Acacium Group

Subcutaneous Administration of Medicines

Procedure Reference | SOP MEDS 04

Version | V4.0

Procedure Name	Subcutaneous Administration of Medicines
Purpose of Document	To ensure that the correct preparation, procedures & outcomes are achieved by implementing a consistent and systematic approach to the procedure of administering subcutaneous medicines
Target Audience	All Nurses & appropriately trained carers
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Equality Impact Assessment (EIA) Form	Acacium Group is committed to Equality, Diversity and Inclusion and in line with our values, we strive to ensure that everyone that is part of the Acacium community is not disadvantaged or discriminated against given their individual need or characteristics. To support this, an Equality Impact Assessment has been undertaken on this policy/procedure. This information is held centrally and can be requested from the Clinical Governance Team.
About Acacium Group	Details of all Acacium Group trading companies that this policy applies to are detailed within Appendix A

Document History			
Version	**Date**	**Changes made/comments**	**By whom**
V1	Dec 2016	Implementation of document history page	KNF/VM
V1	Apr 2018	Updated front sheet to include new review frequency date	KMS/VM
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1. Introduction

Medications may be administered just under the skin in the form of an injection. A subcutaneous injection administers up to 2ml of a drug solution directly beneath the skin. The drug becomes effective within 20 minutes.

A subcutaneous injection is administered when a small amount of fluid is to be injected, the patient/client is unable to take the drug orally, or the drug is destroyed by intestinal secretions.

2. Aim

To undertake subcutaneous injection safely according to prescription, with no complications for the health care provider or client.

3. Who needs to be aware of this procedure

All Acacium Group Healthcare Professionals that have been trained and assessed as competent to do so.

4. Hazards/complications

If the drug to be administered is harmful to superficial tissues, it should not be administered via the subcutaneous route.

If the circulation is depleted, absorption of the drug administered may be slow. Certain drugs such as anticoagulants have specific side effects that the client may experience. Injected drugs can also interact with other medications that the client is taking. Check for any adverse reactions if the drug is being administered for the first time.

In order to prevent client harm, make sure you comply with the six rights:

- Right drug
- Right time
- Right dose
- Right route
- Right client
- Right to refuse

As well as the six rights it is also important to consider the right position and the right documentation.

Most complications of subcutaneous injections are a result of the drug injected and not the procedure. However, it is possible that localised trauma of the injection site may result as part of the process. Minor discomfort and pain may occur for a short period following the injection, but usually resolves within a few hours.

Complications that are above what would be expected should be reported to the client's GP and your line manager.

5. Storage of medicines

To check the medicine for subcutaneous injection remains in license, observe that the medication is stored as per manufacturer's instructions. Acacium Group employed nurses or carers may need to advise the client

and his/her family of the suitability of storage but responsibility for storage lies with the client and his or her family. There should be an awareness of the need to store medicines and injection equipment out of the reach of children.

6. Availability of supplies and medications

Whoever has responsibility (Client, Family or worker) must ensure that the required items and medication for administration are available as required. If this not feasible, alternative arrangements will be documented in the client's care plan.

7. Consent

Valid consent should be gained before commencing the procedure. Risks and benefits to the procedure should be explained along with the risks of not having the procedure and any possible alternatives to the proposed procedure.

Acacium Group staff should be aware that carers and relatives do not have the right to give consent on behalf of the client however staff may be able to act as long as they are able to demonstrate that any actions are in the best interest of the client. There may be a representative legally appointed to provide consent on the client's behalf.

Please read Acacium Group policy on consent.

8. Administration

Evidence suggests when drawing up from glass ampoules glass particles may be present that are not visible to the naked eye. In a study conducted in 2004 it was found that a minimum of 22% of ampoules had glass particles present in the medication when unfiltered needles were used. When 19G filter needles were used no glass was aspirated into the syringe. Therefore, Acacium Group requires that Acacium Group nurses and carers use filter needles when drawing up injections from glass ampoules. The needle MUST be changed after to a suitable size for injection administration.

The needle used for administration should be 25G (orange microlance needle). How the needle is inserted can make a difference. The needles are designed so that the sharp end is cut at a 45° angle. If you insert the needle with the cut angle facing towards the skin, this will be painful. However, if you insert it with the cut angle facing upwards, the point will be inserted into the skin first and so will be less painful. 0.5–2mls can be administered as a bolus in to one site for children and adults.

If a pre-loaded syringe and needle unit is being used, ensure the product has not been tampered with prior to administration.

If client require sub-cut injections for a pro-longed period of time, they may be prescribed sub-cut cannula, these remain inserted for 7 days. Please document the date of insertion and the expected date for re-insertion (see section 10). Care of a sub-cut cannula, should be detailed within the client specific care plan.

9. Use of topical anaesthesia prior to injection

Topical anaesthetics reversibly block nerve conduction near their site of administration, thereby producing temporary loss of sensation in a limited area. This is helpful when you need to keep pain to a minimum

during the administration of injections, especially for babies and young children. Lidocaine patches are more effective than anaesthetic gel. Cream takes up to one hour to work but lasts for several hours. The length of time it takes to start working must be taken into consideration when planning the injection.

The GP or hospital specialist should prescribe these and transcribed on the MAR chart. Acacium Group nurse or carer must use them as directed in the drug information leaflet, usually known as a Summary of Product Characteristics (SPC) and as prescribed.

10. Sub-cutaneous cannula's

- Sub-cutaneous cannula's (insuflon's) can be inserted to prevent frequent sub-cutaneous injections.
- Sub-cutaneous cannulas are used regularly with children as it limits the amount of injections that they need
- Sub-cutaneous cannula's can remain in-situ for 7 days subject to assessment of its patency
- There are acceptable sites for sub-cutaneous cannula insertion, these differ between adults and children as shown in the table below

Adults		Children
Anterior aspect of the upper arms		Abdominal wall
Anterior aspect of the abdominal wall		Front of thighs
Anterior aspect of the thigh		Anterior aspect of the upper arms
The scapula (only if the client is distressed and/or agitated)		
Anterior chest wall		

Sites that are not suitable for injection are:

- Skin folds
- Breast tissue
- Limbs that have oedema
- The abdominal wall when ascites are present
- Bony prominences
- Previously irradiated skin
- Sites near a joint as this is uncomfortable and has an increased risk of displacement
- Infected, broken or bruised skin

Rotation of Site

Injecting into the same spot too often can cause skin problems and can impair your body's ability to absorb some medication, it is therefore very important to rotate the injection site. It is good practice to Inject at least one finger-width away from your previous injection site but still within the boundaries of the

previously listed areas. A record of where the sub-cut injection has been given should be recorded within the appropriate documentation.

11. Client and relatives/carers involvement

The client's relatives and carers may be taught to undertake this procedure if they wish to support the care needs. This may be supported by the District Nurse or other clinical teams. Acacium group employees do not have responsibility to train the clients family.

This is true too for children, especially as they become young adults and the need for independence and self-care increases.

12. Client information

As part of obtaining valid consent the risks, benefits and alternatives to treatment will have been discussed.

The procedure must be explained fully in order to gain full cooperation with the procedure.

An information leaflet may be given about the drug and/or the procedure. This supports the verbal information given and serves as a reference.

The client should also be informed about possible side effect and advised to contact the GP if they are concerned.

13. Equipment

- MAR chart and prescribed medication
- Needles to draw up medication – 21 G to ease reconstitution and drawing up, 23 G if from a glass ampoule
- Needle for administration – 25 G or subcutaneous cannular
- Syringe of appropriate size or pre-loaded syringe and needle
- Sharps container
- Gauze swab or cotton wool
- Alcohol hand rub
- Alcohol swab topical if drug is presented in ampoule form
- Nursing records
- Topical anaesthesia (optional) as prescribed

Please note:

- See separate procedures at the end of this section regarding ampoule and vial preparation**. (Sections 14.1, 14.2, 14.3)**

14. Procedure – administration of subcutaneous injection

	Action	Rationale
1.	Explain the procedure to the client and their relatives and carers.	To ensure understanding and obtain valid consent.

2.	Check before commencing procedure that client is not allergic to any of the ingredients of the medicine for injection.	To ensure drug is not administered if client has any known allergy to any of the ingredients in the injection. **NB:** People can become intolerant or allergic to medicines even after years of use.
3.	Check that the client also does not have contraindications to administration of the drug such as pregnancy, immunosuppression or other medications.	To ensure that the client does not receive a medication that would cause harm.
4.	Inspect all equipment. If damaged, discard and report to Medicines and Health Care Regulatory Agency.	To ensure that only safe equipment is used. Reporting to the MHRA ensures that difficulties with equipment can be monitored.
5.	Wash hands with bactericidal soap and water or bactericidal alcohol hand rub and dry.	To minimise risk of contamination.
6.	Prepare needle/s, syringe/s or pre-loaded syringe and needle etc. maintaining asepsis.	To contain all items in a clean area.
7.	Consult the client's prescription sheet, and ascertain the following: a) Client identification b) Drug c) Dose d) Date and time of administration e) Route and method of administration f) Expiry date g) Validity of prescription h) Signature of prescriber i) Allergy	To ensure that the client is given the correct drug in the prescribed dose and that the drug has not expired.
8.	Select the drug in the appropriate volume, dilution or dosage and check the expiry date(s). Check the colour and composition.	To reduce wastage. To ensure drug is efficacious and not administered out of license. To ensure the drug looks like it should according to the SPC.
9.	Prepare the fluid for injection as recommended by the manufacturer, withdrawing the appropriate amount of solution in relation to the prescribed dose. Use protective clothing if advised by manufacturer.	To minimise risk of error. To protect health personnel during preparation.
10.	Ensure client's privacy.	To maintain client's privacy and dignity.
11.	Assist the client into the required position.	To allow access to the appropriate injection site.

12.	Expose the site for injection. Assess the injection site for signs of inflammation, oedema, infection and skin lesions.	To promote effectiveness of administration. To reduce the risk of infection. To avoid skin lesions and possible trauma to the client.
13.	Place a new needle on the syringe with the injection that is ready for use unless using a pre-loaded syringe and needle.	To prepare for administration.
14.	There is no need to clean the skin with an alcohol swab unless it is felt this is necessary.	The risk of infection without cleaning skin prior to injection is negligible and alcohol may cause unnecessary discomfort.
15.	Prepare the injection by removing the needle guard and expressing any air bubbles from the syringes and check the dosage in the syringes.	To prevent injecting air and ensure correct dose administration.
16.	With dominant hand, hold the syringe between thumb and forefinger.	To provide optimum control of the injection.
17.	With non-dominant hand, pinch the subcutaneous tissue between the thumb and forefinger, or spread the tissue taut if the patient has substantial subcutaneous tissue. See potential sites for administration in Appendix B.	Pinching the skin ensures the injection is administered into the skin; especially important if the person is thin.
18.	Insert the needle quickly at 45-degree angle.	The correct angle to achieve administration into the subcutaneous layer.
19.	Release the subcutaneous tissue and grasp the barrel of the syringe with non-dominant hand.	
20.	Inject medication slowly.	To allow steady administration.
21.	DO NOT recap or re-sheath needle, discard the needle in a sharps box container.	Prevent accidental needle injury and possible infection of the administering nurse or carer.
22.	Dispose of all waste products carefully, placing needle and syringe in sharps container.	Ensure appropriate waste management and prevention of accidental injury from needle.
23.	Make sure client is comfortable.	Allow client to settle to previous or improved state.
24.	Wash hands.	To be ready for the next role or client.
25.	Record the following information in the care notes:	To maintain accurate records, provide a point of reference and prevent any duplication of treatment. To highlight any concerns.

	• Drug name, product name, batch number and expiry date • Dose administered • Site(s) used • Date of administration • Name and signature of administrator. Ensure MAR sheet is completed.	

Ampoule Preparation
Single Dose Ampoule: Solution Preparation

	Action	Rationale
1.	Inspect the solution for cloudiness or particulate matter. If this is present, discard and use new ampoule. If all ampoules are the same inform line manager and if necessary, obtain new urgent prescription from GP.	To prevent the client from receiving an unstable or contaminated drug.
2.	Tap the neck of the ampoule gently.	To ensure all the solution is in the bottom of the ampoule.
3.	Cover the neck of the ampoule with a sterile topical swab and snap it open. If there is any difficulty, a file may be required.	To minimise the risk of contamination. To prevent aerosol formation or contact with the drug, which could lead to sensitivity reaction. To reduce the risk of injury to health personnel.
4.	Inspect the solution for glass fragments, if present, discard.	To minimise the risk of foreign matter into the client.
5.	Withdraw the required amount of solution, tilting the ampoule if necessary.	To avoid drawing in any air.
6.	Replace the sheath on the needle and tap the syringe to dislodge any air bubbles. Expel air. ***Note*: Replacing the sheath should not be confused with re-sheathing used needles** An alternative to expelling the air with the needle sheath in place would be to use the ampoule or vial to receive any air and/or drug.	To prevent aerosol formation. To ensure that the correct amount of drug is in the syringe.
7.	Attach a new needle if required (and discard used needle into appropriate sharps container) or attach a plastic end cap.	To reduce the risk of infection. To avoid tracking medications through superficial tissues. To ensure the correct size of needle is used for the injection. To reduce the risk of injury to health personnel.

Single Dose Ampoule: Powder Preparation

	Action	Rationale
1.	Tap the neck of the ampoule gently.	To ensure all the solution is in the bottom of the ampoule.
2.	Cover the neck of the ampoule with a sterile topical swab and snap it open. If there is any difficulty, a file may be required.	To minimise the risk of contamination. To prevent aerosol formation or contact with the drug, which could lead to sensitivity reaction. To reduce the risk of injury to health personnel.
3.	Inject the correct diluent slowly into the powder within the ampoule.	To ensure that the powder is thoroughly wet before agitation and is not released into the atmosphere.
4.	Agitate the ampoule.	To dissolve the drug.
5.	Inspect the content for glass fragments or other particle matter. If present, continue agitation or discard as appropriate.	To minimise the risk of injection of foreign matter into the Clients.
6.	When the solution is clear, withdraw the required amount, tilting the ampoule if necessary.	To ensure the powder is dissolved and has formed a solution with the diluent. To avoid drawing in any air.
7.	Replace the sheath on the needle and tap the syringe to dislodge any air bubbles. Expel air.	To prevent aerosol formation. To ensure that the correct amount of drug is in the syringe.
8.	Attach a new needle and discard used needle into appropriate sharps container or attach a plastic end cap.	To reduce the risk of infection. To avoid tracking medications through superficial tissues. To ensure the correct size of needle is used for the injection. To reduce the risk of injury to health personnel.

Multidose Vial: Powder Preparation

	Action	Rationale
1.	Remove the tamper evident seal and clean the rubber septum with the chosen antiseptic and let it air dry for at least 30 seconds.	To prevent bacterial contamination of the drug, as the plastic lid prevents damage and does not ensure sterility. (NPSA 2007).
	Use either of these methods for reconstitution: Reconstitution method A: (2 – 6)	
2.	Insert a 21G needle into the cap to vent the bottle.	To prevent pressure differentials, which can cause separation of needle and syringe. (NPSA 2007).
3.	Inject the correct diluent slowly into the powder within the ampoule.	To ensure that the powder is thoroughly wet before it is shaken and is not released into the atmosphere. (NPSA 2007).
4.	Remove the needle and syringe.	To enable adequate mixing of the solution.

5.	Place a sterile topical swab over the venting needle and shake to dissolve the powder. *Note:* Health personnel may encounter other presentations of drugs for injection e.g. vials with a transfer needle and should follow the manufacturer's instructions in these instances.	To prevent contamination of the drug or the atmosphere. To mix the diluent with the powder and dissolve the drug.
6.	Inspect the solution for cloudiness or particulate matter. If this is present, discard. Use another vial. If all vials the same – inform line manager and the MHRA. Ask client or carers to obtain new prescription from GP – urgently if required.	To prevent client from receiving an unstable or contaminated drug.
	Reconstitution method B: (7 -13)	
7.	With the needle sheathed, draw into the syringe a volume of air equivalent to the required volume of solution to be drawn up.	To prevent bacterial contamination of the drug.
8.	Remove the needle cover and insert the needle into the vial through the rubber spectrum.	To gain access to the vial.
9.	Invert the vial. Keep the needle in the solution and slowly depress the plunger to push the air into the vial.	To create an equilibrium in the vial. (NPSA 2007).
10.	Release the plunger so that the solution flows back into the syringe (if a large volume of solution is to be withdrawn, use a push/pull technique).	To create an equilibrium in the vial. (NPSA 2007).
11.	Inject the diluent into the vial. Keeping the tip of the needle above the level of the solution on the vial, release the plunger. The syringe will fill with air which has been displaced by the solution.	This 'equilibrium method' helps to minimise the build-up of pressure in the vial.
12.	With the needle and syringe in place, gently swirl the vial to dissolve all the powder.	To mix the diluent with the powder and dissolve the drug.
13.	Inspect the solution for cloudiness or particulate matter. If this is present, discard. Follow local policy guidelines on what action to take.	To prevent client from receiving an unstable or contaminated drug.
	Withdrawal of medication from vial:	
14.	Withdraw the prescribed amount of solution and inspect for pieces of rubber which may have been 'cored out' of the cap. *Note:* coring can be minimised by inserting the needle into the cap, bevel up, at an angle of 45 to 60 degrees. Before complete insertion of the needle tip, lift the needle to 90 degrees and proceed.	To ensure that the correct amount of drug is in the syringe. To prevent the injection of foreign matter into the patient.

15.	Remove air from the syringe without spraying into the atmosphere by injecting air back into the vial or replace the sheath on the needle and tap the syringe to dislodge any air bubbles. Expel air.	To reduce risk of contamination of practitioner. To prevent aerosol formation.
16.	Attach a new needle and discard used needle into appropriate sharps container or attach a plastic end cap.	To reduce the risk of infection. To avoid possible trauma to the client if the needle has barbed. To avoid tracking medications through superficial tissues. To ensure that the correct size of needle is used for the injection.

Insertion of a sub-cutaneous cannula

	Action	Rationale
1.	Explain the procedure to the client and their relatives and carers.	To ensure understanding and obtain valid consent.
2.	Wash your hands.	Infection control.
3.	Clean skin with an alcohol-impregnated swab and allow to dry for a minimum of 30 seconds.	To ensure that the skin around the insertion site is clean.
4.	Put on non-sterile gloves.	To maintain Infection control.
5.	Remove clear needle cover and hold the sub-cut cannula by grasping the side wings and pinching firmly.	To ensure that you have a firm grip of the sub-cut cannula and that it is ready for insertion.
6.	Pinch the skin between and forefinger.	To ensure sub-cut tissue is identified.
7.	Insert the cannula at a 45-degree angle.	
8.	Cover the insertion site and the wings of the sub-cut cannula with a transparent semi-permeable dressing (for example tegaderm).	To ensure that the sub-cut cannula is secure.
9.	Hold the wings of the sub-cut cannula firmly and remove the introducer (needle) by pulling back in a smooth single movement. This should leave the injectable bung in-situ.	To allow administration of the medications.
10.	Dispose the needle in the sharp's container provided.	To maintain health and safety.
11.	Document date, time and place of cannula insertion in the client's care records.	To maintain good care records.
12.	Check that the client is comfortable.	Maintain client comfort.
13.	Wash hands.	To maintain infection control.

15. Aftercare

Monitor the client's reaction and provide reassurance if required. For clients requiring frequent subcutaneous injections, the site is changed each time.

Acacium Group employees should record any side effects or negative reactions to the injected drug and inform the GP as appropriate.

16. Associated Policies / SOPs

Policies
CLIN 03 Medicines Management Policy
CLIN 06 Consent Policy
CLIN 12 Safe use of Medical Devices Policy
CLIN 14 Health Records Management Policy
Infection Control Policy
Documentation

SOPs
SOP Meds 01 Controlled Drugs
SOP Meds 09 Removal of Medicines from Client's Home
SOP Meds 18 Administration of Epi-Pen, Anapen and Emerade
SOP Meds 19 Self Administration of Medicines
SOP Meds 20 Oxygen Therapy: Adult and Child
SOP INF CONT XXX Needlestick injury Community

17. References

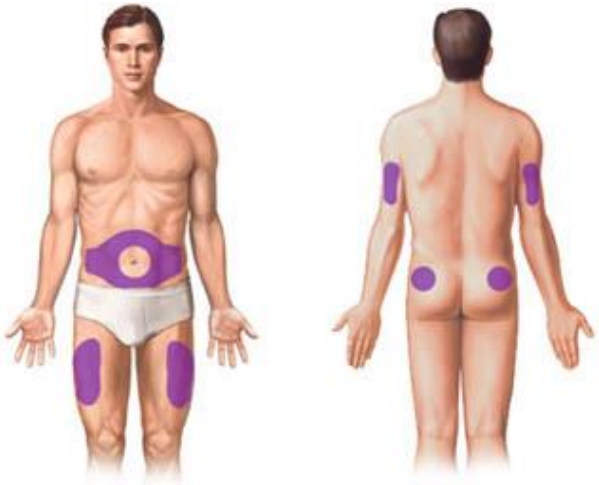
- NMC 2018 Guidelines for records and record keeping (this is updated version) Procedure no 4
- The Royal Marsden 2015 Manual of Clinical Nursing procedures 9th Edition (this is updated version)
- CQC Medicines training and competency in adult social care settings – this relates to appropriate training, support and competencies making care safe, high quality and consistent (Training is referred to in all SOP's)
- NICE Guidance NG67 Managing medicines for adults receiving social care in the community March 2017 – this relates to general medicines management and details all processes
- C Fonzo-Christe, C Vukasovic et al, Palliative medicine 2005:19(3), Sage
- Subcutaneous injection sites, www.drugs.com
- Immunisations core training programme, Health Protection Agency 2008
- Workman A et al, 1999, Safe injection techniques, Nursing Standard, 13 (39) 47 – 52
- The Green Book, Department of Health, 2006
- Giving subcutaneous injections, 2009, Great Ormond Street Hospital, http://www.gosh.nhs.uk/gosh_families/information_sheets/medicines_subcutaneous_injections/medicines_subcutaneous_injections_families.html
- **Shepherd E** (2018) Injection technique 2: administering drugs via the subcutaneous route. *Nursing Times*

Appendix A: About Acacium Group

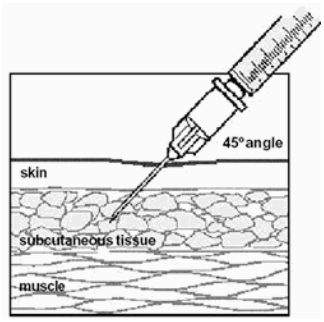
Acacium Group consists of a number of trading companies, each providing services within core niche areas of the health and social care industries. Therefore, as this document is a Group Policy, the Policy herein applies to all trading companies detailed below:

pulse Part of Acacium Group	Thornbury Nursing Services Part of Acacium Group
Thornbury Community Services Part of Acacium Group	Scottish Nursing Guild Part of Acacium Group

Appendix B: Preferred sites for subcutaneous administration



Angle of subcutaneous administration



Administration in an infant