

# British Anaesthetic and Recovery Nurses Association [BARNA]

## Standards of Practice

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*Standards are authoritative statements by which the nursing profession describes the responsibilities for which its practitioners are accountable. Therefore, standards reflect the values and priorities of the profession and provide direction for professional nursing practice and a framework for evaluation of this practice.*

*BARNA Standards of Practice have been devised to represent an achievable level of good practice in the anaesthetic and recovery domains. They are founded on ethical principles which underpin any interpretation subject to local variation. These standards should be used in conjunction with local policies/protocols/guidelines and used as a reference when drafting future local policies.*

*BARNA thanks ASPAN and IFNA for their kind permission to use their documents on Standards as templates for this document*

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## 1. BARNA VISION AND MISSION STATEMENTS

### Vision Statement

Excellence in care through education, audit and research

### Mission Statement

**To support all professionals working in anaesthetic and recovery nursing to achieve excellent standards of care in patients undergoing anaesthesia in any setting**

### Our values

**BARNA** commits to:

- Value everyone who contributes to our work
- Expect and encourage the highest possible standards
- Foster communication and collaboration among professional partners
- Raise awareness of the clinical speciality
- Maximise opportunities for professional development

How we make a difference:

- Through our journal, conference, study days and educational projects we help our members develop their clinical knowledge and skills in anaesthetic and recovery nursing
- We actively encourage members to become leaders in anaesthetic and recovery nursing care
- We seek to set and audit standards of care in anaesthesia and post anaesthesia care
- We promote clinical research in this specialty to bring about improvements in care
- Along with other professional organisations we campaign to represent the interests of all patients undergoing anaesthesia and raise awareness of this speciality
- We offer opportunities for communication in order to promote networking and fellowship between all members
- We work to establish a global fellowship of anaesthetic and recovery practitioners through our association with :-
  - ASPAN [American Society of PeriAnesthesia Nurses]
  - IARNA [Irish Anaesthetic and Recovery Nurses Association]
  - IFNA [International Federation of Nurse Anaesthetists]
  - ICPAN [International Congress of Perianaesthesia Nurses]

## **2. INTRODUCTION**

BARNA standards have been designed for recommended use in anaesthetic and recovery practice by members of the association and in the units where they work. They advance BARNA's core vision: to support all professionals working in anaesthesia and recovery nursing to achieve excellent standards of care in patients undergoing anaesthesia in any setting.

These standards fulfil a need for national criteria on which to base practice [within all areas of nursing] underlined by the clinical governance initiative. They are based on the NMC The Code: Standards of conduct, performance and ethics for nurses and midwives [2008] and Scope of Professional Practice, which govern how nurses act within their speciality.

This standard document comprises 5 main sections:

**Ethics of Practice**

**Scope of Practice**

**Educational Standards for Practice**

**Standards of Practice**

**Monitoring and Assessment Standards**

The standard statements drawn up within these sections are broad based in design. They represent the basic standard to ensure the safety and comfort of any patient undergoing anaesthesia/surgery and subsequent recovery within any setting. All patient categories: paediatrics / elderly / pregnant / multiple medical pathologies are included within these broad statements.

The standards have been designated as 'nursing' standards but may be applied to any suitable trained practitioners working in the peri-anaesthetic field.

The standards have also been ratified by the following organisations:

American Society of Perianesthesia Nurses ASPAN

International Federation of Nurse Anesthetists IFNA

Irish Anaesthetic and Recovery Nurses Association IARNA

Royal College of Anaesthetists RCOA

Association of Anaesthetists of Great Britain and Ireland AAGBI

### 3. GLOSSARY OF TERMS

The following definitions may prove helpful in clarifying how BARNA interprets and uses these terms which are often confused in practice:

#### **STANDARD:**

‘A level of excellence or quality’. ‘An accepted or approved example of something against which others are judged or measured’. ‘A principle or propriety, honesty, and integrity’ [dictionary definitions].

BARNA has incorporated all of the above within its understanding and use of this term. Thus the standards laid down fulfil the following characteristics:

- Define a level of performance of a quality adequate to maintain level of patient safety and comfort during the delivery of anaesthesia and subsequent recovery
- Incorporate ethical principles – honesty – integrity
- Are broken down into measurable units : criteria or indicators
- Maintain reliability and validity
- Achievable
- Relevant, owned and upheld by peer group

#### **GUIDELINE:**

‘A principle put forward to set standards or determine a course of action, ‘To advise or influence’, ‘To lead the way’, To direct or control’ [dictionary definitions]

BARNA interprets the use of guidelines as essential in further defining elements of good practice that contribute to maintaining any given broad based standard.

Guidelines therefore:

- Have an implicit advisory [rather than prescriptive element]. They are not therefore prescriptive statements of quality of care as are standards but may be used in a more flexible manner to reflect local circumstances
- Are used to define a more narrow spectrum of practice [for example, many guidelines on more specific practice issues may make up one standard]
- May advise/direct practice according to differing local circumstances [which may be concerned with staffing numbers, equipment available etc]

- Guidelines are not included within the text of BARNA Standards. However, the loose leaf file presentation of this document gives the individual [or unit] using this set of standards the opportunity to include local guidelines wherever possible.

**POLICY:**

‘A document containing a plan of action adopted or pursued by a specific group’  
A policy is prescriptive and should be followed until otherwise advised.

**PROTOCOL:**

‘The formal etiquette and code of behaviour, precedence, and procedure for state and diplomatic ceremonies’, a memorandum on record of an agreement [international relations], an annexe appended to a treaty to deal with subsidiary matters or to render the way more lucid’ [dictionary definitions]

BARNA interprets the use of this term as highly prescriptive and rigid in character. A protocol may be drawn up with regard to any element of practice where there will be no deviation in the performance of that practice.

**INDICATOR:**

‘Breakdown of standard statement into measurable units for audit’. The indicator may be absolute, for example: oxygen saturation must be measured on all patients who have undergone general anaesthesia. The indicator may not always be integral to care: for example not all day surgery recovery units routinely monitor the ECG of all patients. In this case the indicator may be: ‘ECG monitoring will be performed if the patient demonstrates circulatory instability’.

**COMPETENCY:**

‘The capacity to perform job functions by an individual who has the knowledge, skills, behaviours and personal characteristics necessary to function well in a given situation’.

**AUDIT:**

‘An audit is a check on whether an appropriate quality of practice has been achieved’.  
Before an audit can be carried out three conditions must be met:

- The necessary research should have been carried out to clarify the facts and issues relevant to the area of practice
- Agreement should have been reached about which indicators show reliably how good a method of practice is

- A decision should be made about what levels these indicators should reach to show that best practice has been achieved

**BEST PRACTICE:**

Optimal health-care 'best practice' – is the result of striking a reasoned balance between quality, quantity and cost. Relentless pursuit of any one is at the expense of the other two. It is therefore a matter of local judgement as to what emphasis should be placed on these three dimensions to achieve the desired result.

#### 4. ETHICS OF PRACTICE

*Rationale: General anaesthesia renders the patient unconscious from the moment of induction of anaesthesia, until the return of full consciousness. The patient is unable to serve as his/her own advocate, make decision regarding his/her wellbeing, protect his/her dignity and maintain respect for his/her confidentiality. The nurse plays a vital role in protecting and supporting the patient during this vulnerable period.*

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The Code: Standards of conduct, performance and ethics for nurses and midwives laid down by the Nursing and Midwifery Council [2008] is the foundation for ethical practice in all areas of nursing and is particularly relevant to the anaesthetic and recovery areas.

##### **The Code: Standards of conduct, performance and ethics for nurses and midwives [2008]:**

The people in your care must be able to trust you with their health and wellbeing

To justify that trust, you must:

- Make the care of people your first concern, treating them as individuals and respecting their dignity
- Work with others to protect and promote the health and wellbeing of those in your care, their families and carers, and the wider community
- Provide a high standard of practice and care at all times
- Be open and honest, act with integrity and uphold the reputation of your profession

As a professional, you are personally accountable for actions and omissions in your practice, and must always be able to justify your decisions

You must always act lawfully, whether those laws relate to your professional practice or personal life

Failure to comply with this code may bring your fitness to practise into question and endanger your registration

The code should be considered together with the Nursing and Midwifery Council's [NMC] rules, standards and guidance available from [www.nmc-uk.org](http://www.nmc-uk.org)

The nurse working in anaesthetics and recovery has a duty of care to the patient that is clearly defined in the NMC: The Code. BARNA has developed its code of ethical practice from this document.

**BARNA Anaesthetic Recovery and Anaesthetic nurses strive to make the care of people our first concern, treating them as individuals and respecting their dignity**

**Treat people as individuals**

*Rationale: Normal mechanisms for the protection of patient autonomy to act as an individual are disturbed during the process of anaesthesia*

During this period the nurse:

- Provide's quality care for the patient regardless of age, sex, race, religion, disability, social or economic status
- Maintains patient's dignity [including modesty and privacy]
- Communicates information to the patient regarding their progress if and when appropriate
- Respects any advance directive issued by the patient
- Respects the patient's right to participate in care
- Includes the patients family or significant others in the plan of care as desired by patient
- Advocates for patient welfare

**Respect people's confidentiality**

*Rationale: The patient undergoing anaesthesia trusts the nurse with confidential information regarding his physical, social mental, economic status*

During this period the nurse:

- Maintains patient confidentiality regarding all aspects of the patients status
- Safeguards that only those entitled to share knowledge of patient progress are given information
- Safeguards the highest levels of confidentiality of written and electronic patient information
- Disclose information if you believe someone may be at risk of harm

**Consent is obtained before giving any treatment of care:**

*Rationale: The right to perform specific treatments within the perioperative spectrum is implicit in the patient's formal consent to surgery pre-operatively. When the patient is conscious – the nurse must ensure that the patient's consent is implicit in all aspects of care given*



During this period the nurse:

- Confirms that informed consent for surgery has been obtained
  - If the patient is unable to consent for surgery- collaborates with the medical team to ensure that other means of consent is obtained as defined by the legislations regarding mental capacity
  - Explains procedure to the awake, orientated patient where necessary and gains their consent
  - Respects and supports the patient's right to accept or decline treatment
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**BARNA Anaesthetic and Recovery Nurses work with others to protect and promote the health and wellbeing of those in our care, their families and carers**

**Share information with your colleagues**

*Rationale: the peri-anaesthesia environment is a dynamic area where patient acuity changes rapidly through the various stages of anaesthesia and surgery. Excellent communication is needed to ensure patient safety during this period*

During this period the nurse:

- Informs colleagues of change in patient's clinical status
- Informs colleagues of any change in operational factor which may impact on patient

**Work effectively as a team**

*Rationale: Safe and effective patient care is dependent on excellent team work [including physicians, anaesthetists, surgeons, operating department practitioners, ward based nursing staff, laboratory technicians, health care assistants, clerical staff, receptionist, cleaning staff]*

- Works within this team to implement channels of communication to assess, plan and deliver safe patient care promptly and efficiently
- Instigates immediate action in any clinical emergency with the help of the team
- Respects all members of the team for their significant role and knowledge
- Consults and takes advice from colleagues where appropriate
- Shares experience and skills for the benefit of your colleagues

### **Delegate effectively**

*Rationale: The perioperative team comprises many grades of expertise including health care practitioners who are not registered to practice autonomously.*

- Establishes that anyone you delegate to is able to carry out your instructions
- Confirm that the outcome of any delegated task meets required standards
- Ensures that everyone you are responsible for is supervised and supported

### **Manage risk**

*Rationale: The perioperative environment is potentially hazardous and the procedures undertaken during anaesthesia may constitute risks for the patient*

During this period the nurse:

- Evaluates patient environment for safety and addresses deficiencies
  - Maintains and updates risk policies and ensures that these are followed
  - Ensures that all patients are cared for by a professional nurse trained and competent to deliver care
  - Protects/removes patients from actual harm
  - Acts without delay if you believe that you or a colleague may be putting someone at risk
  - Follows unit policy risk assessment policies
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## **BARNA Anaesthetic and Recovery Nurses provide a high standard of practice and care at all times**

### **Use the best available evidence**

*Rationale: Perianaesthesia nursing is developing its unique body of knowledge and evidence on which to base practice*

- Delivers care based on the best available evidence or best practice
- Participates in research and audit trials to develop the body of Perianaesthesia evidence

### **Keep skills and knowledge up to date**

*Rationale: Both recovery and anaesthetic nurses must continuously update their knowledge and skills as new techniques and drugs are introduced into perianaesthetic practice. Recovery nurses acting autonomously in the absence of the anaesthetist must ensure that they work within their established and recognised scope of practice.*

- Ensures that knowledge and skills for safe practice are assured when you work without supervision
- Identifies personal competences and participates in regular institutional performance review to maintain and develop practice
- Recognises and works within the limits of your competence
- Keeps knowledge and skills updated throughout your working life
- Accepts accountability and responsibility for anaesthetic and recovery practice within their scope of practice
- Recognises own professional boundaries and practice within them

### **Keep clear and accurate records**

*Rationale: the Perianaesthesia environment is a high risk area for the patient. Accurate records, whether paper or electronic are essential to ensure that information is available to all members of the team looking after the patient to ensure his safety*

- Maintain clear and accurate records of assessment : treatment and patient progress
- Complete records as soon as possible after any event or intervention
- Do not tamper with original records in any way
- Ensure that all entries in a patient's paper records are clearly and legibly signed, dated and timed
- Ensure that any entries made in electronic records are clearly attributable to you

- Ensure that all records are kept securely
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**BARNA Anaesthetic and Recovery Nurses are open and honest, act with integrity and uphold the reputation of their profession**

**Act with integrity**

*Rationale: the patient is dependent on the complete integrity of the nurse during this vulnerable period where he: she is unable to act autonomously*

- Conforms to the UK law
- Informs the NMC and employer if you have been cautioned, charged or found guilty of a criminal offence
- Informs employers if your fitness to practice is called into question
- Demonstrates a personal commitment to equality and diversity
- Displays integrity in all communication with colleagues, patients and significant others

**Deal with problems**

*Rationale: Problems arise quickly in the dynamic Peri anaesthesia area, and must be dealt with promptly*

- Gives constructive and honest response to any patient who complains about the care they receive
- Not allow someone's' complaint to prejudice the care you provide for them
- Acts immediately to put matters right if someone has suffered harm in your care
- Cooperates with internal and external investigations

**Be impartial**

*Rationale: Anaesthetic and recovery nurses have access to privileged information and commercial opportunities*

- Does not abuse your privileged position for your own ends

- Ensures that your professional judgement is not influenced by any commercial considerations

**Uphold the reputation of your profession**

*Rationale: Anaesthetic and recovery nurses have a duty to uphold the reputation of their profession and speciality within that profession*

- Does not use your professional status to promote causes not related to health
- Cooperate with the media only when you can protect the confidential information and dignity of those in your care
- Upholds the reputation of nursing at all times

## 5. SCOPE OF CLINICAL PRACTICE

The nurse delivering care in the anaesthetic and recovery areas is a member of the multi-disciplinary team responsible for the safety and quality care of all patients undergoing treatment necessitating anaesthetic/sedation/analgesia in the following clinical settings:

- **Main theatre complex**
- **Day care surgery**
- **Special procedures areas [cardio catheter laboratory, ECT, endoscopy, radiology, oncology]**
- **Labour and delivery suites**
- **Pain management services**
- **Dental clinics**
- **Psychiatric services**

The application of the systematic nursing process of monitoring, assessment, intervention and evaluation is key to effective nursing care within these specialised areas where rapid physiological changes may necessitate immediate and appropriate action in support of the anaesthetist. In order to perform effectively the nurse must perform within the limits of his/her scope of practice be it novice, experienced or advanced level. Her theoretical clinical knowledge, experience and practice expertise will define the nurses' scope of practice.

**The principles upheld in the The Code: Standards of conduct, performance and ethics for nurses and midwives [NMC 2008]:**

**'Provide a high standard of practice and care at all times'**

**Keep your skills and knowledge up to date**

38 You must have the knowledge and skills for safe and effective practice when working without direct supervision

39 You must recognise and work within the limits of your competence

40 You must keep your knowledge and skills up to date throughout your working life

41 You must take part in appropriate learning and practice activities that maintain and develop our competence and performance

The licence for the nurse working in the anaesthetic and recovery areas to undertake any clinical role for which he/she is properly trained and for which he/she is professionally accountable is fundamental to

the NMC's statement and is upheld in the BARNA Scope of practice. **The absolute necessity to provide formal training, supervised practice and ongoing performance review for any clinical procedures undertaken by the individual nurse within her scope of practice is fundamental to the achievement of safe and effective practice within these areas.** The educational requirements for the performance of clinical practice in the anaesthetic and recovery areas are outlined in BARNA Standards of Education

The scope of anaesthetic and recovery nurse practice may be regulated and procedures dictated by the individual hospital/facility.

The Scope of Clinical Practice may include:

- Preassessment of patient [with family/significant other] prior to date of surgery
- Validation of preassessment information on day of surgery
- Checking the anaesthetic machine and equipment
- Preparation of anaesthetic agents prior to reception of patient
- Assistance in the delivery of anaesthesia/sedation/analgesia
- Ongoing monitoring assessment, intervention and evaluation of care in the recovery area from reception to discharge

The Scope of Clinical Skills may include:

- Assistance in the delivery of anaesthetic agents [gas/drugs] during surgical intervention
- Assistance in the delivery of fluids [blood and colloids] during anaesthesia and in the recovery area
- Assistance in intubation in the anaesthetic area
- Monitoring/delivery of ventilation
- Setting up lines [central, peripheral]
- Assistance in delivery of local anaesthesia [regional etc]
- Extubation in recovery area
- Removal of LMA in recovery area
- Delivery of basic and advanced life support in theatre, recovery and hospital wards/units
- Delivery of IV drug therapy
- Delivery of fluid resuscitation therapy in recovery

Practitioners in anaesthetic and recovery units now include:

- Non-physician providers of anaesthesia
- Non physician consultant practitioners in PACU

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- Health Care Assistants in PACU
- Associate Practitioners in PACU

BARNA Scope of Clinical Practice is founded on the principles of evidence based knowledge derived from research. While the Scope highlights practical skills it acknowledges the important of good management principles in the delivery of safe effective care



## 6. STANDARDS IN EDUCATION AND TRAINING

The competencies that define the role of the anaesthetic and recovery nurse are outlined here. Competence is defined to include the knowledge, judgement, skills and attitudes appropriate to the performance of safe and consistent standards of practice within the anaesthetic and recovery domain. Competencies may be gained in a variety of different ways including recognised training courses, formal/informal teaching within the unit, individual performance review and mentorship, in house mandatory training sessions, study days, conferences, participation in unit audit and research, membership of professional organisations.

### Definition/role of an anaesthetic nurse

The anaesthetic nurse/practitioner works in collaboration with the anaesthetist in the preparation and safe delivery of general, regional or local anaesthesia. The nurse protects the patient and provides emotional and psychological support to alleviate apprehension and anxiety during this critical period.

### Competencies

The nurse shall demonstrate competence based on applied knowledge and ongoing practice of skills to perform the role of the anaesthetic nurse:

The anaesthetic nurse shall undergo a formal training and demonstrate the application of knowledge based on scientific and nursing principles. This knowledge shall include the following:

- Principles of anaesthesia
- Applied clinical pharmacology relating to anaesthesia/surgical intervention
- Applied anatomy and physiology relating to anaesthesia/surgical intervention [airway, respiratory, cardio-vascular, central nervous, thermoregulatory systems, pain and nausea and vomiting]
- Knowledge of surgical and anaesthetic procedures to be performed
- Perioperative nursing practice standards
- Principles of aseptic technique
- Equipment required for anaesthetic procedures
- Infection control principles
- Care, cleaning and maintenance of anaesthetic equipment
- Resource management
- Medico-legal requirements
- Waste management

- Age/medical condition specific competencies

Whether the practitioner is a novice through to expert level of competence clinical skills will be acquired by ongoing demonstration, supervised practice, and reflection under the tutelage of the anaesthetists and nurse educators within this field

### **Formal training**

The practitioner working in anaesthesia must be in training or have completed a recognised training course in order to practice in this area. Current training courses include: Diploma of Higher Education in Operating Department Practice / university training course in anaesthetics recognised by the NMC

### **Definition/role of a recovery nurse**

The recovery nurse assumes responsibility for the care and clinical stabilisation of the patient in the immediate post-anaesthetic period until they are fit for discharge to the ward. The role demands skills assessment of their changing physical and psychological condition together with rapid appropriate intervention to ensure their safety and comfort during this dynamic period. The nurse acts as patient advocate during this time when the patient is unable to assume responsibility for themselves.

### **Competencies**

The recovery nurse shall undergo formal training and demonstrate the application of knowledge based on scientific and nursing principles:

- Anaesthetic technique and pharmacology – with special emphasis on their post operative sequelae
- Knowledge of surgical procedures performed – with special emphasis on their post operative sequelae
- Applied anatomy and physiology – airway assessment and management skills
- Applied anatomy and physiology – respiratory function assessment and management
- Applied anatomy and physiology – cardiovascular performance and management
- Applied anatomy and physiology – central nervous system function and management
- Applied anatomy and physiology – thermoregulatory system and management
- Applied anatomy and physiology – pain control regulation and management
- Applied anatomy and physiology - management of nausea and vomiting
- Cardiopulmonary resuscitation techniques
- Management of post anaesthetic/surgical life threatening complications
- Patient monitoring, assessment throughout post operative recovery

- Planning and prioritising care throughout post operative recovery
- Knowledge of practical skills used throughout post operative recovery
- Knowledge and skill in use of equipment used in the recovery area
- Infection control principles related to recovery practice
- Medico-legal requirements
- Knowledge of standards/protocols used within recovery
- Resource management
- Waste management
- Documentation
- Age/medical condition specific competencies

The nurse working in PACU should have an appropriate orientation and development programme ongoing with a view to undertaking a formal course in a higher education institution recognised by the NMC

#### **Ongoing formal education commitment**

All nurses working within the anaesthetic and recovery areas should receive regular updates in the following skills:

- Mandatory training and update on ILS/manual handling/fire training/security/health and safety
- ALS/ILS and PALS for advanced practitioners
- Training for pre-assessment skills for those working in day surgery
- Anaesthetic and recovery nursing courses
- Management courses for experienced practitioners
- In house provision made for male catheterisation, IV drug administration, cannulation, venepuncture
- In house unit orientation programme for all newcomers

#### **Ongoing informal education/mentorship commitment**

- Named facilitator appointed to manage professional development in house
- Measures in place for regular IPR reviews to review performance
- Clinical mentorship – one to one supervision and instruction during practice
- Informal tutorials – one to one/group
- Preceptorship for newly qualified staff
- Perioperative groups meetings – with all members of multi-disciplinary team

- Membership of professional organisation such as BARNA and have access to journals, conference, education and standards facilities
- Audit programmes
- Journal club to encourage research

## 7. STANDARDS OF PRACTICE: 12 STATEMENTS

### Standard 1: Patient rights

#### **Nursing care in the Anaesthetic and Recovery areas is founded on ethical principles respecting the individuality of each patient**

*RATIONALE: the patient during the peri-anaesthetic period is vulnerable and highly dependent on the care of others. It is particularly important that his/her right to individual respect and dignity and choice must be observed at all times taking into consideration background, culture, personality and nature of perioperative experience.*

#### INDICATORS

Written policies and procedures are congruent with NMC the Code, BARNA Ethics of Practice and appropriate legislation.

Written policies exist for identifying and resolving ethical dilemmas.

Nursing practice reflects an understanding of moral, ethical and legal issues as evidenced by NMC The Code, BARNA Ethics of Practice and other appropriate legislation.

\*Please refer to BARNA Ethics of Practice

### Standard 2: Environment of Care

#### **Nursing care in the Anaesthetic and Recovery areas is provided in a safe and planned environment**

*RATIONALE: the clinical condition of the patient within the anaesthetic and recovery areas is subject to dynamic change. Facilities for monitoring, assessment and rapid intervention must be of the highest quality and should meet standards published by the AAGBI and adopted by RCA*

#### INDICATORS – ANAESTHETIC ROOM

The anaesthetic room will be an enclosed area which allows for a quiet environment for the induction of anaesthesia, and will:

- Have ease of access for the transfer of an unconscious patient to the theatre
- Provide sufficient space to allow for the safe performance of anaesthetic procedures
- Provide sufficient work surfaces
- Provide an emergency call system
- Be equipped with appropriate lighting to facilitate patient clinical assessment
- Provide access to defibrillation equipment
- Provide piped suction, oxygen and nitrous oxide
- Provide appropriate mechanisms for scavenging anaesthetic gases
- Be equipped with items required for intravenous cannulation and fluid administration
- Be equipped for insertion of invasive monitoring lines
- Be equipped for airway control and maintenance
- Be equipped for intubation
- Be equipped with an anaesthetic machine including provision for ventilation
- Be equipped with appropriate monitoring systems to facilitate immediate and ongoing assessment
- Ensure there is secure area for safe keeping of scheduled/non scheduled drugs
- Be equipped with emergency resuscitation drugs
- Ensure daily checks on all equipment with documented records
- Ensure there are receptacles available for immediate disposal of infected/dirty material
- Ensure there is appropriate storage for supplies/equipment
- Be suitable modified – and have additional equipment if used for children

#### INDICATORS – RECOVERY UNIT

The recovery unit will be an open area which allows maximum observation from all places by all recovery staff and will:

- Provide an emergency call system by each bay
- Provide piped suction and double flow meter for oxygen by each bay
- Be equipped with re-breathe circuit/airways
- Be equipped with air and oxygen outlet in at least one bay for provision of ventilation
- Be equipped with appropriate monitoring systems to facilitate immediate and ongoing physical assessment [ECG/pulse oximetry/invasive/non invasive BP/CVP]
- Provide clearly identified emergency equipment for resuscitation
- Provide emergency resuscitation drugs
- Provide anaesthetic machine [or have one close at hand]

- Provide appropriate lighting to facilitate patient clinical assessment
- Provide receptacles for immediate disposal of infected/dirty material
- Provide a dedicated area for paediatric recovery adult environment or dedicated in that parental presence facilitated
- Provide means for the maintenance of patient privacy/dignity
- Provide appropriate storage for supplies/equipment
- Provide nurses station
- Provide secure area for safe keeping of scheduled drugs
- Provide regular quality checks on all equipment with documented records
- Ensure safety checks on all patient transport trolleys/beds

### **Standard 3: Infection Control**

#### **Supplies, equipment and policies are inbuilt to maintain safe and effective infection control**

*RATIONALE: the practice of anaesthetic and recovery nursing involves handling and disposal of fluids, which may be contaminated. A policy of universal precautions, which apply to all patients and procedures, must be followed and provision made for the safe disposal of all material*

#### **INDICATORS:**

- Provision of hand washing facilities adequate for service need
- Provision of dirty utility area
- Appropriate receptacles for immediate disposal of infected or dirty material
- Clear in-house policies on the use of protective clothing
- Planned provision for regular contamination of area and equipment
- Provision for updating house policies in conjunction with infection control services
- Ongoing staff education regarding the principles/practice of infection control
- Tracking processes in place for decontamination of equipment

### **Standard 4: Staffing/Skill Mix**

#### **Staffing/skill mix ensures optimal safe practice in the delivery of patient care in the anaesthetic and recovery areas**

*RATIONALE: it is essential that the recovery area will be staffed appropriately (both in terms of numbers and skill mix) to cater for the fluctuating inflow of patients from theatre. The problems of adjusting staff levels to match flow are well known and it is recognised that it is difficult to arrive at a universal*

*equation the can be incorporated in a standard. The following criteria are essential features that contribute to safe and effective staffing in the recovery area.*

#### INDICATORS: ANAESTHETIC AREA

- The anaesthetic nurse will have attained [or be studying for] recognised qualification
- The nurse will work in collaboration with the anaesthetist
- In the absence of a full general anaesthetic but while a procedure is being undertaken a qualified anaesthetic nurse should be available within the unit
- Staff/patient ratio within the anaesthetic room must be on the basis of one to one (and in the presence of GA – anaesthetist and trained anaesthetic nurse)

#### INDICATORS: RECOVERY UNIT

- Staffing/skill mix must be formulated according to the clinical progression continuum, acuity of cases, throughout and number of clinical 'feeder' area
- Patient clinical progression continuum for routine cases:

**Reception of patient:** (the patient may be unconscious or emergent from that state) Staff ratio: 1:2 (one patient/two nurses) – to undertake handover/prioritise immediate care/set up monitoring). The skills of the first nurse must be appropriate for the acuity of case. The helper may be a novice nurse or member of the perioperative team

**Stabilisation period:** (self-ventilating with no airway adjuncts or needing respiratory assistance; the patient's clinical condition stabilises through this period to full recovery but may regress back along the clinical continuum). Staff ratio: 2:1 (two patients/one nurse) skills of nurse must be appropriate to acuity of cases. If patient's condition deteriorates staff must be reallocated promptly.

**Fit for discharge:** (has met all local discharge criteria – is stable and comfortable). Staff ratio: 3:1 (three-patients/1 nurse). The nurse looking after three patients must be experienced and may be assisted by novice \*(see appendix 1)

- Patient acuity classification. Patient acuity may progress or regress along the clinical continuum dependent on age, accompanying medical condition, anaesthetic and surgical intervention. Staff must be allocated promptly when deterioration occurs. Staff patient ratios must make provision for this.
- Paediatric cases must be recovered strictly on a 1:1 basis within the reception period. During stabilisation and fit for discharge 2 paediatric cases to one experienced nurse is acceptable.

**Throughput factor:**

- The time taken to pass through each of the above stages will impact on staff/patient ratio – complex cases will necessarily take longer to recover at each stage
- The numbers of patients on each theatre list will determine the numbers of recovery staff required on a daily basis
- The number of ‘feeder’ areas must be considered in determining staffing levels [i.e. the total number of theatres in use which may deliver patients at any one time]
- Shift patterns must be staggered to allow safe staffing levels during routine anticipated maximum activity (usually towards end of morning and afternoon)
- Emergency procedures must be accounted for in planning staffing levels
- Skill/mix may include novice, experienced and expert practitioner. The novice must work under supervision from her senior colleagues – this factor must be taken into account in planning staffing provision
- Suitable means of communication must be available to alert theatres when the recovery area is full/or if for any reason there is an unsafe level of staffing in recovery
- The nurses in charge of recovery must be authorised to alert theatres to stop the lists at any time if recovery staffing levels are unsafe / contact line manager to intervene

**It is the responsibility of the nurse in charge of PACU to forecast unit activity (using audit) and match nurse ratio to known surgical needs. On a daily basis the nurse in charge of PACU will direct utilisation of nurses/skills according to changing patient numbers and acuity.**

\*please see appendix 1

**Standard 5: Staff Clinical Development**

**The nurse shall demonstrate continuing clinical expertise and professionalism based on sound theoretical practice**

*RATIONALE: advanced critical judgement/practical skills are required by the nurse to work in these areas which may be developed by clinical training courses, practical supervision and in house mentorship which should be available to all staff. Professionalism incorporates the development of managerial and leadership skills at all levels.*

**INDICATORS:**

- Orientation programmes will be available for all new members of staff
- Preceptorship for newly qualified staff



- A named facilitator will be appointed to manage professional development in house
- Mandatory training and update will be provided for BLS/ILS/ALS manual handling/fire training/health and safety for all staff
- Measures will be put in place for regular performance review with ongoing mentorship provision
- Opportunities will be available for nurses to undergo formal recognised training courses in anaesthetics and recovery
- Reflection will be used to enhance self peer review and develop own skills/knowledge
- Training will be provided for pre-assessment/paediatric skills
- In-house provision will be made for the extended practice of the nurse
- Provision will be made for experienced staff to attend management courses
- Role modelling, mentorship will be available as means to encourage positive professional attitudes
- Professional attitudes should demonstrate an openness to constructive criticism, and awareness of personal limitations, knowing when to ask for advice
- Leadership skills should be demonstrated by those with management responsibilities to motivate members of the team and enhance patient care
- Management skills should include the use of effective/responsible delegation and the art of managing the poor performer

\*Please refer to BARNA – Education Section

### **Standard 6: Nurse Accountability**

#### **The nurse will be accountable for his: her scope of practice**

*RATIONALE: the nurse is accountable for her standard of care within her scope of clinical practice and must ensure that she is adequately prepared for her role. From the onset of anaesthesia until full recovery the patient may pass through different planes of consciousness – the nurse must act as to protect & support the patient during this vulnerable period*

#### **INDICATORS:**

The nurse must:

- Practice in accordance with current local standards of practice
- Be aware of advances and changes in clinical practice and research
- Practice within the BARNA Ethics of Practice Code

- Use professional development reviews to discuss scope of practice with senior ensuring that adequate training : assessment is given in respect of the practice of new skills

\*Please refer to BARNA: Ethics of Practice/Educational Standards

### **Standard 7: Established Guidelines for Practice**

#### **Nursing practice will be developed within established local: national guidelines for practice**

*RATIONALE: local guidelines shall be formulated to further define practice within individual hospitals: units. These will cater for and reflect local circumstances, which impact on the service provided. The generic national standards of care will underpin all local guidelines drawn up*

#### **INDICATORS:**

Written guidelines (procedures/policies/protocols) as follows shall further define local practice and be made available to all staff. These guidelines will be reviewed, audited and updated regularly. They need to be time related where relevant

- Patient care integrated pathways to identify the needs of particular clinical groups
- Pre-assessment guidelines
- Guidelines on care in immediate patient into recovery
- Guidelines on frequency of physical observations
- Guidelines on patient discharge
- On specific clinical skills to be performed within scope of practice i.e. extubation/removal of LMA defibrillation
- Specific guidelines relating to patient category (paediatric/elderly, pregnant) medical pathology (diabetes, cardiac, respiratory), & surgical speciality
- Pain assessment protocol
- Procedures for the checking and administration of drugs
- Policies on use of monitoring and resuscitation equipment
- Policies for intervention in emergency clinical events
- Procedures for fire, infection control, internal/external disasters and handling of hazardous material
- COSHH regulations
- Staff orientation programmes / development programmes
- Preceptorship responsibilities
- Cultural diversity – with regard to practice issues i.e. on decease of patient

### **Standard 8: Research**

**The nurse shall use research based evidence in practice and participate in developing research projects**

*RATIONALE: the nurse has a duty to update her clinical knowledge and skills on the latest research based evidence in order to function effectively within her scope of practice*

#### **INDICATORS:**

- Research findings appropriate to clinical practice are incorporated into nursing care where relevant
- Research projects are encouraged in the anaesthetic and recovery areas to improve patient care
- Channels of communication shall be assessed to disseminate research generated locally and nationally where significant

### **Standard 9: Patient Care Clinical Pathway**

**The nurse collaborates to deliver patient care based on a planned cycle of clinical monitoring, assessment, implementation and evaluation**

*RATIONALE: rapid clinical change takes place from the onset of anaesthesia until full recovery. Dynamic care should be planned accordingly along the on-going monitoring, assessment, intervention and evaluation cycles throughout this period*

#### **INDICATORS:**

- The nurse uses touch, listening, observation and monitoring technology as appropriate in assessing the clinical needs of the patient during all stages of the pathway
- The nurse collaborates to formulate a care pathway appropriate to the patients individual needs (based on age, medical history, surgery etc)
- The nurse collaborates with the patient carers where necessary
- The nurse implements the care pathway – constantly re-prioritising according to the changing clinical condition of the patient
- The nurse constantly evaluates the effect of the care delivered and delivers appropriate clinical intervention accordingly

### **Standard 10: Nursing Care**

**The nurse shall deliver excellent standards of physical and psychological care & support during the anaesthetic and recovery period**

*RATIONALE: the nurse constantly assesses the patient for signs of discomfort, be it physical or psychological during this period. High standards of care given will ensure that the patient progression through this critical period is kept as comfortable as possible*

#### INDICATORS:

- The nurse will ensure that the patient is kept clean throughout this period
- The nurse will ensure that pressure area care is delivered during this period
- The nurse will ensure that the patient is reasonably pain free by means of analgesia, distraction therapy and comfort measures
- The nurse will ensure that the patient is not nauseated or actively vomiting by means of anti-emetics
- The use of imaginative comfort measures [mouth care : positioning] are employed in patient care
- The nurse will ensure that the patient is kept warm throughout this period
- Emotional support (reassurance, touch, explanation, simple direction) is employed to relax the patient and aid recovery
- If the environment is suitable parents and carers will be allowed alongside their children or patients with reduced mental capacity in the anaesthetic room / PACU
- The environment will be planned to reduce anxiety either in the anaesthetic / PACU areas (i.e. music may be employed)
  
- See BARNA standards of assessment

### **Standard 11: Communication**

**The nurse will collaborate with the multi-disciplinary perioperative care team – maintaining clear lines of written and verbal communication**

*RATIONALE: the safety and well-being of the patient depends on excellent communication (verbal and written) between all members of the multi-disciplinary perioperative team, the patient (patient carers) and the ward staff*

**INDICATORS:**

- The nurse will communicate with all members of the multi-disciplinary team involved in the patient care
- Nurse communication must be appropriate to the individual patient +/- carers and delivered in clear understandable language
- The nurse will communicate immediately any significant adverse change in the patient condition to the anaesthetist in charge of the case/or in his absence/nearest available anaesthetist
- The anaesthetic nurse will receive details of the patient from the ward nurse on patient reception into the anaesthetic room
- The nurse will clearly document (written/electronic) all care given by herself within the anaesthetic period – documentation will be time related
- The nurse will receive a clear and concise handover from the anaesthetist/theatre staff on patient reception into recovery
- The recovery nurse will clearly document (written/electronic) all care given to the patient in her care
- The nurse will give a clear and concise verbal handover to the ward nurse (maintaining confidentiality) on patient discharge

**Standard 12: Unit Performance Review**

**Practice within the anaesthetic and recovery areas will be reviewed & evaluated regularly**

*RATIONALE: unit performance must be reviewed regularly in order for individual practitioners to develop their practice, and for quality standards of patient care to be maintained within local guidelines to be maintained within local guidelines and standards for practice*

**INDICATORS:**

- Systems will be put in place for the provision of standard setting, formulating guidelines, audit and bench marking of clinical practice
- A team approach will be used to initiate and deliver the above systems

- Problem areas will be identified and the above system will be used to audit and improve performance
- Routine audit will be carried out on all aspects of care
- Standards and audit tools will be reviewed and updated regularly

## 8. STANDARDS OF MONITORING AND ASSESSMENT

These standards derive from Standard of Practice No.9 Care Clinical Pathway. The nurse collaborates to deliver care based on a planned cycle of clinical monitoring, physical assessment, implementation and evaluation (see appendix 1). The patient undergoing surgical intervention under general anaesthesia will experience physiological changes brought about by the combination of anaesthetic and surgical intervention. While the majority of patients make an uneventful recovery, normal homeostatic mechanisms will be disturbed to some degree during general anaesthesia and may result in airway dysfunction, inadequate respiratory effort, rapid fluid shifts, varying levels of consciousness, hypothermia, pain, nausea and vomiting. The nurse must be vigilant in monitoring physical changes and assessing their significance, implementing care and then evaluating the effect of that intervention.

**Monitoring** the physical condition of the patient involves the use of all senses [feel for warmth, listen for sounds of airway obstruction etc] as well as technical equipment. **Assessing** the significance of the collated information relies on the clinical judgement of the nurse in taking into account particulars of the patients' age, previous medical history, surgery and anaesthetic. Observations should be taken regularly as a baseline rule, [every 10 minutes], and, where the patient's condition deteriorates, more frequently [every 5 minutes].

Patient assessment standards are intended as a basic set of principles to assist the nurse in providing consistent, safe anaesthetic and recovery care. They may be used in any situation involving anaesthesia (general, regional, local). These standards have been formulated on the physical 'systems' approach prioritising each system, as it would be monitored in a real practice scenario.

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### Anaesthetic Nurse

The ANAESTHETIC NURSE assesses the patient constantly from their arrival in the anaesthetic room until their transfer to the immediate post-operative recovery area. During the process of anaesthesia

monitoring devices must be attached at all times, alarms set and the patient observed together with the monitoring input. Clinical monitoring / assessment is as follows:

### **A Mental/Emotional Status**

*Rationale : anaesthesia and surgery presents a challenge to many people. Once in the anaesthetic room, they are often emotional, anxious and distressed. This may result in a difficult induction, as they will often require larger doses of induction agents to attain narcosis. In some instances administration pre induction of a drug that reduces anxiety should be considered.*

#### **Standard : patients' mental and emotional status will be monitored by:**

- Verbal communication (talkative, non communicative, aggressive)
- Facial expressions (fear, anxiety, non-comprehension, lack of expression)
- Non verbal communication (body language, restlessness, rigidity of posture, seeking physical reassurance, avoiding touch)
- Vital signs (increase in blood pressure, tachycardia, tachypnoea)

In assessment consideration should be made for the following:

- Patient's medical history and social circumstances (from notes, anaesthetic assessment, ward information)
- Route and nature of admission for surgery (planned, emergency, inpatient, day case, alcohol, recreational drugs, assault, accident)
- Assessment of the nature of anaesthetic technique, surgery and its likely significance to the patient

### **B Respiratory Function Assessment [Work of Breathing]**

*Rationale: to assess patient's respiratory function at induction and during maintenance of anaesthesia (induction and anaesthesia may result in inadequacy of airway or depressed respiratory drive)*

#### **Standard: the following will monitor respiratory function:**

- Patient colour
- Adequacy of airway – provide equipment to maintain patency and collaborate during insertion
- Respiratory effort – monitoring of tidal and minute volumes, (rate, depth, pattern of breathing, use of accessory muscles)
- Level of oxygenation – saturation of oxygen measured by pulse oximetry
- Adequacy of ventilation – end tidal CO<sub>2</sub> measured by capnography
- Auscultation of chest for breath sounds

- Arterial blood gases to determine oxygenation, ventilation and pH
- Adequacy of lung function and compliance – monitoring of airway pressures

In assessment consideration should be given to the following:

- Anaesthetic agents which may depress the respiratory centre/lead to flaccid muscle tone and may result in slow inadequate respiration or obstructed airway
- Vomit, secretions or any other material which may occlude the airway
- Take into account the patient's previous medical history (asthma, chronic obstructive pulmonary disease)

### **C Circulatory Function Assessment (cardiovascular status)**

*Rationale: to assess patients circulatory function (anaesthesia may depress cardiac function, surgery may result in significant blood loss and consequent inadequacy for cardiovascular system to deliver sufficient blood to meet tissue demands)*

**Standard: the following will monitor circulation:**

- Baseline vital signs for blood pressure/heart rate and rhythm
- Skin (for colour, temperature, turgor, oedema, and diaphoresis)
- Nailbeds for capillary refill
- Invasive monitoring of arterial pressure where indicated
- Central venous pressure monitoring where indicated
- Continuous ECG monitoring
- Continuous assessment of surgical blood loss (weighing swabs to estimate blood loss and monitoring of blood collected in the suction unit)

In assessment consideration should be given to the following:

- Use of anaesthetic drugs which may depress the heart/cause vasodilation
- Use of anaesthetic technique such as spinal / epidural which may cause vasodilation
- Total fluid input perioperatively (all colloids, crystalloids & blood products)

### **D Neurological assessment (level of consciousness)**

*Rationale: to ensure that the patient is maintained at the surgical level of anaesthesia and not waking up on the operating table*

- Continuous cardiovascular monitoring (light plane of anaesthesia – tachycardia / hypertension – deep plane of anaesthesia bradycardia / hypotension / decreased respiratory rate)



- Use of specific consciousness monitors when available
- Response to stimuli on induction and emergence (verbal, physical)
- Assessment of motor function (excitation, movement)
- Pupil size and reaction

In assessment consideration should be given to the following:

- Drugs administered and their reactions
- Medical history of cerebral dysfunction
- Nature of surgery

### **E Neuromuscular Function assessment (muscle tone)**

*Rationale: to assess patient neuromuscular function as muscle tone may be affected for a variety of reasons both intentional and inadvertent (Anaesthesia will result in a degree of relaxation: administration of muscle relaxants may be required to facilitate the surgical procedures or to enable intubation. Malignant hyperpyrexia may present with muscle rigidity at or shortly after induction).*

#### **Standard: the following will monitor strength of neuromuscular tone:**

- Assessment for muscle tone using nerve stimulator (either to allow top up doses of muscle relaxants during surgery or assess the degree of blockade present to determine appropriateness of administering a reversal drug)
- Motor tone – limb rigidity in the advent of malignant hyperpyrexia
- Breathing pattern and effort on emergence from anaesthesia

In assessment consideration should be given to the following:

- Neuromuscular blocking agents used perioperatively, half lives of drugs administered and time of reversal
- Suxemethonium apnoea and Mivacurium apnoea
- Dual blockade as a result of repeated doses of succinyl choline

### **F Renal Function (fluid balance)**

*Rationale: anaesthesia and surgery will impact on normal homeostatic fluid distribution  
Dehydration caused by pre-operative fasting, hypovolaemic shock in emergency cases and significant fluid loss perioperatively may result in renal/cardiovascular/neurological impairment*

**Standard: the following will monitor renal function:**

- Cardiovascular status (blood pressure, heart rate, central venous pressure, temperature)
- Patient total input (including colloids, crystalloids and blood products)
- Patient total output (urine, blood loss, nasogastric tube, insensible loss, 3<sup>rd</sup> spacing)
- Patency of urethral catheter / supra-pubic catheter if present
- Diuretics used perioperatively
- Laboratory results (urea and creatinine to assess renal function)

In assessment consideration should be given to the following:

- Patients previous medical history – where taking diuretics routinely, whether starved for prolonged period of time preoperatively or for those with a history of acute or chronic renal failure
- Nature of surgery – prolonged abdominal surgery can result in significant clear fluid loss

**G Thermoregulation (temperature control)**

*Rationale: prolonged surgery may result in hypothermia, which in turn will delay patient recovery.*

*Malignant hyperpyrexia is a rare life-threatening complication of anaesthesia (characterised by rapid rise in temperature, high end tidal CO<sub>2</sub>, muscle rigidity, tachycardia and acidosis)*

**Standard: thermoregulation will be monitored by:**

- Core temperature monitoring where appropriate and use of warming devices (Bair Huggers, mattresses, warmed intravenous fluids, raised ambient air temperature for paediatrics)
- Peripheral temperature ( by feel or with probe)
- Excessive diaphoresis
- Patient colour

In assessment consideration should be made for the following:

- Elderly and paediatric patients are at special danger from hypothermia (consider age of patient)
- Consider the nature of surgery: heat loss via evaporation is maximised during long abdominal cases.
- Those at risk of raised temperature [malignant hyperpyrexia]

**H Pain**

*Rationale: the anaesthetised patient exhibits the physiological response to pain. If this pain is not controlled during the surgical procedure then difficulties will arise maintaining the plane of anaesthesia*

**Standard: pain control will be monitored by:**

- Monitoring vital signs (hypertension, tachycardia, tachypnoea)
- Observe for crying, restlessness, signs of distress
- Assessment by asking patient – (if they have undergone local or regional anaesthesia)

In assessment consideration should be made for the following:

- Nature of surgery and whether analgesia is sufficient
  - Assessment of the patient prior to anaesthesia
- 

**Recovery Nurse**

The RECOVERY NURSE takes over patient care after a handover from the anaesthetist when she: he is satisfied about the patient's clinical status. She: he monitors and assesses the patient constantly from immediate receptions until discharge as follows:

**A AIRWAY ASSESSMENT**

*Rationale: the patient's airway is at risk of partial to full obstruction until him: she regains full consciousness. Failure to observe airway obstruction and act swiftly to alleviate this may rapidly lead to serious hypoxia which if prolonged will cause death.*

**Standard: airway patency will be monitored by:**

Look, listen, feel for:

- Level of consciousness
- Colour
- Saturation of oxygen
- Breathing pattern
- Sounds of obstruction [stridor: snoring: gurgle]

In assessment consideration should be made for the following:

- Patient's physical appearance
- Surgical procedure if it involved the head and neck [i.e. nasal, throat or dental surgery may cause bleeding into the airway]
- Type of airway adjunct used [Endo tracheal intubation may produce laryngospasm]
- Danger of aspiration causing airway obstruction

## **B RESPIRATORY ASSESSMENT**

*Rationale: to assess patient's respiratory function [anaesthesia may result in depressed respiratory drive and weak intercostal muscles leading to hypoventilation with possible hypoxia and accumulation of carbon dioxide]*

**Standard: respiratory assessment will be monitored by:**

Look, listen, feel for:

Level of consciousness

Adequacy of airway

Respiratory effort [rate, depth, pattern of breathing, use of accessory muscles]

Level of oxygenation – saturation of oxygen measured by pulse oximetry

Patient colour

Auscultation for breath sounds

Advanced practice will include:

Ventilator observations

Arterial Blood Gases [ABG's] to determine oxygenation and ventilation

In assessment consideration should be made for the following:

Anaesthetic mixture of volatile agents and opioids which may depress the respiratory centre leading to hypoventilation

Muscle relaxants which may leave residual weakness in the respiratory muscles contributing or causing hypoventilation

Diseases such as myasthenia gravis which may lead to respiratory weakness

Patient may have a medical history of asthma, chronic obstructive airway disease which may contribute to impaired respiratory performance

## **C CIRCULATORY ASSESSMENT**

*Rationale: to assess patient's circulatory function [anaesthesia may depress cardiac function, surgery may result in significant blood or fluid loss and consequent failure of cardio-vascular system to deliver sufficient blood to meet tissue demands]*

**Standard: circulation will be monitored by:**

- Level of consciousness
- Baseline vital signs for blood pressure: heart rate and rhythm
- Skin [for colour, temperature, turgor, oedema and diaphoresis]
- Nail beds for capillary refill
- Peripheral arterial pulses for rhythm, amplitude, bilateral equality where indicated
- Central venous pressure
- ECG monitoring
- Signs of overt bleeding [drains, dressings], concealed bleeding [distension, swallowing, altered level of consciousness]

In assessment consideration should be made for the following:

- Use of anaesthetic mixture of drugs which may depress the heart: cause vasodilation
- Use of anaesthetic technique such as spinal: epidural which may cause vasodilation
- Total fluid input perioperatively [all colloids and crystalloids]
- Total fluid output up to recovery period

**D NEUROLOGICAL ASSESSMENT**

*Rationale: to assess patient's neurological status [general anaesthesia will depress the central nervous system rendering the patient unconscious]*

**Standard: the following will monitor neurological function:**

- Baseline vital signs [CVS: respiratory]
- Level of consciousness [responses to verbal, tactile stimuli]: AVPU score
- Glasgow Coma Scale [include verbal orientations / motor function / pupil response] in cases where normal return to full consciousness, motor function and orientation has not occurred within a reasonable length of time

In assessment consideration should be made for the following:

- Use of anaesthetic drugs which may delay the return to full consciousness
- Any previous medical history of cerebral dysfunction

Nature of surgery – e.g. carotid endarterectomy may give rise to concern with delay in return to full consciousness

## **E NEUROMUSCULAR FUNCTION**

*Rationale: to assess patient neuromuscular function [muscle relaxants used in anaesthesia will paralyse muscle tone. If complete reversal does not take place intercostal respiratory muscles strength will be impaired]*

**Standard: the following will monitor strength of neuromuscular tone:**

Breathing pattern [strength, depth and rate of respiration]  
Motor tone – limb weakness [test by hand grip, sustained head lift, ability to stick out tongue]  
Patient distress [extreme anxiety brought on by not being in control of breathing]  
Signs of hypoxia if inadequate reversal pronounced  
Cardio-vascular changes – rise in BP and heart rate brought on by agitation

In assessment consideration should be made for the following:  
Neuromuscular blocking agents used perioperatively and time / agent of reversal

## **F RENAL FUNCTION**

*Rationale: general anaesthesia and surgery will impact on normal homeostatic fluid distribution. Significant fluid loss perioperatively may result in renal: cardiovascular and neurological impairment*

**Standard: the following will monitor renal function**

CVS status [blood pressure, heart rate, central venous pressure, temperature and colour]  
Patient total input [including colloids, crystalloids]  
Patient total output [urine, blood loss, drains, NG tube aspirate, insensible loss, 3<sup>rd</sup> spacing]  
Patency of urinary catheter  
Bladder distension  
Diuretics used intraoperatively  
Laboratory results [urea and creatinine to assess renal function]

In assessment consideration should be made for the following:  
Patient's previous medical history [period of pre-operative starvation – use of diuretics or acute: chronic renal failure]

Nature of surgery: prolonged abdominal surgery can result in significant fluid loss by evaporation and 3<sup>rd</sup> spacing

## **G THERMOREGULATION**

*Rationale: prolonged surgery may result in hypothermia, which in turn will delay patient recovery. Malignant hyperpyrexia is a dangerous complication of anaesthesia and must be looked out for*

### **Standard: thermoregulation will be monitored by**

Core temperature taken on arrival in recovery  
Peripheral temperature [by feel or with probe]  
Shivering  
Excessive diaphoresis  
Patient colour  
Level of consciousness

In assessment consideration should be made for the following:

Age of patient [elderly and very young patients are at increased risk from hypothermia]  
Consider how patient has been warmed in theatre and the nature of surgery  
Length of time of exposure in theatre  
Fluid loss intraoperatively  
Patients suffering from burn injuries  
History of malignant hyperpyrexia [with rapid rise in temperature]

## **H NAUSEA AND VOMITING**

*Rationale: many anaesthetic drugs cause nausea and vomiting which is unpleasant for the patient, may cause transient hypotension and in the unconscious or semi-conscious patient may lead to aspiration. Anxiety is linked with a previous medical history of vomiting – this is both a physical and psychological phenomenon*

### **Standard: nausea and vomiting will be monitored by**

Asking the patient if he/she has nausea  
Observe for signs of swallowing, retching  
Colour – pallor

Vital signs for accompanying tachycardia, hypotension

In assessment consideration should be made for the following:

Patients with previous medical history of vomiting may demonstrate intractable condition

Patient known to be at high risk: gynaecological, children, ENT surgery

Consider intraoperative use of opioids, any use of anti-emetic drug and time of dosage

Consider how long the patient has been nil by mouth and the need for intra-venous fluid replacement

### **I PAIN**

*Rationale: pain can be severe in the immediate post operative phase and can significantly delay the full recovery of the patient*

#### **Standard: pain will be monitored by**

Monitoring facial expressions, signs of restlessness

Monitoring vital signs [hypertension, tachycardia, tachypnoea]

Assessment by asking patient for pain score

In assessment consideration should be made for the following:

Use of balanced analgesia using a combination of:

Opioids

NSAIDs

Paracetamol [especially intra venous dose]

Regional block: local block: spinal or epidural

Noting dose and time analgesia given intra-operatively

Nature of surgery and potential for pain

Cultural and age specific risk of pain

Consider substance abusers or those with chronic pain dependent on opioids

### **J MENTAL: EMOTIONAL STATUS**

*Rationale: surgery presents a real challenge to many people. When it is over, they are often emotional, anxious and distressed. This may delay recovery and make pain relief more difficult*

#### **Standard: patient's mental and emotional status will be monitored by**

Facial expressions [fear, anxiety]



Vital signs [increase in blood pressure, tachycardia, tachypnoea]  
Verbal questioning of how they are feeling

In assessment consideration should be made for the following

Patient's medical history and social circumstances [from notes, anaesthetic record, ward information]  
Assessment of the nature of surgery and its likely significance to the patient  
Emotional status of patient – need for touch, reassurance, orientation  
Patient's age especially paediatric and elderly patients

In the immediate reception of the patient monitoring [and in any event where the patients condition deteriorates] monitoring should be taken recorded every 5 minutes while assessment should be on-going. In any event where the nurse has not got the skills and experience to care for the patient, help should be sought immediately.

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