

Monitoring, assessment and observation skills are essential in postoperative care. Nurses can support patients recovering from surgery and identify complications

POSTOPERATIVE NURSING CARE PART 1 OF 2

Principles of monitoring postoperative patients

In this article...

- The principles of postoperative care
- Reasons for vital signs monitoring
- Considerations for transferring postoperative patients

Author Cathy Liddle is senior lecturer, school of professional practice, department of skills and simulation, Birmingham City University.

Abstract Liddle C (2013) Postoperative care 1: principles of monitoring postoperative patients. *Nursing Times*; 109: 22, 24-26.

Postoperative care is provided by peri-operative nurses. They are often experienced in a specialised area of surgery that requires specific care for the intervention performed. This article, the first in a two-part series, identifies the principles of postoperative nursing care. These remain reasonably consistent over the years but nurses must ensure they keep up to date with guidelines, policies and evidence-based practice.

A report by the National Confidential Enquiry into Patient Outcome and Death identified a need for a UK-wide system that would enable health professionals to identify high-risk surgical patients easily and quickly and for their care to be managed appropriately (NCEPOD, 2011). This was accompanied by a number of other recommendations:

- » Elective high-risk patients should be seen at a pre-assessment clinic;
- » Mortality risk should be assessed and explained to the patient; this should be documented on the consent form and in the notes;
- » Trusts should provide sufficient critical care beds or care pathways to provide support during the postoperative period;
- » Surgical teams should calculate the

volume of high-risk patients and help to plan the provision of facilities, reporting to the trust board annually.

Immediate postoperative care

Postoperative patients must be monitored and assessed closely for any deterioration in condition and the relevant postoperative care plan or pathway must be implemented.

The NCEPOD (2011) report found that patients whose condition was deteriorating were not always identified and referred for a higher level of care. Patients should be made as comfortable as possible before postoperative checks are performed.

Postoperative patients are at risk of clinical deterioration, and it is vital that this is minimised. Knowledge and understanding of the key areas of risk and local policies will help reduce potential problems (National Patient Safety Agency, 2007; National Institute for Health and Clinical Excellence, 2007).

Track and trigger or early warning systems are widely used in the UK to identify deteriorating patients. These have been adapted by trusts for adults and children and are based on the patient's pulse and respiratory rate, systolic blood pressure, temperature and level of consciousness. Additional monitoring may include pain assessment, capillary refill time, percentage of oxygen administered, oxygen saturation, central venous pressure, infusion rates and hourly urine output.

The National Early Warning Score (NEWS) was developed by a working party to provide a national standard for assessing, monitoring and tracking acutely and critically ill patients (not for use with children under 16 years or in

5 key points

- 1** It is crucial to follow guidelines and policies on postoperative care
- 2** Using evidence-based tools can make a stressful situation calmer and more controlled
- 3** Proficiency and patient safety should be maintained by updating knowledge and understanding
- 4** All vital signs, observations and assessments performed must be recorded
- 5** Patients should be educated on how to prevent postoperative complications



Automatic monitoring: many trusts insist vital signs are done manually as well

pregnancy); the intention was that trusts would use it to replace their locally adapted early warning systems (Royal College of Physicians, 2012). Like other early warning systems, NEWS has six physiological parameters:

- » Respiratory rate;
- » Oxygen saturation;
- » Temperature;
- » Systolic blood pressure;
- » Pulse rate;
- » Level of consciousness (this will be impaired in patients who have had recent sedation or are receiving opioid analgesia, which should be taken into consideration in assessment).

The system also includes a weighting score of two, which is added if the patient is receiving supplemental oxygen via a mask or nasal cannulas.

When assessing the postoperative patient using NEWS, it is vital that the patient is observed for signs of haemorrhage, shock, sepsis and the effects of analgesia and anaesthetic. Patients receiving intravenous opiates are at risk of their vital signs and consciousness levels being compromised if the rate of the infusion is too high. It is therefore imperative that the patient's pain control is managed well, initially by the anaesthetist and then the ward staff and pain team or anaesthetist, to ensure that the patient has adequate analgesia but is alert enough to be able to communicate and cooperate with clinical staff in the postoperative period.

Many trusts have yet to implement NEWS, although it is beginning to be taught in pre-registration nursing programmes. Student nurses frequently perform postoperative observations under the supervision of a nurse; it is reassuring that they receive some insight and education as recommended by NCEPOD (2011).

Vital signs

Vital signs should be performed in accordance with local policies or guidelines and compared with the baseline observations taken before surgery, during surgery and in the recovery area.

Nurses should also be aware of the parameters for these observations and what is normal for the patient under observation. When assessing patients' recovery from anaesthesia and surgery, these observations should not be considered in isolation; the nurse should look at and feel the patient. This also applies to children and should include observation of other signs and symptoms, for example abdominal tenderness or poor urine output, which could indicate deterioration (Royal College

BOX 1. SBAR TOOL

Situation

- Identify where you are calling from
- Identify the patient and reason for report
- Identify what you are concerned about

Background

- Significant medical history
- Information from charts, notes

Assessment

- Vital signs
- Concerns

Recommendation

- Explain what you need
- Clarify expectations

of Nursing, 2011). The RCN (2011) provides guidance on vital signs performed post-operatively on children. Many trusts now insist that vital signs are performed manually to provide more accurate recording and assessment.

All vital signs and assessments should be recorded clearly in accordance with guidelines for record keeping (Nursing and Midwifery Council, 2009). Handheld personal digital assistants (PDAs) are used at some trusts to store track and trigger data and calculate early warning scores, which can be accessed by the clinical and outreach teams.

When a patient's condition is identified as deteriorating, this information can be passed verbally to appropriate health professionals using the Situation, Background, Assessment and Recommendation (SBAR) tool advocated by the NHS Institute for Innovation and Improvement (2008) (Box 1).

Airway and respirations

Respiratory rate and function is often the first vital sign to be affected if there is a change in cardiac or neurological state. It is therefore imperative that this observation is performed accurately; however, studies show it is often omitted or poorly assessed (NPSA, 2007; NCEPOD, 2005).

Nurses should observe and record the following:

- » Airway;
- » Respiratory rate (regular and effortless), rhythm and depth (chest movements symmetrical);
- » Respiratory depression: indicated by hypoventilation or bradypnoea, and whether opiate-induced or due to anaesthetic gases.

Oxygen therapy

Oxygen is administered to enable the anaesthetic gases to be transported out of the body, and is prescribed when patients have an epidural, patient-controlled analgesia or morphine infusion. Nurses should ensure and record the following:

- » Oxygen therapy is prescribed;
- » Oxygen is administered at correct rate;
- » Continuous oxygen therapy is humidified to prevent mucous membranes from drying out;
- » The skin above the ears is protected from elastic on the mask.

Pulse oximetry

Oxygen saturation should be above 95% on air, unless the patient has lung disease, and maintained above 95% if oxygen therapy is prescribed to prevent hypoxia or hypoxaemia. An abnormal recording may be due to shivering, peripheral vasoconstriction or dried blood on the finger.

Nurses should ensure that:

- » The finger probe is clean;
- » The position of the probe is changed regularly to prevent fingers becoming sore.

Heart rate, blood pressure and capillary refill time

The following should be checked and recorded:

- » Rate, rhythm and volume of pulse;
- » Blood pressure;
- » Capillary refill time to assess circulatory status, along with the colour and temperature of limbs, also identifying reduced peripheral perfusion.

Particular attention should be paid to the systolic blood pressure as a lowered systolic reading and tachycardia may indicate haemorrhage and/or shock, although initially the blood pressure may not drop and will remain within normal limits as the body compensates. Tachycardia may also indicate that the patient is in pain, has a fluid overload or is anxious. Hypertension can be due to the anaesthetic or inadequate pain control.

Body temperature

Children, older adults and patients who have been in theatre for a long period are at risk of hypothermia. Shivering can be due to anaesthesia or a high temperature indicative of an infection, while a drop in temperature might indicate a bacterial infection or sepsis.

Patients' temperature should be monitored closely and action taken to return it to within normal parameters.

- » Use a Bair Hugger (forced-air blanket)

and blankets to warm the patient if their temperature is too low;

- » Choose an appropriate method to cool the patient if their temperature is too high (antipyretics/fanning/tepid sponging).

Level of consciousness

Postoperative patients should respond to verbal stimulation, be able to answer questions and be aware of their surroundings before being transferred to the ward and throughout the postoperative period.

A change in the level of consciousness can be a sign that the patient is in shock. The AVPU scale (Box 2) is appropriate for assessing consciousness in adults, children and young people unless they have had neurosurgery (RCN, 2011).

Fluid balance

The NCEPOD (2011) found, in 30% of patient data reviewed, there was insufficient recording of postoperative fluid balance. Nurses should observe/undertake and record on the fluid balance chart the following:

- » IV fluids (colloids and crystalloids used to replace fluid loss postoperatively) and infusions;
- » Oral intake;
- » Urine output: catheter urine measurements should not be less than 0.5ml/kg/hour. Oliguria can be a sign of hypovolaemia and should be reported to medical staff immediately. Check that the catheter is not kinked or that the patient is not lying on the tubing if urine output is reduced;
- » Colour of stoma (where appropriate) and whether there is any bleeding;
- » Nausea and vomiting: if necessary, administration of antiemetics should be checked and vomit bowls and tissues should be within easy reach of the patient;
- » Oral care;
- » Nasogastric tube drainage (aspirate if patient feels nauseous unless otherwise indicated);
- » Colour and amount of wound drainage: large amounts of fresh blood could be an indication of haemorrhage; if there is no wound drainage, it is advisable to check that the drain has not fallen out.

Intravenous infusions

The RCN (2010) and Health Protection Scotland (2012) recommend that peripheral venous catheters (PVC) are checked daily as a minimum, and consideration given to removing any PVC that has been in situ longer than 72 hours (Health

BOX 2. AVPU SCALE

- Alert
- Responds to Voice
- Responds to Pain
- Unconscious

Protection Scotland, 2012) or 72-96 hours (Department of Health, 2011).

A phlebitis scale can be used to help assess the PVC site; the Visual Infusion Phlebitis Scale (Jackson, 1998) is frequently used and recommended by the RCN (2010). These national guidelines should be used as resources in caring for PVCs. The following should be checked and recorded:

- » The PVC site when changing IV fluids, before administering IV medication;
- » Signs of phlebitis (redness, heat and swelling).

Conclusion

The postoperative healthcare team is under constant pressure to discharge patients quickly. This can lead to vital signs being missed and result in a delay in recovery.

Patients can be discharged quickly only when they do not experience any postoperative complications, many of which can be avoided or identified with correct and thorough monitoring of signs and symptoms.

All health professionals must continually update their theoretical knowledge and clinical skills; those working in postoperative care can do this by relying less on electronic equipment and developing their ability to combine the use of assessment tools with good observational skills; feeling, listening for abnormal sounds and closely observing their patients.

Part 2 of this series, to be published in next week's issue, discusses postoperative pain control and patients' care up to discharge from hospital. **NT**

References

- Department of Health (2011) *High Impact Intervention No 2: Peripheral Intravenous Cannula Care Bundle*. London: DH. tinyurl.com/DH-cannula-bundle
- Health Protection Scotland (2012) *Targeted Literature Review: What are the Key Infection Prevention and Control Recommendations to Inform a Peripheral Vascular Catheter (PVC) Maintenance Care Quality Improvement tool?* Glasgow: Health Protection Scotland. tinyurl.com/HPS-PVC
- Jackson A (1998) Infection control: a battle in vein infusion phlebitis. *Nursing Times*; 94: 4, 68-71.
- National Confidential Enquiry into Patient Outcome and Death (2011) *Knowing the Risk. A Review of the Peri-Operative Care of Surgical Patients*. tinyurl.com/NCEPOD-knowing-risks
- National Confidential Enquiry into Patient

Outcome and Death (2005) *An Acute Problem?* London: NCEPOD. www.ncepod.org.uk/2005aap.htm

National Institute for Health and Clinical Excellence (2007) *Acutely Ill Patients in Hospital: Recognition and Response to Acute Illness in Adults in Hospital*. www.nice.org.uk/CG50

National Patient Safety Agency (2007) *Safer Caring for the Acutely Ill Patient: Learning from Serious Incident. 5th Report from the Patient Safety Observatory*. London: NPSA. tinyurl.com/NPSA-serious-incidents

NHS Institute for Innovation and Improvement (2008) *Situation, Background, Assessment, Recommendation*. London: NHS III. tinyurl.com/NHSIII-SBAR

Nursing and Midwifery Council (2009) *Record Keeping: Guidance for Nurses and Midwives*. London: NMC. tinyurl.com/NMC-record-keeping-guidance

Royal College of Nursing (2011) *Standards for Assessing, Measuring and Monitoring Vital Signs in Infants, Children and Young People*. London: RCN. tinyurl.com/RCN-vital-signs

Royal College of Nursing (2010) *Standards for Infusion Therapy*. London: RCN. tinyurl.com/RCN-infusion-standards

Royal College of Physicians (2012) *National Early Warning Score (NEWS): Standardising the Assessment of Acute-Illness Severity in the NHS. Report of a Working Party*. London: RCP. tinyurl.com/RCP-early-warning

IN THIS SERIES

- Postoperative care 1: principles of monitoring postoperative patients, 5 June 2013
- Postoperative care 2: how to reduce the risk of deterioration after surgery, 12 June 2013

Unlimited access to learning units

Nursing Times subscribers can now enjoy unlimited FREE access to learning units, each worth £10+VAT!

- Over 30 units to choose from and new ones added monthly
- Each provides at least 2 hours' CPD to count towards your PREP requirement
- Units focused on case-based scenarios to help you transfer theory into clinical practice

To subscribe visit: subscription.co.uk/nurstimen/vcw

Subscribers - activate your unlimited access: nursingtimes.net/activate-now

CPD