Intravenous (IV) Drug Administration in Adult Intensive Care Units (ICU) UHL Guideline

University Hospitals of Leicester NHS
NHS Trust

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ITAPS

1. Introduction

Intravenous (IV) drug administration is a complex process which requires 2 registered nurses to prepare and administer the medicine. Within the intensive care settings multiple adjustments are made to injectable administration often against variable rate prescription. Preparation and checking cannot always be done in the treatment room and it is often necessary to remain at the patient's bed space.

This protocol has been developed to specifically define the checking roles and place in processes for the different types of IV administration found within an intensive care unit, allowing for preparation at the bed space.

It does not cover the standard labelling, preparation and training requirements which are defined in the IV policy (B25/2010) and must be used in conjunction with that policy.

2. Scope

This protocol applies to all registered nursing practitioners, who are IV trained, working in the adult intensive care units in UHL.

This protocol does not cover the following:

a) IV administration of Cytotoxic Medications (please see LNR Cytotoxic Policy, Trust ref E2/2007 for further information)

b) Epidural Medication Administration (please search INsite with the term Epidural for relevant policies)

c) Administration of Parenteral Nutrition (please see Administration and Care of Parenteral Nutrition in Adults Procedure Manual, Trust Reference B21/2010, or Parenteral Nutrition Administration in Children

3. Procedural Statements

Throughout this document the two nurses who are involved in the process have been called the first and second checker.

3.1 General principles of checking

- All IV drugs and injectables require double checking by 2 registered nurses
- Checking of medicines should not be routinely interrupted
- Checks should be independent and not ' talked through' by colleagues unless in a teaching or education scenario when a third checker may be required.
- The 2 individuals involved for the purposes of this guideline, first checker and second checker, are equally accountable for their practice.
- The checks should include
    - The correct medication has been selected and in date
    - All diluents and flushes are in date

- Preparation in accordance with an IV monograph or instructions specified on the prescription chart
- Dose / rate of administration has been calculated and selected correctly
- Correct patient

3.2 Preparation stage

3.2.1 **First** check stage

- First checker uses the prescription chart to collect the required drugs and equipment required for administration placed in ANTT trays. A **red** separate tray must be used for Controlled drugs including potassium.
- The trays with the drugs laid out are taken to the bed space ready for the second checker. Each drug to be prepared must be placed in a different tray with all the constituents required to prepare.
- The first checker must not talk through the drugs with the second checker

3.2.2 **Second** check stage:

- Best practice is that the second checker should start with the patient's drug charts and review medications due / prescribed first. This prevents possible omissions.
- The second checker should review the drugs laid out independently. The second checker should complete calculations and review IV monographs separately.
- When the second checker approves the drugs for preparation, they should inform the first checker they are correct.
- The second checker must check the patient ID using the patient's wrist band and sign complete the drug chart.

3.2.3 Once the second checker has approved the drugs in the tray the first checker should start preparing the drugs ready for administration.

3.2.4 During this time the second checker should write out and sign the IV drug syringe/ infusion labels.

3.2.5 Once prepared the first checker must check and sign the IV label and then attach to the syringe or infusion bag.

3.2.6 More than one syringe/ bag can be prepared at a time as long as each preparation is always kept in separate trays.

3.2.7 The empty vials/ ampoules used to prepare the syringe/ bag must remain in the tray with the prepared syringe / bag until all the checks have been completed and the drug administered.

3.3 Non pump IV bolus administration

These are boluses which are administered without being connected to a rate controlled device.

Best practice is always that the second checker remains the same throughout the process.

3.3.1 The drugs and equipment must be brought to the bed space as described in 3.2.1 First check

3.3.2 The second checker must check the drugs in each tray independently

3.3.3 The first checker must then prepare the syringe.

3.4.3 The second checker checks the preparation including the patient's drug chart, ensuring that this is the correct patient.

3.4.5 The first and second checkers must both sign the patient's drug chart for administration.

3.4.6 The above steps can be repeated for several bolus injections which are to be administered immediately following one another.

3.5.5 The second check can then leave and does not have to witness the administration of the bolus(es) injections.

3.5.6 If at any point the first checker is interrupted and has to leave the bed space then the remaining boluses which have not been administered must be either locked in a patient cupboard until the second checker returns or thrown away and prepared again when 2 nurses are available.

3.4 Administration stage

There are 2 types of administration 'set ups' for continuous infusions and 2 types of prescriptions for adjusting rates described below:

3.4.1 Double pumping:

Double pumping is when an interruption in therapy would be detrimental to the patient. The second infusion is set up and connected to the patient using a second line so that it can start as the first infusion is finishing.

- Once prepared and checked as above the syringe/ bag should be connected immediately to the patient.
- A line label with the drug name must be attached to the correct line, checked by both checkers.
- Two nurses must sign for the administration on the prescription chart as it has been connected.
    - first checker must sign the 'drawn up by ' box
    - second checker must sign the 'checked by' box.
- The rate of infusion must be recorded on the ICU observation chart. This rate will be checked as accurate at handovers and signed for by two nurses.

3.4.2 **Uninterrupted** administration:

Uninterrupted administration is when a drug is given as a continuous infusion but can be interrupted briefly as it is connected to the same line as the infusion which has just been finished.

- Once prepared and checked as above the syringe/ bag must be capped with a tamper luer lock and kept secure and ready in the patient's bed space, still under ANTT conditions
- Two nurses must sign for the preparation on the prescription chart
    - First checker must sign in 'drawn up by' box
    - Second checker must sign the ' checked by' box
- Once the drug is required the syringe/ bag must be re-checked by two nurses (where practically possible one of which should be from the original check)
- A line label with the drug name must be attached to the correct line, checked by both checkers as the syringe is placed in the pump and the line connected to the patient.

- The two nurses must then sign at the point of administration in the 'started by' and 'rate check' sections on the ICU prescription chart.
- The rate of infusion must be recorded on the ICU observation chart. This rate will be checked as accurate at handovers and signed for by two nurses.

Infusions of controlled drugs can never be prepared without administering or connecting to a patient.

Controlled drugs should be changed and connected immediately while the two nurses who are signing the register are present. Any residual drug should be recorded as wastage in the controlled drug register. (see Controlled drug policy B16/2009)

3.4.3 **Variable rate** prescriptions:

Variable rate prescriptions are those where the rate is prescribed and administered within a specified range. The rate can be changed up or down within the prescribed range against fluctuating monitored results eg noradrenaline

- The infusion should be prepared and administered as detailed in either the 'Double pumping' 3.3.1 or the 'Uninterrupted' 3.3.2
- Once connected, the rate of infusion can be manipulated by the patient's own named nurse within the prescribed range only.
- Changes in the rate are recorded on the ICU observation chart.
- Rates are checked as being accurate at handovers and signed for by two nurses.
- Changes to the prescription range need to be re-prescribed.

3.4.4 **Set rate** prescriptions:

Set rate infusions are those where the prescribed rate is specific to a set range of blood values. for example insulin in response to blood glucose values.

- The infusion should be prepared and administered as detailed in either the 'Double pumping' 3.3.1 or the 'Uninterrupted' 3.3.2
- Once connected, the rate of infusion must be adjusted by two nurses
- The changes in the rate must be recorded on the ICU observation chart signed by two nurses.
- Rates are checked as being accurate at handovers and signed for by two nurses.

3.5 Handover:

3.5.1 All injectable medicines being administered should be checked by two nurses at handover of care and documented on the ICU observation chart to record the check has happened. The check must include the following:

- Infusions are connected and administered appropriately against the prescription chart to the correct patient.

- Syringes and giving sets are labelled correctly
- Routes of administration including compatibilities are acceptable

4. Education and Training

4.1 All Nurses who start within an adult intensive care unit will be LCAT assessed against this guideline in addition to the standard IV training requirements specified in the IV policy

5. Monitoring and Audit Criteria

Key Performance Indicator	Method of Assessment	Frequency	Lead
Incident reports for the preparation or administration of an injectable medication in ITU	Datix reporting	Yearly	Medication safety Pharmacist

6. Legal Liability Guideline Statement

Guidelines or Procedures issued and approved by the Trust are considered to represent best practice. Staff may only exceptionally depart from any relevant Trust guidelines or Procedures and always only providing that such departure is confined to the specific needs of individual circumstances. In healthcare delivery such departure shall only be undertaken where, in the judgement of the responsible healthcare professional' it is fully appropriate and justifiable - such decision to be fully recorded in the patient's notes.

7. Supporting Documents and Key References

- UHL IV policy Preparation and Administration of Intravenous Medications and Fluids to Adults, Babies, Children and Young People * (*excluding cytotoxic, epidural, PN and radiopharmaceuticals) B25/2010
- Leicestershire medicines code chapter 6 : administration of medicines
- Aseptic non touch technique UHL guideline B20/2013
- Policy and procedures for the management of controlled drugs on wards, departments and theatres B16/2009

8. Key Words

IV, Intravenous, ICU, intensive care, ITU, Checking

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This table is used to track the development and approval and dissemination of the document and any changes made on revised / reviewed versions

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