

<b>Title:</b>	<b>NWTS Local Safety Standards for Invasive Procedures in Paediatric Critical Care patients</b>
<b>Version:</b>	<b>Version 1</b>
<b>Supersedes:</b>	N/A
<b>Application:</b>	The guideline is intended for use by NWTS team or any hospital team caring for infants, children and young people under 16 years age across the Paediatric Critical Care Network in the North West & North Wales region.

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1. **Detail of Procedural Document: NWTS Local Safety Standards for Invasive Procedures in Paediatric Critical Care patients**
2. **Equality Impact Assessment (RMCH)** - applied for 11.02.2022. EqIA number allocated 20.06.22: 2022—136
3. **Consultation, Approval and Ratification Process**

This guideline was developed with input from:

- North West (England) and North Wales Paediatric Transport Service (NWTS).

These guidelines were circulated amongst the North West and North Wales Paediatric Critical Care Transport Service clinical team for comments in May 2022

All comments received have been reviewed and appropriate amendments incorporated.

These guidelines were signed off by NWTS guideline team and NWTS Clinical Leads on .

For ratification process for network guidelines see appendix 1.

#### **4. Disclaimer**

These clinical guidelines represent the views of the North West (England) and North Wales Paediatric Transport Service (NWTS) and the North West and North Wales Paediatric Critical Care Operational Delivery Network (PCCN). They have been produced after careful consideration of available evidence in conjunction with clinical expertise and experience.

It is intended that trusts within the Network will adopt this guideline and educational resource after review and ratification (including equality impact assessment) through their own clinical governance structures.

**The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient.**

Clinical advice is always available from NWTS on a case by case basis.

Please feel free to **contact NWTS (01925 853 550)** regarding these documents if there are any queries

Key Points

- This Standard Operating Procedure (SOP) / Guideline details the universal approach and guidance which must be adhered to by all staff caring for patients who are undergoing invasive procedures by the North West and North Wales Transport Team (NWTS).
- The guidance is based on the NHS England 2015 document National Safety Standards for Invasive Procedures (NatSSIPs).  
<https://www.england.nhs.uk/wpcontent/uploads/2015/09/natssips-safety-standards.pdf>.

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## 1. Introduction

The purpose of this SOP / Guideline is to define and standardise the approach taken by North West and North Wales Paediatric Transport Service (NWTS) when implementing Local Safety Standard for Invasive Procedures (LocSSIPs) that are consistent with the principles and framework set out in the National Safety Standards for Invasive Procedures (NatSSIPs). The aim of NatSSIPs is to eradicate the occurrence of the Patient Safety Never Events, which occur around invasive procedures. NatSSIP(s) addressed within NWTS procedural LocSSIPs are:

- 4.5.3 Handovers during procedural care
- 4.7 Safety Briefing
- 4.8 Sign in
- 4.9 Time out
- 4.11 Prevention of retained foreign objects.
- 4.12 Sign out
- 4.13 Debriefing

## 2. Aim of the NWTS LOCSSIPs:

To standardise the management of invasive procedures which members of the NWTS team may undertake whilst out on retrieval including:

- Arterial Line insertion
- Chest Drain insertion
- Intubation – Endotracheal Tube (ETT)
- Central Venous Catheter insertion (CVC)
- Peripherally inserted central catheter (PICC),
- Umbilical Venous Line (UVC)
- Hickman or Midline Line
- Nasogastric tube insertion (NGT) or Orogastric tube (OGT)
- Urinary Catheter insertion.

**\*Excluding Peripheral cannulation and Intraosseous insertion\***

Providing a clear definition of invasive procedures, multidisciplinary team roles and responsibilities and maintaining a safe culture to promote teamwork, minimise avoidable complications, and prevent patient safety never events.

### **3 The process**

Procedural team briefing is a key element of practice in the delivery of safe patient care during invasive procedures, and forms part of both the World Health Organisation (WHO) Surgical Safety Checklist and the 'Five Steps to Safer Surgery' (NPSA, 2010).

The key elements are the Brief, Sign-in, Time-out, Sign-out and Debrief. The original WHO Checklist (NPSA, 2009) did not mandate Brief and Debrief, but the evidence base supports the importance of these steps from a safety point of view and the time spent ensuring everyone is briefed at the start of a list will often save time later.

### **4 Team safety briefing**

A safety briefing must be performed at the start of all elective, emergency and unscheduled procedures. It should take place in a discreet location in which patient confidentiality can be maintained, while enabling inclusivity and contribution from all team members and noise and interruptions should be minimised during the safety briefing.

Every team member is responsible for the delivery of safe care and the discussion should include and not limited to:

- Diagnosis and planned procedure
- Site and side of procedure eg: Chest Drain insertion, CVC/PICC lines
- Infection risk, e.g. MRSA status
- Allergies
- Relevant comorbidities or anticipated complications
- Plan for cardiac decompensation
- Need for antibiotic prophylaxis
- Likely need for blood or blood products
- Patient positioning
- Equipment requirements and availability, including special equipment or 'extras
- Possibility of speciality input e.g., ENT

### 5 Sign in

All patients undergoing invasive procedures by NWTS must undergo safety checks. Participation of the patient (and/or parent, guardian, or carer) in the sign in should be encouraged when possible.

The sign in should not be performed until any omissions, discrepancies or uncertainties identified in the handover from the District General Hospital Staff (DGH) to the NWTS team have been fully resolved except in extreme emergencies. The necessary checks as part of the sign in process for particular procedures are detailed in the relevant procedural checklist(s) found within the appendix.

The sign in must be performed by at least two people involved in the procedure. For procedures performed under general or regional anaesthesia, these should include the anaesthetist and anaesthetic assistant. For procedures not involving an anaesthetist, the operator and an assistant should perform the sign in (NHS England, 2015).

Any omissions, discrepancies or uncertainties amongst any member of the team, should be raised during this sign in stage and should be resolved before the 'time out' and before starting any procedure.

### 6 Time Out

All patients undergoing invasive procedures by NWTS must undergo safety checks immediately before the start of the procedure: **the time out**, the relevant checks are listed in the procedural checklist(s) relevant to the procedure undertaken found within the appendix.

Any member of the NWTS/ DGH team involved in the procedure may lead the time out. All team members involved in the procedure should be present at the time out and, except in extreme emergencies, all team members should stop what they are doing and participate. Asking all team members to introduce themselves is an effective way of doing this and is the first step of the time out process.

Any omissions, discrepancies or uncertainties identified during the time out should be resolved before the procedure starts. Consideration should also be given to other safety guidelines that may apply to the specific procedure being carried out.

### 7 Sign out

All patients undergoing invasive procedures must undergo safety checks at the end of the procedure before handover to the accepting team: **the sign out**. The necessary checks are detailed in the relevant checklist(s) with the appendix. Any member of the NWTS team or DGH team can lead the sign out. All team members involved in the procedure should be present at the sign out. The team member leading the sign out should verify that all team members are participating. This will usually require that they stop all other tasks and face the sign out lead. The senior operator must sign the sign out section on the NWTS transfer form indicating the LocSSIP for the procedure was followed and no deviations were made, or adverse events occurred. If deviations were made or adverse events did happen, then this should be documented in the patients notes.

### **8 Prevention of retained foreign objects**

This standard supports safe practise in accounting for all items used during invasive procedures and in minimising the risk of them being retained unintentionally either at a surgical site, in a body cavity or in patients clothing or bedding. In the case of an intentionally retainment object(s) e.g CVC lines, Arterial lines, PICC lines, Hickman lines, UVC lines, Chest Drains, NGT, OGT, Urinary catheter, ETT or tracheostomy, the LocSSIP(s) relevant to the procedure should address the following:

- Parent/ Patient informed and consented

- Impact on the retained item

- Documentation in patient notes of what item is left behind and explanation given to patient/ family why. This should include Type, design, material, size and if anything, else is needed e.g water instilled for balloon inflation of a urine catheter.

### **9 Debriefing**

A debriefing should be performed at the end of all elective procedures and can be led by any team member. Debrief is an opportunity for all team members to facilitate reflection, conversation and learning. The debriefing should occur in a place which is free from noise and interruption, ensuring patient confidentiality throughout.

The debriefing can be modified but main discussion points should consist of:

- Whether the LocSSIP(s) are being effectively implemented.

- Things that went well.

- Any problems with equipment or other issues that occurred.

- Any areas for improvement.

If a significant issue about the care of a patient arises during the debriefing, clear and contemporaneous notes of this should be made in the patient's records (NHS England, 2015)

There should be no other checklists in use other than those listed in the appendix of this document. If a staff member feels that none of the forms relate to NWTS they should speak to NWTS line manager if unsure.

### **10 Monitoring compliance and effectiveness**

NWTS will ensure that all staff are aware of the safety standards for Invasive Procedures and LocSSIPs on staff inductions and on yearly inhouse days. Use of the LocSSIPs, documentation and deviation from protocol will be regularly audited as part of the NWTS audit programme, and audit findings will be fed back to the team. Once they have been in place six months, we will audit their use and deviations every 2 years.

# INVASIVE PROCEDURE SAFETY CHECKLIST: PAEDIATRIC INTUBATION

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF / SIGN IN	
Preparation	
NWTS intubation guideline: cognitive aid for plan page 3	Yes
Airway assessment—is difficult airway anticipated? Do you need ENT?	Yes
Airway rescue plan verbalised if <u>un</u> anticipated difficulty? See NWTS intubation guideline—page 5	Yes
Plan for cardiovascular decompensation	Yes
Allergies or risk of Malignant Hyperthermia?	Yes
Appropriate P.P.E.worn?	Yes
Position optimised Eg Ramp / C-spine precautions	Yes
Pre-oxygenate: 100% FiO <sub>2</sub> ideally for 3 minutes	Yes
Apnoeic oxygenation: use nasal cannula/high-flow cannula	Yes
NGT / PEG inserted and aspirated	Yes
Secure IV / IO access checked & working well?	Yes
<b>Have team members all introduced themselves?</b> <b>TEAM ROLES:</b> (ideally team leader is not the intubator) – Intubator 1 + 2 – Airway assistant – Drugs / runner (Minimum 3 people required for RSI) – NGT / PEG assistant to aspirate regularly during BVM	Yes

DOCUMENT IN PATIENT NOTES
Indication for intubation
Name /grade / specialty of intubator
Size and length of tube
Number of attempts – state where/why failed
Laryngoscopy grade and type of Laryngoscope used
CXR reviewed—confirming ETT and NGT/ OGT position
Any adjuncts / specific position or equipment required.
Any complications / adverse events/ issues with equipment/ deviations made/ any other comments.

TEAM DEBRIEF / SIGN IN	
Equipment (use sizing chart in Intubation Guideline)	
Monitoring attached (SpO <sub>2</sub> , ECG, BP auto 2 minute cycles) <b>Waveform capnography + stethoscope</b>	Yes
Suction working – yankaeur & airway catheter	Yes
Face mask, oro/naso pharyngeal airways and LMA's	Yes
Laryngoscope (preferably 2) checked and working	Yes
Video laryngoscope available? Use as primary device if able	Yes
Endotracheal tubes - 1/2 size above and below expected size - use microcuff if over 3kg	Yes
Tube tapes/ ties ready (ideally with duoderm and cavilon)	Yes
Bougie / introducer / Magill's	Yes
Anaesthetic bagging circuit and HME Ambubag Bag-valve mask available in case of O <sub>2</sub> failure	Yes
Ventilator checked and ready (if time allows)	Yes
Difficult Airway trolley / Defibrillator location known?	Yes

DEBRIEF / SIGN OUT	
ETT position confirmed by ETCO <sub>2</sub> trace	Yes
Tube depth checked (B/L air entry?)	Yes
ETT secured appropriately	Yes
Cuff pressure checked (if applicable)	Yes
Chest X-ray ordered	Yes
Nasal cannula O <sub>2</sub> removed	Yes
Appropriate ventilator settings confirmed	Yes
Analgesia and sedation commenced	Yes
Procedure documented in patients notes	Yes

Drugs (all labelled)	
Crashcall printed & used to check drug doses	Yes
Intubation drugs ready	Yes
Vasopressors ready incl <sup>6</sup> 'dilute' adrenaline	Yes
Fluid bolus ready	Yes
Cardiac arrest drugs: Adrenaline/atropine ready	Yes
Post intubation sedation available	Yes
Sugammadex available	Yes
Anaphylaxis kit / MH box location known?	Yes

TIME OUT	
Verbal confirmation between all team mem-	
Airway plan verbalised (plan A, B,C,D)	Yes
Senior help in room or available (Phone/ bleep)	Yes
Is role allocation clear: 1 <sup>st</sup> intubator, 2 <sup>nd</sup> intubator, airway assistant / cricoid, drugs, runner, NGT /PEG aspirator, team leader etc.	Yes
Triggers for emergency drugs verbalised	Yes
Triggers for failed intubation / oxygenation clear & verbalised Algorithm on display (page 5 NWTS intubation)	Yes
<b>Any concerns about procedure?</b> <b>If yes, document in notes if / how they were mitigated.</b>	



## Size Guide for managing Paediatric Airways

Age	Plain E.T.T. Internal Diameter (#ID, mm)	Length Oral (cm at lip)	Length Nasal (cm at nose)	Micro-cuff Size (#ID, mm)	Bougie Size (Ch or FG)	LMA Size	Suction (Ch or FG)	Cricothyroid Needle (G)	Quicktrach (#ID, mm)
Preterm <2kg	2.0,2.5	6-7	7.5-9	-	5 = 1.7mm	1	6	18G	1.5
Preterm 2-4kg	3.0,3.5	7-8.5	9-10.5	3 (if	5	1	6,7	18G	1.5
Term -3 months	3.5	8.5-10	10.5-12	3	5	1	7	16G	1.5
3 m- 1year	3.5,4.0	10-11	12-14	3, 3.5	5	1.5	7,8	16G	1.5
1 year	4.0, 4.5	11-12	14-15	3.5	5	1.5, 2	8,10	14G	2.0
2 year	4.5, 5.0	12-13	15-16	4.0	10=3.3mm	2	10	14G	2.0
3 year	5.0	13-14	16-17	4.0	10	2	10	14G	2.0
4-6 years	5.0, 5.5	14-15	17-19	4.5	10	2,2.5	10,12	14G	2.0
6 –8years	6.0, 6.5	15-16	19-21	5.0	15 = 5mm	2.5	12	14G	2.0
>8 years	6.5, 7.0,7.5	16-20	20-23	5.5	15	3	14	14G	2.0

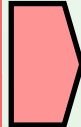
\*All sizes / distances are guides and should be confirmed clinically and by CXR

Microcuff tubes not recommended by manufacturer <3Kg — Check compatibilities of your equipment as manufacturers vary

# INVASIVE PROCEDURE SAFETY CHECKLIST: CHEST DRAIN

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF/ SIGN IN	
Indication e.g. pneumothorax, pleural effusion, empyema..... If Tension Pneumothorax; has thoracocentesis been performed. <b>*Document in patient notes*</b>	
Patient identity confirmed	Yes
Carer/ patient informed	Yes
<b>Does the procedure need to be performed pre-transfer?</b> <b>*If yes, Document in patient notes*</b>	
NWTS consultant informed	Yes
Imaging reviewed: CXR, US, CT	Yes
Confirm site of clinical abnormality	Yes
Clinical signs correlate with CXR/US/CT	Yes
Coagulation checked?	Yes
Allergies checked?	Yes
Safe site of drain insertion identified	Yes
Has feeding been stopped/ NGT aspirated?	Yes
Sedation and analgesia checked	Yes
Local anaesthetic checked	Yes
Plan for Cardiovascular Decompensation	Yes
Is necessary equipment available? • Hat, mask, gown, sterile gloves • Procedure pack • Appropriate chlorhexidine gluconate • Needles, syringes, 0.9% NaCl • Lignocaine local anaesthetic • Sutures x2 (3.0-4.0 non-absorbable) • Appropriate size/type drain • Chest drain bottle & tubing • Clamp available • +/- Ultrasound + sterile sleeve & lubricant • Appropriate dressing	Yes
Are there any concerns about this procedure for the patient? <b>*If yes, Document in patient notes*</b>	



TIME OUT	
Verbal confirmation between members before start of procedure	
Consider potential need for help with the chest drain insertion and / or Ultrasound guidance	Yes
Seldinger technique to be used?	Yes
<b>All guidewires counted</b>	<b>Yes</b>
Is pt on adequate ventilator settings & in 100% FiO <sub>2</sub> ?	Yes
Is patient adequately sedated and muscle relaxed?	Yes
Is position optimal?	Yes
All team members identified, and roles assigned eg 1 <sup>st</sup> & 2 <sup>nd</sup> individual to insert drain; airway management; team leader?	Yes
Calculate and document what 10mL/kg would be for max. drainage within the first 1-2 hours.	Yes
If draining pleural effusion, has team allocated an individual to clamp drain once 10 mL/kg drained and considered mL/mL replacement.	Yes
Consider clamping for patient move	Yes
Plan for pulmonary oedema if draining an effusion	Yes
Any concerns about procedure including mitigations. <b>If yes, document in patient notes</b>	

DEBRIEF / SIGN OUT	
Guidewire removed	Yes
Sutures, tubing and dressing secured?	Yes
Was fluid drained?	Yes
Volume of fluid (mL): <b>*Document in patient notes*</b>	Yes
Type of fluid: <b>*Document in patient notes*</b>	Yes
Was fluid sent to the lab? <b>*Document in patient notes*</b>	Yes
Was air aspirated?	Yes
Is drain swinging or bubbling?	Yes
Has chest x-ray been reviewed?	Yes
<b>If effusion, clamp drain once 10mL/kg has drained within the first 1-2hours</b>	
Any complications/ adverse events/issues with equipment or any deviations made? <i>Eg: bleeding, subcutaneous emphysema</i> <b>*Document in patient notes*</b>	

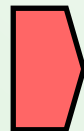


DOCUMENT IN PATIENT NOTES
Indication for procedure and why needed to be performed pre-transfer
Insertion site and what sutures are present
Number of attempts and method of insertion
Chest drain type and size
Volume of fluid drained and type drained
Fluid sent for microbiology: e.g. MC&S, other micro, histology, biochemistry
X-ray reviewed
Any complications/adverse events/ issues with equipment/ deviations made/ any other comments

## INVASIVE PROCEDURE SAFETY CHECKLIST: ARTERIAL LINE INSERTION

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF/ SIGN IN	
Patient identity confirmed	Yes
Carer / patient informed	Yes
Allergies checked – <b>If any allergies, please specify in notes</b>	Yes
Appropriate staff and equipment available: <ul style="list-style-type: none"> <li>• Appropriate size arterial lines</li> <li>• +/- Baby wire</li> <li>• Heparinised Saline bag</li> <li>• Transducer line + pressure bag</li> <li>• Appropriate PPE for procedure</li> <li>• Sterile drape</li> <li>• Appropriate strength Chlorhexidine gluconate</li> <li>• Steri-strips/sutures</li> <li>• Sterile Tegaderm dressing</li> </ul>	Yes
Confirm optimum insertion site selected: <ul style="list-style-type: none"> <li>• Overlying skin with no signs of infection and no pre-existing ischemic changes</li> <li>• +/- USS/Doppler assessment</li> </ul>	Yes



TIME OUT	
Verbal confirmation between team mem-	
<b>All guidewires counted</b>	Yes
Heparinised saline available with transducer set primed and ready	Yes
Circulatory risks to limb assessed	Yes
<b>If yes, document in patient notes</b>	
Any concerns about procedure including mitigations.	



DEBRIEFING / SIGN OUT	
<b>Guidewire removed</b>	Yes
<b>All guidewires accounted for</b>	Yes
Line secured: steri-strips/sutures	Yes
Sterile transparent semi-permeable dressing applied	Yes
Distal Perfusion & pulses checked both in line and failed attempt sites.	Yes
Operator disposed of all sharps safely	Yes
Arterial line transduced and wave form confirmed	Yes
Able to aspirate arterial blood	Yes
Blood gas obtained	Yes
Procedure documented in patients notes	Yes



DOCUMENT IN PATIENT NOTES
Indication for arterial line
Arterial line insertion site
Number of attempts – state where/why failed.
Wave form confirmed
Blood gas results documented
Whether ultrasound guided or not. E.g. poor pulses
Catheter size, type and length.
Distal perfusion and pulses checked in both line site and failed attempt sites.
Any complications/ adverse events/ issues with equipment/ deviations made/ any other comments

# INVASIVE PROCEDURE SAFETY CHECKLIST: CVC / PICC/ UVC / MIDLINE INSERTION

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF / SIGN IN	
Patient identity confirmed	Yes
Carer / patient informed	Yes
Allergies checked <i>If yes, please specify in patient notes</i>	Yes
Peripheral / IO access checked	yes
Necessary equipment available +/- ultrasound	Yes
Appropriate line for procedure available Check size and length	Yes
Sterile gloves, sterile gown, hat & mask worn by operator	Yes
Use sterile drape to cover patient	Yes
Appropriate strength chlorhexidine Gluconate applied to procedural site and allowed to dry?	Yes
Sterile chlorhexidine dressing available. For UVC—secure with umbilical tape. A purse string suture may be used later to stitch the catheter in place.	Yes
Primary vessel identified for procedure (Plan A)	Yes
Alternative vessel identified for procedure (Plan B)	Yes
Plan for cardiovascular decompensation	Yes
Any contraindications (including coagulation, platelets checked, anatomical, high O <sub>2</sub> , clinical instability) <i>please specify in patient notes</i>	

TIME OUT	
Verbal confirmation between team members before start of procedure	
Inotrope(s) / further fluid bolus con- sidered	Yes
Is patient position optimal?	Yes
Insertion site accessible and communicated with team	Yes
All team members identified and roles assigned?	Yes
Correct line available & ready	Yes
<b>Number of guidewires in pack counted</b>	<b>Yes</b>
Any concerns regarding procedure including mitigations. <i>If yes, document in patient notes</i>	

DEBRIEF/ SIGN OUT	
Guidewire removed and intact	Yes
Injection site caps placed using ANTT	Yes
Sterile Chlorhexidine dressing applied over insertion site using ANTT. Only exception is UVC.	Yes
Is line sutured in place For UVC—Umbilical tape in place/ purse string suture + bridging tape to secure	Yes
Blood aspirated from all lumens before flushing	Yes
Venous Gas checked + if necessary line transduced	Yes
Number of guide wires disposed of matches number in pack	Yes
Post procedure X-Ray required/checked when indicated (Tick box on transfer form)	Yes
Line safe to use and clearly communicated to the team	Yes

DOCUMENT IN PATIENT NOTES
Indication for CVC/ PICC line/UVC/ midline insertion
Insertion site
Lumen size & length
Number of lumens
LOT number – <i>Place sticker in the notes</i>
Number of attempts – state where/ why failed
Any allergies
Tip confirmed on x-ray if applicable
Blood gas results documented and whether line transduced
Distal perfusion and pulses checked both line site and failed sites.
Any complications / adverse events/ issues with equipment/ deviations made/ any other comments

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF/ SIGN IN	
Patient identity confirmed	Yes
Carer / parents informed?	Yes
Allergies checked	Yes
Correct size NGT available? (eg double the appropriate size of endotracheal tube, but easily fits the patient's nostril)	Yes
Enteral syringe and pH testing paper available	Yes
Duoderm and tape available to secure the NG tube	Yes
Water- soluble gel available for lubrication	Yes
Approx length = nose to ear to half-way between xiphisternum & umbilicus	Yes
Are there any concerns or contraindications to performing the procedure? (Coagulopathy/ base of skull Fracture/ previous sphenoidal surgery)	Yes
<b>If yes, document in patient notes and proceed to orogastric tube.</b>	

TIME OUT	
Verbal confirmation between team members before start of procedure	
Base of skull # ruled out if applicable?	Yes
Is position optimal	Yes
Team members identified and role assigned	Yes
Any concerns about procedure including mitigations.	

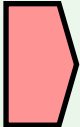
DEBRIEF/ SIGN OUT	
Guidewire removed?	Yes
Is aspirate below pH 5? <b>If pH &gt;5 do not use until</b>	Yes
NGT/OGT taped appropriately	Yes
Post procedure hand over given to nursing staff?	Yes
Procedure documented in patients notes	Yes
Is a chest X-ray required? <b>If yes, document reason why in</b>	

DOCUMENT IN PATIENT NOTES
Insertion site
How many mls aspirated and pH
Number of attempts
Type of NGT (e.g. short or long term)
Size NGT
Length NGT secured
X-ray reviewed, position confirmed and verbally communicated
Any complicated / issues with equipment / deviations made/ any other comments.

# INVASIVE PROCEDURE SAFETY CHECKLIST: INSERTION OF A URINARY CATHETER

Tick 'yes' on transfer form if full compliance. If not then please ensure you document deviations in patients notes.

TEAM DEBRIEF / SIGN IN	
Patient identity confirmed	Yes
Allergies checked	Yes
<i>If yes, please specify in patient notes</i>	
Clinical need for catheterisation discussed	Yes
Carer/ patient informed?	Yes
Assemble and verify supplies: <ul style="list-style-type: none"> <li>• Sterile catheterisation kit</li> <li>• Sterile gloves &amp; apron</li> <li>• Urinary Catheter (consider having 2<sup>nd</sup> catheter in case 1<sup>st</sup> accidentally contaminated)</li> <li>• Lubricant / Instillagel</li> <li>• Sterile syringe and ampoule of water for balloon inflation as per catheter size</li> <li>• Urinary collection bag</li> <li>• Balloon function checked on catheter before insertion</li> </ul>	Yes
Ensure privacy and good lighting.	Yes
Are there any concerns about this procedure for the patient? E.g. contraindications / anatomical abnormality/ safeguarding	
<i>If yes, please specify in patient notes</i>	
Optimal position achieved to perform procedure	Yes
Perform hand hygiene, don clean gloves <b>Female:</b> cleanse the perineal area with sterile water moving front to back (new swab each time) <b>Male:</b> clean urethral meatus in a circular motion working outward from meatus.	Yes
Remove gloves and perform hand hygiene	Yes



TIME OUT
Verbal confirmation between team members prior to start of the procedure
Do not force the catheter through the urethra. If the catheter does not advance, <b>STOP</b> and inform senior clinician.
Only inflate the balloon after inserting catheter completely and if urine is present .
Do you anticipate patient will need an MRI scan ?
<b>If so, do not use a catheter with a temperature probe as may not be compatible</b>
Any concerns about procedure
Including mitigations.
<i>If yes, document in patient notes</i>



DEBRIEF/ SIGN OUT	
Guidewire removed	Yes
Urine present before inflation of balloon	Yes
Foreskin replaced if retracted for procedure	Yes
Catheter secured to leg using duoderm and Elastoplast—not tight	Yes
Urine dip-sticked and sent for MC+S.	Yes
If appropriate sent for toxicology	
Post procedure hand over given to receiving nursing staff?	Yes



DOCUMENT IN PATIENT NOTES
Clinical need for catheter
Type of Catheter
Catheter size
Volume placed in balloon
Amount of fluid drained?
Any complications / adverse events/ issues with equipment/ deviations made/ any new safeguarding concerns

## NWTS invasive procedures sizing guide—

All are approximate sizes and should be judged clinically by the responsible clinician

AGE	ARTERIAL LINE	CENTRAL LINE (UNLESS STATED CAN BE USED AT ANY SITE, BUT BE AWARE OF LENGTH IF I.J.V. / S.C.V.)	CHEST DRAIN (SELDINGER TYPE)	NASO-GASTRIC TUBE	URINARY CATHETER
<b>NEONATE</b>	24G / 2.5 cm or 24G Cannula	4.5F / 6 cm	8F	6F	6F
<b>INFANT</b>	24G / 2.5cm (radial) 22G / 5cm (femoral)	4.5F / 6 cm 4.5F / 8 cm (femoral) 5F / 5 cm 5F / 8 cm	8-10F	8F	6-8F
<b>1-8 YRS</b>	22G / 5cm	5F / 5 cm 5F / 8 cm 5F / 12 cm	10-14F	8-10F	8-10F
<b>8 YRS – ADULT</b>	22G / 5cm (radial) 20G / 8cm (femoral)	7F / 8 cm 7F / 15cm (femoral)	14 <sup>+</sup> F	10-12F	10-14F
<b>ADULT SIZED</b>	20G / 8 cm	8F / 8 cm 8F / 16 cm (femoral)	14 <sup>+</sup> F	12-16F	14-16F

**Ensure local LOCSIPS are followed for any invasive procedure**

Different manufacturers have different configurations of size/length/lumens (use as a guide only)

Beware leaking from the proximal lumen if multi-lumen CVL catheters are not completely inserted.

## References

### FOR DRUG DOSES:

**British National Formulary for Children 2019-2020**

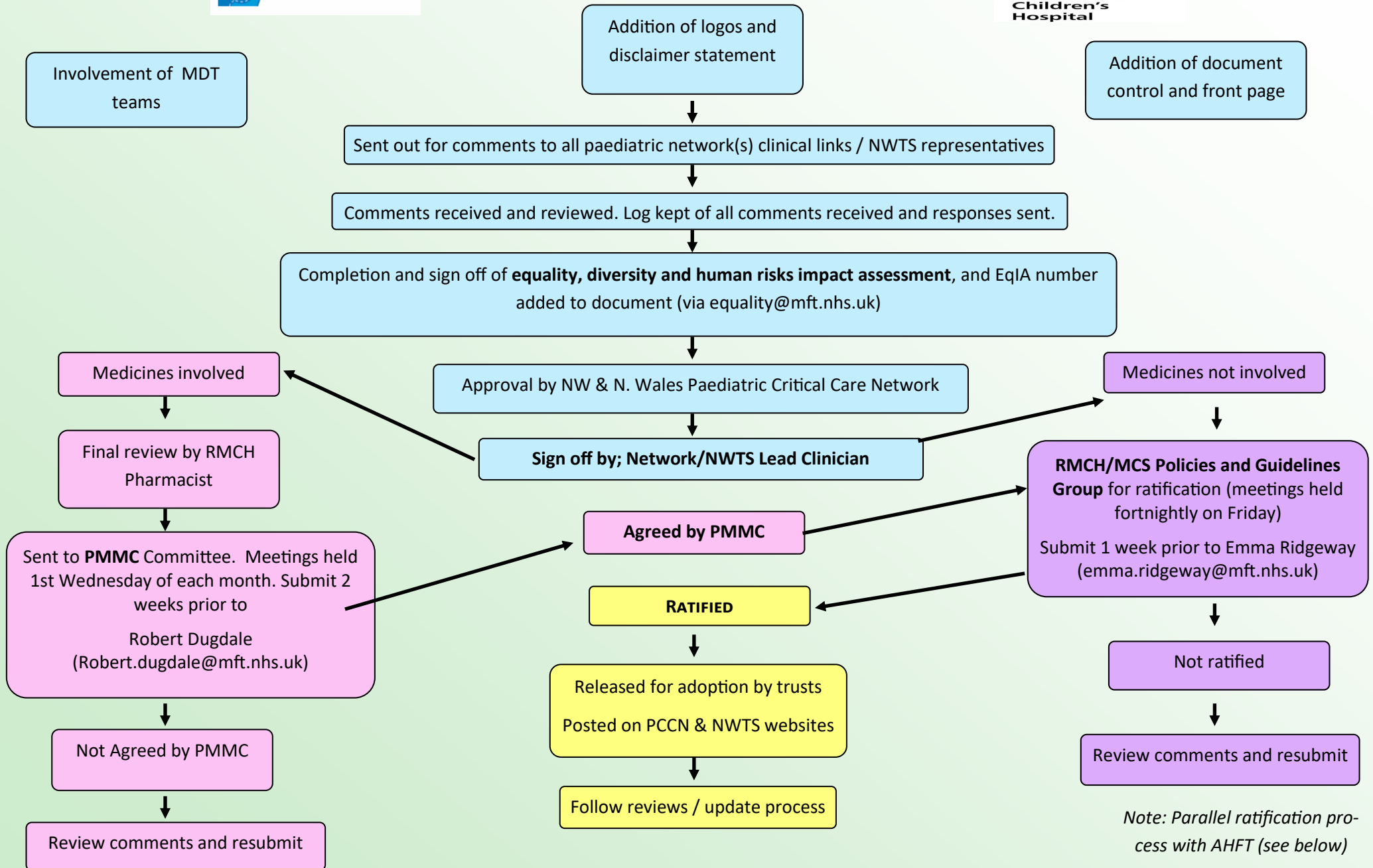
[www.crashcall.net](http://www.crashcall.net)

## Selected References

*National Patient Safety Agency. Five Steps to Safer Surgery.* London: NPSA; 2010. 'How to Guide'  
*National Patient Safety Agency. Who Surgical Safety Checklist.* London: NPSA; 2009. Patient Safety Alert  
NHS England (2015). National Safety Standards for Invasive Procedures (NatSSIPs).

<https://improvement.nhs.uk/uploads/documents/natssips-safety-standards.pdf> accessed 22/04/2021





*Note: Parallel ratification process with AHFT (see below)*

Involvement of MDT teams

Addition of logos and disclaimer statement

Addition of document control and front page

Sent out for comments to all paediatric network(s) clinical links / NWTS representatives

Comments received and reviewed. Log kept of all comments received and responses sent.

Completion and sign off of **equality, diversity and human risks impact assessment**, and EqIA number added to document (via [equality@mft.nhs.uk](mailto:equality@mft.nhs.uk))

Approval by NW & N. Wales Paediatric Critical Care Network

**Sign off by; Network/NWTS Lead Clinician**

Sent to **CDEG** (Clinical Development & Evaluation Group which includes clinical pharmacist) at Alder Hey  
Meetings held 3rd Friday of every month, papers submitted by 1st Friday of the month via Liz McCann [liz.mccann@alderhey.nhs.uk](mailto:liz.mccann@alderhey.nhs.uk)

Not ratified

Review comments and resubmit

**RATIFIED**

Released for adoption by trusts  
Posted on PCCN & NWTS websites

Follow reviews / update process

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Please visit our website for the most up to date version of this guideline: [www.nwts.nhs.uk](http://www.nwts.nhs.uk)