Livewell Southwest

Injectable Drug Administration Policy (Policy includes subcutaneous, intramuscular, and intravenous)

Version 5.3

Review Date: August 2017

Notice to staff using a paper copy of this guidance

The policies and procedures page of LSW intranet holds the most recent version of this document and staff must ensure that they are using the most recent guidance.

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Reader Information

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Acknowledgements	Perdue MB (2001) Intravenous Complications. Infusion therapy in clinical practice. 2nd Ed. Pennsylvania: WB Saunders. RCN (2010) Nursing standards for infusion therapy. Safe and secure handling of medicines. Livewell Southwest, current edition. Sharps policy. Livewell Southwest. Current edition. Stan T, Preston R, Hegadoren K (2004). Glass contamination in parentally administered medication. Journal of Advanced Nursing 48(3) pp266-270. Syringe Driver McKinley infusion policy, Livewell Southwest. Current edition. Wittenberg AG, Richard AJ, Conrad SA. (2006) Venous Air Embolism. EMedicine May 2, 2006 cited Available from: http://www.emedicine.com/EMERG/topic787.htm www.epic.tvu.ac.uk/epic2.html www.doh.gov.uk www.clean-safe-care.nhs.uk Plymouth Hospitals NHS Trust Injectable drug administration policy. Current edition.
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Document Version Control

Version Number	**Details** e.g. Updated or full review	Date	Author of Change	**Description of** Changes and reason for change
1	New policy	2004	District Nurse Lead	New policy
2	Full review	2006	District Nurse Lead	Resign of policy
3	Review	2007	District Nurse Lead	Full review of policy
3.1	Updated	1/6/2007	Communications and Intranet Officer	Formatted to bring in line with corporate standards. Not published
3.2	Updated	20/06/2007	Communications and Intranet Officer/ Freedom of Information Manager	Update to draft to include Appendix A. Not published
3.3	Updated	20/06/2007	Freedom of Information Manager	Monographs added
3.4	Updated	09/07/2007	Communications and Intranet Officer	Updated in line with Governance Committee
3.5	Updated	March 2010	District Nurse Lead	Changes from PMGG
4	Ratified	May 2010	Policy Ratification Group	
5	Full Review	August 2011	Professional Lead District Nursing	To include injections administered by intravenous, subcutaneous and intramuscular route
5	Published version	7th Oct 2011	Chair PMGG	Amendments as agreed at PMGG
5.1	Full review	August 2013	Pharmacist Professional Lead	2 yearly formal review
5.2	Updated	June 2016	A Hawke	Updated and formatted.
5.3	Extended	February 2017	Clinical Director of Pharmacy	Extended.

1. Introduction and purpose

1.1 This injectable policy includes intramuscular, subcutaneous and intravenous drug administration.

1.2 This policy is designed to enable and facilitate Healthcare Professionals to administer drugs via subcutaneous, intramuscular and intravenous routes.

1.3 The Standard Operating Procedures for administration of subcutaneous and intramuscular injections can be found in appendix F and G of this policy.

1.4 This policy does not cover the administration of depot injections. For the administration of depot injections refer to the organisations policy on Depot antipsychotic medication and practice guidelines for adults (current edition).

1.5 This policy does not cover syringe driver infusions as there is a separate organisation policy for syringe drivers on LSW website.

1.6 The purpose of this policy is to inform Healthcare Professionals of the correct and safe methods of prescribing, preparation and administration of injectable medication.

1.7 Registered Healthcare Professionals may only administer and check the administration of drugs within the specialist area for which they are registered.

1.8 This policy includes guidance on central venous access devices with regard to the administration of drugs and dressings.

2. Duties

2.1 The Director of Professional Practice, Quality and Safety within the organisation is ultimately responsible for the content of the policies and their implementation.

2.2 Directors are responsible for the implementation of this policy across all clinical services.

2.3 Individual matrons, clinical managers, professional and clinical leads are responsible for ensuring staff are working to the guidance of the policy and monitoring its implementation.

2.4 Clinical staff are responsible for ensuring they work within the guidance of the policy.

2.5 The organisation is responsible in partnership with the medical electronic teams to ensure that all intravenous pumps and other electronic administration devices are appropriately serviced annually and an audit trail is available.

2.6 The organisation is responsible for providing and ensuring that all staff using medical devices are appropriately trained (Medical Device Agency (MDA 2006).

3. Responsibilities of clinicians:

3.1 Registered and Provisionally Registered Medical Practitioners.

3.1.1 The Registered Medical Practitioner is responsible for monitoring the effects that drugs may produce in patients, irrespective of whether the administration is undertaken by the doctor or delegated to another Registered Healthcare Professional.

3.1.2 Medical Practitioners must provide a clear, legal, complete and unambiguous prescription, in accordance with the organisations Policy for the Safe and Secure Handling of Medicines (current edition), to guide the practitioner.

3.1.3 The use or continuation of an injectable route is justified only where there is a clear benefit to the patient and when no alternative, less invasive routes are available.

3.1.4 It is recommended that IV drugs (inpatient areas only) are checked by a second person, either another medical practitioner, registered healthcare professional or third year pre-registration student before administration.

3.2 Registered Nursing Staff:

3.2.1 Registered Nursing Staff administering drugs must have current Nursing and Midwifery Council registration. Nurses are accountable for their own professional practice and able to justify their decisions. Staff must work within this policy and respective professional codes and any associated legislation.

3.2.2 Registered Nursing Staff are personally responsible and accountable to ensure they receive training in the safe use and observation of any medical devices they need to use (MDA2006).

3.2.3 Registered Nurses who have undertaken the organisations IV drug administration training (or satisfy the criteria for new employees from outside the organisation), and have been assessed as competent. The training and competency will include the correct procedure for administration of medication via intramuscular and subcutaneous route of specific medication related to their work area.

3.2.4 Within Inpatient areas another Registered Healthcare Professional must check all aspects of the administration with this Nurse (this is not applicable to Community Nurses as a robust system of self monitoring is used).

3.2.5 The Registered Nurse must understand the action of the drugs used, their compatibility and side effects.

3.2.6 Newly Qualified Registered Healthcare Professionals will be given IV Drug Administration training if deemed appropriate as part of their core role.

3.2.7 All staff administering medication will be required to undertake Basic Life support, anaphylaxis training annually as part of their mandatory training and demonstrate their competencies within their personal development plan and the appraisal process

4.4 Assistant Practitioners:

4.4.1 Suitably trained Assistant Practitioners working within the organisation who have undertaken relevant training and competency may administer intramuscular and subcutaneous injections which have been delegated by the Registered Nurse.

4.5 NHS Professionals staff

4.5.1 NHS Professionals can administer injectable medication if they fulfil the following criteria:

- They complete IV training (or satisfy the criteria for new staff to the organisation) and have been assessed as competent.

- They only administer injectable medication that they are familiar with.

4.6 Pre registration Healthcare Professionals:

4.6.1. Pre registration Healthcare Professionals (e.g. student nurses in their final year) in order to gain experience can prepare an infusion UNDER THE DIRECT SUPERVISION of a registered Healthcare Professional who is competent at this skill, but MUST NOT attach any infusion to the patient.

4.6.2 Pre registration healthcare Professionals may administer I/M and S/C medication under supervision and once deemed competent.

5. Prescribing of injectable medication

5.1 All prescriptions for injectable medicines must specify the following:

- Patient's name
- Hospital / NHS Number
- Prescriber's signature
- The approved medicine name
- Diluent prescribed
- The dose and frequency of administration
- The date and route of administration
- The allergy status of the patient

5.2 Where relevant, the prescription, or a readily available local protocol, must specify the following:

- Brand name and formulation of the medicine
- Concentration or total quantity of medicine in the final infusion container or syringe
- Name and volume of diluent and/or infusion fluid
- Rate *and* duration of administration
- Stability information to determine the expiry date of the final product
- Type of rate-control pump or device(s) to be used
- The age and weight of any patient under 16 years of age, where relevant;
- Date on which treatment should be reviewed
- Arrangements for fluid balance or clinical monitoring should be made and clearly recorded on an individual patient basis and according to local protocol and clinical need
- Check that the medication is due for administration at the time and has not already been given

6. Preparation of injectable medicines

6.1 General principles

6.1.1 Check cannula is patent

6.1.2 Read all prescription details carefully and confirm that they relate to the patient to be treated.

6.1.3 Ensure that the area in which the medicine is to be prepared is as clean, uncluttered and free from interruption and distraction as possible. Ideally, preparation should take place in an area dedicated to this process.

6.1.4 Assemble all materials and equipment: sharps bin for waste disposal, medicine ampoule(s) / vial(s), diluents, syringe(s), safety needle(s), alcohol wipes, disposable protective gloves, clean re-usable plastic tray.

6.1.5 The organisation has adopted the safer needle system approach to reduce inoculation injuries.

6.1.6 Check the following:

- expiry dates;
- damage to containers, vials or packaging;
- that medicines were stored as recommended, e.g. in the refrigerator.

6.1.7 Beware of the risk of confusion between similar looking medicine packs, names and strengths. Read all labels carefully.

6.1.8 Check that the formulation, dose, diluent, infusion fluid and rate of

administration correspond to the prescription and product information; the patient has no known allergy to the medicine and an understanding the method of preparation.

6.1.9 Calculate the volume of medicine solution needed to give the prescribed dose. Write the calculation down and obtain an independent check by another qualified healthcare professional (Inpatient settings only).

6.1.10 Prepare the label for the prepared medicine.

6.1.11 The persons checking and preparing the medication must be the persons administering the medication to the patient.

6.1.12 Cleanse your hands according to local policy.

6.1.13 Put on apron and disposable protective gloves.

6.1.14 Use a 70% alcohol wipe or spray to disinfect the surface of the plastic tray and leave for 30 seconds to allow the liquid to evaporate.

6.1.15 Assemble the syringe(s) and needle(s). Peel open wrappers carefully and arrange all ampoules/vials, syringes and needles neatly in the tray.

6.1.16 Use a 'non-touch' technique, i.e. avoid touching areas where bacterial contamination may be introduced, e.g. syringe-tips, needles, vial tops. Never put down a syringe attached to an unsheathed needle.

6.1.17 Prepare the injection by following the manufacturer's product information or local guidelines, and the relevant guidance

7. Withdrawing solution from an ampoule (glass or plastic) into a syringe

7.1 Tap the ampoule gently to dislodge any medicine in the neck.

7.2 Snap open the neck of glass ampoules, using an ampoule snapper if required.

7.3 Attach the needle to a syringe and draw the required volume of solution into the syringe. Tilt the ampoule if necessary.

7.4 Invert the syringe and tap lightly to aggregate the air bubbles at the needle end. Expel the air carefully.

7.5 Remove the safety needle from the syringe and fit a new safety needle or sterile blind hub. Label the syringe (inpatient area only). Keep the ampoule and any unused medicine until administration to the patient is complete to enable further checking procedures to be undertaken.

7.6 If the ampoule contains a suspension rather than solution, it should be gently

swirled to mix the contents as per manufacturer's instructions immediately before they are drawn into the syringe.

7.7 The neck of some plastic ampoules are designed to connect directly to a syringe without use of a needle, after the top of the ampoule has been twisted off.

8. Withdrawing a solution or suspension from a vial into a syringe

8.1 Remove the tamper-evident seal from the vial and wipe the rubber septum with an alcohol wipe or chlorasept. Allow to dry for at least 30 seconds.

8.2 With the needle sheathed, draw into the syringe a volume of air equivalent to the required volume of solution to be drawn up.

8.3 Remove the safety needle cover and insert the needle into the vial through the rubber septum.

8.4 Invert the vial. Keep the needle in the solution and slowly depress the plunger to push air into the vial.

8.5 Release the plunger so that solution flows back into the syringe.

8.6 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.

8.7 Alternatively, the rubber septum may be pierced with a second needle to let air into the vial as solution is withdrawn. The tip of the vent needle must always be kept above the solution to prevent leakage.

8.8 With the vial still attached, invert the syringe. With the needle and vial uppermost, tap the syringe lightly to aggregate the air bubbles at the needle end. Push the air back into the vial.

8.9 Fill the syringe with the required volume of solution then draw in a small volume of air. Withdraw the needle from the vial.

8.10 Expel excess air from the syringe. Remove the needle and exchange it for a new needle or a sterile blind hub.

8.11 The vial(s) and any unused medicine should be kept until administration to the patient is complete.

8.12 If the vial contains a suspension rather than solution, it should be gently swirled to mix the contents, immediately before they are drawn into the syringe.

9. Reconstituting powder in a vial and drawing the resulting solution or suspension into a syringe

9.1 Remove the tamper-evident seal from the vial and wipe the rubber septum with an alcohol wipe. Allow to dry for at least 30 seconds.

9.2 Use the procedure in section 7 above to withdraw the required volume of diluent (e.g. water for injections or sodium chloride 0.9%) from ampoule(s) into the syringe.

9.3 Inject the diluent into the vial. Keeping the tip of the needle above the level of the solution in the vial, release the plunger. The syringe will fill with the air which has been displaced by the solution (if the contents of the vial were packed under a vacuum, solution will be drawn into the vial and no air will be displaced). If a large volume of diluent is to be added, use a push-pull technique (see above).

9.4 With the syringe and needle still in place, gently swirl the vial(s) to dissolve all the powder, unless otherwise indicated by the product information. This may take several minutes.

9.5 Follow the relevant steps in 2.3 above to withdraw the required volume of solution from the vial into the syringe.

9.6 Alternatively, the rubber septum may be pierced with a second needle to let air into the vial as solution is withdrawn. The tip of the vent needle must always be kept above the solution to prevent leakage.

9.7 If a purpose-designed reconstitution device is used, the manufacturer's instructions should be read carefully and followed closely.

10. Adding a medicine to an infusion

10.1 Prepare the medicine in a syringe using one of the methods described above.

10.2 Check the outer wrapper of the infusion container is undamaged.

10.3 Remove the wrapper and check the infusion container itself in good light. It should be intact and free of cracks, punctures/leaks.

10.4 Check the solution, which should be free of haziness, particles, discolouration.

10.5 Where necessary, remove the tamper-evident seal on the additive port according to the manufacturer's instructions or wipe the rubber septum on the infusion container with an alcohol wipe and allow to dry for at least 30 seconds.

10.6 If the volume of medicine solution to be added is more than 10% of the initial contents of the infusion container (more than 50ml to a 500ml or 100ml to a

1litre infusion), an equivalent volume must first be removed with a syringe and needle.

10.7 Inject the medicine into the infusion container through the centre of the injection port, taking care to keep the tip of the needle away from the side of the infusion container. Withdraw the needle and invert the container at least five times to ensure thorough mixing before starting the infusion.

10.8 Before adding a medicine to a hanging burette, administration must be stopped. After the addition has been made and before administration is re-started, the contents of the burette must be carefully swirled to ensure complete mixing of the contents.

10.9 Check the appearance of the final infusion for absence of particles, cloudiness or discolouration.

10.10 Label the infusion.

11. **Diluting a medicine in a syringe for use in a pump.** This policy does not relate to infusions through a Mckinley syringe driver please refer to syringe driver policy

11.1 Prepare the medicine in a syringe using one of the methods described above.

11.2. Draw the diluent into the syringe to be used for administration by the pump or syringe-driver. Draw in some air (slightly more than the volume of medicine needed) and remove the needle.

11.3 Stand the diluent syringe upright. Insert the needle of the syringe containing the medicine into the tip of the diluent (administration) syringe and add the medicine to it. Alternatively, a disposable sterile connector may be used to connect two syringes together directly.

11.4 Check the total volume of injection solution in the syringe is as specified in the prescription and that the infusion can be delivered at the prescribed rate by the administration device chosen the rate of administration is set correctly on the administration device and according to the manufacturer’s instructions. 11.5 Invert the syringe several times to mix the contents.

11.5 Tap the syringe lightly to aggregate the air bubbles at the needle end. Expel the air and refit the blind hub.

11.6 Carefully check the syringe for cracks and leaks and then label it, especially noting the requirements specific to syringe drivers.

11.7 Check that the rate of administration is set correctly on the device before fitting the syringe, priming the administration set and starting the infusion device.

12. Labelling injection and infusion containers

12.1 All injections should be labelled immediately after preparation, except for syringes intended for immediate push (bolus) administration by the person who prepared them. Under no circumstances should an operator be in possession of more than one unlabelled syringe at any one time, nor must an unlabelled syringe be fitted to a syringe driver or similar device.

12.2 Labels used on injectable medicines prepared in clinical areas should contain the following information:

- Name of the medicine
- Strength
- Route of administration
- Diluent and final volume
- Patient's name
- Hospital/ NHS number
- Expiry date and time;
- Name, signature and designation of the practitioner preparing the medicine
- Date and time prepared

12.3 Place the final syringe or infusion and the empty ampoule(s)/vials(s) in a clean plastic tray with the prescription for taking to the patient for administration.

13. Intravenous drug administration

13.1 Drugs can be administered intravenously by intravenous bolus, intermittent or continuous infusion.

13.2 Intravenous bolus or intravenous push:-

- The drug and diluent are injected directly into the bloodstream via a peripheral cannula or a central venous catheter.

- A bolus can be given via a cannula with a closed connector (e.g. Clave, Bionector). Use of injection port can be used in exceptional circumstances, but is not recommended for regular use.

13.3 Hazards

- Infection – administration with a closed system e.g. Clave, rather than the port on the cannula is much safer and provides less pressure on the vein.

- Phlebitis

- Damage to peripheral veins

- Local reactions/toxicity where drug is insufficiently diluted or given too rapidly.

- Anaphylaxis.
- Drug incompatible with contents of infusion or previously given drug.
- Clotting at cannula site (more likely when no infusion running).

13.4 General principles

- Hands must be decontaminated prior to accessing the cannula.
- Gloves (and other standard precautions when necessary) should be worn and a clean non touch technique used.
- Clean connectors/ports with 70% isopropyl alcohol/2% Chlorhexidine impregnated swab (e.g. Clinell, Sanicloth) and allow to dry before and after procedure (Pratt et al 2006).
- Use a 10ml Luer Lock syringe or larger for the initial flush to prevent damage to cannula and reduce pressure on the vein (Conn 1993, Dougherty et al 2010).
- Flush with a compatible fluid (see monographs).
- For the procedure for administration of an intravenous drug please refer to the standard operating procedure in appendix B.
- Observe site for phlebitis, inflammation (Visual Infusion Phlebitis (VIP) score, Appendix A) and signs of infiltration or extravasation before, during and following administration of any drug.
- Peripheral cannulae should be resited if clinically indicated after 72 hours. All decisions to retain a patient's cannula for more than 72 hours must be clinically reasoned, discussed with MDT and Patient and documented in the Patient record.
- Dispose of waste and sharps according to LSW policy.
- Document and evaluate actions.

13.5 For the standard operating procedure for IV Bolus administration see Appendix B.

14. Intermittent infusions

14.1 Refers to an infusion which is usually administered between ten minutes and six /eight hours. Used as an alternative to bolus administration for regular dosing, where a slower administration rate or greater dilution is required to avoid toxicity.

14.2 Hazards

- Damage to peripheral veins
- Local reactions/toxicity where drug is insufficiently diluted or given too rapidly
- Anaphylaxis
- Drug incompatible with contents of infusion or previously given drug
- Infection

14.3 General principles

- Hands should be decontaminated prior to accessing the cannula Gloves (and other standard precautions when necessary) should be worn and a clean non touch technique used.
- Check infusion solution visually for clarity and absence of particles/cloudiness, if in doubt do not administer and contact pharmacy.
- Volumes given by intermittent infusion vary considerably. Always check manufacturer's guidelines and the monographs for specific drugs and use the volume recommended. For small volumes up to 50mls a syringe pump may be used.
- Infusion devices should be used whenever possible to enable accurate amounts of fluids to be administered.
- Clean connectors/ports with 70% isopropyl alcohol/2% Chlorhexidine impregnated swab (e.g. Clinell, Sanicloth, Chlorasept) and allow to dry before connecting and after disconnecting (Pratt et al 2006).
- If intermittent infusions of more than one drug are to be administered in the same set, confirm the compatibility of the drugs before administration. If compatibility is not confirmed then either flush between infusions with a flush compatible with both drugs or replace the set in between each drug administration.
- Where a primary infusion exists use a multi lumen closed connector (e.g. Clave or Bionector) to connect another solution set (if compatible) to the primary infusion. When the intermittent infusion is finished, discard the set and flush the connector with a compatible solution.
- Always document and evaluate actions, including VIP score.
- Syringes/ container should be labelled with name of medicine, strength, route of administration, diluent and final volume and patient's name. Administration sets should be dated.

- Check cannula site for signs of phlebitis before administering any infusion

- Flush cannula before and after infusion, usually with 0.9% Sodium Chloride, but only if this is compatible with the medication that is to be infused, using 10ml or larger syringe.

- Document and evaluate actions.

15. Continuous Intravenous Infusions

15.1 Refers to an infusion given continuously used where a continuous or controlled therapeutic response is required. The rate may be variable or not. It may also be used to permit greater dilution than is possible with intermittent infusion, in order to avoid toxicity.

15.2 For the standard operating procedure for continuous Intravenous infusion administration see Appendix C.

15.3 Hazards

- Damage to peripheral veins

- Dislodgement of cannula due to Patient movement

- Local reactions/toxicity where drug is insufficiently diluted or given too rapidly.

- Anaphylaxis.

- Drug incompatible with contents of infusion or previously given drug.

- Infection.

15.4 General principles

- Hands must be decontaminated prior to accessing the cannula.

- Gloves (and other standard precautions when necessary) should be worn and a clean non touch technique used.

- If the infusion is not provided in a ready prepared formulation, follow the guidance in monographs on the addition of drugs to intravenous fluids.

- Check infusion solution visually for clarity and absence of particles/cloudiness, if in doubt do not give and contact pharmacy.

- Infusion devices should be used whenever possible to enable accurate amounts of fluids to be administered.

- Clean connectors/ports with 70% isopropyl alcohol/2% Chlorhexidine impregnated swab (e.g. Clinell, Sanicloth using a cleaning action for 30 seconds) and allow to dry before connecting and after disconnecting (Pratt et al 2006).

- Always document and evaluate actions, including VIP score.

- Check cannula site for signs of phlebitis before administering any infusion.

- Where drug administration requires simultaneous use of two continuous infusions use a solution set for each, connected via a multi lumen closed connector.

- Document and evaluate actions.

- Flush cannula before and after infusion, usually with 0.9% Sodium Chloride, but only if this is compatible with the medication that is to be infused, using 10ml or larger syringe.

15.5. Addition of drugs to infusion fluids

- The persons checking and preparing the Intravenous infusion must be the persons administering and checking the infusion at the patient's bedside.

- Before making any addition check for availability of a suitable ready prepared solution from Pharmacy.

- Refer to the injectable drug monographs for suitable diluents and infusion fluids to ensure drug stability.

- With the exception of certain multi-dose vials (Heparin and Insulin) all ampoules, vials, bags and bottles containing ready-diluted drug or plain saline, glucose or other diluent must be treated as single use only. Bags of saline or glucose must not be kept on the ward or at the bedside for repeated use to prepare drug infusions for syringe drivers. These must be discarded after single use.

- Mix the drug thoroughly with the contents of the infusion container.

- **CAUTION**: Insufficient mixing can result in inadvertent administration of highly concentrated drug, potentially causing serious adverse effects.

- Complete the 'Drug Additive' label and fix to the infusion container, taking care not to obscure details of the fluid bag.

- Enter the drug additive label and fix to the infusion container, taking care not to obscure details of the fluid bag.

- Enter the expiry date and time of the infusion onto the drug additive label. This will generally be 24 hours from preparation and never longer than 24

hours. However, several drug infusions have expiry time shorter than 24 hours.

- Check the infusion for cloudiness or particles.
- Cover the infusion container if protection from light is required.
- Once prepared a drug infusion is for immediate administration and should not be kept or stored for administration at a later point in time.

15.6. **NEVER** add drugs to an infusion container after the giving set has been attached.

15.7 **NEVER** add drugs to parenteral nutrition solutions, lipid preparations.

15.8 **NEVER** add any drugs to blood or blood products.

15.9 Avoid multiple drug additions as compatibility cannot be guaranteed.

15.10 When drawing up from glass vials a safety filter needle is recommended. If these are not available the smallest gauge needle should be used (INS 2006).

16. The infusion system

16.1 The infusion system should always be considered as a possible source of infection.

16.2 The use of 3 way taps and Y connectors should be avoided wherever possible. Manipulation of the system should be kept to a minimum.

16.3 Add on devices should be kept to the absolute minimum and should be changed at the periods recommended by the manufacturer or at a maximum of 72 hours when the cannula is changed.

16.4 If contamination of fluid is suspected, i.e. visible particulate matter in the fluid or evidence of an acute reaction to the infusate (fever, anaphylactic reaction, etc.), a sterile closure should be placed on the end of the tubing. The tubing and container should be placed in a plastic bag, secured, labelled and advice sought from medical staff. The attending doctor should inform the on-call Consultant Microbiologist and Pharmacy technical services etc. The Quality Assurance Manager in pharmacy should also be informed. An incident form should be completed.

17. Administration sets for solutions

17.1 Intravenous administration sets should be labelled with date and time of when they were set up. They should be changed every 72 hours (DH 2006) with the following exceptions:

17.2 Blood administration sets should have a 200micron filter and should be changed after the administration of 2 units of red cells, Platelets or FFP or at the end of 12 hours (LSW Blood Transfusion Policy 2010).

17.3 Blood administration sets should not be used for routine infusions of solutions, however, if rapid administration of large volumes of fluid this may be necessary.

17.4 Sets used for drugs which react with plastic may require more frequent changes. In the case of insulin infusions, the bulk of insulin absorption to the PVC of the bag and/or line apparently occurs in the first 30 to 60 minutes of the infusion. Therefore there will be a drop in the delivered amount of insulin at a set rate of infusion for the first 30 to 60 minutes after each new line change. The clinical significance of this absorption is debatable as the rate of the infusion is adjusted to maintain the required blood glucose level.

Note: There is a risk of air embolism (and microbial contamination) occurring when partly used collapsible infusion fluid containers are reconnected to administration sets. Hence:

17.5 Ensure that partly used bags of intravenous fluids and administration sets are discarded immediately after disconnection from the venous access device, (MHRA 2003).

17.6 Ensure that such bags are NOT reconnected to the administration sets under any circumstances.

17.7 Administration of medication via injection ports on IV administration sets must be avoided as there is an increased risk of needle stick injury with this method.

18. Central Venous Access Devices (CVAD)

18.1. Definition:

- A central venous access device is a device whose tip lies within the lower third of the superior vena cava or the right atrium (Dougherty 2010). It may start in a peripheral vein e.g. peripherally inserted central catheter (PICC).
- Be directly inserted into a central vein (non tunnelled central venous catheter).
- Be tunnelled under the skin (skin tunnelled catheter e.g. Hickman).
- Be implanted (Totally Implantable Venous Access Device (TIVAD) (Dougherty 2008).
- Midlines/long lines are not CVAD’s but as they are used for longer than 72 hours they should be cared for as such.

18.2. Indications:

- To monitor Central Venous Pressure (CVP) in acutely unwell patients.
- For the administration of large amounts of intravenous blood or fluid e.g. shock or major surgery.
- To provide long term intravenous access for repeated drug administration, parenteral nutrition, haemodialysis etc.

18.3 No-one should manipulate a Central Vascular Device unless they fulfil the following criteria:

- As a Registered Healthcare Professional (with the exception of specialised areas where an agreed local policy has been ratified).
- Has successfully completed an Intravenous Drug Administration Course (with the exception of specialised area where an agreed local policy has been ratified).
- Has been assessed as competent for care and maintenance of these devices.

18.4 All patients should be screened for MRSA prior to insertion of CVAD. If this is not possible, or missed, screen patient following insertion.

18.5 Inspect insertion site daily for signs of redness, exudates or pain. This should be done alongside the daily Visual Infusion Phlebitis Score. Document findings in patient's notes.

18.6 If any symptoms are present a swab should be taken and sent for Microbiology, culture and sensitivity, clean site with Chlorhexidine 2% e.g. Chloraprep daily until situation resolved.

18.7 Ensure that the sutures are intact at all times, if they are to remain in situ. If they are not, medical staff or vascular access team should be informed and the line should not used until reviewed.

18.8 IV3000 dressings should be used, which should be changed weekly using aseptic technique unless otherwise indicated e.g. oozing, not intact. Other dressings must not be used, except if wound is oozing, where a sterile gauze dressing may be used under the IV3000 dressing. The gauze must be changed every 24-48 hours.

18.9 Patient's observations, including temperature should be recorded at least twice a day (Inpatient areas only).

18.10 An aseptic technique should be used at all time when manipulating any part of the line or administering anything into the line

18.11 Closed connectors such as Claves or Bionnectors must be used on all lumens and changed weekly when attached to Central Vascular Access Device.

18.12 Administration sets should be changed every 72 hours except for blood and TPN lines or other lipid solution as organisational policy.

18.13 A three way tap should never be used, instead double/triple Claves should be attached to lines when necessary.

18.14 On completion of an Intravenous Infusion the line should be disconnected using an aseptic technique and the closed connector cleaned with 2% Chlorhexidine /Alcohol wipe and allow to air dry.

18.15 Lumens of short term lines, not in regular use should be flushed every 24 hours to maintain patency. Lumens of long term catheters should be flushed 2-3 times a week. Heparin is not required unless line is a large lumen e.g. Dialysis catheters, advice can be obtained from Vascular Access Team at Derriford.

18.16 Always use a 10ml or larger syringe for administering into a Central Vascular Access Device. A small syringe will generate higher pressures and may damage the catheter.

18.17 Sodium Chloride flushes MUST be prescribed.

For the procedure for administration of medication via a Central Venous Access Device Refer to appendix D.

19. Procedure for checking and administering Intravenous medication

19.1 Read the patient's notes, prescription and identify any special instructions, investigations (including abnormal blood test results), baseline parameters such as weight, or issues for which you need to seek advice.

19.2**.** Confirm that the prescription has been written clearly and fully to enable accurate and safe interpretation of the therapeutic instruction intended by the prescription, and also safe preparation.

19.3. The prescription should include the following:

- Patient's name, hospital/NHS number, date of birth and/or address.
- The allergy status of the patient.
- Date and time.
- The approved name of the injectable medication (in full, do not abbreviate).

- The dose and frequency ensuring, where necessary, that recent parameters have been used to calculate dose, (ensuring, where necessary, that recent parameters have been used to calculate dose, for example, weight and laboratory test results).

- The route of administration, for example, intravenous and sub-cutaneous, date and time for re-assessment of the prescription.

- Start and finish date/time or maximum number of doses.

- Prescriber's signature.

- The age and weight of all children under the age of 16 years.

19.4. Patient checks to be made, should include:

- Arrangement for fluid balance or clinical monitoring should be made on an individual basis and according to monographs and clinical need.

- Confirmation that the parenteral route is the most appropriate route for administration of medication to the patient (i.e. consider and exclude oral or other routes of administration).

- Assess the appropriateness of the treatment plan against the patient's current health status and concurrent medication.

- Check the medication against the treatment plan, prescription, patient information and local protocol with regard to:

- Patient's identification on ID band and prescription chart and on labelled medication.

- Allergy status (where relevant for the medication involved).

- Critical test results (including blood results).

- Regimen and individual medication name: i.e.name of medication the medication's fitness for administration (assessed by appearance and condition).

- Diluents and dilution volumes.

- Dose.

- Administration route and duration.

- Type of infusion control device or pump.

- Expiry date/time of the medication

19.5 For the standard operating procedure for administration of medication through a central venous access device see Appendix D and dressing procedure Appendix E.

20. Training and competencies

20.1 All registered Healthcare Professionals must undergo additional training and be assessed as competent before administering **ANY** injectable drug.

20.2 Assessors must be clinically competent at giving injectable drugs and able to critically assess staff in an objective manner, referring any problems or difficulties to the Ward/Team Manager using employer's guidelines.

20.3 All Registered Nurses will be expected annually to demonstrate, maintain and review their own competencies, identifying any learning needs and attend yearly updates if required. This will be evidenced in their Professional Development Programme (PDP) and Key Skills Review. This includes updating on changes to polices, safety alerts and drug information.

20.4 An annual self assessment competency will be required for all staff undertaking administration of injectables and produced as evidence at their appraisal – appendix I.

20.5 Registered Healthcare Professionals appointed from outside the Organisation, who regularly gave injectable drugs in their last post, must do the following;

- Show evidence of their competence from previous training and evidence of recent up-dating.
- Read the organisations injectable drug administration Policy and procedures and all relevant policies relating to injectable drugs e.g. Infection Control, Blood Transfusion and change their practice to meet the organisation's requirements.
- Attend a LSW Intravenous update session (Service specific).
- Have their practice observed by their manager or someone nominated by their manager (providing this person is competent at this skill).
- Completed and passed Livewell Southwest injectable competencies related to each service area.

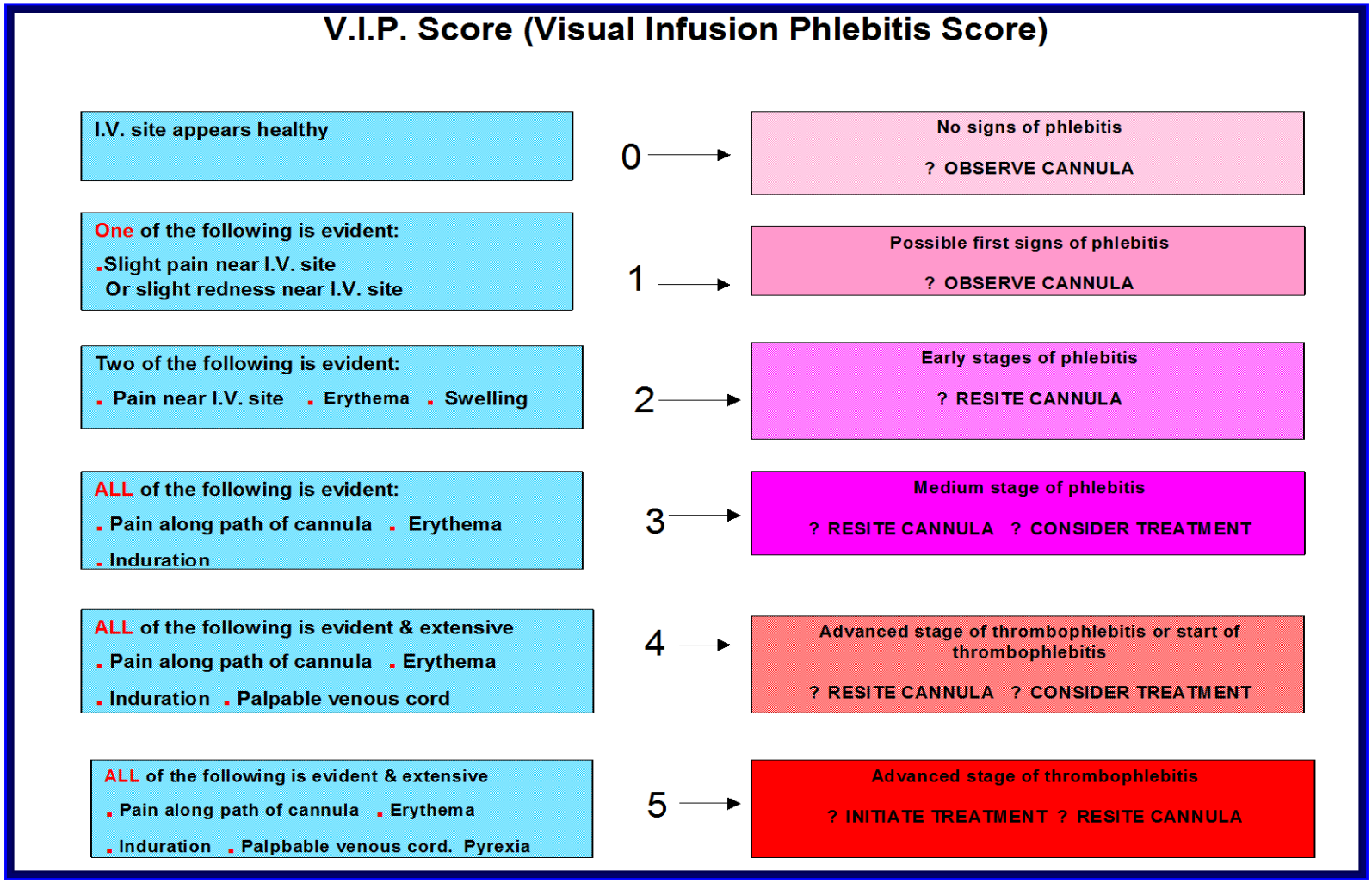
21. Monitoring Compliance and Effectiveness

21.1. The monitoring of any medication errors and incident reporting within NHS Plymouth will be through the Medicines Governance Group.

22. Abbreviation list:

CVP	Central Venous Pressure
CVAD	Central Venous Access Device
CVC	Central Vascular Catheter
IV	Intravenous
MDA	Medical Device Agency
MRSA	Methicillin Resistant Staphylococcus Aureus
PICC	Peripherally Inserted Central Catheter
TIVCD	Totally Implantable Venous Access Device
VIP score	Visual Infusion Phlebitis score

Appendix A. Jackson 1998.



Standard Operating Procedure for the administration of intravenous medication

Equipment
Patient's prescription chart
Injection tray with sharps bin
Gloves
Appropriate drug and diluent
10 ml Luer Lock or larger syringes/ safety needles
70%alcohol 2% chlorhexidine wipes
Labels if applicable

- Positively identify the patient and explain the procedure. Obtain informed consent.
- Wash hands using soap and water and dry thoroughly. Apply Personal protective equipment.
- Assemble equipment needed and prepare them according to pharmacy recommendations.
- With another registered healthcare professional (hospital only) check the product name,
  strength and volume of intravenous fluid against the prescription chart.
  Also check expiry dates.
- Check that packages are intact.
- Calculate the volume of medicine solution needed to give the prescribed dose, write the calculation down (In a hospital environment obtain an independent check by
  another registered healthcare professional.)
- Inspect the container and contents in a good light for cracks, punctures, air bubbles,
  haziness, discolouration and crystalline particulate matter.
- Check the type and amount of drug to be added. Consider:-
  - Compatibility of fluid and additive
  - Stability of mixture over the prescribed period
  - Any special directions for dilution
  - Sensitivity to external factors such as light
  - Any anticipated allergic reactions

- If any doubts exist about the listed points, consult pharmacy or the prescriber.
- Any additives must be prepared immediately before use.
- Wash and dry hands thoroughly, reapply gloves.
- Expose any seal present on the container.
- Clean the site with a 70% alcohol/2% chlorhexidine swab using a continuous cleaning action
  for 30 seconds and allow to dry.

- If preparing an infusion for administration with a bag, bottle or burette, inject the prepared drug with a 21 or 23g needle.
- If the addition is made into a burette at the bedside.
- Avoid contamination of the needle and inlet port.
- Check that the correct quantity of fluid is in the chamber.
- Switch the infusion off briefly.
- Invert the container a number of times, especially if adding to a flexible infusion bag.
- Check again for discolouration even if the mixture is theoretically compatible.
- Complete the drug additive label and fix it onto the bag, bottle or syringe.
- Place the container in a clinically clean tray. Gel hands and proceed to the patient.
- Check identity of the patient (name, date of birth, NHS / hospital number) with the patient,
  their identity band, prescription chart. Check for allergies. Also check label on infusion bag
  or syringe corresponds with patient identity band.
- Observe cannula site using VIP score.
- If a closed connector (e.g. Clave) is in use, apply gloves and wipe thoroughly with a
  70% alcohol/2% chlorhexidine wipe using a continuing cleaning action for 30 seconds.
  Wait for the alcohol to dry before proceeding.

  From this point you must use a clean non-touch technique.

- Flush cannula with 5mls-10mls of 0.9% of sodium chloride in a 10ml or larger syringe or
  check existing infusion is running well if compatible with drug.

- If existing infusion bag is in place:

  - Stop the infusion

  - Change over the infusion bags using a non-touch technique

- If no infusion in place:

  - Connect the prepared infusion bag to a giving set and prime the line

  - Connect the giving set to the patient using a non-touch technique

- If the existing infusion has been administered via a syringe pump:

  - Stop the infusion

  - Clamp line

  - Disconnect old syringe, using a non-touch technique

  - Insert new syringe into syringe pump.

  - Purge the infusion via the syringe pump until a bubble of fluid appears at the tip of the
    syringe

  - Connect to infusion set using a non-touch technique

- Start the infusion and adjust the flow rate as prescribed.

- If the addition is made into a burette, the infusion can be restarted immediately following
  mixing, recording and flow rate adjustment.

- Ask the patient if any abnormal sensations are experienced.

- If patient's bed space was moved to do this procedure i.e. table, call bell, return to previous
  positions.

- Dispose of waste according to Infection Control Policy and the Policy for the Disposal or
  Re-Use of Pharmaceuticals (Accessed via the Medicines Management page on LSW intranet)

- Wash and dry hands thoroughly.
- Complete prescription chart documentation requirements.

Standard Operating Procedure for adding intravenous additives and for bolus, intermittent and continuous administration

Continuous administration of intravenous therapy relates to using drug additives into a bag over a period of time.

Equipment

Clinically clean tray containing the prepared drug(s) to be administered
Patient's prescription chart
Protective clothing required by hospital policy e.g. gloves
Intravenous infusion fluid appropriate for drug being administered
Drug addition label
Sterile equipment
Small sharps box taken to patient

- Identify the patient and explain the procedure. Obtain informed consent.
- Allow the patient time to ask questions and check any known allergies.
- Check any infusion in progress.
- Wash hands using soap and water and dry thoroughly and apply clean gloves

.

- Assemble equipment needed and prepare the medication.
- In a hospital environment, together with another registered healthcare practitioner, check the product name, expiry date, strength and volume of intravenous fluid against the prescription chart.
- The person/ s checking and preparing the medication must be the persons administering the medication to the patient.
- Check that packages are intact.
- Inspect the container and contents in a good light for cracks, punctures, air bubbles, haziness, discoloration and crystalline particulate matter.

- Check the type and amount of drug to be added. Consider:

    - Compatibility of fluid and additive
    - Stability of mixture over the prescribed period
    - Any special directions for dilution
    - Sensitivity to external factors such as light
    - Any anticipated allergic reactions

- If any doubts exist about the listed points consult a pharmacist.

- Any additives must be prepared immediately before use.

- Expose the injection site on the container by removing any seal present.

- Clean the site with a 70%alcohol/2%Chlorhexidine swab using a continuing cleaning action
  for 30 seconds and allow to dry.

- Inject the prepared drug using a sterile needle into the bag or bottle.

- Avoid contamination of the needle and inlet port.

- Check that the correct quantity of fluid is in the chamber of burette.

- Switch the infusion off briefly if attached to patient.

- Invert the container a number of times, especially if adding to a flexible infusion bag.

- Check again for discoloration even if the mixture is theoretically compatible.

- Complete the drug additive label and fix it onto the bag or bottle. All injections should be
  labelled immediately after preparation, except for syringes intended for immediate push (bolus)
  administration by the person who prepared them. Under no circumstances should an operator
  be in possession of more than one unlabelled syringe at any one time, nor must an unlabelled
  syringe be fitted to a syringe driver or similar device.

- Labels used on injectable medicines prepared in clinical areas should contain the following
  information:
    Name of the medication
    Strength
    Route of administration

Diluent and final volume
Patient's name
Expiry date and time,
Name of practitioner preparing the medication

- For new infusions or existing line is older than 72 hours or drugs are not compatible, prime a
  new giving set by running fluid through. Place label with date and time onto the giving set.

- Place the container in a clinically clean receptacle. Remove gloves and wash hands and
  proceed to the patient. Take a small sharps box and clean gloves to the bed side.

- Check identity of the patient with the prescription chart and with the checking nurse.

- Inspect the cannula entry site using the Visual Infusion Phlebitis (VIP) score (Appendix A).
  Bandages or tubigrip MUST BE REMOVED if it has been necessary to apply them.

- Apply apron and clean gloves.

- Clean the closed connector (e.g. Clave) by wiping thoroughly with a 70% alcohol/2%
  Chlorhexidine swab e.g. Clinell or Sanicloth using a continuing cleaning action for 30 seconds.
  Wait for the alcohol to dry before proceeding.

- From this point you must use a non-touch technique.

- For new infusions. Flush 5-10mls of prescribed and checked 0.9% sodium chloride into
  the cannula by pushing and turning syringe into closed connector.
  If there is resistance stop and remove cannula.

- If existing infusion is in place;

- Stop the infusion.

- Change over the infusion bags using a non-touch technique.

- For new infusions connect the giving set to the patient using a non-touch technique.

- Start the infusion and adjust the flow rate as prescribed.

- Ask the patient if any abnormal sensations are experienced.

- If patient's bed space was moved to do this procedure i.e. table, call bell, return to previous
  positions.

- Dispose of waste according to Infection Control Policy and the Policy for the Disposal or
  Re-Use of Pharmaceuticals (Accessed via the Medicines Management page on LSW intranet)
  Place all remaining waste in appropriate waste bags.

- Wash and dry hands thoroughly.

- Complete prescription chart documentation in accordance with ORGANISATION Policy.

Standard Operating Procedure for administration of medication through a central vascular catheter using a strict aseptic non touch technique.

Assemble equipment:

Sterile Dressing pack (containing receptacle for cleansing solution, low-linting, swabs, sterile gloves,
sterile towel and disposable bag)
Sterile gloves (if second pair required)
Detergent wipe
2% Chlorhexidine/70% alcohol wipe x 2 (e.g. Clinell)
Trolley/Clean tray
10ml syringe or larger

10ml vial 0.9% Sodium Chloride
Sterile obdurator (optional)
Sharps bin

- Decontaminate hands with alcohol rub.
- Explain and discuss the procedure with the patient.
- Put on a plastic apron.
- Wash hands thoroughly up to the elbows using liquid soap. Dry thoroughly.
- Clean the trolley/tray with detergent wipe.
- Place all the equipment required for the procedure on the bottom of a dressing trolley. .
- Check the pack is sterile (i.e. the pack is undamaged), intact and dry.
- Check the expiry.
- Date open the outer cover of the sterile pack and slide the contents onto the top shelf of the
  trolley/tray.
- Decontaminate hands with a bactericidal alcohol hand rub.
- Open the sterile field using only the corners of the paper.
- Check any other packs for sterility and open, tipping their contents gently onto the centre of the sterile field.

- Open all ampoules and swab tops if applicable, place them on tray/side, not on the sterile field.

- Decontaminate hands with alcohol rub.

- Arrange contents for easy access maintaining asepsis, using sterile bin bag from dressing pack.

- Put on sterile gloves touching only the inside wrist end.

- Draw up medication in 10ml syringes using a non-touch technique and label syringes.

- In hospital environment, check prescription medication with another registered health care professional.

- The person/s checking and preparing the medication must be the persons administering the medication to the patient.

- Place labelled syringes into the sterile plastic tray, within the sterile dressing pack, maintaining asepsis. Sterile obdurators may be used at ends of syringes.

- Fold corners of dressing pack over the tray to cover. Place in a sterile plastic bag, which comes with the dressing pack.

- Remove sterile gloves and wash hands.

- Ensure all vials are placed on tray/trolley underneath sterile dressing pack.

- Both Healthcare Professionals proceed to the patient with the tray and check patient's identity.

- Explain procedure to patient.

- Draw curtains and position the patient comfortably so that there is easy access to the central line without exposing the patient unduly.

- Gel hands and open dressing pack.

- Put on sterile gloves touching only the inside wrist end.

- FROM THIS POINT ONWARDS DO NOT TOUCH THE VITAL PARTS e.g. ENDS OF LINES, TIPS OF SYRINGES, CONNECTORS ETC.

- Place sterile towel under the central line.
- Clean the closed connector with Chlorhexidine alcohol wipe using a continuing cleaning
  action for 30 seconds and wait for it to dry before accessing.
- Push and turn 10ml syringe of 0.9% Normal Saline into the needle-less connector of catheter,
  or attach giving set to the closed connector.
- Unclamp the catheter clamp.
- Administer flush at a slow rate using the push pause method.
- Clamp line and disconnect syringe, discard syringe into sharps bin.
- Attach syringe containing medication and administer as described above, clamping before removal of syringe.
- Using the syringe with the prepared final flush, flush the catheter.
- As the final 0.5ml of the flush is injected clamp at the same time fluid is pushed in
  to the catheter.
- Remove the syringe and discard into sharps bin in accordance with the Infection Control policy
  And the Policy for the Disposal or Re-Use of Pharmaceuticals (Accessed via the Medicines
  Management page on LSW intranet)
- Clean the closed connector with Chlorhexidine and alcohol wipe.
- Remove sterile gloves and dispose of in clinical waste bags.
- Wash and dry hands thoroughly.
- The patient should be observed during and after the procedure for signs of reactions or complications. Ensure the patient is comfortable.
- Complete documentation.
- Check that the trolley remains dry and is physically clean. If necessary wash with soap
  and water and dry with a paper towel.
- Decontaminate hands with alcohol rub.

Standard Operating Procedure for changing a dressing of a central catheter

Assemble equipment:

Sterile Dressing pack (containing receptacle for cleansing solution, low-linting, swabs, sterile gloves, sterile towel and disposable bag)
Clean gloves
70% Isopropyl alcohol e.g. Chloraprep
Trolley/Clean tray
Appropriate hand hygiene preparation
Sharps Bin
IV3000 dressing

- Decontaminate hands with alcohol rub.
- Explain and discuss the procedure with the patient.
- Put on a plastic apron.
- Wash hands thoroughly up to the elbows using liquid soap. Dry thoroughly.
- Clean the trolley with detergent and warm Water. Wipe top of trolley/tray with detergent wipe.
- Place all the equipment required for the procedure on the bottom of dressing trolley/tray.
- Take the patient to the treatment room or screen the bed area. Position the patient
  comfortably so that there is easy access to the central line. Maintain patient's dignity
  without exposing the patient unduly.
- Take the trolley to the treatment room or patient's bedside, disturbing the screen as little as possible.
- Check the pack is sterile (i.e. the pack is undamaged, intact, dry and check the expiry date.
  Open the outer cover of the sterile pack and slide the contents onto the top shelf of the
  trolley/tray.
- The person/s checking and preparing the medication must be the persons administering
  the medication to the patient.

- Decontaminate hands with a bactericidal.
- Open the sterile field using only the corner paper.
- Check any other packs for sterility and open, tipping their contents gently onto the centre
  of the sterile field.
- Decontaminate hands with alcohol rub.
- Place hand in disposable bag, arrange contents.
- Place sterile towel under the central line.
- Put on clean gloves touching only the inside wrist end.
- Remove old dressing carefully taking care not to pull on skin/sutures.
- Remove gloves and apply new sterile gloves.
- Using Chloraprep using a continuing cleaning action for 30 seconds, wipe in an up/down and backwards/forwards friction motion around the site.
- Apply new IV3000 dressing.
- Remove sterile gloves and dispose of all waste in orange clinical waste bags.
- Wash and dry hands thoroughly.
- The patient should be observed during and after the procedure for signs of reactions or
  complications. Ensure the patient is comfortable.
- Complete documentation and ensure date and time of dressing change is applied using line labels.
- Check that the trolley remains dry and is physically clean. If necessary, wash with soap
  and water and dry with a paper towel.
- Decontaminate hands with alcohol rub.
- Document in patient's notes.

Standard Operating Procedure for the preparation and administration of intramuscular injections

1. Indications

This is the only route of administration available, tolerated or recommended by the manufacturer.

2. Contraindications

Absolute patient refusal
Drug allergy
Bleeding disorder or low platelets
Ineffective absorption

3. Complications

Anaphylaxsis
Drug overdose
Local swelling
Pain
Bruising
Bleeding

4. Site

The deltoid muscle of the upper arm;

The anterior lateral aspect (the vastus laterals muscle) of the thigh;

The upper outer quadrant (the dorsogluteal muscle) of the buttock.

5. Equipment

Patient's prescription chart
Sharps bin
Personal Protective equipment (gloves and apron)
Non sterile Gloves
Appropriate drug and diluent
Syringe
Needles: One filter needle or blue (23G) for drawing up and 1 for administration (depending on size of patient)

6. Procedure

- Positively identify the patient and explain the procedure. Obtain informed

consent.

- Check prescription for: legibility, prescription is in date, dose, strength prescribed, frequency,
  route, batch number, expiry date, allergies.

- Wash hands using soap and water and dry thoroughly.

- Assemble equipment needed and prepare them according to pharmacy recommendations.

- Check that packages are intact and in date.

- If required, calculate the volume of medicine solution to give the prescribed dose,
  write the calculation down (In a hospital environment obtain an independent check by
  another registered healthcare professional).

- The person/s checking and preparing the medication must be the persons administering the
  medication to the patient.

- Draw up the medication into a syringe using a safety needle (if drawing up from a glass vial)
  and expel the air bubbles. There are some IM products that are suspensions e.g. Depo-provera, Decapeptyl SR, Kenalog for which a filter needle would be used.

- Discard the needle into the sharps bin.

- Attach a blue needle to the syringe.

- Gel hands

- Check identification of patient.

- Assist the patient into the required position. Remove appropriate garments to expose
  the injection sites.

- Assess the injection site for signs of inflammation, oedema, infection and skin lesions

- Stretch the skin around the injection site. Holding the needle at an angle of 90 degree.
  Quickly plunge it into the skin.

- Pull back slightly to check you are not in a blood vessel. Inject the medication slowly,

watching the patient as you do so, wait 10 seconds then withdraw the needle rapidly.
Apply pressure to any bleeding point. The exception to this is for immunisation and staff
are required to refer to green book for guidance for immunisations.

- Dispose of waste according to the Infection Control policy and the Policy for the Disposal or
  Re-Use of Pharmaceuticals (Accessed via the Medicines Management page on LSW intranet)

- Remove gloves and wash and dry hands thoroughly.

- Complete documentation including prescription chart and patient record.

7. General hints and tips

- Use a larger needle e.g. green in a large patient.

- If blood is aspirated, withdraw and repeat the procedure in a different area with a clean needle.

- A filter needle is recommended drawing up from glass ampoules, or if these are not present,
  draw up with the smallest bore needle possible to prevent the drawing up of glass particles
  (RCN 2010).

- Rotate injection sites to limit local reaction.

Standard Operating Procedure for the preparation and administration of subcutaneous injections

1. Indications

Only route of administration available, tolerated or recommended by the manufacturer.

2. Contraindications

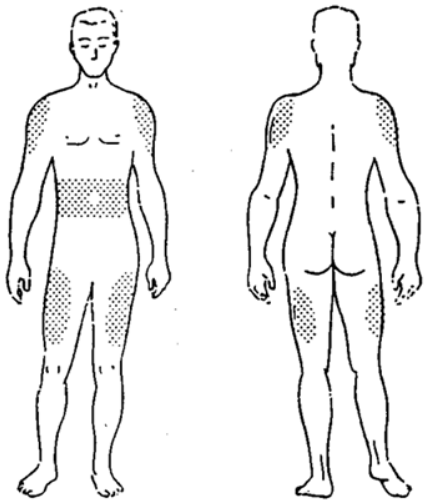
Absolute patient refusal
Drug allergy
Bleeding disorder or low platelets
Ineffective absorption

3. Complications

Anaphylaxis
Drug overdose
Local swelling
Pain
Bruising
Bleeding

3. Site

The sites recommended are the abdomen in the umbilical region, the lateral or posterior aspect of the
lower part of the upper arm, the thighs (under the greater trochanter rather than mid thigh) and the
buttocks.



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4. Equipment

Patient's prescription chart
Sharps bin
Personal Protective equipment (gloves and apron)
Appropriate drug and diluent
Syringe
Needles: One filter needle or blue needle (23G) for drawing up and 1x orange (25G) for administration.
Unless the product is available in a pre-filled syringe/needle

5. Procedure

- Positively identify the patient and explain the procedure. Obtain informed consent.
- Assist the patient into the required position. Remove appropriate garments to expose the injection site.
- Assess the injection site for signs of imflammation, oedema, infection and skin lesions.
- Check prescription for: legibility, prescription is in date, dose, strength prescribed, frequency, route, batch number, expiry date, allergies.
- Wash hands using soap and water and dry thoroughly.
- Assemble equipment needed and prepare them according to pharmacy recommendations.
- Check that packages are intact and in date.

- If required, calculate the volume of medicine solution needed to give the prescribed dose,
  write the calculation down (In a hospital environment obtain an independent check by
  another registered healthcare professional).

- Draw up the medication into a syringe using a filter /blue needle and expel any air bubbles.
  Discard the needle into the sharps bin.

- Gel hands.

- Check identification of patient

- Attach an orange needle to the syringe. Raise the skin and subcutaneous tissue between
  your fingers by pinching it and inset the needle at 45 degree angle into the skin (some drugs are given at a 90 degree angle please refer to manufacturers guidance).
  Inject the medication slowly, watching the patient as you do so, then withdraw the needle
  and apply pressure to any bleeding points. The exception to this is for immunisation and
  staff are required to refer to green book for guidance for immunisations.

- Dispose of waste according to the Infection Control policy and the Policy for the Disposal or
  Re-Use of Pharmaceuticals (Accessed via the Medicines Management page on LSW intranet)

- Remove gloves and wash and dry hands thoroughly.

- Complete documentation including prescription chart and patient record.

6. General hints and tips

- Use a larger safety needle if the patient is large.

- A safety filter needle is recommended drawing up from glass vials, or if these are not present,
  draw up with the smallest bore needle possible to prevent the drawing up of glass particles
  (RCN 2010).

- Rotate injection sites to limit local reaction.

Guidelines for setting up and maintaining I.V Sliding Scale Insulin Infusion

Aim:

The safe and effective management of hyperglycaemia for those patients with known diabetes or
those patients who develop hyperglycaemia during their hospital stay.

Indications:

Diabetic Ketoacidosis
Hyperglycaemic Hyperosmolar State (HHS)
Unstable diabetes
Peri-operative
Fasting / Nil by Mouth
Acute Myocardial Infarction
During labour

Please note: This list is not inclusive of every clinical situation in which sliding scale insulin is used.
The indication for sliding scale insulin will be determined by the responsible clinician.

Essential requirements before you start:

- Patient to be cannulated with a clave connector attached to the cannula.
- Documentation of Cannula as per hospital policy.
- Sliding scale chart signed by Doctor.
- IV fluids prescribed on the back of the prescription chart.
- Pump chart

Equipment you will need:

- Volumetric pump (Baxter Colleague is most widely available in the Trust).
- 50ml Syringe pump (Alaris GH is most widely available in the Trust).
- ALARIS giving set ~ with anti-syphon, anti-reflux, and 'Y' connection **Ref MFX2256.**
- BAXTER IV fluid giving set **Ref EMC9608.**
- IV fluid bag of either Normal Saline or

- 10% Dextrose with 10mmol potassium chloride.

- 50ml Luer Lok syringe with 49.5ml Normal Saline added
- 50 units short-acting insulin (either Actrapid or Humulin S)
- Additive label

Check medication with another registered healthcare professional.

Complete and sign additive label, prescription chart, sliding scale chart and pump chart.

Setting up sliding scale:

- Prime all lines and date as per hospital policy.
- Attach equipment to the pumps.
- Attach IV fluid line to the 'Y' connector.
- Attach the line to the patient's cannula.
- Commence infusions at the prescribed rates.

Management of the sliding scale infusion

Advice is printed on the sliding scale chart regarding:

- Change of IV fluids according to blood glucose result.
- Frequency of blood glucose testing.
- Stopping sliding scale insulin and converting back to usual medication.
- NB: If appropriate glycaemic control is not achieved with the initial sliding scale prescription
  then the responsible doctor should amend the sliding scale in the space provided on the
  sliding scale prescription chart or seek the advice of the diabetes specialist team.

This form is to be used to assess your current performance and to provide evidence of development.

Care Quality Commission Essential Standards of Quality and Safety reference	CQC Outcomes 9A, B, D, G,14A, National Occupational Standards (Skills for Health): CHS3 Administer medication to individuals
Author	Professional Lead District Nursing
Date agreed	
Version number	Version 1

It is the responsibility of all staff to ensure they are working to current and relevant policies,
standards and guidelines.

Staff Name; ……...

Department ……

This statement of competence will provide evidence towards the following dimensions in the Knowledge and Skills Framework Core dimensions 1, 2, 3 and 5HWB7 Contributing to planning and monitoring interventions and /or treatments Prepare to, and administer medication to individuals, and monitor the effects

All Livewell Southwest staff who are involved in the administration of injectable medication must:

- ***'Have the knowledge and skills for safe and effective practice***

  Recognise and work within the limits of your competence

  Take part in appropriate learning and practice activities that maintain and develop your competence and performance'

  (Nursing & Midwifery Council. The Code 2008)

- Have access to and work to the Livewell Southwest Injectable Drug Administration and associated policies and Standard Operating Procedure (SOP)

- Have attended any relevant training

- Complete self assessment of the injectable competencies at least annually.

Take completed self assessment forms to individual annual KSF review and identify any training needs with your line manager. Where there are concerns regarding competence this must be discussed with line manager at line management supervision and appraisal.

All newly employed registered nurses and relevant healthcare staff must be assessed as competent in administering injectable medications. The assessment should take place in the ward/community and staff should be assessed by a competent practitioner. All staff transferring from other areas that have prior knowledge, skills and competences in administering injectable medications can be checked and assessed by a competent practitioner using the self assessment

Every 3 years all staff must provide **evidence** of formal updating . This could include:

- attending a study/training session
- e learning
- relevant research for an assignment / project/link meeting
- working with a specialist or the education team

Guidance for completing this document

Level	Associated Statement
O	**Observation.** Awareness through observation of the performance criteria. At this stage the registered nurse does not actively participate.
A	**Assistance.** Performing with assistance. At this stage the registered nurse requires constant supervision by a suitably registered practitioner and some assistance to complete the competency safely and effectively.
S	**Supervision**. Performing under supervision**.** At this stage the registered nurses can largely fulfil the competency criteria, but only with the oversight of a suitably registered practitioner to check for safety and efficiency.
C	**Competent.** Performing competently and independently. The registered nurse is able to complete the competency satisfactorily without supervision and / or assistance.
S	**Sustained**. The competency continues to be in active use enough for the registered nurse to feel they continue to be competent in this area. Reviewed annually in development review, with evidence for this having been sustained.

Following completion of the attached competencies, a copy should be held by operational

Management in staff member's personal file and a copy retained by the staff member as evidence for their KSF review and personal developmental plan

Aim; For Practitioners to demonstrate evidence of competence in peripheral cannulation and the administration of injectable medication via subcutaneous, intramuscular , intravenous and central vascular routes (does not include depot injections)					
Objectives/criteria	**O**	**A**	**S** **Supervision**	**C**	**S** **Sustained**
All core competencies need to be completed for all injectables and peripheral cannulation and then each individual additional section as required.					
Demonstrate working knowledge and ability to locate Livewell Southwest policies on: Safe and secure handling of medicines Incident Reporting Clinical Record Keeping Infection Prevention and Control Consent Waste Management **And for registered nurses** : NMC Code NMC Standards For Medicines Management NMC Record Keeping Guidance					
Demonstrate the ability to confirm and identity the patients :This includes checking the patients : name , address , Date of Birth and hospital/ NHS number					
Demonstrate knowledge and					

ability to check that each prescription specifies : • Patient's name ,Hospital / NHS Number , DOB , Address • Prescriber's signature • The approved medicine name • Diluent prescribed • The dose and frequency of administration • The date and route of administration • The allergy status of the patient And take appropriate action if information has not been completed.					
Demonstrate clinical and pharmaceutical knowledge of the prescribed medication including contraindications and possible side effects .					
Demonstrate confidence in approaching the patient, explaining the procedure, ascertaining any contraindications or cautions , rechecking allergy status and discussing possible side effects					
Demonstrate process of checking the patient has not already had the medication administered					
Demonstrate ability to obtain informed consent and know what action to take if this is not possible					

Demonstrate knowledge and ability to recognise any adverse reactions , respond appropriately and report using yellow card form					
Demonstrate knowledge of how to recognise , manage and treat Anaphylaxis					
Demonstrate correct use of Personal Protective Equipment					
Demonstrates ability to dispose of all sharps and waste safely and appropriately					
Demonstrates knowledge of procedure to follow in the event of an inoculation injury					
Demonstrate the ability to record the procedure in the patient's record accurately, contemporaneously and according to organisational policy					
Additionally for Subcutaneous and Intramuscular injections : Demonstrate knowledge and ability to : • select appropriate site • administer injection using correct equipment including appropriate needle size • follow procedure as per each relevant SOP for the preparation and administration of sub cutaneous and intramuscular injections .					

Additionally for IV s **Demonstrate knowledge and ability to :** • monitor and record VIP score and act accordingly • administer IV medication following procedure as per SOP for Intravenous medication • recognise infiltration and extravasion and know what action to take					
Additionally for Central vascular catheters : Demonstrate knowledge of • different types of Central vascular catheters and how lines are inserted and positioned • be able to recognise and attempt to resolve troubleshooting and know who to contact if necessary •					
Demonstrate knowledge and ability to administer medication correctly as per Central Vascular SOP					
Additionally for PICC lines : Demonstrate knowledge and ability to administer medication correctly as per Central Vascular SOP					
Demonstrate knowledge and ability to measure line correctly and know why this is important					

Additionally for Peripheral cannulation : Demonstrates knowledge of the anatomy and physiology of the arm and hand					
Able to demonstrate knowledge and ability to : • select an appropriate site • insert Cannula correctly as per procedure in Marsden Manual • complete VIP score and know what action to take accordingly					

Evidence used to support claim	
Agreed action plan (if relevant)	

Competency statement (Assessor) **I confirm that the above named member of staff has achieved the required competency level for IM / SC / IV and CV injectables and Peripheral Cannulation (delete as appropriate)**
Name **Designation** **Signature** **Date**

Competency statement (staff member) **Having received appropriate training I am competent in this procedure at this time. I have discussed this role as part of my job description with my manager**
Name **Designation** **Signature** **Date**

All policies are required to be electronically signed by the Lead Director (the policy will not be accepted onto Healthnet until the e-signature is received).

The proof of signature for all policies is stored in the policies database.

The Lead Director approves this document and any attached appendices.

Signed:

Title:

Date: