Independent checking of medication in babies, children and young people under the age of 18 years.

Trust Ref : B21/2015

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References to other standards and procedures:

The procedure must be used in conjunction with:

- Leicestershire Medicines Code UHL Policy (B60/2011)
- IV (Intravenous Therapy) UHL Policy (B25/2010)
- Nursing Associate Scope of Practice UHL Policy (B21/2019)
- Weight Measurement UHL Childrens Hospital Guideline (C35/2006)
- Hand Hygiene UHL Policy (B32/2003)
- Assessment of Administration of Medicines by Nurses and Midwives UHL Policy (B13/2009)

1. Introduction and who this procedure applies to:

1.1 Babies, Children, and young people who require paediatric medication dosages are at an increased risk of medication errors predominantly because of the need to make dosage calculations which are individually based around their age, weight, or body surface area.

1.2 All practitioners who are involved in the preparation, checking, and administration of medications to

babies, children, and young people must have undertaken local neonatal/paediatric medication administration training and have been assessed as competent (Leicestershire Medicines Code Section13)

1.3 This document provides a step-by-step procedure for the safe checking and administration of medications with the aim of reducing risk, avoiding potential hazards and increasing safety in medicines management to babies, children and young people under the age of 18yrs.

"Independent" checking is deemed to be the process where each party in preparing and administering the drug carries out the full checks (Refer to 6 Rights of medication administration Leicestershire Medicines Code Chapter 13) individually to reduce the risk of inadvertent misreading that can occur when close checking of medications.

1.4 There are two levels of Administration of Medicines to Infants & Children at UHL:

Single Checked Medication Administration

- There is a list of agreed medications that can be administered to infants & children under a single check. The neonatal unit has a separate list specific for their area. These can be found in Section 13 of the Leicestershire Medicines Code.

- Where this practice is supported by the Line Manager of the clinical area, practitioners who have been assessed as competent to prepare and administer medication to infants and children may administer medications from the agreed list without requiring a second check. However, a second check may be sought for these medications if the practitioner wishes.

Double (Independent) Checked Medication Administration

- All medications that are not on the single check medication list must be check by two practitioners.
- The person undertaking the **Primary** check is to perform a check of the full drug preparation process and must be an authorised member of staff who is competent to prepare and administer the medication to children (refer to Leicestershire Medicines Code Chapter 13).
- The person undertaking the **Second** check is to perform an 'independent' check of the full drug preparation process. They must check the drug, diluent, dose (including calculation), time, route and documentation independently before administration.
- They are also required to verify the patient's identity and check administration details e.g. infusion rates. They do not need to witness the whole administration.

1.5 This procedure applies to all registered professionals who administer Medication to babies, children or young people under the age of 18yrs in UHL.

1.6 The procedure excludes:

- Patients OVER 16 but under 18 years of age who are being treated in an adult environment and who have been assessed as suitable to have adult doses (refer to LMC Section13)
- All Cytotoxic Chemotherapy
- Intravenous medications. Please refer to 'Administration of injectable drug policy' (B25/210)

2. Recommendations, Standards and Procedural Statements

This procedure should be used in conjunction with the Leicestershire Medicines Code (Chapter 13).

2.1 Practitioners must know the therapeutic uses of medication to be administered, its normal dosage, general side effects, precautions, contra-indications, methods and duration of administration and how appropriate the medication is to the child's plan of care.

2.2 The dose of medication must always be checked against the latest edition of the BNF for children (available online) or locally agreed formulary. Attention must be paid as to whether the reference relates to a single or total daily dose. If the medication is not included in the reference material, advice must be sought from pharmacy.

2.3 If using weight or body surface area to calculate a dose, these must be a recent measurement. The patient's weight must be updated at least every week, but this may be more frequent in very young children or patients whose weight may fluctuate.

2.4 The date of birth, weight in kilograms and where appropriate body surface area of the child MUST be written on the prescription chart. The person taking these measurements must sign and date the chart in the relevant boxes.

2.5 If the child is uncooperative and has to be weighed with a parent or carer, the calculation used to subtract the parents weight (& therefore leaving the child's weight) must be shown alongside the weight box on the prescription chart and signed and dated by the practitioner doing the subtraction.

2.6 When checking a dose pay particular attention to the standard international units prescribed and decimal places.

2.7 The final dose prescribed may be adjusted to within +/-5% of the exact dose to aid administration. Dose adjustments greater than +/- 5% may be necessary so suitability must be confirmed by a pharmacist before administration

2.8 Paediatric formulations must be used when these are available. Where they are not available and multi- dose or adult strength preparations have to be used, extra vigilance should be exercised when calculating and preparing the dose.

2.9 Oral solutions can differ in strength. Ensure that dose strength and volume are confirmed when calculating and preparing for administration.

2.10 Oral solutions should be sugar free where possible.

2.11 Oral syringes must always be used for the preparation and administration of oral doses for babies, children, and young people. Injectable syringes must never be used for the preparation of administration of oral doses.

2.12 Enteral tube syringes (Enfit) must be used for the preparation and administration of doses via enteral tubes.

2.13 When administering injections or medicines of doses less than 1ml in volume, a 1ml syringe graduated to 0.01ml must be used.

2.14 In UHL all babies, children and young people must wear identity bracelets to enable staff to identify the patient, especially during the medicine's administration process.

3. Procedure for the Checking of Single Checked Medicines in Babies, Children and Young People

No.	Action
1	Ensure that the medication to be administered is on the 'single check medication list'. The single check medication lists for infants and children can be found in the Leicester Medicines Code Section 13 (LMC). Ensure the person giving the medication has been assessed as competent to administer medication to infants and children and has met criteria for single nurse drug administration. (Refer to LMC Section13). Ensure that the prescription has the words 'single check' written in the additional information box of the prescription (this should be written by the first person administering the medication as a single check).
2	Approach the child or young person and family in a friendly and open manner. Depending on the age and development of the child, explain the procedure to them and their parents/carers (person with parental responsibility) and obtain their verbal consent. You must also check that the route of the medication to be administered is acceptable to the child and their family. Ensure that the child and/or parents/carers understand the medication as part of their treatment plan. The practitioner should anticipate the need for the baby or young child to be held whilst administering the medication. For further guidance follow - RCN guidance for restrictive physical interventions and clinical holding In older children holding may be avoided through giving the child information, encouragement, distraction and control by talking and listening to the child and their parent/carer.
3	Medications should be checked and prepared in an identified drugs preparations area. Clean hands, as per UHL hand hygiene policy (B32/2003)
4	To ensure the prescription chart is valid, the practitioner must check: • The whole prescription chart is legible • The patients name, date of birth, and S-number are recorded • There is a recent signed & dated weight in kgs recorded (including surface area where required). The measurement MUST have been taken within the last week or more frequently in very young children whose weight may fluctuate. • The child's allergies and contraindications are documented and do not affect the medications prescribed

5	To ensure the medication prescription to be administered is valid, the practitioner must check: • The correct medication has been prescribed using the generic drug name • The dose and frequency has been prescribed accurately using the child's age/weight This must be checked against the latest edition of the BNF-C • The route of administration is identified and is appropriate for the child and treatment required • The medication is due to be given (ensure the correct time has elapsed since the last dose administered and the maximum number of doses in a 24hr period has not been exceeded) • The indication for administration is clearly documented • The duration of treatment is documented where required (e.g. antimicrobials) • The prescription is signed by the prescriber
6	The practitioner must then: • Select the correct medication against the prescription • Ensure the formulation selected is suitable for the route prescribed and is appropriate for the age and clinical condition of the patient • Check the expiry date of the medication selected – this may be shorter than the original expiry date if the medication has a reduced shelf life once opened, has been reconstituted, or transferred to another vessel • Check the packaging and expiry dates of all equipment used (e.g. syringes) • If administering a liquid/suspension the correct type and appropriate size of syringe must be selected • Accurately calculate the volume of medication to be administered
7	The medication must then be prepared adhering to principles of aseptic touch technique (ANTT). The prepared medication must be placed in a clean tray/trolley to be taken to the child's bedside. Only the volume of medication to be administered should be taken to the bedside.
8	Before leaving the medication preparation area: • Clean medication bottles and return to cupboard • Review stock levels ensuring medication is available for next dose (re-order as required following completion of administration process) • Ensure all drug cupboards/fridges are locked • Clean hands, as per UHL hand hygiene policy (B32/2003)
9	At the child's bedside the practitioner MUST: Clean hands and apply appropriate PPE where required (refer to Personal Protective Equipment at Work Policy B9/2004) When administering medications Healthcare professionals will only need to wear gloves and aprons: • When in contact with bodily fluid, non-intact skin, or mucous membranes • When applying creams or lotions • When administering cytotoxic medications • If you have a skin condition that requires protection • If patient requires isolation precautions ▪ Re-explain the procedure to the child and family to ensure that consent has not been withdrawn ▪ Ensure the patient and/or parent/carer has confirmed verbally name and date of birth of the patient ▪ Ensure the identity bracelet is checked against the prescription chart ▪ Reconfirm allergy status

10	Ensure the child is in an appropriate position for the method of administration providing assistance where necessary. Consider the use of age appropriate safe holding techniques if required. Administer the medication following the appropriate procedure for the route prescribed. Stay with the patient until all of the medication has been administered.
11	Following administration, the practitioner must: • Remove gloves and apron (if used) • Clean hands before leaving the bedside • Sign the prescription (1st box) ONLY once the medication has been administered Clean tray and dispose of waste appropriately

3.1 Procedure for the Double Checking of Oral, Rectal, Topical, Inhaled, Eye, Nose, Ear and Injectable Medicines in Babies, Children and Young People

No.	Action
1	All medications not on the single check medications list must be checked by 2 authorized members of staff who have been assessed as competent to administer the route prescribed (refer to LMC section 13)
2	The primary practitioner should approach the child or young person and family in a friendly and open manner. Depending on the age and development of the child, explain the procedure to them and their parents/carers (person with parental responsibility) and obtain their verbal consent. You must also check that the route of the medication to be administered is acceptable to the child and their family. Ensure that the child and/or parents/carers understand the medication as part of their treatment plan. The practitioner should anticipate the need for the baby or young child to be held whilst administering the medication. For further guidance follow - RCN guidance for restrictive physical interventions and clinical holding In older children holding may be avoided through giving the child information, encouragement, distraction and control by talking and listening to the child and their parent/carer.
3	Medications should be checked and prepared in an identified drugs preparations area. Clean hands, as per UHL hand hygiene policy (B32/2003)

4	To ensure the prescription chart is valid, the primary practitioner must check: • The whole prescription chart is legible. • The patients name, date of birth, and S-number are recorded • There is a recent signed & dated weight in kgs recorded (including surface area where required). The measurement MUST have been taken within the last week or more frequently in very young children whose weight may fluctuate. • The child's allergies and contraindications are documented and do not affect the medications prescribed
5	To ensure the medication prescription to be administered is valid, the primary practitioner must check: • The correct medication has been prescribed using the generic drug name • The dose and frequency has been prescribed accurately using the child's age/weight. This must be checked against the latest edition of the BNF-C • The route of administration is identified and is appropriate for the child and treatment required • The medication is due to be given (ensure the correct time has elapsed since the last dose administered and the maximum number of doses in a 24hr period has not been exceeded) • The indication for administration is clearly documented • The duration of treatment is documented where required (e.g. antimicrobials) • The prescription is signed by the prescriber
6	The primary practitioner must then: • Select the correct medication against the prescription • Ensure the formulation selected is suitable for the route prescribed and is appropriate for the age and clinical condition of the patient • Check the expiry date of the medication selected (including any diluents) – this may be shorter than the original expiry date if the medication has a reduced shelf life once opened, has been reconstituted, or transferred to another vessel • Check the packaging and expiry dates of all equipment used (e.g. syringes) • If administering a liquid/suspension the correct type and appropriate size of syringe must be selected • Accurately calculate the volume of medication to be administered including any diluents that may be required
7	The primary practitioner can check, draw up and prepare the medication up to the point of adding any diluent before asking a second practitioner to perform their check Any mixing of medication with diluent or further dilution must be observed by both practitioners The second practitioner must then independently check the prescription and the medication by following steps 4, 5, and 6 As some of the medications can require complex calculations the second practitioner must undertake all calculations independently (i.e. separate from their colleague) in order to minimize the risk of error. The calculations must verify the dose of medication prescribed against the child's age/weight as well of the volume of medication to be administered.
8	The medication must be prepared adhering to principles of aseptic touch technique (ANTT) The prepared medication must be placed in a clean tray/trolley to be taken to the child's bedside. Only the volume of medication to be administered should be taken to the bedside

9	Before leaving the medication preparation area: • Clean medication bottles and return to cupboard • Review stock levels ensuring medication is available for next dose (re-order as required following completion of administration process) • Ensure all drug cupboards/fridges are locked Both Practitioners must clean hands, as per UHL hand hygiene policy (B32/2003)
10	Both practitioners must go the patient's bedside and: Clean hands and apply appropriate PPE where required (refer to Personal Protective Equipment at Work Policy B9/2004) When administering medications Healthcare professionals will only need to wear gloves and aprons: • When in contact with bodily fluid, non-intact skin, or mucous membranes • When applying creams or lotions • When administering cytotoxic medications • If you have a skin condition that requires protection • If patient requires isolation precautions ▪ Re-explain the procedure to the child and family to ensure that consent has not been withdrawn. ▪ Ensure the patient and/or parent/carer has confirmed verbally name and date of birth of the patient ▪ Ensure the identity bracelet is checked against the prescription chart ▪ Reconfirm allergy status
11	Once patient identify has been confirmed the second practitioner may sign the prescription chart (2nd box) to confirm they have completed their role and clean their hands before leaving the bedside
12	The primary practitioner must: • Ensure the child is in an appropriate position for the method of administration providing assistance where necessary • Consider the use of age appropriate safe holding techniques if required • Administer the medication following the appropriate procedure for the route prescribed • Stay with the patient until all of the medication has been administered
13	Following administration, the primary practitioner must: • Remove gloves and apron (if used) • Clean hands before leaving the bedside • Sign the prescription chart (1st box) ONLY once the medication has been taken/administered Clean tray and dispose of waste appropriately

4. Education and Training

Nursing staff involved in administering or checking oral medications to infants, children, or young people must have successfully completed a paediatric competency assessment process (refer to Assessment of Administration of Medications by nurse and Midwives UHL Policy B13/2009)

Any staff involved in administering or checking intravenous medications to infants, children, or young people must have paediatric specific training and competency as set out in the IV Policy (B25/2010)

5. Monitoring and Audit Criteria

Key Performance Indicator	Method of Assessment	Frequency	Lead	Reporting arrangements
Procedure being used to underpin practical LCAT assessments as part of new starters training	LCAT medication assessments on all new starters in Children's Nurses & Adult Nurses working in Children's Areas	100%	Head of Nursing	CMG Q&S board
Procedure used by all staff administering medicines to children (under 18 yrs)	Peer review, LCAT assessments	100%	Head of Nursing	CMG Q&S board

6. Supporting Documents and Key References

J Russell et al June 2022 Pediatric Dose Calculation Issues and the Need for Human Factors–Informed Preventative Technology OptimizationsPatient safety. VOL. 4 No. 2
https://patientsafetyj.com/index.php/patientsaf/article/view/pediatric-dose-calculation-issues/pdf

Royal College of Nursing (2019) Restrictive physical interventions and the clinical holding of children and young people. London, RCN https://www.rcn.org.uk/professional-development/publications/pub-007746

Leicestershire Medicines Code UHL Policy (B60/2011) Medicines Code - Leicester, Leicestershire and Rutland Area Prescribing Committee (areaprescribingcommitteeleicesterleicestershirerutland.nhs.uk)

IV (Intravenous Therapy) UHL Policy (B25/2010)

Nursing Associate Scope of Practice UHL Policy (B21/2019)

Weight Measurement UHL Childrens Hospital Guideline (C35/2006)

Hand Hygiene UHL Policy (B32/2003)

Assessment of Administration of Medicines by Nurses and Midwives UHL Policy (B13/2009)

7. Key Words

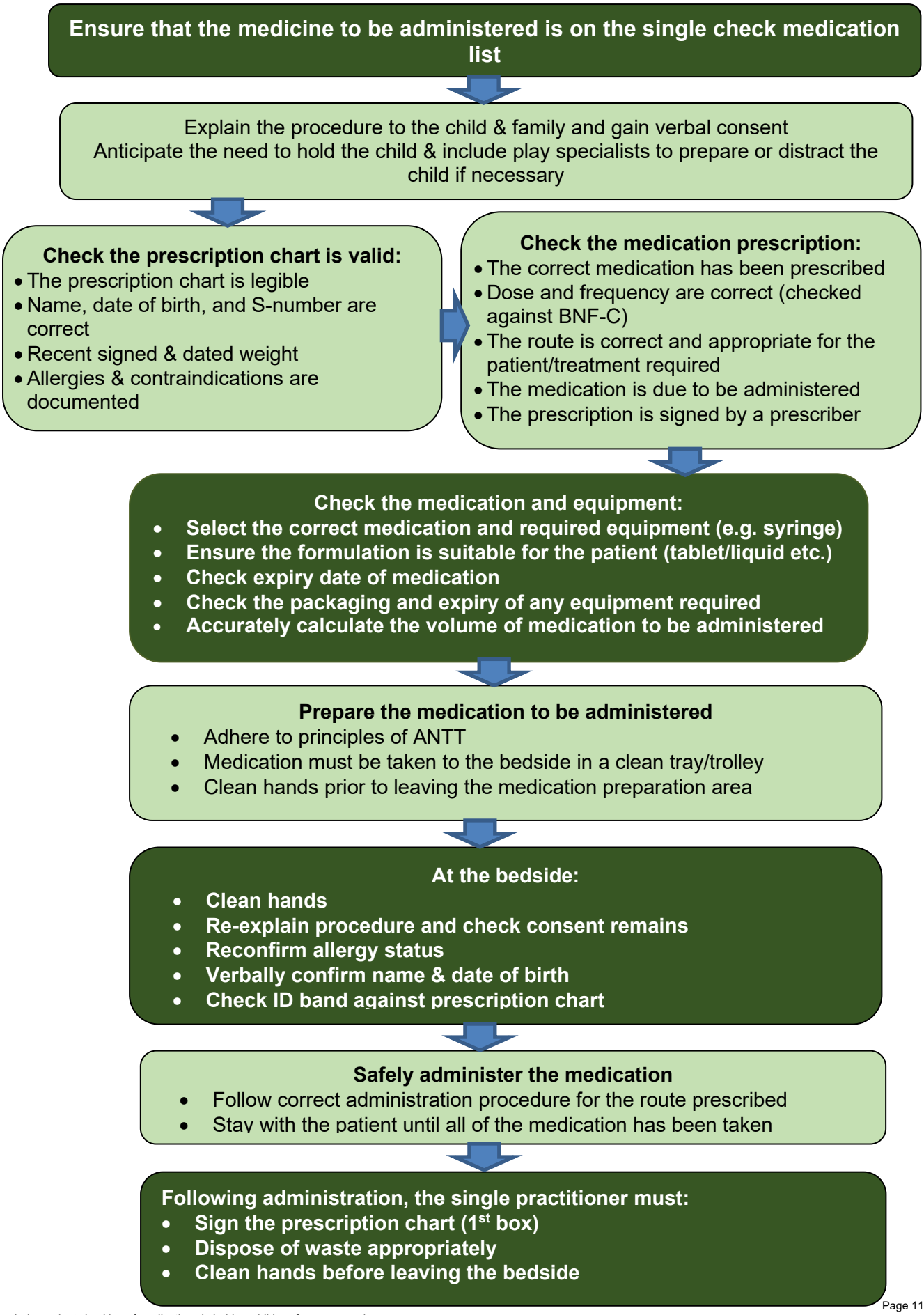
Children's Nurses, competent, single check, double check

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.

As part of its development, this procedure and its impact on equality have been reviewed and no detriment was identified.

Contact and review details		
Guideline Lead (Name and Title) A Whitehall - Education & Practice Development Charge Nurse		**Executive Lead** Chief Nurse
Date	**Reviewed by:**	**Changes made**
October 2020	A Whitehall	Included reference to separate Neonatal single check medications Following Added: 2.2 – Check BNFc & local formulary 2.3 – Recent weight measurement must be recorded 2.6 – Attention to Si units and decimal point 2.7 – Final dose adjustment advice 2.9 - Use sugar free oral solutions when possible 3.1.3, 3.2.3, 3.3.3 – Prepare in identified area 3.1.1 – Ensure single check is written in the additional info box 3.1.4-6, 3.2.4-6 , 3.3.4-6 – Medication checking procedure re-worded and clarified 3.1.7, 3.2.8 – ANTT & preparation advice 3.1.8, 3.2.9, 3.3.9 – Stock management/store 3.3.1 – All IV medications must be checked by 2 authorised members of staff 3.3.7 – Mixing of medication & diluent must be observed by both practitioners 3.3.8 – Refer to MEDUSA Only take volume to be administered to bedside 3.3.12 – Primary practitioner bedside responsibilities Updated flowcharts in appendices in–line with additions to procedure
August 2022	A Whitehall Children's Hospital & Children's ED clinical guidelines group	• Added link to RCN Restrictive physical interventions and the clinical holding of children • Updated PPE advice section 3.0 point 9 & section 3.1 point 10 • IV administration guidance, to now refer to IV (Intravenous Therapy) UHL Policy (B25/2010)

Appendix 1 Procedure for the independent checking of single checked medication in babies, children, and young people (under 18yrs)



Appendix 2: Procedure for the independent double checking of oral, rectal, topical, inhaled, eye, nose, ear, and injectable medicines in babies, children, and young people (under 18yrs)

All medications not on the single check medicines list must be checked by 2 authorised members of staff (refer to LMC section 13)

Explain the procedure to the child & family and gain verbal consent
Anticipate the need to hold the child & include play specialists to prepare or distract the child if necessary

Before starting the procedure, decontaminate hands and put on a plastic apron

Primary practitioner must check the prescription chart is valid:
- **The prescription chart is legible**
- **Name, date of birth, and S-number are correct**
- **Recent signed & dated weight**
- **Allergies & contraindications are documented**

Primary practitioner must check the medication prescription:
The correct medication has been prescribed
Dose and frequency are correct (checked against BNF-C)
The route is correct and appropriate for the patient/treatment required
The medication is due to be administered
The prescription is signed by a prescriber

Primary practitioner must check the medication and equipment:
- **Select the correct medication and required equipment (e.g. syringe)**
- **Ensure the formulation is suitable for the patient (tablet/liquid etc.)**
- **Check expiry date of medication**
- **Check the packaging and expiry of any equipment required**
- **Accurately calculate the volume of medication to be administered (including any diluents)**

Ensure second independent check
The primary practitioner can check and prepare the medication (up to the point of adding diluent) before asking a second practitioner to independently check the prescription chart and medication (following the steps above)

Prepare the medication to be administered
- **Adhere to principles of ANTT**
- **Medication must be taken to the bedside in a clean tray/trolley**
- **Both practitioners must decontaminate hands prior to leaving the medication preparation area**

Both practitioners must go to the bedside:
Clean hands
Re-explain procedure and check consent remains
Reconfirm allergy status
Verbally confirm name & date of birth
Check ID band against prescription chart

The primary practitioner must safely administer the medication
- **Follow correct administration procedure for the route prescribed**
- **Stay with the patient until all of the medication has been taken**

The second practitioner must:
- **Sign the prescription chart (2nd box)**
- **Clean hands before leaving the bedside**

Following administration, the primary practitioner must:
- Sign the prescription chart (1st box)
- Dispose of waste appropriately
- Clean hands before leaving the bedside