

# **NHS Lanarkshire**

**Care Homes Protocols Group**

**Sub Cutaneous Fluids in the**  
**Community Setting**  
**Guidelines**

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## **INTRODUCTION**

Hypodermoclysis is the term used for the administration of subcutaneous fluid.

The low technology nature of the method is well suited to less acute settings.

It also has great potential for use with people who have difficulty swallowing or other problems that make them prone to dehydration but for whom hospital care is not appropriate.

It has been recognised that there is the potential for staff working in community settings, including Community Nurses, Community Hospitals and Care Homes to care for residents/patients receiving subcutaneous fluids.

The attached guidelines have been developed to promote safe practice and standardise an approach that will ensure that the most appropriate and timely care is given to residents/patients identified as needing this type of intervention.

## **STATUS**

This document was produced by NHS Lanarkshire Care Home Protocols group.

The Group membership includes General Practitioners, Geriatricians, Pharmacists, Care Home Liaison Staff (Adult, Adult Mental Health and Physiotherapist) Social Work Management, Care Home Managers and representation from the Care Inspectorate.

## **SCOPE OF DOCUMENT**

This document is relevant to GPs, Registered Nursing staff and Hospital at Home Clinicians working in Community, Community Hospitals and Care Homes for the older adult within the catchment area covered by NHS Lanarkshire.

## **DEFINITION**

Subcutaneous fluid administration or hypodermoclysis can be defined as the infusion of a solution into the subcutaneous tissue to supply the patient with continuous fluid and /or electrolytes.

## **STAFF AUTHORISED TO ADMINISTER**

Registered Nurse or Doctor

## **ROLE OF THE PRACTITIONER**

Registered Nurses / Practitioners must be familiar with and demonstrate an understanding of the following documents:

Registered Nurses/practitioners must adhere to/demonstrate an understanding of

- NMC (2015) The Code
- NMC (2004) Standards for Competence for Registered Nurses
- NMC (2008) Standards for medicines management
- RCN (2005) Standards for Infusion Therapy, London
- National Infection prevention and Control Manual
- HCPC (2016) Standards of Conduct, Performance and Ethics

## **INDICATIONS FOR USE**

To supplement fluid intake in those who struggle to take adequate fluid orally or those who have excessive gastro intestinal fluid loss from diarrhoea and / or vomiting.

Where short term use can prevent admission to an acute setting. (For example, to supplement hydration through an episode of intercurrent illness)

In the palliative care setting, to alleviate the sensation of thirst when oral hygiene proves insufficient – please refer to [Scottish Palliative Care Guidelines](#)

**‘ If a patient is felt to be in the last few days of their life from a terminal illness, it is unlikely that subcutaneous fluid administration would be appropriate. A reduced need for fluid intake is a normal part of the dying process. This can cause distress to family members however and often requires sensitive explanation from Health Care Professionals. It is unlikely that the individual is experiencing thirst. Good mouth care is often more important than artificial hydration and family members can be encouraged to participate in this caring role if they wish.**

**If the patient is complaining of thirst and cannot manage an adequate oral intake, the use of subcutaneous fluids should be considered.**

If the dying process is prolonged over several days to weeks, the use of subcutaneous fluids should be considered, as dehydration may contribute to symptom burden and accumulation of medications.

If subcutaneous fluid therapy is initiated near the end of life, there is a risk that it will accumulate in the lungs and worsen shortness of breath. It should be stopped in such circumstances.

The use of subcutaneous fluids in palliative care patients must be considered on an individualised basis. The on-going administration should be reconsidered on a daily basis. The views and wishes of the patient and carers should be taken into account, and sensitive communication is required to ensure all understand the goals of care.'

**NOTE: The decision to start fluids will ultimately be based on the clinical judgement of the GP or Hospital at Home Clinician , taking into account views of patient, relatives and the wider multidisciplinary team. Prescribers should note that sub cutaneous fluid administration of IV fluids is an unlicensed procedure (or "off-label" use). See Appendix 5 for more information.**

## **CONTRAINDICATIONS**

Severe dehydration for patients in whom more aggressive intervention would be appropriate.

Where precise control of volume and rate of infusion is essential and fluid balance is clinically important.

Patients with fluid overload or marked oedema.

## **RELATIVE CONTRAINDICATIONS**

(Please consider on a case by case basis the Risk versus Benefits – additional support can be sought from the relevant specialty eg Renal, Cardiology, Palliative medicine)

Patients with coagulation defects.

Patients with severe and unstable cardiac failure or who are fluid restricted.

Patients with severe renal failure or on haemodialysis.

As a treatment for hypercalcaemia.

## **EQUIPMENT (Guidelines for accessing equipment see Appendix 2)**

Fluid regime / prescription chart signed by GP/Hospital at Home Clinician (see Appendix 3)

Fluid balance chart

Saf –T –Intima cannula 22g

Standard giving set (single chamber – 20 drops per ml)

Clear occlusive dressing

Gloves

Infusion solution

Drip stand

Sharps box

## **SITES FOR INFUSION**

**\*Rotate sites to minimise tissue damage\***

Abdomen

Chest

Lateral aspect of the upper arm or thigh

## **SITES TO AVOID**

Lymphoedematous tissue

Skin recently irradiated

Area with a rash of any type

Sites over bony prominences

Sites near joints

Sites over tumours

Areas of broken, infected or inflamed skin

## **MONITORING SITE**

The infusion should be re sited if any of the following occur.

- Patient complains of pain at the administration site.
- Skin is red and/or inflamed.
- Skin is white and/or hard.
- Blood is present in the giving set or Butterfly.
- Needle becomes dislodged

Occasionally local oedema can occur at the site. Gentle massage of the area can increase absorption but if condition persists re site infusion.

Monitoring should be carried out 4 hourly. In community settings, monitoring should be carried out twice daily. Carers should be advised on what to look for (**Appendix 6 for Care Homes, Appendix 8 for patient's own home**) and contact numbers given should a problem arise before the nurse's next visit.



## **RECOMMENDATIONS FOR INFUSION**

Alternate Sodium chloride 0.9% and Dextrose 5%

Duration of infusion 8 - 12 hourly per 500ml bag

8hrly = 15 drops per minute

12hrly = 10 drops per minute

It is recommended that there is no more than 3 days of treatment without GP/ Hospital at Home Clinician review.

GP/Hospital at Home Clinician should review patient before end of treatment to assess effectiveness and allow time to arrange further supplies if ongoing treatment is needed.

**For guidance on calculation of drip rate (see Appendix 4)**

## PROCEDURE FOR SUBCUTANEOUS INFUSION

PROCEDURE	RATIONALE
<p>1. Explain procedure to patient and relevant others.</p> <p>Ensure valid consent for procedure. Record consent / compliance in care plan. Check prescription</p>	<p>Explanation provides reassurance and facilitates co-operation.</p> <p>Administration of medications NMC</p>
<p>2. Ensure patient comfort.</p>	<p>To facilitate the procedure and reduce anxiety.</p>
<p>3. Wash hands as per infection control policy and apply gloves.</p>	<p>To reduce risk of cross infection.</p>
<p>4. Attach infusion set to bag of fluid and prime.</p> <p>Note: Saf-t-Intima needle does not require priming</p>	<p>To ensure no air enters the infusion set or the patient.</p>
<p>5. Grasp the skin firmly</p>	<p>To elevate subcutaneous tissue and ensure ease of insertion.</p>
<p>6. Insert needle at 45° angle in chosen site. For Saf-t-Intima see Appendix 1.</p>	<p>To increase absorption into subcutaneous tissues.</p>
<p>7. Apply transparent occlusive dressing to cannula</p>	<p>To reduce risk of infection and allow observation.</p>
<p>8. Set correct rate as prescription, using formula on prescription chart.</p>	<p>To ensure fluid is delivered according to prescription.</p>
<p>9. Dispose of sharps and waste as per infection control guidelines, remove gloves &amp; wash hands.</p>	<p>To reduce the risk of needlestick injury and infection.</p>
<p>10. Document accurately on s/c fluid px chart, house held and electronic records</p>	<p>To assist effective communication. To comply with record keeping policy. NMC guidelines- admin of med</p>
<p>11. Infusion site and rate of administration should be checked 4 hourly.</p>	<p>To observe for inflammation and ensure correct rate of administration.</p>

## **APPENDIX 1**

### **Procedure to insert Saf –T–intima Cannula**

1. Wash hands as per hand hygiene policy.
2. Explain procedure to patient and gain consent.
3. Put on gloves.
4. Remove and dispose of clamp on the BD Saf-T-Intima™ to avoid accidental occlusion.
5. Rotate white safety barrel to loosen needle.
6. Remove clear needle cover.
7. Grasp pebbled side wings, pinching firmly.
8. Pinch skin between thumb and forefinger to ensure SC tissue is identified.
9. Insert cannula at a 45-degree angle.
10. Cover the insertion site and wings with a transparent semi-permeable dressing e.g. Tegaderm.
11. Hold wings of the cannula firmly and remove introducer (needle) by pulling back in a smooth single movement. This should leave an injectable bung in-situ.
12. Dispose of needle in sharps container as per local policy.
13. Document date, time and place of cannula insertion in nursing notes.
14. Wash hands as per hand hygiene policy.

### **Notes:**

- Check site 4 hourly (twice daily in community setting) for erythema, pain or swelling. Document findings of check on monitoring sheet.
- If insertion is unsuccessful use another cannula. Do not reinsert.
- If blood appears in the cannula insert a new one in another site.

**APPENDIX 2**

**Guideline for the Distribution of Equipment and Fluids to Care Home Staff/community staff for the Administration of subcutaneous fluids**

The following guideline should be used when a patient in Community or a Care Home is identified as requiring subcutaneous fluids. This guideline supports the protocol available to Community staff and Care Home staff and relates to the supply of equipment only.

1. Patient identified by GP/hospital at home clinician requires subcutaneous fluids (using policy agreed by primary care).  
The S/C fluids should be started as early as is practicable (it is rarely indicated in the middle of a night).
2. Care home/ Community Staff contacts A&E department and arranges collection of equipment and will include the faxing of a subcutaneous fluid instruction form signed by the GP/ Hospital at Home Clinician. (Hospital at Home Clinicians and Community Hospital Staff will have their own supplies)
3. A&E checks Care Home is on the list of Lanarkshire homes.
4. Care Home arranges collection of the equipment. All equipment should be sent in a sealed bag and the care home should confirm receipt by phone. Equipment should include 3 x butterfly cannulae (Saf T Intima), 2 giving sets, 3 bags of saline, 3 bags of dextrose and 4 transparent occlusive dressings .
5. Equipment given to the Community Staff/Care Home staff is signed out by a registered A&E nurse and signed as received by whoever is collecting the equipment (this is documented in a book held within the A/E department).
6. A&E department sends an e-mail to designated site pharmacist weekly informing them of what has been used for audit purposes.

<b>Hairmyres A and E</b>		<b>Monklands A and E</b>		<b>Wishaw A and E</b>	
Fax	01355 585690	Fax	01236 713153	Fax	01698 366634
Telephone	01355 584700	Telephone	01236 712209	Telephone	01698 366630

**APPENDIX 3**

**Subcutaneous Fluid Prescription**

Name of Home				Name CHI Number				
				DOB			Room	
Date	Prescriber's Signature	Fluid	Volume	Duration	Serial No Batch No	Given by	Start	Finish
		Normal Saline	500ml					
		Dextrose 5%	500ml					
		Normal Saline	500ml					
		Dextrose 5%	500ml					
		Normal Saline	500ml					
		Dextrose 5%	500ml					

500ml administered 8-12 hrly  
 No more than 2litres in 24hours  
 No more than 2litres through one site  
 Review patient before 72hours to assess effectiveness  
 and allow time to access more supplies if needed

Rate of flow =  $\frac{\text{Volume of fluid(ml) x 15}}{\text{Duration (mins)}}$

Approximate rate for 500ml  
 8hr = 15 drops per minute  
 12hr = 10 drops per minute

(Standard fluid giving set 1 ml = 15 drops)

#### APPENDIX 4

Flow rate to work out drips delivered per minute to transfuse 500mls over varying periods of time via standard giving set (15 drops/ml).

Vol (mls)      x      **Rate (drops per minute)**

**Time (mins)**

500 (mls)      x      **15 drops per ml**

**4hrs**              x      **60 mins**

=      **7.500 drops in 500 mls**

**240 minutes in 4hrs**

=      **31 drops per minute**

**Rate**              =      **drops/minute**

**Volume**          =      **mls/drops**          =      **15 drops in one ml**

**Time**              =      **hrs/mins**              =      **60 mins in one hour**

Drops per minute via standard giving set delivering 500mls:

**4 hours = 30**

**5 hours = 24**

**6 hours = 20**

**7 hours = 19**

**8 hours = 15**

**12 hours = 10**

## APPENDIX 5

### **Subcutaneous Fluids**

#### **Prescribing Notes:**

Subcutaneous fluid administration of IV fluids is an unlicensed procedure (or being used “off-label”) which can be carried out in the community setting for the subcutaneous replacement of fluids. The fluids used for subcutaneous fluid replacement have a product specific license for intravenous route only. Therefore the use of sterile fluids for subcutaneous use must be considered an unlicensed procedure (MHRA 2010), and therefore use must be in line with the principles of the [NHS Lanarkshire Policy for the Availability of Unlicensed Medicines](#). Risk assessment is an integral part of the approval process for the use of unlicensed medicines and off label medicines and is a fundamental part of the policy governance arrangements.

Although not applicable in all cases, [Scottish Palliative Care Guidelines](#) have guidance on the use of sub cut fluids in end of life care.

Due to the lack of any clear evidence, decisions to initiate subcutaneous hydration rests with the individual clinician and will vary from patient to patient depending on the estimated burden to benefit balance. Treatment should always be in conjunction with other quality care. Should the clinician decide to prescribe they should:

- Be conversant with available evidence
- Ensure the patient or welfare proxy is made aware of the off-license status of the treatment as it forms part of the consent required for the procedure

As with all prescribing, prescribers are responsible for the use of a medicine and the patient’s welfare and in the event of adverse reactions may be called upon to justify the decisions that they have made. In the case of unlicensed/ off label medicine prescribing it is important to be aware that information regarding efficacy and safety may be less robust and this should be considered where there is an alternative, more appropriate treatment option.

## Appendix 6

### Responsibilities for administration of Subcutaneous fluids in a **Care Home without Registered Nurses employed**

#### Prescriber Responsibilities

- To obtain consent for administration from resident or recognised proxy
- To ensure all NHSL documentation completed

#### Community Nurse/ Hospital at Home Clinician responsibilities

- To obtain required prescription
- To commence infusion
- To visit at least twice daily to monitor infusion and effects of infusion
- To ensure contact details of the practitioner (having been agreed by community nursing team and hospital at home team) overseeing the procedure is available for 24 hour period for staff to call
- To ensure care staff are aware of infusion and when to call responsible community nurse/hospital at home clinician (having been agreed by community nursing team and hospital at home team)
- Update MDT notes including:
  1. Reason for infusion
  2. Review date /time
  3. Responsible nurse /doctor

#### Carer responsibilities

- To obtain equipment and fluids required from A&E
- To ensure all staff on duty are aware of the infusion
- To complete fluid balance chart
- To check infusion hourly for:-
  1. Fluid remaining in bag (call responsible community nurse/hospital at home clinician if bag empty /almost empty)
  2. Signs of redness /swelling /leakage around infusion site
  3. Complaints of pain around infusion site
  4. Needle being dislodged
- Turn off roller clamp to stop infusion when bag empty

**Turn off Infusion and Contact community nurse/hospital at home clinician responsible**





## Appendix 8

Responsibilities for administration of Subcutaneous fluids in a **patient's own home**

### Prescriber Responsibilities

- To obtain consent for administration from patient or recognised proxy
- To ensure all NHSL documentation completed

### Community Nurse/ Hospital at Home Clinician Responsibilities

- To obtain equipment and fluids required
- To obtain required prescription
- To commence infusion
- To visit at least twice daily to monitor infusion and effects of infusion
- To ensure contact details of the practitioner (having been agreed by community nursing team and hospital at home team) overseeing the procedure is available for 24 hour period for carer to call
- To ensure carer is aware of infusion, how to monitor infusion and when to call responsible community nurse/hospital at home clinician (having been agreed by community nursing team and hospital at home team)
- Update MDT/electronic notes including:
  1. Reason for infusion
  2. Review date /time
  3. Responsible nurse /doctor

### Carer responsibilities

- Agrees to monitor infusion by checking infusion hourly for:-
  - 1.Fluid remaining in bag (call responsible community nurse/hospital at home clinician if bag empty /almost empty)
  - 2.Signs of redness /swelling /leakage around infusion site
  - 3.Complaints of pain around infusion site
  - 4.Needle being dislodged
- Turn off roller clamp to stop infusion when bag empty

<p><b>Turn off Infusion and Contact community nurse/hospital at home clinician responsible</b></p>
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