3 Postoperative care

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3.1 Recovery room staffing and monitoring provision

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Why do this quality improvement project?

Life-threatening emergencies may arise during the immediate postoperative period. However, the majority are easily remedied if they are recognised and treated promptly. Adequate staffing and appropriate monitoring in recovery are therefore vital to keeping patients safe.[1]

Background

The post-anaesthetic care unit (PACU) denotes any clinical area where patients recover from anaesthesia, and therefore includes those colloquially referred to as 'recovery' or 'the recovery room' in many UK hospitals.

The PACU is a high-risk area for life-threatening airway complications, as highlighted in The fourth National Audit Project and several NCEPOD reports.[2,3] Emergence from anaesthesia is potentially hazardous and patients require a high standard of observation until recovery is complete.[4] The RCoA and the Association of Anaesthetists recommend that PACU staffing and monitoring standards should be maintained in any area where anaesthesia is administered. This includes labour wards, cardiology and radiology suites, dental, psychiatric and community hospitals.[4,5]

Best practice

Hours of operation

Recommendations from the Association of Anaesthetists state that the PACU must have sufficient numbers of trained staff available throughout all operating hours, and if an emergency surgical service is run the PACU must remain open 24 hours a day.[6]

Staffing levels

No fewer than two nurses should be present if one patient is in the PACU. Any patient unable to maintain their own airway must be nursed continuously on a one to one basis by a nurse who has no other duties. Staffing should be sufficient to meet this requirement even in peak periods.[5]

Competencies required

All PACU staff should have been trained in and deemed to have achieved locally or nationally agreed prescribed competencies.[5]

Monitoring

Monitoring is required until the patient has fully recovered from anaesthesia and as a minimum should include clinical observation supplemented by pulse oximetry, non-invasive blood pressure and temperature monitoring. An electrocardiogram (ECG), nerve stimulator, capnography and glucometer must be immediately available should they be needed.[7]

Depending on the local surgical case mix, some PACUs may additionally consider immediate access to near patient testing (eg arterial blood gas, HemoCue or point-of-care coagulation testing) a desirable standard of care.

Record keeping

All patients should have regular observations documented until PACU discharge.

Suggested data to collect

Staffing

- Percentage of staff present in the PACU trained to the recognised standard, audited at different times of day and night.
- Percentage of patients admitted to the PACU out of hours where there are two members of staff present in the PACU until the patient is discharged.
- Any periods where the PACU has to be closed to new admissions due to inadequate staffing levels should be highlighted.
- Underlying reasons for inadequate staffing levels, or inadequately trained PACU staff.

Staff-patient ratios

- Percentage of patients recovering from spinal, epidural or general anaesthesia who are cared for in a specifically designated recovery area with sufficient numbers of adequately trained staff.
- Percentage of unconscious patients who are being cared for on a one to one basis.
- Percentage of conscious patients requiring critical care or critical care monitoring who are being cared for in a ratio of one nurse to two patients.
- Percentage of conscious stable patients who are being cared for by nurses not involved with the patients above (eg patients ready for discharge awaiting transfer to the ward).

Patient monitoring

- Percentage of patients with an advanced airway in place who have continuous capnography monitoring.
- Percentage of patients having their observations recorded with appropriate frequency.
- Percentage of patients monitored with non-invasive blood pressure, pulse oximetry and temperature.
- Ease and speed of applying further monitoring such as capnography, ECG or nerve stimulator.
- Ease and speed of obtaining ABG, blood glucose, HemoCue or point-of-care coagulation results.
- Percentage of patients with complete documentation of observations from PACU arrival until discharge.
- Reasons for inadequate monitoring or delay in applying additional monitoring when required (eg shortage of monitoring devices, monitoring device broken/not charged/being used elsewhere).

Data should be collected in all areas of the hospital where patients are recovering from anaesthesia. The adequacy of facilities in outlying areas should be audited regularly.

Quality improvement methodology

- Critical incidents in the PACU should be recorded and reviewed on a monthly basis, including analysis of developing themes. Learning points should be disseminated to all PACU staff. These points may be combined with data collected above to suggest areas for improving patient safety in the PACU – stakeholder analysis will be crucial to make sure that a wide range of improvement ideas are generated.
- PACU staff should be encouraged to participate in suggesting and designing interventions to address areas for improvement (eg where incomplete documentation of patient observations has been highlighted), PACU staff may be able to suggest appropriate solutions (eg more time for documentation, availability of automatic printouts).
- In-situ simulation or 'check and challenge' drills could be practised to review processes for accessing and apply additional monitoring or escalating care in a deteriorating patient in recovery.

Mapping

ACSA standards: 1.5.1.1, 1.4.1.1, 1.4.2.1, 1.4.2.2, 1.4.2.3, 1.4.2.4, 1.4.1.3, 4.2.2.2

Curriculum competences: PO_BK_02, PO_BK_03, PO_BS_05, DI_IK_03, AT_D1_01, AT_D1_09, AT_D2_05, AT_D3_08, CD_AK_15

GPAS 2020: 4.1.8, 4.2.17, 6.5.18, 6.5.19, 6.5.20

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3.2 Patient handover in the post-anaesthesia care unit

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Why do this quality improvement project?

An effective handover from the anaesthetist to a post-anaesthesia care practitioner is essential for patient safety and quality of care. Ineffective handover is a common factor in safety incidents.

Background

The quality of handover depends on three key areas:[1,2]

- transfer of information
- transfer of responsibility and/or accountability
- team dynamic and environment.

Poor communication is recognised as contributing to adverse events in health care, with communication during handovers being a specific area of concern.[3,4] In many centres, handover remains an informal process, with little structure.[5]

Best practice

The Association of Anaesthetists' guideline on post-anaesthesia recovery states that, after transfer to the post-anaesthesia care unit (PACU), 'the anaesthetist must formally hand over the care of a patient to an appropriately trained and registered PACU practitioner'. There are tools and frameworks available to standardise information transfer between practitioners,[6,7] as recommended by the Association of Anaesthetists' guideline,[5] including formal handover checklists.

Suggested data to collect

- Is there a structured handover process already or is it an informal process?
- Is the verbal handover supported by written documentation?
- Is there a handover checklist available? Is it used or perceived as useful? What percentage of the mandatory handover information is covered in each handover?
- Have any particular problems been highlighted already by:
  - recovery staff?
  - anaesthetists?
  - theatre staff?
  - surgeons?
  - midwives?
- Have there been any critical incidents or near-misses related to handover?
- How long does handover take? (An unnecessarily long formal handover process is unlikely to be used by practitioners day to day.)

Quality improvement methodology

- Problem driven solutions are most likely be to be successful. Ensure that common incidents reported in your department are addressed by your handover process and included in any accompanying teaching.
- Forming a stakeholder group including anaesthetists, operating department practitioners, recovery and theatre staff and patients will facilitate identifying problems.
- Testing handover processes can be done in multidisciplinary simulation. Implementation may include joint training, workshops and simulation, as well as environmental and structural changes to support handover.
- A pareto chart might be a useful way to identify the themes that contribute most to perceived communication gaps.

Mapping

ACSA standard: 1.1.1.2
Basic level curriculum: PO_BS_05
GPAS 2020: 4.1.4, 4.5.4, 4.5.6

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3.3 Postoperative nausea and vomiting beyond recovery

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Why do this quality improvement project?

Despite advances in anaesthetic technique and medications, postoperative nausea and vomiting (PONV) remains a common complication of general anaesthesia, with nausea affecting around 50% of patients.[1] As well as contributing to clinical outcomes such as wound dehiscence, dehydration, electrolyte imbalance and pulmonary aspiration,[2] PONV leads to increased demands on resources and is an important outcome for patients, who often rate it as worse than postoperative pain.[3,4]

Background

Several published quality improvement projects have shown that implementing a systematic approach to assessing PONV risk and modifying anaesthetic technique accordingly can reduce PONV incidence.[5–9] PONV is multifactorial in nature and an approach to its management that includes both pharmacological and non-pharmacological interventions should be considered and has been found to be effective.[10,11]

Best practice

There are no consensus guidelines for PONV in adults in the UK, but guidelines produced by the Society for Ambulatory Anaesthesia in the United States have achieved international recognition.[1] These guidelines recommend, among other standards, that patients receive a risk assessment for PONV, that baseline risk factors are reduced where possible and that prophylactic treatment is administered in accordance with risk. Furthermore, the guidelines stress that departments need to assess whether any suggested algorithms for PONV prophylaxis are actually implemented. The Association of Paediatric Anaesthetists of Great Britain and Ireland produced guidance for paediatric patients in 2016.[12]

Accordingly, departments should determine a consistent local approach to PONV (which could involve a local guideline or algorithm, or reference to a national guideline) and measure both implementation of this approach and the incidence of PONV itself.

Suggested data to collect

Best practice standard	Suggested data to collect
All patients should have a preoperative risk assessment score for PONV.	■ Percentage of patients assessed preoperatively for risk of PONV.
Intraoperative antiemetics should be given in accordance with local guidelines.	■ Percentage of patients receiving PONV prophylaxis as per local guidelines.
When PONV has developed, patients should have timely rescue treatment.	■ Percentage of patients receiving treatment of PONV as per local guidelines. ■ Percentage of all patients developing PONV during the first 24 hours.

Quality improvement methodology

- Collection of baseline data to identify the scale of the problem and the presentation of these results locally to all stakeholders involved are key. A Pareto chart of most common specialties involved can help to focus improvements where they are most needed.
- Process mapping the local perioperative pathway to identify where risk assessment could most easily be carried out and the points where implementation of the agreed approach is ineffective will be essential to improving the process.
- Feedback to all stakeholders of their individual incidence of PONV and other process measures is helpful to inform practitioners of the case for change.
- Regular presentation of data will help to improve compliance with guidelines and decrease both the incidence and severity of PONV.
- Patient feedback and sharing patient stories about the impact of PONV can also create a compelling case for change.

Mapping

Curriculum competences: PO_BK_08, PO_BS_08, OA_BK_14, DS_BK_09, PA_BK_07, POM_BK_24, POM_BK_18, PR_BK_56

CPD matrix codes: 1A02, 1105, 2A03

ACSA standards: 1.1.1.2, 1.4.1.2, 1.1.1.9

GPAS 2020: 3.5.22, 3.5.23, 4.1.4, 4.5.4

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3.4 Record keeping in recovery

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Why do this quality improvement project?

Clear, accurate and legible medical records are necessary for the reliable transfer of information between different healthcare professionals and, as such, are also required by the General Medical Council.[1] Good record keeping will allow others to understand a patient's clinical course in recovery and their response to any interventions. Good records will also facilitate the measurement of outcomes in the immediate postoperative period, while inadequate records may make it challenging to respond to complaints.

Background

The immediate postoperative period is one of the most closely monitored episodes of a patient's hospital stay, reflective of the risk of life-threatening complications. Failure to ensure that a patient has regained a safe level of physiological performance before leaving recovery could have devastating consequences. Thus, documentation of that patient's condition on arrival and at the time of discharge features strongly in standards and guidelines for the UK and the United States. The Association of Anaesthetists' guidelines for this period list a minimum dataset of information to be recorded, including the occurrence of any of a set of prespecified complications,[2] while the American Society of Anesthesiologists' standards encourage the use of post-anaesthesia care unit scoring systems at sequential timepoints during a patient's recovery.[3]

Common outcome measures for anaesthesia, such as pain and nausea and vomiting, are most effectively measured in recovery and should form part of the recovery record. Both the Association and the RCoA note that it is desirable for recovery data to be electronic and collected automatically.[2,4]

Best practice

As an absolute minimum, the Generic Medical Record Keeping Standards require each page of the medical record to contain a patient's name, identification number and location in the hospital.[5] Each entry should be dated, timed, legible and signed.

The RCoA's Guidelines for the Provision of Anaesthetic Services require maintenance of careful records, including instructions, patient observations and drug administration for the postoperative period.[4] Association guidelines are more specific, detailing a minimum dataset for the recovery period.[2] For patients receiving critical care in recovery, Association guidelines note that after four hours' stay, the recovery record also needs to contain the Critical Care Minimum Dataset.[2]

Other information in the recovery record will depend on the anaesthetic and surgical techniques used. For example, the dermatomal sensory level and the presence of motor block should be recorded for patients with neuraxial blocks.

Suggested data to collect

Data to be collected should be determined locally and should be realistic, based on local needs.

Outcome measures will be difficult to link to recovery records, so process measures such as those suggested below should be used instead. It may be worth collecting a balancing measure such as the amount of time required to record data in recovery.

- Percentage of patients whose recovery record meets Generic Medical Record Keeping Standards (their name, identification number and location in the hospital are on every page, and every entry is dated, timed, legible and signed by the person making the entry).
- Percentage of patients whose recovery record contains the Association's minimum dataset.
- Percentage of patients receiving critical care in recovery for more than four hours whose recovery record contains the Critical Care Minimum Dataset.
- Specific measures, such as the percentage of patients with epidurals for whom block height was recorded.

Quality improvement methodology

- Where record keeping is already considered to be done well, clinical audit is a suitable methodology. A sample of recovery records is analysed and compliance with the standard is assessed. Examples of good practice should be shared and analysed for lessons to learn.
- Develop a driver diagram to identify factors that will improve compliance with best practice. What are the barriers to behaviour change? Consider using a behaviour change model to highlight factors which could lead to better record keeping (eg clinical time limitations, anaesthetic record design).
- Improvements after interventions can be displayed using run charts. These charts can be displayed in recovery, so that all staff can see the impact of the interventions tested.

Mapping

ACSA standards: 2.3.1.1, 2.3.1.2, 4.2.3.1
CPD matrix code: 1G01
Curriculum competences: IO_BS_06
GPAS 2020: 4.2.10, 4. 2.16

References

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3.5 Postoperative visiting

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Why do this quality improvement project?

Despite being recognised as an important part of the holistic role of the anaesthetist,[1] the exact requirements for anaesthetic involvement in postoperative care beyond pain control are poorly described.[2] Patients should have access to anaesthetic input immediately following surgery, and all patients fulfilling specific criteria will require a formal anaesthetic review within 24 hours postoperatively.[3] Anaesthetic input into postoperative recovery is likely to improve pain management and reduce the risk of complications, as well as giving the anaesthetic team valuable feedback about the impact of their perioperative care.

Background

In light of the risk of life-threatening complications, the immediate postoperative period is closely observed in the recovery area. Anaesthetists are well-practised at review at this stage, and their attendance is expected within minutes.[4] However, early postoperative complications that can impact on morbidity and mortality outcomes can arise following discharge to the ward,[5,6] and may also be appropriately dealt with by an anaesthetist. These outcomes include physiological alterations, pain and the need for efficient assessment and transfer of high-risk patients to intensive care. A quality improvement project in this area may contribute to optimising postoperative care, controlling complications and potentially improving patient satisfaction.[7]

Best practice

RCoA guidance specifies groups of patients who should be visited by an anaesthetist within 24 hours of surgery:

- those graded as American Society of Anaesthesiologists physical status 3, 4 or 5
- those receiving epidural analgesia in a general ward
- those discharged from recovery with invasive monitoring in place
- those for whom a request is made by other medical, nursing or other clinical colleagues
- those for whom there is any other appropriate need.

Suggested data to collect

Quantitative

- Is there a departmental policy on postoperative follow-up?
- What is the process to ensure that patients are followed-up by appropriate member of the team?
- Number of patients falling into the patient groups highlighted for postoperative review.
- The percentage of patients who are visited postoperatively by an anaesthetist.
- The percentage of patients who are visited postoperatively by their own anaesthetist.

Qualitative

- What information is recorded from the visit and where are the data entered?
- What actions have been taken following review?
- Reasons for failure to visit (eg patient discharged, time constraint, staffing)?
- Near misses of incidents averted by an anaesthetic postoperative visit.

Quality improvement methodology

- A sample of operating lists should be analysed for patients who qualify for a postoperative review. Notes for these patients should be checked to determine whether a review has taken place. If postoperative reviews are not yet standard practice, this audit would indicate the resource needed to set up a review process.
- A driver diagram of key drivers to deliver regular postoperative reviews should be written, based on local stakeholders' assessment of the drivers.
- Stakeholder engagement is crucial to facilitate anaesthetic postoperative review. Is the process clear and accessible to surgeons, pharmacists, ward staff and associated health professionals involved in postoperative care? If reviews reduce workload for other groups, can their support be used to build a business case for a funded service?
- Patient involvement in setting up a review process is helpful to ensure that patient-centred measures are included in any review. What aspects of care do patients think the review visits would improve? Patients can also help to produce any resources to inform patients about postoperative recovery.

Mapping

ACSA standard: 1.4.4.2
Curriculum competences: PO_BK, POM_IK 16–22, POM_HK 13–19, POM_AK
CPD matrix code: 2A07
GPAS 2020: 4.1.11, 4.5.6

References

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3.6 Drinking, eating and mobilising after surgery

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Why do this improvement project?

The ability for a patient to drink, eat and mobilise (DrEaM) after surgery can be used to evaluate the quality of any chosen anaesthetic technique in the context of a particular surgical procedure.[1] Patient outcomes can be significantly improved by using quality improvement methodology to study the impact of elements of anaesthetic technique which promote timely DrEaMing postoperatively.

Background

The determinants of early DrEaMing influence the quality of recovery. Anaesthesia quality indicators such as the presence of postoperative nausea and vomiting, moderate to severe pain, delirium and hypothermia can be measured and used to help to identify anaesthetic techniques which promote the best outcomes. Agreed ideal endpoints should be surgery-specific, and age, comorbidity and frailty may need to be adjusted for, depending on the population undergoing surgery.

Best practice

Much of the work published on enhanced recovery after surgery describes best practice, as do guidelines such as those issued by the British Association of Day Surgery and the Association of Anaesthetists.[2,3] The editorial by Levy *et al*[1] references the use of postoperative quality indicators to improve quality of recovery in both a district general and teaching hospital setting.[4,5] Best practice includes having a real-time understanding of the quality of recovery and an improvement programme in place to understand and improve the performance of the perioperative medicine service.

Suggested data to collect

The hospitals recruiting to the Perioperative Quality Improvement Project (PQIP) are collecting DrEaMing data in their patients, so using these data if they are already being collected would be an ideal starting point. The advantage of collecting these data is that you can track improvement over time and evaluate how your department is performing in comparison with other similar units in the UK. The following data could be collected (it is important that the data are standardised to the surgical procedure (or group of related procedures)):

- postoperative nausea and vomiting scores for the first 24–48 hours
- pain scores over a time-period specific for the patient's surgery
- delirium scores for the first three days in those at risk (usually 65 years and above)

Postoperative delirium may not become apparent for the first 24 hours. A score should be taken daily. Ideally, cognition should have been assessed preoperatively. The 4AT rapid clinical test for delirium and the Confusion Assessment Method have been validated for the use in this setting.[6,7]

- time to first drink
- time to first food
- time to mobilising (an agreed description of what mobilising means in each surgical context is required to make this a meaningful metric).

Quality improvement methodology

What are the determinants of DrEaMing? A driver diagram may help you to identify the points in the patient's journey that would influence ability to eat, drink and mobilise.

- Start with the preoperative phase; consider the fasting period, use of carbohydrate drinks, risk scoring for postoperative nausea and vomiting, and existing limitations to mobility, which may be patient-specific.
- Are the patients expecting DrEaMing to happen on day 1 postoperatively? Is this supported by patient information resources?
- Intraoperatively, look at anaesthetic techniques, use of opioids, regional anaesthesia, prophylactic antiemetics and type of surgery.
- Postoperatively, consider how the patient will eat, drink and mobilise. Do they have access to food and drink on the ward? What advice have they been given?
- Who will help them to get out of bed and when? Are they attached to devices, lines and catheters which may impede getting out of bed? Is there a role for grouping patients together for motivation (eg an enhanced recovery ward where patients move together along the ward as they progress through their recovery)?

- DrEaMing lends itself well to a run chart once you have looked at the process and drivers. This is available on the PQIP dashboard. Engagement of staff on the ward is key, both to improving and qualitative data documenting what is happening and any barriers to change.
- Would a dashboard on the ward be helpful for keeping staff informed of their progress?

Mapping

ACSA standards: 1.4.1.2, 1.2.1.4, 1.2.1.5, 1.4.5.1, 1.4.4.2, 1.4.4.1, 3.1.1.2, 3.1.2.2, 4.2.2.2

Curriculum competences: DS_IS_01, GU_IK_09, EN_IS_10, POM_IS_04, POM_IK_11, POM_IS_21, POM_IK_18, AR_AS_01, IS_K_15, IS_K_20, IS_K_22

CPD matrix codes: 1D01, 1D02, 1G01, 1I02, 1I05, 2A03, 2A07, 3A02, 3A03, 3A04, 3A05, 3A06, 3A08, 3A12, 3A13

GPAS 2020: 3.5.10, 3.5.17, 3.5.19, 3.7.1, 3.7.4, 4.2.18, 4.3.19, 4.3.20, 4.7.1, 4.7.5

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3.7 Recovery discharge protocols

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Why do this quality improvement project?

The timely discharge of postoperative patients from recovery to an appropriate destination maximises theatre efficiency, maintains patient safety and improves patient satisfaction. Comprehensive recovery discharge protocols that enable recovery staff systematically to assess when patients are fit for discharge are clearly fundamental to this aim, ensuring that patients are discharged neither too early nor with unnecessary delay.

Background

Locally tailored recovery discharge protocols are recommended by both the RCoA and the Association of Anaesthetists.[1–3] Their importance has also been highlighted in national audits where major adverse events commonly occurred in the immediate postoperative period.[4,5] The RCoA's Guidelines for Provision of Anaesthetic Services and Anaesthesia Clinical Services Accreditation schemes similarly propose explicit standards for recovery discharge protocols.[2,6] Discharge protocols based on the Aldrete score have been shown to reduce length of stay in the post-anaesthetic care unit (PACU);[7] adequate patient comfort is an additional recommended criterion in most recovery discharge protocols.

Best practice and suggested data to collect

Standards	Measures
Discharge protocols should be appropriately tailored where necessary for patient groups who may have specific additional needs in recovery and following discharge (eg maternity theatres, children, frail/elderly and obese patients).	■ Presence of locally tailored discharge protocol(s). ■ Staff awareness of and familiarity with local discharge protocol.
Discharge from the PACU is the responsibility of the anaesthetist. However, clear discharge criteria and protocols permit safe delegation of this responsibility to PACU staff, provided that they are correctly implemented.	■ Percentage of patients assessed for discharge readiness using the protocol. ■ Percentage of patients discharged from recovery to a general ward who are satisfied discharge criteria. ■ Percentage of patients not meeting discharge criteria who received anaesthetic review prior to discharge.
For patients who have not met discharge criteria, an anaesthetist must be available at all times to review such patients promptly.	■ Time taken for the anaesthetist to review patients not meeting discharge criteria after being contacted and reasons for delay.
After medical assessment, patients who do not fulfil the discharge criteria may be transferred to a critical care unit.	■ Percentage of patients not meeting discharge criteria who were discharged to a safe clinical area (eg high dependence or intensive care unit or other critical care facility); patients discharged to general wards despite not fully meeting all discharge criteria, (eg patients who still have mild-moderate pain or nausea). Every PACU should have well-defined criteria for fitness for discharge of patients to the ward or other clinical areas. ■ Measure of overall duration of stay in recovery. ■ Duration of stay in recovery despite the patient fulfilling discharge criteria. ■ Reasons for staying in recovery beyond readiness for discharge.
Standardisation can improve patient care by ensuring information completeness, accuracy and efficiency (the use of checklists should be considered). Staff should comply with the local standardised handover process.	■ Percentage of patients with adequate documentation of patient handover between recovery and ward staff.
When handing over to ward staff, patients should be transferred to the ward accompanied by two members of staff, at least one of whom should be suitably trained.	■ Percentage of patients where two members of staff (of whom at least one was adequately trained) transferred the patient from recovery.

3.7 Recovery discharge protocols

Dr Natalie Hester, Dr Oliver Boney
Barts and the London School of Anaesthesia

Quality improvement methodology

- Ownership of the quality improvement initiative should ideally be shared among staff involved in post-anaesthetic recovery, so a multidisciplinary group is key, including staff from wards or other areas to where patients are discharged.
- Ask patients for their perception of recovery after theatre. What is important to them and are you measuring it?
- You could use a Pareto chart to display the most common reasons for delayed discharge from recovery.
- Recovery processes are ideal for small tests of change, as they may be repeated many times in one day. Can you practice and refine your improvement idea over one shift?

Mapping

ACSA standards: 1.1.1.1, 1.1.1.2, 1.4.4.2, 1.2.1.3, 1.4.1.3, 1.4.4.1, 4.2.2.2

Curriculum competences: PO_BK_13, PO_BK_14, PO_BS_03, PO_BS_05, PO_BS_10, DS_IK_03, DS_IK_02, DS_HS_01, AT_D1_01, AT_D4_01, AT_D4_01, AT_D4_02, AT_D6_01

GPAS 2020: 4.1.8, 4.2.17, 6.5.18, 6.5.19, 6.5.20

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Postoperative care

3.8 Patient satisfaction: a quality improvement project worked example

Dr Adam Revill
Torbay and South Devon NHS Foundation Trust

Why do this quality improvement project?

Mortality and major morbidity are not useful outcome measures for anaesthesia, as they are so rare. Global patient satisfaction asked within the first 24 hours of surgery is also not useful because high satisfaction rates can occur despite concurrent severe adverse effects from anaesthesia. Quality improvement efforts should focus on other measures that patients link to satisfaction.

Examples of these measures from the Perioperative Quality Improvement Programme (PQIP) Bauer questionnaire for my local hospital compared to national figures are shown in Figure 3.8.1.[1]

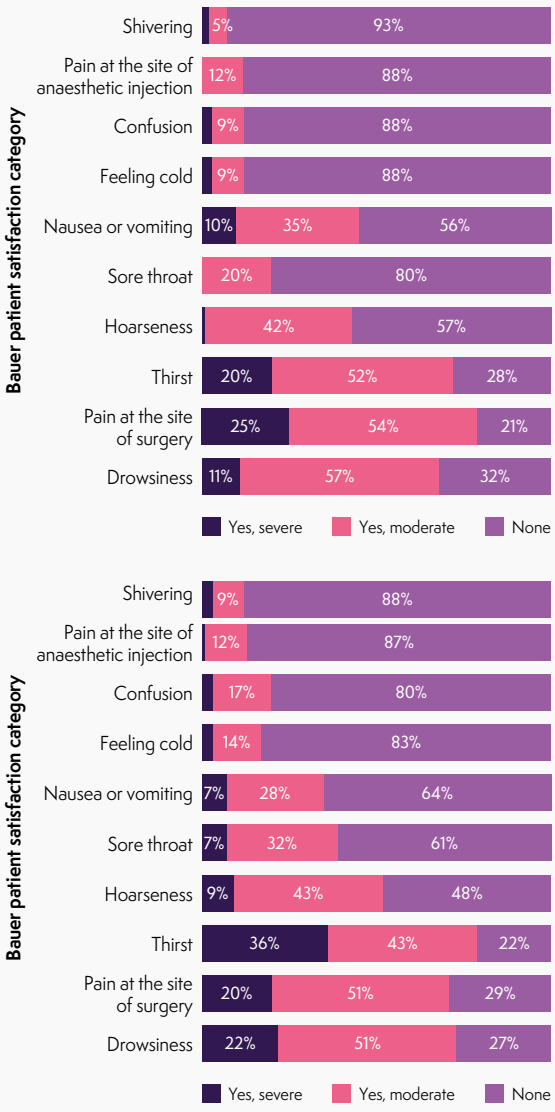

Figure 3.8.1: Patient experience of anaesthetic related discomfort. (top) Bauer patient satisfaction score; (bottom) national data.

Background

Defining patient satisfaction with anaesthesia is difficult. The Sprint National Anaesthesia Project-1 study demonstrated that there was no relationship between satisfaction and patient experience of adverse effects.[2] In other words, a patient could experience severe symptoms but still report being very satisfied with anaesthesia. This is probably due to patient expectation (ie they expect some degree of pain, nausea or thirst after an anaesthetic so when they experience it, it does not impact on their satisfaction).

PQIP postoperative data are helpful to highlight local opportunities for improvement. They can provide a global baseline and a comparator with other hospitals.

Best practice

A suggested aim from our local data would be to reduce to less than 5% the number of patients reporting severe discomfort in the specific category of focus by the time of publication of the next PQIP report.

Suggested data to collect

For our project, we are using pain in recovery from the PQIP database and the day-one Bauer questionnaire. We have found that we needed to set up additional data collection to identify different points at in the patient's journey for interventions. This is because the Bauer questionnaire only reports symptoms experienced at any time in first 24 hours. We have therefore set up additional data collection systems in recovery for:

- severe pain on arrival
- worst pain score in recovery (none, mild, moderate, severe)
- nausea on waking
- highest nausea score in recovery (none, mild, moderate, severe)
- vomiting in recovery.

This will identify whether you need to focus on intraoperative or postoperative interventions. Analysis of your own PQIP data will suggest what additional data you need to collect, which will be dependent on your aim.

Data need to specific and comparable if they are being used on a run chart, so if you have data on different surgical specialties they should be separated. The majority of our PQIP data is from major colorectal surgery.

Our data are presented on monthly run charts showing the percentage of severe responses over time from varying sample sizes. Figures 3.8.2, 3.8.3 and 3.8.4 show data on statistical process control P-charts for severe pain in recovery, severe pain in the first 24 hours and severe nausea in the first 24 hours, respectively. The template for creating these charts is available on the NHSi website.[3] These charts calculate a mean, upper and lower control limits, and automatically apply the rules for special cause variation.

The data are also presented to individual anaesthetists as part of their own quality improvement dashboard. This is for all cases, not just PQIP. We currently do this for our temperature data. We use the department average as a comparator to give the anaesthetist an idea of how they are performing, which can be used to make future decisions about analgesic and antiemetic approaches to colorectal cases.

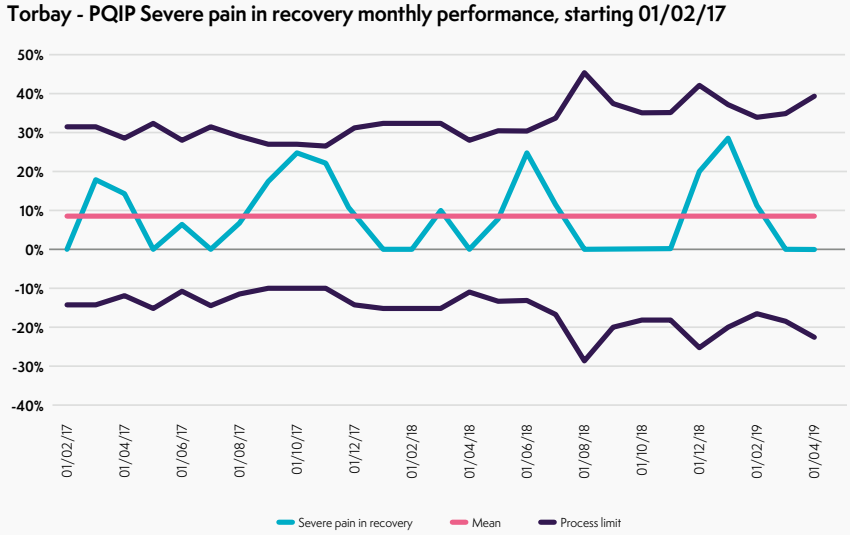

Figure 3.8.2: Severe pain in recovery.

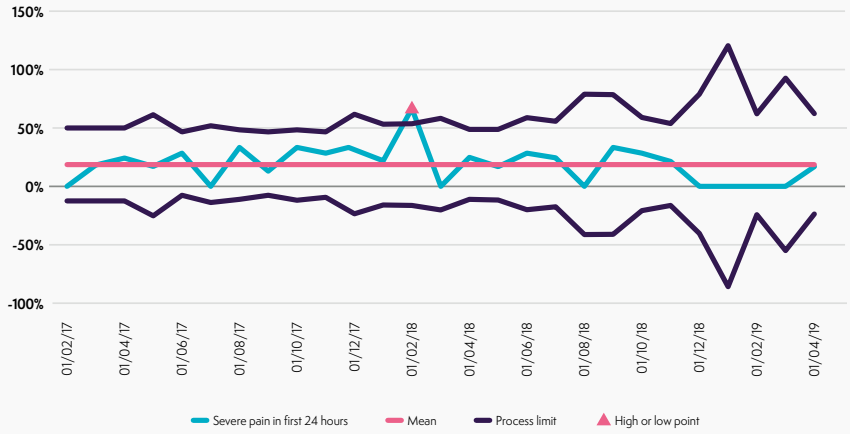

Figure 3.8.3: Severe pain in first 24 hours.

3.8 Patient satisfaction: a quality improvement project worked example

Dr Adam Revill
Torbay and South Devon NHS Foundation Trust

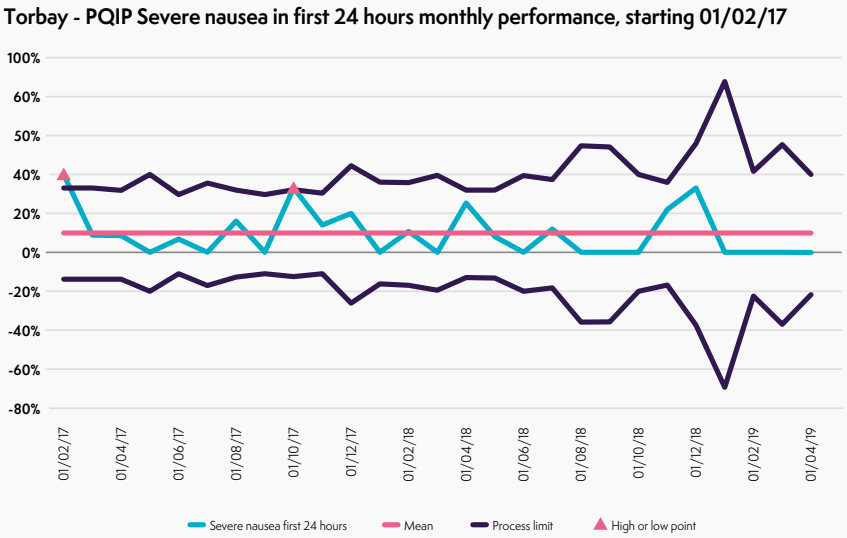

Figure 3.8.4: Severe nausea in first 24 hours.

Quality improvement methodology

Start with a project initiation brief. This might be a local hospital document or you can find them online from websites such as the Institute for Healthcare Improvement. Develop a 'SMART' (specific, measurable, achievable, realistic and, timely) aim.

- Our PQIP team meets every six weeks to review progress on outcome measures. The results are disseminated at the combined surgical and anaesthetic clinical governance meeting every four months.
- Our local data recording on PQIP were found to be inconsistent, so we developed a standardised reporting methodology and disseminated it to the anaesthetic department.
- We have established a guideline of suggested recipes for major colorectal cases to standardise technique and documentation. This was created by finding the best performers in PQIP nationally and combining that information with local expert opinion; this was implemented in March 2019.
- Our main process measures from our data are displayed on statistical process control P-charts, using the charts as the sample size changes from month to month.
- Our process measures include monitoring compliance with the suggested recipes; this is being done in conjunction with the pain team.
- These charts demonstrate natural variation in our process which suggest that we have a stable process. Thus, an intervention that is introduced and is effective will, we hope, demonstrate a positive special cause variation.

Mapping

ACSA standard: 4.2.3.1
Curriculum: PO_BK_02, PO_BK_07, PO_BK_08, PO_BK_14
GPAS 2020: 4.7.1, 4.7.2, 4.7.3, 4.7.4, 4.7.5, 3.7.1, 6.5.31

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3.9 Unplanned critical care admission after elective surgery

Dr Nicholas Owen
GIRFT Fellow

Why do this quality improvement project?

Unplanned admissions to critical care are linked to potentially avoidable postoperative mortality and morbidity. The causes are complex and multifactorial and are likely to be related to a mix of culture and resource in each hospital.

Capturing data effectively on unplanned escalations of care after an elective operation is an essential first step for effective quality improvement to reduce unplanned admissions. Capturing these data at a nationwide administrative dataset level (eg Hospital Episode Statistics, via the critical care minimum dataset) will allow peer to peer comparison of performance as well as shared learning.

Background

Effective elective perioperative care involves patient risk stratification in the preassessment clinic and appropriate allocation of a level 2/3 postoperative bed accordingly. While the evidence is mixed about improved patient outcomes following a planned period of elective level 2/3 care,[1–3] it is well established that an unplanned step-up in care postoperatively is associated with up to a 15-fold increase in mortality compared with those who do not require escalated care (so called 'failure to rescue').[4,5] The most commonly associated comorbidities with failure to rescue are congestive cardiac failure, renal failure and ascites.[6]

Best practice

There is no defined level of acceptable unplanned escalations of care to critical care units after elective surgery. The mean occurrence internationally is around 2.8–3.4% of all patients.[7] Occurrences above 7% may represent a significant deviation worthy of investigation. Improved shared decision making in the preassessment clinic may improve appropriate patient selection. Individualised risk assessment is a key component of shared decision making and should form the basis of decisions on level of care postoperatively; in many hospitals this is done based on predicted 30-day mortality.

Suggested data to collect

1. The following datasets in your hospital, including the nature of admission to level 2/3 (planned vs unplanned and indication for admission). The clinical coding department of your hospital may be able to help you:
   a) Intensive Care National Audit and Research Centre.
   b) Critical care minimum dataset (especially discharge and source locations).
   c) Local departmental level.
2. Baseline audit:
   a) Number of planned level 2/3 admissions following elective surgery (or other enhanced care areas).
   b) Number of unplanned level 2/3 admissions following elective surgery (or other enhanced care areas).
   c) Calculate unplanned admissions as percentage of total.
3. Suggested secondary data collection:
   a) Morbidity and mortality associated with planned and unplanned admissions (eg postoperative morbidity survey, 30-day mortality, reoperation rate).
   b) Presence and operational hours of critical care outreach or equivalent.
   c) Number of nurse-led and anaesthetist-led preassessment clinic sessions.
   d) Perceived hospital level barriers to elective postoperative level 2/3 bed access.
   e) Rate of on-the-day cancellation of elective major surgery because of critical care capacity.

Quality improvement methodology

1. SPC or run charts:

- Unplanned admissions: elective postoperative level 2/3 admissions; as this may be a rare event, this may be a statistical process control t- or g-chart.
- Calls to critical care outreach team.
- Patients seen in preassessment clinic and elective level 2/3 beds planned postoperatively.
- Documentation of predicted risk.

2. Process map the patient journey through the preassessment process to identify the point at which need for higher level care is planned. How is this communicated? What are the admission criteria? What is the booking process? What levels of care are actually available and at which locations? How reliable are the processes, including analysis of when the process fails?
3. Alternative models of care: is the post-anaesthesia care unit somewhere where these beds are sourced and who is responsible for care? Are there models of other enhanced care in patients at intermediate risk who do not need level 2 care but ward care is insufficient?

Mapping

ACSA standards: 1.2.1.2, 1.2.1.3, 1.2.2.1, 4.2.1.1, 4.2.1.2, 4.2.2.1, 4.2.3.1
Curriculum competences: POM_AK_03, POM_AS_05, POM_AS_07, POM_AS_10
CPD matrix codes: 1I01, 1I02, 2A03, 2C07
GPAS 2020: 2.1.1, 2.7.2, 4.1.8, 4.2.17, 4.3.26, 4.3.29, 4.7.5, 6.5.18, 6.5.19, 6.5.20

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