

Equipment Used in Critical Care

Every patient in critical care has a monitor which enables continuous monitoring of heart rate and rhythm, blood pressure, oxygen saturations, temperature, respiratory rate with the option to add other variables.

Many patients in Intensive Care will be sedated with powerful drugs given to them continuously through an intravenous infusion; these patients will require assistance with their breathing using a ventilator. Patients can also be breathing using a ventilator when they are awake using a tracheostomy tube which allows full ventilatory support to be delivered whilst the patient is awake. This method is used if the patient is likely to take some time to wean from the ventilator.

Arterial Line: is a small, thin plastic catheter similar to an IV cannula which is inserted into an artery and allows constant monitoring of blood pressure. This may be essential for stabilising the patient's condition. It also provides access for the frequent blood sampling a critically ill patient needs and may be inserted into the radial, brachial, femoral or pedal artery. An arterial line is inserted into the artery using the same technique as inserting a peripheral cannula, it is then sutured to the skin to keep it in place. The catheter is connected to the monitor where the patient's blood pressure is constantly displayed as a waveform.

Central Line: is an intravenous line which is used for giving fluids and/or medications. Certain medications commonly used in critical care cannot be given in the smaller peripheral veins. A central line is inserted into one of the larger veins of the body: jugular, femoral or subclavian veins.

Endotracheal Tube (ETT): is a plastic tube used during mechanical ventilation, a procedure used to assist the patient breathing. The ETT is inserted into the patient's trachea and attached to a ventilator to assist with their breathing.

Indwelling Urinary Catheter: all critical care patients require an indwelling urinary catheter to measure the amount of urine being produced. This enables accurate fluid balance to be calculated.

Nasogastric (NG) Tube: is a flexible plastic tube that is inserted into the patient's nose and passed into the stomach. The NG tube has two main purposes; firstly it allows the emptying of the stomach and prevents the build-up of fluids which may cause aspiration if the patient was to vomit. Secondly, it provides a way to give oral medications and nutrition to a patient who is unable to swallow.

Renal Dialysis: dialysis machines assist the kidneys to work; there are many reasons why someone may need dialysis. For example if the kidneys are failing because of disease or injury, to remove harmful toxins and excess fluid. CVVHDF (Continuous VenoVenous Haemodiafiltration) is used on ITU whereby patients are connected to dialysis via a vas cath (a tube similar to a central line only used for CVVHDF). Blood is removed via the catheter and is circulated through a filter in the machine to clean the blood which is then returned via the same line. Patients receiving dialysis require close monitoring of their blood pressure and will require a number of blood tests to check their dialysis is working properly.

Tracheostomy Tube: is a small tube placed directly into the patient's trachea using a small hole made in the neck. These are used to facilitate weaning patients from ventilatory support which can take some time. Tracheostomies inserted for this purpose are temporary and are removed when no longer needed.

Vas Cath: is a dialysis catheter, a specialised central line only used in dialysis. This catheter is placed when the patient requires dialysis for renal failure. It is placed either in the jugular, femoral or subclavian veins.

Ventilator: these machines can either assist patients to breathe if they need it, or completely take over their breathing to allow the body to rest. The patient is connected to the ventilator via either an endotracheal tube or a tracheostomy inserted into the trachea.