



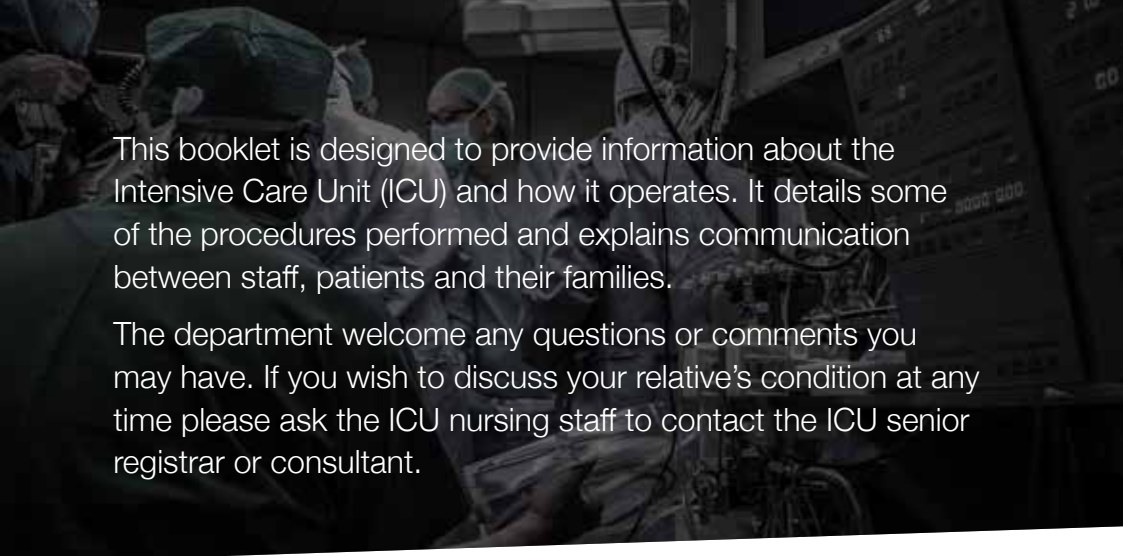
# Intensive Care Unit

Information about procedures and treatments



# Contents

About the ICU	3
Communication	4
Medical procedures and consent	4
Procedures and treatments in ICU	5
Art line	7
Balloon pump	8
BiPAP	9
Bronchoscopy	10
CPR	11
CVC	12
Dialysis	13
Enteral feed	14
EVD	15
ICC	16
Inotropes	17
Intravenous Cannula	18
Intubation	19
Lumbar puncture	21
Research and Audits	22
Swan	24
TOE	25
TPN	26
Tracheostomy	27
Transfusion	29
Urinary Catheter	31
Vascath	32
Ventilator	33
Royal Perth Hospital Intensive Care Unit	34



This booklet is designed to provide information about the Intensive Care Unit (ICU) and how it operates. It details some of the procedures performed and explains communication between staff, patients and their families.

The department welcome any questions or comments you may have. If you wish to discuss your relative's condition at any time please ask the ICU nursing staff to contact the ICU senior registrar or consultant.

## About the ICU

There are many clinical and non-clinical staff involved in the care of ICU patients.

At Royal Perth Hospital the ICU is divided into two sections:

- › General ICU
- › Surgical ICU.

During your own or your relative's stay, there may be one nurse allocated to look after the patient exclusively. Sometimes one nurse may care for two (or more) patients if their needs are less acute, or if their condition is improving.

During the day each area is supervised by an intensive care consultant who is in charge of all aspects of the patients' care. In the evening a different consultant supervises both sections of the ICU, and is on-call from 12am to 8am. All consultants have specialist qualifications in intensive care medicine and considerable experience. There are a number of junior intensive care doctors attached to each area, many of them training to become specialists in intensive care medicine.

## Communication

Soon after a patient is admitted to ICU, the staff will discuss the reason for admission, the risks and outcomes that can be expected, and the nature of the treatment that will be provided. You will be given an opportunity to ask questions about the treatment and the role the family has in decision making processes. If a patient is unable to make decisions on their own behalf the next-of-kin may be asked to provide consent to procedures or surgery.

Admission to ICU can sometimes be prolonged and the medical and nursing staff will endeavour to keep you informed of your relative's progress. It is often beneficial to schedule formal discussions if you have questions.

Intensive care treatments are not always successful and are not appropriate for all patients. If medical staff consider that a favourable outcome is not possible, this will be discussed with you. In these circumstances, following a detailed explanation of treatment options and an adequate time for discussion, a decision may be made to either not initiate or to withdraw certain treatments that are not in your own or your loved one's best interests.

## Medical procedures and consent

ICU treatment is complex and will frequently involve specialised treatments and procedures, not available or possible in the general wards. All procedures involve some risk to the patient. The procedures and treatments are only undertaken when the benefits are thought to outweigh the risks and discomforts. This booklet provides information on the majority of these procedures.

Most procedures performed in ICU need to be performed in a timely manner. The number and type of procedures a patient requires will depend on the severity of their illness procedure may cause delays and may potentially be detrimental to patient care. Therefore, you will be asked to sign a consent form that covers all of these procedures and treatments that are integral to ICU management.

For some procedures (e.g. tracheostomy) you may be required to sign a specific consent form in addition to the general ICU treatment consent form. The medical and nursing staff will be happy to discuss any concerns you may have about procedures and treatments performed in ICU. Whenever possible and practical, procedures will be discussed with you before the procedure is performed.

The consent form and the discussion will be recorded in the medical notes.

***This document provides information about procedures and terms used during a patient's stay in ICU. Please feel free to ask for more information from the medical or nursing staff.***

## Procedures and treatments in ICU

Intensive care involves procedures and treatments that are carried out in the patients' best interests. In general, all medical procedures have risks and the potential to cause complications. This is particularly the case when a medical device is inserted into the body – either through the skin into the blood stream or a body cavity, or into the gastrointestinal tract.



Complications may arise at the time the device is inserted, or may develop after the device has been in place for some time.

These complications can include:

- › bleeding
- › displacement
- › infection
- › discomfort
- › punctures or damage to adjacent parts of the body.

We take all possible precautions to minimise these risks, including extensive educational programs, checklists and adherence to best practice guidelines. Procedures are only undertaken when the expected benefits of the intervention outweigh the risks of the procedure. Our procedures are supervised by experienced staff and patients are closely monitored for the possibility of complications – both during insertion and throughout the time the device is in place. All adverse events are reviewed and compliance with national and international standards is regularly audited.

The following pages detail some of the more common procedures that may be undertaken during ICU admission and some of the potential complications associated with them. If the discomfort and risk is thought to be greater than any potential benefit this will be discussed with you or your next-of-kin.

# Art line

## **Also known as:**

Arterial line or intra-arterial catheter.

## **What is an art line?**

An art line is a thin plastic tube inserted into an artery to continuously measure the blood pressure. Regular blood tests are taken from it – most commonly to measure the levels of oxygen, carbon dioxide and acid within the blood.

## **How is it put in?**

Using local anaesthetic, the doctor inserts a needle and then the art line into the artery. The needle is removed and the art line is secured in place with a stitch. Although usually placed in the wrist, an art line may be positioned at the elbow, groin or foot. They commonly stay in place for several weeks. You may notice the fluid within the art line pulsating slightly. This is normal and is due to pulsations within the artery.

## **Are there any risks?**

Art lines are generally very safe, although they may occasionally require multiple attempts for insertion. They may damage the artery or cause clots to form in the artery; both of which can temporarily impair blood supply. Very rarely, this lack of blood supply may cause the death of downstream tissue.

# Art line



# Balloon pump

## Also known as:

Intra-aortic balloon (counter pulsation) pump or IABP.

## What is a balloon pump?

A balloon pump is a long inflatable tube positioned in the aorta, the main blood vessel which runs out from the heart. It beats in time with the heart and aids the pumping of blood to the rest of the body. It also helps supply additional blood and oxygen to the heart itself.

## How is it put in?

A doctor inserts the balloon via a blood vessel in the groin. It is attached to a console which sits at the end of the bed. Helium gas is used to inflate the balloon in time with the heart.

## Are there any risks?

A balloon pump may damage the aorta or the vessel into which it was inserted or impair blood supply to other parts of the body such as the leg or intestines. There is also a small risk of blood clot formation and gas leakage. A balloon pump is only used when absolutely necessary and is constantly monitored for complications.

Balloon  
pump



# BiPAP

## **Also known as:**

Bi-level positive airways pressure Non-invasive ventilation or NIV

## ***Related and similar therapies are***

Continuous positive airways pressure or CPAP

## **What is BiPAP and why is it used?**

When patients cannot breathe adequately, a BiPAP machine may provide additional oxygen and assistance with breathing. This may reduce the need to insert an ET tube (intubate). BiPAP is usually applied using a tight fitting mask to the face or nose. BiPAP is used within ICU and sometimes elsewhere within the hospital.

## **Are there any risks?**

The most common problem with BiPAP is that some patients find it too uncomfortable and cannot tolerate the mask over their face. The mask can cause pressure sores on the face. As with ventilation via an ET tube there is a risk of chest infection. Despite using BiPAP some patients deteriorate and may need to be intubated if the additional discomfort this causes can be justified. Patients on BiPAP are closely monitored for complications or any signs of deterioration.

# Bronchoscopy

## **Also known as:**

A bronch

## **What is a bronchoscopy?**

A doctor performs a bronchoscopy by passing a video camera on the end of a flexible tube into the patient's windpipe (trachea). This may be needed when a patient has pneumonia, when there is a blockage in the airways, or to aid the placement of other tubes (e.g. a tracheostomy) into the trachea. The doctor may take samples from the airways for analysis. Occasionally a small piece of lung tissue (biopsy) is taken. In ICU bronchoscopy is usually performed through a breathing tube (ET tube or tracheostomy). Sedation or an anaesthetic is given during the procedure.

## **Are there any risks?**

A bronchoscopy may cause deterioration in a patient's oxygen level or a small amount of bleeding in the airways. If a biopsy is taken there is a small risk of damage to the lung. There is a risk that a bronchoscopy may cause infection in the lung. There is a small risk of side effects from the medications used for sedation or anaesthesia during the procedure.

# Bronchoscopy

# CPR

# CPR

## **Also known as:**

Cardio-pulmonary resuscitation

Resus

Cardiac arrest

## **What is CPR and why is it used?**

When a patient's heart stops beating or they stop breathing unexpectedly, chest compression and artificial ventilation are used. An electric current may be passed through the heart and medications are used to try and stimulate the heart back into action. Even with very vigorous CPR the heart is able to be re-started on less than half the occasions when this occurs in an ICU. This is because ICU patients are usually already very ill when CPR is needed. ICU staff will, when possible, discuss the goals of treatment and any treatment limitations before they are applied, If a patient deteriorates to the stage where death is expected or the chances of a good recovery are extremely small we do not try to re-start the heart.

## **Are there any risks?**

Even when CPR is performed by skilled staff there is a risk that while the heart has stopped, the brain does not receive enough oxygen, which can cause brain damage. Other organs such as the kidneys, gut and liver can also suffer damage from a period without an adequate supply of oxygen. Physical damage with fractures to the breast bone and ribs can be caused by chest compression.



# CVC

## **Also known as:**

Central venous catheter  
Central line or CVP line

## **What is a CVC and why is it put in?**

A CVC is a thin plastic tube inserted into a large vein which allows medications to be given intravenously and pressures within the body to be monitored. Under sterile conditions a doctor injects local anaesthetic into the skin and then inserts the CVC using a needle into the neck, or beneath the collar bone, or in the groin. The needle is removed after the line has been placed. The CVC may stay in place for days or even weeks depending on the type but will be removed as soon as it is no longer required.

## **Are there any risks?**

CVCs sometimes take multiple attempts to insert. The most common significant complication of CVCs is infection. During insertion, there is a risk of the needle damaging other structures such as arteries or nerves. CVCs inserted in the neck or under the collar bone may also occasionally puncture the lung causing it to collapse. CVCs used in the ICU are coated with antibiotics and special dressings are used to minimise the chance of infection.

# CVC

# Dialysis

## Also known as:

Haemodialysis, Haemofilter or Filter, Haemofiltration, Haemodiafiltration (Continuous) renal replacement therapy (CRRT or RRT)

Continuous veno-venous haemofiltration  
CVVHD, CVVHF, CVVHDF

## What is dialysis and why is it used?

Patients often require a dialysis machine when there is kidney failure or abnormal levels of acid and salts within the blood. It is also occasionally used to treat some drug overdoses. A doctor inserts a vascath (see Vascath) into a large vein in the neck or groin. Blood circulates through the dialysis machine, toxins are removed and the blood then returns to the body. As patients recover the kidney function often improves and the dialysis machine can be stopped.

## Are there any risks?

A patient's blood pressure may drop temporarily when dialysis is started. The dialysis machine may reduce the levels of some blood cells and remove too much of some salts from the body. Regular blood tests are done to check if this might be happening. It may also lead to a reduction in body temperature. The blood usually needs to be thinned to allow successful dialysis, and this part of dialysis too carries a small risk. Other complications are quite rare.



# Enteral feed

## Also known as:

Nasogastric or NG feeding

Orogastric or OG feeding

## What is enteral feed and why is it used?

Enteral feed is a liquid form of nutrition that is passed into a patient's stomach via a plastic tube inserted into the nose (NG tube) or mouth (OG tube). Patients who are attached to ventilators are not able to eat food the normal way. Most intensive care patients are fed in this way.

## Are there any risks?

Enteral feeding rarely causes problems. However NG tubes may lead to a sinus infection. There is a possibility of incorrect tube placement. Enteral feeding may increase the risk of vomiting, diarrhoea and possibly pneumonia (while on a ventilator). Some patients may not absorb enteral feeds. In this case, a special tube may be passed further past the stomach and further into the gut or TPN may be used (see TPN).

# Enteral feed

# EVD

## **Also known as:**

External ventricular drain  
Intracranial pressure (ICP) monitor

## **Similar and related devices:**

Codman catheter

# EVD

## **What is an EVD and why is it used?**

An EVD is inserted into a patient's head to measure intracranial pressure (ICP) within the brain. EVDs are also used to take samples and drain spinal fluid (cerebro-spinal fluid or CSF). They are used in patients with severe head injury, a brain haemorrhage or after neurosurgery. The EVD is inserted under strict sterile conditions by a neurosurgeon either in the ICU, Emergency Department or operating theatre. A Codman catheter also measures ICP but is not able to drain CSF. When it is no longer needed the EVD (or Codman catheter) is removed.

## **Are there any risks?**

There is a risk of bleeding in, or damage to, the brain from the EVD/Codman. There is a risk of infection developing within the fluid around the brain. The EVD may become blocked or dislodged. An EVD/Codman is only used when absolutely necessary, often when patients are in an induced coma, and is constantly monitored for complications.



# ICC

## **Also known as:**

Intercostal catheter  
Chest drain  
Pleural drain  
Mediastinal/pericardial drain

# ICC

## **What is an ICC?**

Patients who have had chest surgery, have fluid or air around the lung, or experienced major trauma may need an ICC inserted through the chest wall to drain fluid or air from around the lung (or heart). An ICC may also be required to drain collections of fluid from the chest in other circumstances (such as pneumonia). Every ICC is inserted under strict sterile conditions by a doctor. It may be inserted while the patient is in the Emergency Department, operating theatre or ICU. It is stitched in place underneath the armpit or at the base of the breastbone. The ICC is connected to a drainage bottle or collection system at the side of the bed. You may see the tubing swinging or the fluid bubbling.

## **Are there any risks?**

An ICC may cause damage to the lung or other parts of the body during insertion. Chest x-rays are done after insertion to check that they are in an appropriate position. The ICC can cause pain, and may occasionally become blocked. The ICC and the patient are constantly monitored for complications. They are removed when they are no longer necessary.



# Inotropes

## **Also known as:**

Vasopressors, vasoconstrictors

Vaso-active drugs

Ino-constrictors and ino-dilators

## **What are inotropes and why are they used?**

Inotropes are drugs given to increase blood pressure and support the function of the heart, helping patients who have gone into shock. They are given through a CVC (see CVC) into a large vein. Different types of inotrope (e.g. adrenaline, noradrenaline, dobutamine) are used in various situations. Inotropes are commonly used in the ICU.

## **Are there any risks?**

Different inotropes have different effects and side effects. In high doses some may impair blood supply to fingers and toes or the bowel. Other inotropes may increase the risk of irregular heart rhythms, rapid heart rhythms or increase the level of acid or sugar in the blood. They may also cause blood pressure to rise too high. Patients given inotropes have their heart rhythm monitored and frequent or continuous measurements of blood pressure.

# Inotropes



# Intravenous Cannula

## **Also known as:**

IVC, IV cannula

Drip

## **What are intravenous cannulas and why are they used?**

An intravenous cannula is a small, soft piece of hollow tubing which is inserted into a vein, usually in the back of the hand or the arms, which is then used to administer intravenous medications and fluids. They are used as an alternative to CVC (see CVC) when the latter is not required.

## **Are there any risks?**

Intravenous cannulas can take several attempts to insert. The main risk is infection, and they are routinely changed every few days to prevent this. They can cause inflammation or blood clots to form in the vein in which they are inserted. There may be some bleeding when they are removed.

# Intravenous Cannula

# Intubation

## **Also known as:**

Insertion of a breathing tube, an endo-tracheal tube, ET tube or ETT

## **What is intubation?**

If a patient is unconscious or has severe breathing difficulty, then an ETT is placed into the windpipe (trachea). This is connected to a ventilator, which provides additional oxygen and assistance with breathing.

## **How is it done?**

A general anaesthetic is given and a doctor inserts an ETT into the trachea via the mouth (or occasionally nose). Sometimes the procedure is done under local anaesthetic using a flexible telescope (see Bronchoscopy). A small cuff is inflated which creates a seal to stop air leaks and prevent mouth secretions going into the lungs. Once the ETT is confirmed to be in the right place it is secured with a tape or a special holding device. Sedation is usually given for comfort while the ETT is in place. An ETT may stay in place for many days and occasionally longer. If a patient requires ventilator support for a long time a tracheostomy (see Tracheostomy) is usually performed.

## **Are there any risks?**

People vary in the difficulty of ETT insertion. Intubation may occasionally damage the trachea, vocal cords, mouth and teeth. Allergic reactions can occur to the drugs used for the anaesthetic. If the ETT goes into the oesophagus it will cause oxygen levels to drop. Oxygen levels can drop during intubation and, very rarely, this may cause death or severe disability.



Chest infection is also a risk during intubation. The ETT may be accidentally dislodged. We have guidelines for intubation, and the latest equipment and training to minimise the risks.

# Intubation



# Lumbar puncture

## **Also known as:**

LP

Spinal tap

## **What is an LP and why is it performed?**

An LP is performed to sample the fluid from around the spinal cord and brain. Under sterile conditions a doctor inserts a small needle through the lower part of the back and draws up a small amount of fluid. An LP may be done to measure the pressure inside the spine and brain, to check for conditions such as meningitis, or to get a fluid sample for other tests.

## **Are there any risks?**

Occasionally an LP may cause a headache after the procedure. There is also a very small risk of damage to the spinal cord and brain from an LP, either directly or because of bleeding or infection at the site of the LP. A brain scan is usually done before an LP to see if there are signs of high pressure inside the skull. In extremely rare cases, the high pressure may not show on the brain scan and when the LP is done the brain can squash down above the spinal cord causing brain damage or even death.

# Lumbar puncture



# Research and Audits

## What is Research?

Research is carried out to test new treatments and to compare different treatments. For this type of research we request consent from patients or, if a patient is unable to give consent themselves, consent for the research is requested from their legal representative or next of kin. Consent is always voluntary. Sometimes when people are critically ill, treatments are being compared and the treatment needs to be given urgently to be effective. The treatment may be given and then consent to continue in the research and receive the ongoing treatment will be requested after the initial treatment has been given. This only occurs when there is no other way to carry out the research and permission has been granted by the hospital's Ethics Committee. Other research simply involves collecting information on patients that are being, or have been treated in the ICU. Such information is collected in such a way that individual patients cannot be identified. This can help us identify risk factors in patients and inform further research which focuses on improving their chances of recovery.

## What is an Audit?

Audits are routinely carried out as part of our quality improvement program. When a performance audit is being carried out, information is collected from all patients in the ICU who meet the inclusion criteria. This allows us to compare how we are performing against our past performance and quality benchmarks. The results of recent audits can be found on the Quality TV's between the two sides of the ICU.

### **Are there any risks?**

Risks associated with any research are explained to you in a separate information and consent document for that particular study. There can be potential benefits to patients from access to new treatments and observation carried out by the research team. For other types of research and audits the main risk is to personal privacy if your health information was to become public. This risk is minimised by storing the information securely and in a form that is de-identified to the greatest extent possible.

# Research and Audits



# Swan

## **Also known as:**

Swan Ganz catheter  
Pulmonary artery catheter

## **What is a Swan and how is it put in?**

A Swan is a thin piece of tubing inserted via a vein in the neck or just beneath the collar bone. Under sterile conditions a doctor inserts the Swan using a needle. The needle is removed when the Swan is in place. The tubing then passes through the heart chambers and into the main blood vessel in the lungs (the pulmonary artery). It is used during heart surgery, when patients have poor heart function and also when patients need large doses of medications (inotropes) to support the blood pressure and heart function. A Swan measures how well the heart is functioning and monitors pressure within the heart and lungs.

## **Are there any risks?**

A Swan can take multiple attempts to insert, with the risk of the needle damaging other structures such as nerves and very rarely the pulmonary artery or lung. There is also a risk of infection. Occasionally during insertion, a Swan can cause the heart to beat irregularly. Chest X-rays are routinely taken to check the position of the catheter and to help avoid complications or assist in recognising them at the earliest opportunity.



# TOE

## **Also known as:**

Transoesophageal echocardiogram

## **What is a TOE?**

A TOE is a specialised ultrasound examination of the heart. A doctor passes an this needs to be explained through the mouth of a patient and into the gullet (oesophagus) and then the stomach. This allows inspection of the heart and major blood vessels from inside the chest to see if there are any abnormalities. It also provides information on how well the heart is working. Sedation is given to the patient during the procedure.

## **Are there any risks?**

A TOE may rarely damage the mouth or oesophagus. Patients may have a sore throat for a short time after the procedure. There is a very small risk of the TOE probe causing perforation of the oesophagus. The risk is increased if there is a history of a bleeding disorder, difficulty swallowing, or liver disease. All patients are carefully monitored before, during and after a TOE.

# TOE



# TPN

## **Also known as:**

Total parenteral nutrition

Intravenous feeding

## **What is TPN and why is it used?**

TPN involves introducing nutrition directly into a patient's vein when they are unable to eat normally. TPN contains protein, energy, vitamins and minerals. It is usually given via a CVC or PICC. It is used when it is not possible to feed a patient via the stomach and/or gut. It is usually possible to change to enteral feeding (page 12 or see Enteral feed) or normal eating as the gut starts working and a patient's condition improves.

## **Are there any risks?**

TPN can increase the risk of infection. It may also affect liver and immune function, and can cause high blood sugars requiring treatment. The need for TPN is regularly assessed by nursing, medical and nutrition staff.

# TPN

# Tracheostomy

## **Also known as:**

Trache or tracheotomy

## **What is a tracheostomy?**

When a patient is attached to a ventilator for a long time, a tracheostomy is usually performed. This is a plastic tube which is placed directly into the windpipe (trachea) through the front of the neck. It is more comfortable than a breathing tube through the mouth and voice box and often allows patients to be ventilated with less sedation.

## **How is it put in?**

Under a general anaesthetic and with local anaesthetic and strict sterile precautions, a doctor performs a small operation to insert the tracheostomy. This is usually a minor keyhole operation that is done in the ICU. However, sometimes the patient will need to be taken into surgery for the operation. Talking and swallowing are sometimes possible when a patient has had a tracheostomy in for some time. The tracheostomy is almost always removed when the patient has recovered, leaving a small scar.

## **Are there any risks?**

All ICU tracheostomies are inserted under direct ICU consultant supervision. There is a small risk of bleeding during the procedure. Rarely, the patient may require surgery if the bleeding cannot be stopped. Low oxygen levels or difficulty with ventilation can occur during the insertion of the tracheostomy, or if a blockage occurs. Very rarely this may cause death or severe disability.



There may be a reaction to the drugs used for the general anaesthetic. There is a risk a tracheostomy may damage the trachea, needing later surgery to repair.

# Tracheostomy



# Transfusion

See: [transfusion.com.au](http://transfusion.com.au) for more information

## Different forms of transfusion and related terms:

Blood transfusion

Red blood cells

Platelets

Fresh frozen plasma or FFP

Cryoprecipitate or cryo

Albumin

## When are transfusions used?

Transfusions are used to correct low blood counts (low haemoglobin and anaemia) or replace blood loss due to bleeding. Other blood products listed above are used to correct abnormal or low levels of protein and clotting factors (if a patient is bleeding or is at risk of bleeding during a procedure).

## Are there any risks?

Serious transfusion reactions are rare. However all transfusions carry a small risk of infection. A recipient's body may also react against a transfusion. These reactions range from a mild increase in body temperature to severe life-threatening illness with multiple organ failure. The risk of a reaction is minimised by extensive procedures that ensure a patient receives the safest blood product possible. Estimates of the risk are shown below:

Febrile reaction	1 in 1000
Delayed transfusion reaction	1 in 11 000
Anaphylaxis (severe allergic reaction)	1 in 50 000
Transfusion related acute lung injury	1 in 190 000
Septic reaction	1 in 75 000 to 500 000



Hepatitis B	Approx 1 in 557 000
Hepatitis C	Less than 1 in 1 million
HIV (AIDS) and HTLV 1 & 2	Less than 1 in 1 million
Variant Creutzfeldt-Jakob disease	Possible – not yet reported in Australia

# Transfusion

# Urinary Catheter

## **Also known as:**

In-dwelling catheter (IDC).  
Catheter.

## **What is a urinary catheter and why is it used?**

A urinary catheter (IDC) is a soft tube inserted into the bladder through the urethra. It drains urine from the bladder continuously, removing the need for a patient to empty their bladder as usual. A small balloon at the tip of the catheter holds it in place within the bladder. It is essential for patients who are heavily sedated, have an epidural catheter in place, or who have limited mobility and are unable to walk to the toilet. It is also used to closely monitor urine output. The catheter is connected to a drainage bag which holds and records the amount of urine passed.

## **Are there any risks?**

Urinary catheters can lead to infection within the bladder. There is a small risk of damaging the urethra when the catheter is inserted which can lead to bleeding and, in extremely rare cases, problems with passing urine after the catheter is removed. Some patients are temporarily unable to pass urine when the catheter first comes out – in this case, the catheter may need to be re-inserted for a short period of time.



# Vascath

## **Also known as:**

Dialysis line or vascular catheter.

## **What is a vascath and how is it put in?**

A vascath is a tube inserted into a large vein for dialysis (when there is kidney failure – see Dialysis) or for plasmapheresis (the removal of certain proteins from the blood). Under sterile conditions a doctor inserts a needle and then the vascath into either the neck, beneath the collar bone or in the groin. The needle is removed and the vascath is left in place for up to several weeks. The vascath is removed when it is no longer needed.

## **Are there any risks?**

Vascaths sometimes take multiple attempts to insert. The most common significant complications of vascaths are infection and blockage. During insertion, there is a risk of the needle damaging other structures such as arteries or nerves, and vascaths in the neck or under the collar bone may also occasionally damage the lung. Chest X-rays are taken after insertion to check for any complications.

# Vascath



# Ventilator

## Ventilator

### **Also known as:**

Respirator

Breathing machine

Invasive ventilation

### **What is a ventilator and why is it used?**

When patients cannot breathe properly, they may need to be attached to a ventilator (by an endotracheal tube (ETT) or tracheostomy – see Intubation and Tracheostomy). This is a common reason for admission to an intensive care unit. The ventilator provides additional oxygen and assistance with breathing. Patients on ventilators via an ETT often require sedation. When a patient no longer needs ventilator support it is slowly reduced and the ETT removed. If a patient requires ventilator support for a long time a tracheostomy is usually performed.

### **Are there any risks?**

Patients who are on a ventilator are at risk of damage to the lungs and infection. The risk of a chest infection and pneumonia (although small) increases with the amount of time spent on a ventilator. This is because patients have a tube in their windpipe that makes it easier for bacteria to get into the lungs. Patients are constantly monitored for complications and have chest X-rays as needed.



# Royal Perth Hospital Intensive Care Unit

Location: Level 4 North Block  
Royal Perth Hospital  
Wellington Street  
Perth 6000

Contact: Royal Perth Hospital Switchboard  
Telephone: 08 9224 2244

## Thank You

The medical and nursing staff are happy to answer any questions you might have and to discuss any concerns about procedures and treatments performed in the ICU.

**If there are any specific procedures or treatments mentioned in this booklet that you would not want performed, or any other treatment limitations that are important to you or your family member, please raise these with the medical staff.**





© Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the Copyright Act 1968, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia 2019.