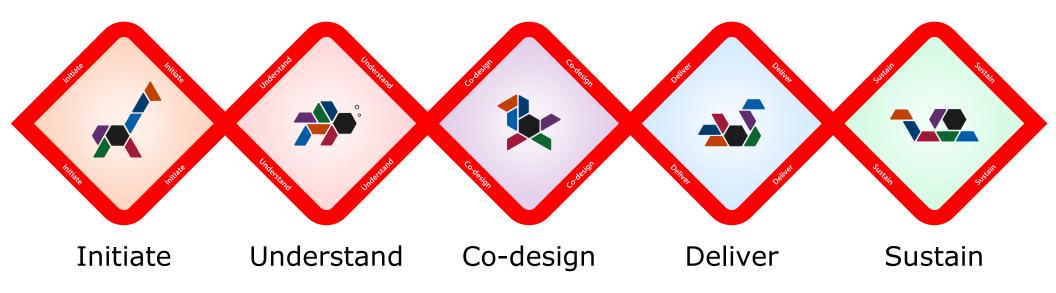


	Improvement Canvas		
	Agree the Scope	Understand the Context	Define the Problem
Stage Plan			
Scope Stage Plan	Output		
Understand the Context	olders	Develop the Solution	Collect the Evidence
Define the Problem			
Develop the Solution			
Collect the Evidence	Review	Make the Case	Manage the Plan
Make the Red Pred to be a second seco			
Manage the Plan			











## Improvement Toolkit





This quide provides a brief discription to the application of a systems approach to the understand atage of health and care design and continuous improvement.

Introduction Improvement: Convex Stakeholder Doftunco Stakeholder Needs Rich Poture Systems Bounderies Persona Descriptions Design Themes Stage Pian



This quality provides a brief discription to the application of a systemic approach to the Design stage of health and care design and continuous improvement.

Introduction Improvement Canvas Stakinholder Tethence Stakinholder Tethence Stakinholgeal Chart Denign Skotions Boxtis Hitthod Petiona Responses Stage Plan



Summary This quide prevides a brief description to the application of a asternia approach to the Okliver stage of braith and care design and costinueus improvement,

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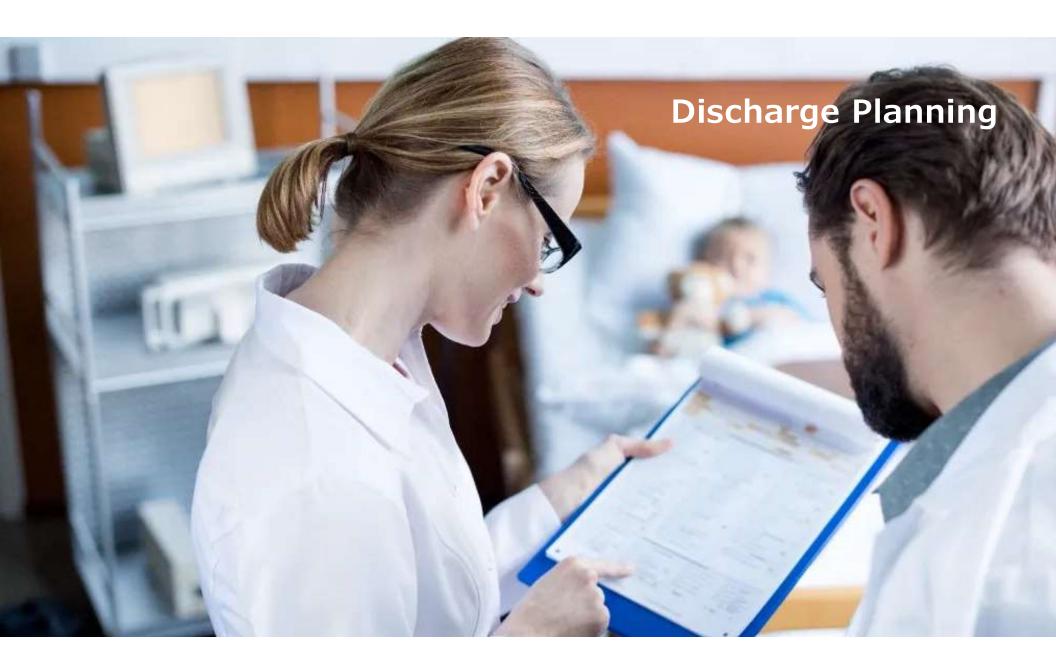
## Improvement Toolkit



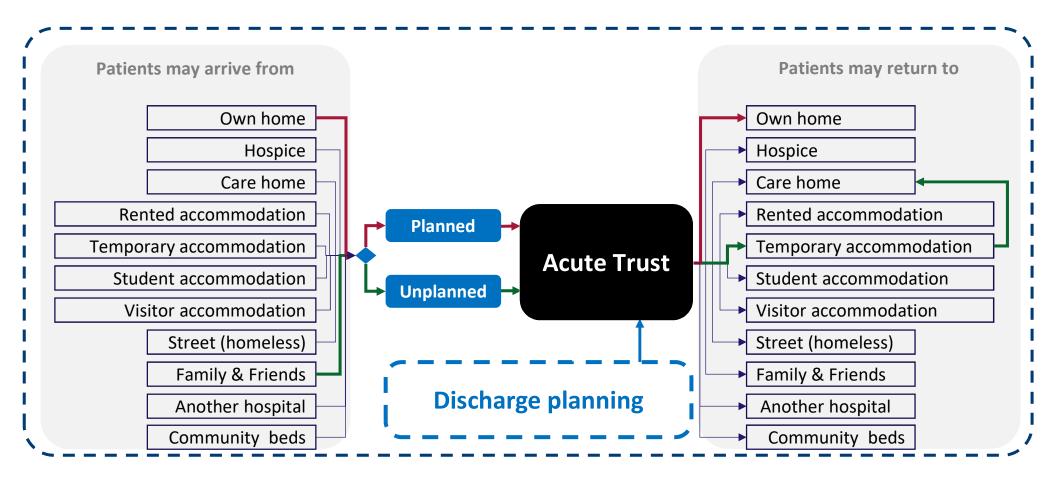


### Improvement Toolkit











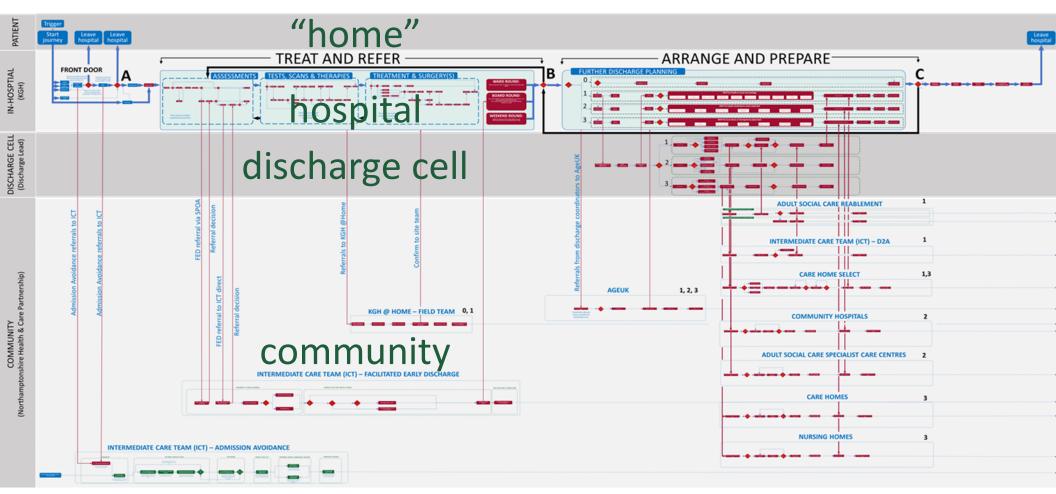
#### Interviewed ~40 stakeholders

- Nurses
- Occupational Therapists
- Discharge Coordinators
- Surgeons and Consultants
- Adult Social Services
- Community Hospitals
- Charity Sector

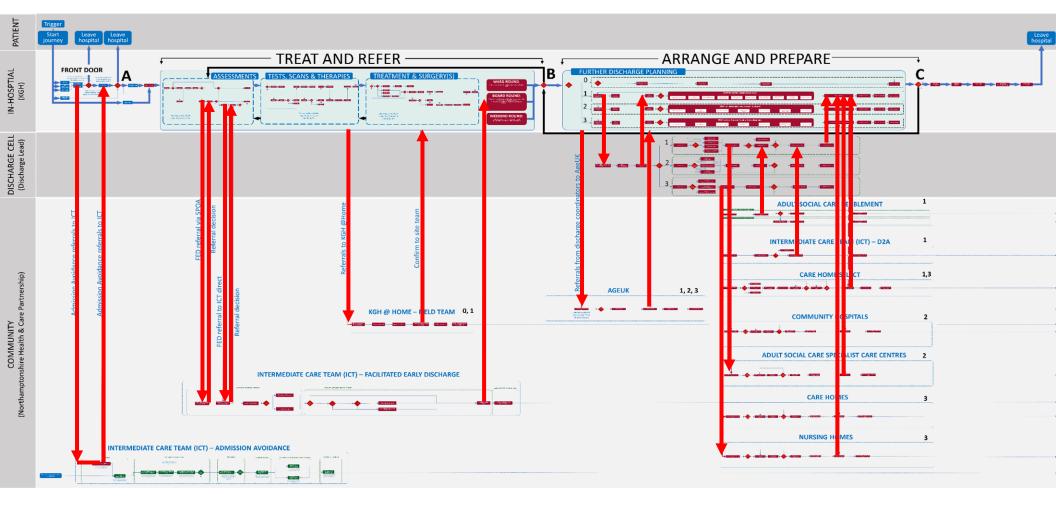


Image credit: <u>twitter</u>

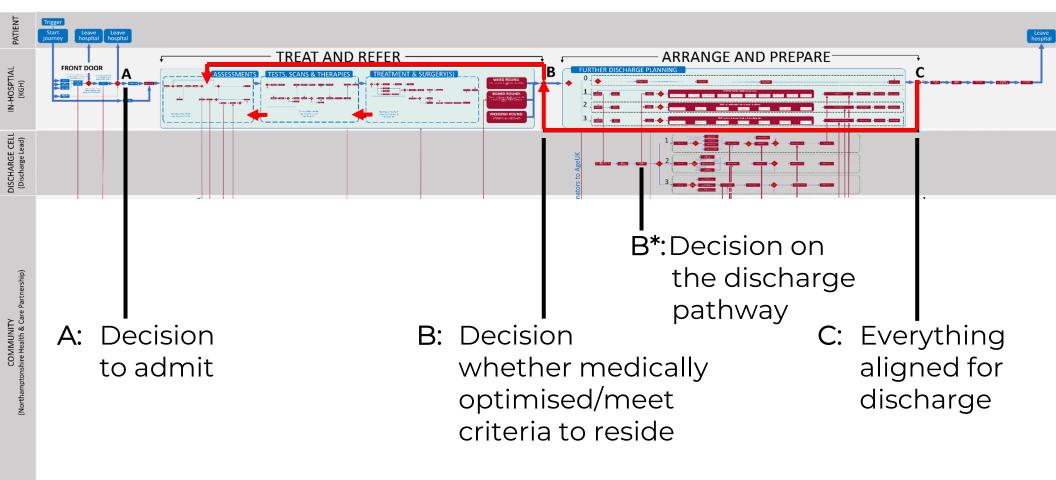




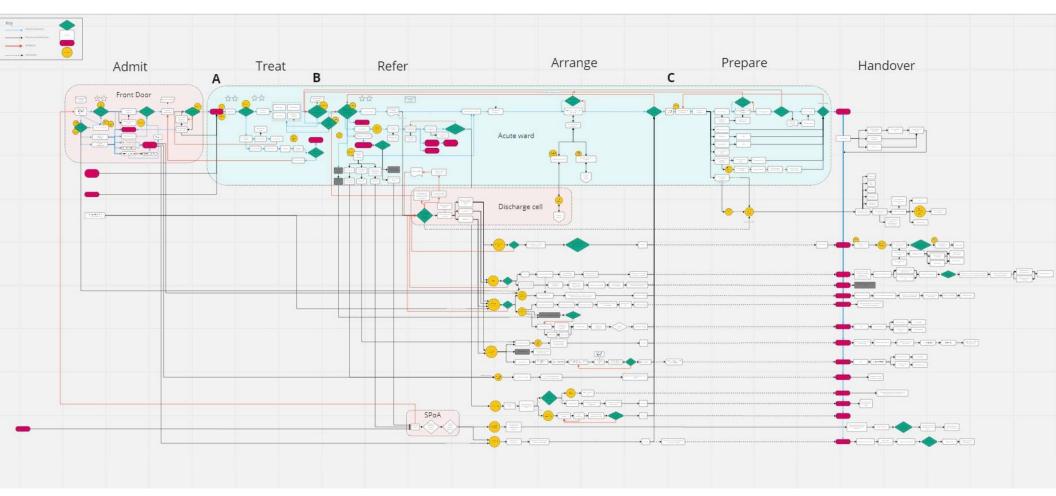




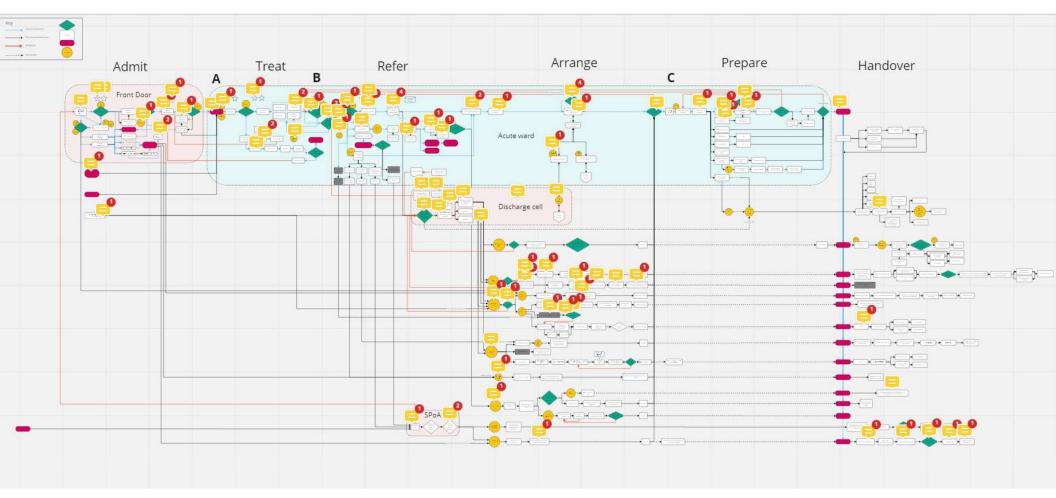




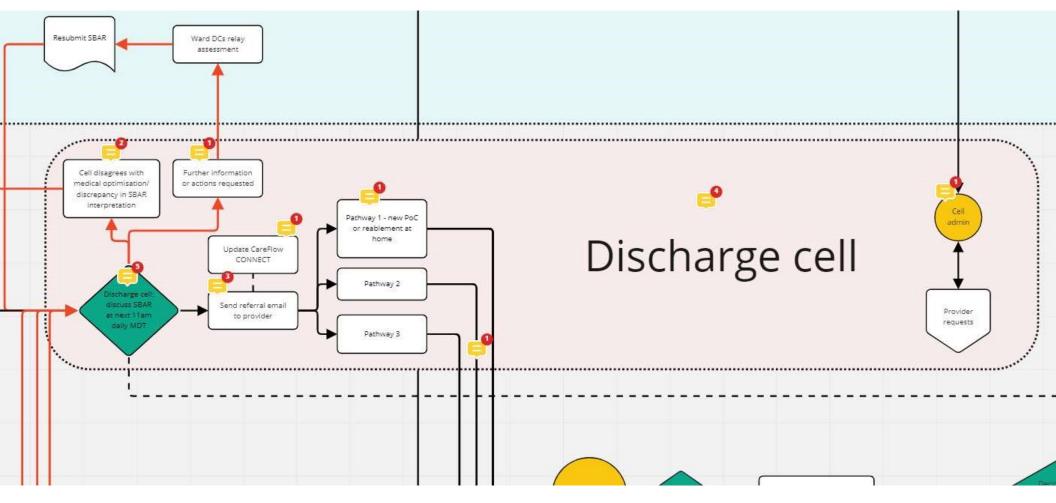




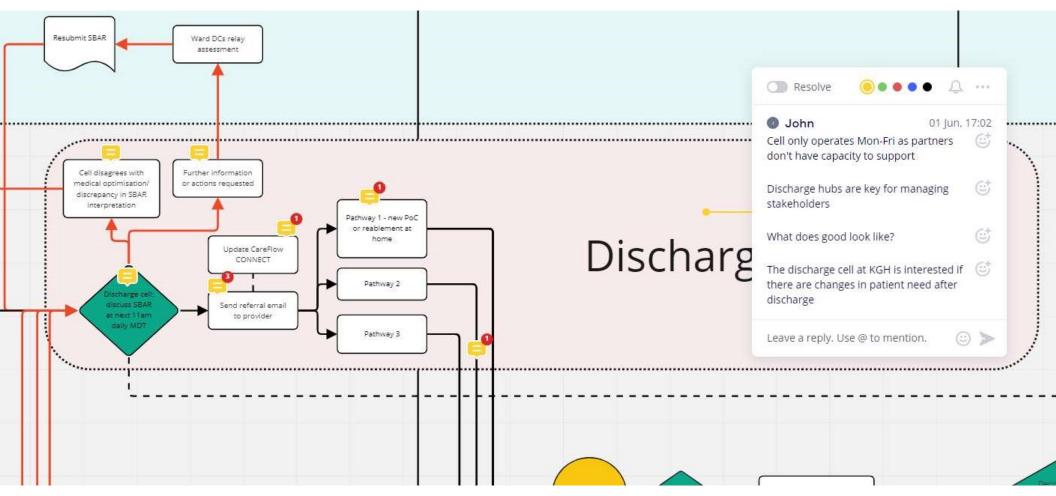




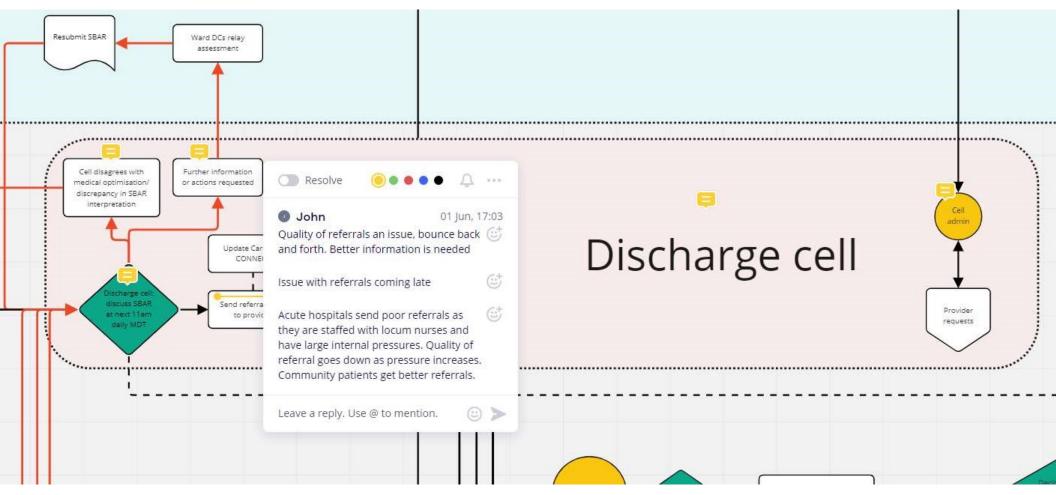














# System complexity

- Individual elements are complicated, the whole is complex
- Knowledge of the whole process is fragmented
- Experts do not externalise their mental models of practice



# Inherent challenges

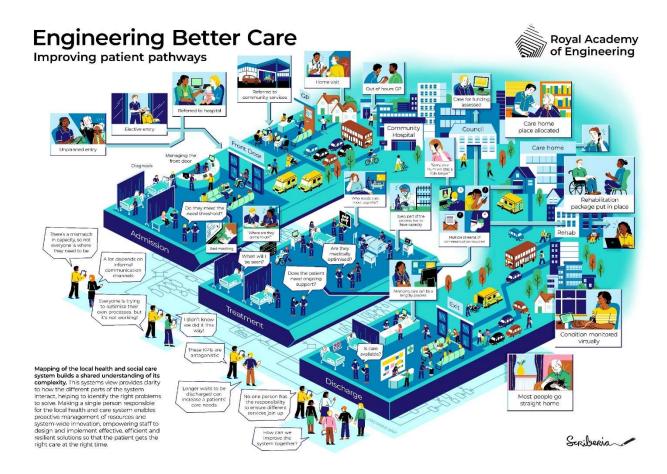
- Discharge pathway is essentially operated as a serial process
- Planning delays increase risk of change, deterioration and rework
- Current care packages may be forfeited on hospital admission



# Current thoughts

- There is value in consolidated responsibility and governance
- Over 'leaning' of individual elements may compromise the whole
- There may be a need to 'fatten' some elements of the process







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