Intubation and Bronchoscopy(s) Children's Critical Care Standard Operating Procedure UHL Paediatric Intensive Care Unit (PICU) (LocSSIPs)

Change Description	**Reason for Change**
☐ Change in format	☒ Trust requirement

APPROVERS	**POSITION**	**NAME**
Person Responsible for Procedure:	PICU and ECMO Consultant	Claire Westrope
SOP Owner:	Senior Sister	Lauren Maughan
Sub-group Lead:	PICU and ECMO Consultant PICU Consultant	Jeremy Tong Julia Vujcikova

Appendices in this document:

Appendix 1 : UHL Safer Surgery Intubation (Children's Critical Care)
Appendix 2 : UHL Safer Surgery Bronchoscopy (Children's Critical Care)
Appendix 3 : Patient Information Leaflet for *Procedure* Available at: Home (leicestershospitals.nhs.uk)

Introduction and Background:

National Safety Standards for Invasive Procedures (NatSSIPs) have been developed by a multidisciplinary group of clinical practitioners, professional leaders, human factors experts and lay representatives brought together by NHS England. They set out the key steps necessary to deliver safe care for patients undergoing invasive procedures and will allow organisations delivering NHS-funded care to standardise the processes that underpin patient safety.

Organisations should develop Local Safety Standards for Invasive Procedures (LocSSIPs) that include the key steps outlined in the NatSSIPs and to harmonise practice across the organisation such that there is a consistent approach to the care of patients undergoing invasive procedures in any location. Put simply, NatSSIPs should be used as a basis for the development of LocSSIPs by organisations providing NHS-funded care.

The development of LocSSIPs in itself cannot guarantee the safety of patients. Procedural teams must undergo regular, multidisciplinary training that promotes teamwork and includes clinical human factors considerations. Organisations must commit themselves to provide the time and resources to educate those

who provide care for patients.
This LocSSIPs is designed for PICU Intubation and Bronchoscopy on PICU. The SOP will help to familiarise staff with the LocSSIPs and safety checklist prior to its use.

Never Events:

No never events have been recorded for this procedure in the Paediatric Intensive care Units. These safety checklists are designed to ensure that patient safety during a procedure is paramount and that risk of never events is reduced.

List management and scheduling:

Scheduled procedures will be discussed and planned at PICU 'business round' meetings which, incorporates the Morbidity and Mortality data collection and the Safety Briefing. Emergent procedures will be performed as necessary under the direction of the consultant in charge of the Paediatric Intensive Care Unit.

Patient preparation:

The child or young person should be involved in their care planning when possible and the clinician who needs to perform the procedure should explain the procedure to the child after explaining why it is necessary. The play specialist or clinical psychologist may be useful in helping during the discussion and consenting process and during preparation for the procedure.

If a competent young person refuses to consent to a procedure, parents/guardians cannot override a decision for treatment that you consider to be in their best interests, but you can rely on parental consent when a child lacks the capacity to consent. Where possible, the child/young person should consent to their own treatment however, if the child cannot competently consent, then a parent/guardian can provide the consent on their behalf. This can be discussed at the bedside or in a treatment/quiet room for more privacy- it should be wherever is felt to be most comfortable.

The identity of the patient must be verified by the child/parent/carer. Name and Date of Birth (DOB) will be checked against the ID band as per UHL policy. In infants under 1 year of age, ID bands must be attached to the lower limbs only. In children of all other ages, the ID band should be attached to the non-dominant hand/limb.

Consent should be documented in the notes and ticked as gained on the UHL Safer Surgery Checklist. Consent should include the possible difficulties that may be encountered. An explanation of how the procedure will be carried out should be given, detailing the strategies you utilise to ensure strict adherence to infection prevention guidance.

For all procedures, the decision whether to proceed with the procedure when coagulation abnormalities, anti-coagulant medication or physiological disturbances are present remains the responsibility of the ICU consultant in charge of the patient. Precautions need to be considered when treating patients who are

suspected of COVID-19 infection. Suspected patients will have evidence of the following: Clinical or radiological evidence of pneumonia, or acute respiratory distress syndrome or influenza-like illness (fever

≥37.8 ° C). At least one of the following must be of acute onset: persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing). All staff should wear full PPE as described by UHL and the patient should be isolated in a negative pressure cubicle or cohorted with other suspected/confirmed patients (please refer to PICU COVID-19 Management SOP for further information).

For patients who have been proven negative to COVID-19, monitoring should be placed on the child/young person (see monitoring section), equipment selected and induction and muscle relaxation drugs prepared and given by a competent practitioner once the patient is fully monitored and prepared for the procedure. The history needs to be reviewed, taking time to look for previous documented intubations, grade of intubation, ETT size and length.

Operator should perform an airway assessment (are there any features of a predictably difficult airway, is yes ensure difficult airway trolley is available). Has the patient been starved? If no, an NG needs to be inserted and aspirated, if one is not present, to empty the stomach.

Pre-oxygenate the patient for 2-3 mins with maximum prescribed oxygen and optimise the patient's position.

Ensure IV access is adequate and that the patient is haemodynamically stable. Intubate when ready using video laryngoscopy, confirm ET tube position using colour changing capnometer (colour changing capnometer use should be followed by continuous waveform capnography), auscultation and visual assessment of chest movement.

If there is doubt about correct ET placement, then remove tube and start the process again. Secure the ET tube and confirm position on chest x-ray. Set the ventilator with appropriate settings and attach ETCO2 monitoring.

Observe the patient and their vital signs and record them on the ITU chart.

Preparation for a patient undergoing a Bronchoscopy follows a similar path if the patient needs to be intubated but is relatively easier if the patient is already intubated. The equipment for the bronchoscopy must be by the patient's bedside and the patient should be adequately sedated and have appropriate ventilator settings. The bronchoscope should have been cleaned prior to patient use following the areas local guidance and recorded as such. If using a disposable bronchoscope, the appropriate size should be selected.

Workforce – staffing requirements:

One person must be assigned to complete the safety checklist in addition to the operator and assistant performing the procedure. Staffing requirements will be allocated in line with unit activity.

Ward checklist, and ward to procedure room handover:

The safety checklist for each individual procedure will cover the pre-procedure checklist and required handover to the bedside nurse in PICU. In the event a patient has been transferred from a ward area to a PICU for increased work of breathing/respiratory failure then the airway must be stabilised as a priority before handover of that patient can take place. Handover should them proceed when it is safe to do so. For Bronchoscopy, a referral will have been made to the appropriate team and a handover given.

Procedural Verification of Site Marking:

This is not required for the procedures covered in this SOP. Details on the intubation will be recorded on the UHL Safer Surgery Checklist and on the VAP (Ventilator Associated Pneumonia) care bundle on the ITU chart. Details of the Bronchoscopy will be recorded on the UHL Safer Surgery Checklist and filed in the patients notes.

Team Safety Briefing:

The team safety briefing is incorporated into each checklist. As a minimum, the operator and person completing the safety checklist (usually the bedside nurse) must be present. It is clear that at times of high activity the person completing the checklist may also need to perform the role of assistant.

Sign In/ Before the Procedure:

'Sign In' refers to the safety checks completed before the procedure.

- Sign In will take place at the patient's bedside
- The Sign In must be carried out by two people. The people present should ideally be the operator and assistant. That the patient will be encouraged to participate where possible.
- Any omissions, discrepancies of uncertainties must be resolved before proceeding.

The check should consist of:

- Confirmation of the patient identity and consent for the procedure,
- Identification of all team members and their roles,
- Pre-procedure observations documented and the patients medication/coagulation been checked/rectified,
- Is the appropriate monitoring available,
- Are there any contraindications to the procedure,
- Spinal precautions required,
- Has the NG feed been stopped and the NG aspirated.

Time Out:

'Time Out' is the final safety check that must be completed for all patients undergoing invasive procedures just before the start of the procedure. The WHO checklist is the Gold Standard and may be adapted for local use with the deletion or addition of elements to suit the procedural requirements. Some Royal Colleges or other national bodies have checklists for their specialties.

This section should have a description of your 'Time Out' procedures: State:

- That the patient will be encouraged to participate where possible
- Who will lead it (any member can)
- That all team members must be present and engaged as it is happening
- That is will occur immediately before the procedure start
- That separate time out checklist will be completed if there is a separate or sequential procedure happening on the same patient
- That any omissions, discrepancies or uncertainties must be resolved before staring the procedure.

Specifically, the verbal time out between team members confirms that:

- The patient is on adequate ventilator settings and maximum individualised oxygen,
- The patient is adequately sedated (and paralysed if required),
- The patient position is optimal,
- All team members have roles assigned and
- Concerns about the procedure have been identified, documented and mitigated.

As per

UHL Safer Surgery Intubation (Children's Critical Care) **(**Appendix 1).

UHL Safer Surgery Bronchoscopy (Children's Critical Care) **(**Appendix 2).

Performing the procedure:

The procedure can only be performed by those with appropriate training – this will be in line with current PICU training. Direct supervision must occur for those learning the procedures by an appropriately trained individual. All operators must ensure familiarity with the equipment required prior to performing any invasive procedure.

Monitoring:

Describe how the patient will be monitored throughout the time in the procedural area. Consider:

- O2 Sats
- ECG
- Blood Pressure (if NIVBP, regular cycling is needed)
- Pulse rate
- Respiratory rate
- GCS
- Temp
- (Capillary Blood Glucose) CBGs
- ETCO2 for ventilated patients

If the patient requires ongoing sedation, this must be covered by the Analgesia and Sedation Guideline for Paediatric Intensive Care Unit C10/2009.

Prosthesis verification:

All equipment used must be checked that is within date. As appropriate there is recording of the device on the UHL Safer Surgery Checklist.

Prevention of retained Foreign Objects:

The responsibility for ensuring all sharps are disposed of correctly is with the procedure operator.

Radiography:

These procedures do not require radiography during the procedure. If post procedure X-rays are required this is clearly highlighted on each individual safety checklist.

Sign Out:

'Sign Out' must occur post procedure in line with each individual LocSSIPs. This covers, as appropriate, the following:

- Confirmation of procedure
- Confirmation that counts (guidewires, instruments, sharps and swabs) are complete if applicable
- Confirmation that specimens have been labelled correctly and placed in appropriate transport medium
- Discussion of post-procedural care and any outstanding investigations required to confirm safe completion of the procedure.

- Equipment problems to include in team debriefing

All the above points will be documented on the UHL Safer Surgery Checklist.

UHL Safer Surgery Intubation (Children's Critical Care) **(**Appendix 1).

UHL Safer Surgery Bronchoscopy (Children's Critical Care) **(**Appendix 2).

Handover:

Handover to the nursing and medical team post procedure should include:

- A brief description of the case, details of the anaesthetic/conscious sedation and review of the CXR (if one was required) and whether this line is safe to use,
- Explanation of samples taken so that the results can be followed up in a timely manner,
- Inform staff of any post procedure complications.

Team Debrief:

A Team Debrief should occur as a discussion at the end of all procedure sessions, this should happen when the patient has been made comfortable, the procedural waste has been disposed of and documentation has been completed.

For those who have been learning the procedure and have been supervised by an appropriately trained person, the appropriate documentation/leaning pack must be completed.

Post-procedural aftercare:

Once the post procedure x-ray is completed (if applicable), the patient should be made comfortable and repositioned every 4-6 hours as tolerated and recorded on Best Shot. Monitoring probes should be moved frequently to prevent skin marking and burns. Where able, regular blood gases (Capillary/venous/arterial) should be monitored. When safe to do so, feeds should be recommenced. The family should be updated and specific plans for the patient's care pathway should be made if appropriate. Dispose of sharps safely and CHG wipe reusable equipment and return to original places.

Discharge:

Not applicable for children/young people who need to remain in PICU.

Governance and Audit:

Deviation from the LocSSIPs unless clinically justified in an emergency constitutes a safety incident. All safety incidents must be recorded on a DATIX.

Any Datix submitted will be fully investigated by a designated person and overseen by the Children's Patient Safety Coordinator. All findings will be fed back to the team involved and any learning will be cascaded throughout the Childrens Hospital

To submit monthly Safe Surgery Audit and WHOBARS assessment as per Safe Surgery Quality Assurance & Accreditation programme.

Training:

All staff performing or assisting with access procedure must receive appropriate training.
Training opportunities and documented progress must be discussed every 6 - 12 months with a clinical supervisor.
Training will address:

- Hand Hygiene,
- Aseptic non touch technique (ANTT),
- Intubation technique,
- Equipment usage and
- Documentation.

Documentation:

The UHL Safer Surgery Safety Checklist is the record of insertion/procedure and should be filed in the patients notes.

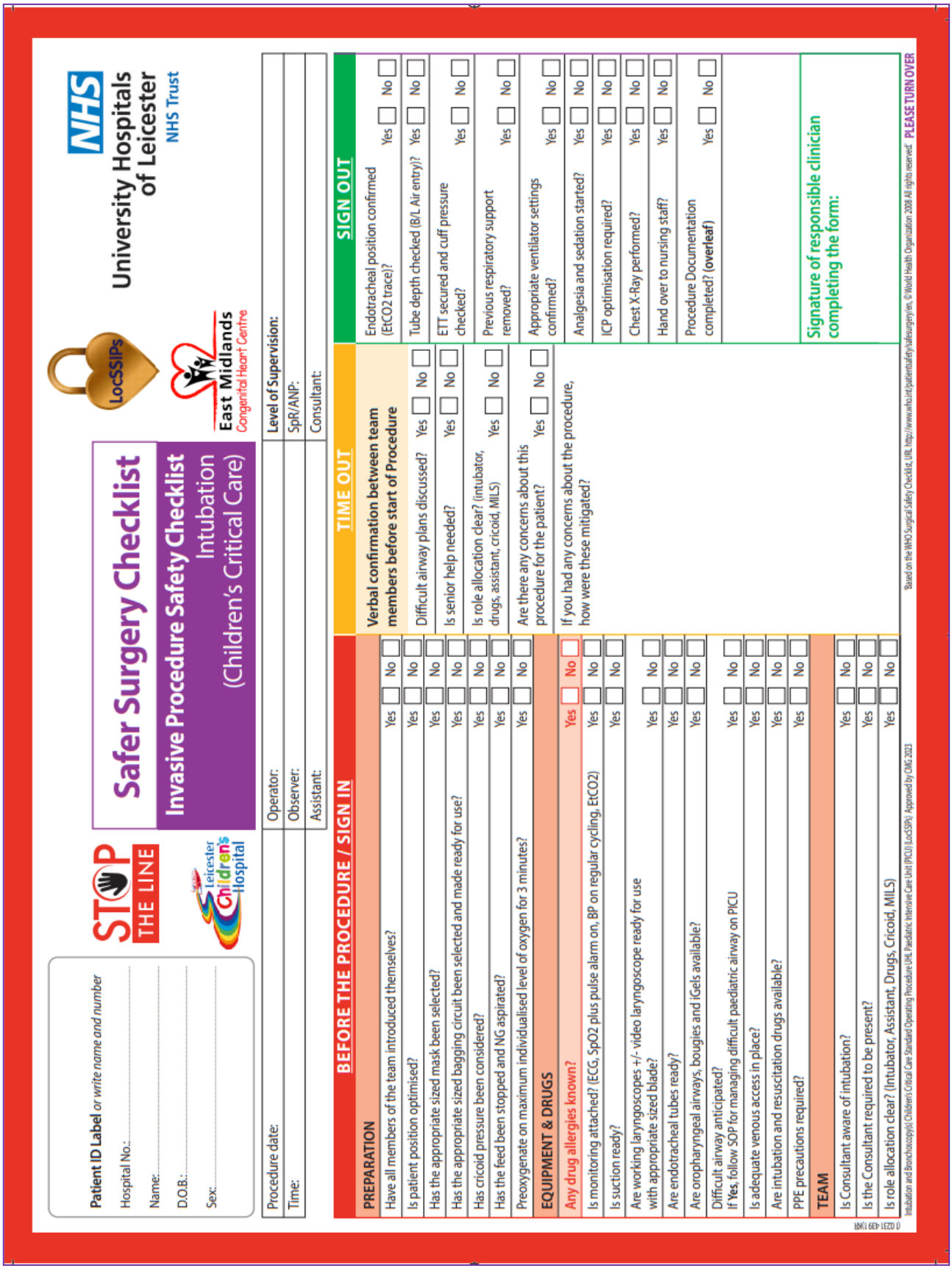
References to other standards, alerts and procedures:

National Safety Standards for Invasive Procedures, NHS England 2015:
https://www.england.nhs.uk/patientsafety/wp-content/uploads/sites/32/2015/09/natssips-safety-standards.pdf

UHL Safer Surgery Policy: B40/2010
UHL Patient Identification Band Policy B43/2007
UHL Antimicrobial Prescribing Policy B39/2006
Endotracheal Tube Management UHL Childrens Intensive Care Guideline C116/2016
Prevention and management of Post Extubation Stridor C119/2016
UHL Children's Hospital Guideline B31/2016 UHL Paediatric Sepsis Guideline
Hand Hygiene UHL Policy B32/2003
Analgesia and Sedation Guideline for Paediatric Intensive Care Unit C10/2009

UHL Safer Surgery Policy: B40/2010 UHL Consent to Treatment or Examination Policy A16/2002 Shared decision making for doctors: Decision making and consent (gmc-uk.org) COVID and PPE: UHL PPE for Transmission Based Precautions - A Visual Guide COVID and PPE: UHL PPE for Aerosol Generating Procedures (AGPs) - A Visual Guide
END

Appendix 1: UHL Safer Surgery Intubation (Children's Critical Care)



Safer Surgery Checklist

Invasive Procedure Safety Checklist Intubation (Children's Critical Care)

University Hospitals of Leicester NHS Trust

East Midlands Congenital Heart Centre

LocSSIPs

STOP THE LINE

Leicester Children's Hospital

Patient ID Label *or write name and number*

Hospital No.:

Name:

D.O.B.:

Sex:

Procedure date:

Time:

Operator:

Observer:

Assistant:

Level of Supervision:

SpR/ANP:

Consultant:

BEFORE THE PROCEDURE / SIGN IN

PREPARATION

- Have all members of the team introduced themselves? Yes ☐ No ☐
- Is patient position optimised? Yes ☐ No ☐
- Has the appropriate sized mask been selected? Yes ☐ No ☐
- Has the appropriate sized bagging circuit been selected and made ready for use? Yes ☐ No ☐
- Has cricoid pressure been considered? Yes ☐ No ☐
- Has the feed been stopped and NG aspirated? Yes ☐ No ☐
- Preoxygenate on maximum individualised level of oxygen for 3 minutes? Yes ☐ No ☐

EQUIPMENT & DRUGS

- Any drug allergies known? Yes ☐ No ☐
- Is monitoring attached? (ECG, SpO2 plus pulse alarm on, BP on regular cycling, EtCO2) Yes ☐ No ☐
- Is suction ready? Yes ☐ No ☐
- Are working laryngoscopes +/- video laryngoscope ready for use with appropriate sized blade? Yes ☐ No ☐
- Are endotracheal tubes ready? Yes ☐ No ☐
- Are oropharyngeal airways, bougies and iGels available? Yes ☐ No ☐
- Difficult airway anticipated? If **Yes**, follow SOP for managing difficult paediatric airway on PICU Yes ☐ No ☐
- Is adequate venous access in place? Yes ☐ No ☐
- Are intubation and resuscitation drugs available? Yes ☐ No ☐
- PPE precautions required? Yes ☐ No ☐

TEAM

- Is Consultant aware of intubation? Yes ☐ No ☐
- Is the Consultant required to be present? Yes ☐ No ☐
- Is role allocation clear? (Intubator, Assistant, Drugs, Cricoid, MILS) Yes ☐ No ☐

TIME OUT

Verbal confirmation between team members before start of Procedure

- Difficult airway plans discussed? Yes ☐ No ☐
- Is senior help needed? Yes ☐ No ☐
- Is role allocation clear? (intubator, drugs, assistant, cricoid, MILS) Yes ☐ No ☐
- Are there any concerns about this procedure for the patient? Yes ☐ No ☐
- If you had any concerns about the procedure, how were these mitigated?

SIGN OUT

- Endotracheal position confirmed (EtCO2 trace)? Yes ☐ No ☐
- Tube depth checked (B/L Air entry)? Yes ☐ No ☐
- ETT secured and cuff pressure checked? Yes ☐ No ☐
- Previous respiratory support removed? Yes ☐ No ☐
- Appropriate ventilator settings confirmed? Yes ☐ No ☐
- Analgesia and sedation started? Yes ☐ No ☐
- ICP optimisation required? Yes ☐ No ☐
- Chest X-Ray performed? Yes ☐ No ☐
- Hand over to nursing staff? Yes ☐ No ☐
- Procedure Documentation completed? **(overleaf)** Yes ☐ No ☐

Signature of responsible clinician completing the form:

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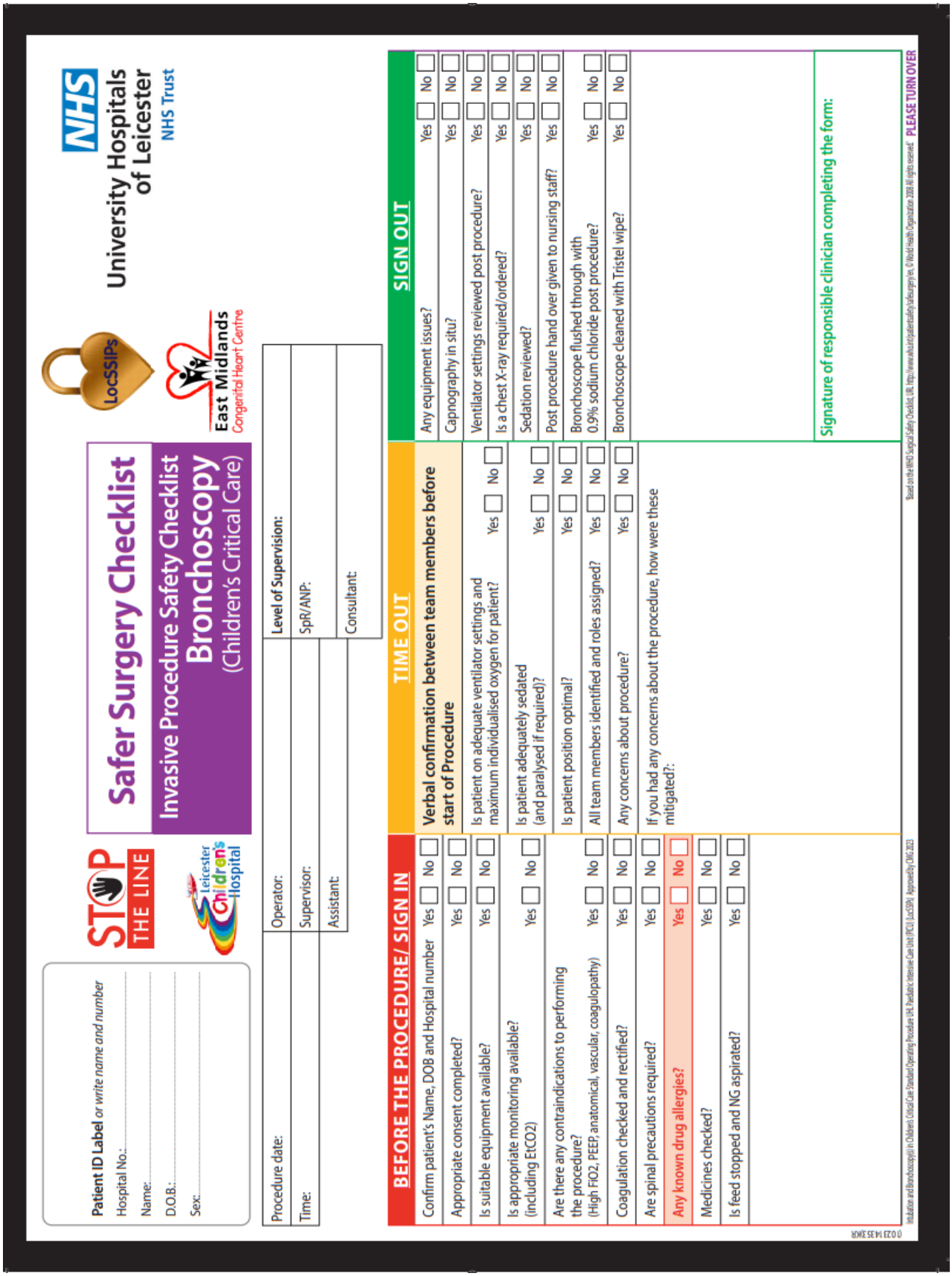
Intubation and Bronchoscopy(s) Children's Critical Care Standard Operating Procedure UHL Paediatric Intensive Care Unit (PICU) (LocSSIPs) Approved by CMG 2023

Title: Intubation and Bronchoscopy(s) Children's Critical Care Standard Operating Procedure UHL Paediatric Intensive Care Unit (PICU) (LocSSIPs)
Authors: Lauren Maughan - Senior Sister
Approved by: PICU/CICU Clinical Practise Group 2023
Review: 17/10/2026

Appendix 2: UHL Safer Surgery Bronchoscopy (Children's Critical Care)



NHS University Hospitals of Leicester NHS Trust

LocSSIPs

East Midlands Congenital Heart Centre

Safer Surgery Checklist

Invasive Procedure Safety Checklist Bronchoscopy (Children's Critical Care)

STOP THE LINE

Leicester Children's Hospital

Patient ID Label *or write name and number*

Hospital No.:

Name:

D.O.B.:

Sex:

Procedure date:	Operator:	**Level of Supervision:**	
Time:	Supervisor:	SpR/ANP:	
	Assistant:	Consultant:	

BEFORE THE PROCEDURE/ SIGN IN

Confirm patient's Name, DOB and Hospital number	Yes ☐	No ☐
Appropriate consent completed?	Yes ☐	No ☐
Is suitable equipment available?	Yes ☐	No ☐
Is appropriate monitoring available? (including EtCO2)	Yes ☐	No ☐
Are there any contraindications to performing the procedure? (High FiO2, PEEP, anatomical, vascular, coagulopathy)	Yes ☐	No ☐
Coagulation checked and rectified?	Yes ☐	No ☐
Are spinal precautions required?	Yes ☐	No ☐
Any known drug allergies?	Yes ☐	No ☐
Medicines checked?	Yes ☐	No ☐
Is feed stopped and NG aspirated?	Yes ☐	No ☐

TIME OUT

Verbal confirmation between team members before start of Procedure

Is patient on adequate ventilator settings and maximum individualised oxygen for patient?	Yes ☐	No ☐
Is patient adequately sedated (and paralysed if required)?	Yes ☐	No ☐
Is patient position optimal?	Yes ☐	No ☐
All team members identified and roles assigned?	Yes ☐	No ☐
Any concerns about procedure?	Yes ☐	No ☐

If you had any concerns about the procedure, how were these mitigated?:

SIGN OUT

Any equipment issues?	Yes ☐	No ☐
Capnography in situ?	Yes ☐	No ☐
Ventilator settings reviewed post procedure?	Yes ☐	No ☐
Is a chest X-ray required/ordered?	Yes ☐	No ☐
Sedation reviewed?	Yes ☐	No ☐
Post procedure hand over given to nursing staff?	Yes ☐	No ☐
Bronchoscope flushed through with 0.9% sodium chloride post procedure?	Yes ☐	No ☐
Bronchoscope cleaned with Tristel wipe?	Yes ☐	No ☐

Signature of responsible clinician completing the form:

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Intubation and Bronchoscopy(s) in Children's Critical Care Standard Operating Procedure UHL Paediatric Intensive Care Unit (PICU) (LocSSIPs) Approved by CPG 2023

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East Midlands Congenital Heart Centre

Safer Surgery Checklist

Invasive Procedure Safety Checklist
Bronchoscopy
(Children's Critical Care)

STOP THE LINE

Leicester Children's Hospital

Patient ID Label *or write name and number*

Hospital No.:

Name:

D.O.B.:

Sex:

Procedure Documentation

Sedation: Opiate: Other:

ml/hr ml/hr

Findings:

BAL's Sent:

Tissue Sent:

Additional Comments/Adverse events noted:

Intubation and Bronchoscopy(s) in Children's Critical Care Standard Operating Procedure UHL Paediatric Intensive Care Unit (PICU) (LocSSIPs) Approved by CMG 2023

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Appendix 3: Patient Information Leaflet for *Procedure* Available at: Home (leicestershospitals.nhs.uk)