POLICY AND PROCEDURE FOR THE MANAGEMENT OF SUBCUTANEOUS INFUSIONS IN ADULTS
(for use in the Royal Cornwall Hospitals NHS Trust)

Version 1.2

August 2016
Summary.

The Palliative Care team and Medical Devices Training Officer have combined efforts to produce this policy to support staff and practices within the Acute Hospital Trust. This policy explains:

- Indications for use
- Potential therapeutic advantages
- Preparation for use
- Preparation of site and needle insertion
- Initial set up, priming, insertion of the cannula and starting the McKinley Syringe Driver
- Subsequent syringe changes
- Minimising risk
- Observation and monitoring of infusion
- Re-siting and/or skin reactions
- Troubleshooting
- Discharges and transfers to/from inpatient setting
- Discontinuing infusion at time of death
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1. Introduction

1.1. Injectable medicines and syringe drivers
The use of injectable medication can have many healthcare benefits for patients. The complexities associated with the prescription, preparation and administration of injectable medicines means that there are greater potential risks for patients than for other routes of administration. Weak operating systems and practices increase the potential risk of harm; therefore safe systems of work are needed to minimise these risks. The Palliative Care team and Medical Devices Training Officer have combined efforts to produce this policy to support staff and practices within the Acute Hospital Trust.

1.2. McKinley syringe drivers are commonly used for the continuous administration of drugs via the subcutaneous route, following assessment of the patient, with the aim of providing steady levels and reliable absorption of a drug or drugs, thus helping to enhance symptom management. These drugs include opioids, anti-emetics, sedatives, non-steroidal anti-inflammatory drugs, anti-convulsants, other analgesics (e.g. ketamine) and anti-secretory agents. In this way treatment can be planned and delivered at a regular rate for periods of up to 24 hours, then reviewed and adjusted as necessary for optimum symptom control.

1.3. This policy explains why a McKinley syringe driver is used, the preparation and procedure for setting up the pump initially and for subsequent infusions. Troubleshooting compatibility issues, and discharge or transfer of patients from hospital with a syringe driver in situ, are also explained.

1.4. This version supersedes any previous versions of this document.

2. Purpose of this Policy/Procedure

- To inform health professionals on the correct, safe and appropriate use of the McKinley T34 syringe driver for subcutaneous infusions.

- To highlight to staff that syringe driver training is a mandatory training requirement within the Royal Cornwall Hospitals Trust. Only registered nurses and health professionals who have received the appropriate training may set up and manage a syringe driver.

N.B. If no such healthcare professional is available, the drugs will be prescribed to be administered by intermittent subcutaneous injection (usually 4 hourly) until a syringe driver can be commenced. The subcutaneous injections may be required more or less frequently dependent on the drug duration of action and/or half-life (staff should seek further professional advice as needed).
3. **Scope**

3.1. This policy is for use by healthcare professionals who are involved in the setting up and management of McKinley syringe drivers and covers the reasons for prescribing, and process of administration of, syringe driver medication. Specific advice about what medication to prescribe and drug compatibilities can be sought from the following:
- Palliative Care team
- Anticipatory Guidelines
- Palliative Care Formulary, PCF4
- BNF
- Pharmacists

3.2. The policy supports staff in the use of the syringe driver alongside mandatory training on the subject.

4. **Definitions / Glossary**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ANTT:</td>
<td>Aseptic non-touch technique</td>
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<tr>
<td>McKinley T34 syringe driver:</td>
<td>Dedicated subcutaneous syringe driver for continuous infusion</td>
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<td>Occlusion:</td>
<td>Closure or blockage</td>
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<td>Catheter:</td>
<td>Refers to the needleless system</td>
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<tr>
<td>Link-Nurse:</td>
<td>Clinically based nurse with a special interest in Palliative care</td>
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<tr>
<td>EPMA:</td>
<td>Electronic prescribing tool</td>
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</table>

5. **Ownership and Responsibilities**

5.1. **The Medical Director**

The Medical Director has executive responsibility for authorising final approval of this policy.

5.2. **Medical Devices Committee**

The Medical Devices Committee is the trust committee through which corporate decisions relating to the syringe driver procedure will be exercised. This includes receiving internal or external reports relating to trust-wide practices on medical devices, and authorising actions arising from such reports.

5.3. **Medical Devices Training Officer and Medical Devices Team**

This policy is overseen by the Medical Devices Training Officer, who runs regular mandatory training sessions for clinical staff on the use of the McKinley Syringe Driver. The Medical Devices team have a key training and operational role, which includes monitoring of syringe drivers sent with patients outside of the trust.

See Appendix 4 MD 11 Form: Record Sheet for Issuing Medical Devices outside the RCHT
5.4. Medicines Practice Committee
The Medicines Practice Committee is the trust committee through which corporate decisions about medicines practice will be exercised. Datix reports in relation to syringe drivers will be monitored for trends; any further training needs will be highlighted to the Medical Devices Training Officer and the Palliative Care team.

5.5. Specialist Palliative Care Team and the Palliative Care Link-Forum
The policy is reviewed and updated by the Palliative Care Specialist Nurses, together with the Medical Devices Training Officer and the Palliative Care Link Forum members (registered Staff Nurses and other health professionals) who use their skills with this procedure in the clinical settings. Engagement with the multidisciplinary team will ensure the policy remains relevant to all users. Together with Matrons and Ward Managers, all these relevant staff will ensure that all users within the clinical areas are aware of any updates or training required.

5.6. Matrons and Ward managers
Matrons and Ward Managers will lead on the implementation of this policy within their ward area. Line managers are required to ensure that all of the team for whom they are responsible have undertaken training in accordance with relevant medical devices training guidelines. In collaboration with clinical staff, matrons and ward managers must ensure that adverse clinical incidents in relation to physiological monitoring in their clinical areas are reported and investigated, and action plans produced to prevent further occurrence.

5.7. Role of Individual Staff
All nursing staff who work within a clinical area where patients are likely to require a subcutaneous syringe driver setting up, or who have a syringe driver in place, need to be familiar with the policy and procedures described within this document. Staff must attend McKinley syringe driver training, and refresh their knowledge and skills as needed if they do not undertake the procedure sufficiently often to maintain their competence.
All staff members are responsible for:

- Ensuring that they undertake the appropriate training to carry out this procedure in accordance with the Medical Devices Training Policy.
- Maintaining their competencies in accordance with their regulatory body. This must also be in accordance with the Standards for Medicines Management (Nursing & Midwifery Council 2008).

N.B. It is every practitioner’s responsibility to ensure that they have received training prior to using a T34 McKinley Syringe Driver. Use of a T34 driver by a member of staff without relevant training is not permitted under any circumstances.
5.8. MD 11 Form: Record Sheet for Issuing Medical Device outside of RCHT

When a patient leaves RCHT with a syringe driver in situ, staff must record the syringe driver serial number and patient identification on a MD 11 Form: Record Sheet for Issuing Medical Device for use outside the RCHT (Appendix 4). Staff will make it known to the receiving health professional in the community that the RCH McKinley Syringe Driver must be swapped with a community/ hospice/ hospital syringe driver asap and the RCH pump returned to the RCHT equipment library in the following few days.

6. Standards and Practice

6.1. Indications for Use

Continuous subcutaneous infusion should not be used indiscriminately. There should be a specific reason why the oral route is considered inappropriate. Consideration should also be given to other alternative routes of administration, e.g. rectal, sublingual or transdermal routes.

6.2. Potential Therapeutic Advantages:

- Stable plasma drug concentrations will be achieved, facilitating symptom control
- Therapeutic agents can be delivered over a 24 hour period avoiding the need for 4 hourly injections
- If more than three drugs need to be combined then seek advice regarding compatibility from RCHT medicines information unit on 01872 252587, or via the specialist palliative care hospital team via 8346/8347 or bleep 3055, during working hours. For out of hours advice or at weekends, contact the Specialist Palliative Care Advice line on 01736 757707.

Drug compatibility guidelines can be found in

- PCF4: Palliative Care Formulary, 2011

Criteria for Use:

Situations in which the patient is not able to swallow or absorb oral medication, for example:

- Persistent nausea and vomiting
- An intolerance of oral administration of drugs
- Difficulty in swallowing
- Poor alimentary absorption
- Intestinal obstruction
- Comatose/moribund patient
- Profound weakness
- Burden of oral medication is too great
6.3. The syringe driver for use for adults at the RCHT is the McKinley T34

The syringe driver is a portable, battery-operated device for mechanically delivering drugs at a predetermined rate by continuous subcutaneous infusion. This policy refers only to drugs being delivered subcutaneously. Syringe drivers work by pushing fluid contained in a syringe into an administration set and thence into the subcutaneous tissue. The McKinley T34 must be secured in a locked box (supplied with the driver). The key to unlock the security box must be held in a safe storage place on the ward or held by a registered practitioner in charge of the controlled drugs cabinet keys. The Registered Nurse starting the syringe driver is responsible for checking the date of the last annual service of the syringe driver and documenting this appropriately. The setting up of a syringe driver is a clean technique and hands should be washed as per infection control policy, with the wearing of personal protective equipment as per infection control policy; refer to the ANTT. The process is as follows:

- Explanation is given to the patient (and/or carers) regarding the purpose and function of the syringe driver, as appropriate. This is an opportunity to gain consent.
- If the patient has a person appointed as Lasting Power of Attorney for Health and Welfare, then that person has the legal right to be consulted over the commencement of treatment (unless the decision is urgent and deemed in the best interest of the patient by the clinical team).
- Calculate the volume of drugs to be administered before dilution, write this calculation down in appropriate documentation and obtain an independent check by another qualified healthcare professional where possible.

6.4. Preparation for use

When a syringe driver is commenced the health professional must explain what oral drugs, if any, should be continued or discontinued.

Equipment required:
- Syringe driver medication sheet. Noted on EPMA as “Syringe Driver See Paper Chart” (NB: there may be a potential future change in view of ePMA prescribing)
- McKinley T34 syringe driver. Currently this comes in a plastic box with all the equipment needed to commence the first infusion (except the drugs and diluent).
- Syringe driver label stating medication, dose, routes of administration, diluents, final volume, patient’s name and date of birth, plus date, time, signature and printed name of healthcare professional.
- 9v alkaline battery (rechargeable batteries are not to be used)
- Spare battery to be available in ward stock
- Luer-lock syringe – 30ml. See rationale in section 6.6.2 of this policy.
- The recommended soft set and 100 cm line available on EROS (see Appendix)
- Plastic Tray to collect equipment together - this may/may not include a sharps disposal bin
- Sharps disposal bin and denaturing kit for controlled drugs. The denaturing kits can be obtained through EROS (KYA003 for 250ml and KYA004 for 1 litre)
- Syringe Driver Lockbox and key. Clinical areas will keep a key for the McKinley Syringe Driver lockbox with the drug keys.
6.5. Preparation of site and needle insertion
Explain the procedure and gain consent as appropriate.

The following sites are the most commonly used as there tends to be more subcutaneous fat present:
- Anterior aspect of upper arms
- Anterior chest wall
- Anterior abdominal wall
- Anterior aspect of upper thigh
- Scapula area.

Consider physical activity of the patient when choosing a site.

The following sites are contraindicated:
- Any lymphoedematous area because absorption is affected and there is a risk of infection
- Areas of damaged skin, e.g. broken, reddened or bruised skin, area of indentation or pressure area
- Any area currently receiving radiotherapy or to which radiotherapy has recently been administered
- Any area over a bony prominence or near a joint as there is little subcutaneous tissue and can easily be dislodged
- Any area close to a part of the body where a surgical procedure has been or is about to be performed, or near to a stoma.

6.6. Initial set up, priming, insertion of the cannula and starting the McKinley Syringe Driver

6.6.1. The initial set up of a syringe driver infusion requires two nurses to check and sign that they have undertaken the procedure.

6.6.2. Draw up the medication into a 30ml syringe and dilute the volume to 23ml. It is considered best practice to make the solution as dilute as possible to reduce the likelihood of drug incompatibility and minimise site irritation.
  - Water for injection is the diluent of choice except for those drugs listed as incompatible or unstable with water in the British National Formulary (BNF) or in the Palliative Care Formulary 4 PCF4 (2011)
  - The solution in the syringe should be clear and free from precipitation and/or crystallisation for the twenty four hours over which the drug is to be delivered. Please note that when using Dexamethasone the solution becomes cloudy but then clears.
  - If cloudiness or precipitation remains a problem the syringe and its contents should be discarded and the prescriber informed as the regime may need to be reviewed. This can be done in consultation with the hospital palliative care team Monday to Friday (9 am to 5 pm); out of hours and weekends contact the Specialist Palliative Care advice line 01736 757707. All contact details are available on wards or via Switchboard.
6.6.3. **Label the syringe** (not the driver or plastic case) without obscuring the scale on the syringe.

Syringe driver labels should contain the following information:
- Name of the drug(s)
- Dose
- Route of administration
- Diluent and final volume
- Patient’s name and date of birth
- Date and start time
- Signatures of the two registered nurses

*Caution: On the rare occasion where two syringes/syringe drivers are required please ensure that the label clearly differentiates the two syringes and their different drugs.*

6.6.4. **Insertion of the recommended cannula** used by the Trust
- Insert cannula into patient as instructed by the manufacturer and clinical trainers
- Use ANTT

The injection site should be cleaned thoroughly with ChloraPrep 2% and allowed to dry for 30 seconds. Please check patient has no allergy to Chlorhexidine; contact Infection Control team for advice if Chlorhexidine is contraindicated. Follow manufacturer’s instructions for the best way to insert the cannula. Attach appropriate line if required.

6.6.5. **Starting up the pump**
- Insert 9 volt battery in the back of the pump
- Press and hold on/off key until start up screen appears
- Wait until pre-loading has finished (actuator stops moving)
- Check battery life: press blue info button until “battery level” is displayed on the screen, press yes to display. If battery level is not 33% or above discard and use a new battery
- 33% is the minimum required to deliver 24 hours of medication
- Use the FF/Back arrow keys to move the actuator to the correct position for syringe loading. Barrel arm must be in the down position to use the FF/Back arrow keys.

6.6.6. **Setting the Infusion Rate**
With the prepared syringe, lift the barrel arm and insert the syringe into the infusion pump. Replace the barrel arm ensuring the collar of the syringe is slotted into the collar sensor, and the plunger into the plunge sensor. Select or confirm “YES” to the syringe size and brand.

Continue confirming until the rate, volume to be infused and infusion time are displayed on the screen, **but stop at this point and do not start the infusion until the giving set has been primed**. The rate displayed should be approximately 0.96 ml/hr (+/- 0.02 ml/hr) over 24 hours. Volume should be approximately 23ml (using a 30 BD plastic pack luer-lock syringe).
6.6.7. **Priming the line**
- Remove the syringe from the pump and manually prime the line
- Using the FF/back keys, adjust the actuator and replace the syringe in the syringe driver
- Press YES to confirm syringe size
- Press “YES” to resume programming
- Before starting to infuse, press the FF key to purge the syringe and reduce mechanical slack. Hold the FF Key and follow the instruction on the syringe driver screen. Note: The time and volume to be delivered will reduce slightly but the rate will remain the same
- After purging confirm “syringe type” by pressing yes, then press yes again to resume
- Attach the line to the cannula in place
- Press “YES” to start infusion
- Ensure “pump delivering” is displayed on the screen and the light is flashing
- Check and document the rate setting displayed on the screen over 24 hours, record date
- Place the McKinley syringe driver in the 'lock box' and lock
- Dispose of all sharps safely checking the empty ampoules before discarding as per Waste Management Policy.

6.6.8 **To lock/unlock the keypad**
The McKinley T34 syringe pump allows users to lock the operation of the keypad during infusion. This function should be used to prevent tampering with the device. To activate the keypad lock, press and hold the INFO key until a chart is displayed showing a ‘progress’ bar moving from left to right. Hold the key until the bar has moved completely across the screen and a beep is heard to confirm the lock has been activated. Repeat to unlock.
If further advice is needed (during working hours) on the set up of this device, contact the Medical Device Training Officer on ext. 2275 or the Specialist Palliative Care hospital team on ext. 8346/8347 or bleep 3055.

6.7. **Subsequent syringe changes**
6.7.1. **No changes to prescribed drugs**
- Draw up new 24-hour infusion as prescribed using a 30ml BD syringe following the methods described in section 6.6.2.
- Press stop and hold the off button until the screen is blank
- Remove previous syringe keeping the primed line attached
- Press and hold on/off key until start up screens appear
- Wait until pre-loading has finished (actuator stops moving)
- Check battery life, press blue info button until “battery level” is displayed on the screen, press yes if battery level is 33% or above. If not, discard and use a new battery as 33% is the minimum required to deliver 24 hours of medication
- Load new 30 ml BD syringe using the FF/Back keys to move the actuator to the correct position
- Select “YES” to confirm syringe brand and size
- Check and document the rate setting displayed on the screen over 24 hours
- Press “YES” to confirm acceptance
o Remove line from previous syringe and attach to new 30 ml BD syringe in the syringe driver
o Press “YES” to start infusion
o Ensure “pump delivering” is displayed on the screen and the light is flashing
o Place the McKinley syringe driver in the ‘lock box’ and lock
o Dispose of all sharps safely checking the empty ampoules before discarding as per Waste Management Policy.

6.7.2. Changes to prescribed drugs
If changes are made to the prescribed drugs, then the syringe and infusion line must be replaced; follow the instructions in Section 6.6.1. Initial Set Up. Disposal of the ‘old’ line and syringe must be carried out as per Waste Management Policy.

6.7.3. Drug Compatibilities
Drug incompatibility can lead to precipitation, which may result in a blocked cannula and inflammation at the insertion site. It is advised that no more than four drugs should be mixed in one syringe. The absence of cloudiness does not always guarantee compatibility or stability.

Consideration must be given to drug compatibility; refer to ‘Syringe Driver Compatibility Charts’, or ‘PCF4 Palliative Care Formulary’; or Dickman and Schneider (2011) ‘The Syringe Driver’ (Oxford University Press), or advice can be sought from the Royal Cornwall Hospitals Pharmacy Medicines Information Unit on 01872 252587. The out of hours on call pharmacists can be contacted via switchboard at Royal Cornwall Hospital (01872 250000).

6.7.4. Compatibility Issues:
  o BNF interactions
  o Diluents
  o Tonicity (Osmolality)
  o pH
  o Drug degradation over time
  o Sunlight, agitation factors

Check the prescribed medication fits into a 30 ml syringe; if a higher volume is required, a second syringe driver may be needed.

6.8. Minimise Risk
- Do not cover syringe driver with bedding or put into direct sunlight
- Do not agitate the syringe driver
- Dilute to maximum volume in the syringe
- Change syringe 24 hourly (micro and drug stability)
- Keep syringe driver (vertically) below skin site to avoid accidental siphoning of drug
6.9. Observation and Monitoring of Infusion
Adults that are inpatients at RCHT: Checks on the pump and infusion site should be undertaken every four hours, or a minimum of four times per 24 hour period and be recorded on the check sheet (see Appendix 3).

If the syringe driver should occlude at any time during the infusion, the time of the occlusion should be recorded on the check sheet. Further information on how to manage an occlusion can be found in section 7.8.3. of this document.

6.10. Re-siting and/or Skin Reactions
The following action is required for patients who experience a painful inflammatory reaction:

- Change needle site – this should be at least 5cm away from the last site
- Reduce the concentration of the irritant drug by using an increased dilution, reduce dose prescribed or change irritant drug. A new 30 ml syringe will need to be drawn up. Change giving set line if there are drug compatibility issues (follow the instructions in section 6.6. for initial set up).
- Give irritant drug by another route.
- Ensure that the needle is not inserted too superficially and that it does penetrate the subcutaneous layer.

6.11. Troubleshooting
For all incidents: Assess the patient and inform line manager/on-call manager and the site coordinator immediately.

A DATIX report must be completed at the time of the incident. Include the details of the syringe driver (asset number and date of service), the prescribed medications if a drug error has occurred, patient information, and any other details that would be beneficial in a follow-up investigation.

If the syringe driver is found to be faulty, staff must exchange the syringe driver immediately and send it directly to CEMS (Clinical Engineering Management, Medical Physics Dept.) to be checked. Ensure the decontamination/fault slip has been completed with the cause for concern and is also sent with the device to CEMS. Keep a record of the asset number if the device was involved in an incident.

6.11.1. If a syringe driver infusion runs through too slowly:
- Check the position of the patient in relation to the insertion site
- Check record sheet to confirm volume in syringe and time commenced
- Check giving set for kinking
- Check infusion site for displacement/leakage or inflammation
- Check contents of syringe for precipitation or crystallisation
- Check syringe is secured properly on syringe driver
- Check infusion rate visually
- Check battery working using the functions within the McKinley T34
- Check start function has been commenced
Check position of syringe driver – infusion may be slower if the device is positioned too low because the device is working against gravity
Check the event log on the McKinley T34.

6.11.2. If a syringe driver infusion runs through too quickly:
- Check record sheet to confirm volume in syringe and time commenced
- Check infusion rate
- Check position of syringe driver – if the syringe driver is placed higher than chest height, line siphonage may occur (increase in flow rate due to gravity).

6.11.3. If the syringe driver has an occlusion:
- Check the infusion line for crystallisation or kinking
- Check the insertion site for infiltration or extravasation
- The catheter can be flushed using the second portal.
- If necessary, disconnect the line from the catheter and flush the line with the syringe. The VTBI (Volume to be infused) will decrease. Insert the syringe back into the driver and restart infusion. The time will be recalculated to accommodate the new VTBI as long as you resume programming.
- Write this in the comment section of the syringe driver checklist documentation to alert other staff that the line has been flushed.

If there are no obvious reasons for the occlusion, start the pump again. If the pump occludes a second time within one hour of the first occlusion, repeat steps 1 and 2 and check the delivery volume. If there is no obvious reason for the occlusion, the line or pump may need to be changed.

Note: Occlusions of the line can result in the patient not receiving the prescribed drug(s) for several hours. Check the volume infused to ensure the appropriate amount of drug(s) has been delivered.

6.12. Discharges and transfers to/from inpatient setting
Staff must complete form MD11 for patients leaving RCHT with a T34 syringe driver (see Appendix 4). A copy of the form goes with the patient; the form must also be faxed to the Equipment Library. An expected date of return must be documented on the form.

If a patient is transferred with a syringe driver that is unfamiliar to the staff receiving the patient (into the community, hospital, hospice or other care setting outside the county) it should be immediately exchanged for one that they have received training on once the patient has arrived at their new place of care. The RCHT pump should be returned immediately upon the exchange of the new syringe driver.
If a patient is transferred into the hospital with a syringe driver other than a McKinley T34, the pump must be exchanged with a T34 and the procedure to set up a new 24 hour infusion should be followed if there are no changes to the prescription, or site used.
6.13. Discontinuing infusion at time of death

6.13.1. Expected death: Deactivate the keypad lock, stop infusion and switch the syringe driver off. The syringe driver should be left in situ until death has been confirmed.

6.13.2. Unexpected death: this must be reported to the Coroner. Leave the syringe driver in situ but remove the battery to stop the infusion. Ensure that all the professionals dealing with the body are aware that the syringe driver is still in situ. The Coroner has access to a syringe driver lock box key if the syringe driver needs to be removed from the lock box.

7. Dissemination and implementation

7.1. A copy of the policy will be stored electronically in the Trust’s document library on the internet/intranet site.

7.2. A clear communication will be sent to managers to make them aware that the policy has been issued and that they are responsible for cascading the information to their staff members, including staff members who do not have regular access to email.

8. Monitoring compliance and effectiveness

| Element to be monitored | Full Adherence to the policy. Incidents involving McKinley Syringe Drivers and the infusion line and Needleless System. Check sheet for McKinley T34 syringe driver for use on Adults assists the clinical team to check the volume of mixture is being infused at the expected rate. This is monitored every 4 hours |
| Tool | (1) Datix (2) McKinley Syringe Driver itself stores code protected programmes detailing recent 24 hour infusions within the internal memory. Medical Devices Team access only. (3) Audit tool developed by the Medical Devices Team and the Palliative Care Forum as part of the annual records audit. |
| Frequency | Every 3 years to comply with Medical Devices Training policy as and when alerts incidents occur Medical Devices Team monitor use of the syringe drivers, incidents and faulty Mckinley Syringe drivers. Audits will be reported via the Divisional Audit and Guidelines Meeting within the appropriate Division. |
| Reporting arrangements | The Medical Devices Team and Training Officer will report incidents and their findings to the Medical Devices Group Quarterly. Medication Incidents are reported to the Medicines Practice Committee. The nature of Incidents and their findings will be recorded together with the required actions within the minutes of these meetings. The Medical Devices Committee and Medicines Practice Committee report to the Trust Management Committee which in turn reports via the Governance Committee to the Trust Board. |
Acting on recommendations and Lead(s) | Ward Managers, Lead Nurses and Matrons. Divisional Quality Group is responsible for interrogation, required actions within their Division, and to designate a named lead where appropriate. This is documented in meeting minutes.

Change in practice and lessons to be shared | Designated leads will forward the lessons to be shared with all relevant stakeholders and disseminated to all clinical staff across The Royal Cornwall Hospitals sites.

9. **Updating and Review**
   
   This policy will be reviewed every three years.

10. **Equality and Diversity**
   
   10.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Diversity & Human Rights Policy' or the [Equality and Diversity website](#).

   10.2. The Initial Equality Impact Assessment Screening Form is at Appendix 2.
### Appendix 1: Governance Information

<table>
<thead>
<tr>
<th>Document Title</th>
<th>Policy and procedure for the management of subcutaneous continuous infusions in Adults</th>
</tr>
</thead>
<tbody>
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<td>Date Issued/Approved:</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; August 2016</td>
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<tr>
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<td>1&lt;sup&gt;st&lt;/sup&gt; August 2016</td>
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<tr>
<td>Date Valid To:</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; August 2019</td>
</tr>
<tr>
<td>Directorate / Department responsible (author/owner):</td>
<td>CNS Team: Palliative Care Liz Thomas and Angela Hart</td>
</tr>
<tr>
<td>Contact details:</td>
<td>Liz Thomas &amp; Angela Hart <a href="mailto:elizabeth.thomas26@nhs.net">elizabeth.thomas26@nhs.net</a></td>
</tr>
<tr>
<td>Brief summary of contents</td>
<td>This policy describes the criteria for using a McKinley T34 Syringe Driver and the procedure to follow for its use. It highlights the standard expected of clinical staff who care for patients who have or may require this device to administer their medication.</td>
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<tr>
<td>Suggested Keywords:</td>
<td>Syringe, driver, infusion, palliative. T34, end</td>
</tr>
<tr>
<td>Target Audience</td>
<td>RCHT ✓ PCH CFT KCCG</td>
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<tr>
<td>Executive Director responsible for Policy:</td>
<td>Medical Director</td>
</tr>
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<td>Date revised:</td>
<td>N/A</td>
</tr>
<tr>
<td>This document replaces (exact title of previous version):</td>
<td>POLICY AND PROCEDURE FOR THE MANAGEMENT OF SUBCUTANEOUS CONTINUOUS INFUSIONS IN ADULTS V1.1</td>
</tr>
<tr>
<td>Approval route (names of committees)/consultation:</td>
<td>Medicines Practice Committee Medical Devices Committee Palliative Care Link Forum CSSC Governance DMB</td>
</tr>
<tr>
<td>Divisional Manager confirming approval processes</td>
<td>Karen Jarvill, Divisional Director CSSC</td>
</tr>
<tr>
<td>Name and Post Title of additional signatories</td>
<td>Not required</td>
</tr>
<tr>
<td>Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings</td>
<td>{Original Copy Signed}</td>
</tr>
<tr>
<td>Signature of Executive Director giving approval</td>
<td>{Original Copy Signed}</td>
</tr>
</tbody>
</table>
### Version Control Table

<table>
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<tr>
<th>Date</th>
<th>Version No</th>
<th>Summary of Changes</th>
<th>Changes Made by (Name and Job Title)</th>
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<tr>
<td>13.07.15</td>
<td>V1.0</td>
<td>Final alterations to procedure of syringe driver commencement.</td>
<td>Eve Thorp, Liz Thomas &amp; Angela Hart CNS Palliative Care team</td>
</tr>
<tr>
<td>02.10.15</td>
<td>V1.1</td>
<td>Formatting into policy compliant with RCHT Policy on Policies</td>
<td>Eve Thorp CNS Palliative Care</td>
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<tr>
<td>01.08.2016</td>
<td>V1.2</td>
<td>Minor changes: Updated contact email address &amp; confirmation battery life standard as 33% battery power required prior to starting 24 hour pump</td>
<td>Liz Thomas CNS Palliative Care Team</td>
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</table>
Appendix 2: Initial Equality Impact Assessment Form

Name of the strategy / policy / proposal / service function to be assessed (hereafter referred to as policy) (Provide brief description): Policy and procedure for the management of subcutaneous infusions in adults

<table>
<thead>
<tr>
<th>Directorate and service area: CSSC, Palliative</th>
<th>Is this a new or existing Policy? Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of individual completing assessment: Liz Thomas</td>
<td>Telephone: 01872 25 8346</td>
</tr>
</tbody>
</table>

1. Policy Aim
Who is the strategy / policy / proposal / service function aimed at?
To ensure correct, safe and appropriate use of the McKinley T34 syringe driver for subcutaneous infusions.

2. Policy Objectives
The purpose of this document is to inform health professionals on the correct, safe and appropriate use of the McKinley T34 syringe driver for subcutaneous infusions.

3. Policy – intended Outcomes
Safe use of subcutaneous infusions in adults.
Improved patient experience.

4. How will you measure the outcome?
An agreed audit tool developed by the Division and registered with clinical effectiveness as part of the annual records audit, to include the elements to be monitored described above. Datix will also be monitored.

5. Who is intended to benefit from the policy?
Adult Healthcare professionals
Patients requiring a subcutaneous infusion

6a) Is consultation required with the workforce, equality groups, local interest groups etc. around this policy? No

b) If yes, have these groups been consulted?
The following were consulted during the compiling of this policy:
Members of the Hospital Specialist Palliative Care Team - Nursing and Medical
Palliative Care Link Nurses
Other ward nurses
Medical Devices Committee led by Nurse Executive
Productive Ward Team

C) Please list any groups who have been consulted about this procedure.
This policy has been produced specifically to address aspects of care for patients when in the hospital setting when staff are able to undertake more frequent checks.

7. The Impact
Please complete the following table.

Are there concerns that the policy could have differential impact on:

<table>
<thead>
<tr>
<th>Equality Strands</th>
<th>Yes</th>
<th>No</th>
<th>Rationale for Assessment / Existing Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>x</td>
<td></td>
<td>All adult patients requiring a subcutaneous infusion</td>
</tr>
<tr>
<td><strong>Sex</strong> (male, female, transgender / gender reassignment)</td>
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<td>---------------------------------</td>
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<tr>
<td><strong>Race / Ethnic communities /groups</strong></td>
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<tr>
<td><strong>Disability</strong> - Learning disability, physical disability, sensory impairment and mental health problems</td>
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<tr>
<td><strong>Religion / other beliefs</strong></td>
<td></td>
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<tr>
<td><strong>Marriage and civil partnership</strong></td>
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<tr>
<td><strong>Pregnancy and maternity</strong></td>
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</tr>
<tr>
<td><strong>Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian</strong></td>
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</tbody>
</table>

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:
- You have ticked “Yes” in any column above and
- No consultation or evidence of there being consultation- this **excludes** any **policies** which have been identified as not requiring consultation. **or**
- Major service redesign or development

8. Please indicate if a full equality analysis is recommended.  

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td></td>
<td>X</td>
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</tbody>
</table>

9. If you are not recommending a Full Impact assessment please explain why. Not required

The device and procedure described within the policy will be implemented within a clinical area following assessment on a patient and based on their individual clinical need and patient safety/preference.

Signature of policy developer / lead manager / director  
Liz Thomas  
Date of completion and submission  
1st August 2016

Names and signatures of members carrying out the Screening Assessment  
1. Liz Thomas  
2.  

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead,  
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa,  
Truro, Cornwall, TR1 3HD

A summary of the results will be published on the Trust’s web site.

Signed: Liz Thomas  
Date: 1st August 2016
Appendix 3: Check sheet for McKinley T34 syringe driver for use on Adults

Patients Name…………………………………………NHS/CR number……………………………………
(ID sticker)

For inpatients, checks must be done every 4 hours

<table>
<thead>
<tr>
<th>Rationale for checks</th>
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<tbody>
<tr>
<td>Starting time</td>
<td>Commencement/change of syringe</td>
</tr>
<tr>
<td>Site</td>
<td>Appropriate placement / intact / no pain / no inflammation / no discharge</td>
</tr>
<tr>
<td>Position</td>
<td>Syringe driver must be level with patients trunk</td>
</tr>
<tr>
<td>Connections</td>
<td>Luer lock / secure / no leaks</td>
</tr>
<tr>
<td>Syringe(approximate volume remaining)</td>
<td>Record the volume to be infused, to check whether delivery is correct</td>
</tr>
<tr>
<td>Rate</td>
<td>Chart current rate, to ensure correct dose</td>
</tr>
<tr>
<td>Stability of solution</td>
<td>Clear/colourless / no crystallisation / protected from light</td>
</tr>
<tr>
<td>Battery level</td>
<td>Press INFO key, then YES key. Replace battery when 33% or below</td>
</tr>
<tr>
<td>Occlusions</td>
<td>Record the time of each occlusion during a 24 hour period. Notify appropriate person if device occludes 2 or more times during a 24 period.</td>
</tr>
</tbody>
</table>

If any alteration to the rate or syringe is made, please complete checklist at the time of the change.

PLEASE INITIAL BOX AFTER CHECKING

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Appendix 4: MD 11 Form
Record Sheet for Issuing Medical Device for use outside RCHT

Training Requirements
Staff members and end users should ensure all items on this list are covered.

<table>
<thead>
<tr>
<th>Pre-checks</th>
<th>Before use, ensure device is safe to use and perform any maintenance checks required</th>
</tr>
</thead>
<tbody>
<tr>
<td>General use</td>
<td>Be aware of the capabilities of the device and it's clinical use, and how to check it during use</td>
</tr>
<tr>
<td>Faults/alarms</td>
<td>Know about any common faults and errors with use and the actions to take in the event of any alarms</td>
</tr>
<tr>
<td>Cleaning</td>
<td>Appropriate cleaning process between use</td>
</tr>
<tr>
<td>Contacts</td>
<td>General contact numbers for routine enquiries and emergency contact numbers in case of faults or alarms which cannot be resolved</td>
</tr>
<tr>
<td>Return</td>
<td>Method of returning the device after use, or for routine service</td>
</tr>
<tr>
<td>Consumables</td>
<td>Information of how to obtain additional accessories for the device</td>
</tr>
</tbody>
</table>

Confirmation of Training and Identification of Device

<table>
<thead>
<tr>
<th>Item Issued</th>
<th>(Manufacturer and serial/ID number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination of item</td>
<td>(e.g. patient’s home/care home)</td>
</tr>
<tr>
<td>Agreed date of review/return</td>
<td></td>
</tr>
<tr>
<td>Last Service Date</td>
<td>(please note if service is required within loan period)</td>
</tr>
</tbody>
</table>

We, the undersigned, agree that training and information about the medical device to be issued has been given and understood.
Applicable for family members that may be responsible for the device as a home carer or staff that have not received training on the device. Registered staff from other organisations may decline training if they have received and recorded training on the issued device through their own organisations.

Staff member performing training

Patient (or person taking responsibility for item) confirmation:
- I understand that this medical device is for named patient’s use only.
- I have been given clear explanation (& written instructions) of its use (if applicable).
- I will take reasonable care of the device and report any fault to Royal Cornwall Hospital, CEMS, Medical Physics Department: 01872 252498.

Please Print and Sign your name

Name of person receiving device: Please note if it's a district nurse, hospice, care home or other community hospital staff.

Patient NHS Number (& address)

Storage of Form
- Keep original form in Patient notes as evidence of training given (copy may be given to patient)
- Record loan of any ward/RCHT device in separate folder & confirm it's return
- Equipment Library Device:-Fax form to Equipment Library via FAX 2909. Equipment Library will record loan and confirm return of device to RCHT

Return of Loan Equipment
This Item Is On Loan From The Royal Cornwall Hospital. Please return it promptly.

On return of item, patient may ask a member of staff to confirm receipt on this form.

<table>
<thead>
<tr>
<th>Item returned to (location)</th>
<th>Received by (staff to PRINT name)</th>
<th>Date of return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
This page has been left blank for any additional notes staff may need to make.
Appendix 5: T34 Consumable list Order information

Instruction for BD saf-T-Intima can be found on