

ABSTRACT: What has Engineering Design to say about Healthcare Improvement?

From firefighting to a systems approach for health and care improvement, over the past two decades, there have been numerous references to the value of a systems approach in calls to transform health and care, without there being a common understanding of what this might mean. However, many people working to improve health and care are aware of and use systems techniques, leading to improved pathways, processes and patient experience in many areas. Healthcare leaders know intuitively that there is a need to involve stakeholders in decisions, think across pathways and deliver integrated care, but lessons can be learned from the analysis and rigour applied in complex engineering systems.

John will reflect on his personal experience of acquiring the knowledge and skills of the systems engineer whilst working as a technology consultant and more recently as a researcher in engineering design. Through stories of firefighting, beer, inhalation devices and micromorts he will explore the engineer's world of systems design and risk.

John will then describe a unique project, based on an extended conversation within a forum of systems engineers, health and care professionals, quality improvement experts and patient representatives, to develop a new and integrated approach to guide service design and improvement in health and care. This project, led by the Royal Academy of Engineering, in collaboration with the Royal College of Physicians and the Academy of Medical Sciences, brought together ideas from engineering and health and care to define a new framework for improvement.

Finally, John will present this new framework, focusing on the language and terms developed with the health and care professionals. A systems approach will be described as a standalone set of questions, with reference to systems, design, risk and people thinking, and as a design 'spiral' borrowed from the world of ship design. The talk will conclude with reflections on the value of pursuing engineering design research in health and care and highlight some of the opportunities and challenges ahead.