Policy for the Administration of Subcutaneous Fluids (Hypodermoclysis) to Adults in Palliative Care and End of Life Care.

Version:	2
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Applicable to :

The Policy will apply to all staff as identified below who administer subcutaneous fluids including but not limited to:-

- Registered Nurses
- Registered Paramedics
- Non-Medical Prescribers

Executive Summary

The policy has been developed to enable community clinicians and non-medical prescribers to administer subcutaneous fluids to clinically suitable service users at the end of life, within the community setting. These service users may be in their own home or in a bedded unit.

Implementation

Key items to note:

- Subcutaneous fluids must be prescribed by a Doctor or non-medical prescriber on a community prescription form.
- Service user must consent to treatment.
- Only registered clinicians and non-medical prescribers that have read the policy and are competent in the procedure may administer subcutaneous fluids in Palliative and End of Life care (PEoLC).
- Subcutaneous fluids are suitable for the palliation of symptoms of thirst or other symptoms of mild dehydration in PEoLC and should only be prescribed for short term symptom relief, NOT routinely.
- Subcutaneous fluids are NOT suitable for severe dehydration with electrolyte imbalance.
- The service user must be monitored for the first 30 minutes from start of infusion and at every visit, ideally 6-8 hours, but no longer than 12 hours (in keeping with NG 31, NICE 2015), for the first 24hrs.
- The prescriber, or appropriate designated prescriber, must review the service user within 12 hours of commencement and then weekly as part of a multidisciplinary team approach to review ongoing need, or as dictated by the service user's condition.
- Referral must be made through Sirona Single Point of Access

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Consultation Process

Key individuals involved in developing the document

Name	Designation
Dawn Stevens	End of Life Nurse Specialist
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Circulated to the following individuals/groups for consultation

Name of Individual & designation	Date approved
St Peters Hospice	23 March 2022
Representatives across Sirona as part of a subcutaneous fluids task and finish group.	1 April 2022
Representatives for OOH	

Details of approval by Lead Director

Director	Designation	Date approved
Mary Lewis	Director of Nursing	18 July 2022

Circulated to the following Committee for Ratification

Name of Committee(s)	Date ratified
Professional Council	18 July 2022
Medicines Optimisation Committee	17 May 2022
End of Life Steering Group	15 July 2022

Version Control

Version	Updated By	Updated On	Summary of changes from previous version
1			New Policy
2	K Smith-Bishton		Scope amended to include exceptional circumstances use for someone who may not be defined as palliative or end of life care. Amendment to page 41, pathway terminology changed from MDT to ‘New subcut fluids’ and addition of process for urgency of referral.

Contents

1. INTRODUCTION

Hypodermoclysis is a term used for administration of fluid by the subcutaneous route. It is a relatively safe, simple and cost effective technique suitable for use in the community with a range of adult service user's. It is a reliable method for maintaining adequate hydration in service users unable to take adequate fluids orally. This technique should not be used as a substitute for intravenous fluids in severely dehydrated service users.

Hypodermoclysis is generally limited to Palliative and End of Life care (PEoLC). It is not recommended for service users needing rapid administration of fluids, and is also contraindicated in service users with clotting disorders or who have problems with fluid overload.

Hypodermoclysis is an intervention which can be carried out by community nursing staff for appropriate service users thus preventing unnecessary admissions to hospital.

Subcutaneous fluids are often chosen in preference to intravenous fluids in the community. This is because:

- Venous access can be difficult in end of life care or frail older people
- Confused service users can find peripheral IV lines distressing
- Insertion of butterfly needle is less distressing for the service user than an intravenous cannula.

Advantages of subcutaneous fluid infusion include:

- Side effects are few and generally not significant
- Can be administered in almost any setting, reducing the need for hospitalisation
- Less likely to cause fluid overload or pulmonary oedema
- Allows greater service user mobility and comfort
- Is easier to maintain, resite and manage
- Requires less nursing time / intervention
- Low cost
- Reduces the risks associated with intravenous access

Disadvantages of subcutaneous fluid infusion include:

- Limitations on type and amount of fluids which can be administered by the subcutaneous route
- Possible oedema at infusion site
- Possibility of local reactions

2. PURPOSE

This policy has been developed to ensure that staff providing PEoLC explore the complexity of the medical and ethical issues surrounding the use of subcutaneous infusion.

The purpose of this policy is to establish safe and consistent practice in the prescribing, acquisition, preparation, administration and monitoring of fluids administered subcutaneously in community settings, to reduce risks, minimise errors and maintain the safety of service users.

Referrals for subcutaneous infusion are most likely to come from Hospital or Hospice, but they may also come from GPs.

The use of subcutaneous fluids are intended to correct mild to moderate dehydration, in those who are able to take some oral fluid but not sufficient amounts to correct deficiency. Subcutaneous fluids can also be used to maintain hydration in service users who are unable to take adequate fluids. The subcutaneous route may be preferable in service users with impaired venous access or those service users where it is impractical to insert a cannula for intravenous fluids.

2.1 This policy and associated procedures:

Outlines the responsibilities of health professionals with regard to their role in the prescribing, preparation and administration of subcutaneous fluids.

Enables healthcare practitioners to consistently assess whether subcutaneous fluids are appropriate for service users in the community setting in PEoLC or supportive care.

Provides up-to-date, evidence-based guidance and a knowledge base to support practitioners involved in subcutaneous administration of fluids and guide clinical practice.

Provides guidance on the ethical issues associated with subcutaneous infusion in PEoLC.

Provides a detailed procedure on the technique.

3. SCOPE

This policy applies to all the clinical staff involved in prescribing, administering and maintaining subcutaneous fluids in PEoLC and supportive care, as part of their role within Sirona care and health.

It provides guidance to registered clinicians and non-medical prescribers who, following an assessment of the service user's medical needs have been prescribed fluids to be administered via the subcutaneous route.

Service user's most suitable for subcutaneous fluids are those are thought to be in their last weeks of life where no active intervention is available to treat the cause of their deterioration.

In exceptional circumstances it may be necessary to use this policy to support service users who require artificial hydration due to an acute episode and management of reversible causes, such as diarrhoea or infection, where peripheral venous access has been unsuccessful in the community setting and admission to hospital is declined or not appropriate.

4. DEFINITIONS

Hypodermoclysis - When fluids are administered by infusion into the subcutaneous tissues, it is a process known as hypodermoclysis (Royal Marsden 2020). Inserting the Saf-t-intima giving set into the subcutaneous layer of skin, an extensive network of lymphatic and blood vessels allows the fluids to be readily absorbed (Bowen et al 2014).

Subcutaneous – The skin has three main layers; the epidermis, dermis and subcutaneous layer. The subcutaneous layer under the dermis consists of connective tissue and fat (Health and Safety Executive (2022).

End of Life Care - End of life is defined as the last year of life, may include those whose death is imminent and those with advanced, progressive, incurable conditions, general frailty and co-existing conditions (GMC 2010).

Palliative care - Palliative care is an approach that improves the quality of life of patients (adults and children) and their families who are facing problems associated with life-threatening illness. It prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual (WHO 2020).

5. RESPONSIBILITIES, ACCOUNTABILITIES AND DUTIES

The Board

The Board remains accountable for health, safety and welfare of all service users.

Directors

The Medical Director and Director of Nursing will ensure all staff involved in end of life care are aware of this policy, ensure adequate training is given to allow staff to implement this policy safely, inform senior management if the policy is not being implemented appropriately.

Medicines Management

Medicines Management are responsible for review of clinical incidents reported in relation to the administration of subcutaneous fluids.

Team Managers and Advanced Clinical Practitioners

All clinicians who are able to administer subcutaneous fluids are accountable for their practice and must ensure they maintain their competence in this skill. If they do not use the skill for an extended period of time, they must update their competence appropriately. Team managers should make sure:

- Staff have read and understood the policy, which is available on the intranet.
- Staff have the necessary training and mentorship to complete competencies. A competent practitioner can mentor staff.
- Incidents and near misses involving subcutaneous fluids are reported using Ulysses, the Sirona adverse event reporting system. This can be done via the Intranet home page.
- Any suspected adverse drug reactions are reported to the prescriber.
- Medicines are handled in accordance with all medicines management policies and that the necessary equipment and supplies are available.

Clinicians

Clinicians are required to:

- Ensure that they are aware of the contents of this policy and supporting policies and SOPs.

- To identify appropriate training and development requirements, requesting training to develop skills within this policy.
- Deliver quality care and ensure that the needs of the service users are identified in accordance with best practice guidelines.
- To inform via line management the Medical Director and Director of Nursing / Director of Operations if the policy is not being implemented appropriately or requires amendment.
- Assess the service user for appropriateness and duration of the prescribed therapy.
- Ensure that the service user or service user's advocate consents to the treatment plan.
- Ensure that the service user is monitored appropriately during treatment, with regard to the rate of administration, adverse effects and integrity of the subcutaneous tissue.
- Ensure that the necessary records are kept.
- At all times adhere to the Nursing and Midwifery Council Code of Professional Conduct and Guidelines for the Administration of Medicines.
- Registered Health and Care Professionals (HCP's) who have the appropriate training and are sufficiently experienced to undertake this procedure must also adhere to their registered HCP body.
- Understand they are professionally accountable for their practice and must work within their competence.
- Ensure that they have received the necessary training in relation to the solutions used and the subcutaneous fluids administration procedures.
- Ensure that they maintain and update their professional knowledge and skills in the relevant area of practice.
- Ensure that incidents and near misses involving subcutaneous fluids are reported using Ulysses, the Sirona adverse event reporting system.

<u>Prescribers</u>

It is the responsibility of the doctor or non-medical prescriber to;

- Prescribe the subcutaneous fluids appropriately.

- Ensure that the fluid, volume, concentration and rate are appropriate with regard to the integrity and condition of the service user's subcutaneous tissue.
- The doctor or non-medical prescriber must review the service user within 12 hours of commencement (NICE 2015) and then every 24hours or sooner if dictated by the service user's condition. If this is not possible it must be agreed by the MDT overseeing the service user's care to nominate a practitioner with sufficient seniority and experience such as an Advanced Clinical Practitioner, Clinical Nurse Specialist, General Practitioner or Advanced Nurse Practitioner to undertake this review.

6. ETHICAL CONSIDERATIONS

Ethical and medical consideration in the assessment of service users in which subcutaneous fluids may be considered an appropriate treatment in PEoLC;

- The primary goal should be the comfort and quality of life of the service user at the end of life. The service user's condition, prognosis and wishes should be considered.
- The perception by family members that dehydration will cause distress to the service user should be considered and discussed.
- The ethical basis of clinical decision-making is the assessment of the risk/benefit ratio.
- Careful, considered discussions should be conducted with the prescriber, the service user and the family, where appropriate. Discussion should include limitations regarding subcutaneous fluid administration given that it may take place in the service user's home.
- Consideration to be given to regular and effective mouth care to reduce symptoms of thirst rather than moving directly to subcutaneous fluids.

6.1 Supporting Evidence

Those service users approaching the end of their life should have their hydration status assessed regularly, in the last days and weeks, preferably daily and reviewed for the need of starting clinically assisted hydration, respecting their preferences and wishes. Risk and

benefits should be discussed with the dying person and those important to them. Clinically assisted hydration may relieve distressing symptoms or signs of dehydration but may cause other problems. It is uncertain if clinically assisted hydration will prolong life or extend the dying process. It is uncertain if not giving clinically assisted hydration will hasten death (NICE 2015).

There is limited evidence to help decide whether or not the provision of fluids by subcutaneous infusion is beneficial. Therefore, it is recommended that the risks and benefits of subcutaneous infusion should be considered and discussed on an individual basis (General Medical Council 2010).

One qualitative study showed service user and families perceptions that hydration had enhanced quality of life and comfort (Cohen et al, 2012). However, a review of 6 studies examining the effect of artificial hydration on the quality and length of survival of service users receiving palliative care showed no difference in outcomes between artificial hydration and no hydration (Good et al, 2014).

Research has shown that 50% of service users within the final 2 days of life have evidence of mild to moderate dehydration (Watson et al, 2011). However, there is no clear evidence that subcutaneous hydration helps to treat thirst. It is suggested that the symptom of thirst can often be relieved by regular and effective mouth care (Suchner et al, 2019).

The National Council for Palliative Care publication 'Artificial Nutrition and Hydration Guidance in End of Life Care for Adults', May 2007, stated "In assessing whether to give artificial nutrition or hydration, each case needs to be individually assessed to determine what is in that person's best interests. Best interests decisions will include an assessment of the benefits and burdens to the service user".

Studies suggest that terminally ill cancer service users may achieve adequate hydration with much lower volumes of fluid than those required for the average medical service user.

A natural consequence of the process of dying is a reduction in oral intake and dehydration in service users who are terminally ill may be due to several causes. It is unclear whether dehydration adversely affects the service user's quality of life or well-being. Many dying service users are not symptomatic from dehydration but there may be others who do manifest symptoms.

The symptom that most service users, carers and clinicians worry about is thirst and dry mouth. The evidence of thirst and dry mouth in the dying service user is often associated with multiple factors including drug therapy; therefore these symptoms may be relieved by a change of medication and good mouth care.

Some practitioners and family will request subcutaneous fluid rehydration for the terminally ill service user. Whilst subcutaneous rehydration may be appropriate, it is essential to be aware that if the service user is dying, hydration will not affect survival and may lead to distressing respiratory secretions. Artificial hydration will not improve a dry mouth. Good mouth care is essential to relieve a dry mouth (www.palliativecareguidelines.nhs.uk).

Administration of fluids in service users who have cardiopulmonary, renal or hepatic failure may contribute to increased pulmonary oedema, pharyngeal secretions, peripheral oedema, ascites and vomiting and may be an unnecessary intrusion.

A medical assessment is needed to ensure that service users who require fluid replacement for correction of specific problems are identified and the most appropriate route for fluid administration is established.

7. CONTRA-INDICATIONS

- Severe dehydration – subcutaneous fluids should not be used as a substitute for intravenous fluids
- Severe renal or hepatic failure
- Service users on renal dialysis
- Service users where precise control of fluid balance is clinically important
- Service users with severe electrolyte imbalance
- Emergency situations e.g. physiological shock, circulatory failure
- Service user known to have a clotting disorder
- Fluid overload e.g. congestive cardiac failure, marked oedema
- Where service user clinically requires intravenous treatment
- Service users who express a wish for more active medical management e.g. intravenous fluids
- Service users requiring more than 2 litres of subcutaneous fluid in 24 hours
- Poor tissue perfusion
- For medication induced dry mouth
- Confusion where infusion lines may be removed

8. CAUTIONS

- Service users with platelet or coagulation defects, which may predispose to bleeding at cannula sites
- Avoid previously irradiated skin and sites near joint, bony prominences
- Avoid areas of oedema and ascites.

9. CLINICAL INDICATIONS FOR THE USE OF SUBCUTANEOUS FLUIDS IN END OF LIFE CARE

Subcutaneous infusion may be appropriate for PEoLC service users, who show symptoms of thirst or other symptoms of dehydration and are unable to remedy with oral fluids.
Thirst is described as the desire to drink water; it is a subjective multi factorial symptom. Symptoms are: dry mouth and throat, thick saliva, dry lips (Leiper 2005).
The service user's mouth should be assessed regularly and a mouth care regime agreed as oral cavity dryness is often described as the most distressing symptom.

The following should be considered before subcutaneous fluids are prescribed:

- The service user's condition, prognosis and wishes.
- Service user's cognition should be considered and if family members and / or carers can remain with the service user throughout treatment.
- Implementation of care plan detailing length of treatment, review and stop date.
- Consultation regarding the best interests of the service user should be made with family / next of kin where service users are unable to make decision or communicate their needs.
- The decision to give subcutaneous fluids in any situation is one that needs careful consideration and should involve the service user and family /carers. Service users and families should understand why the fluids are being used and that if the aims of treatment are not met the treatment should be discontinued after further discussion.
- The difficulties of withdrawing treatment once started should be taken into account when making the decision to start.
- Open and honest conversations must be had with the service user, their carer, those important to them and the multidisciplinary team, to confirm clear review timescales

with the appropriateness for subcutaneous fluids being reassessed every 24hours (Bowen et al 2014), or sooner if the service users' condition indicates.

Service users for whom administration of subcutaneous fluids may be considered are:

- When the service user requires fluids to supplement their oral intake and oral intake is not sufficient to achieve hydration.
- Service users who are unable to take adequate fluids orally and are thirsty and have a persistent dry mouth despite exemplary mouth care.
- Acute problems such as mild infections or vomiting and diarrhoea where an adequate fluid intake cannot be maintained.
- Mild or moderate dehydration where administration of subcutaneous fluids could potentially prevent the need for hospitalisation.
- Obstruction in PEoLC.
- Service users who have swallowing problems who are not actively dying where fluids can actually prevent dehydration.
- Impaired intravenous access.
- Dehydration contributing to poor renal clearance of opioids which are causing symptoms of toxicity, where intravenous fluid replacement is not appropriate or possible.
- Inability to swallow e.g. advanced head and neck tumour, unsuitable for intravenous fluid replacement, gastrostomy or other artificial feeding tube.
- Confusion and restlessness can be occasionally aggravated by dehydration. However, quality evidence for use of hypodermoclysis in these service users is lacking.

10. CONSENT

- When considering clinically assisted hydration for a service user in PEoLC an individualised approach must be taken, including whether they have expressed a preference for or against clinically assisted hydration.

- Service users and their families need to have a clear understanding of why subcutaneous fluids are being used and how they will benefit the service user, and that the fluids will be reviewed regularly. If the aims of treatment are not met it may be discontinued following further discussion.

- The service user has the right to refuse treatment with fluids even if it is considered of clinical benefit.
- For further advice see the Consent Policy (Obtaining Service User Consent for Examination, Treatment and Personal Care 2020).
- Informed consent must be sought before initiating treatment so that the service user fully understands the procedure and any associated risks including the off licence use of fluids for subcutaneous infusion.
- In situations where the service user's ability to make decisions regarding this procedure is impaired, the service users Mental Capacity should be assessed in keeping with Sirona's Mental Capacity Policy and determination of best interests must be followed.
- A relative or friend may have lasting power of attorney to make health decisions for the person but this is only valid it is has been registered with the Office of Public Guardian and must be seen by the professional involved.
- In situations where the person does not have capacity to consent to this procedure staff should check for the existence of any valid Advance Decision relating to the persons wishes regarding medical treatments.

The prime goal of any treatment should be the comfort and quality of life of the service user and the ethical basis of clinical decision making is the assessment of the risk vs. benefit. Service user and carer information, and managing expectations.

For service users to give informed consent they should have an understanding of the following:

- The purpose of using subcutaneous fluids.
- That the underlying disease process will continue and that further deterioration may be due to this rather than reduced fluid intake.
- How and when the decision will be made to stop the infusion (if appropriate).
- Possible peri-tumour oedema, cerebral oedema, peripheral oedema and ascites and what this means for them.
- Possible increase in airway secretions.
- Possible increase in gastrointestinal secretions causing increase in nausea and vomiting.
- Possible need for a urinary catheter.

- Discussion with service users/carers around the use of a time limited 'therapeutic trial' of subcutaneous fluids with defined outcome measures e.g. improvement in symptom control (ideally as reported by the service user) should be explored prior to administration of fluids.

11. REFERRAL

Referral of service users for the administration of subcutaneous fluids must be made by a medical professional (GP, hospice or hospital doctor) or non-medical prescriber with appropriate competency in this area of prescribing, via the Single Point of Access (SPA). See referral pathway – Appendix 7.

Service users must be assessed on an individual basis to ensure they will comply with treatment and are suitable for treatment in the community.

Individuals with cognitive problems, or those who may put either themselves or staff at risk when handling sharps, or administering medication may not be appropriate for this service. Assessment should be carried out by the prescriber and discussed with the nursing team on referral. The implications of someone living on their own must be carefully considered before commencing this intervention.

Medical responsibility must be agreed at the time of the assessment and should include the following:

- Full medical assessment
- Review or monitoring of bloods or other investigations
- Review of service user's condition
- Agreement of process for dealing with deterioration should it occur
- Date on which treatment will be reviewed
- Documentation must include all of the above

12. PRESCRIBING

- Bags of normal saline can be obtained from one of three locations; Skylark, Elton or South Bristol Community Hospital. Where a subcutaneous fluids kit box and portable drip stand can be accessed. Please see appendix 9.

- Subcutaneous fluids must be authorised by a doctor or non-medical prescriber on the Healthier Together Community Patient Specific Direction – Authorisation for Administration of Medication form. Which can be completed and saved within EMIS or printed and emailed to Sirona (sirona.psd@nhs.net) to authorise administration

by the appropriate clinician. A record of administration is documented on the Sirona Community Medicines Administration Record.

- The prescriber must provide clear, precise written instructions regarding the fluid, volume, route and rate of administration and frequency.
- The duration of infusion must be stated and the duration of treatment.
- The prescriber, or appropriate designated prescriber, must review the service user within 12 hours of commencement and then weekly as part of a multidisciplinary team approach to review ongoing need, or as dictated by the service user's condition.
- Verbal instructions for commencement or changes to subcutaneous fluid prescription are not permitted. Unless the prescriber instructs for the infusion to be stopped.
- Fluids for infusion are licensed for the purpose of intravenous use only; therefore the use of these fluids for the purpose of subcutaneous infusion is outside the product licence. The effective use of infusion fluids in this way has been well documented and the prescriber must be conversant with such evidence. As such the prescriber must take full responsibility for their use and any adverse effects resulting from its use. It is important that the service user/carer is made aware of this issue as it forms part of the consent required for the procedure.

12.1 Fluids to be prescribed

- Sodium chloride 0.9% solution (normal saline)
- The rate of infusion can be up to 83mls/hour with a maximum of 1.5L in 24 hours
    - If service users weight is greater than 45kg then the maximum volume to be infused would be 1.5 litres in 24 hours
    - If the service user weighs less than 45kg the maximum volume to be infused would be 1 litre in 24 hours (Davies et al 2015)

13. ADMINISTRATION

Guidelines for administering subcutaneous fluids are found in appendix 2.

13.1 Equipment

Subcutaneous equipment boxes will be located at one of three sites; Skylark Ward in South Glos, South Bristol Community Hospital in Bristol and Elton Ward in North Somerset (appendix 9).

The equipment will be monitored monthly by the End of Life Specialist Services Team for quality control, expiry date and infection control.

Bags of saline can be obtained from the Ward, where they will have been stored in accordance with guidelines.

Clinicians who used the equipment will be required to sign the boxes in and out for monitoring and control purposes.

Clinicians are expected to replenish any supplies used from their own stock, using the subcutaneous fluid toolbox equipment checklist, found in each box.

Equipment required:

- Solution for infusion (sodium chloride 0.9%)
- Gravity giving set with drip connector
- Saf-T-Intima subcutaneous cannula
- 2% chlorhexidine in 70% isopropyl alcohol wipe
- Sterile clear film dressing
- Dressing pack
- Drip stand or suitable hook to allow solution bag to be positioned higher than the level of the service user
- PPE
- Sharps bin
- Healthier Together Community Patient Specific Direction – Authorisation for Administration of Medication form. Which can be completed and saved within EMIS or printed and emailed to Sirona (sirona.psd@nhs.net) to authorise administration by the appropriate clinician.
- A record of administration is documented on the Sirona Community Medicines Administration Record
- Fluid balance chart
- The infusion bag must be labelled with the date and time of setting up, using the yellow label.
- Detergent wipes

13.2 Rate & volume of infusion

The usual rate of administration is 1ml per minute per site. The prescribing clinician must state the rate of infusion on the prescription / authorisation form.

Subcutaneous fluids should only be infused via gravity using a standard IV giving set connected to a Saf-T Intima single port subcutaneous cannula.

Number of drops per minute = Volume of fluid (mls) x Number of drops per ml / Duration of infusion (mins)

Maximum of 1.5 litres in 24 hours using a single site (**depending on weight, as per 12.1**). See appendix 3.

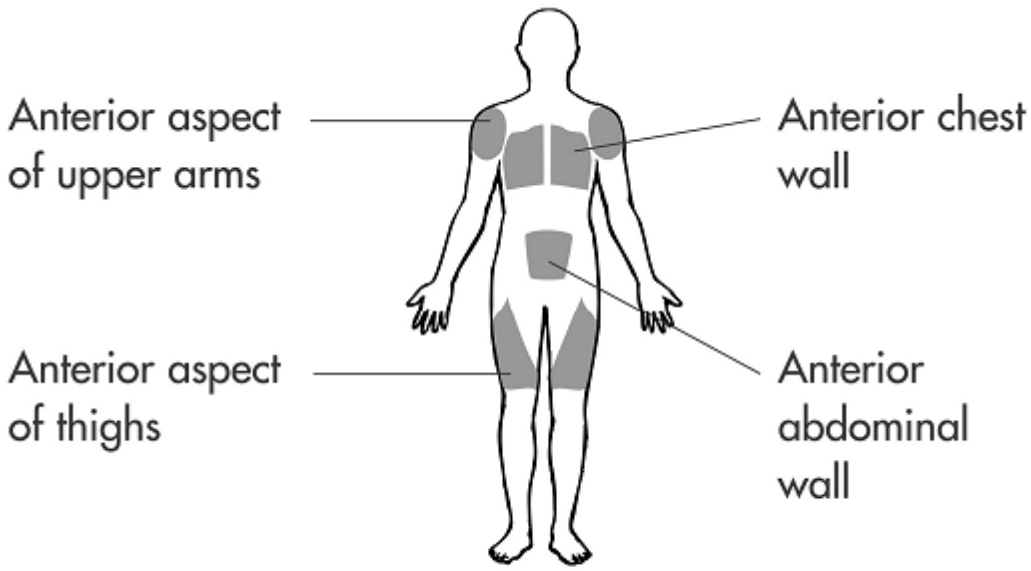
When considering the volume of fluid to be infused, it is important to be aware that clinical studies have suggested that terminally ill service users with cancer may achieve adequate hydration with much lower fluid volumes than recommended for the average medical and surgical service user. It would be preferable to use 500ml bags of normal saline rather than 1litre bags to prevent risks associated with overloading or pooling.

13.3 Site of administration

Choice of site should be based on both the thickness of the subcutaneous tissue and service user convenience. The subcutaneous infusion should be sited in a position with good lymphatic drainage to maximise absorption. Appropriate sites include:

- Outer thigh
- Anterior aspect of upper arms
- Anterior chest wall, below the clavicle (caution should be exercised when using this site in cachectic service users)
- Abdominal wall
- Scapula, usually between or below the shoulder blades (useful in confused service users)

For ambulant service users the chest or abdomen are the preferred sites.



The following sites should be avoided:

- Pre-existing oedema sites or in lymphoedematous limbs (tissue viability is compromised and absorption is affected)
- Sites of previous radiotherapy (skin perfusion is reduced in these areas)
- Sites with skin damage, swelling, infection or scarring
- On the side of a mastectomy or close to a stoma
- Sites over bony prominences
- Sites near a joint as movement may cause the infusion to be dislodged
- Skin folds
- Paralysed limbs
- Ascites

13.4 Monitoring

The site must be checked within 30 minutes of starting the infusion and at every visit, ideally every 6-8 hours for the first 24 hours, but no longer than 12 hourly within the first 24 hours (NICE 2015), for signs of redness, induration, pain / tenderness, inflammation, bleeding / bruising, leakage at insertion site, abscess formation and signs of fluid overload such as dyspnoea or peripheral oedema.

Once subcutaneous infusion is established, the service user or carer must be informed about the correct course of action if they become concerned at any time or notice a

problem with the infusion. They should be provided with 24 hour contact numbers to ensure they can access advice or assistance if necessary. An information leaflet is available in Appendix 5.

The site must be changed, regardless of its duration if any complications are observed. A record of this site check should be made in the service user's notes daily. Sites should be rotated to minimise tissue damage. In general, an infusion site need not be changed for at least 72 hours, unless there is a local reaction to the infusion (Royal Marsden 2020), it is therefore recommended changing and rotation of the site every 72 hours.

Caution should be taken not to exceed the maximum life-span recommended by the manufacturer of the particular device, so that their product liability can be maintained.

Where fluids are not administered continuously a new giving set is required each time fluids are initiated. Fluids not finished after 24 hours must be removed.

13.5 Side Effects

The risks of subcutaneous infusion are minimal when these indications and guidelines are respected. However, any of the following adverse effects may be observed:

- Potential complications at infusion site
- Local oedema and slow absorption from the infusion site resulting in localised swelling.
- Soft tissue infection
- Pain, tenderness, inflammation, local oedema, erythema or bruising may occur which can be reduced by changing the site of the infusion (Royal Marsden 2020)
- Abscess formation
- Bleeding
- Systemic complications could include peripheral oedema, dyspnoea, heart failure or pulmonary oedema.

Any adverse or suspected adverse reaction must be reported to the prescriber and relevant medical team as soon as possible. The details should also be documented in the service user's medical records. If necessary, the nurse may re site the sub cutaneous needle. A verbal and/or written order is needed from the prescriber if it is felt that the fluids should be discontinued along with the rationale for this decision.

If appropriate, the service user and family/carer should be advised of possible side effects and how to recognise complications and whom to contact for advice.

Where appropriate, the service user/family/carer should be advised how to stop the infusion in the event of a problem, whether to disconnect it after the infusion has finished or whether to leave it in place until the next visit from the nurse. Dehydration and Replacement (Subcutaneous Fluids) Leaflet (Appendix 5) and Dehydration and Oral Fluids Leaflet (Appendix 6) should be provided for information.

13.6 Documentation

Administration of subcutaneous fluids should be documented in the service user's notes in the home, on the drug administration chart and on EMIS. In addition to the date and time of commencement, the following should be recorded:

- Insertion site, including whether the Saf-T-Intima has been re-sited or not and condition of surrounding skin.
- Expected time of end of infusion and actual time of finish, if any discrepancy
- Member of staff initiating infusion

A Subcutaneous Maintenance chart (Appendix 8) should be used to support evidence of monitoring.

13.7 Infection Control

For administration of subcutaneous fluids, the ANTT policy should be followed.

13.8 Disposal of Waste

Once an administration set has been disconnected from a service user it must not be reconnected; a new administration set and a new bag of fluid must be used and the old one discarded.

All sharps used during subcutaneous infusion must be disposed of safely in an approved sharps container at the point of use, in accordance with the Waste Management Policy.

All waste that is contaminated with blood or body fluids and that has been used in the insertion or care of a giving set must be disposed of as clinical waste in an appropriate bin.

14. TRAINING REQUIREMENTS

Until such time as this training becomes available the registered nurse should only undertake this task if they are competent and confident to do.

All registered practitioners administering subcutaneous fluids in end of life care must have undertaken the appropriate training and demonstrated competence for practice. This includes:

- Successfully completed an approved medication study day
- Completed competency for administration of subcutaneous fluids in the community and documented observation of practice by competent clinician
- Up to date and able to demonstrate competency in mandatory clinical training
- All registered staff have a professional obligation to maintain their knowledge and skills

Registered clinicians must be up to date with subcutaneous fluid training, competency assessment and understand the contents of this policy before administering fluids by the subcutaneous route. Core competency in appendix 4.

15. MONITORING COMPLIANCE AND EFFECTIVENESS

The effectiveness of this policy will be monitored as follows

What will be monitored?	How?	When?	By whom?
Audit of service user records	Audit records using a combination of data via BI and Ulysses audit tool	After initial 3 months 6 monthly thereafter	EOL SASS Team
Record of staff supervision	INT managers will oversee their team supervision logs	6 monthly	EOL SASS Team
Review of all adverse events, complaints or concerns associated with this treatment	The End of Life Specialist Services Team are copied into all incidents relating to end of life and can	Monthly review of incidents	EOL SASS Team

	monitor any associated events		

16. LINKS TO PROCEDURAL DOCUMENTS

ANTT Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/07/ANTT-policy-V2.pdf
Consent Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2020/03/Consent-Policy-v4.pdf
End of Life Care Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/12/EOL-Policy-for-the-care-of-individuals-at-the-end-of-life.pdf
Hand Hygiene Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/11/Hand-Hygiene-Policy-V3.3.pdf
Infection Prevention & Control Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/10/Overarching-IPC-3.1.pdf
Medicines Management Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2020/03/Management-and-Administration-of-medicines-policy-REGISTERED-STAFF-FINAL-March-2020.pdf
Safe Handling & Disposal of Waste Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/08/Safe-Handling-and-Disposal-of-Waste-Policy-v2.pdf
Sharps and Contamination Incidents Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2021/08/Sharps-and-Contamination-Incidents-Policy-v4.2.pdf
Subcutaneous Fluids Administration Policy
https://intranet.sirona-cic.org.uk/wp-content/uploads/2020/03/Policy-for-Subcutaneous-Fluids-Administration-v4.pdf

17. REFERENCES

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Appendix 1

Equality Impact Assessment Tool

To be completed and attached to any procedural document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the document/guidance affect one group less or more favourably than another on the basis of:**	No	
	• Race		
	• Ethnic origins (including gypsies and travellers)		
	• Nationality		
	• Gender (including gender reassignment)		
	• Culture		
	• Religion or belief		
	• Sexual orientation		
	• Age		
	• Disability – learning disabilities, physical disability, sensory impairment and mental health problems		
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are there any valid exceptions, legal and/or justifiable?**	No	
4.	**Is the impact of the document/guidance likely to be negative?**	No	
5.	**If so, can the impact be avoided?**	N/A	
6.	**What alternative is there to achieving the document/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

Appendix 2

Guidelines for administration of subcutaneous fluids in End of Life Care

Equipment

Healthier Together Community Patient Specific Direction – Authorisation for Administration of Medication form. Which can be completed and saved within EMIS or printed and emailed to Sirona (sirona.psd@nhs.net) to authorise administration by the appropriate clinician.
A record of administration is documented on the Sirona Community Medicines Administration Record.
Prescribed fluid
Gravity giving set
Subcutaneous Cannula (BD Saf-T Intima)
2% chlorhexidine in 70% isopropyl alcohol wipe
Semi-permeable transparent film dressing
Dressing Pack
Sharps Box
Drip Stand / Suitable Hook
PPE
Fluid balance chart
Subcutaneous fluid maintenance chart

Action	Rationale
Check the identity of the service user	To minimise risk of errors and ensure correct service user
Prepare service user, explain procedure and obtain and document consent	To ensure service user understands procedure and can make informed consent
Check fluid with prescription chart	To ensure the correct type and volume is administered
Inspect the infusion fluid	To ensure clear, colourless and in date
Ensure all equipment is assembled	To avoid unnecessary stress to the service user
Wash hands in accordance with hand washing guidelines	To comply with infection prevention and control guidelines
Attach giving set to infusion fluid	To deliver fluid through giving set
Prime the giving set with the fluid to be infused	To prevent air bubble formation
Assess service user for suitable infusion site	To provide a comfortable and safe area for fluid absorption
Clean site with 2% chlorhexidine in 70% isopropyl alcohol wipe and allow to dry	To reduce the risk of site contamination
Insert the subcutaneous cannula as per manufacturer's instructions	To provide a comfortable and safe method of fluid administration
If blood appears in the line on insertion of the cannula, withdraw and repeat process	To ensure a blood vessel has not been punctured

Secure cannula with a clear film dressing	To prevent kinking at insertion site, security of cannula and protection from infection
Make sure the service user is comfortable	To maintain the service users comfort & dignity
Set infusion as prescribed rate and record time and date commenced on fluid balance chart	To ensure fluid is administered as prescribed
Check site and infusion after 30 minutes for signs of leakage, oedema, skin changes, inflammation around site	For service users comfort and safety before leaving service user

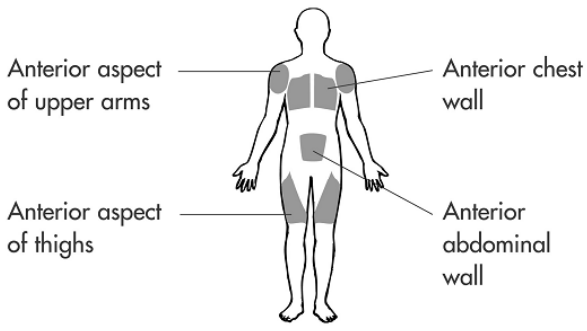
Adverse Effects

Observation	Cause	Action
Site is red and inflamed	Needle may have been placed intradermally	Re-site immediately, away from affected area
Local Oedema	Most common adverse effect	Re-site cannula in a different area
Pain	Can be related to insertion and positioning of cannula	Adjust cannula position slightly to exclude nerve ending placement. If pain persists re-site
Infusion running slow	Check gravity feed and site for oedema	Raise height of infusion bag, check lines for occlusion. Rub area to encourage absorption
Large white flat area around site	Common	Observe, only re-site cannula if red or painful

NO MORE THAN 1.5L IN 24 HOURS IN A SINGLE SITE. CANNULA SHOULD BE RESITED EVERY 72 HOURS

Recommended subcutaneous infusion sites:

- Outer thigh
- Lateral aspect of upper arms
- Anterior chest wall, below the clavicle (avoid in cachectic service users)
- Lateral abdominal wall
- Back, usually between the shoulder blades (useful in confused service users)
- Lower limb sites should not be used in ambulatory service users due to back flow of blood into the line and blockage of cannula



Infusions should not be sited in:

- Pre-existing oedema or lymphedema
- Radiotherapy damaged or scarred skin
- On a side of a mastectomy or close to a stoma

- Ascites

Appendix 3

Calculation/Rate of Subcutaneous Infusion

Fluids given subcutaneously should be gravity fed and not pumped

When using a standard gravity intravenous administration set, drops must be counted to set the rate.

To calculate the volume in drops, you need to know how many drops of the fluid are contained in a millilitre (ml). The information is printed on the packaging of the administration set. A standard intravenous giving set delivers a rate of **20 drop per ml.**

The volume in mls is multiplied by the number of drops per ml to give the volume in drops. The rate in minutes is calculated by multiplying by 60.

To set up a manually controlled drip accurately by eye, count the number of drops per minute, which equates to the amount prescribed.

The formula for calculation is: Rate = Volume (in drops) / Time (in minutes)

Example: To administer 1000ml over 12 hours using a giving set that delivers 20 drops/ml the calculation would be:

$$\frac{\text{1000 mls (volume of infusion) x 20 (drops per ml)}}{\text{12 (hours) x 60 (mins)}} = \frac{20{,}000}{720} = \text{27.7 drops/minute}$$

NB: As we are trying to work out a number of drops, round up to a whole number i.e. 28

Appendix 4

End of Life – Administration, Monitoring & Removal of Sub-Cutaneous Fluids in the Community

Competence is having the knowledge and skills to do the job and the capability to deliver the highest standards of care based on research and evidence

Aim: To ensure Registered Healthcare Professionals are equipped to provide safe and consistent practice in relation to the prescribing, acquisition, preparation, administration and monitoring of fluids administered subcutaneously in community settings, to reduce risks, minimise errors and maintain the safety of service users.

Objective: To demonstrate knowledge and understanding of the performance criteria below.

Standard: To ensure and maintain a consistent and high standard of clinical practice across the organisation.

Assessment Criteria:

- Up to 3 observations in practice - or until clinician feels confident and competent
- Pre and post visit discussion with Clinical Supervisor for each of the observed sessions
- Observed service user assessment, including communication and assessment of service user record for each of the observations

Key area	Competency	Competency Indicator	**Summative Assessment** Competent/Needs Improvement (Comment, Sign and Date)
Knowledge	Describe policy	• Where policy can be found • Explain key points of policy • Responsibilities and role	
	Able to demonstrate understanding and able to recognise when sub-cutaneous fluids may be appropriate in the community	• Symptoms of thirst or other symptoms of dehydration and are unable to remedy with oral fluids • Service users who are unable to take adequate fluids orally and are thirsty and have a persistent dry mouth despite exemplary mouth care. • Acute problems such as mild infections or vomiting and diarrhoea where an adequate fluid intake cannot be maintained. • Mild or moderate dehydration where administration of subcutaneous fluids could potentially prevent the need for hospitalisation. • Obstruction in PEoLC. • Service users who have swallowing problems who are **not actively dying** where fluids can actually prevent dehydration. • Impaired intravenous access. • Dehydration contributing to poor renal clearance of opioids which are causing symptoms of toxicity, where intravenous fluid replacement is not appropriate or possible.	

		• Inability to swallow e.g. advanced head and neck tumour, unsuitable for intravenous fluid replacement, gastrostomy or other artificial feeding tube.	
	Demonstrate awareness of contra-indications of sub-cutaneous fluids	• Severe dehydration – subcutaneous fluids should not be used as a substitute for intravenous fluids • Severe renal or hepatic failure • Service users on renal dialysis • Service users where precise control of fluid balance is clinically important • Service users with severe electrolyte imbalance • Emergency situations e.g. physiological shock, circulatory failure • Service user known to have a clotting disorder • Fluid overload e.g. congestive cardiac failure, marked oedema • Where service user clinically requires intravenous treatment • Service users who express a wish for more active medical management e.g. intravenous fluids • Service users requiring more than 2 litres of subcutaneous fluid in 24 hours • Poor tissue perfusion • For medication induced dry mouth • Confusion where infusion lines may be accidentally removed	
	Ensures an MDT approach is followed	Documentation of discussions with healthcare professionals in service user's medical records (EMIS)	
	Demonstrates the ability to use shared decision making with service users and family to	Considers whether the service user has any advance care planning documents (ReSPECT Plus Shared Care	

	decide a plan of Care/ under best interest	Plan), advanced decision to refuse treatment (ADRT) and any previous wishes/preferences.	
Skills	Assess environment for safety, addressing health and safety issues.		
	Ensure the service user's verbal consent is obtained where able, prior to any care/interventions being delivered.	Clear documentation of this	
	If the service user lacks capacity/loses consciousness, do you ensure a Mental Capacity assessment has been completed and a Best Interest decision has been made, taking into account any advanced care planning documents, advanced decisions to refuse treatments or previous wishes/preferences prior to delivering medication/treatment?	Clear documentation of this and rationale required	
	Ensures that the Mental Capacity assessment is a "one off" assessment unless the person regains consciousness/regains mental capacity?		
	Ensure any Adult at Risk concerns are addressed appropriately.		
	Apply safe manual handling and infection control principles	Correct disposal of PPE in line with current infection control procedures	

	throughout the service user's interaction.		
	Able to correctly identify the service user	• Service user's identification • Consent • Prescription.	
	Able to provide information in relation to sub-cutaneous fluids to service users, carers and those closest to them in a way that they understand, including the patient information leaflet	• Provides sub-cutaneous fluids in the community leaflet to service user, carers and those closest to them • Consider alternative formats if appropriate • Consider if interpreter required	
	Identify correct equipment required for safe practice	• Subcutaneous Cannula • Correct prescribed fluid and volume • Giving set with drip connector • Clear film dressing • Dressing pack • 2% chlorhexidine in 70% isopropyl alcohol wipe • Fluid balance chart • Yellow label/sticker for bag of fluids • Detergent wipes • Drip stand • Sharps bin • PPE	
	Able to describe rationale for skin site selection	• Mastectomy • Cachectic • Confused service user • Lymphedema • Oedema • Ascites • Skin folds • Paralysed limbs	

		• Bony prominences • Previously irradiated skin	
	Understands when to change site of infusion	• Generally every 72 hours unless adverse rection identified	
	Demonstrate procedure for setup of sub-cutaneous fluids	Including: • Hand hygiene • ANTT • Calculation of drip rate	
	Ability to monitor the infusion	• Site check within 30 minutes of starting the infusion and at every visit • Check for signs of redness, induration, pain / tenderness, inflammation, bleeding / bruising, leakage at insertion site, abscess formation and signs of fluid overload such as dyspnoea or peripheral oedema. •	
	Describe potential adverse problems and how to manage	• Redness • Oedema • Pain Any adverse or suspected adverse reaction must be reported to the prescriber and relevant medical team as soon as possible. Details should also be documented in the service user's medical records. If necessary, the nurse may re-site the sub cutaneous needle.	
	Describe/demonstrate how to remove and dispose of sub-cutaneous needle safely.	• As per sharps policy	
	Demonstrate the ability to establish that following administration or disposal of sub-cutaneous fluids, relevant	Evidence in documentation (paper copy and EMIS) to include:	

	recording is completed appropriately (e.g. records are timely, clear, accurate, complete, relevant and without ambiguities) Document as per Sirona documentation policy to include medication batch numbers & expiry dates using the appropriate EMIS template	• Insertion site, including whether the Saf-T-Intima has been re-sited or not and condition of surrounding skin. • Expected time of end of infusion and actual time of finish, if any discrepancy • Member of staff initiating infusion • A Subcutaneous Maintenance chart should be used to support evidence of monitoring.	

Practitioner: **Job title:**

Assessor: **Job Title:**

Comments from assessor:

Comments from participant:

I certify that I am fully aware of my professional responsibility for continuing my professional development within assessing administration, monitoring and removal of sub-cutaneous fluids in the community. As an accountable practitioner I will ensure that I keep up to date with related clinical issues and undertake further education and training when necessary to ensure these competencies are maintained.

Signed…….Designation …… Date……

Assessor sign……Designation ……..Date ……..

Action plan to achieve competency

Action to be taken	Time scale

Appendix 5

0385 Dehydration and Subcutaneous I

Appendix 6

0386 Dehydrationand Ora

Appendix 7

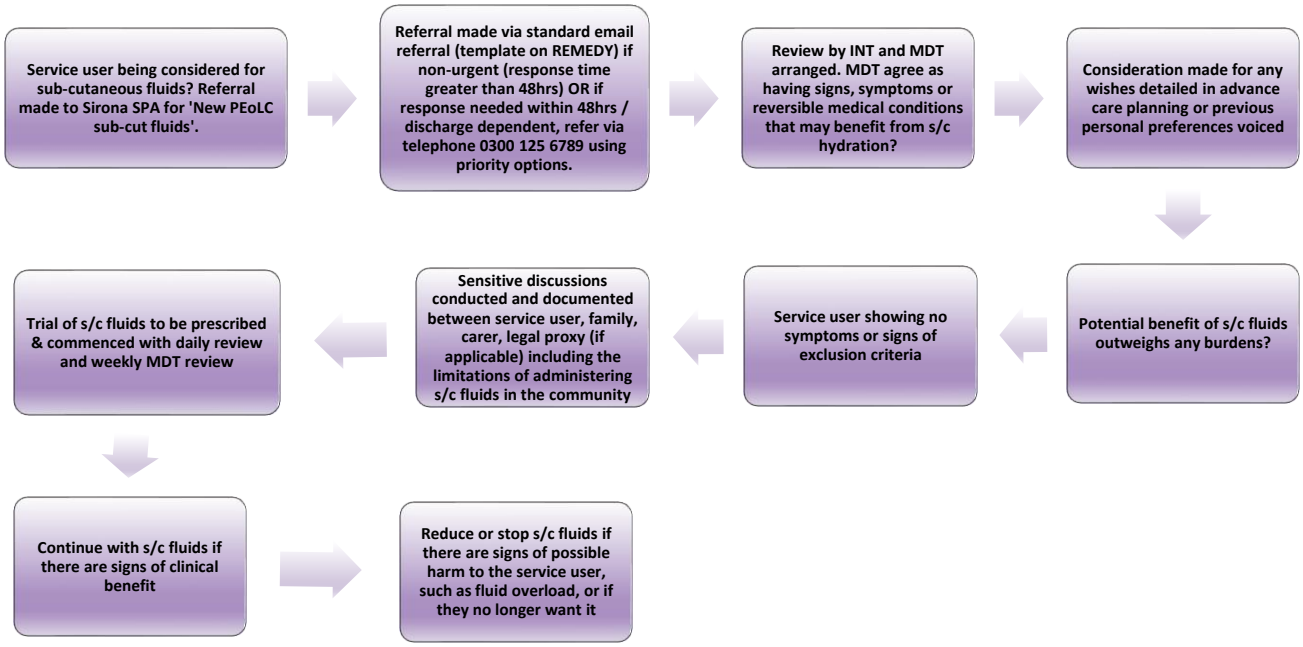
Sub-Cutaneous Fluids in End of Life Clinical Pathway

Inclusion Criteria:

- Service user must be aged 18 years or over
- In last year of life including months/weeks prognosis
- Registered with a BNSSG GP
- Has signs or symptoms of reversible medical condition(s) that may benefit from sub-cutaneous (s/c) fluids
- Dysphagia and/or persistent nausea & vomiting
- Service user consents to s/c fluids
- Increased oral intake is not feasible or manageable
- Service user & relatives fully understand that the purpose of s/c fluids is to relieve symptoms and reduce distress but not to cure

Exclusion Criteria:

- Severe dehydration – subcutaneous fluids should not be used as a substitute for intravenous fluids
- Severe renal or hepatic failure
- Service users on renal dialysis
- Service users where precise control of fluid balance is clinically important
- Service users with severe electrolyte imbalance
- Emergency situations e.g. physiological shock, circulatory failure
- Service users known to have a clotting disorder
- Fluid overload e.g. congestive cardiac failure, marked oedema
- Where service user clinically requires intravenous treatment
- Service users who express a wish for more active medical management e.g. intravenous fluids
- Service users requiring more than 2 litres of subcutaneous fluid in 24 hours
- Poor tissue perfusion



Appendix 8

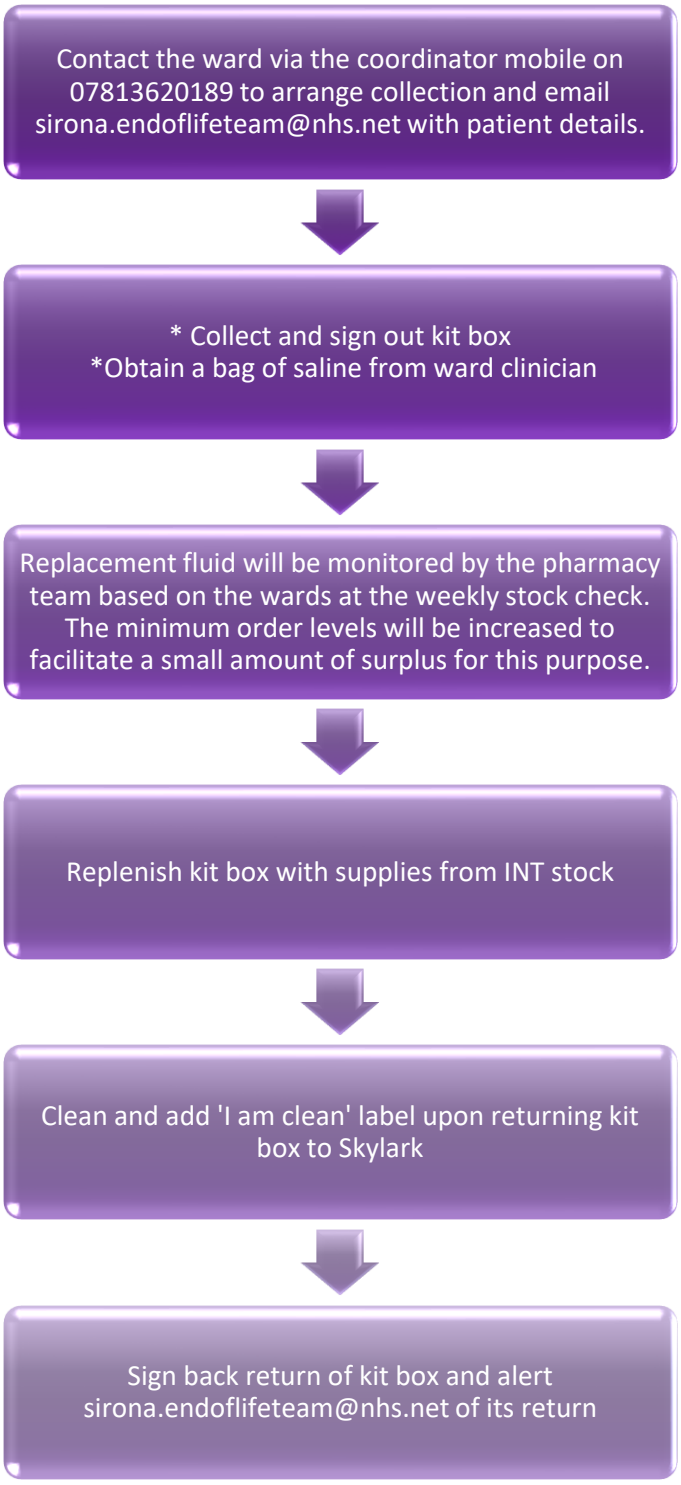
Subcutaneous Fluid Maintenance Chart

Name:		Date of Birth:		NHS Number:	

Date	Time	Site Used & Checked S=Satisfactory P=Pain I=Inflammation SW=swelling B=Bleeding Actions taken if not satisfactory	Drip rate of infusion: drops per min	Time infusion due to finish	Saf-T Intima: date of insertion and site change next due (72 hours maximum)	Single use gravity giving set with drip connector: Make, batch no & expiry date	Print & Sign Name

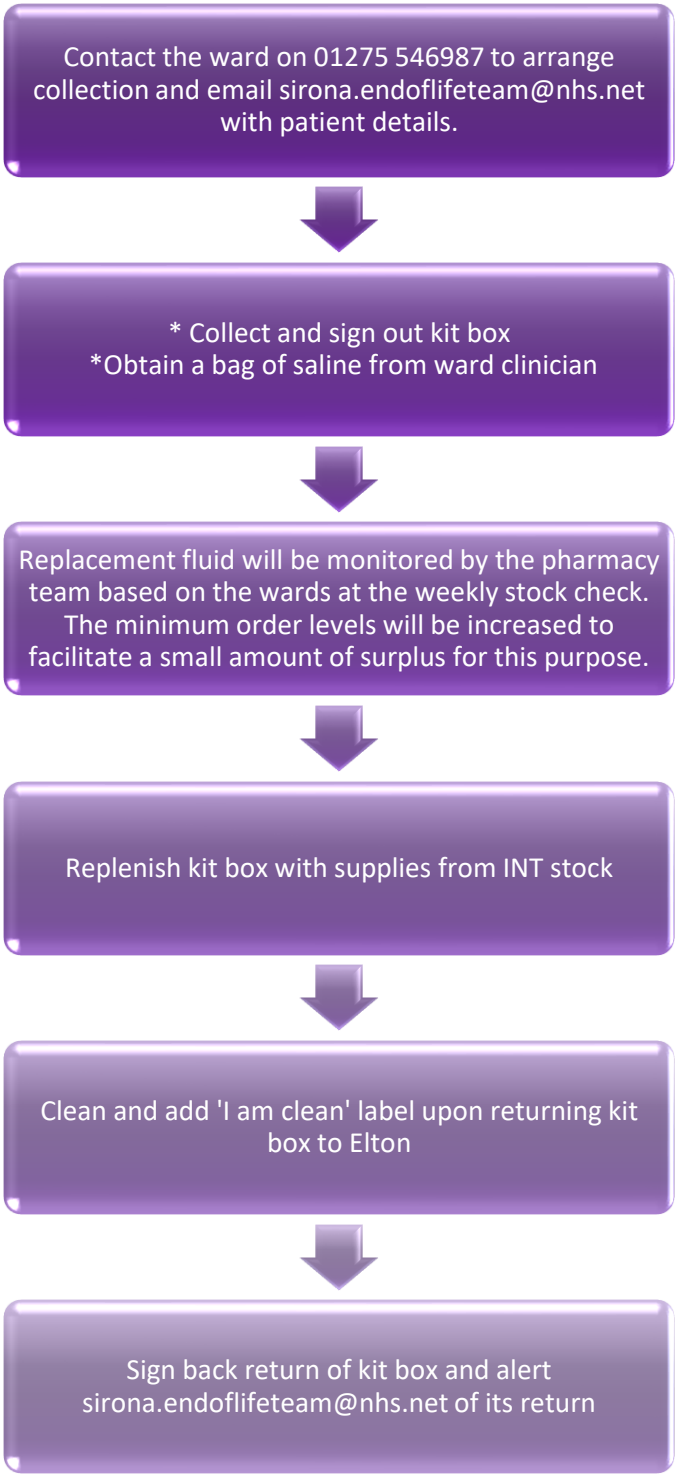
Appendix 9

Protocol for accessing subcut fluids from Skylark Ward in South Glos



Appendix 9

Protocol for accessing subcut fluids from Elton Ward in North Somerset



Appendix 9

Protocol for accessing subcut fluids from South Bristol Community Hospital