

# POLICY AND PROCEDURES FOR THE PRESCRIBING AND ADMINISTRATION OF INJECTABLE MEDICINES

TO BE USED IN CONJUNCTION WITH W.A.H.T 'Medicines Policy'

<b>Department /Service:</b>	Trust-wide
<b>Originator:</b>	Lead Nurse for Education and Workforce
<b>Accountable Director:</b>	Chief Nursing Officer Chief Medical Officer
<b>Approved by:</b>	Medicines Safety Committee
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<b>Target Organisation(s):</b>	Worcestershire Acute Hospitals NHS Trust
<b>Target Departments:</b>	Trust wide
<b>Target staff categories</b>	All Registered Health Care Professionals (HCPs), students and any other staff who are authorised by the Trust to administer injectable medicines.
<b>Policy Overview:</b>  This Policy and Procedure describes how injectable medicines are to be prescribed and administered safely within the Trust.	

## Key amendments to this Document:

Date	Amendment	By:
Aug 2010	Change of Lead Nurse and reformatted into Trust Policy Template in line with Trust Policy for Key Documents. Reformat approved by Nick Hubbard, Chairman of Medicines Safety Committee 8/9/10	Alison Smith
Aug 2010	Clarification of advice on needle-free intravascular connectors and addition of MHRA Medical Device Alerts to References	Sallyanne Simpson
Nov 2010	Update of content and references	Sallyanne Simpson
Dec 2010	Addition of warning to Procedure 2 re drawing up of insulin	Alison Smith
Mar 2012	Extended unchanged for a period of 3 months to allow completion of the review process.	Alison Smith

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June 2012	Policy updated in relation to checking of IV Drugs by agency nurses and the addition of procedures for IM and subcutaneous injection	Andrea Edwin
October 2012	Amendments to section 4 to ensure clarity in respect to staff roles and competencies required.	Martina Morris
October 2012	Amendments to section 5.2 to ensure that all the process for second checking is clearly described for all injectable medicines.	Martina Morris
September 2014	Change of Directors to reflect organisational changes	Phil Goode
September 2014	Amendment of section 4 to include Agency Nurse administration of intravenous medication.	Phil Goode
September 2014	Addition of agreement between ward manager and agency nurse to administer intravenous medication (appendix B)	Phil Goode
August 2016	Addition of intra-articular route	Emma Barnes/Tracey Mourino
August 2016	Addition of examples of subcutaneous medicines which must be checked	Emma Barnes/Tracey Mourino
August 2016	Medicines Safety Committee replaced by Medicines Optimisation Committee Director of Nursing replaced by Chief Nursing Officer	Alison Smith
November 2018	Complete review of policy Inclusion of Nurse Associates and students Definition of roles and responsibilities Sections included and redefined included: Preparation, Administration and labelling Updated appendices	Kate Knight
May 2019	Update to monitoring schedule Inclusion of process for first and second checking	Keith Hinton
Dec 2019	Further clarity added regarding Nurse Associate & students Review of section relating to sodium chloride flushes 0.9%	L Pearson
December 2021	1) Addition of Registered Nurse Associates who have attended the Trust IV Therapy Course to be authorised to administer medicines intravenously 2) Amendment to section 7.6 to include that sodium chloride 0.9% and glucose 5% flushes associated with medicines administration (whether ampoules are used, or Posiflush®/similar medical devices) are classed as an integral part of the intravenous administration process and can be administered without a prescription or PGD. Training requirements	Medicines Safety Committee

	<p>and situations where flushes <u>do</u> need to be prescribed are also set out.</p> <ol style="list-style-type: none"> <li>3) Addition of wording to Appendices 2 &amp; 3 to emphasise the push-pull technique for withdrawing a solution or suspension from a vial into a syringe</li> <li>4) Update to 4.9 re medical students (by Angie Connell, Clinical Skills Trainer for Medical Students)</li> <li>5) Update to 6.3 to include exception for critical care, theatres or accident and emergency when transferring a critically ill patient for further investigation or treatment.</li> <li>6) Update to sections on higher risk injectable medicines including Never Events and signposts to relevant MedPolSOPs</li> <li>7) Review/update to list of Key Documents section 2.5 and throughout</li> <li>8) Updates to incorporate excerpts from and signposts to the latest version of the Medicines Policy WAHT-CG-580</li> <li>9) Update/simplification of terminology use to describe staff groups</li> <li>10) Removal of references to Medicines Information ext 45776 (replace with 'a pharmacist')</li> </ol>	
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## 1. Introduction

The use of injectable medication has many healthcare benefits for patients. However, the complexities associated with prescribing, preparing and administering injectable medicines means that there are greater potential risks for patients than for other routes of administration. Weak operating systems increase the potential risk of harm and safe systems of work are needed to minimise these risks. The main risks are:

- Incomplete and/or ambiguous prescriptions which do not include important information, for example, details of the solution to be used to dilute the injectable medicine (diluent), the final volume of medication to be administered, the final concentration or intended rate of administration.
- Injectable medicines may be prescribed on other documentation such as anaesthetic records or casualty cards, which increase the chance of duplication of doses.
- Presentations of injectable medicines that require complex calculation, dilution and handling procedures before the medicine can be administered.
- Lack of information about injectable medicines available to healthcare professionals at the point of use. This information may not always be included in the manufacturer's pack or in commonly available reference sources. In WAHT, the 'MEDUSA' Injectable Medicines Administration Guide is available at <http://nww.worcsacute.nhs.uk/clinical-systems/>, as are the BNF and BNFc. If in doubt, contact a pharmacist for advice.
- Selection of the wrong medicine or diluent.
- Use of a medicine, diluent or infusion after its expiry time and date.
- Calculation errors made during prescription, preparation, and administration of the medicine, leading to administration of the wrong dose and/or at the wrong concentration or rate. For example, extended interval gentamicin doses are calculated on adjusted body weight rather than actual body weight and adjusted according to blood levels (see WAHT-PHA-004 GUIDELINES ON 'EXTENDED INTERVAL' GENTAMICIN REGIME).
- Unsafe handling or poor Aseptic Non-Touch Technique (ANTT) leading to contamination of the injection and harm to, or infection of, the patient.
- Incompatibility between diluent, infusion fluid, other medicines and administration devices.
- Failure to follow patient identification procedures leading to administration to the wrong patient.
- Failure to follow administration checking procedures leading to administration of the wrong dose or via the wrong route.
- Health and safety risks to the operator or environment.
- Equipment failure/ inappropriate selection of recommended equipment
- Risk of medication error due to incorrect use of an infusion device. All practitioners administering injectable medication through an infusion device must have evidence of training and competency assessment for the device being used.
- Variable levels of knowledge, training and competence amongst healthcare practitioners. All practitioners administering and checking injectable medication should have recorded evidence they have received the Trust approved training and have the necessary competencies to administer injectable medicines safely.
- Lack of effective communication regarding loading dose (initial large dose of a medicine used to ensure a quick therapeutic response) and subsequent

maintenance dose regimens when prescribing, dispensing or administering critical medicines.

These **risks were highlighted by the NPSA Patient Safety Alert** 'Promoting safer use of injectable medicines' (March 2007) which required the Trust to:

1. Undertake a risk assessment of injectable medicine procedures and products in all clinical areas to identify high risks, and develop an action plan to minimise them.
2. Ensure there are up-to-date protocols and procedures for prescribing, preparing and administering injectable medicines in all clinical areas.
3. Ensure essential technical information on injectable medicines is available and accessible to healthcare staff in clinical areas at the point of use.
4. Implement a 'purchasing for safety' policy to promote procurement of injectable medicines with inherent safety features.
5. Provide training for, and supervision of, all healthcare staff and students involved in prescribing, administering and monitoring injectable medicines.
6. As part of the annual medicines management audit programme, healthcare organisations should include an audit of medication practice with injectable medicines.

**Never Events** <https://www.england.nhs.uk/publication/never-events/> are defined as Serious Incidents that are wholly preventable because guidance or safety recommendations that provide strong systemic protective barriers are available at a national level and should have been implemented by all healthcare providers. All five medication related Never Events involve injectable medicines/routes, and in addition to the relevant clinical guidelines, specific Medicines Policy procedures have been developed for these (see 2.5).

## 2. Scope of this document

2.1 This policy covers all routes of injectable medicine administration and applies to all healthcare professionals employed by the Trust and students on clinical placements who are involved in the prescribing, supply and storage, preparation, administration and monitoring of injectable medicines.

2.2 This policy does not apply to cytotoxic agents or agents being used in the treatment of malignant disease. Refer to Guideline for safe prescribing, handling and administration of Chemotherapy drugs - SACT and Management Policy for Adult Patients (WAHT-NUR-064)

2.3 This policy does not apply to neonate injectable administration. Refer to West Midlands Neonatal Network Guideline IV fluid therapy and Safe use of Gentamicin in neonates guideline WAHT-KD-015

2.4 The policy is intended for use by:

- Medical / Dental Officers
- Registered Nurses / Midwives and Registered Nurse Associates
- Registered Allied Health Professionals e.g. Radiographers, Physiotherapists, Paramedics, Operating Department Practitioners
- Advanced Clinical Practitioners

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- Students on clinical placements (under supervision by a registered health care professional)
- Any other suitably trained person authorised by the Trust to administer injectable medicines

2.5 This policy must be used in conjunction with any other relevant Policies, Guidelines or Procedures which include injectable medicines, including:

WAHT Medicines Policy (WAHT- CG-580) and accompanying MedPolSOPs, which describe specific safety measures to be taken with certain higher risk injectable medicines identified locally and/or nationally (including Never Events):

MedPolSOP07 Controlled Drugs Procedure and MedPolSOP8 Controlled drug access list

MedPolSOP09 Supply, Administration, Storage and Transfer/TTOs of Insulin

MedPolSOP14 Policy for reducing the risk of overdose with midazolam in adults

MedPolSOP23 Supply, storage, prescribing and handling of strong potassium infusions and concentrated potassium solutions

MedPolSOP28 Safe management of ONCE WEEKLY Methotrexate (any route) for non-malignancy on acute admission

Other Key Documents:

WAHT Blood Transfusion Policy (WAHT-KD-001)

WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices (IVAD)

WAHT Medical Devices Policy (WAHT-CG-022)

WAHT Latex Policy (WAHT-CG-004)

WAHT Treatment of Acute Anaphylaxis Policy (WAHT-TP-108)

WAHT Guideline for the use and monitoring of intravenous unfractionated (UFH) Heparin in Adults (WAHT-HAE-010)

WAHT Guideline for safe prescribing, handling and administration of Chemotherapy drugs (WAHT-NUR-064)

WAHT Safe use of Gentamicin in Neonates Guideline (WAHT-KD-015)

WAHT Policy to Identify All Patients (WAHT-CG-019)

WAHT-KD-004 Acute Pain Guideline

NHS England - Guidelines for the Management of Extravasation of a Systemic Anti-Cancer Therapy including Cytotoxic Agents. West Midlands Expert Advisory Group for Systemic Anti-Cancer Therapy (SACT)

Palliative Care Guidelines

Professional Standards:

NMC (2015) The Code: Standards for Conduct, Performance & Ethics for Nurses and Midwives.

NMC (2018) Standards of Proficiency for Nursing Associates

Health and Care Professions Council (2014) Standards of Proficiency for Operating Department Practitioners

Health and Care Professions Council (2014) Standards of Proficiency for Radiographers

## 3. Definitions

3.1 **Injectable medicines** covered within this policy are:

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- Intramuscular injection
- Subcutaneous injection
- Subcutaneous infusion
- Intradermal Injection
- Intravenously by:
  - Direct intermittent injection (Bolus)
  - Intermittent infusion
  - Continuous infusion

3.2 Injectable routes not covered within this policy are:

- Intrathecal – refer to Intrathecal Chemotherapy - Policy and Guidelines for Adults WAHT-HAE-004 and Medicines Policy 5.3.20
- Epidural – refer to Acute Pain Guideline WAHT-KD-004, Epidural analgesia in labour WAHT-TP-094 and Medicines Policy 5.3.21
- Central venous access – refer to WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices (IVAD)
- Other routes such as intra-arterial, intraosseous, intraventricular, intravitreal, intrapleural and intraocular. If medication is to be administered via specified route, reference should be made to specific Policies and Guidelines used in specific clinical areas. The principles and basic preparation procedures covered in this policy will generally apply.

### 3.3 Training and Competencies

The Trust Medicines Policy (section 5.3.4) states that:

**‘An appropriately trained and authorised member of trust staff who has been assessed as competent to do so safely may administer medicines that have been prescribed by an authorised prescriber to an individual patient. The medicines may only be administered to that named patient. This principle applies to trust staff at all levels’**

This applies to medicines given by the injectable route, provided that:

- A training and competency assessment procedure for each staff group to prepare, administer and check injectable medication is approved by the Trust.
- Standard Operating Procedures are in place (see Medicines Policy section 5.3 Administration of Medicines for more details)

The Trust may approve different levels of training and levels of authorisation for different staff groups depending on the needs of the Trust. For example, to authorise Radiographers to administer contrast media or designated and appropriately trained staff to administer an intravenous sodium chloride 0.9% flush.

Registered Nurse Associates are not currently authorised to administer Controlled Drugs by injectable routes.

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In order to administer injectable medicines, Registered Healthcare Professionals must have undergone theoretical and practical training as part of a competency assessment. An appropriately trained and competent HCP is able to administer all prescribed injectable medication appropriate to their scope of practice (including FIRST DOSE intravenous medication where included) and should be able to successfully handle any adverse reactions. Students are able to complete the above, under direct supervision of an appropriately trained and competent registered HCP.

## 4. Responsibility and Duties

**4.1 Divisional Directors of Nursing (DDNs)** are responsible for ensuring that necessary measures are in place to support the safe implementation and monitoring of the use of the policy in practice. They will need to take measures where practice has been deemed potentially unsafe and work with matrons and department managers to ensure unsafe practices have been resolved

**4.2 Matrons and Department Managers** are responsible for ensuring that all staff accountable to them, are aware of and adhere to this policy. They will investigate and rectify any discrepancies identified.

**4.3 Ward Manager/Charge Nurse/Department Leader** will act as role models and are responsible and accountable for the policy implementation among staff in practice, and the monitoring of standards and best practice associated with it. They will ensure all staff they are responsible for, including agency and NHSP, have access to relevant training and associated documents to develop the skills and competences they need. They are responsible for undertaking a risk assessment based on the frequency of injectable medications administered. This should include the use and regularity of Agency Staff

Line managers are responsible for ensuring the healthcare practitioner has access to the Trust Medicines Policy and Injectable Medicines Policy. For agency/NHSP staff to administer intravenous medication an agreement must be obtained between the agency/NHSP healthcare practitioner and line manager (Appendix 1). Evidence of competence provided by external staff should be retained by the line manager, who must undertake an observed assessment of competence in the clinical area where they will be administering intravenous therapy. A local induction (which includes medicine safety) must be provided in-line with the Trust agreed process, and competency should be reviewed every six months

**4.4 All Registered Healthcare Professionals** must always work within their own Codes of Professional Practice and in accordance with Trust policies and guidelines. All registered Healthcare Professionals are responsible for the management (including device insertion and on-going management) of injectable medicines within their scope of practice. In addition they should have validated clinical competences and undertaken initial and on-going theoretical and practical training. Completion of the Trusts Annual PDR process should include competencies being assessed and reviewed. They are personally responsible and professionally accountable in ensuring they receive training in the safe use and observation of any medical device they use.

4.5 **Consultants** must ensure that they and all medically trained members of their team (including FY1 doctors) have the knowledge, skills and understanding required before giving a drug by an injectable route. They must be competent to prescribe, prepare, administer and monitor injectable therapy. They must be familiar with their responsibilities concerning the addition of medicines to intravenous infusion fluids, and aware of the hazards associated with IV therapy, particularly when using an infusion pump or syringe pump / drivers.

4.6 **Agency/NHSP staff** who are not employed by the Trust are permitted to administer injectable medicines with the exception of chemotherapy, epidurals and to paediatrics. The HCP must not administer intravenous medication unless they have received additional training, and are required to produce evidence of training and competence in the administration of IV therapy.

**Students** are only permitted to administer the aforementioned under direct supervision of an appropriately trained registered health care professional.

4.7 **Healthcare Support Workers (HCSW)** are permitted to administer a single 10ml 0.9% sodium chloride pre-filled syringe device (e.g. Posiflush®) immediately after peripheral cannulation to adults. HCSWs must have attended the Venepuncture & Cannulation course and successfully completed assessed competencies, also refer to WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices.

#### 4.8 **Assistant Practitioners (Nursing), Student nurses/ midwives/ paramedics and European Band 4 Nurses awaiting registration.**

Staff in these roles work under the direct supervision and support of registered staff and allied healthcare professionals. Although Assistant Practitioners, student nurses/midwives/ paramedics and European Band 4 Nurses awaiting registration are not professionally registered they are required to meet the same standard of practice as any competent professional within the agreed scope of their role. Their preparation will enable them to competently undertake administration of prescribed medications.

They must take responsibility for their own actions and ensure that their knowledge and skills are maintained to ensure safe and competent administration of medications.

They must be assessed against the Trust Medicines Management Competency by a Registered Nurse, prior to undertaking any medicines administration in practice without a second checker. Students are expected to undertake the aforementioned competency, however will not be administering medications without supervision until they are registrants.

These staff will not be deemed competent to administer medications in any ward or department outside that in which they completed competency training without additional assessment of competence.

Assistant Practitioners (Nursing), student nurses/midwives/ paramedics and European Band 4 Nurses awaiting registration may not administer:

- Controlled drugs
- Intravenous medication

4.9 All medical students obtaining their clinical competencies in injectable medicines (as required for their clinical skills passport), must be directly supervised by a practitioner competent in the preparation and administration of injectable medicines. Medical devices should not be used by any medical student unless they have received medical device training and are directly supervised by a competent practitioner.

## 5. Prescribing

5.1 Medicines should be given by injection only when the use of any other route is clinically inappropriate, practically impossible or unacceptable to the patient. The necessity for repeated injections/infusions should be regularly reviewed in favour of switching to oral administration as soon as clinically appropriate.

It is the responsibility of all prescribers to:

- Ensure that medicines prescribed are appropriate for the injectable route and for the vehicle of administration, taking into account stability and incompatibility information.
- Chemical symbols must NOT be used e.g. KCl
- Provide a legal, legible, signed prescription as stated below to enable the drug to be administered safely and correctly.
- Ensure the patient has appropriate intravenous access for intravenous medicines prescribed so they can be administered (refer to WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices)
- Be aware of departmental protocols and the role of designated healthcare professionals in the administration of injectable drugs.
- Ensure that no drug is added directly to any blood product.
- Ensure information has been handed over about any new prescriptions that have been written and that have not administered themselves (Medicines Policy 5.3.1.1). Effective communication is especially important with loading doses and subsequent maintenance dose regimens.
- If in doubt, prescribers should seek information from Pharmacy.

5.2 All prescriptions for injectable medicines (including injectables on TTOs) should be written clearly and in accordance with the Trust 'Medicines Policy'. Prescriptions must specify the following:

- Patient's name, date of birth, hospital number, NHS number and weight.
- Prescriber's signature and bleep number.
- The approved medicine name.
- The dose, route, frequency and rate of administration.
- The allergy status of the patient.

5.3 Additional information may be required including the following:

- Concentration or total quantity of the medicine in the final infusion container or syringe.
- Name and volume of diluent and/or infusion fluid.
- Duration of administration.
- The age and weight of any patient under 16 years of age.
- Date on which treatment should be reviewed.

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- Arrangements for fluid balance or clinical monitoring should be made on an individual patient basis and according to local protocol and clinical need.

5.4 When two or more prescription charts are in use, it is essential that they be cross-referenced so that practitioners are aware of *all* prescribed medicines (e.g. extra drug charts, insulin, heparin, epidural charts)

5.5 To access technical information, the 'MEDUSA' Injectable Medicines Administration Guide is available at <http://nwww.worcsacute.nhs.uk/clinical-systems/> , as are the BNF and BNFc. If in doubt, contact a pharmacist for advice

## 6. Preparation

6.1 Injections should be prepared only by healthcare staff who understand the risks involved. They must have been trained using safe procedures and have demonstrated their competence for the task.

6.2 Preparation should only take place if there is a prescription, a Patient Group Direction or other written instruction available. Essential technical information must be available about the product(s) and processes needed for safe preparation and administration.

6.3 Staff must not prepare substances for injection in advance of their immediate use or administer medication drawn into a syringe or container by another practitioner when not in their presence. Exceptions to this include pharmacy aseptic unit, critical care, theatres or accident and emergency when transferring a critically ill patient for further investigation or treatment. The medications will be checked and prepared by two competent registered practitioners immediately prior to the transfer, during which the syringes will stay with the registered practitioner and must not be left unattended. The syringe must be fully labeled. Additional labelling with patient details should be added prior to administration and be checked by two registered practitioners competent in intravenous therapy.

6.4 'Open systems' for injectable medicines, including gallipots or other types of open container such as moulded plastic procedure trays must not be used, except where a specific procedure has been approved by the Medicines Safety Committee. This risks one medication being confused with another and medication intended for injection being confused with other substances, such as skin antiseptics, that are routinely contained in gallipots or other open containers. Additionally an 'open system' can become contaminated by bacteria.

6.5 Aseptic Non-Touch Technique (ANTT) should be used during preparation.

6.6 Injectable medicines prepared in clinical areas should always be administered immediately after preparation. They should not be stored for a period of time before use.

6.7 Administration of infusions prepared in clinical areas should be completed within 24 hours of preparation or sooner depending on the product (refer to preparation information).

6.8 Only medical devices with luer connectors must be used for preparation and administration of infusions.

6.9 Risk assessments will have identified those products representing the highest risk to patients at the time of preparation. Where supplied by pharmacy, products supplied in a ready-to-use form should be used.

6.10 For second check requirements see section 8.

### 6.11 Labelling

6.11.1 All syringes, including flushes and infusions, must be labelled immediately after preparation by the person who prepared them. 'Flag labelling' should be used to ensure that volume graduations on small syringes are not obscured. The only exception to this is in situations where preparation and bolus administration is one uninterrupted process and the unlabelled product does not leave the hands of the person who prepared it. In theatres a scrubbed nurse drawing up and handing a syringe to a surgeon is also considered to be undertaking one uninterrupted process providing the second checker process has been followed. Only one unlabelled medicine must be handled at one time.

### 6.12 Labelling of Bolus Injections

6.12.1 Critical Care and Theatres use an internationally recognised pre-printed and colour coded system.

6.12.2 General wards and clinical areas should prepare labels as part of the preparation process and attach to the syringe for differentiation of preparations during transportation to the patient. The purpose of the label here is to simply identify contents of the syringe that are given immediately after preparation (unlike preparation for infusions). Information such as diluents used etc. is not required.

### 6.13 Labelling of Infusions

6.13.1 Any intravenous product prepared by adding to an infusion bag/syringe driver must be labelled with the following information, ensuring that no information details/graduation markings are obscured:

- Patient name and date of birth
- Ward/clinical area
- Date of preparation
- Time of preparation
- Medicine name, dose, batch number,
- Medicine Diluent, volume, batch number
- Initials of person preparing
- Initials of person checking
- Expiry date & time of infusion after reconstitution
- Route of administration

6.13.2 Where manufacturer labels are used, the following minimum information must be provided:

- Patient name
- Date of preparation

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- Time of preparation
- Expiry time/date
- Drug name
- Concentration (total mass of drug in total volume of infusion)
- The initials of the person preparing
- The initials of the person checking
- Route
- Ward/Clinical area

## 6.14 Labelling of syringes for use during sterile procedures

6.14.1 In these circumstances a risk assessment should be undertaken by the directorate. If the provision of sterile labels is deemed appropriate, contact the Supplies department who will be able to assist with their procurement. If other methods of differentiating prepared injections are used then a standard operating procedure should be developed.

## 6.15 Additional Checks

6.15.1 Checking the expiry dates of the medicines to be administered, including, diluents and infusion fluid where used.

6.15.2 Checking the container and fluid show no obvious faults or contamination, this check MUST take place immediately before use. The container should be examined for:

- Cracks
- Faults in the plastic
- Defects in the closure, or other damage.

The injectable medicine should be examined for unexpected:

- Particles
- Cloudiness
- Change in colour

Any suspicion that a medicine may be defective should be discussed with the most senior pharmacist on duty in the supplying pharmacy, or the on-call pharmacy out of pharmacy working hours. (Section 5.3.14 of the 'Medicines Policy').

## 7. Administration

7.1 Before administering an injectable medicine either a current prescription or PGD should be available.

7.1.1 Before administering any injection check all of the following:

- Patient's name, Date of Birth, Hospital Number or address with the patient and against their wristband (Independent Positive Patient Identification)

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- Prescription, including: prescriber's signature, dose, time frequency, rate, and route and allergy status.

7.2 In circumstances where a doctor has prepared and is administering the injectable medicine, a prescription is not required prior to administration. Similarly when a doctor is administering the medication, a second check is recommended, but not required. It is at the discretion of the individual practitioner. Where other staff members are administering on behalf of the doctors, second checking guidance applies.

7.3 The patient's cannula site must be checked prior to intravenous administration and the phlebitis score must be documented and protocol followed (refer to WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices). The cannula should be removed and/or re-sited every 72 hours unless earlier change is indicated by the phlebitis score or clinical need.

7.4 Needle-free devices should be used where possible to reduce the risk of hospital acquired infection. Exceptions may be made in areas such as theatres and endoscopy, where a new cannula is inserted and only used for a minimum length of time and using strict ANTT technique. Following the first stage recovery and where appropriate theatre staff should endeavour to return the patient to a ward area with a needle-free device in situ.

7.5 Aseptic Non-Touch Technique (ANTT) should be used during administration.

7.6 As part of the intravenous administration process, the peripheral cannula/vascular device must be flushed before and after (and between medicines if more than one is administered) with 5 ml of 0.9% sodium chloride. The same applies to central venous access devices, for details refer to WAHT-INF-051 Infection Prevention Procedure and Practice Guidelines for Intravenous Access Devices.

Within WAHT sodium chloride 0.9% and glucose 5% flushes associated with medicines administration (whether ampoules are used or Posiflush®/similar medical devices) are classed as an integral part of the intravenous administration process (in the same way as diluents for the reconstitution of vials/dilution of medicines before administration) and can be administered without a prescription or PGD, provided the person administering them has attended the Trust IV Therapy Course, completed the associated competency package and follows the procedures in the Injectable Medicines Policy. Signing for administration of the medicine therefore incorporates flushing before and after according to these procedures.

Flushes associated with the insertion of a cannula do not need to be prescribed, but the person inserting the cannula must have attended the Trust Venepuncture & Cannulation training course and completed the associated competency package.

However, situations where flushes do need to be prescribed are:

- Where a flush is used containing heparin or any other medicine
- If a patient is no longer prescribed any IV medicines, but a sodium chloride 0.9% flush is still needed to be used as a flush to maintain patency. In these cases review regularly and confirm that a cannula is still needed
- Where a flush needs to be supplied for discharge (NB must be ampoules not Posiflush® as these are not available in primary care)



7.7 The person administering the medicine must make a record of administration as soon as possible after the event. This is extremely important and the healthcare practitioner should exercise vigilance in areas such as theatres and out-patient clinics where the person administering the injectable medicine may also be the prescriber. Where an injectable medicine is administered by a non-prescriber, a valid prescription must be available to check and administer. Exceptions include medicines covered by a PGD or in life threatening situations e.g. for the administration of adrenaline.

## 7.7 Administration Sets

7.7.1 In all cases the integrity of the packaging and expiry must be checked before use.

7.7.2 The administration giving set should be labelled with the date and time of when it was set up

7.7.3 Set out below are the recommended maximum time limits before administration sets should be changed.

- Every 72 hours for clear fluids
- Every 12 hours colloid and blood products
- Every 24 hours for IV medicine infusions/Parenteral Nutrition (PN). This includes changing the infusion contents.

7.7.4 In all cases where contamination is suspected or the integrity of the product or system has been compromised the set shall be changed immediately.

7.7.5 If a giving set is disconnected from a patient, any remaining solution and giving set must be discarded following the Trust's policy on disposal of clinical waste and a new set attached.

7.7.6 Fluid prescription charts and fluid balance charts must be updated to record actual fluid administered.

7.7.7 Administration sets and unused fluids must be disposed of in accordance with the Trust's Waste Disposal Policy

7.8 It is recommended that all intravenous infusions containing Potassium Chloride are delivered via an infusion device. All potassium infusions with a concentration of more than 40mmol per litre MUST be given via a pump or syringe driver, using a non-return valve if more than one infusion is in progress. (see MedPolSOP23)

## 8. Checking of injectable medicines.

8.1 A two person check should be exercised during preparation and administration. The checks should be performed independently and incorporate positive patient identification.

8.2 The second checker must be someone who has been assessed as competent to administer injectable medicines, or who is a pharmacist.

8.3 Second checking is required for injectable medicines in the following circumstances (Trust Medicines Policy):

- Where a patient's condition makes it necessary

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- When administering controlled drugs and two authorised persons are available on duty
- When a dose calculation is required (e.g. volume of liquid, fraction of reconstituted vial to administer, or a weight-related dose is to be administered)
- When administering medicines by intravenous bolus or infusion, via epidural catheter, and by infusion pump
- Where continuous variable rate intravenous insulin infusion is prescribed
- Administration of cytotoxics by any route
- When the medicine is to be administered to a child under 12 years of age
- When a clinical area's standard operating procedures defines that local circumstances make the involvement of two persons desirable e.g. units dependant on temporary agency or other locum staff
- A person training to administer a medicine(s) must always be checked by a person trained and authorised to administer the medicine(s)

8.4 In addition to the above checking of administration requirements, registered nurses, midwives, registered nurse associates and AHPs (agency and Trust employees) must ensure that checking of administration by a second person who is also authorised to administer the medicine, or who is a pharmacist, takes place when administering medicines via the following route:

- Intra-muscular injection
- Direct subcutaneous injection - including insulin and treatment dose low molecular weight heparin
- Subcutaneous infusion
- Intradermal injection

8.5 The exceptions to the second checking of administration requirement for registered nurses, midwives, and AHPs are:

- Prophylactic dose of a low molecular weight heparin from a single dose pre-filled syringe e.g. Enoxaparin.
- Vaccinations administered by occupational health nurses
- Injectable medicines administered by midwives in an emergency situation or during a home birth when a second person is not present

Any planned variations from this must be approved by Medicines Safety Committee.

8.6 If there are insufficient staff to administer and check according to this Policy, the Assigned Healthcare Professional-in-Charge must be informed at once who must escalate to the Matron or Nurse / Midwife bleep holder if the situation cannot be resolved, and complete a Datix incident report (with subcategory 'Medication issue').

8.7 Agency/NHSP staff who are not employed by the Trust may undertake second checking of administration of all injectable medicines except chemotherapy, epidurals and paediatric medicines, provided that they have been inducted to the

clinical area in line with the Trust agreed process and confirm to the Appointed/Assigned Healthcare Professional-in-Charge that they are trained and competent to do so and have read and understood the Trust's Medicines Policy and Injectable Medicines Policy. The registered practitioner administering the injectable medicine is responsible for informing Agency/NHSP staff who are not employed by the Trust about MEDUSA and making it available to them in order for the second check to take place.

## 9. Monitoring of the patient

- 9.1 After administration, if possible, ask the patient to report any soreness at the injection site or discomfort of any sort.
- 9.2 Make a detailed record of administration.
- 9.3 Re-check the administration site for signs of leakage, infection or inflammation and continue to monitor the patient, contents of the infusion container and the rate of infusion according to local policy.
- 9.4 Check that the arrangements for monitoring fluid balance or clinical parameters have been made. Ensure that relevant documentation is made available for subsequent regular monitoring to take place.
- 9.5 Infusions should be monitored to ensure safe administration of prescribed treatment. A minimum standard for active infusions recommends monitoring of the patient, the cannula and infusion site, the administration set, and the infusion pump or device on an hourly basis.

## 10 General Principles

- 10.1 Medicines should be given by injection only when the use of no other route is possible and acceptable to the patient or in an emergency situation or according to clinical need.
- 10.2 Staff administering injectable medication must familiarise themselves with the method of administration of the medicine which they are to give, by reference to the B.N.F., Pharmacy, manufacturer's literature, UKMI Guidelines on IV administration or MEDUSA at <http://nwww.worcsacute.nhs.uk/clinical-systems/>)  
Package inserts should be returned to the correct medicine container after use.
- 10.3 Not all medicines may be given by intravenous bolus injection.
  - Some medicines must only be given by infusion.
  - Some medicines must be further diluted before administration.
  - Some medicines must not be diluted before administration
- 10.4 Most medicines licensed for injectable use are intended for single use only and should not be used more than once. Exceptions include vials of insulin, which contain antibacterial preservatives; even so each vial should be reserved for a single patient (see Medicines Policy SOP MedPolSOP9).
- 10.5 Two or more medicines should not be mixed together unless the compatibility has been confirmed, by pharmacy or other approved guidelines.

10.6 Where more than one medicine is given intravenously, the line/cannula/vascular device should be flushed between medicines. This is usually with sodium chloride 0.9% however reference should be made to MEDUSA to ensure compatibility.

10.7 Prepared medication and reconstituted products will have a different expiry date to that given by the manufacturer, this will be no longer than 24 hours but may be less dependent on medicine stability. For further guidance the B.N.F. and the manufacturer's literature should be consulted. Exceptions to this will be for medicines where additional advice is provided by pharmacy e.g. epidural infusions.

## 11.0 Medicine Calculations

11.1 The calculation of injectable medicine dosages is a potential source of error. All staff authorised to administer injectable medicines must be satisfied that they have the ability to calculate the medicine dose safely and accurately, using standard formulas where necessary.

11.2 When checking calculations all calculations must be conducted independently and the results of the calculations must correspond. If they do not, calculations must be repeated independently. If there is still a discrepancy between the two calculations, assistance should be sought from a third authorised person, doctor or pharmacist.

11.3 If there is any doubt, or if the dose seems to require the administration of the contents of more than **4 ampoules** of a stock medicine, contact pharmacy (or the on-call pharmacist) to check this is correct. Gentamicin (refer to Trust Guideline WAHT-PHA-004) and acetylcysteine (refer to Trust Guideline WAHT-A&E-30) are two notable exceptions.

## 12.0 Displacement Values

12.1 Where the dose of a medicine is less than a complete vial and the vial requires reconstitution, e.g. for paediatrics, it is necessary to take into account the displacement value of the medicine (see MEDUSA at <http://nww.worcsacute.nhs.uk/clinical-systems/>)

## 13.0 Supply and Storage

13.1 It is good practice to undertake risk assessments of injectable medicines procedures and products to identify high risks, and develop action plans to minimise them.

13.2 A 'Purchasing for Safety' Policy (see MedPolSOP19) is used to promote the procurement of injectable medicines with inherent safety features for example, the purchase of ready-to-administer presentations, where available and necessary to reduce risks.

13.3 Injectable cytotoxics and parenteral nutrition must be supplied to clinical areas only as ready-to-administer products (also see Medicines Policy 5.3.27)

13.4 Most medicines licensed for injectable use are intended for single use only and should not be used more than once. Exceptions include vials of insulin, which

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contain antibacterial preservatives; even so each vial must be reserved for a single patient and labeled with the patient's name and date of opening.

13.5 Epidural infusions must NEVER be stored in the same location as intravenous or sub-cutaneous infusions.

#### **14.0 Treatment of anaphylaxis during/following injectable therapy**

14.1 Anaphylaxis is a severe, life-threatening generalised or systemic hypersensitivity reaction.

14.2 It is characterised by rapidly developing life-threatening airway and/or breathing and/or circulation problems usually associated with skin or mucosal changes.

14.3 All staff must have completed their resuscitation training.

14.4 Certain antibiotics, anaesthetic, NSAIDs, aspirin or other drugs have been implicated as triggers.

14.5 Staff should be aware of the signs and symptoms of anaphylaxis and how to access help quickly if required.

14.6 Signs and Symptoms of Anaphylactic Shock include:

- Angio-oedema/laryngeal oedema
- Rash – urticaria/erythema
- Hypotension
- Bronchoconstriction
- Rhinitis/conjunctivitis
- Abdominal pain, vomiting and diarrhoea
- Collapse

14.7 For the treatment of anaphylaxis see **Trust Anaphylaxis Policy WAHT-ANA-012** and [www.resus.org.uk](http://www.resus.org.uk) for further information.

#### **15.0 Adverse reaction during administration of injectable medicines**

15.1 If a patient exhibits any adverse reaction receiving an injectable medicine it must be stopped and the medical/dental officer notified. It should only be continued on his/her decision.

15.2 The medical/dental officer is responsible for taking a full clinical history. List signs, temperature, all medicines and the times and batch number of any infusions given.

15.3 Update the Adverse Medicine Reaction box on the front of the patient's medicine chart and follow Medicines Policy procedure MedPolSOP15

15.4 If a defect in an infusion is suspected take specimens for blood culture from another vein and discuss with the most senior pharmacist on duty in the supplying pharmacy, or the on-call pharmacy out of pharmacy working hours. (Section 5.3.14 of the 'Medicines Policy').

15.5 Watch any other patients having medication of the same batch. The order of use of the containers concerned should be noted. When the medication has been completed the containers should be retained for a period of 24 hours to ensure that they can be examined should any reaction follow.

15.6 All suspect containers and accessories should be labelled and returned to pharmacy at the earliest opportunity.

15.7 The senior nurse and senior pharmacist on duty (or the on-call pharmacist) should be informed immediately and the procedure MedPolSOP15 followed

## 16.0 Extravasation

16.1 Extravasation is the inadvertent administration of vesicant drugs or solutions into the surrounding tissues instead of the intended vascular pathway (RCN 2010) Vesicant solutions have the potential to cause blistering and tissue damage which may lead to necrosis and damage to underlying nerves, tendons and blood vessels.

16.2 As the signs of extravasations can occur during or after administration this should be considered when an area of inflammation is identified in a patient who has had a venous access device in situ.

16.3 Extravasation should be suspected if one or more of the following are present:

- Patient complains of burning, stinging or any discomfort at the vascular access device's injection site.
- Inability to aspirate blood from the vascular access device
- Resistance is felt when the drug is given as a bolus.
- There is an obstruction to flow of fluid when an infusion is in progress.
- Swelling or leakage is observed at the injection site.

16.4 Reference should be made to the Extravasation Guidelines NHS England - Guidelines for the Management of Extravasation of a Systemic Anti-Cancer Therapy including Cytotoxic Agents. West Midlands Expert Advisory Group for Systemic Anti-Cancer Therapy (SACT)

16.5 If extravasation is suspected:

- Stop administration IMMEDIATELY leaving the cannula in place (for cytotoxics see relevant Cancer Network Policy)
- Inform medical staff immediately
- Elevate limb
- Aspirate the residual medicine through the cannula (medical staff)

16.6 During the day (Mon-Fri) a pharmacist can also contact the medicine manufacturers to check if there is any further information on specific medicines.

16.7 In the case of a severe extravasation where surgical intervention may be needed (e.g. skin breakdown and/or tissue necrosis), the patient's consultant or registrar should be contacted, who may consider a referral to the plastics team at University Hospital Birmingham.



16.8 Document in the patient's notes: Medicine involved and approximate amount, appearance of site, date/time of incident, administration technique, needle size, type and insertion site, patient's symptoms, name of person administering and doctor notified, follow up procedure

16.9 Report as a patient safety incident/Medication issue on Datix.

## 17. Implementation of the Policy

### 17.1 Plan for implementation

This Policy is implemented via publication on the Trust intranet, the Trust IV Therapy Course and is included in medical staff induction.

### 17.2 Dissemination

This Policy is available on the Trust intranet.

### 17.3 Training and awareness

Training requirements are included in the Trust's Training Needs Analysis Appendix A of the Trust's Statutory and Mandatory Training Policy (WAHT-HR-039).

## 18.0 Monitoring and compliance

Aspect to be monitored	Evidence	Frequency	Individual responsible	Reported to
Ensure all staff who prescribe, prepare, administer and monitor injectable medicines have received training and have the necessary work competencies to undertake their duties safely	<b>Healthcare professionals preparing and administering injectable medicines:</b> <ul style="list-style-type: none"> <li>• Copy of training/competency assessment materials</li> <li>• Dates of training sessions</li> <li>• Evidence accessible through ESR</li> </ul>	As per agreed process according to staff group and route of administration.	Line manager	Directorate governance lead
Training for administration of Intravenous therapy	<ul style="list-style-type: none"> <li>• Records of staff who have received training.</li> <li>• Evidence of completion of post-registration IV training.</li> <li>• Evidence of completion of relevant competencies</li> </ul>	Annual	Professional development lead	MSC
Hand hygiene	Ward audits	Monthly	Ward/department managers	TIPCC
Adherence to policy	Monitoring of medicines incidents via review of	Quarterly	Ward/department managers	Divisional governance and



	Datix		Medicines Safety Officer	MSC
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## 19. Policy Review

This Policy is reviewed by the Medicines Safety Committee every 3 years, as part of the Medicines Policy Review Process

## 20. References

DOH Saving Lives – High Impact Interventions nos. 1,2,3 (August 2007)

Dougherty, L and Lister, S (2008) The Royal Marsden Hospital Manual of Clinical Nursing Procedures 7th Edition Oxford: Blackwell Science Limited

Epic2: National Evidence-based Guidelines for preventing healthcare-associated infections in NHS Hospitals in England.

European Oncology Nursing Society 2007 Extravasation Guidelines

Hector B (2009) Nurse cannulation: introducing an advanced clinical skill. Nursing Management. 16, 6, 22-30

Ingram P, Lavery I (2007) Peripheral intravenous cannulation: safe insertion and removal technique. Nursing Standard. 22,1, 44-48

Injectable Medicines Administration Guide 2<sup>nd</sup> edition, Pharmacy department, University College London Hospitals, Blackwell Publishing

Lavery I, Ingram P (2006) Prevention of infection in peripheral intravenous devices. Nursing Standard. 20, 49, 49-56.

MHRA Medical Device Alert MDA/2005/030 All brands of needle-free intravascular connectors

MHRA Medical Device Alert MDA/2007/089 Intravenous (IV) infusion lines: all brands

MHRA Medical Device Alert MDA/2008/016 Needle-free intravascular connectors: all brands

National Patient Safety Agency Patient Safety Alert 'Promoting safer use of injectable medicines' March 2007

National Patient Safety Agency /2010/RRR013 Safer administration of insulin

NHS Improvement (2018) Never Events policy and Framework

NHS Improvement (2018) Never Events List 2018

NHS Improvement (2016) 'Restricted use of open systems for injectable medicines.'

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NHS Pharmaceutical Quality Assurance Committee 'Multiple Use of Injections' 3rd edition November 2004

NMC (2018) Standards of Proficiency for Nursing Associates

NMC (2015) The Code: Professional standards of practice and behaviour for nurses, midwives and nursing associates London NMC

NMC (2010) *Standards for Medicines Management*. London:NMC

RCN (2016) *Royal College of Nursing Standards for Infusion Therapy. Fourth Edition*

WAHT Medicines Policy WAHT-CG-580

WAHT Blood Transfusion Policy WAHT-KD-001

WAHT Treatment of Acute Anaphylactic Reactions in Adults Policy WAHT-TP-108

NPSA Rapid Response Report RRR018 -Preventing fatalities from medication loading doses (2010)

## 21. Background

### 21.1 Equality Requirements

This Policy and Procedures for administration of injectable medicines have been assessed by the Medicines Optimisation Committee as having NO IMPACT on equality and diversity on the grounds of race, religion/belief, or disability and NO IMPACT on Race Relations.

### 21.2 Financial Risk Assessment

This Policy and Procedures for administration of injectable medicines have been assessed by the Chief Nursing Officer and Medicines Safety Committee as requiring no financial support that is additional to that already in place.

### 21.3 Consultation Process

This Policy are reviewed and updated by the Medicine Safety Committee, which includes representatives of all professional groups administering injectable medicines are invited to participate.

21.4 Approval Process This Policy and Procedure is approved by the Medicines Safety Committee

## Appendix 1

### Assessment of competency for Agency staff to administer intravenous medication

#### Agency Nurse

Name of Agency Nurse (Print) .....

I confirm that I have read and understand the following policies:-

- Trust Medicines Policy
- Injectable Medicines Policy

Signature of Agency Nurse .....

Date .....

#### Assessor

I confirm that I have received evidence of competency in IV drug administration and have completed an observed assessment of the above named Nurse

Name of Assessor (Print) .....

Signature of Assessor .....

Date of assessment .....

Evidence of training should be retained by the Ward Sister/Charge Nurse.

A copy of this competency assessment will be retained on the ward and a copy sent to the Learning and Development Department for recording on Trust records.

**This assessment is valid for six months only from date of assessment**

**Appendix 2- The Procedure for Administering Intravenous medication using Aseptic Non Touch Technique (ANTT) Via Direct Bolus.**

(Includes preparing to administer injectable medicines, reconstituting and drawing up injectable medicines and medicine administration by direct intravenous (Bolus) injection.

**Pre- Procedure**

Injectable medicines should only be checked and administered by Healthcare professionals who have attended an Intravenous Study Day and have valid up to date competencies and Professional registration.

A second checker must observe the entire procedure from preparation to administration.

The ideal environment for ANTT procedures at ward level is a clean location designated for the task (such as a clinical room). The area should be free from interruption and distraction.

Prior to administration, Healthcare Professionals must check the drug information leaflet and/or Medusa Injectable Medicines Guide to determine the correct diluent and if necessary, the infusion fluid required for administration.

They must also ensure that the prescription is valid. It must consider the right patient, the right drug, the right dose, the right date and time of administration and the right route. The prescription must also be legible and signed by the prescriber. Whilst 'acceptable abbreviations' as detailed in the Medicines Policy may be used on the prescription chart, generally abbreviations are discouraged to minimise the risk of error.

Both checkers must identify the patient who is to receive the medication via their wristband. The wristband must display the patient's name, patient's hospital number and date of birth. The patient should also be asked to state their name and date of birth. Each checker must independently check this three way identification process.

All equipment should be checked pre- procedure including the integrity of the packaging and the individual expiry dates.

Sodium chloride 0.9% cannula flush devices (e.g. Posiflush®) must also have their expiry dates checked and the containers should be assessed to make sure that they are not discoloured or contain any particles.

Risk assessment must consider the drug being administered and provision taken to ensure risks are minimised (e.g. is an infusion pump required? Does the patient need monitoring during the infusion due to the medication risks/ properties? ).

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Pre-procedure the patient must give informed consent to the Intravenous Therapy administration, once provided with information regarding the requirement for the drug and potential side effects.

## The Procedure

Action	Rationale
1. Clean hands with soap & water followed by alcohol hand rub as per Trust Policy.	Effective hand hygiene is vital to reduce the risk of contamination.
2. Apply apron and non-sterile gloves.	To prevent contamination and for personal protection.
3. Clean plastic tray with Clinell 'Universal' wipes inside then outside covering all surfaces. Leave for 60 seconds then dry with a paper towel.	To establish a clean working surface through eliminating bacteria and microorganisms.
4. Remove apron and non –sterile gloves and discard into clinical waste bin.	To prevent contamination with cleaning solutions.
5. Decontaminate hands with alcohol gel.	Hands may have been contaminated by handling equipment.
6. Check the drug against the prescription chart to ensure it is the correct medication for administration to the specific patient. <ul style="list-style-type: none"> <li>• Check the drug name, the dose, the route and time of administration.</li> <li>• Check the drug is not contraindicated due to allergies.</li> <li>• Check the expiry date of the drug and the diluent.</li> <li>• Check the integrity of the medicine container.</li> </ul>	To prevent administering the incorrect drug, the incorrect dose, the incorrect route or at the incorrect time to the patient which may cause harm.

7. Pass the drug chart to the second checker and ask them to independently check these details against the drug.	To prevent incorrect administration of incorrect medication to the patient.
8. Decontaminate hands with alcohol gel.	Hands may have been contaminated handling the drug chart.
9. Apply apron and non-sterile gloves	To prevent contamination and for personal protection.
10. Prepare drugs and equipment, protecting key parts and using a non-touch technique. <ul style="list-style-type: none"> <li>• Check drug name, expiry, integrity</li> <li>• Check sterile water for injection, expiry, integrity</li> <li>• Check equipment expiry (syringe, needles, 2% chlorhexidine / 70% isopropyl wipe)</li> <li>• Open packaging using peel tabs only.</li> <li>• Always protect key parts (syringe tips, needle hub that attaches to the syringe, syringe plunger).</li> <li>• Handle key parts with confidence.</li> <li>• Keep syringe and needle in sterile packaging until ready to draw up sterile water for injection.</li> <li>• Twist off sterile water for injections cap and stand in tray.</li> <li>• Connect syringe to needle hub using ANTT. Remove protective needle cover.</li> <li>• Avoid holding the syringe plunger, aspirate the sterile water using the plunger top</li> <li>• Arrange equipment in an orderly manner in plastic tray.</li> <li>• Remove protective cap of drug container and clean rubber bung with 2% chlorhexidine and 70% isopropyl wipe for 30 seconds, allow to air dry for 30 seconds.</li> <li>• Prepare medication as per instruction (considering compatibility of diluent) according to Medusa Injectable Medicines Guide.</li> <li>• If reconstituting a powder, use the</li> </ul>	<p>Prevents contamination of key parts during removal from packaging.</p> <p>Exposed key parts increase risk of contamination.</p> <p>An orderly aseptic field decreases the chance of contaminating key parts.</p>

<p>correct volume of sterile water for injection discussed in Medusa Injectable Medicines Guide.</p> <ul style="list-style-type: none"> <li>• Use a push-pull technique* for withdrawing a solution or suspension from a vial into a syringe</li> <li>• Only blunt filter needles or 23g needles may be used to draw up drugs/diluents.</li> <li>• If drugs are drawn up from glass vials, the needles must always be changed prior to adding drug to an infusion bag.</li> </ul>	<p>To prevent glass fragments inadvertently being added to the infusion fluid.</p>
<p>11. Remove apron and non-sterile gloves and discard into a clinical waste bin.</p>	<p>As preparation procedure has finished.</p>
<p>12. Apply alcohol gel to hands.</p>	<p>To prevent cross contamination moving from one ward area to another.</p>
<p>13. Take the prescription chart, the second checker and the plastic tray containing the IV therapy to the patient.</p>	<p>To ensure that medication is given to the correct patient and errors are minimised.</p>
<p>14. Perform a full hand wash.</p>	<p>To eliminate microorganisms and bacteria on hands.</p>
<p>15. Apply gloves and non-sterile gloves.</p>	<p>To prevent contamination and for personal protection.</p>
<p>16. Positive patient identification</p> <ul style="list-style-type: none"> <li>• Check the patient's identification band displaying name, date of birth and hospital. Cross check against their drug chart and ask the patient to confirm their name and date of birth.</li> <li>• Ask the second checker to also check the patient's identification band, prescription chart and ask them to confirm their name and date of birth.</li> </ul>	<p>To confirm positive patient identification to prevent errors and harm to the patient.</p>
<p>17. Ask the patient if they have any allergies and confirm this with the prescription chart and the patient's identification band.</p>	<p>To prevent administering a drug to a patient that they are allergic to.</p>

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18. Clean the needle free port with a 2% chlorhexidine/ 70% isopropyl wipe for 30 seconds. Allow to air dry for 30 seconds. Hold to avoid contaminating.	To ensure microorganisms have been removed from the needle free port and to prevent contamination.
19. Carefully remove the syringe containing the sodium chloride 0.9% flush from the packaging being careful not to contaminate the syringe hub.	To prevent contaminating key parts and causing harm to the patient.
20. Push the syringe into the needle free port and twist to the right.	To ensure that key parts are handled with confidence to prevent contamination through poor handling of equipment.
21. Unclamp the needle free device clamp.	To allow the flush to be administered once the syringe is attached
22. Using a push/pause technique flush 5mls of the sodium chloride 0.9% flush into the cannula observing for any signs of phlebitis.	To ensure vein and cannula patency and to create 'turbulence' within the needle free device and cannula for more thorough flushing.
23. Reclamp the needle free device on a positive flush.	Positive pressure flush compensates for the negative displacement of fluid that occurs upon disconnection from the device.
24. Insert the drug into the needle free port and twist to the right. Slowly push the IV drug into the cannula using a push/ pause technique and over the time stipulated in the Medusa Injectable Medicines Guide. Observe for adverse reactions.	To ensure key parts are handled with confidence. To create 'turbulence' within the needle free port and cannula. To prevent speed shock from rapid administration. To minimise risks to the patient through recognising adverse reactions swiftly.
25. Clamp the line.	To prevent accidental leakage of blood or fluid.

26. Using a push/ pause technique, flush the remaining 5mls of sodium chloride 0.9% flush push whilst clamping the line.	To ensure vein and cannula patency. To ensure that all the drug is flushed from the line to prevent drug interaction. To compensate for the negative displacement of fluid that occurs upon disconnection from the device.
27. Clean the needle free port with a 2% chlorhexidine/ 70 % isopropyl wipe for 30 seconds and allow to air dry for 30 seconds.	To eliminate bacteria/micro-organisms.
28. Remove apron and non-sterile gloves and place in clinical waste bin.	To prevent contamination.
29. Decontaminate hands using alcohol gel.	To remove microorganisms from the hands.
30. Dispose of waste in clinical waste, sharps as per local policy (using gloves).	To prevent sharps injury and follow clinical waste guidelines.
31. Reapply PPE to decontaminate plastic tray using Clinell universal wipes cleaning and leave for 60 seconds before wiping dry with paper towels.	To prevent contamination.
32. Remove apron and non-sterile gloves.	Clinical procedure has finished.
33. Decontaminate hands with alcohol gel.	To rid hands of any microorganisms.

**\*Push-pull technique for withdrawing a solution or suspension from a vial into a syringe**

- With the needle sheathed, draw into the syringe a volume of air equivalent to the required volume of solution to be drawn up.
- Remove the needle cover and insert the needle into the vial through the rubber septum.
- Invert the vial. Keep the needle in the solution and slowly depress the plunger to push air into the vial.
- Release the plunger so that solution flows back into the syringe.
- If a large volume of solution is to be withdrawn, use a push-pull technique.
- Repeatedly inject small volumes of air and draw up an equal volume of solution until the required total is reached. This 'equilibrium method' helps to minimise the build-up of pressure in the vial.

## **Post Procedure**

If during the procedure the patient has any adverse reactions to the medication being administered stop immediately and call for help. Follow anaphylaxis protocol if anaphylaxis is identified.

## Appendix 3

### The Procedure for administering Intravenous Drugs using ANTT in an infusion form

Addition of medicines to intravenous fluids:

- Medicines should only be added to an infusion when the intravenous route is prescribed. If adding medicines to an infusion bag, a blue needle should be used to prevent leakage/prevent channel for infection.
- When using syringe pump/drivers, the size of the syringe used must be specified. All pumps are calibrated to a specific manufacturer of syringes therefore the correct syringe must be used for the pump being used e.g. only BD Plastipak™ syringes must be used in any pump calibrated for BD Plastipak™.
- Extension sets connected to syringe pump/ drivers, where possible (in line with NPSA 2010 recommendations) should have clamps and anti-siphon valves to guard against accidental siphoning of medications. A needle free connector is used, manufacturer's instructions must be followed and any defective device discarded and replaced. Prior to use, the device should be checked to ensure that the septum of the connector is in its closed position.
- When drawing diluent for syringe pumps, only blunt filter needles or a blue 23g needles must be used.
- When continuous infusion is prescribed, the medicine must be thoroughly mixed with the fluid and administered at the prescribed rate. Prepare the solution immediately before administration and use within time stated on the package insert.
- Administration of potassium chloride is potentially hazardous. Standard solutions with Potassium Chloride included are available and should be used whenever possible to avoid the need to add concentrated solutions of Potassium Chloride to infusions. SEE MEDICINES POLICY PROCEDURE MedPolSOP23 before administering any potassium infusion > 40 mmol/litre. There are safety restrictions on the availability of Potassium ampoules and strong Potassium infusions (> 40mmol/litre). It is recommended that all intravenous infusions containing Potassium Chloride are delivered via an infusion device. **All Potassium infusions with a concentration of 40mmol per Litre or more MUST be given via a pump or syringe driver.**
- Intravenous antibiotics should be given by bolus or intermittent infusion unless continuous infusion is specifically indicated.

- Medicine must not be added to a partly used infusion. Multiple additions of medicines to a fluid should be avoided.
- Repeat the examination procedure after adding and mixing any medicine and again during administration, rejecting if any precipitation, particles, cloudiness or unexpected colour change is present, and immediately inform the prescriber.
- The container with added medicine must be labelled.
- Medicines should not be added to, or run through the same giving set as :-
  - Any blood product including plasma, platelets and albumin
  - Lipid Preparations (except for ICU/theatres where specific compatibility advice exists for propofol.
  - Mannitol
  - Sodium Bicarbonate
  - Parental Nutrition
  - Where specific information is not available (e.g. British National Formulary, Medusa Injectable Medicines Guide) a pharmacist should be consulted

## The Procedure

Action	Rationale
1. Clean hands with soap & water followed by alcohol hand rub as per Trust Policy.	Effective hand hygiene is vital to reduce the risk of contamination.
2. Apply apron and non-sterile gloves.	To prevent contamination and for personal protection.
3. Clean plastic tray with Clinell 'Universal' wipes inside then outside covering all surfaces. Leave for 60 seconds then dry with a paper towel.	To establish a clean working surface through eliminating bacteria and microorganisms.
4. Remove apron and non –sterile gloves and discard into clinical waste bin.	To prevent contamination with cleaning solutions.
5. Decontaminate hands with alcohol gel.	Hands may have been contaminated by handling equipment.
<p>6. Check the drug against the prescription chart to ensure it is the correct medication for administration to the specific patient.</p> <ul style="list-style-type: none"> <li>• Check the drug name, the dose, the route and time of administration.</li> <li>• Check the drug is not contraindicated due to allergies.</li> <li>• Check the expiry date of the drug and the diluent.</li> <li>• Check the integrity of the medicine container.</li> <li>• Check the drug name of the infusion fluid. Check the expiry date and observe for any particles within the infusion fluid.</li> </ul>	To prevent administering the incorrect drug, the incorrect dose, the incorrect route or the incorrect time of administration to the patient which may cause harm.

7. Pass the drug chart to the second checker and ask them to independently check these details against the drug.	To prevent incorrect administration of incorrect medication to the patient.
8. Decontaminate hands with alcohol gel.	Hands may have been contaminated handling the drug chart.
9. Apply apron and non-sterile gloves	To prevent contamination and for personal protection.
<p>10. Prepare drugs and equipment, protecting key parts and using a non-touch technique.</p> <ul style="list-style-type: none"> <li>• Check drug name, expiry, integrity</li> <li>• Check sterile water for injection, expiry, integrity</li> <li>• Check equipment expiry (syringe, needles, 2% chlorhexidine / 70% isopropyl wipe)</li> <li>• Open packaging using peel tabs only.</li> <li>• Always protect key parts (syringe tips, needle hub that attaches to the syringe, syringe plunger).</li> <li>• Handle key parts with confidence.</li> <li>• Keep syringe and needle in sterile packaging until ready to draw up sterile water for injection.</li> <li>• Twist off sterile water for injections cap and stand in tray.</li> <li>• Connect syringe to needle hub using ANTT. Remove protective needle cover.</li> <li>• Avoid holding the syringe plunger, aspirate the sterile water using the plunger top</li> <li>• Arrange equipment in an orderly manner in plastic tray.</li> <li>• Remove protective cap of drug container and clean rubber bung with 2% chlorhexidine and 70% isopropyl wipe for 30 seconds, allow to air dry for 30 seconds.</li> <li>• Prepare medication as per instruction (considering compatibility of diluent) according to</li> </ul>	<p>Prevents contamination of key parts during removal from packaging.</p> <p>Exposed key parts increase risk of contamination.</p> <p>An orderly aseptic field decreases the chance of contaminating key parts.</p>



<p>Medusa Injectable Medicines Guide.</p> <ul style="list-style-type: none"> <li>• If reconstituting a powder, use the correct volume of sterile water for injection discussed in Medusa Injectable Medicines Guide. Use a push-pull technique* for withdrawing a solution or suspension from a vial into a syringe</li> <li>• Only blunt filter needles or 23g needles may be used to draw up drugs/diluents.</li> <li>• If drugs are drawn up from glass vials, the needles must always be changed prior to reconstituting into an infusion bag.</li> </ul>	<p>To prevent glass fragments inadvertently being added to the infusion fluid.</p>
<p>11. Open the infusion fluid protective packaging using the peel tabs and expose the needle free port.</p>	<p>To protect key parts from contamination</p>
<p>12. Clean the needle free port with a 2% chlorhexidine and 70% isopropyl wipe for 30 seconds, allowing to air dry for 30 seconds.</p>	<p>To ensure that microorganisms are removed</p>
<p>13. Gently insert the needle/ syringe containing the medication to be administered into the needle free port taking caution not to pierce the bag/ chamber.</p>	<p>To prevent contamination of key parts and needle stick injury.</p>
<p>14. Inject the medication, removing the needle and syringe cautiously when contents have all been delivered into the bag and discard into a sharps bin.</p>	<p>As per local sharps policy to prevent harm.</p>
<p>15. Gently agitate the bag to ensure that the medication has dispersed into the fluid properly.</p>	
<p>16. Immediately label the infusion bag using the WAHT medicines added to this</p>	<p>To ensure that it is evident that the infusion fluid has had a medication added.</p>

**Policy and procedures for the prescribing and administration of injectable medicines**

infusion label ensuring that all details are completed as per policy and the label does not obstruct the infusion fluid name and expiry date. Get second checker to initial the label.	
17. Remove apron and non-sterile gloves and discard into a clinical waste bin.	As preparation procedure has finished.
18. Apply alcohol gel to hands.	To prevent cross contamination moving from one ward area to another.
19. Take the prescription chart, the second checker and the plastic tray containing the IV therapy to the patient.	To ensure that medication is given to the correct patient and errors are minimised.
20. Perform a full hand wash.	To eliminate microorganisms and bacteria on hands.
21. Apply gloves and non-sterile gloves.	To prevent contamination and for personal protection.
22. Positive patient identification <ul style="list-style-type: none"> <li>Check the patient's identification band displaying name, date of birth and hospital. Cross check against their drug chart and ask the patient to confirm their name and date of birth.</li> <li>Ask the second checker to also check the patient's identification band, prescription chart and ask them to confirm their name and date of birth.</li> </ul>	To confirm positive patient identification to prevent errors and harm to the patient.
23. Ask the patient if they have any allergies and confirm this with the prescription chart and the patient's identification band.	To prevent administering a drug to a patient that they are allergic to.
24. Disconnect the infusion bag cap.	

25. Check the IV administration set packaging to ensure that it is intact and in date.	
26. Open the packaging using the peel tabs and remove the giving set from the packaging.	
27. Rip off the paper holding the giving set in shape.	
28. Open out the IV giving set taking caution to hold the key parts in hands.	
29. Ensure that the roller clamp is down.	
30. Take off protective cover and pierce the bag via the administration rubber cap doing so with confidence to break the seal.	
31. Squeeze the giving set chamber to half fill and then slowly release the roller clamp to let the infusion fluid run through the giving set to the end.	
32. Reapply the roller clamp and hang bag from the infusion stand taking caution not to expose key parts.	
33. Clean the needle free port with a 2% chlorhexidine/ 70% isopropyl wipe for 30 seconds. Allow to air dry for 30 seconds. Hold to avoid contaminating.	To ensure microorganisms have been removed from the needle free port and to prevent contamination.
34. Carefully remove the syringe containing the sodium chloride 0.9% flush from the packaging being careful not to contaminate the syringe hub.	To prevent contaminating key parts and causing harm to the patient.

35. Push the syringe into the needle free port and twist to the right.	To ensure that key parts are handled with confidence to prevent contamination through poor handling of equipment.
36. Unclamp the needle free device clamp.	To allow the flush to be administered once the syringe is attached
37. Using a push/pause technique flush 5mls of the sodium chloride 0.9% flush into the cannula observing for any signs of phlebitis.	To ensure vein and cannula patency and to create 'turbulence' within the needle free device and cannula for more thorough flushing.
38. Reclamp the needle free device on a positive flush.	Positive pressure flush compensates for the negative displacement of fluid that occurs upon disconnection from the device.
39. Disconnect the protective cap on the administration giving set and using an ANTT approach connect to the needle free device	To prevent contaminating key parts and causing harm to the patient.
40. Unclamp the line.	
41. Place giving set into administration pump and programme rate and volume as per Medusa Injectable Medicines Guide. Ask second checker to confirm correct rate and volume to be administered.  Some infusion fluids may not need to be administered via an administration pump but the drop rate must be counted to make sure that the medication is administered at the correct rate.	To ensure that infusion is given at the correct rate to prevent harm occurring to the patient.
42. Slowly release the roller clamp to allow the medication to flow.	
43. Observe for adverse reactions.	To ensure that the patient is not having an allergic reaction to the medication.
44. Remove apron and non-sterile gloves.	Procedure has finished.

45. Decontaminate hands with alcohol gel.	To remove microorganisms from the hands.
46. Reapply PPE to decontaminate plastic tray using Clinell universal wipes cleaning and leave for 60 seconds before wiping dry with paper towels.	To prevent cleaning solutions irritating the skin and prevent cross contamination.
47. Remove apron and non-sterile gloves.	
48. Decontaminate hands with alcohol gel.	To rid hands of any microorganisms.

**\*Push-pull technique for withdrawing a solution or suspension from a vial into a syringe**

- g. With the needle sheathed, draw into the syringe a volume of air equivalent to the required volume of solution to be drawn up.
- h. Remove the needle cover and insert the needle into the vial through the rubber septum.
- i. Invert the vial. Keep the needle in the solution and slowly depress the plunger to push air into the vial.
- j. Release the plunger so that solution flows back into the syringe.
- k. If a large volume of solution is to be withdrawn, use a push-pull technique.
- l. Repeatedly inject small volumes of air and draw up an equal volume of solution until the required total is reached. This 'equilibrium method' helps to minimise the build-up of pressure in the vial.

## Post Procedure

Sign for the drug on the prescription chart with the second checker and document administration in the patient's notes.

Never disconnect the infusion and reconnect it as this can contaminate the key parts.

Maintaining and monitoring an intravenous infusion

- Frequent checks should be made of the infusion rate and volume remaining and the prescription, and these should be recorded on the appropriate chart.
- For small volume medicines infusions e.g. 100ml and depending on the giving set used, the volume remaining in the line may represent a significant proportion of the medicine dose. **Where this is the case and the line will not be flushed by an already prescribed compatible infusion, a 50ml to 100 ml sodium chloride 0.9% mini bag must be prescribed and administered to ensure the patient receives the whole dose.** Caution should be exercised where patient is fluid restricted.

- When a patient has an infusion running and an additional, continuous infusion is required, it is preferable for the medicine to have its own venous access for administration, even if the medicine and the fluid are compatible. If this is impossible to achieve and both infusions have to use the same venous access, then both should have one- way valve in place. Whenever possible both infusions should also be controlled via a mechanical device such as a syringe pump or infusion pump.

## Appendix 4

### The Procedure for Administering an Intramuscular Injection

Action
Perform full hand wash as per Trust policy.
Inform the patient of the reason for needing to administer the Intramuscular injection and the side effects of the drug. Ensure the patient understands about the medication being administered. Gain informed consent for the procedure.
Ask the patient to verbalise name, date of birth, address and allergies. Checks these details against the patient's name band (allergy appropriate name band) and prescription chart. Checks hospital number on name band against prescription chart.
Check patient position and comfort.
With patient consent, check injection site- e.g. deltoid considering is this the patient's non dominant arm, is it the correct needle size for the site, is there any arm swelling, injury or blood vessels present?
Maintain privacy and dignity.
Inform the patient you need to leave to collect the equipment and to use the call bell if they need you whilst you are away.
Decontaminate your hands with alcohol gel.
Collect equipment and check the expiry date and integrity of equipment; syringe, blunt drawing up needle or 23g gauge needle for drawing up, administration needle (21g or 23g) 2 sterile wipes (2% chlorhexidine/ 70% alcohol) one for skin prep, one for medical device, non-sterile gloves, apron, spot plaster, medication, gauze, alcohol hand gel. Collect plastic medication tray +- dressing trolley.
Check medication against prescription chart to ensure correct drug prescribed including dose, route, appropriate time for administration and legible prescriber. Also check integrity and expiry date of drugs and diluent if necessary (check drug leaflet and Medusa Injectable Medicines Guide for administration advice and compatibility guidance).



Decontaminate hands with alcohol gel.

Apply apron and non-sterile gloves.

**If available clean dressing trolley using disinfectant wipe (discuss detergent clean of trolley every 24 hours). Clean the plastic tray with Clinell 'Universal' wipes, inside and out, leave for 60 seconds and use a paper towel to wipe dry.**

Remove apron and non-sterile gloves.

Decontaminate hands with alcohol gel.

Reapply apron and non-sterile gloves.

Open syringe and blunt drawing up needle using tabs and protecting key parts (keep in packaging).

Clean the top of the medicine vial with sterile medical device wipe (2% chlorhexidine/ 70% alcohol) for 30 seconds and allow to air dry for 30 seconds.

Open the top of the vial away from you and dispose of in sharps bin (If using a vial). Place the vial upright in the plastic tray.

Apply needle to syringe protecting needle hub using ANTT.

Use syringe to draw up required amount of medication checking for particles or contamination (add diluent if necessary) - avoid touching syringe plunger.

Remove drawing up needle using the sharps container's needle remover (ensuring key parts are not contaminated).

Open and apply administration needle to syringe whilst protecting key parts using ANTT.

Remove any air bubbles and prime to exact amount to be administered. Avoid touching the syringe plunger.

Dispose of any waste as per local waste policies.

Remove apron and non-sterile gloves.

Perform full hand wash.

Recheck name, date of birth, address and allergies. Recheck patient comfort and that they are happy to proceed.

Decontaminate hands with alcohol gel.

Apply apron and non-sterile gloves.

Expose the site for intramuscular administration respecting privacy and dignity.

Using sterile wipe for skin (2% chlorhexidine/ 70% alcohol) clean site for 30 seconds from inner to outer areas and allow to dry for 30 seconds.

Prepare the needle informing patient to remain still and that the injection may be sharp.

Hold the needle in dart like motion whilst stretching skin to disperse adipose tissue insert needle into muscle.

Leave 1cm of needle outside in case of breakage.

Withdraw back/aspirate syringe slightly to ensure there is no blood present. If blood is present remove needle and re site. Some literature suggests that aspiration only needs to occur if Intramuscular administration occurs into the Ventrogluteal site as it is the most vascular site and the likelihood of administration into a blood vessel is higher. \*

When satisfied, administer medication at a rate of 1ml per 10 seconds.

Allow a further 10 seconds for absorption of medication. Ensure patient comfort.

Withdraw the needle and apply sharp safety device.

Apply gauze using light pressure ensuring not to massage site.
If any bleeding is present apply small plaster. If not leave exposed.
Inform patient administration complete and check comfort.
<b>Inform patient you will observe them for up to 30 minutes for any signs of adverse reactions.</b>
Inform patient when medication is next due. Leave patient.
Dispose of any sharps into sharps bin.
Dispose of any rubbish into appropriate waste bin.
Do not dispose of medication ampoule.
Dispose of gloves and apron.
Verbalise that you would perform full hand wash.
Complete documentation, medication administered, dose, batch number, injection site, next due date, any adverse events. Safely dispose of the medication ampoule in the sharps bin using gloves and then further decontaminate hands.

## Appendix 5

### Procedure for Subcutaneous Injection Administration

Action
Perform full hand wash as per Trust policy.
Decontaminate your hands with alcohol gel, before entering bed space or touching the patient.
Inform the patient you are there to administer the subcutaneous injection explaining the reason for administering and checking patient understanding of medication.
Ask patient to verbalise name, date of birth, address and allergies. Check these details against the patient's name band (allergy appropriate name band) and prescription chart. Checks hospital number on name band against prescription chart.
Check patient position and comfort making sure the patient consents to receiving the injection.
With patient consent, check the injection site (abdomen umbilical region, lower upper arm – lateral/posterior region, the thighs (under the great trochanter rather than mid thighs, buttocks) observing site for issues (no infection, skin lesions, birth marks, bony prominences, and underlying muscles or nerves, swelling, injury or blood vessels) maintaining privacy and dignity.
Inform the patient you need to collect the equipment and to use the call bell if they need you whilst you are away.
Decontaminate hands with alcohol gel.
Collect equipment and check expiry date and integrity of equipment, syringe (insulin syringe) 23g needle/ blunt needle for drawing up, 25g needle for administration, 2 sterile wipes (2% chlorhexidine/ 70% alcohol – skin prep and medical device) non-sterile gloves, apron, spot plaster, medication, gauze, alcohol hand gel. Additional equipment required; apron, gauze, sharps bin, plastic medication tray +-dressing trolley.
Check medication against prescription chart to ensure correct drug prescribed including dose, route, appropriate time for administration and legible prescriber. Also check integrity and expiry date of drugs and diluent if necessary (check drug leaflet and Medusa Injectable Medicines Guide for administration advice and compatibility guidance).
Prior to administering medication consider contraindications and clinical exemptions for not administering.

Decontaminate hands with alcohol gel.

Apply aprons and gloves.

If available, clean dressing trolley using disinfectant wipe (discuss detergent clean of trolley every 24 hours). Clean the plastic tray with 70% alcohol disinfectant wipe for 30 seconds and allow to dry for 30 seconds \*

Remove apron and non-sterile gloves.

Decontaminate hands with alcohol gel.

Reapply apron and non-sterile gloves.

Open syringe and blunt drawing up needle using tabs and protecting key parts (keep in packaging). If using insulin specific syringe open packaging using tabs and keep in packaging.

Clean top of medicine vial with sterile medical device wipe (2% chlorhexidine/ 70% alcohol) for 30 seconds and allow to air dry for 30 seconds.

Open top of vial away from you and dispose in sharps bin. Place the vial upright in the plastic tray.

Apply drawing up needle (blunt or 23g) to syringe, protecting needle hub using ANTT. If insulin needle used, remove protective cap and place cap in plastic tray upside down protecting key part.

Use syringe to draw up required amount of medication checking for particles or contamination (add diluent if necessary) avoid touching syringe plunger.

Remove drawing up needle using sharps container's needle remover (ensure key parts are not contaminated).

Open and apply administration needle (25g) to syringe whilst protecting key part if another subcutaneous drug being administered using ANTT.

Remove any air bubbles and prime to exact amount to be administered explicitly stating so avoiding touching the syringe plunger.

Dispose of any rubbish as per local waste policies e.g. domestic waste/clinical waste.
Remove gloves and apron.
Perform full hand wash at sink.
Recheck ID, name, date of birth, address, allergies. Recheck patient comfort and that they are happy to proceed
Decontaminate hands with alcohol gel.
Apply apron and gloves.
Expose site for administration respecting privacy and dignity.
Use sterile wipe for skin (2% chlorhexidine/ 70% alcohol) clean site for 30 seconds from inner to outer area and allow to air dry for 30 seconds.
Prepare needle by removing the sheath. Inform patient of pending injection, requirement to remain still and it may be a bit sharp.
Gently pinch the skin up into a fold with non-dominant hand.
Hold the syringe between thumb and forefinger of dominant hand as if grasping a dart.
Insert the needle into the skin at an angle of 45° and release the grasped skin (unless administering insulin when an angle of 90° should be used). Inject the drug slowly over 10–30 seconds.
Withdraw the needle rapidly. Apply gentle pressure with sterile gauze. Do not massage area.
If bleeding is present, apply small plaster. If not leave exposed.
Inform patient administration is over and check comfort.
Inform patient they may experience bleeding at site and to observe for adverse reactions.
Inform the patient when medication next due. Leave patient.
Ensure that all sharps and non-sharp waste are disposed of safely and in accordance with locally approved procedures.
Do not dispose of medication ampoule.
Dispose of gloves and apron.
Verbalise that you would perform full hand wash.
Complete documentation, medication administered, dose, batch number, injection site, next

due date and any adverse reactions, state that you would now safely dispose of the medication ampoule in the sharps bin using gloves and then further decontaminate hands.



## Appendix 6: Requirements for a first and second check

### *First check*

Before preparation of any injection the practitioner will

- Check the prescription to ensure they understand what is required.
- Check the dose
- Pay particular attention to 'STAT' and PRN doses.
- Check the medicine has not already been given.
- Read and understand any relevant information leaflet concerning preparation, safety, handling, or reconstitution of the medicine being prepared.
- Assemble the appropriate materials.
- Prepare any relevant labels.
- Check that the components are not date expired.
- Check that the components are physically compatible.
- Check that there are no documented allergies or intolerances which may contraindicate the use of the medicine
- Check that there are no therapeutic interactions with currently prescribed medicines or other contraindications.
- Check that the infusion solution is compatible with the infusion device.
- Check the integrity of the packaging or any components being used.
- At handover give notice of any outstanding injectable medications not administered, the reason and what has been done to resolve the non-administration.

### *Second check*

The table below details exactly which stage of an injectable medicine should be included in the second check and which need not. In practice this represents the **minimum** checking which should be completed and in certain situations additional checks may be required.

Process	First check	Second check
<b>Preparation of medicine</b>		
<b>Right drug, right indication</b> <ul style="list-style-type: none"> <li>Look up any unfamiliar medicines, and confirm the indication if you are unsure</li> </ul>	√	√
<b>Right dose</b> <ul style="list-style-type: none"> <li>Check the dose is reasonable using standard references such as BNF, C-BNF and local guidelines</li> </ul>	√	√
<b>Right preparation</b> <ul style="list-style-type: none"> <li>Select the correct form and strength for the drug</li> </ul>	√	√
<b>Right diluent and volume</b> <ul style="list-style-type: none"> <li>If the medicine is in powder form, refer to the Summary of Product Characteristics, or <b>Medusa</b> injectable medicines guide to confirm diluent and volume required for reconstitution of the injection.</li> </ul>	√	√
<b>Right infusion fluid and volume</b> <ul style="list-style-type: none"> <li>Follow the guidance in <b>Medusa</b> the injectable medicines guide and the Summary of product characteristics</li> <li>Any calculations required must be calculated independently and the answers compared</li> </ul>	√	√
<b>Right flush</b> <ul style="list-style-type: none"> <li>Identify the type of flush required before and after administration. Repeat the steps above if a heparin flush is to be given. Sodium chloride flushes must be identified as correct</li> </ul>	√	√
<b>Right expiry</b> Check that the expiry on the medicines and any diluents used have not passed	√	√
<b>Prescription chart – checks occur in the utility room</b>		
<b>Prescription</b> <ul style="list-style-type: none"> <li>Check the prescription is legible, unambiguous, signed and dated</li> </ul>	√	√
<b>Right day and right time</b> <ul style="list-style-type: none"> <li>Check all the pages of the inpatient medication chart including “once only” and “as required” sections plus any additional charts used to identify which drugs are due to be given.</li> <li>Check when the dose was last administered</li> </ul>	√	√

<b>Right route</b> <ul style="list-style-type: none"> <li>Confirm that medications are still prescribed parenterally and that the correct dilutions / reconstitutions for IV/IM/SC are being adhered to</li> </ul>	√	√
<b>Allergies</b> <ul style="list-style-type: none"> <li>Check the allergy box on the front of the medication chart. This must be completed before any drugs are administered</li> <li>If a penicillin allergy is documented do not give flucloxacillin, co-amoxiclav, Augmentin, amoxicillin, penicillin or Tazocin, (piperacillin / tazobactam) unless a doctor reviews the allergy status and says it is safe to do so.</li> </ul>	√	√
<b>Bedside patient checks</b>		
<b>Patient identity</b> <ul style="list-style-type: none"> <li>Check the patient name and unique identifying number on the patients wrist band matches that on the medication chart</li> </ul>	√	√
<b>Right Line (if appropriate)</b> <ul style="list-style-type: none"> <li>Check if peripheral or central line is to be used</li> </ul>	√	X
<b>Compatibility</b> <ul style="list-style-type: none"> <li>Ensure any combinations of medicines / infusions given via the same line are compatible</li> </ul>	√	√
<b>Bedside medication checks – for IV infusions</b>		
<b>Rate of infusion / pump settings</b> <ul style="list-style-type: none"> <li>Confirm the correct rate / duration for the infusion</li> <li>Any calculations required must be calculated independently and the answers compared</li> </ul>	√	√
<b>Rate changes</b> <ul style="list-style-type: none"> <li>Any rate change should be checked and the new pump settings confirmed (e.g. insulin, heparin, GTN). The second checker should sign to confirm the rate change</li> </ul>	√	√
<b>On-going infusion/pump checks to ensure correct rate / duration</b> <ul style="list-style-type: none"> <li>As per specific administration sheet.</li> </ul> <p>e.g. PCA – hourly End of Life 1 – 4 hourly In community domiciliary setting 12 hourly Medication specific – e.g. VR insulin infusion</p>	√	X

## Supporting Document 1 - Equality Impact Assessment Tool **to be completed**



### Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form Please read EIA guidelines when completing this form

#### Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP	<input type="checkbox"/>	Herefordshire Council	<input type="checkbox"/>	Herefordshire CCG	<input type="checkbox"/>
Worcestershire Acute Hospitals NHS Trust	<input type="checkbox"/>	Worcestershire County Council	<input type="checkbox"/>	Worcestershire CCGs	<input type="checkbox"/>
Worcestershire Health and Care NHS Trust	<input type="checkbox"/>	Wye Valley NHS Trust	<input type="checkbox"/>	Other (please state)	<input type="checkbox"/>

<b>Name of Lead for Activity</b>	
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<b>Details of individuals completing this assessment</b>	<b>Name</b>	<b>Job title</b>	<b>e-mail contact</b>
<b>Date assessment completed</b>			

#### Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	<b>Title:</b>
What is the aim, purpose and/or intended outcomes of this Activity?	

# Policy

Who will be affected by the development & implementation of this activity?	<input type="checkbox"/> Service User <input type="checkbox"/> Patient <input type="checkbox"/> Carers <input type="checkbox"/> Visitors	<input type="checkbox"/> Staff <input type="checkbox"/> Communities <input type="checkbox"/> Other _____
Is this:	<input type="checkbox"/> Review of an existing activity <input type="checkbox"/> New activity <input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence?	
What information and evidence have you reviewed to help inform this assessment? (Please name sources, e.g. demographic information for patients / services / staff groups affected, complaints etc.)		
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)		
Summary of relevant findings		

## Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.** Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age				
Disability				
Gender Reassignment				
Marriage & Civil Partnerships				
Pregnancy & Maternity				
Race including Traveling Communities				
Religion & Belief				

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
<b>Sex</b>				
<b>Sexual Orientation</b>				
<b>Other Vulnerable and Disadvantaged Groups</b> (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)				
<b>Health Inequalities</b> (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)				

## Section 4

<b>What actions will you take to mitigate any potential negative impacts?</b>	<b>Risk identified</b>	<b>Actions required to reduce / eliminate negative impact</b>	<b>Who will lead on the action?</b>	<b>Timeframe</b>
<b>How will you monitor these actions?</b>				
<b>When will you review this EIA?</b> (e.g. in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

## Section 5 - Please read and agree to the following Equality Statement

### 1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact

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on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc., and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

<b>Signature of person completing EIA</b>	
<b>Date signed</b>	
<b>Comments:</b>	
<b>Signature of person the Leader Person for this activity</b>	
<b>Date signed</b>	
<b>Comments:</b>	





## Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	N
2.	Does the implementation of this document require additional revenue	N
3.	Does the implementation of this document require additional manpower	N
4.	Does the implementation of this document release any manpower costs through a change in practice	N
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	N
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.