PREOPERATIVE CARE

**Perioperative mortality** is [death](https://en.wikipedia.org/wiki/Death) in relation to [surgery](https://en.wikipedia.org/wiki/Surgery), most frequently defined for research purposes as death within 24 hours, or alternatively within up to 30 days of a surgical procedure An important consideration in the decision to perform any surgical procedure is to weigh the benefits against the risks. [Anesthesiologists](https://en.wikipedia.org/wiki/Anesthesiologist) and [surgeons](https://en.wikipedia.org/wiki/Surgeon) employ various methods in assessing whether a patient is in optimal condition from a medical standpoint prior to undertaking surgery, and various statistical tools are available. [ASA score](https://en.wikipedia.org/wiki/ASA_score) is the most well known of these.

The **ASA physical status classification system** is a system for assessing the fitness of patients before [surgery](https://en.wikipedia.org/wiki/Surgery). In 1963 the [American Society of Anesthesiologists](https://en.wikipedia.org/wiki/American_Society_of_Anesthesiologists) (ASA) adopted the five-category physical status classification system; a sixth category was later added. These are:

1. Healthy person.
2. Mild [systemic disease](https://en.wikipedia.org/wiki/Systemic_disease).
3. Severe systemic [disease](https://en.wikipedia.org/wiki/Disease).
4. Severe systemic disease that is a constant threat to [life](https://en.wikipedia.org/wiki/Life).
5. A [moribund](https://en.wiktionary.org/wiki/moribund) person who is not expected to survive without the [operation](https://en.wikipedia.org/wiki/Surgery).
6. A declared [brain-dead](https://en.wikipedia.org/wiki/Brain-dead) person whose [organs](https://en.wikipedia.org/wiki/Organ_%28anatomy%29) are being removed for [donor](https://en.wikipedia.org/wiki/Organ_donation) purposes.

 While anesthesia providers use this scale to indicate one's overall physical health or "sickness" preoperatively, it is regarded by hospitals, law firms, accrediting boards and other healthcare groups as a scale to predict risk,and thus decide if a patient should have – or should have had – an operation. To predict operative risk, age and obesity, the nature and severity of the operative procedure, selection of anesthetic techniques, the competency of the surgical team (surgeon, anesthesia providers and assisting staff), duration of surgery or anesthesia, availability of equipment, medicine, blood, implants and especially the level of post-operative care etc. are often far more important than multiple ASA classification.

## Intraoperative causes

Immediate complications during the surgical procedure, e.g.bleedind or perforation of organs may have lethal sequelae

Complications following surgery

**Infection**

Local infection of the operative field is prevented by using sterile tecniques, and prophylactic antibiotics are often given in abdominal surgery or patients known to have a heart defect or mechanical heart valves that are at risk of developing endocarditis.

Methods to decrease surgical site infections in spine surgery include skin preparation, use of surgical drains, prophylactic antibiotics, and vancomycin Preventative antibiotics may also be effective.

Whether any specific dressing has an effect on the risk of surgical site infection of a wound that has been sutured closed is unclear

**Blood clots**

Examples are [deep vein thrombosis](https://en.wikipedia.org/wiki/Deep_vein_thrombosis) and [pulmonary embolism](https://en.wikipedia.org/wiki/Pulmonary_embolism), the risk of which can be mitigated by certain interventions, such as the administration of [anticoagulants](https://en.wikipedia.org/wiki/Anticoagulant) (e.g., [warfarin](https://en.wikipedia.org/wiki/Warfarin%22%20%5Co%20%22Warfarin)or [low molecular weight heparins](https://en.wikipedia.org/wiki/Low_molecular_weight_heparin)), [antiplatelet drugs](https://en.wikipedia.org/wiki/Antiplatelet_drug%22%20%5Co%20%22Antiplatelet%20drug) (e.g., [aspirin](https://en.wikipedia.org/wiki/Aspirin)), [compression stockings](https://en.wikipedia.org/wiki/Compression_stockings), and [cyclical pneumatic calf compression](https://en.wikipedia.org/wiki/Sequential_compression_device) in high risk patients.

**Lungs**

Many factors can influence the risk of postoperative pulmonary complications (PPC). (A major PPC can be defined as a postoperative pneumonia, respiratory failure, or the need for reintubation after extubation at the end of an anesthetic. Minor post-operative pulmonary complications include events such as atelectasis, bronchospasm, laryngospasm, and unanticipated need for supplemental oxygen therapy after the initial postoperative period.) Of all patient-related risk factors, good evidence supports patients with advanced age, ASA class II or greater, functional dependence, chronic obstructive pulmonary disease, and congestive heart failure, as those with increased risk for PPC. Of operative risk factors, surgical site is the most important predictor of risk for PPCs (aortic, thoracic, and upper abdominal surgeries being the highest-risk procedures, even in healthy patients The value of preoperative testing, such as spirometry, to estimate pulmonary risk is of controversial value and is debated in medical literature. Among laboratory tests, a serum albumin level less than 35 g/L is the most powerful predictor and predicts PPC risk to a similar degree as the most important patient-related risk factors

[Respiratory therapy](https://en.wikipedia.org/wiki/Respiratory_therapy) has a place in preventing [pneumonia](https://en.wikipedia.org/wiki/Pneumonia) related to [atelectasis](https://en.wikipedia.org/wiki/Atelectasis%22%20%5Co%20%22Atelectasis), which occurs especially in patients recovering from thoracic and abdominal surgery.

**Neurologic**

[Strokes](https://en.wikipedia.org/wiki/Stroke) occur at a higher rate during the postoperative period.

**Livers and kidneys**

In people with [cirrhosis](https://en.wikipedia.org/wiki/Cirrhosis), the perioperative mortality is predicted by the [Child-Pugh score](https://en.wikipedia.org/wiki/Child-Pugh_score)

**Postoperative fever**

[Postoperative fevers](https://en.wikipedia.org/wiki/Postoperative_fever) are a common complication after surgery and can be a hallmark of a serious underlying sepsis, such as pneumonia, [urinary tract infection](https://en.wikipedia.org/wiki/Urinary_tract_infection), [deep vein thrombosis](https://en.wikipedia.org/wiki/Deep_vein_thrombosis), wound infection, etc. However, in the early post-operative period a low-level fever may also result from anaesthetic-related [atelectasis](https://en.wikipedia.org/wiki/Atelectasis%22%20%5Co%20%22Atelectasis), which will usually resolve normally.

**To mitigate the above complication**,

 a consultant surgeon leads a large team of people involved in

safely seeing a patient through their individual operative experience.

NB a trainee is a member of that team.

Important aspects of the trainee’s role in this process are:

**1.** *Gathering and recording* concisely all relevant information.

Notes on the history, examination, investigation, conclusions

and treatment plan should be clearly written, concise and yet

comprehensive. The same applies to subsequent notes. They

should allow other members of the team to familiarise themselves

rapidly with the management plan and its rationale. It

should be easy to check objective observations for any change

in the patient’s condition

**2.** *Planning* to minimise risk and maximise benefit for the patient.

Patients do not have to be medically fit before surgery is

undertaken. This is simply not possible in many cases, especially

when surgery is being undertaken as an emergency or

when elective surgery is undertaken in the elderly. However,

every effort should be made to find out what medical problems

the patient has and how bad these are. Any problems should

be treated if possible so that the risk to the patient is minimised.

This will also involve balancing the potential harm

caused by the delays involved in diagnosing and treating

comorbidity with the benefits of taking time to bring problems

under control. Elective patients should have all medical problems

identified, assessed and addressed before being put onto

an operative list; however, critically ill patients may only be

able to receive rapid, continuous resuscitation on the way to

theatre if they are to be treated in a timely manner.

**3.** *Being prepared* for adverse events and how to deal with them.

Anticipating possible adverse events allows many of them to be

avoided eg having blood ready.

**4.** *Communicating* with the patient and all other members of the

team. Communication errors are the source of many problems

in patient care. Everyone, including the patient, should understand

the surgical plan.

**PATIENT ASSESSMENT**

In the last 10 years there has been a major shift from in-patient to

out-patient surgery. Alongside this, many patients requiring major

in-patient elective surgery now arrive in hospital on the day of surgery.

Preoperative assessment and optimisation have therefore

become an increasingly important part of modern surgical practice.

At the start of each consultation the surgeon should introduce

him/herself to the patient, explaining who he/she is

History

Follow the usual format of Hx taking, data, c/o, HPI,PMSHX

Do not assume that the history has already been adequately

covered previously. Important points may have been overlooked

in a busy out-patient clinic. In addition, there may have been a

substantial delay between the clinic appointment and the

admission for surgery, during which time symptoms and signs may

have changed considerably.

There are a number of useful principles to adhere to when

taking a history;

• *Listen*. What does the pt. see as the problem Patients are allowed to describe their symptoms in their

own words (try not to interrupt at this stage).

• *Clarify*. What does the patient expect? (Closed questions.) Clarify

details in the history and explore the patient’s hopes, fears and

expectations of surgery. What outcome is the patient looking for?

• *Narrow the differential diagnosis.* (Focused questions.)

Formulate a list of differential diagnoses as the story unfolds,

with the most likely first.

• *Fitness*. What other comorbidities exist? (Fixed questions.) Some

aspects of the history are not directly relevant to the diagnosis in

hand but will be vital if anaesthesia and surgery are eventually

necessary. Other conditions could alter the surgical plan or

adversely affect the outcome unless they are identified and optimised.

Important negative findings must also be noted when they are important for the care plan, e.g.

‘no problems with previous anaesthetics.

In the review of system, do a thorough review of system that are know to affect surgery. They include;

CVS- Cardiovascular disease is the leading cause of death in the industrialized world, and its contribution to perioperative mortality during non-cardiac surgery is significant. Of the 27 million patients undergoing surgery in the United States every year, 30%, have significant coronary artery disease or other cardiac co-morbid conditions. One million of these patients will experience perioperative cardiac complications, with substantial morbidity and mortality. Consequently, much of the preoperative risk assessment and patient preparation centers on the cardiovascular system.

**R/S**- Preoperative evaluation of pulmonary function may be necessary for either thoracic or general surgical procedures. Whereas extremity, neurologic, and lower abdominal surgical procedures have little effect on pulmonary function and do not routinely require pulmonary function studies, thoracic and upper abdominal procedures can decrease pulmonary function and predispose to pulmonary complications. Accordingly, it is wise to consider assessment of pulmonary function for all lung resection cases, for thoracic procedures requiring single-lung ventilation, and for major abdominal and thoracic cases in patients who are older than 60 years, have significant underlying medical disease, smoke, or have overt pulmonary symptomatology.Necessary tests include forced expiratory volume in 1 second (FEV1), forced vital capacity, and the diffusing capacity of carbon monoxide. Adults with an FEV1 of less than 0.8 L/sec, or 30% of predicted, have a high risk for complications and postoperative pulmonary insufficiency.

Specific pulmonary risk factors include chronic obstructive pulmonary disease, smoking, preoperative sputum production, pneumonia, dyspnea, and obstructive sleep apnea.

Preoperative interventions that may decrease postoperative pulmonary complications include smoking cessation (>2 months before the planned procedure), bronchodilator therapy, antibiotic therapy for preexisting infection, and pretreatment of asthmatic patients with steroids. Perioperative strategies include the use of epidural anesthesia, vigorous pulmonary toilet and rehabilitation, and continued bronchodilator therapy.

**Renal** Approximately 5% of the adult population have some degree of renal dysfunction that can affect the physiology of multiple organ systems and cause additional morbidity in the perioperative period. In fact, a preoperative creatinine level of 2.0 mg/dL or higher is an independent risk factor for cardiac complications. Identification of coexisting cardiovascular, circulatory, hematologic, and metabolic derangements secondary to renal dysfunction are the goals of preoperative evaluation in these patients.

A patient with end-stage renal disease frequently requires additional attention in the perioperative period. Patients with chronic end-stage renal disease undergo dialysis before surgery to optimize their volume status and control the potassium level. Intraoperative hyperkalemia can result from surgical manipulation of tissue or transfusion of blood. Prevention of secondary renal insults in the perioperative period include the avoidance of nephrotoxic agents and maintenance of adequate intravascular volume throughout this period.

 **Endocrine** A patient with an endocrine condition such as diabetes mellitus, hyperthyroidism or hypothyroidism, or adrenal insufficiency is subject to additional physiologic stress during surgery. insulin preparations are administered at two thirds the normal pm dose the night before surgery and half the normal am dose the morning of surgery, with frequent bedside glucose determinations and treatment with short-acting insulin as needed. An infusion of 5% dextrose is initiated the morning of surgery. If the planned procedure is expected to take a long time, an insulin infusion can be administered, again with frequent monitoring of blood glucose.

 A patient with known or suspected thyroid disease is evaluated with a thyroid function panel. A patient with hyperthyroidism who takes antithyroid medication such as propylthiouracil or methimazole is instructed to continue this regimen on the day of surgery. The patient's usual doses of β-blockers or digoxin are also continued. In the event of urgent surgery in a thyrotoxic patient at risk for thyroid storm, a combination of adrenergic blockers and glucocorticoids may be required and are administered in consultation with an endocrinologist.

**Examination**

Keep patients warm and comfortable while they are being examined

and always treat them with respect. Only expose parts of the

body as they are required

A full explanation of what is being done and why should be provided

throughout.

First, possible differential diagnoses should be actively

excluded and any new complications that might make surgery

more difficult highlighted, e.g. an inguinal hernia developing

signs of bowel obstruction. Second, a general medical examination

should be performed to identify the presence and severity of

any co-morbidities. If an operation has known complications (e.g.

sciatic nerve damage in a patient receiving a total hip replacement)

it is important to record the situation preoperatively, in

case the problem pre-dates the surgery.

Do general physical and thorough systemic exam.

**Investigations Include;**

1. Blood test eg Hb, FBC, GXM, UECs, LFTs, Coagulation profile, PDT for women,

2. Relevant Imaging eg chest x-ray, u/sound

3. Fluid/ aspirates for, microscopy, c/s, biochemistry and cytology

NB results should be available before operation day.

**Immediate preoperative** care includes;

1. Fasting of patients for at least 6 hours (from midnight)

2. Removal of denture

3. Obtaining an informed signed consent by pt. /guardian/doctor

4. Shaving of operation site

5. premedication- pain/anxiety opiet eg pethidine, anti-acid, anti-emetics, prophylactic antibiotics and taking routine drugs eg antihypertensive, anti-thyroid carbimazole 20 mg tds and propranolol 40-80 mg bd for 3- 6 months

6. Catheterization

7. i.v access and starting the patient on i.v fluid

In diabetic patients undergoing surgery, several principles of management are generally accepted.

NB. A drug chart should be completed including all of the patient’s

routine medication. Extra medications required perioperatively

should be included, such as increased doses of corticosteroids,

analgesia, antiemetics and thrombosis prophylaxis. Although the

mainstay of infection prevention in the surgical patient is meticulous

surgical technique, there is good evidence that prophylactic

antibiotics can help reduce the incidence of this

complication. The antibiotics prescribed should reflect the likely

organisms involved. Most hospitals follow specific protocols for

this. The drugs should be prescribed to allow peak serum concentrations

to occur as the surgery starts. Only three doses (8-hourly)

of prophylactic antibiotics should be given. Continuing antibiotics

beyond the first 24 hours carries the risk that antibiotic

resistance may develop, and there is no evidence of any benefit to

the patient.

**OBTAINING CONSENT**

The person obtaining consent should be fully conversant with the

planned surgery, including all of the possible complications and

alternatives.

**Competence**

To give informed consent adults (over 18 years) must be deemed

competent. This requires that they can comprehend and retain

the information discussed with them, believe it, and weigh up and

choose from an array of treatment options. Children under 18

years of age can only give consent if they truly understand the

nature, purpose and hazards of the relative treatment options.

Although it is common to allow children to countersign the consent

as they get older, it is still usually a parent who gives formal

consent. A social worker can give consent for treatment for a

child under a care order but if the child is in voluntary care the

parent must still sign. For adults who are not deemed competent

to give consent, treatment can still proceed if it is believed that it

is in their best interests. It is usual to obtain two consultants’

signatures in such cases and the reasons for the actions taken

must be fully documented.

Stages in the consent process

- Ensure competence (ensure that the patient can take in,

analyse and express their view)

- Check details (correct patient)

- Make sure that the patient understands who you are and

what your role is

- Discuss the treatment plan and sensible alternatives

- Discuss possible risks and complications (especially those

specific to the patient)

- Discuss the type of anaesthetic proposed

- Give the patient time and space to make the final decision

- Check that the patient understands and has no more

questions

- Record clearly and comprehensively what has been agreed.

Component of theatre list form

Name of patient, age, date of operation, diagnosis, type of operation requirement eg amount of blood

Intraoperative preparation

AIRWAY EXAMINATION

Assessing the airway is a crucial step in developing an anesthetic plan. Even if regional anesthesia is planned, general anesthesia and the need to maintain a patent airway could be necessary. The goal of the airway examination is to identify characteristics that could hinder assisted mask ventilation or tracheal intubation. A history of diseases or conditions that are associated with airway closure or difficult laryngoscopy will alert the practitioner to potential airway difficulties. Review of previous anesthetic records can provide invaluable information regarding previous airway management. The airway examination is completed by systematic inspection of the mouth opening, thyromental distance, neck mobility, and the size of the tongue in relation to the oral cavity. The size of the tongue in relation to the oral cavity can be graded by using the Mallampati classification. The examination is performed with the patient sitting and the head in a neutral position, the mouth opened as wide as possible, and the tongue protruded maximally. The observer views the oral and pharyngeal structures that are evident. In general, a patient in whom the uvula, tonsillar pillars, and soft palate are visible (class I) will be easy to mask ventilate and intubate. Patients in whom only the hard palate is visible, a class IV airway, have a higher likelihood of being difficult to mask ventilate and intubate

IMMEDIATELY BEFORE SURGERY

The patient should be seen by both the surgeon and the anaesthetist

before any pre-medication is given.

1 The patient’s identity should be confirmed and the patient

should be asked to confirm what surgery is being carried out.

The case notes should agree with this and with what is written

on the operating schedule.

2 A check should be made that there has been no change in the

patient’s condition since they were last seen and, if the

patient’s condition has changed, this needs to be recorded.

3 Consent. The patient should be asked if they want the consent

process to be repeated and, even if not, they should be

asked whether they have any questions and whether they are

happy to proceed with surgery.

4 All relevant results, investigations and imaging must be available.

5 Adequate preoperative planning should have been undertaken

and preferably recorded in the notes.(CHECK LIST)

6 A check should be made for any sepsis (skin, teeth, urine and

chest).

7 If there is the possibility of any neurovascular complications,

the neurovascular status should also be recorded at this stage.

8 The side to be operated on should be marked with indelible

pen.

9 The surgical area should be shaved either at this time or

immediately before the incision is made

ASEPSIS

No operating room can be kept completely free of bacteria and,

therefore, the risk of a wound becoming infected from contamination

is always present. However, the risk can be minimised by

strict theatre discipline.

*1. Scrubbing*

‘Scrubbing up’ is the process of washing the hands and arms prior

to donning a gown and gloves, to minimise the microbial loads on

parts of the surgical staff that might come into contact with the

patient.

. The commonest solutions used for hand-washing are 2% chlorhexidine

gluconate or spirit-based antiseptic solutions.

Scrub technique

• You should not scrub if you have an open wound or an

infection

• All jewellery on the hands should be removed.

- A theatre hat, mask and eye protection should be fitted so

that no hair is exposed and you are protected from splash back.

-After applying disinfectant, the arms are washed from distal to proximal,

 with hands up and elbows flexed to avoid/minimise any contamination from

the more proximal ‘unclean’ areas

- Following the final rinse the hands and arms should be raised

to face level

- The hands and arms should be dried using a sterile towel for

each side. Drying with each towel should start with the fingers

and work across the hand and up the arm

.

 *2.Gowning*

• The folded gown is lifted away from the surrounding wrapping

and kept away from the trolley.

• The gown is grasped firmly at the neckline and allowed to

unfold completely, with the inside facing the wearer.

• The arms are inserted into the armholes simultaneously (the

front of the gown is not be touched with ungloved hands).

• Hands should stay inside the cuffs while gloving.

• The circulating theatre nurse should secure the gown at the

neck and waist.

• If a wrap-around type of gown is worn, these ties are secured

with the help of the circulating nurse once gloves are on.

*3. Gloving*

Gloves have two important functions. They prevent contamination

of the surgical wound and they also protect the scrub team

from the blood and body fluids of the patient.

Double gloving reduces the chance of a breach in this protection and allows the

outer gloves to be changed if damaged. Double gloving is now a

standard part of ‘universal precautions’ for minimising the transmission

of human immunodeficiency virus (HIV) and hepatitis B

and C.

Once gowned and gloved, the hands must remain above waist

level at all times, and when not involved in a sterile procedure

the hands should be held together at chest

*4. Skin preparation solution – ‘prep’*

The solution used may have an aqueous or alcohol base. The

agents commonly used are similar to those used in the surgical

scrub solutions described in the section above. Care must be

taken that the solution does not pool under the patient, as pooling

can cause a chemical burn. In general, alcohol or spirit-based

solutions are used when the skin is intact and aqueous solutions

when there is an open wound.

*Method of preparing the skin*

The prep area should include the surgical site and a substantial

area surrounding it, to minimise the possibility of micro-organism

migration from unclean to clean areas during the surgical

procedure The cleansing of the skin should

start at the incision site, working outwards in continually

expanding circles away from the surgical site. The prep

sponge/swab on a stick should then be discarded and a new

clean swab taken.

Contaminated areas, e.g. axilla, groin or perineum, must be

prepped last, and once the prep sponge has been used in this

area it must be again be discarded. Repeat at least twice

Draping of the operative area

Surgical draping involves covering with sterile barrier material,

‘drapes’, the area immediately surrounding the operative site.

Drape materials should resist penetration of microscopic particles

and moisture, limiting the migration of micro-organisms into the

surgical wound.

The purpose of surgical draping is to create and maintain a

protective zone of asepsis, called a ‘sterile field’, so that all sterile

items for the surgical procedure avoid touching any unclean

surface (see Fig. 15.7a–c). Drapes should be handled only by personnel

wearing sterile gloves and should be placed carefully and

not disturbed once placed.

Both re-usable and disposable drapes and gowns are in use

today. Disposable drapes are a more effective barrier to fluid

penetration (‘strike-through’) and therefore prevent secondary

ingress of micro-organisms. Re-usable drapes will lose their barrier

quality if not properly laundered and must be routinely inspected

for holes and tears.

5. Draping should allow access to the whole surgical incision

and allow for extensile exposure if this is possibly going to be

needed. The drapes should also be applied to allow the free

movement of a limb if this is going to be necessary during the

operation. When possible the edge of the drape nearest the

incision should be stuck down onto the patient’s skin, while

the outer edge should be allowed to drop away off the edge

of the operating table.

Once the patient is draped the surgeon and assistant should keep

their hands and arms on the table within the sterile field whenever

possible. Their hands should not come near to their faces

Behaviour of theatre personnel

Staff who are ‘scrubbed up’ only touch sterile items or areas. Staff

who are not ‘scrubbed up’ only touch unsterile items or areas.

Staff who are scrubbed up always:

• watch the sterile fields to guard against contamination;

• keep movement to a minimum to avoid contamination of

sterile items or persons

Anesthesia

The patient may have many questions regarding types of anesthesia. Many anesthesia departments can provide literature preoperatively. The patient may be instructed to meet with someone from the anesthesia department prior to the date of surgery. For those with Internet access, Web sites are provided by [The American Association of Nurse Anesthetists](http://www.aana.com/patients/default.asp) and [The American Society of Anesthesiologists](http://www.asahq.org/patientEducation.htm) . Both Web sites provide excellent educational information for the public as well as brochures that can be obtained for the office.

There are generally 3 different types of anesthesia. The type of anesthesia the patient will receive will depend upon the procedure and the patient's medical condition. The anesthesia provider will discuss the appropriate anesthesia options with the patient during the anesthesia interview.

Local anesthesia. A local anesthetic agent can be injected near the surgical site to anesthetize the nerve endings and prevent the sensation of pain. This type of anesthesia produces a loss of sensation to a small specific area of the body.[8] It is usually associated with numbness at the surgical site, and sometimes difficulty in moving an extremity, but few other effects. Sedation is often given to minimize the discomfort of the injection.

Regional anesthesia. Local anesthetic is injected near one of the major nerves that provide sensation to a region of the body. This type of anesthesia prevents the transmission of the painful impulses for up to several hours. There may be loss of sensation and weakness of an entire arm or leg until it wears off. Spinal, epidural, or caudal anesthesia anesthetizes the major nerves in and around the spinal cord. It can be in the form of an injection at almost any level, from the sacral area to the upper back. It usually affects the entire body below the waist. The duration of the spinal block depends upon the drug used. When it begins to take effect, the patient will begin to feel warmth in the legs. The patient will feel changes that progress proximally, and when it wears off, it regresses from the highest dermatome in a caudad direction.

Regional anesthesia usually lasts for several hours but may be injected continuously through a small epidural catheter to provide pain relief for up to several days. It is often associated with numbness and weakness of the legs and lower body. The anesthesia department is responsible for medication administered through an epidural catheter. The medications that are used vary slightly from department to department. Often, a local anesthetic such as bupivacaine may be mixed with fentanyl in the pharmacy and then given continuously via special tubing and a pump. Additional narcotics may be given for "breakthrough" pain as well.

General anesthesia. This type of anesthesia interrupts the transmission of nerve impulses in the brain, causing unconsciousness. The brain does not receive or interpret any pain signals from the rest of the body. General anesthesia also interrupts other functions of the brain such as the control of movement and breathing. As the depth of anesthesia is increased, the patient may cease spontaneous respirations and will be assisted through mechanical ventilation. With a lesser depth of anesthesia and muscle relaxation, spontaneous respiration may continue, but the patient is still under general anesthesia and is not responsive to stimuli.

Depending upon the type of surgery, length of procedure, and the patient's physical status, the airway may be maintained via mask ventilation, laryngeal mask airway (LMA), or endotracheal intubation. Mask ventilation uses the patient's natural airway and is usually used for shorter cases that do not put the patient at risk for aspiration, such as dilatation and curettage, myringotomy, and other minimally invasive procedures that may require general anesthesia.

LMA is a device placed in the hypopharynx, but it is not as invasive as endotracheal intubation. LMA may be used instead of mask ventilation to assist the anesthesia provider in maintaining a patent airway while freeing up his or her own hands to do other tasks.

Endotracheal intubation is generally performed for any patient who needs more definitive airway protection. This may include patients who have predisposing risk factors for aspiration (as described earlier), a lengthy procedure, will be in a position that may make managing the airway difficult (prone), or any other factors that may compromise the airway without intubation.

Patients occasionally ask "Will my heart stop?" The patient can be assured that the heart continues to beat.

Monitored anesthesia care (sedation). This type of anesthesia, also referred to as "twilight sleep," is becoming more widely used with the development of new medications. It is often used for procedures that are uncomfortable but not very painful, or along with local or regional anesthesia (eg, colonoscopy). The anesthesia provider administers sedation to provide pain relief and reduce anxiety. The patient will often sleep throughout the procedure while maintaining his or her own airway and awaken quickly at the end of the procedure.

#### Personal Items

Patients are usually reminded to leave valuables at home; however, they often forget to remove jewelry. It is becoming more common to have patients arrive in the surgery department with jewelry in tongue, belly, and genital piercings. These will need to be removed as well. Patients should be reminded that if they wear contact lenses, they should either leave them at home and wear their eyeglasses or bring a case and solution to store lenses. Contact lenses cannot be worn into the operating room. Dentures should also be removed and stored with personal belongings before coming into the operating room.

#### General Information

If the patient has any laboratory/diagnostic test results or medical clearance documentation from his or her healthcare provider, they should be brought to the surgery department to avoid having to repeat any procedures, saving time, money, and patient discomfort. (Ideally, this material should have already been faxed to the surgical department prior to the day of surgery, depending on institution policy.)

Patients should be instructed to contact their primary care provider's offices if they become ill shortly before the day of surgery. The presence of cold symptoms with a productive cough makes it inadvisable to proceed with elective procedures, especially if general anesthesia is planned. The patient's airways are more reactive, and he or she is at a greater risk for respiratory complications both during induction and postoperatively.

It is advisable to remind patients not to apply lotions, perfumes, or powders before surgery. Many offices now have signs requesting patients not wear perfume, because of staff and other patients' allergies. Lotions and powders applied to the skin can also interfere with monitoring equipment.

It is important to explain to the patient why he or she needs to arrive at the hospital or surgical center early. By having the patient arrive well before the scheduled time of surgery, paperwork can be completed and any last minute details can be managed. Patients often complain about the long wait. They may not realize that they have been asked to come in well before the procedure and assume that they will be entering the operating room within a few minutes of arrival. It can be suggested that they bring a book or magazine to read while they are waiting. If a delay arises, they need to be informed and given an explanation. This will usually relieve some of their anxiety.

#### After Surgery

At the end of the procedure, the patient who has received sedation is awakened and will usually move onto the stretcher to leave the operating room and be transferred to the postanesthesia care unit (PACU). If the patient has received general anesthesia with intubation, the patient will be extubated and may require assistance to move onto the stretcher.

Patients who have been intubated or who have had an airway placed in the hypopharynx may experience a mild sore throat for a couple of days. There is also a potential for postoperative nausea, especially if the patient has a known history of postoperative nausea and vomiting. Medication can be given to minimize this problem. Nausea may be due to the anesthesia or the specific surgical procedure (eg, laparoscopic cholecystectomy, certain breast procedures).

Although every effort is made to make the patient comfortable, there may be some pain or soreness when the anesthetic reverses or wears off. Some patients believe they will wake up after surgery and have no pain, and if they are uncomfortable, they do not understand why. Each patient is different and reacts differently to anesthesia as well as the pain medication. Regional spinal anesthetic may wear off when the procedure is over or may last a couple of hours longer. Patients should be reassured that medication will be given when pain arises, and pain will be controlled. The surgeon will write a prescription for pain medication and leave it with written postoperative instructions for the patient and family. It is important to make sure the patient has these prior to discharge.

Most patients stay in the PACU for approximately 45 minutes. When a patient has met PACU criteria for discharge, the patient will be discharged to a room, a step-down area to prepare for discharge from the facility, or directly to home. It is required that the patient have someone available to transport him or her home (the patient is not allowed to drive home following the procedure). For certain procedures and general anesthesia, patients will be asked to have someone with them for at least the first 24 hours postoperatively. ADMISSION AND IDENTIFICATION OF PATIENT TO THEATRE / DURING SURGERY SENDING FOR THE PATIENT “Sent for” in TMS8• On request from the Operating Theatre Team, the patient is sent for. system for theatre utilisation. • Ambulatory patients will walk to theatres escorted by a nurse/midwife and will be sent for via a “patient” icon in TMS Recovery8phone call to the ward co-ordinator. On arrival to theatre, Module. • A green patient collection slip containing the patient’s details is to be completed by the theatre staff and given to the theatre orderly to collect patients arriving on beds/trolleys from the ward /EC • The theatre orderly is to hand this green slip to the nurse/midwife on the ward prior to collecting the patient, in order to identify the correct patient. 8• A red tick is placed on the left of the patients name on the recovery room operating list and “Bed” Icon in TMS module, to indicate that the patient has been sent for. • The patient and all medical records are escorted to the Theatre Suite by a nurse/midwife and the orderly. The nurse/midwife must walk at the head end of the bed. Bed rails must be up at all times. The patient shall be covered with a blanket for warmth and privacy. • The nurse/midwife escorting the patient to theatre must have knowledge of care of this patient in order to carry out an effective and complete handover to staff in the theatre suite. • For patients who are unable to participate in the identification process (mental incompetence/impairment, children or due to language barriers) the escorting nurse/midwife must confirm the patients identity with an accompanying adult, legal guardian or parent and provide documentation on the Pre-op/Theatre Checklist MR 290 or DSU Care record MR 335. • In the case of emergency procedures, informed consent is assumed and patients may be taken directly to the theatre suite with only minimal checking procedures taking place (ie allergies, Identity (ID) bands x 2, correct patient labels, group and hold details and consent as per Pre-op/Theatre Checklist MR 290). A Blue sheet may be completed in theatre to facilitate theatre utilisation • Refer to WNHS Policy W144 Correct Patient, Correct Procedure, Correct Site Policy BEFORE ENTERING THE OPERATING/PROCEDURE ROOM • On arrival to the theatre suite, a member of the clinical team welcomes the patient and informs them of what will occur. • Staff must confirm that the patient has two ID labels, and ask the patient to state their full name, date of birth, the type of procedure/treatment, the reason for the procedure/treatment, and the side and site of the procedure/treatment. • For patients who are unable to participate in the identification process (mental incompetence/impairment, children or due to language barriers) the escorting staff member ADMISSION, TRANSFER AND DISCHARGE TO/ FROM THE OPERATING SUITE CLINICAL GUIDELINES SECTION F: PERI OPERATIVE SERVICES 2014 All guidelines should be read in conjunction with the Disclaimer at the beginning of this manual Page 1 of 5 from the preceding location who witnessed and confirmed patient’s identity with an appropriate adult must act as the patient’s representative during the verification process. • Confirm written consent for the procedure from the patient or person responsible. • The patient shall not proceed beyond the holding area until the consent is signed, dated, correct and understood. Any questions shall be dealt with in the holding area by the surgeon as required • A paper cap is placed over the patient's hair. If the patient has any allergies, a RED CAP is used along with RED ID bracelets • Ensure procedure site has been marked in indelible ink by the person performing the procedure (when applicable): The intended site must be unambiguously marked¬ All cases involving laterality, multiple structures or levels must be clearly marked¬ The mark must be visible and sufficiently permanent so as to remain visible¬ following skin prep and draping If patient is turned in theatre marking should be done in such a way that site¬ mark is still visible Marking must take place when the patient is awake and before they enter the¬ procedure room (except in emergency) ‘Left’ or ‘Right’ should be written in full on all documentation¬ where imaging data is used during the marking process the team must confirm¬ images are properly labelled and for the correct patient MARKING EXCEPTIONS • Interventional cases for which the catheter or instrument site is not predetermined (e.g. epidural or spinal analgesia or anaesthesia, cardiac catheterisation etc) • Procedures performed on midline organs such as the umbilical, perineal, or anal areas • Single organ cases such as caesarean section, laparoscopy, laparotomy, urethrotomy or midline sternotomy • Endoscopic procedures performed through the mouth or anus • the operative site is a traumatic site • urgency of surgery precludes marking • intra-operative imaging for localisation will be used • the patient refuses (this must be documented in the medical record) DENTAL CASES Relevant radiographs or other scans must, if possible, be marked to indicate the operative site. Where this is not possible, a diagram clearly indicating the site and side must be prepared and present in the patient’s medical record pre-operatively • Check the pre-op/DSU checklist has been completed at each phase and signed by the ward/DSU staff at the end of the list. • Ensure that all the appropriate documents and diagnostic images are available prior to the commencement of the procedure and that they are labelled correctly, have been reviewed and are consistent with each other and the patient’s and the teams understanding of the proposed procedure • ·Ensure that all correct prostheses/implants/specialised equipment are available • Check the pre-op/DSU checklist and clarify any problems with the ward/DSU nurse/midwife. Admission and Identification of a Patient to Theatre/ During Surgery King Edward Memorial Hospital Clinical Guidelines Section F Perth Western Australia All guidelines should be read in conjunction with the Disclaimer at the beginning of this section Page 2 of 5 • Ensure adequate number of correct labels are available for the operation • When all records are in order the escorting nurse/midwife may leave • The pre-op/DSU checklist must be signed legibly with designation, and time of arrival at Theatre Suite entered on the chart, and “clicked” on “ARRIVE” in Theatre Management System • Patient's name is crossed off the holding bay operation list to indicate the patient has arrived. The holding bay nurse, coordinator and recovery room staff ensures the main theatre list (kept in recovery room) is updated with patients arrival by viewing the Theatre Management System SIGN IN - BEFORE INDUCTION OF ANAESTHESIA • Anaesthetic team with nurse and/or surgeon to confirm patient identity, procedure, site, consent and marking, if applicable. • Known and potential risks (allergies, potential blood loss, airway or aspiration risks) need to be addressed prior to procedure commencement so that if they eventuate, a plan has been communicated. • Antibiotic therapy requirements must be reviewed/discussed. • If special equipment is required for the procedure, the relevant medical team confirms that it is available and has been checked. • Complete documentation on the Surgical Safety Checklist (MR 290/MR 335). TIME OUT - IMMEDIATELY PRIOR TO SKIN INCISION • All team members should introduce themselves and be aware of each others roles. If the members of the team are familiar with each other, a confirmation that everyone has been introduced, is acceptable. • All members of the clinical team must stop and participate in team time out and independently confirm patient identity, procedure, site, thrombophylaxis and allergies. As part of time out antibiotic prophylaxis should be confirmed as given. • VTE prophylaxis should be discussed and implemented. • A final briefing by the surgeon, anaesthetic team and nursing team should be used to verbalise any concerns. • If imaging data are used confirm they are displayed and correct. • The occurrence of the time out process must be recorded on the Theatre Management System. • Complete documentation on the Surgical Safety Checklist (MR 290/MR 335) Admission and Identification of a Patient to Theatre/ During Surgery King Edward Memorial Hospital Clinical Guidelines Section F Perth Western Australia All guidelines should be read in conjunction with the Disclaimer at the beginning of this section Page 3 of 5 SIGN OUT – BEFORE PATIENT LEAVES OPERATING ROOM • Ensure all necessary information is discussed and documented prior to the patient leaving the procedure room • Verbal confirmation by the team of the procedure attended; instrument and equipment counts and specimens are labelled correctly should be documented • To ensure adequate handover to the team providing post-procedure care, post-operative concerns must be discussed and a follow-up plan documented • Complete documentation on the Surgical Safety Checklist (MR 290/MR 335) DISCREPANCIES IN THE PROCESS • If any discrepancy arises or there is disagreement regarding the planned procedure, commencement of the procedure must be delayed until verification confirmed. • • If the patient has not had sedation, neuroleptic or anaesthesia that may alter mental state and the verification can be safely conducted in the operating theatre, the surgeon should undertake the verification process with the patient and document this in the patient’s medical record. • If patient has been administered sedation, neuroleptic or anaesthesia that may alter mental state or who maybe otherwise incompetent, the surgeon must determine the urgency of the case. If not urgent the procedure should be rescheduled until the patient regains mental faculties and the verification can be completed. The action must be documented in the patient’s medical record and an appropriate process undertaken to inform patient. • If the procedure is deemed urgent the surgeon must document their action and rationale in the patient’s medical record and notify the Clinical Nurse Manager and the Medical Director and relevant hospital administrators of all incidences of where all verification steps have not been completed. They should document in the patient’s medical record also. • Refer to WNHS Policy W144 Correct Patient, Correct Procedure, Correct Site Policy Related Forms Pre-op/Theatre Checklist MR 290 DSU Care Record MR 335 Admission and Identification of a Patient to Theatre/ During Surgery King Edward Memorial Hospital Clinical Guidelines Section F Perth Western Australia All guidelines should be read in conjunction with the Disclaimer at the beginning of this section Page 4 of 5 Do not keep printed versions of guidelines as currency of information cannot be guaranteed. Access the current version from the WNHS website. REFERENCES / STANDARDS Office of Safety & Quality in Health Care, DepartmeAn introduction to anaesthesia This booklet aims to offer you and your relatives and friends an introduction to anaesthesia. There are wide differences in how much information people want. Only you can know how much you want to know. We offer some information here and suggest how and where you can find out more. Your anaesthetist will discuss the anaesthetic methods that are appropriate for you and will find out what you would like. Sometimes you can make choices if you want to – anaesthetists try to offer individual care. You and your anaesthetist can work together to make your experience as calm and free from pain as possible. What is ‘anaesthesia’? The word ‘anaesthesia’ means ‘loss of sensation’. If you have ever had a dental injection in your mouth or pain-killing drops put in your eyes, you already know important things about anaesthesia. It stops you feeling pain and other sensations.• It can be given in various ways.• Not all anaesthesia makes you unconscious.• It can be directed to different parts of the body.• Drugs that cause anaesthesia work by blocking the signals that pass along your nerves to your brain. When the drugs wear off, you start to feel normal sensations again, including pain. www.anaesthesia.ie 5 Some types of anaesthesia Local anaesthesia A local anaesthetic numbs a small part of your body. It is used when the nerves can easily be reached by drops, sprays, ointments or injections. You stay conscious but free from pain. Regional anaesthesia Regional anaesthesia can be used for operations on larger or deeper parts of the body. Local anaesthetic drugs are injected near to the bundles of nerves which carry signals from that area of the body to the brain. The most common regional anaesthetics (also known as regional ‘blocks’) are spinal and epidural anaesthetics. These can be used for operations on the lower body such as Caesarean sections, bladder operations or replacing a hip joint. You stay conscious but free from pain. General anaesthesia General anaesthesia is a state of controlled unconsciousness during which you feel nothing and may be described as ‘anaesthetised’. This is essential for some operations and may be used as an alternative to regional anaesthesia for others. Anaesthetic drugs injected into a vein, or anaesthetic gases breathed into the lungs, are carried to the brain by the blood. They stop the brain recognising messages coming from the nerves in the body. www.anaesthesia.ie 6 Anaesthetic unconsciousness is different from unconsciousness due to disease or injury and is different from sleep. As the anaesthetic drugs wear off, your consciousness starts to return. Combining types of anaesthesia Anaesthetic drugs and techniques are often combined. For example: A regional anaesthetic may be given as well as a general anaesthetic• to provide pain relief after the operation. Sedation may be used with a regional anaesthetic. The regional or• local anaesthetic prevents you from feeling pain, and the sedation makes you feel drowsy and mentally relaxed during the operation. Sedation Sedation is the use of small amounts of anaesthetic or similar drugs to produce a ‘sleepy-like’ state. It makes you physically and mentally relaxed during an investigation or procedure which may be unpleasant or painful (such as an endoscopy). You may remember a little about what happened or you may remember nothing. Sedation may be used by other healthcare professionals as well as anaesthetists. If you are having a regional or local anaesthetic, you may want to ask for some sedation as well. www.anaesthesia.ie 7 The anaesthetist Anaesthetists are doctors who have had specialist training in anaesthesia, in the treatment of pain, in the care of very ill patients (intensive care), and in emergency care (resuscitation). They will make major decisions with you, although if you are unconscious or very ill, they will make decisions on your behalf. Your anaesthetist is responsible for: your wellbeing and safety•An introduction to anaesthesia This booklet aims to offer you and your relatives and friends an introduction to anaesthesia. There are wide differences in how much information people want. Only you can know how much you want to know. We offer some information here and suggest how and where you can find out more. Your anaesthetist will discuss the anaesthetic methods that are appropriate for you and will find out what you would like. Sometimes you can make choices if you want to – anaesthetists try to offer individual care. You and your anaesthetist can work together to make your experience as calm and free from pain as possible. What is ‘anaesthesia’? The word ‘anaesthesia’ means ‘loss of sensation’. If you have ever had a dental injection in your mouth or pain-killing drops put in your eyes, you already know important things about anaesthesia. It stops you feeling pain and other sensations.• It can be given in various ways.• Not all anaesthesia makes you unconscious.• It can be directed to different parts of the body.• Drugs that cause anaesthesia work by blocking the signals that pass along your nerves to your brain. When the drugs wear off, you start to feel normal sensations again, including pain. www.anaesthesia.ie 5 Some types of anaesthesia Local anaesthesia A local anaesthetic numbs a small part of your body. It is used when the nerves can easily be reached by drops, sprays, ointments or injections. You stay conscious but free from pain. Regional anaesthesia Regional anaesthesia can be used for operations on larger or deeper parts of the body. Local anaesthetic drugs are injected near to the bundles of nerves which carry signals from that area of the body to the brain. The most common regional anaesthetics (also known as regional ‘blocks’) are spinal and epidural anaesthetics. 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If you are having a regional or local anaesthetic, you may want to ask for some sedation as well. www.anaesthesia.ie 7 The anaesthetist Anaesthetists are doctors who have had specialist training in anaesthesia, in the treatment of pain, in the care of very ill patients (intensive care), and in emergency care (resuscitation). They will make major decisions with you, although if you are unconscious or very ill, they will make decisions on your behalf. Your anaesthetist is responsible for: your wellbeing and safety•Premedication Premedication (a ‘pre-med’) is the name for drugs which are given before some anaesthetics. These days they are not used very often, but if you feel a pre-med would help you, you can ask your anaesthetist about having one. Most are tablets or liquid that you swallow, but you may need an injection, a suppository (see page 29) or an inhaler. They can: reduce or relieve anxiety• help to prevent sickness after the operation• treat any health problems you may have• help with pain relief after your operation.• They may make you more drowsy after the operation. If you want to go home on the same day, this may be delayed. Needles and local anaesthetic cream A needle may be used to start your anaesthetic. If this worries you, you can ask to have a local anaesthetic cream put on your arm to numb the skin before you leave the ward. The ward nurses should be able to do this. Blood transfusion During most operations, you will lose some blood. If necessary, your anaesthetist will make up for this blood loss by giving you other types of fluid into a vein through a drip. If you lose a lot of blood, your anaesthetist will consider a blood transfusion. If your anaesthetist expects you to need a blood transfusion, he or she will discuss this with you beforehand. www.anaesthesia.ie 15 Occasionally, you might need blood unexpectedly. You have the right to refuse a blood transfusion, but you must make this clear to your anaesthetist and your surgeon before the operation. What blood will I be given? Your anaesthetist will know your blood type from your records. Most commonly, you will receive blood from a volunteer (a blood donor). It is supplied by the Irish Blood Transfusion Service. Why does the anaesthetist postpone some operations? Occasionally, your anaesthetist might find something about your general health that could increase the risks of your anaesthetic or operation. It might then be better to delay your operation until the problem has been reviewed or treated. The reasons for any delay would always be discussed with you at the time. Your anaesthetist’s main concern is your safety. www.anaesthesia.ie 16 Getting ready for ‘theatre’ Here are some of the things that you may be asked to do to get yourself ready for your operation. Washing and changing A bath or shower before your operation will clean your skin and• reduce the risk of infection. You must avoid using make-up, body lotions or creams as they prevent heart monitor pads and dressings from sticking to your skin properly. You will be given a hospital gown to put on. You may like to wear• your own dressing gown over this. You can keep your pants on as long as they will not get in the way of• the operation. Sometimes, you may be given paper pants. Please remove nail varnish and ask for advice about false nails.• These can interfere with oxygen monitoring. Personal items and jewellery You can wear your glasses, hearing aids and dentures to go to the• operating theatre. If you are having a general anaesthetic, you will probably need to remove them in the anaesthetic room to make sure they are not damaged or dislodged while you are anaesthetised. They will be returned to you as soon as you want them. If you are not having a general anaesthetic, you can keep them in place. Jewellery and decorative piercings should ideally be removed. Bare• metal against your skin could get snagged as you are moved. If you cannot remove your jewellery, it will need to be covered with tape to prevent damage to it or to your skin. If you are having a local or regional anaesthetic block, you may take• a personal tape, CD or MP3 player with you to listen to music through your headphones. www.anaesthesia.ie 17 When you are called for your operation When it is time for your operation, a member of staff will go with you to the theatre. A relative or friend may be able to go with you to the anaesthetic• room. A parent will normally go with a child. Most people go to theatre on a bed or trolley. You may be able to• choose to walk but this will depend on your general health, whether you have had a pre-med and how far the theatre is from your ward. If you are walking, you will need your dressing gown and slippers. The operating department (‘theatres’) The operating department includes a reception or waiting area, anaesthetic rooms, operating theatres and a recovery room. It looks and feels quite different from other hospital departments – more cold and clinical. Operating theatres are brightly lit and may have no natural light. The theatres may also be quite cool. As it is important for you to keep warm, a blanket will help if you feel cold. The staff Theatre staff normally wear coloured ‘pyjamas’ and paper hats. Because of this, they all look much the same, but you will probably recognise your anaesthetist as you should have met him or her already. www.anaesthesia.ie 18 Reception If you have walked to theatre, you will now need to get onto a theatre trolley for your anaesthetic. This is narrower and higher than a hospital bed and may feel quite cold and hard. A member of staff will help you climb onto it. Theatre staff will check your identification bracelet, your name and date of birth and will ask you about other details in your medical records as a final check that you are having the right operation. The anaesthetic room You will then be taken into the anaesthetic room or, sometimes, into the operating theatre. Several people will be there, including your anaesthetist and the anaesthetic assistant. There may also be an anaesthetist in training, a nurse and a student doctor or nurse. All the checks you have just been through will be repeated once again. If you are having a general anaesthetic, you will probably now need to remove your glasses, hearing aids and dentures to keep them safe. If you would prefer to leave your dentures in place, ask your anaesthetist if this would be alright. www.anaesthesia.ie 19 To monitor you during your operation, your anaesthetist will attach you to machines to watch: your heart: sticky patches will be placed on your chest• (electrocardiogram or ECG) your blood pressure: a blood-pressure cuff will be placed on• your arm the oxygen level in your blood: a clip will be placed on your• finger (pulse oximeter). More monitoring may be needed for major operations. Setting up your cannula Your anaesthetist may need to give you drugs into a vein. A needle will be used to put a thin plastic tube (a ‘cannula’) into a vein in the back of your hand or arm. This is taped down to stop it slipping out. Sometimes, it can take more than one attempt to insert the cannula. You may be able to choose where your cannula is placed. If you have not been able to drink for many hours before your operation, or you have lost fluids from being sick, you may have become dehydrated. Bags of sterile water with added salt or sugar can be given through a drip into your cannula to keep the right level of fluids in your body. Any blood you need will also be given through the drip. www.anaesthesia.ie 20 Local and regional anaesthetics These anaesthetics are usually given to you while you are awake, either in the anaesthetic room or theatre. This is so that you can: help your anaesthetist get you into the correct position• tell your anaesthetist if the needle causes pain• tell your anaesthetist when the anaesthetic is taking effect.• The type and place of a local or regional anaesthetic injection will depend on the operation you are having and the pain relief you will need afterwards. Local anaesthetics Local anaesthetics are injected close to the area of your operation. They can also be used to numb the skin before anything sharp is inserted, such as a cannula for a drip. Regional anaesthetics Spinals or epidurals (the most common regional anaesthetics), are used for operations on the lower half of your body. Spinals are single injections which take only a few minutes to work and last about two hours. They cannot be topped up to make them work longer. Epidurals can take up to half an hour to work but can be used to relieve pain for hours and sometimes days after your operation. They can be topped up by putting more local anaesthetic into the fine plastic tube. www.anaesthesia.ie 21 There are other nerve blocks that your anaesthetist may be able to offer for specific operations. Starting a regional anaesthetic Some local anaesthetic can be given to help the discomfort of the injection for the block. It can take more than one attempt to get the needle in the right place so that the area is properly numbed. If you find this too painful, you can always ask your anaesthetist to stop, and use other types of anaesthesia. Your anaesthetist will ask you to keep quite still so he or she can give you your local or regional anaesthetic block. When the needle is inserted, your anaesthetist will ask you if you feel any tingling or shocks. You may notice a warm tingling feeling as the anaesthetic begins to take effect. It is common to feel as though the part of your body which is anaesthetised does not belong to you. Your operation will only go ahead when you and your anaesthetist are sure that the area is numb. Once the local or regional block is working, your anaesthetist will continue with the plan you have agreed. Your monitoring equipment will be temporarily disconnected and you will be wheeled on your trolley into the operating theatre. www.anaesthesia.ie 22 In the operating theatre: local or regional anaesthetics This is often a busy place, with staff bustling to get ready for your surgery and noises echoing around. Music may be playing. You may be moved across from your trolley onto the operating table. Monitoring equipment will be reconnected, bleeps will start indicating your pulse and a cuff will inflate on your arm to take your blood pressure regularly. A cloth screen is used to shield the operating site, so you will not see the operation unless you want to. Your anaesthetist is always near to you and you can speak to him or her at any time. You can listen to your own music or ask for none at all. After a local or regional anaesthetic After surgery you may have problems passing urine. A thin soft tube• (catheter) may need to be inserted temporarily into the bladder to drain it. This is more likely after a spinal or epidural anaesthetic, as you will not be able to feel when your bladder is full. It will take some hours for feeling to return to the area of your body• that was numb. This ranges from one hour to about 18 hours depending on the type of anaesthetic injection. During this time, the recovery or ward staff will make sure that the• numb area is protected from injury. You can expect to feel tingling as feeling returns, but this soon passes. At this point it is important to let staff know if you are feeling pain. www.anaesthesia.ie 23 General anaesthetics Starting a general anaesthetic (induction) Induction usually takes place in the anaesthetic room, although you may go direct to the operating theatre. If you have had premedication to help you relax, you may not remember this later. There are two ways of starting a general anaesthetic. Either: anaesthetic drugs may be given through the cannula (this is• generally used for adults); or you can breathe anaesthetic gases and oxygen through a mask,• which you may hold if you prefer. Induction happens very quickly, and you will become unconscious within a minute or so. People usually describe a swimmy, light-headed feeling. If it hurts when anaesthetic drugs are given through your cannula, it is important that you tell your anaesthetist. Once you are unconscious, your anaesthetist will continue to give drugs into your vein or anaesthetic gases to breathe (or both) to keep you anaesthetised. www.anaesthesia.ie 24 In the operating theatre: general anaesthetics When your anaesthetist is satisfied that your condition is stable, the monitors will be temporarily disconnected and you will be taken into the theatre. He or she will stay with you and will be constantly aware of your condition, checking the monitors, adjusting the anaesthetic and giving you any fluids or drugs that you need. These are some of the drugs you may be given during your anaesthetic: anaesthetic drugs to keep you anaesthetised• pain-relieving drugs to keep you pain-free during and after your• operation muscle relaxants to relax or temporarily paralyse the muscles of• your body antibiotics to guard against infection• anti-sickness drugs to stop you feeling sick• other drugs depending on your condition as it changes.• Your anaesthetist will choose a way of making sure that you can breathe easily. He or she may do this by simply tilting your head back and lifting your chin. You may have a tube placed in your airway. Keeping your airway open is essential for your safety. For some operations, muscle relaxants, which will stop you breathing, are necessary. Your anaesthetist will use a machine (a ventilator) to ‘breathe’ for you. At the end of the operation, your anaesthetist will stop giving anaesthetic drugs. If muscle relaxants have been used, a drug that reverses their effect will be given. When your anaesthetist is sure that you are recovering normally, you will be taken to the recovery room. www.anaesthesia.ie 25 After a general anaesthetic Most people regain consciousness in the recovery room. Recovery staff will be with you at all times and will continue to monitor your blood pressure, oxygen levels and pulse rate. You may receive pain-relieving drugs before you regain• consciousness, but if you are in pain, tell the staff so they can give you more. Oxygen will be given through a lightweight clear-plastic mask, which• covers your mouth and nose. Breathing oxygen keeps up its levels in your blood while the anaesthetic wears off. The staff will remove your mask as soon as these levels are maintained without oxygen. If you feel sick, you may be given drugs which will help this.• Depending on the operation you have had, you may have a urine• catheter. This is a thin soft tube put temporarily into the bladder to drain it. When you are fully alert, dentures, hearing aids and glasses can be• returned to you. You may shiver after your operation. If you are cold you will be• warmed with a warming blanket. High Dependency Unit (HDU) or the Intensive Care Unit (ICU) After some major operations, you may be taken to the HDU or ICU. If this is planned, it will be discussed with you beforehand. If you are going to one of these areas, you can ask your surgeon, anaesthetist or ward nurse what to expect. www.anaesthesia.ie 26 After your operation Back to the ward The recovery staff must be totally satisfied that you have safely recovered from your anaesthetic, and all your observations (such as blood pressure and pulse) are stable before you are taken back to the ward. The operation will affect how long it will be before you can drink or eat. After minor surgery, this may be as soon as you feel ready. Even after quite major surgery you may feel like sitting up and having something to eat or drink within an hour of regaining consciousness. www.anaesthesia.ie 27 What will I feel like afterwards? How you feel will depend on the type of anaesthetic and operation you have had, how much pain-relieving medicine you need and your general health. Most people feel fine after their operation. However, you may suffer from side effects of some sort. You may feel sick, dizzy or shivery, or have general aches and pains. Some people have blurred vision, drowsiness, a sore throat, a headache and breathing difficulties. You may have fewer of these side effects after a local or regional anaesthetic block. Until the block wears off, you will usually feel fine. However, when it has worn off, you may need pain-relieving medicines and you may then suffer from their side effects. It is important to ask for help: when you first get out of bed• (although you may feel fine lying in the bed, you may feel faint or sick when you first get up) if you have had a spinal or epidural,• as your legs may still be weak or numb for some hours. They may not regain their full strength for about 12 hours. This will help prevent you from falling over. www.anaesthesia.ie 28 Pain relief Good pain relief is important. It prevents suffering and it helps you recover more quickly. Your anaesthetist will probably discuss different pain-relief methods with you before your surgery so you can make an informed decision about which you would prefer. Some people need more pain relief than others. Feeling anxious• increases the pain people feel. Pain relief can be increased, given more often, or given in different• combinations. Occasionally, pain is a warning sign that all is not well, so the nursing• staff should be told about it. Good pain relief helps prevent complications If you can breathe deeply and cough easily after your operation, you• are less likely to develop a chest infection. If you can move around freely, you are less likely to get blood clots• (deep-vein thrombosis or DVT). It is much easier to relieve pain if it is dealt with before it gets bad. So, you should ask for help as soon as you feel pain and continue the treatment regularly. www.anaesthesia.ie 29 Ways of pain relief Pills, tablets or liquids to swallow These are used for all types of pain. They take at least 20 minutes to work and should be taken regularly. You need to be able to eat, drink and not feel sick for these drugs to work. Injections If needed, these may be given through your cannula into a vein or into your leg or buttock muscle. If they are given in your muscle, they may take 20 minutes or more to work. Suppositories These waxy pellets are placed in your back passage (rectum). The pellet dissolves and the drug passes easily into the body. They are useful if you cannot swallow or if you are likely to vomit. They are often used alongside other methods. Patient-controlled analgesia (PCA) This is a method using a machine that allows you to control your pain relief yourself. It has a pump which contains an opiate drug (see page 30). The pump is linked to a handset which has a button. When you press the button, you receive a small dose of the drug painlessly into your cannula. Local anaesthetics and regional blocks These types of anaesthesia can be very useful for relieving pain after surgery. More details are in the leaflet ‘Epidurals for pain relief after surgery’. www.anaesthesia.ie 3

**Postoperative care in the hospital**

After your surgery is complete, you will be moved to a recovery room. You’ll probably stay there for a couple of hours while you wake up from anesthesia. You’ll feel groggy when you wake up. Some people also feel nauseated.

While you’re in the recovery room, staff will monitor your blood pressure, breathing, temperature, and pulse. They may ask you to take deep breaths to assess your lung function. They may check your surgical site for signs of bleeding or infection. They will also watch for signs of an allergic reaction. For many types of surgery, you will be placed under general anesthesia. Anesthesia can cause an allergic reaction in some people.

Once you’re stable, you’ll be moved to a hospital room if you’re staying overnight, or you’ll be moved elsewhere to begin your discharge process.

**Outpatient surgery**

Outpatient surgery is also known as same-day surgery. Unless you show signs of postoperative problems, you’ll be discharged on the same day as your procedure. You won’t need to stay overnight.

Before you’re discharged, you must demonstrate that you’re able to breathe normally, drink, and urinate. You won’t be allowed to drive immediately following a surgery with anesthesia. Make sure you arrange transportation home, preferably ahead of time. You may feel groggy into the following day.

**Inpatient surgery**

If you have inpatient surgery, you’ll need to stay in the hospital overnight to continue receiving postoperative care. You may need to stay for several days or longer. In some cases, patients who were originally scheduled for outpatient surgery show signs of complications and need to be admitted for ongoing care.

Your postoperative care will continue after you’ve been transferred out of the initial recovery room. You will probably still have an intravenous (IV) catheter in your arm, a finger device that measures oxygen levels in your blood, and a dressing on your surgical site. Depending on the type of surgery you had, you may also have a breathing apparatus, a heartbeat monitor, and a tube in your mouth, nose, or bladder.

The hospital staff will continue to monitor your vital signs. They may also give you pain relievers or other medications through your IV, by injection, or orally. Depending on your condition, they may ask you to get up and walk around. You may need assistance to do this. Moving will help decrease your chances of developing blood clots. It can also help you maintain your muscle strength. You may be asked to do deep breathing exercises or forced coughing to prevent respiratory complications.

Your doctor will decide when you’re ready to be discharged. Remember to ask for discharge instructions before you leave. If you know that you’ll need ongoing care at home, make preparations ahead of time.

**POSTOPERATIVE CARE OF THE PATIENT**

After the operation the patient should be safely transferred to the

bed from the operating table, under the supervision of the anaesthetist

and surgeon.

A clear operative note should be written immediately. This

should include instructions on the postoperative care, including

the thresholds for calling back the surgeon.

The following details should be included in the operative

note:

**1** Patient’s details – full name, date of birth, hospital number,

address, ward.

**2** Date (and start/finish time) of operation.

**3** Operating room.

**4** Name of operation.

**5** Surgeon, assistant, anaesthetist.

**6** Anaesthetic type.

**7** Patient positioning and set-up.

**8** Was a tourniquet used, were antibiotics given, was the

patient catheterised, type of skin preparation, method of

draping.

**9** Tourniquet time, if applicable.

**10** Operative details including:

• incision;

• approach;

• findings;

• procedure (appropriate illustration, if appropriate);

• complications, untoward events;

• implants used;

• closure, including suture material used;

• dressing;

• postoperative state (e.g. distal neurovascular status);

• type of dressing used.

**11** Postoperative instructions relevant to surgery:

• observations required and frequency, e.g. 4-hourly pulse

and blood pressure measurements for 24 hours;

• possible complications and action to be taken if complications

occur, e.g. if blood loss exceeds 500 ml in a drain

call the surgeon;

• treatment, e.g. intravenous fluids;

• time lines for patient recovery, e.g. when to mobilise,

when to resume normal oral intake, the need for physiotherapy,

allowable movements, dressing changes.

**12** Discharge and follow-up details; instruction for sutures,

splints, casts, etc.