

# Effective use of interdisciplinary approaches in healthcare quality: drawing on operations and visual management

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Thinkers from the broad field of quality management, such as Edwards Deming, have influenced the more focused field of healthcare quality including international organisations such as the Institute for Healthcare Improvement and The Health Foundation. Quality management was initially established for industrial settings but has since been applied in many other sectors such as education, travel and, in this context, healthcare. Quality management encompasses quality assurance, control and improvement. Healthcare practitioners and researchers have applied aspects of these in examples such as Benneyan *et al*<sup>1</sup> who in their much-cited text apply statistical process control in healthcare quality improvement using standard techniques developed in quality management. Other industrial research fields such as change management and organisational culture have also been adopted by the healthcare quality field. The value of learning from these fields was summarised by Davies *et al*<sup>2</sup> who noted that ‘there is a rich literature from other industries’ available to researchers and practitioners. This rich literature continues to develop, and there remain many opportunities for those interested in healthcare quality to draw from fields beyond the healthcare context.

In this editorial, we explore the use of methods and findings from operations management and quality management to inform quality improvement initiatives within healthcare, particularly focusing on the use of ‘Visual Management’ techniques as an example. The value of these fields is exemplified by Woodward and colleagues in this issue of *BMJ Quality and Safety*.<sup>3</sup> In this paper, Woodward *et al*

use some approaches from visual management—the use of instinctive visual cues to make succinct, accurate information available within a workplace—to develop a clinical tool for use in maternity care. The paper tests Framework for co-dESign of Clinical practice tOol (‘FRESCO’), the framework of Woodward *et al* for developing practice tools, and trials it in a clinical setting. FRESCO applies several stages of development to allow the refinement of tools, including usability, evaluation and prototype testing. The paper provides detailed reporting of the FRESCO approach and tracks the development of a clinical tool in their case study. The paper concludes with a commentary on the application of FRESCO, identifying it as providing the possibility to underpin a practical approach for the co-design of clinical tools.

## OPERATIONS MANAGEMENT AND QUALITY MANAGEMENT IN HEALTHCARE

In this editorial, we are principally focusing on quality management but the related field of operations management is also considered. Operations management is ‘how organisations create and deliver services and products’<sup>4</sup> and addresses topics such as capacity, process design and continuous improvement. Thus, it is important to consider both these fields as they both have strong potential for application in healthcare.

The fields of healthcare quality and quality management have developed in parallel, as documented by Komashie *et al*<sup>5</sup> often cross-pollinating to strengthen thinking in both areas.<sup>6,7</sup> Learning from another field is a challenging task, and



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researchers often underappreciate the effort needed because of the requirement to have good knowledge and understand the nuance in different but related fields of research. To be successful, a genuinely interdisciplinary approach is required—where a synthesis from more than one discipline is achieved.<sup>8</sup> However, this more demanding approach can advance both the fields being drawn on. An example of this is shown by Burgess and Currie<sup>9</sup> who used healthcare as a setting to illustrate the role of middle managers in knowledge brokering, specifically looking how these middle managers contribute to decision-making across both organisational boundaries and hierarchies. The work was useful to the field of healthcare quality and also advanced understanding within the broader field of operations management.

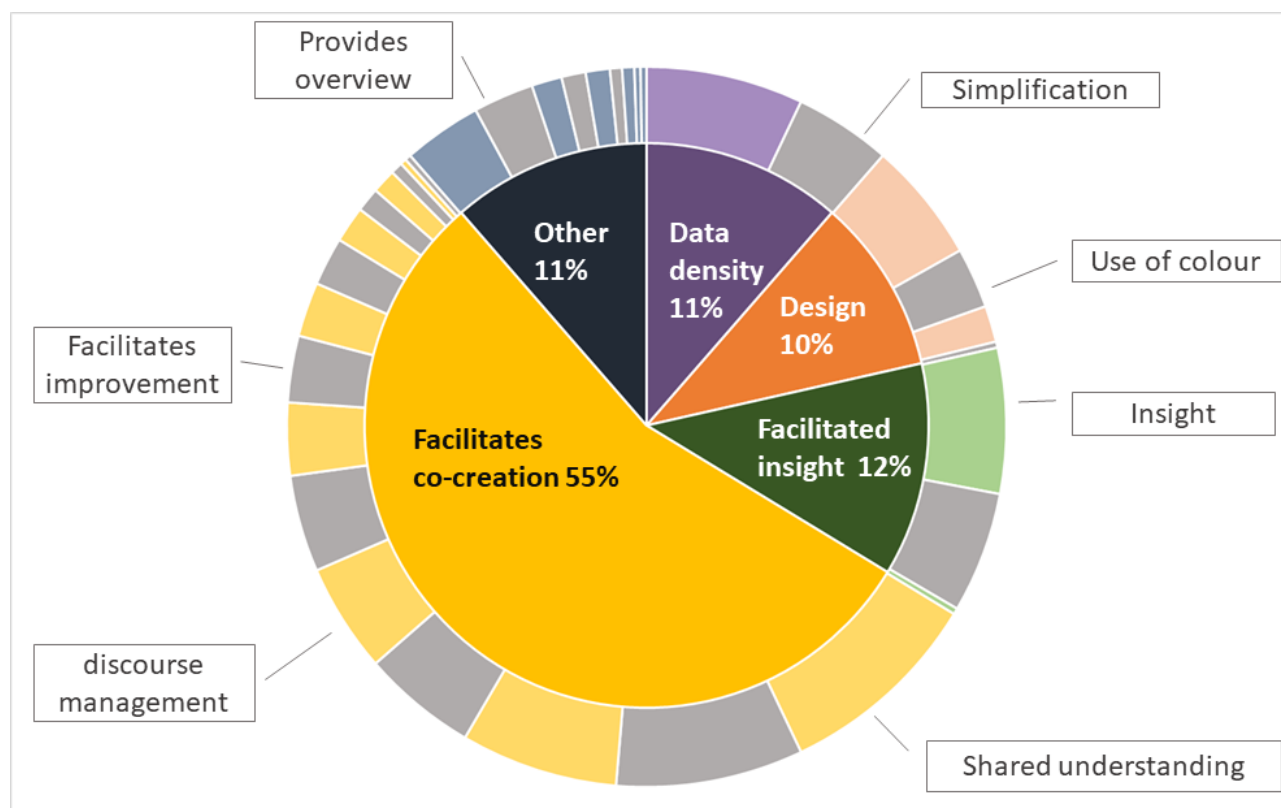
**EXAMPLES FROM VISUAL MANAGEMENT RESEARCH**

An example of useful research from outside of healthcare is visual management. The origins of visual management lie in the manufacturing industry and an early example of this, with the potential for learning for healthcare, is the work of Greif<sup>10</sup> who documented the use of team communication boards for manufacturing operations in the Renault car factory. The work captures many essential aspects of a visual management approach, such as the use of visual data to inform team decision-making, particularly in terms of quality improvement. Perhaps the most important concept

that Greif emphasises, relevant for both healthcare and other settings, is one of a ‘shared vision’. This means the group of people who are using visual management develop a shared understanding of key concepts such as strategic direction, the current situation and opportunities for improvement. For healthcare, this is particularly important for the multidisciplinary teams responsible for both patient care and management decision-making. A shared vision supports the coherence of decision-making and the contribution of a range of professional specialisms as is exemplified by the current study from Woodward and colleagues.<sup>3</sup>

Healthcare researchers have insights to offer in return. In an example of this, Cluley *et al*<sup>11</sup> applied visual management principles to progress the concept of co-creation in a healthcare setting. Their findings are informative beyond healthcare and demonstrate the benefits of using visual management—for speed of comprehension and improved quality of co-creation. Cluley *et al* gathered interviews with participants of co-created patient pathways. A visual management analytical framework was then used to focus on different aspects of findings with the participants. This analysis was sorted into five themes (figure 1). Each of these themes was compiled from subthemes such as discourse management<sup>12</sup> and shared understanding<sup>10</sup> for facilitating co-creation.

Co-creation is important in healthcare design (as applied in Woodward *et al*<sup>3</sup>) but also applies to other settings where stakeholder voice is important. Thus,



**Figure 1** Sunburst diagram showing the five themes and related subthemes frequency.<sup>11</sup> Theme percentages are from a total of 368.

the approach taken in this research, analysing the role of visual management in healthcare co-creation, could be used to inform co-creation practice and research in other sectors as exemplified by Hunt<sup>13</sup> who used the research by Cluley *et al* in an industrial setting.

### ADVICE FOR HEALTHCARE RESEARCHERS USING OPERATIONS MANAGEMENT AND QUALITY MANAGEMENT RESEARCH

In terms of difference, researchers should be aware of how healthcare careers differ from other sectors and can limit the applicability of concepts from other fields. Healthcare is strongly professionalised with dedicated vocational paths. This provides excellent training and development within those vocations but is in contrast to many other sectors that do not have this kind of professional representation or formality. Individuals from different health professions have different ways of framing the same situation and a strong commitment to vocational norms and working practices: this can limit quality improvement approaches.<sup>2 14</sup>

The different uses of language also need to be considered. For example, the use of ‘quality’ in healthcare tends to have a broader definition than in other sectors by incorporating issues such as equity, cost and safety.<sup>15</sup> In operations management, these aspects would be addressed as interlinking, but separate dimensions, as illustrated in the definition from the classic text by Slack *et al* where quality is defined as ‘consistent conformance to customers’ expectations’ (p590).<sup>4</sup>

Another term that has specialised use, that interdisciplinary researchers need to be aware of, is ‘optimisation’. In the healthcare field, optimisation is used to refer to making processes and systems better, as used by Woodward *et al*.<sup>3</sup> Whereas in operations management, optimisation can imply achieving well-defined and specific goals. Robinson *et al*<sup>16</sup> provide a more in-depth discussion of this and, in a healthcare context, propose a method of facilitated workshops for systems modelling using simulations. They use an alternative term of a ‘satisficing solution’<sup>16</sup> as opposed to an optimal solution, where a satisficing solution means meeting user’s needs. This approach is well suited to the case in Robinson *et al* of simulating an ophthalmology clinic. The simulation was used to support meaningful discussion of improvements to the clinic system design, allowing participants to explore various satisficing solutions. The resulting, implemented changes then resulted in actual improvements to the clinic.

Finally, in mastering more than one topic, literature reviews pose a challenge for interdisciplinary researchers. A systematic literature review across more than one subject in a cross-disciplinary context needs careful handling. Texts, such as Dekkers, Carey and Langhorne, can provide guidance and a framework for

how to approach drawing on more than one body of literature.<sup>17</sup>

### CONCLUSIONS

Interdisciplinary research can strengthen most fields of intellectual endeavour and is particularly applicable in the area of healthcare quality as it is heavily informed by other disciplines such as quality management. The effective use of approaches developed in parallel fields such as co-production and visual management can enhance research, as exemplified by Woodward *et al*.<sup>3</sup> Interdisciplinary projects can also cross-pollinate insight back into the original field from which an approach was drawn.

Researchers in the field of healthcare quality have much to gain from an interdisciplinary approach. Appreciation should be taken for the particularities of healthcare and the use of language, but it is worth the effort. The reverse is also applicable, with opportunities for researchers from outside healthcare to use the substantial body of work derived from healthcare quality improvement to progress the fields of operations management and quality management.

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