Procedure-Based Assessment Validation: VP Shunt (to be used for training assessor)

Specialty: Neurosurgery	Procedure: VP Shunt

Trainees should carry out the procedure, explaining what they intend to do throughout. If the trainee is in danger of harming the patient at any point s/he must be warned or stopped by the trainer immediately.

Competencies and Definitions		**Positive Behaviors** (doing what should be done)	**Negative Behaviors** (doing what shouldn't be done)	**Negative – Passive Behaviors** (not doing what should be done)
I. Consent				
C1	Demonstrates sound knowledge of indications and contraindications including alternatives to surgery	Explains using examples relevant to the patient: • Principle benefit of operation • Subsequent improvement of function • Limitations of surgery • Consequences of not having surgery	Expresses unrealistic views of the improvement in function expected following the procedure	Fails to point out the limitations of the operation
C2	Demonstrates awareness of sequelae of operative or non-operative management	Describes consequences, agrees expectations and checks patient understanding	Is over confident in describing consequences, reinforces patient's unrealistic expectations	Fails to mention key inevitable consequences
C3	Demonstrates sound knowledge of complications of surgery	Explains in priority order the complications likely to occur in terms of commonality and in terms of seriousness	Spends time explaining rare complications and fails to mentions commoner ones	Misses out one or more major complication(s) when explaining to trainer or patient
C4	Explains the perioperative process to the patient and/or relatives or carers and checks understanding	Describes what will happen throughout the management of the condition, indicating clear post-operative milestones, giving a rough idea of time involved and specifying who will do what. Questions the patient to	Uses technical terms, explains too quickly and does not check understanding	Misses out common events, particularly those likely to happen in the early post-operative period

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		check that their expectations are realistic and they have understood fully		
C5	Explains likely outcome and time to recovery and checks understanding	Expresses sensible prognosis and clear has knowledge of the current outcome data	Expresses over optimistic outcomes and glosses over realistic difficulties	Fails to check that the patient has understood by actively listening to the patient's reiteration of what is being said to them
II.	Pre-operative planning			
PL1	Demonstrates recognition of anatomical and pathological abnormalities (and relevant co-morbidities) and selects appropriate operative strategies/techniques to deal with these e.g. nutritional status	Articulates the realistic clinical findings against any investigative findings and achieves a balance between the two	Describes an operative plan without the full use of the clinical and investigative material	Fails to take into account specific medical conditions that might limits the technical choices
PL2	Demonstrates ability to make reasoned choice of appropriate equipment, materials or devices (if any) taking into account appropriate investigations e.g. X-rays	Draws, writes or iterates pre-operative plan		Fails to check the notes for relevant or unexpected findings. Does note take into account investigative findings when planning or selecting the equipment
PL3	Checks materials, equipment and device requirements with operating room staff	Either personally visits or rings up the operating theatre to check on equipment availability	Delegates the task to ta more junior team member with no plans to check the instruction has been carried out	Fails to communicate with the theatre staff
PL4	Ensures the operative site is marked where applicable	Personally marks the site	Delegates the task of marking the site to a junior doctor or nurse	Fails to check that the site has been marked

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PL5	Checks patient records, personally reviews investigations	Ensures that the relevant information such as investigative findings are present, checks wristband	During the procedure asks theatre staff to look something up in the notes	Fails to check notes to ensure all information is available that is needed
III. Pre-operative preparation				
PR1	Checks in theatre that consent has been obtained	Checks the consent form in the notes	Leaves the consent checking to nurses or junior medical staff	Makes no effort to check consent form in the notes
PR2	Gives effective briefing to theatre team	Checks with nurse that they have all equipment needed ready to hand and discusses planned actions	Complains when something is not available during the procedure. Asks for something which results in theater staff going on a hunt for it	Makes no attempt to discuss operation with team
PR3	Ensures proper and safe positioning of the patient on the operative table	Prior to scrubbing supervises the position of the patient	Delegates the task to a theatre orderly and does not check	Concentrates on the process of scrubbing up while the patient is being transferred onto the operating table
PR4	Ensures proper and safe positioning of the patient's head	Ensures the head of the patient is safely placed on headrest / Mayfield head clamp. Positions the patient's head according to the planned surgical approach taking into consideration of clinical conditions and anatomical variation	Leaves the headrest or Mayfield head clamp unlocked. Position of the head incompatible with the surgical approach planned	Fails to check the patient's head position
PR5	Ensures proper and safe positioning of headpins in cases where Mayfield head clamp is being used	Informs anesthetist about putting on head clamp. Makes sure the headpins do not slip, or causing any impingement	Places headpins at insecure positions or may cause muscle bleeding	Fails to inform anesthetist about putting on head clamp or to check the position of headpins

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		onto the scalp, or being placed onto the temporalis muscle		
PR6	Checks the positioning of all the body parts of the patient	Checks: • Neck position for airway, venous drainage of the brain and brachial plexuses • All pressure points packing e.g. elbows and ankles	Delegates the task to a theatre nurse or orderly and does not check	Fails to check the positioning of the patient's at risk area
PR7	Demonstrates careful skin preparation	Supervises painting of the operative field, ensures the material covers the whole surface	Paints (or supervises) the operative field leaving gaps or inadequate coverage	Delegates painting to an unsupervised member of the team or fails to check that the area has been adequately painted
PR8	Demonstrates careful draping of the patient's operative field	Drapes (or supervises draping of) the operative filed to adequately expose site ensuring only prepared site is exposed	Exposes an inadequate area for the incision/access	Fails to secure drapes adequately
PR9	Ensures general equipment and materials are deployed safely (e.g. catheter, diathermy)	Checks with the anesthetic nurse that the diathermy has been placed well away from any existing metal implants	Delegates the task unsupervised to the anesthetic nurse or orderly	Fails to brief the team if metalware is in place in the other limb
PR10	Ensures appropriate drugs administered	Checks notes, liaises with anesthetic team to ensure prescribed drugs administered	Assumes drugs have been administered without checking	Fails to check with anesthetic team that drugs have been administered
PR11	Arranges for and deploys specialist supporting equipment	Briefs and discusses with the team where equipment is to	Takes no regard of where equipment is placed such as	Ignores the set up procedure in the immediate pre-operative

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	(e.g. Image intensifier) effectively	be placed relative to the operative field	diathermy scabbard and/or places it in a position where the devices can't be used safely	period and has a conversation with a third party
IV. Exposure and closure				
E1	Demonstrates knowledge of optimum skin incision / portal / access	Verbally states or marks with a pen the anatomical landmarks prior to making the incision	Makes an incision that is clearly too small or too large	Does not extend an incision when struggling for access
E2	Plans the appropriate craniotomy / burr hole(s)	Designs the craniotomy / burr hole(s) according to investigations findings and clinical situations	Makes the craniotomy / burr hole(s) that provides not adequate exposure on intracranial structures	Does not extend the craniotomy / burr hole(s) when clinical and investigation (e.g. stereotaxy, intra-op USG) finding confirmed inadequate exposure
E3	Achieves an adequate exposure through purposeful dissection. Identifies and protects all surrounding structures	Gives a running commentary to the trainer of the structures encountered / anticipated to be encountered. Implements measures to protect surrounding structures which are at risk of damage during dissection and retraction	Describes the structure encountered in the dissection in the wrong location. Damages surrounding structures during the dissection inadvertently. Exposes structures which are clearly unnecessarily or inadequately exposed	Tries to maintain the standard approach despite the fact that access is proving difficult. Fails to recognize and adjust to anatomical variation
E4	Completes a sound wound repair where appropriate	Closes each layer without tension	Ties very tight sutures, clearly strangulating soft tissue	Leaves too large a gap between sutures so that structures are not properly opposed
E5	Protects the wound with dressings, splints and drains where appropriate	Personally supervises the application of the wound dressing	Walks away from the operating table without briefing the assistant or the nurse on what they require to cover the wound	Fails to specify required dressing

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V.	Intra-operative technique			
IT1	Follows an agreed, logical sequence or protocol for the procedure	Justifies actions at any point in procedure	Spends a lot of time removing superfluous tissue	When a difficulty is encountered fails to completer maneuver
IT2	Consistently handles tissue well with minimal damage	Personally places self retaining retractors and checks whether the skin is under tension	Pull and tears tissue. Allows the wound edges to become dry	Fails to recognize tissue damage
IT3	Controls bleeding promptly by an appropriate method	Responds calmly by applying pressure initially, briefs the team about what will need to be done – e.g. asks assistant to be ready for diathermy	Grabs in non-systematic manner at soft tissue and indiscriminately applies diathermy. Continues with a dissection despite welling up of blood in the field	Fails to act calmly. Fails to brief team. Fails to control blood flow
IT4	Demonstrates a sound technique of knots and sutures / staples	Draws soft tissue together without tension and forms proper reef knots	Pulls tissues tight so that the tissues blanche. Lets a wound edge gape or pulls one layer of tissue under another	Fails to use the correct method or technique
IT5	Uses instruments appropriately and safely	Asks for instruments in a timely manner anticipating what is needed	Uses and instrument for a purpose it is not intended. Takes whatever is given to them then complains	Fails to ask for correct instruments at the correct time
IT6	Proceeds at appropriate pace with economy of movement	Lets the nurse know what is to be done or needed next	Stops and starts, picking things up and then putting them down without using them. Spends a long time on a task not appropriate to the pace	Spends a long time on a task not appropriate to the pace
IT7	Anticipates and responds appropriately to variation e.g.	When encountering something unexpected stops	Persists in a task that is proving difficult and has to be stopped	Fails to recognize anatomical variation and has to be stopped

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	anatomy	and verbalizes concerns with the team		
IT8	Deals calmly and effectively with unexpected events / complications	Verbalizes that there is a problem and briefs the team on what needs to happen next	Verbalizes negative concerns and issues conflicting instructions. Tries to continue inappropriately (has to be stopped)	Fails to brief the assistant adequately
IT9	Uses assistant(s) to the best advantage at all times	Briefs assistants and places them and the instruments where they are needed	Accepts whatever assistant does irrespective of whether or not appropriate	Fails to brief the assistant and expresses irritation when positions are not what are required
IT10	Communicates clearly and consistently with the scrub team	Sets positive tone with appropriate greeting. Asks for instruments clearly. Informs as to next steps. Asks for instruments by correct name	Uses rough or inappropriate tone of voice or words. Uses slang or local description so instruments	Gives no greeting, does not ask for anything (but expects to be given it)
IT11	Communicates clearly and consistently with the anesthetist	Sets positive tone with appropriate greeting. Sets clear goals and expectations	Proceeds with next step of procedure without anesthetic advice (where required)	Fails to inform anesthetist of key phase requiring anesthetic cooperation
IT12	Opening of peritoneum	Performs a good dissection down into the intra-peritoneal compartment	Recognizes wrongly the pre-peritoneal space as the intra-peritoneal compartment. Damages intra-peritoneal organs	Fails to dissect into the intra-peritoneal compartment
IT13	Creation of subcutaneous tunnel for the peritoneal catheter	Creates the subcutaneous tunnel correctly	Punctures into the wrong plane or into the intra-thoracic compartment	Fails to create the subcutaneous tunnel for the peritoneal catheter

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IT14	Insertion of ventricular catheter	Inserts the ventricular catheter with good trajectory and positions it in the appropriate place at appropriate length with good flow of CSF observed	Positions the ventricular catheter at clearly inappropriate places (e.g. temporal horn) or leaves the catheter at a place where poor CSF flow observed	Misses the ventricular system due to poor trajectory
IT15	Connection of various components of the shunt system	Connects the components correctly with non-touch technique	Connects the components incorrectly e.g. connects the valve not according to the flow of the CSF	Handles the shunt components carelessly and in turn leads to higher chances of contamination
VI. Post-operative management				
PM1	Ensures the patient is transferred safely from the operating table to bed	Personally takes part in the transfer of the patient from the operating table to the bed	Leaves the operating room prior to the transfer	Fails to check patient once they are in bed
PM2	Constructs a clear operation note	Makes a legibly written or clearly dictated note	Writes illegibly, mumbles on Dictaphone	Fails to write or dictate anything at all
PM3	Records clear and appropriate post operative instructions	Writes in clear text a list of post-operative instructions in the notes	Gives verbal instructions to a pass nurse	Fails to write anything in the notes at all
PM4	Deals with specimens. Labels and orientates specimens appropriately	Personally arranges specimens for pathologist	Delegates checking labels to junior	Does not label specimens