

Navigating NHS Complexity: A Systems Thinking Approach to Managing Complexity in Healthcare

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Context and Approach:

This project addresses a fundamental challenge within the NHS in Wales: how to make better decisions and deliver meaningful improvements in the face of complexity. Complexity is a defining feature of modern healthcare. These environments involve multiple interdependent factors, conflicting stakeholder perspectives, evolving needs, and unpredictable dynamics. Despite this, many improvement approaches used in the NHS continue to rely on linear, standardised methods that assume problems are clearly defined, controllable, and solvable through isolated interventions.

This project explicitly embraces complexity, recognising that improvement in such settings cannot be reduced to simple cause-and-effect solutions. Instead, the project seeks to navigate complexity more effectively, by helping stakeholders develop richer understandings of their systems and make better-informed, more adaptive decisions about what and how to improve.

The approach involves exploring how Critical Systems Thinking (CST) and Critical Systems Practice (CSP) – operationalised through the EPIC methodology – can better address complex challenges within the NHS in Wales, with a specific focus on MHL and Primary Care Services. In practice, a series of participatory workshops introduced participants to five systemic perspectives and guided them through structured sensemaking activities, such as Systemic Analysis and Rich Picture development. A Critical Systems Practitioner's Workbook – developed as part of the project – supports learning, reflection, and practical application.

Progress to date:

Research question:

How can the Critical Systems Thinking and Critical Systems Practice, and its associated EPIC methodology, effectively address the complexity and challenges within the NHS in Wales?

Key Achievements to date:

- Developed and piloted a Critical Systems Practitioner's Workbook to support practical application of EPIC methodology; plans underway for publication.
- Delivered a series of interactive workshops (Explore stage of EPIC), using Systemic Analysis and Rich Pictures; findings consolidated into reports with key insights and actionable recommendations.
- Presented at the 2025 HEIW Wales Science Conference, sharing lessons from applying CSP to NHS complexity.
- Completed a draft journal article on CSP and EPIC; currently being submitted for peer-reviewed publication.
- Designed and delivered CSP training sessions in two new formats – Bitesize and Basics – both well-received by participants.

Future activity:

- Publish the Critical Systems Practitioner's Workbook, supporting wider uptake of systems thinking among improvement teams, leaders, and educators.
- Strengthen academic-practice by publishing in peer-reviewed journals and contributing to thought leadership on systems thinking in healthcare.
- Establish a CSP-based leadership development module, designed to build capability in navigating complexity at all levels of the NHS.
- Embed CSP and EPIC methodology into organisational development and improvement strategies, influencing how complex problems are framed and addressed in practice.
- Explore the creation of a cross-sector learning network or community of practice, bringing together system thinkers across NHS Wales to share learning, tools, and case studies.

Reflections:

- The approach evolved to focus more deeply on the Explore stage of the EPIC methodology, recognising its unique value in navigating NHS complexity by enabling collective sensemaking, shared understanding, inclusive dialogue, and better-informed action.
- Objectives broadened from evaluating CSP to actively shaping practical tools, training, and leadership models to embed systems thinking in NHS culture and decision-making.
- Enablers include growing recognition of complexity within the NHS, strong stakeholder engagement in MHL and Primary Care, and leadership interest in new improvement approaches.
- Barriers remain, such as time constraints on staff, entrenched linear improvement mindsets, and the limited visibility of systems thinking in mainstream NHS training and guidance.



Presenting a paper at the 2025 HEIW Wales Science Conference on applying Critical Systems Thinking to address complexity in NHS Wales.