



PROCEDURE CHECKLIST

Central venous cannulation

Ultrasound-guided Seldinger insertion of a central venous catheter (internal jugular, femoral or subclavian) for vasoactive drugs, reliable access and central monitoring.



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Patient reference	Date	Time	Completed by
Equipment ready			
☐ Full sterile barrier precautions: hat, mask, sterile gown, sterile gloves and a large full-body sterile drape			
☐ 2% chlorhexidine in 70% isopropyl alcohol skin preparation			
☐ Ultrasound machine, linear probe, sterile probe cover and sterile gel			
☐ Central venous catheter kit: introducer needle, syringe, J-tip guidewire, scalpel, dilator, multi-lumen catheter and clamps (adult: 7 Fr triple-lumen)			
☐ Lidocaine 1% with syringe and 25 G / 21 G needles			
☐ 0.9% sodium chloride flushes and pre-flushed lumens with caps or needle-free connectors			
☐ Sutures or sutureless securement device and transparent chlorhexidine dressing			
☐ Blood gas syringe or pressure-transduction tubing to confirm venous placement			
☐ Sharps bin			
☐ Insertion checklist / care bundle sticker			
Before · Decision and consent			
☐ Confirm the indication and choose the site: ultrasound-guided internal jugular is first line for most emergency department patients; femoral in cardiac arrest, coagulopathy or when the neck is inaccessible.			
☐ Explain the procedure, main risks (bleeding, infection, arterial puncture, pneumothorax, thrombosis) and obtain consent, or document best-interests decision.			
☐ Review coagulation results, platelets and anticoagulants where time permits.			
☐ Attach monitoring: ECG, oxygen saturations and blood pressure; give oxygen as needed.			
☐ Complete a pre-procedure safety checklist (a local safety standard for invasive procedures) with the assistant.			
Before · Scan and position			
☐ Pre-scan both sides: identify the vein and adjacent artery, confirm the vein is compressible and free of thrombus, and choose the better vessel.			
☐ For internal jugular or subclavian access, place the patient head-down (Trendelenburg) if tolerated, with the head turned slightly away.			
☐ For femoral access, place the patient supine with the leg slightly abducted and externally rotated.			
Before · Asepsis and set-up			
☐ Perform surgical hand hygiene and put on hat, mask, sterile gown and gloves.			
☐ Clean a wide area with chlorhexidine-alcohol and allow it to dry for at least 30 seconds; apply a full-body sterile drape.			
☐ Flush every lumen of the catheter with 0.9% sodium chloride and clamp all lumens except the distal (guidewire) port.			
☐ Lay out the kit in order of use and check the guidewire advances freely from its sheath.			
☐ Infiltrate lidocaine 1% at the insertion site in the awake patient.			
During · Venepuncture under ultrasound			
☐ Hold the probe in the non-dominant hand and image the vein in short axis (out of plane) or long axis (in plane).			
☐ Insert the needle attached to a syringe at 45° (internal jugular: at the apex of the triangle between the two heads of sternocleidomastoid, aiming towards the ipsilateral nipple), aspirating continuously.			
☐ Track the needle tip on screen by sliding or tilting the probe; stop when the tip is seen inside the vein and dark, non-pulsatile blood aspirates freely.			
☐ If bright red, pulsatile blood or an arterial puncture occurs, remove the needle and apply firm pressure for at least 5 minutes. Do not proceed to dilation.			
During · Guidewire			
☐ Stabilise the needle, remove the syringe and occlude the hub with a thumb to prevent air entry.			
☐ Advance the J-tip guidewire through the needle; it should pass without resistance.			
☐ Never force the guidewire. If resistance is felt, withdraw the wire and the needle together and re-puncture; withdrawing the wire alone through the needle can shear it.			
☐ Watch the ECG: ectopic beats or arrhythmia mean the wire is in the heart — withdraw it a few centimetres.			
☐ Keep hold of the guidewire at all times. A wire released inside the patient can migrate into the circulation.			
☐ Remove the needle while holding the wire.			
☐ Confirm the guidewire is in the vein before dilating. Visualise the wire within the vein in long axis and follow it into the central vein; if doubt remains, use manometry or a venous blood gas via a small cannula. Dilating an artery can cause catastrophic haemorrhage or stroke.			
During · Dilation and catheter placement			
☐ Make a small stab incision at the wire entry point with the scalpel, blade facing away from the wire.			
☐ Pass the dilator over the wire with a gentle twisting motion only to the depth needed to dilate skin and subcutaneous tissue, then remove it, keeping pressure on the site.			
☐ Thread the catheter over the wire until the wire emerges from the distal port; grasp the wire there before advancing the catheter further.			
☐ Advance the catheter to the planned depth and remove the guidewire completely.			
☐ Confirm the complete guidewire is in your hand and show it to the assistant. A retained guidewire is a never event.			
☐ Aspirate and flush each lumen; confirm free back-flow of dark venous blood, then clamp or cap each lumen.			
☐ Optionally confirm the catheter in the vein on ultrasound and the tip position with the agitated saline bubble test in the right atrium.			
After · Securing			
☐ Suture or secure the catheter and apply a transparent chlorhexidine-impregnated dressing.			
☐ Return the patient to a comfortable position.			
☐ Dispose of all sharps yourself and count them.			
After · Confirmation			
☐ Obtain a chest radiograph after internal jugular or subclavian insertion to confirm tip position (lower superior vena cava / cavo-atrial junction) and exclude pneumothorax.			
☐ Do not use the line for vasoactive drugs until position is confirmed, unless the clinical situation cannot wait and venous placement has been proven. Document the reason if used before the radiograph.			
☐ Transduce the line to confirm a venous waveform if central venous pressure is to be monitored.			

After · Documentation and care

- ☐ Document the indication, site, side, ultrasound use, number of passes, catheter length at skin, tip confirmation, guidewire removal and complications.

- ☐ Complete the insertion care bundle and hand over the line for daily review of need, site and dressing.

- ☐ **When removing an internal jugular or subclavian line, place the patient flat or head-down, ask them to exhale or perform a Valsalva manoeuvre, then apply an occlusive dressing.**

Removal with the patient sitting up risks air embolism.



A drafted procedure checklist, awaiting senior review. Perform procedures only within your training, competence and local policy. It does not replace your clinical judgement.

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