

Applying a resilient lens to healthcare investigation

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SUMMARY

This paper outlines how the CARE resilience model was used in a series of patient safety investigations that considered medication-related incidents. The aim was to understand the resilience indicators within the healthcare system and make suitable safety observations to support improvements in patient safety.

KEYWORDS

Patient safety, healthcare investigation, system resilience

Introduction

Healthcare is a complex system where patient safety is a key priority. Investigations conducted by the Health Services Safety Investigations Body (HSSIB) take a system perspective to understand the complexity, using established and testing new safety science approaches. This helps identification of where potential improvements can be made to help improve patient safety.

The Centre for Applied Resilience in Healthcare (CARE) developed a practical approach to explore resilience in healthcare systems (CARE QI Handbook) (Anderson and Ross, 2020). Built on the concept that healthcare staff must adapt and respond to pressures they encounter and devise solutions when faced with both foreseen and unanticipated situations. Adapting and responding flexibly to these situations, within safe limits, requires skill and the ability to do this contributes to high quality and safe care. The Concepts for Applying Resilient Engineering (CARE) model provides a framework for understanding organisational resilience through five indicators: anticipation, responding, monitoring, co-ordination and learning.

During a series of three patient safety investigations exploring medication-related harm, the CARE model was applied to understand the resilience of the system being investigated and how it might be enhanced. This was the first time the model had been used by HSSIB in healthcare safety investigations to help explore resilience within local patient safety events.

Method

This work took a qualitative, evidence-based approach to integrate the model within a series of healthcare safety investigations. The CARE resilience model was used to help guide evidence collection, support analysis, describe resilience, and suggest improvements to the system.

The work system was broken down into five activities to understand how work is actually done.

Example: Medication related harm: discharge from an acute hospital to the community

The work system was broken down into the following five activities:

1. Medication reconciliation on admission to hospital
2. Diabetes education in hospital
3. Discharge from hospital
4. Diabetes nursing team ability to follow up and escalate concerns post-discharge
5. District nursing visits

This involved describing the activity under observation and then setting the scene for the context within which the activity was taking place. The framework then prompts the work as imagined (the goals of the activity) to be described and the challenges and pressures that interfere with the activity to be understood. This helps understanding of what the work as done looked like and what impact the adaptations had on the system across a variety of levels.

Example: Observation of work as done worksheet (CARE QI Handbook)

Activity	Context	Goal 'work as imagined'	Challenges/Pressures	Adaptations 'work as done'	Impact
Describe the activity under observation	Set the scene for the context within which this activity is taking place.	Describe the main goals of the activity under observation.	Describe anything that interferes with the activity proceeding as planned.	Describe the adaptations that individuals/teams make to manage the challenges/pressures.	Describe the impact that making the adaptations has had, this may be immediate or longer term.
	<i>This may provide information about the atmosphere on the ward, how busy the ward is, are people making light-hearted conversation or are tensions running high, has a significant event just happened? Is about to happen? Any potentially relevant aspects could be included here and may be derived from observations or discussions with staff.</i>	<i>The goals may not always be straightforward, for example, different individuals/groups may have different perceptions about what the goals of an activity are. This information should also be gained through observations and discussions with staff.</i>	<i>Is there anything that gets in the way of the activity proceeding as planned or the goals being achieved? Describe what these challenges/pressures/obstacles are. Through observations and discussions with staff also explore:</i> <ul style="list-style-type: none"> • <i>Why these things happen?</i> • <i>How often do they occur?</i> • <i>What, if anything, has been done to try to address it in the past? -What happened and why didn't it work?</i> 	<i>How are these challenges usually solved? What changes/adaptations do staff make in order to get around the problem?</i> <i>Through observations and discussions with staff you could delve into these adaptations exploring, among other things:</i> <ul style="list-style-type: none"> • <i>Why are these adaptations chosen?</i> • <i>Is this the way such challenges are usually managed?</i> 	<i>Adaptations are made within the context of a larger system. Therefore, adaptations may impact the system on a variety of levels including having an impact on the activity being observed, the goals it is trying to achieve or having implications for activities downstream.</i> <i>The impact of an adaptation may be observed, although some may only be uncovered through discussions with staff exploring:</i> <ul style="list-style-type: none"> • <i>What is being prioritised/sacrificed as a result of the adaptation?</i> • <i>Do these things usually get prioritised/sacrificed?</i> • <i>What are the implications of this adaptation? Does it cause problems in other areas?</i>

Once these activities had been analysed, the wider systems factors were explored using the Systems Engineering Initiative for Patient Safety (SEIPS) (Carayon et al, 2006). Collectively, this helped the investigation team to develop local level learning prompts that could be used by the healthcare organisations to improve patient safety.

Example

For the investigation example used above 'Medication related harm: discharge from an acute hospital to the community' each completed worksheet was used to understand which elements applied to the different components of the SEIPS model. When analysing the diabetes education in hospital, an example for each component of SEIPS is shown below:

- Tools and technology (leaflets and educational materials to support discussions)
- Tasks (thorough education needed so patient is confident administering alone)
- Person (cognitive understanding of patient and carer support available)
- Organisation (team funded for weekdays only)
- Internal environment (wards are busy and difficult to get quiet space)
- External environment (adherence to national guidance)

Findings

Using the CARE model it allowed HSSIB, as an organisation to trial applying a new approach for systematic analysis of a patient safety incident, and share the learning with colleagues across the organisation. It prompted investigators to consider systems resilience- in a systematic way. Feedback from the investigation teams was that it provided a useful lens to identify how organisations could improve their resilience indicators in a blame-free way. This enabled local level learning prompts to be developed more easily.

The medication-related harm series of investigations received positive feedback from the healthcare system. Three investigation reports were produced and these referenced the CARE model to help the reader understand how the analysis was approached. Whilst used as a trial approach for the medication-related harm series of investigations, the CARE model can be to explore a range of different healthcare settings where there is a need to understand the alignment between demand and capacity and how misalignments and adaptations to practice can impact on patient safety.

One of the aims of HSSIB is to continue to be innovative with approaches to investigation and expand the use of different human factors tools. HSSIB has a responsibility within healthcare in this country to educate the system more on investigative best-practice methodologies and by expanding its own education, HSSIB can share this wider.

Key takeaways or learning points to share with conference attendees

- An understanding of what the CARE model is and how it can be applied to explore resilience during investigations;
- Showing attendees the value of exploring system resilience when looking to understand work as done versus work as imagined;
- Combining the CARE model with SEIPS provides a robust structure to link human factors, system design and resilience indicators;
- Use of the CARE model supports development of local-level learning prompts that are actionable for healthcare organisations directly linked to investigation evidence, to improve patient safety;
- Use of the CARE models supports organisations to consider how they might better anticipate and coordinate future similar issues;
- Trialling the CARE model enhances investigator capability in resilience-based analysis and this can be utilised by conference attendees within their own organisations.

References

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