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A healthcare quality management system underpinning the 3-E model and its application in a new tertiary hospital in Australia

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ABSTRACT

Objectives: Engaging, enhancing and embedding clinical audit improvement activities into everyday practice to develop capacity, capability and culture in continuous improvement.
Method: Through the implementation of an electronic quality management system called Governance, Evidence, Knowledge and Outcome (GEKO), the key aspects of governance, evidence knowledge and outcomes were able to be applied to quality initiatives. Implementation of the GEKO system incorporated the principles of total quality control and management to include strategic management control and marketing in parallel with leadership strategies.
The vision was to motivate staff to enable ownership of the quality cycle of continuous improvement of patient care to incorporate underlying systems and processes that impact on patient care.
Results: A continuous improvement pathway was successfully established 4 months post hospital commissioning. Over 890 (approximately 16% workforce) multidisciplinary and multi-professional staff received training and support for QIs in 12 months; over 535 quality proposals were received on GEKO. Submissions by profession: nursing and midwifery 46% (246), medical 33% (177), allied health 9% (48), pharmacy 5% (27), and non-clinical staff 7% (37). Average new submissions per month were 42. Reviews demonstrated the application of a rapid cycle approach to develop, test, modify and refine improvements and enhanced clinical care.
Conclusion: Appropriate governance structure, processes, extensive education and training together with collaborative relationships are the keys to embed clinical audit improvement into everyday practice. The availability of a quality management system like GEKO is very useful to make QI accessible to all staff.

1. Introduction

Achieving and sustaining quality and performance improvement in complex health care environments is challenging [1]. Many health care organisations have sought to create internal performance improvement capabilities as a strategy to enable system sustainability [2]. One potentially powerful and widely used method of quality improvement (QI) is to establish the extent to which clinical practice complies with identified review criteria. The degree of compliance, or lack of it, highlights areas where improvements can be made. This is the basis of clinical audit [3]. Identified barriers for clinical audit include lack of resources, lack of expertise or advice in project design and analysis, problems between groups and group members, lack of an overall plan for audit, and organisational impediments [4]. QI initiatives are impacted by a gap between underlying theory linking a change to an intended outcome. The inability to demonstrate causality hinders widespread uptake [5,6,and7]. Lack of time is a common reason for uncompleted or delayed activities.

Healthcare staff need to be encouraged to have autonomy and ownership of their roles to monitor clinical performance in relation to patient care. Development of organisation wide capability in improvement whereby clinical audit is embedded into everyday practice, will contribute to a positive organisational culture of continual learning where there will be common understanding of QI principles and methodologies by organisation members, which influence how staff perceive, think and act. QI is a culture or philosophy that seeks continuous improvement of the whole system, through normal daily activity [8].

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2. Quality management system –employing an electronic database

Having an identifiable infrastructure as the driver has been reported as an effective strategy to cultivate frontline staff engagement in improvement [1,9,10]. In Western Australia (WA) Health, a non-commercial electronic quality management system called Governance, Evidence, Knowledge and Outcome (GEKO) is available for all public hospitals.

This system was first incepted in a WA tertiary hospital in early 2000 to register information about clinical governance and QI activities. It allows for electronic completion, submission and review of forms and tasks, maintaining records of past and current activities. Several enhancements have been made to the system in the last ten years to facilitate closing the loop for quality initiatives. QI governance structures can be built on the system by setting up visual governance committees to facilitate the review of submissions and reporting.

Each activity on GEKO needs to go through three phases: proposal, report and recommendation, and outcome of recommendation to close the loop. The design of the GEKO templates for each phase aligns with the QI principles in the PDSA model (Appendix A, GEKO proposal template). It is therefore educational to promote good practice in QI project planning and execution. All employees can access the system to create and submit proposals which makes QI accessible.

However, success in the implementation of GEKO in WA public hospitals varied significantly due to different levels of staff engagement and governance structures and processes that have been applied. Fiona Stanley Hospital (FSH) as a newly commissioned tertiary hospital in WA, presented the opportunity to learn from the lessons and design a QI governance system that would suit the needs of the organisation, clinical departments and staff.

A strategic 3-E (Engaging, Enhancing, and Embedding) model was developed for this purpose. This model acknowledges the learning curve that staff need to go through and the evolving process required to embed clinical audit improvement into everyday practice. The model incorporates the System of Profound Knowledge (developed by Dr W Edwards Deming) to include the elements of system, variation, knowledge and psychology [11]. The long term objective of the model is to have organisation wide understanding of the Plan-Do-Study-Act (PDSA) model. Implementation of the model was largely dependent on the successful deployment of GEKO in this hospital as the identifiable infrastructure. Fig. 1 outlines the key elements of the model.

3. 3-E model and its clinical meaningfulness

3.1. Engaging – opportunities for engagement

The value of engaging frontline staff in improvement is well reported. Highly engaged staff – and by this we mean individuals who are committed to their organisations and involved in their roles – are more likely to bring their heart and soul to work, to take the initiative, to 'go extra mile' and to collaborate effectively with others [12].

The changing nature of the healthcare profession and growing desire by healthcare workers to engage in quality activities provides an excellent opportunity for the workforce from all levels to participate in the improvement process and leverage available resources for clinical auditing. In WA Health, QI is becoming a core element of professional development for all clinicians. However, universities are only starting to include clinical audit as part of the curriculums in recent years.

Multiple opportunities exist for engagement. First of all, the hospital's vision for a culture of QI is clear, the departments' desire to engage for continuous improvement is evident, and staff motivation to develop skills and profile in QI is compelling as it is part of their professional development. Second, hospitals need to go through various external and internal reviews for funding and accreditation. Hospitals need to undertake quality activities as part of evidence preparation. The alignment of staff intrinsic motivation to undertake improved patient care and alignment with identified goals is beneficial. When motivation is intrinsic, satisfaction comes from the activity itself and the fulfilment of social and personal needs [13]. Clinical engagement, then, involves staff actively contributing 'within their normal working roles to maintaining and enhancing the performance of the organisation, which itself recognises this commitment in supporting and encouraging high quality care' [14].

Both Dr. Deming [15] and Kotter [16] emphasised that the first step in successful change management is to convey its need and purpose, which should be communicated along with the benefits associated with the change. This step is critical to successfully engage busy clinicians and management teams who are dealing with competing priorities every day to promote a shared understanding of the needs, goals and objectives of the organisation, along with partnering with clinical departments and staff. High value projects that are important to business leaders may not be easily linked to the daily work of those who will have the task of executing them [17], thus the perceived priorities won't always be the same by the organisation (senior management), departments (middle management) and staff (frontline) for the same defined period. This leads to the point that leaders need to understand that change involves more than just the tangible results and technical aspects. Allowing people to try and test the new change is more important. Skilfully building knowledge by making changes and observing or measuring the results is the foundation of improvement [13].

3.1.1. Governance structure and processes

Successful integration of The Influence Equation as described by the Triad Consultancy (Interests, Reasons, Relationship, Status, Affiliation, Fear) [18] and the SCARF model (Status, Certainty, Autonomy, Relatedness, Fairness) in NeuroLeadership [19] have a focus on persuading effectively and mitigating resistance to collaboration. Health care is a people business. Translating engagement into tangible terms for QI should mean opportunities, support, ownership, autonomy and trust. Staff need to feel empowered to initiate and implement necessary changes by building on existing knowledge and skills. The QI governance structure on GEKO was therefore designed into 3-tiers (Hospital Executive, Service, and Department) to encourage a bottom-up approach, while both senior management and middle management have oversight and opportunities to intervene.

Visual QI committees were set up on GEKO to facilitate review of submissions. Clinical areas with high interaction and dependency such as Haematology and Oncology nursing share the same committee to facilitate information and knowledge sharing. The final decision on quality proposals, reports and recommendations rests with relevant services. The chair of the committee is usually the respective Nurse Director (for nursing ones), or Head of Service (HoS) (for medical ones) who have authority for approval or rejection. All senior staff such as Nurse Unit Managers (NUMs), Clinical Nurse Specialists (CNSs) and consultants have review access to provide feedback. The same principle applies for other professions.

Medical engagement is critical to organisational performance [20]. Empirically, there are often high value clinical audits that are undertaken by medical staff but not internally reported or used to drive improvements. Building trust relationships with the

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