Trust Standard Operating Procedure

University Hospitals Plymouth NHS Trust

Preparing and Administering Intravenous Medicines and Fluids SOP

Issue Date	Review Date	Version
September 2020	September 2025	3

Purpose

To instruct staff on how to correctly prepare and administer intravenous medications and fluids to avoid incompatibilities, microbial contamination, drug instability and adverse effects to the patient

Who should read this document?

Applies to all competent staff that prepares and administers intravenous medications and fluids.

Key Messages

Staff working for or on behalf of University Hospitals Plymouth NHS Trust who prepare and administer fluids and drugs by injection or infusion must do so in accordance with these SOPs

Core accountabilities	
Owner	Jo Hickey, Clinical Skills and Apprenticeship Manager Gary Hallett, Preceptorship Lead
Review	Medicines Governance Committee
Ratification	Deputy Medical Director – Paul McArdle
Dissemination (Raising Awareness)	Jo Hickey, Clinical Skills and Apprenticeship Manager Gary Hallett, Preceptorship Lead
Compliance	Medicines Governance Committee

Links to other policies and procedures

- UHPT Medicines Management Policy - Medicines Management Policy
- UHPT Vascular Access Documents
- UHPT Administration of Medication through a Central Venous Catheter (CVC)
- UHPT Removal of a Central Line
- UHPT Central Vascular Access Guidelines
- UHPT Infection Control Documents:
- UHPT Guidelines for the Management of Peripheral Intravenous Devices
- UHPT Guidelines for the Management of Central Intravenous Catheters
- UHPT Hand Hygiene Guidelines
- UHPT Guidelines for Aseptic Technique
- UHPT Safe Disposal of Sharps Policy

Version History

1	December 2012	Final Document
2	February 2016	Clave removed in preference of Closed Connectors. Length of time required to clean Closed Connectors added.
3	September 2020	Updated and approved

The Trust is committed to creating a fully inclusive and accessible service. Making equality and diversity an integral part of the business will enable us to enhance the services we deliver and better meet the needs of patients and staff. We will treat people with dignity and respect, promote equality and diversity and eliminate all forms of discrimination, regardless of (but not limited to) age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage/civil partnership and pregnancy/maternity.

An electronic version of this document is available on Trust Documents. Larger text, Braille and Audio versions can be made available upon request.

Standard Operating Procedures are designed to promote consistency in delivery, to the required quality standards, across the Trust. They should be regarded as a key element of the training provision for staff to help them to deliver their roles and responsibilities.

Standard Operating Procedures (SOPs) for Preparing and Administering Intravenous Medicines and Fluids

1 Introduction

Intravenous (IV) medication administration refers to the process of giving medication directly into a patient's vein. Methods of administering IV medication may include giving the medication by rapid injection (push) into the vein using a syringe, giving the medication intermittently over a specific amount of time using an IV secondary line, or giving the medication continuously mixed in the main IV solution. IV medications are most often given through a peripheral line but may also be administered direct IV, through an implanted vascular access port or through a central venous access device (CVAD).

The primary purpose of giving IV medications is to initiate a rapid systemic response to medication. It is one of the fastest ways to deliver medication. The drug is immediately available to the body. It is easier to control the actual amount of drug delivered to the body by using the IV method and it is also easier to maintain drug levels in the **blood** for therapeutic response. The IV route for medication administration may be used if the medication to be delivered would be destroyed by digestive enzymes, is poorly absorbed by the tissue, or is painful or irritating when given by intra-muscular (IM) or subcutaneous (SC) injection.

Proper IV administration should follow the five "rights" of medication administration to avoid medication errors: be sure it is the right patient, the right drug, the right dose, the right time, and the right route before giving any medication. The IV line must be intact before any IV medication can be administered. Some IV medications can cause severe tissue damage if injected into the tissue through an infiltrated IV site.

Some IV bolus medications must be diluted before injection. The health care professional must check the directions for giving the specific drug IV before performing the injection. Administration guidelines for giving IV medications must be followed to avoid serious complications from the drug injection. UHPT has an approved IV drug list and instructions for injecting each drug IV (Medicines Management Policy). Other resources include the PDR guide, drug administration handbooks, or printed inserts from the pharmaceutical company.

Groups able to give intravenous drugs:

- Registered professionals – Additional training is attended and competency assessment
- Assistant Practitioners – Limited scope of drugs in specific specialist areas, additional training attended and competency per drug
- Technologist - Additional training is attended and competency assessment
- Allied Health Professionals - Additional training is attended and competency assessment

2 Definitions

IV = Intravenous

ANTT – Aseptic Non Touch Technique

CVAD – Central Venous Access Device

UHPT – University Hospitals Plymouth NHS Trust

PPI – Positive Patient Identification

PPE – Personal Protective Equipment

VIP – Visual Infusion Phlebitis score

3 Regulatory Background

UHPT Medicines Management Policy

4 Key Duties

To safely prepare and administer intravenous drugs correctly via bolus technique or pump

5 Procedure to Follow

Process that must be followed when administering any medications by intravenous route such as infusion, bolus, intermittent infusion:

The following applies to all intravenous infusions:

- The responsible healthcare professional for preparing any drugs to be used IV MUST administer the drug (See exception below)
- Positively ID your patient and gain consent and explain procedure
- Refer to UHPT Medicines Management Monograph for information on how to reconstitute and administer the required drug
- Hands must be decontaminated as per WHO 5 moments of hand hygiene 2006
- Gloves and aprons must be worn for all preparation and administration of intravenous drugs and the appropriate ANTT technique used.
- Risk assessment of the procedure will identify if it is high or low risk and appropriate ANTT can be selected
- Gather appropriate equipment, drugs and clean the tray with sani-wipes using the ladder technique, allow to dry
- Prepare the drug on the clean tray, ensuring protection of all key parts, using the administration guidance in the UHPT Medicines Management monograph, to ensure correct dilution and rate of administration
- Check infusion solution visually for clarity and absence of particles/cloudiness, if in doubt do not give and contact pharmacy
- A minimum of a 10ml syringe must be used for the infusion and flush to prevent pressure damage to the vein, cannula or CVAD
- All syringes containing drawn-up medication or a flushing solution must be labelled with name of the drug and the dose/strength
- 2nd checker to check drugs and diluents against prescription and monograph

- Remove gloves and apron and wash hands using the approved handwashing technique
- Both registrants to go to side of patient and check patient ID using positive patient identification (PPI)
- Reapply PPE and use hand gel or wash hands again if appropriate
- Check the administration site for signs of phlebitis (Visual Infusion Phlebitis VIP) or the CCAT Score (Central Catheter Assessment Tool) before, during and following administration of any drug and flush
- Clean needle-free devices with 70% isopropyl alcohol/2% Chlorhexidine impregnated swab (e.g. Sanicloth) for 30 seconds and allow to dry for 30 seconds before continuing with procedure
- Protect key parts within a micro or surgical field
- Flush with a minimum of 5-10ml of compatible fluid – check the compatibility with UHPT drug monograph
- Administer drug at the correct rate, using the push-pause technique**, observing the device site and the patient throughout
- If using a pump, run through the giving set and attach to pump. All staff must be trained and have an up to date competency to use the device
- Following infusion flush with a minimum of 5-10mls of compatible fluid – check the compatibility with UHPT drug monograph
- Following flush, clean needle-free devices with 70% isopropyl alcohol/2% Chlorhexidine impregnated swab (e.g. Sanicloth) for 30 seconds and allow to dry for 30 seconds and allow to dry
- All flushes administered intravenously are to be prescribed and recorded on appropriate drug/day case/surgical record or EPMA
- Dispose of waste and sharps according to UHPT infection, prevention and control policy
- Remove PPE and wash hands using the approved handwashing technique
- Document actions in appropriate records including drug charts or day case paperwork/outpatients, EPMA evaluate actions if necessary in patient notes.
- For adverse incidents, please follow the Management of Peripheral Intravenous Devices and Management of Central Venous Catheters and Midline policies
- For treatment of Infiltration, Extravasation, Air Embolism, Speed Shock and Phlebitis, please refer to: SOP Infiltration Extravasation Air Embolism Speed Shock Phlebitis

Exceptions to this SOP

Healthcare Professionals, Healthcare Support Workers and Assistant/Trainee Practitioners or Nursing Associates trained to place cannulas can administer up to a 10ml flush of normal saline as long as it is second checked by the responsible registrant without completing the Corporate IV Drugs Training. However they are not allowed to administer anything other than a 10ml flush at insertion of the cannula.

Theatre Trainee Assistant Practitioners, Assistant Practitioners and Registered Staff – Can draw up and prepare drugs for administration by a surgeon within a surgical scrub field only (Must have completed associated Theatre based competency).

6 Document Ratification Process

The design and process of review and revision of this procedural document will comply with The Development and Management of Formal Documents.

The review period for this document is set as default of five years from the date it was last ratified, or earlier if developments within or external to the Trust indicate the need for a significant revision to the procedures described.

This document will be reviewed by the Clinical Skills Training Group and ratified by the Medicines Utilisation and Assurance Committee.

Non-significant amendments to this document may be made, under delegated authority from the Clinical Skills Training Group, by the nominated author. These must be ratified by the Clinical Skills Training Group and should be reported, retrospectively, to the Medicines Utilisation and Assurance Committee

Significant reviews and revisions to this document will include a consultation with named groups, or grades across the Trust. For non-significant amendments, informal consultation will be restricted to named groups, or grades who are directly affected by the proposed changes.

7 Dissemination and Implementation

Following approval and ratification, this procedural document will be published in the Trust's formal documents library and all staff will be notified through the Trust's normal notification process, currently the 'Vital Signs' electronic newsletter.

Document control arrangements will be in accordance with The Development and Management of Formal Documents.

The document author(s) will be responsible for agreeing the training requirements associated with the newly ratified document with the IV drug training working party and for working with the Trust's training function, if required, to arrange for the required training to be delivered.

8 Monitoring and Assurance

- All staff attending the training day will undergo a UHPT assessment for skills and knowledge in IV drug preparation and administration using the IV competency
- Staff will be monitored during their assessment period by their mentor/supervisor and supported by the tutor.
- Identified shortfalls will be discussed and action plan produced by the mentor/supervisor
- The results will be reported to line manager and supported by the tutor
- Learning will be in individual clinical areas

- The Clinical Skills Training Committee will be responsible for ensuring that the SOP and training is up to date and evidence based.

9 Reference Material

Department of Health. (2007) High impact Intervention No 2. Peripheral intravenous cannula care bundle. In: *Saving Lives: Reducing Infection, Delivering Clean and Safe Care.* London: DH.

Lister, S. Royal Marsden Hospital (2020) **Manual of Clinical Nursing Procedures. 10th Ed**. Blackwell. Oxford.

Medicines and Healthcare Products Regulatory Agency (2018) Drug safety update: Drug-name confusion: a reminder to be vigilant for potential errors

NICE - Intravenous fluid therapy in adults in hospital, **Clinical guideline [CG174] Published date: May 2017**

NMC – Section 11 – The Code: Professional Standards of Practice and Behaviour 2015

Royal College of Nursing (RCN) (2009) The Assistant Practitioner Role: A policy discussion paper

Royal College of Radiologists (2015) Standards for intravascular contrast administration to adult patients

Royal Pharmaceutical Society: Professional Guidance on the Administration of Medicines (2019)

RCN. (2010) **Standards for Infusion Therapy**. (Revised Edition due 2020)

No appendices needed