

The Perioperative Quality Improvement Programme

How is the programme improving surgical care and how can you get involved?

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The Perioperative Quality Improvement Programme (PQIP) is a National Institute for Health Research (NIHR) portfolio-adopted study currently recruiting patients in 85 hospitals across the UK. The aim of PQIP is to reduce postoperative complications while improving patient outcome, experience and quality of life. This article explains how it is improving patient care and outcomes from major elective surgery, and how you and/or your hospital can get involved.

PQIP has a similar methodology to the revered National Surgical Quality Improvement Program® run by the American College of Surgeons, but is uniquely tailored to the UK setting. It was established in 2016 by the Health Services Research Centre at the Royal College of Anaesthetists in collaboration with The Royal College of Surgeons of England (RCS), the Royal College of Physicians, the Royal College of Nursing, the Faculty of Intensive Care Medicine and the Faculty of Pain Medicine. We are grateful to RCS Council members Andrew Swift and John Abercrombie for the support they have provided to the PQIP clinical reference group since the project started. We have also recently recruited three consultant surgeons and three trainees to join the core project team, which meets monthly and drives the day-to-day management of the programme.

In the UK, 7.9 million surgical procedures are carried out each year. This figure has been increasing annually while mortality after elective surgery has been decreasing.¹ The welcome improvement in mortality outcomes means that 30-day or inpatient mortality is a less useful measure of quality than previously.² Nevertheless, we are all aware of other outcomes (eg morbidity and failure to rescue) as well as processes such as compliance with enhanced recovery principles, which vary between institutions and could therefore usefully be tracked to improve quality.³ Furthermore, it is now well established that independent of preoperative co-morbidities, there is a relationship between postoperative morbidity and reduced longer-term survival.⁴⁻⁶ Reflecting all of these considerations, PQIP sets out not only to measure mortality but to shift the focus on to morbidity, failure to rescue and patient-centred outcomes, with the aim of using these as measures of quality to drive improvement.

Patients undergoing elective non-cardiac major surgery are eligible to be recruited to the programme. Each hospital is aiming to recruit either a random sample of 3–5 eligible patients per week or (if capacity exists) all eligible patients. Those patients who consent to take part have data collected regarding patient risk factors, processes of care and a range of outcomes via an online database. The online system offers near real-time feedback to participating hospitals by means of dashboards on metrics, such as unplanned critical care admissions and the proportion of patients with a surgical complication on postoperative day 7, based on the postoperative morbidity survey (Figure 1).³

In addition, hospitals also receive tailored local quarterly reports on each of the surgical specialties that enrol patients to PQIP. These reports contain details on the measures recorded over the immediate past three months; a selection is listed in Table 1. The reports are also supplemented by Microsoft PowerPoint® slides,

Figure 1 Example of a dashboard available online, looking at the proportion of patients who had positive results for the postoperative morbidity survey at day 7

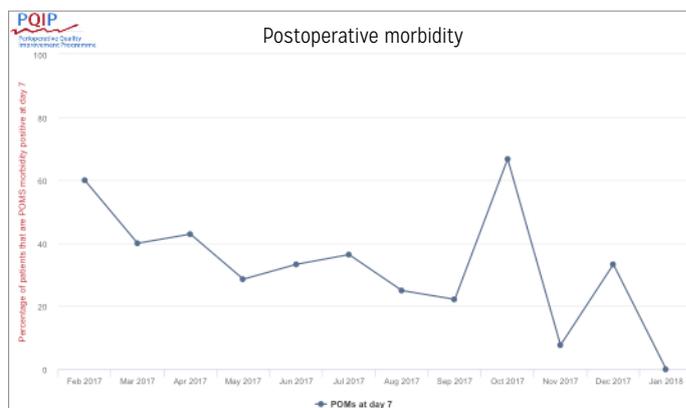


Table 1 A selection of measures collected by the Perioperative Quality Improvement Programme. Most are reported back to local teams every quarter, and all are immediately available to local teams for in-house review, improvement and research.

Preoperative risk assessment and recording
Risk profile (using P-POSSUM or SORT scores) ^{7,8}
Enhanced recovery pathway engagement and compliance
Postoperative length of stay
Administration of prophylactic antibiotics
Critical care admission when risk of death is $\geq 5\%$
Unplanned critical care admission
Complications (Clavien–Dindo classification)
Pain in hospital and following discharge
Patient satisfaction
Patients drinking, eating and mobilising on day 1 (enhanced recovery summary measure)
Postoperative morbidity survey at day 7
Day 3 quality of recovery score
EQ-5D™ (health-related quality of life preoperatively, and at 6 and 12 months after surgery)
WHODAS 2.0 (measurement of disability at 6 and 12 months)
Long-term survival (tracked through linkage to Office for National Statistics)
Readmissions (tracked through linkage to Hospital Episode Statistics)

P-POSSUM = Portsmouth Physiological and Operative Severity Score for the enUmeration of Mortality and morbidity; SORT = Surgical Outcome Risk Tool; WHODAS = World Health Organization Disability Assessment Schedule

allowing the data and graphs to be easily presented and distributed to colleagues.

PQIP is much more than simply another national data collection exercise looking at variation in the NHS. Near real-time feedback plus regular summary reports and immediate access for each hospital to their own dataset support the use of the data for local quality improvement (QI) and research projects. Coupling all this with access to QI tools allows hospitals to drive bottom-up innovation.⁹ We are trying to encourage clinical engagement for both trainees and consultants by offering

free access to relevant research papers that can be used in local journal clubs (<https://pqip.org.uk/pages/library>), online QI training through the linked Perioperative Improvement Science and Management teaching module (<https://www.prism-ed.com/>), access to QI tools such as run chart templates (<https://pqip.org.uk/pages/improvementtools>), and a host of podcasts and videos about surgical outcomes and QI.

Along with helping to drive improvement at a local level, PQIP hopes to bring about national improvement in the quality of care, patient satisfaction and outcome. As PQIP continues to grow and the number of patients enrolled increases, the size of the database that can be mined to answer important research questions will continue to grow. It differs from Getting It Right First Time (the national programme led by the Department of Health looking to reduce unwarranted variation),¹⁰ which presents hospital data during a face-to-face peer review process with a later follow-up review.¹¹ PQIP offers continuous data feedback, enabling local teams to track their progress on a range of processes and outcomes over time as well as comparing this against national data. While there is currently no peer review process, free annual national collaborative meetings provide a forum for local teams to meet colleagues and share experiences.

There are many opportunities to be involved in PQIP. If you would like more information on PQIP or if you would like your hospital to join the programme, please visit: www.pqip.org.uk or contact the

team via: PQIP@roca.ac.uk. More information can be found on the website and the Twitter feed (@PQIPnews).

References

- Abbott TE, Fowler AJ, Dobbs TD *et al*. Frequency of surgical treatment and related hospital procedures in the UK: a national ecological study using hospital episode statistics. *Br J Anaesth* 2017; **119**: 249-257.
- Waljee JF, Dimick JB. Do patient-reported outcomes correlate with clinical outcomes following surgery? *Adv Surg* 2017; **51**: 141-150.
- Davies SJ, Francis J, Dilley J *et al*. Measuring outcomes after major abdominal surgery during hospitalization: reliability and validity of the Postoperative Morbidity Survey. *Perioper Med* 2013; **2**: 1.
- Khuri SF, Henderson WG, DePalma RG *et al*. Determinants of long-term survival after major surgery and the adverse effect of postoperative complications. *Ann Surg* 2005; **242**: 326-341.
- Toner A, Hamilton M. The long-term effects of postoperative complications. *Curr Opin Crit Care* 2013; **19**: 364-368.
- Moonesinghe SR, Harris S, Mythen MG *et al*. Survival after postoperative morbidity: a longitudinal observational cohort study. *Br J Anaesth* 2014; **113**: 977-984.
- Copeland GP, Jones D, Walters M. POSSUM: a scoring system for surgical audit. *Br J Surg* 1991; **78**: 355-360.
- Protopapa KL, Simpson JC, Smith NC, Moonesinghe SR. Development and validation of the Surgical Outcome Risk Tool (SORT). *Br J Surg* 2014; **101**: 1,774-1,783.
- McKinsey. *The 'big data' revolution in healthcare*. https://www.mckinsey.com/insights/health_systems/-/media/7764A72F70184C8EA88D805092D72D58.ashx (cited March 2018).
- Getting It Right First Time. *Why does unwarranted variation matter?* <http://gettingitrightfirsttime.co.uk/why-does-unwarranted-variation-matter/> (cited March 2018).
- Timmins N. *Tackling Variations in Clinical Care*. London: King's Fund; 2017.



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