Document Control

Title **Administration of Subcutaneous Medication Via The T34 Syringe Pump Standard Operating Procedure**			
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Directorate Community Nursing		**Department** Nursing	
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1. Introduction

1.1. The syringe pump was developed in 1979 for use in treating Thalassaemia (Wright & Callan, 1979). The use of a portable battery operated syringe pump for subcutaneous medications is now a well-established technique in the delivery of medication by a subcutaneous route.

1.2. The T34 is a small, lightweight, ambulatory battery operated infusion pump which will deliver a measured volume of medication(s) over a 24 hour period via a subcutaneous route to a patient for whom oral administration would be problematic. The pump is programmed in millilitres per hour thereby, reducing the opportunity for user error and the associated possibility of under or over dose. The T34 Syringe Pump has the option for fixed (LOCK ON) or variable infusion (LOCK OFF). At this stage all Northern Devon Healthcare Trust (NDHT) T34 syringe pumps will be programmed for use with LOCK ON function only delivering infusions over a 24 hour period.

1.3. NDHT is mindful that other pumps may still be used in some partner organisations. If a patient is transferred with a different pump it should be discontinued at the earliest opportunity. Guidelines for the safe transfer of care for patients with a syringe pump are included within this Standard Operating Procedure (SOP).

2. Indications for the Use of the Syringe Pump

2.1. The T34 syringe pump is used to deliver medication(s) at a predetermined rate via the subcutaneous route over a 24 hour period to prevent the need for regular injections when medication cannot be swallowed or absorbed, examples are:

- Nausea and vomiting
- Impaired consciousness
- Clients concordance/confidence, being aware that there may be mental capacity issues to be considered
- Oral medication not tolerated, thus a switch to sub-cutaneous medication should ensure the needs are covered
- Swallowing difficulties
- Head and neck tumours/surgery
- Bowel obstruction
- Recommended route for prescribed medication
- Impaired absorption

2.2. This is not an exhaustive list.

3. Patient Assessment and Communication

- Prior to commencing a syringe pump a full holistic assessment of the patient and clinical needs must be made. The indication for the use of a syringe pump should be clearly and accurately documented in the patient's records. The decision to commence a syringe pump must be agreed with the prescriber, nurse on duty and the patient and/or carer. A full explanation about what a syringe pump is, how it works and why its use is indicated should be discussed with the patient and his/her carers. Informed consent should be gained and documented as per the Consent Policy, NDHT.

- Where appropriate discussion with patient, family and medical practitioner for the need of a Treatment Escalation Plan or Advanced Care Planning should be considered.

- There are situations where a syringe pump is used for short-term symptom control, both in palliative and non-palliative patients. The aim would be for the pump to be discontinued and necessary medication switched to oral or other appropriate routes, e.g. transdermal patches. This should be explained to the patient and his/her carers.

- In the event of a patient who is unable to give consent the nurse will act in the best interest of a patient in conjunction with the Medical Practitioner and following discussion with family and carers in line with the Mental Capacity Act (2005) and evidenced within the clinical records.

- Consideration should be given to whether the patient requires any bolus injections at the time of commencing a syringe pump prior to the medication in the pump taking effect (4 hours for optimum dose to take effect).

- The patient/carer should be offered the NDHT syringe pump information leaflet and advice given regarding general care of the syringe pump and to avoid exposure to excessive sunlight and moisture. If the patient is within the community setting then the patient and/or carer must have information to know when it is appropriate to contact a Registered Nurse or Medical Practitioner and appropriate contact numbers.

  http://www.northdevonhealth.nhs.uk/wp-content/uploads/2016/09/the_mckinley_t34_syringe_pump.pdf

4. Prescribing the Medication

4.1. Guidance on prescribing can be sourced from the following link:

http://www.northdevonhealth.nhs.uk/new/wp-content/uploads/2012/04/Medicines-Policy-V1-0-26May15-BOB-Version.pdf

https://www.medicinescomplete.com/mc/bnf/current/

http://www.northeast.devonformularyguidance.nhs.uk/

4.2. Further information is available on BOB via the Specialist Palliative Care team page including: Symptom Management Guidelines see below.

http://ndht.ndevon.swest.nhs.uk/palliative-care-and-macmillan-nursing/symptom-management-guidelines/

5. Documentation Required

5.1. Ensure all NDHT required documentation is available including:

5.2. A Prescription and Medication Administration Record (Acute) or Authority to Administer Medication prescription (Community) to include:

- Patient full name, address, date of birth and NHS number or unique identification number
- Generic name of the medicine(s) to be used in the syringe pump which should be legible, in capital letters and using black or dark ink
- The pharmaceutical form of the medicine
- The dose in metric units
- The appropriate diluents, name, volume and number of ampoules
- Route and duration of administration i.e. subcutaneous infusion by syringe pump over 24 hours
- As required doses for anticipated symptom control
- Clear and legible signature of prescriber, together with printed name
- All prescriptions for Controlled Drugs must comply with the requirements of the Misuse of Drugs Act 1971 (see British National Formulary guidance on Prescribing)
- In an in-patient setting the standard medication charts are used by all prescribers and the procedures for recording of ampoules follow the medicines management policy
- Community staff use the pre-printed syringe pump care plan and NDDH staff complete the additional needs section of the in-patient care plan

6. Equipment Required

6.1. For further advice refer to the SOP for the preparation of injectable medicine

- All T34s are labelled with a ‘licence until date’. If expired please do not use this pump and return to EBME for servicing. It is the users’ responsibility to check this before use. Ensure a lockable plastic case with appropriate key is available.
- A disposable carrying cover to be available from web basket to protect from exposure to excessive sunlight if required

- Only 9 volt alkaline batteries should be used with the T34, specifically ones labelled with the international marking code 6LR61 which will be clearly displayed on the battery. Not all alkaline batteries are the same and the 6LR61 code is important. The recommended battery is a Duracell plus MN1604 or the Panasonic power line. Non alkaline batteries must NOT be used. Two of the recommended batteries should be available. Please note that with normal use a battery is expected to last 3-4 days depending on the number of times the display function keys are accessed
- Saf–T–Intima 24GA yellow needle free infusion device, single lumen, should be in use across all NDHT sites unless a clear, documented rationale indicating the choice of a different infusion device is present. The use of this needle free prevention device will reduce the risk associated with needle stick injury and metal allergies.
- Use appropriate skin preparation swab
- Non-sterile gloves for preparing medication and inserting Saf-T- Intima
- Ensure that the pump is switched off and battery removed for 30 seconds before cleaning and allow to dry before use
- Syringe Extension Set Non-DEHP, Latex Free w/anti-siphone, anti-reflux valve, female luerlock, length: c.100cm, Diameter: 0.5X3mm (inner X outer) Priming Vol: c.0.5ml should be used unless a documented risk assessment indicates a different line. This is the preferred extension line to be used across all NDHT to minimise volume in the line
- BD Plastipak 10ml or 20ml sterile luer-lock syringe should be used unless a clear, documented rationale indicates the use of a different luer-lock syringe is to be used.
- Ensure injectable medication syringe(s) are chosen to avoid error when a patient is also receiving enteral/oral – medication via oral/enteral syringes
- Sterile needles for drawing up medication
- Please note that a 30ml or 50ml luer-lock syringe may be used with the T34 syringe pump. However, the lockable case cannot be used when either syringe is in place. The maximum volume of fluid that can be drawn up is 34ml. A 50ml syringe MUST only be used following a clear, documented rationale and liaison with local palliative care teams, pharmacist or medicines practice facilitator
- There are large lockable cases that can be purchased from CME Medical- contact EBME if one is required. Currently NDHT do not have these is stock.
- Prescribed medication required and prescribed diluents. Check the integrity of packaging and expiry dates on all medications and diluents
- Drug additive label
- Occlusive dressing: IV 3000 to be used
- Ward staff use a checklist to record the asset number of the pump; date and time set up; medications used; volumes; battery strength; and timed checks
- Disposal of equipment in accordance with Waste Management Policy http://ndht.ndevon.swest.nhs.uk/wp-content/uploads/2010/04/Waste-Management-Policy-V4.0-11Apr14.pdf

7. Setting up the T34 Syringe Pump

7.1. Please ensure you have completed the correct training and competency to set up the T34, see Clinical Training and End of Life sites on BOB. Also ensure you have checked the policies below.

http://www.northdevonhealth.nhs.uk/2016/08/injectable-medicines-policy-prescribing-preparing-and-administering-injectable-medicines-policy/

http://www.northdevonhealth.nhs.uk/2012/04/medicines-policy/

http://www.northdevonhealth.nhs.uk/2018/02/unlicensed-medicines-policy/

7.2. The setting up of a syringe pump is an Aseptic Non Touch Technique as per the Infection Control Precautions Policy.

http://www.northdevonhealth.nhs.uk/2012/10/infection-prevention-control-operational-policy/

7.3. Please note that the process is different when setting up:

- An infusion for the first time, when a new infusion line and infusion device is required
- Subsequent infusions, when the infusion line and cannula are intact

7.4. Step by step guide for both processes are detailed below. It is recommended that the laminated T34 user guides are stored with each syringe pump, where available.

The process for Setting up a New Infusion and When a New Infusion Line and Device are required

- Explain the rationale for the procedure to the patient/carer
- Provide the opportunity for patient/carer to express concerns/ask questions. Check patient identifiers and allergy status
- Gain and document consent or consider best interest decision
- Provide NDHT patient syringe pump information leaflet
- Check the prescribed medication, including expiry dates against the Prescription and Medication Administration Record/Authority to Administer Medication prescription. Reflect on own clinical and pharmaceutical knowledge of the medication prescribed for use within the syringe pump or any prescribed bolus/stat doses. The registered nurse has accountability to ensure that all the medication she/he administers is suitable for the route intended and within an appropriate dose range and in accordance with clinical need.
- Draw up the prescribed medication and diluents in the appropriate size syringe using the filter or non-filter and blunt needle

- It is considered best practice to make the solution as dilute as possible to reduce the likelihood of drug incompatibility and minimise site irritation. Therefore use diluent to draw fluid volume up to:-
    - 10ml in a 10ml syringe
    - 17ml in a 20ml syringe
- 24ml in a 30ml syringe – it should be noted that these syringes do not fit within the clear plastic case so should be used with caution.
- 34mls in a 50ml syringe -– it should be noted that these syringes do not fit within the clear plastic case so should be used with caution.
- The solution in the syringe should be clear and free from precipitation and/or crystallisation
- Attach a completed medication additive label to the syringe. All sections must be completed clearly in black ink, take care not to obscure the scale on syringe or the sensor on the barrel clamp. Under no circumstances must an unlabelled syringe be fitted to a syringe pump
- Dispose of all ampoules and additional equipment used at this stage in a NDHT approved waste disposal container and in accordance with NDHT Waste Management Policy

  http://ndht.ndevon.swest.nhs.uk/wp-content/uploads/2010/04/Waste-Management-Policy-V4.0-11Apr14.pdf

- Install a 9 volt alkaline battery specifically ones labelled with the international marking code 6LR61 which will be clearly displayed on the battery. The recommended battery is a Duracell plus MN1604 or the Panasonic power line.
- Press and hold the ON/OFF button to turn the device on and observe the completion of the pre-programmed start-up sequence (actuator movement)
- During pre-programming, check the LCD display to confirm the default settings of the device. Please be aware that this screen is only displayed for a few seconds
- Press the (info) button to observe the battery power available, this must be at least 35% for community use. Normal battery use is 3-4 days; this will depend on the number of times the display feature buttons are accessed
- Allow pre loading to complete, the actuator will always return to the pre-set position of the previous infusion
- Visually align the 3 syringe sensors to syringe and use the FF/back keys to adjust as necessary. Lift the barrel clamp and load the syringe with the flange facing downwards, replace the barrel clamp. Observe the LCD screen and confirm correct placement
- Check that the device has correctly identified the syringe brand and size, confirm by pressing YES, or use the up/down arrows to select as appropriate
- Check LCD screen for correct duration and volume of infusion

DO NOT PRIME THE LINE AT THIS STAGE

- Lift and turn the barrel clamp arm to remove the prepared syringe from the pump. Replace the barrel clamp
- Connect the infusion line to the prepared luer-lock syringe
- Gently prime the infusion line
- Visually align the 3 syringe sensors to syringe and use the FF/back keys to adjust as necessary, lift the barrel clamp and re-load the syringe. Replace the barrel clamp, observe the LCD screen and confirm correct placement
- Check that the device has correctly identified the syringe brand and size, confirm by pressing YES, or use the up/down arrows to select as appropriate
- Select appropriate subcutaneous infusion site ensuring sites are regularly rotated. 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

7.5. **The following sites are contraindicated. There is a need to avoid the following areas:**

- **Any area affected by oedema/lymphoedema because absorption is affected and risk of infection**
- **Areas of damaged skin for example: broken, reddened or bruised skin, area of indentation or pressure area**
- **Any area that has recently received or is currently receiving radiotherapy**
- **Any area over a bony prominence or near a joint as there is little subcutaneous tissue and can easily be dislodged**

7.6. Following universal precautions and using a clean technique, prepare the skin

- Use appropriate skin preparation swab for 30 seconds and allow to air dry. Please refer to current NDHT Infection Control Policy for further guidance
- Hold Saf-T-Intima straight and rotate the white safety shield to loosen the needle
- Check if the needle bevel is facing up
- Grasp the pebbled side of wings, pinching firmly. Grasp the skin firmly but gently and insert the cannula at a 45 degree angle

- Gently hold the wings of the Saf-T-Intima in place and grasp the white shield and pull in a straight continuous motion, the shield will come off, exposing an injectable bung adapter
- Apply occlusive dressing IV 3000
- Dispose of the shield containing the retraced needle and all remaining waste and equipment used in accordance with NDHT Waste Management Policy
- Connect the prepared/primed T34 syringe pump and infusion line to the Saf-T-Intima
- The screen will be displaying 'Press YES to Resume, NO for New Syringe'. Press YES to resume the same programme as pressing NO will delete the programme and recalculate what is left in the syringe over the default duration 24hrs
- Check LCD screen for correct duration and volume of infusion
- Please note that the volume and duration will be different due to priming the line, however, the rate will be the same
- Press YES to confirm and YES to start the infusion
- Ensure pump delivering is displayed on screen. The green light will flash intermittently
- Where a documented risk assessment indicates a different infusion device please refer to manufactures guidance
- Complete all documentation referring and adhering to NDHT Clinical Records Policy and The Nursing and Midwifery Council. The Code; Professional standards of practice and behaviour for nurse and midwives (2015)

Bolus Doses

7.7. Bolus doses of medication are to be given via a second Saf-T-Intima.

Keypad Lock

7.8. The T34 allows all users to lock the operation of the keypad during infusion. This function can be used to prevent tampering with the device.

To Activate the Keypad Lock

7.9. With the pump infusing press and hold the (info) key until the screen displays 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.

To De-Activate the Keypad Lock

7.10. Press and hold the (info) key until the screen displays a 'progress' bar moving from right to left. Hold the key until bar has moved completely across the screen and a beep is heard to confirm the lock has been de-activated.

7.11. Place the syringe pump in the lock box and lock in place. All staff including community will be issued with a key to access and lock syringe lock boxes and will be responsible for the safe keeping of the key.

The Process for Setting up a Subsequent Infusion when the Infusion Line and Cannula are Intact

- If there is any change in the medication/s the line must be changed or any patient discomfort re-site the Saf-T-Intima
- Lines and sites should be changed on the 5th day unless there is clear clinical indication to change before this date e.g.; inflammation at site, crystallisation in the line, this is not an exhaustive list. The line and site should be changed when there is an addition or removal of prescribed medication. If there is an increase in the dose then you should use your clinical judgement regarding changing the line and site. With any change to medication or alternation to dose in the pump consider patient symptom control and if a bolus dose is required
- Explain the rationale for the procedure to the patient/carer
- Gain and document consent / best interest decision
- Provide the opportunity for patient/carer to express concerns/ask questions. Check patient identifiers and allergy status
- The solution in the syringe should be clear and free from precipitation and / or crystallisation
- Attach a completed drug additive label to the syringe. All sections must be completed clearly in black ink, take care not to obscure the scale on syringe or the sensor on the barrel clamp. Under no circumstances must an unlabelled syringe be fitted to a syringe pump
- Dispose of all ampoules and additional equipment used at this stage. NDHT approved waste disposal container and in accordance with NDHT Waste Management Policy
- Deactivate keypad lock first
- Press the (info) button to observe the battery power available, this must be at least 35% for community use. Normal battery use is 3-4 days; this will depend on the number of times the display feature buttons are accessed
- Press the stop button, if infusion still running
- Lift the barrel clamp and remove the existing syringe from the device
- Visually align the 3 syringe sensors to the new prepared syringe and use the FF/back keys to adjust as necessary
- Replace the barrel clamp and observe the LCD screen and confirm correct placement
- Check that the device has correctly identified the syringe brand and size, confirm by pressing YES, or use the up/down arrows to select as appropriate
- The LCD screen will display resume or new syringe, press NO for new syringe
- Check LCD screen displays correct duration and volume of infusion
- Confirm by pressing YES

- Remove the existing empty syringe from the extension line and dispose in a NDHT approved waste disposal container and in accordance with NDHT Waste Management Policy
- Attach the new filled syringe
- Press YES to start the infusion
- Dispose of all remaining waste and equipment used in accordance with the NDHT Waste Management Policy
- Ensure pump delivering is displayed on screen. The green light will flash intermittently
- Complete all documentation referring and adhering to NDHT Clinical Records Policy and the Nursing and Midwifery Council. The Code: Professional standards of practice and behaviours for nurse and midwives - 2015

Keypad Lock

7.12. The T34 allows all users to lock the operation of the keypad during infusion. This function can be used to prevent tampering with the device.

To Activate the Keypad Lock

7.13. With the pump infusing press and hold the (info) key until the screen displays 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.

To De-Activate the Keypad Lock

7.14. Press and hold the (info) key until the screen displays a 'progress' bar moving from right to left. Hold the key until bar has moved completely across the screen and a beep is heard to confirm the lock has been de-activated.

7.15. Place the syringe pump in the lock box and lock in place. All staff including community will be issued with a key to access and lock syringe lock boxes and will be responsible for the safe keeping of the key.

8. Monitoring

8.1. Individual patient assessment should determine the need to change the Saf-T-Intima.

8.2. The site and line should be changed on the 5th day unless there is clear clinical indication to change before this date e.g.; inflammation at site, crystallisation in the line, this is not an exhaustive list. The site and line should be changed when there is an addition or removal of prescribed medication. If there is an increase in the dose then you should use your clinical judgement regarding changing the site and line. With any change to medication or alternation to dose in the pump consider patient symptom control and if a bolus dose is required. When re-sited, the cannula should be placed at least 3cm from the previous site and not near any other devices.

8.3. If the syringe pump medication is likely to finish early through the line being primed or the line being re-sited it is important that this fact is documented and handed over to the nurse on the next shift or arrangements made for the next visit to take place at the appropriate time.

Battery Change

8.4. If the keypad is locked and the battery needs to be changed while the pump is still running, this is acceptable. When switching back on, it will only allow YES to be pressed to resume the current infusion.

In Patient settings

8.5. After each set up an initial check must be made after 5 minutes to ensure the pump is delivering the prescribed medication and this is documented and then again at 1 hour. The minimum standard expected after this check is 4 hourly. This should be clearly documented and the patient should be checked more often as directed by the patient's clinical need, changing condition and professional judgement.

Community Setting

- Assess the patient's current status, effectiveness of symptom management and any side effects of medication
- On the Authority to Administer Medication prescription; medications are prescribed in a range in the community. Doses can be changed within this range as required by the registered nurse, following a full assessment of the patient. The reason for the change must be clearly documented and the patients General Practitioner (GP) informed of the change-**Community Only**
- After each set up an initial check must be made after 5 minutes to ensure the pump is delivering the prescribed medication and this is documented
- The pump is checked again before the nurse leaves the patients home
- At each contact with the patient the syringe pump will be checked and documentation completed
- Check insertion site for signs of redness, leakage, hardness, swelling, pain
- Observe the syringe and infusion set for kinks in the tubing, leakage precipitation, blood or discolouration of medication
- Check the syringe box is in place and lock the box with key provided.
- Check that the syringe is securely attached to the syringe driver
- Observe that the infusion is running to time

9. Closing Down and Removing Syringe Pump

9.1. Before stopping or removing a syringe from the pump on a live patient, please ensure that the syringe is disconnected from the line so there is no risk of accidentally giving a bolus dose to the patient.

Discontinuing a syringe pump when no longer required

- When the infusion is complete and the syringe is empty the pump will stop automatically and the alarm will sound
- If the infusion is to be stopped before the syringe is empty, it should be disconnected at the syringe end from the patient for safety reasons before the syringe is taken off the pump
- If the syringe pump is no longer required for the patient, press the (info) button and record the date, time, volume infused and the volume remaining
- Press STOP to stop this infusion
- Lift barrel clamp and remove syringe. Dispose of and record any medication remaining in the syringe, in accordance with NDHT Medicines Policy, associated SOP and NDHT Waste Management Policy
- Press “OFF” to turn off the syringe pump
- Remove the cannula and cover the site with a dressing
- Dispose of all remaining waste and equipment used in accordance with NDHT Waste Management Policy
- Ensure all entries are clearly documented, signed and dated in the clinical records
- Remove the battery from the syringe pump
- Clean device as per Trust Policy

Discontinuing a syringe pump when the patient dies whilst the syringe pump is running:

9.2. If there are doubts about the circumstances of the death, leave the pump in place as per the verification of an expected death SOP. Contact the Line Manager/Senior Nurse/GP for advice.

9.3. In a straight forward expected death situation the syringe pump and infusion set should be removed by a registered nurse only when death has been verified by an appropriately trained person.

- Press the (info) button and record the date, time, volume infused and the volume remaining
- Press ‘STOP’ to stop the infusion
- Lift barrel clamp and remove syringe. Dispose of and record any medication remaining in the syringe, in accordance with NDHT Medicines Policy, associated SOP and NDHT Waste Management Policy
- Press “OFF” to turn off the syringe pump

- Remove the cannula and cover the site with a dressing
- Dispose of all remaining waste and equipment used in accordance with NDHT Waste Management Policy
- Ensure all entries are clearly documented, signed, dated and time
- Remove the battery from the syringe pump
- Clean device as per Trust Policy

10. Cleansing, Decontamination and Maintenance

- Ensure that the pump is switched off and battery removed for 30 seconds before cleaning and allow to dry
- Syringe pumps should be decontaminated with detergent wipes as a detergent solution may cause problems on an electrical piece of equipment
- If any additional cleansing is needed, e.g. the treads of the screws the actuator moves along, contact EBME for advice
- The pump must not be submerged in water
- In the event that the pump is accidently dropped in water, or damaged in any way it must be withdrawn from use immediately and sent to Electrical and Biomedical Engineering (EBME) for maintenance and checks
- All syringe pumps are serviced regularly according to a defined schedule and at least annually, whether used or not.
- Check that the syringe pump is well within the maintenance date before storing, if in the community. Return to EBME in NDDH.
- Returning pumps to EBME if it is a hospital T34.

11. Incident Reporting

11.1. Incident reporting should be done through the Datix system.

http://www.northdevonhealth.nhs.uk/2017/11/incident-reporting-management-policy/

Managing and reporting Incidents

11.2. Take immediate action to prevent further harm (e.g. make area safe, quarantine affected equipment, remove patient/employee from exposure, isolate hazard)

11.3. Ensure appropriate medical assessment and treatment as necessary

11.4. When the incident involves a patient, details of the incident should also be recorded in the medical/nursing records this should include the date, brief summary of the incident, who treated the patient and the outcome for the patient and Datix completed

11.5. Report the incident to the person in charge, if the incident occurs out of hours this will be the on call clinician/manager

11.6. Ensure Duty of Candour has been met

11.7. If a medication error has occurred the SOP relating to medication errors should be followed:

http://www.northdevonhealth.nhs.uk/wp-content/uploads/2016/07/Medication Incidents-SOP-v1.4-25Jul2016-FINAL.pdf

12. T34 Syringe Pump Problem Solving

Problem	Possible Cause	Action
The pump will not start or has powered off	No battery present. Battery installed incorrectly Battery level very low Pump is faulty	Insert a battery Realign battery terminals Insert a new battery Service required
The infusion seems to be going to quickly	Wrong syringe brand confirmed during set up Pump faulty or incorrectly calibrated	Retrain user to prevent a repeat of the incident, and report as incident. Service calibration required
The pump has stopped before emptying the syringe	Alarm state has occurred	Check the alarm condition and resolve

Alarms	
When an alarm is activated: • The infusion stops • An audible alarm sounds • Keypad LED turns to red • LCD screen displays a text message and instructions to help identify the cause	How to resolve the cause of an alarm condition: Before trouble shooting or solving any alarm press YES to acknowledge and silence the alarm or follow screen message
Near End Infusion nearly complete, this is an alert only and the infusion does not stop	
Low Battery Prepare to change the battery, this is an alert only and the infusion does not stop	
Occlusion Check the infusion line is not trapped, kinked or clamped at any point and when satisfied press YES to restart the infusion. If the alarm repeats and there is no physical sign of any obstruction, press ON/OFF power the pump off, re-site the line and seek assistance as required.	
Syringe Displaced Syringe is not fitted correctly/displaced. On screen message identifies which sensor to check.	
Pump Paused Too Long Left in stopped or program mode for 2 minutes without a key press. If pump has been accidently stopped press YES to restart or finish the programming.	
Syringe Empty End of program. Press ON/OFF to power off the pump.	
End Battery Change battery now and restart the infusion. Turn pump on, confirm syringe and resume infusion.	

13. Safe Transfer of Care for Patients with a Syringe Pump

Transfer of patients with a T34 syringe pump from any care setting with NDHT

- When a patient is transferred from any care setting within NDHT with a T34 syringe pump, the **Safe Transfer of Care for Patients with a Syringe Driver form** attached must be completed and a copy sent with the patient to facilitate the safe transfer between care settings

- The syringe pump will be identifiable by an asset tag by the EBME Department. The syringe pump must be returned to the EBME Department. The syringe pump will be returned to the allocated team following a check or service of the device as required

Transfer of patients with an alternative syringe pump into the care of NDHT

- When a patient is transferred into your care from another organisation, it is considered best practice to request that the **Safe Transfer of Care for Patients with a Syringe pump form** attached is completed by the transferring team/organisation. This could be by Email, fax or sent with the patient

- When a patient is transferred to your care with an alternative pump this **must** be changed to a T34 syringe pump within 24 hours. The syringe pump must be returned to the transferring organisation

- If you transfer the patient out of your organisation to another organisation that does not use a T34 syringe pump then information on the patient's clinical need and medication will be sent. Log the pump number and provide information of where the syringe pump is to be sent back within one week and follow up accordingly. If pump not returned, escalate to line manager and Datix

Safe Transfer of Care for Patients with a Syringe Pump Form

Patient Name:	NHS Number/Unique Identification Number:	
Date of Transfer:	Transferred from Tel:	
Time of Transfer:	Transferred to: Tel:	
	Date	**Signature**
Telephone referral to the area the patient is being transferred to providing the following information.		
1) Type of syringe pump		
2) The date and time the syringe pump is due to be changed		
3) 7 days' supply of medication for the syringe pump on discharge from inpatient settings.		
4) A signed authority to administer sheet including stat doses to be sent with the patient		
5) Are the family aware of planned transfer/discharge		
6) Written information on how to stop/disconnect the syringe pump to be sent with patient. For T34 syringe pumps; the pump lock box will be unlocked prior to transfer		
Other Information		
Return of the syringe pump sent with patient on transfer		
Model and asses number of syringe pump		
Syringe pump to be returned to		
* Name and signature of staff member returning the syringe pump		
* Date		

***** To be completed by person returning the syringe pump