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Perspective

Framework for better care: reconciling approaches to patient safety and quality

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Abstract. In September 2017, the Royal Australasian College of Medical Administrators adopted a new clinical governance framework that recognised healthcare as a complex adaptive system, and embraced the need for resilient thinking and understanding the differences between work-as-imagined by managers and work-as-done at the front line of patient care. Directors of medical services may soon be implementing the framework in health services across Australia. This perspective describes a new conceptual model that underpins the Royal Australasian College of Medical Administrators framework, and characterises the challenges faced by all healthcare professionals when trying to achieve safe care for patients in an environment of variable complexity and unpredictability.

Additional keyword: resilient health care.

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Introduction

The past 20 years of health care have been appropriately characterised by an increasing and relentless focus on improvement in quality and safety, with little measurable improvement for patients.[1–3] Approaches to safety, such as the methods of high-reliability organisations,[4] have until now focused on compliance and use tools such as Six Sigma,[5] Lean[6] and Plan, Do, Study, Act.[7] Hollnagel *et al.* describe this thinking as 'Safety-I'.[8] However, the use of tools derived from other industries raises the potential for the inherent differences with healthcare confounding the outcomes from those tools. For example, a tool developed for use in a manufacturing plant that is characterised by repetitive and predictable processes may not be valid in healthcare due to the normal variation that is often necessary to meet the needs of patient care.

An emerging theme in patient safety and quality, 'Safety-II',[8] recognises healthcare as a complex adaptive system.[9] Safety-II thinking challenges us to identify interconnected and interrelated elements in the real world that make things go right, in addition to traditional reliability focused methodology. Safety-II concepts are beginning to underpin new approaches to safety management, such as the Royal Australasian College of Medical Administrators Clinical Governance Training Framework.[10]

Making sense of different approaches is challenging. A variety of tools are available to improve safety and quality in health care, but no one tool has been shown to deliver improvement in all situations. Healthcare professionals need to have a better understanding of what tools work the best, either alone or in conjunction with other tools.[11,12]

An agile approach

A starting point to assist healthcare professionals in choosing the right tool for the job may be to characterise the problem to be solved in terms of its complexity and unpredictability, then aim to reduce complexity and unpredictability to the maximum extent possible (Fig. 1; follow the arrows on the axes). System predictability is a function of input uncertainty (e.g. how many inputs, are they known, are they consistent, when will they happen?) and process variability (e.g. is the process linear or non-linear, is variation understood?).[13] In low-complexity, predictable situations, tools that focus on compliance and controlling variability, such as standardisation, are effective.[14] Because complexity is low and outcomes are predictable, we are able to apply process-oriented engineering solutions that are reliable and more able to be automated. Humans in this space are regarded as points of potential failure.[15]

In contrast, high-complexity, unpredictable situations require goal-oriented solutions that give healthcare workers the flexibility to adjust their work to meet changing conditions. Because variability cannot be controlled in a complex adaptive system,[9] solutions need to engineer-in success by identifying

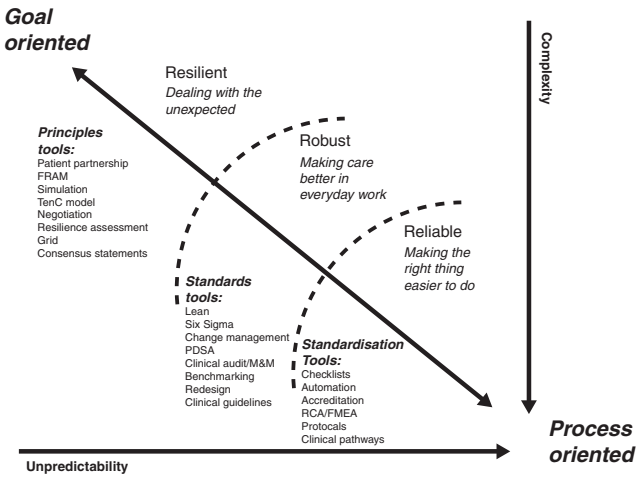

Fig. 1. Framework for Better Care. FRAM, functional resonance analysis method; PDSA, plan do study act; M&M, mortality and morbidity; FMEA, failure mode effects analysis; RCA, root cause analysis.

and incorporating practices that enhance patient outcomes of care. This is capability focused, humans are seen as a resource and complex interdependencies dictate emerging solutions embracing adaptation.[15]

Understanding which tool will work in which situation is critical to success in improving performance. There is no point in using a hammer on a screw, yet we continue to apply the tools of standardisation in environments of irreducible complexity and unpredictability, rather than applying principles that allow us to deal with the unexpected. Conversely, we may treat every event as unexpected and miss the opportunity to simplify and improve predictability through application of standards and standardisation for routine aspects of the system of care.

Herein we describe three bands within the Framework for Better Care, termed 'Reliable', 'Robust' and 'Resilient'. These are outlined below. We offer examples of tools that may be effective when working within each band in Fig. 1.

Reliable: making the right thing easier to do

Some aspects of care can be appropriately systematised. Examples include building blocks of good practice, such as aseptic technique for vascular access device insertion, blood transfusion, specimen collection and cold chain management. These components of care are reproducible and amenable to repetitive processes that can simplify care and improve the predictability of outcomes. These processes are the foundation of a reliable system: these are the rules that matter, and they need to be monitored and enforced.

In a 'Reliable' environment, incidents can be investigated using linear cause-and-effect approaches, such as root cause analysis (RCA), to establish the causes of an adverse event. Here, the tools of standardisation are most useful, including policies, procedures and protocols, bundles of care, automation, clinical pathways, checklists and accreditation. High-quality evidence can be established around cause and effect, which will facilitate implementation of evidence-based care.

Robust: making care better in everyday work

The majority of healthcare is enacted within the Robust band, where variability is well characterised but less amenable to control. In this space, performance is monitored against agreed standards, seeking constant improvement where standardisation is not feasible or appropriate. Quality assurance activities, such as clinical audit and benchmarking, can be undertaken, identifying variation that may open opportunities for investigation and improvement. This may result in care processes with high volume or high risk, minimal variation of inputs, manageable complexity of care and commonality of environment, moving from the Robust to the Reliable band. For example, developing the emergency management of chest pain through a structured pathway using Robust process improvement tools such as Lean and Six Sigma may improve efficiency, reduce wasted effort and ensure that required care gets delivered in a reliable fashion with minimal variation. Lean and Six Sigma approaches may also facilitate clinical redesign, developing clinical guidelines to assist with providing clarity and direction, without the prescriptiveness of pathways and protocols.

Resilient: dealing with the unexpected

In situations of high complexity and unpredictability, tools are required to cope with the unexpected in ways that are safe for patients. We need to use approaches that are flexible and goal driven, rather than rigid and process driven. In this Resilient space, human characteristics of adaptability and creativity, which can be a liability in the Reliable space, are essential for success. Tools are needed to support healthcare workers to problem solve and make decisions when challenged by the unexpected. Examples of tools include simulation, modelling and other decision-support tools, such as the functional resonance analysis method (FRAM)[16] and resilience assessment grid,[17] and negotiation.

Since the mid-1980s,[18] simulation has evolved as a powerful tool to explore and improve the way practitioners work in complex environments and to ensure effectiveness and safety in the introduction of new technologies and models of care. For example, paediatric *in situ* simulation has been successfully implemented in Australia[19] and the US,[20] leading to improved training in how to safely cope with unexpected and emergent paediatric events. Modelling tools, such as FRAM,[21] facilitate understanding work complexity, mapping interdependent and variable tasks, rather than using linear mapping tools such as RCA. Interventions based on linear depictions of processes in complex adaptive systems are unlikely to be effective.

The US Institute for Healthcare Improvement (IHI) has embraced the concepts of Safety-II in its white paper A Framework for Safe, Effective and Reliable Care,[22] which lists negotiation as a key skill for healthcare workers to engage patients and families in complex environments. Evolving tools such as the TenC model,[23] which proposes 10 behaviours that contribute to safe patient care in unpredictable and complex healthcare environments, advocate negotiation as a central component of teamwork in a complex adaptive system.

These tools are likely to be effective in areas such as emergency surgery, chronic illness management and caring for the deteriorating patient, where the inter-relatedness of parties,

environment and other parameters creates dynamic complexity. In the Resilient band, we are focused on exercising principles of practice, rather than applying standards or care or complying with standardised processes.

Conclusion

In Australian healthcare, we need to get better at finding the right tools for the problem at hand. Using the wrong tool, we waste critical resources: time, money and, importantly, motivation. The frustration that results from failed or unsustained improvement activities has a detrimental effect on the willingness of managers and clinicians to engage in future safety and quality efforts. The Framework for Better Care provides an opportunity to think and act differently. An agile approach to matching the tool to the task is essential to maximise the value of our improvement investments.

Competing interests

The authors have no competing interests to declare.

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