Quality Improvement in Anaesthesia

Improving Safety and Processes

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What is Quality improvement?

Involvement in Quality Improvement (QI) has been advancing over the years. Initially, clinical audit was seen as a cornerstone of healthcare improvement; however, its success has been hampered by having too rigid an approach. Clinical audit of measurable standards and metrics can mean that certain clinical scenarios and events are not assessed, and become situations in which problems manifest and teams deteriorate. The Institute of Medicine (2001) outlines six domains of quality improvement; safe, effective, patient-centred, timely, efficient and equitable.[1] Therefore, by engaging in QI, one recognises the need for continuous improvement to deliver better outcomes. As it stands, the NHS is fraught with variation of care, misuse of clinical processes (which can even lead to harm) alongside waste, delay and duplication.[2] Cost savings and productivity gains in the region of £1.1 billion to £2.3 billion can be realised through improvement and redesign of existing systems and processes.[3]

What is the relevance to Anaesthesia?

Anaesthesia and Intensive care have been at the forefront of QI without it actually being termed as such. Peter Pronovost, an Intensive care physician at John Hopkins, recognised the variation of infection rates in critically unwell patients in whom a central venous catheter was placed. As part of the Michigan Keystone project, published in the NEJM, line associated infections were visibly demonstrated to have fallen due to the implementation of a checklist.[4] Structure, education and adherence to simple protocols were able to drive measurable achievements in minimising patient harm. An improved patient care pathway using established techniques, helped to drive value in the system and thus led to cost savings in the absence of increased hospital stay, complications and mortality.

Nationally, the Royal College of Anaesthetists (RCoA) has been progressive in its approach to improve patient outcome and safety, with lessons learned from large scale studies being implemented across the country. NCEPOD, MBRRACE-UK (formally CEMACH), NELA, PQIP and NAP are some notably national projects through which care has been improved and

value created. Unnecessary procedures overnight, improvements to junior doctors staffing, and consultant presence for high-risk cases are some of the instances through which we've seen change.

How to get started in QI

Although the examples above have led to impactful and widely published improvements, engagement in smaller projects is paramount to learning the processes involved in QI and to identify where local problems lie. Often barriers to change include organisational hierarchy, human resources and people culture, physical and logistical obstacles and financial constraints. However, these should not be seen as a reason not to engage in QI.

Enthusiasm, optimism, curiosity and perseverance are important skills the individual needs to ensure success in developing and realising a QI project.[5] It is important to surround yourself with different groups of people within the hospital to achieve your ultimate aim. Collaboration across a multidisciplinary team is vital to success. In terms of finding a project, the best ideas stem from those which affect you personally day to day, and often result in thinking that things can be done better. One particular model that is paramount to utilise, is the "Plan, Do, Study, Act" cycle. Current practice is assessed and implementation of the intervention followed by repeated tests to show its utility. This identifies stress in the system and the strength of your proposal to stand up to different situations, users and scenarios. Time spent on assessment of the problem isn't wasted, as this will demonstrate where weaknesses lie and deficits of the existing set up. The best intervention is often something that is simple, reproducible and sadly with a low-cost structure. However, that doesn't mean that expensive interventions are unsuccessful – if a significant cost saving can be demonstrated over the price of implementation, then this also proves to be a powerful motive for change.

The RCoA have released an audit recipe book over the last 20 years providing ideas and inspiration for audit topics that anaesthesia practitioners can participate in at a local level. However, in line with ongoing development, the fourth edition was released in 2020 entitled "Raising the standards: RCoA Quality Improvement Compendium".[6] This is a great reference to start the QI journey, as it provides examples of situations and metrics that can be improved depending on the interest and need of the individual.

Furthermore, involvement within patient safety teams, clinical incident groups and leaders in QI within the hospital will often be able to provide ideas for a suitable project. Finally, organisations such as SEA UK, EBPOM/TRIPOM and HSJ, provide opportunities to keep up to date with research alongside novel projects, highlight ideas implemented elsewhere and hopefully provide inspiration for the next big thing.

Further Reading:

- Publication: Quality Improvement made simple: What everyone should know about health care quality improvement. The Health Foundation. (https://www.health.org.uk/sites/default/files/QualityImprovementMadeSimple.pdf)

- Resource: The King's Fund > Quality Improvement (https://www.kingsfund.org.uk/topics/quality-improvement)

- Book: The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, 2nd Edition. Gerald J. Langley, Ronald D. Moen, Kevin M. Nolan, Thomas W. Nolan, Clifford L. Norman, Lloyd P. Provost (ISBN: 978-0-470-19241-2)

- Book: Our Iceberg is Melting: Changing and Succeeding Under Any Conditions. John Kotter & Holger Rathgeber. (ISBN: 9781509830114)

References:

1. Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington (DC): National Academies Press (US); 2001. PMID: 25057539.

2. Alderwick, H., Charles, A., Jones, B. and Warburton, W., 2017. *Making the case for quality improvement*. [online] The King's Fund. Available at: https://www.kingsfund.org.uk/publications/making-case-quality-improvement [Accessed 1 May 2021].

3. GOV.UK. 2013. *Closing the NHS funding gap: how to get better value healthcare for patients*. [online] Available at: https://www.gov.uk/government/publications/closing-the-nhs-funding-gap-how-to-get-better-value-healthcare-for-patients. [Accessed 1 May 2021].

4. Pronovost, P., Needham, D., Berenholtz, S., Sinopoli, D., Chu, H., Cosgrove, S., Sexton, B., Hyzy, R., Welsh, R., Roth, G., Bander, J., Kepros, J. and Goeschel, C., 2006. *An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU.* New England Journal of Medicine, 355(26), pp.2725-2732. DOI: 10.1056/NEJMoa061115

5. Jones, B., Vaux, E. and Olsson-Brown, A., 2019. *How to get started in quality improvement*. BMJ, p.k5408. doi:10.1136/bmj.k5437

6. Royal College of Anaesthetists. *Raising the Standards: RCOA Quality Improvement Compendium.* 4th ed. 2020.