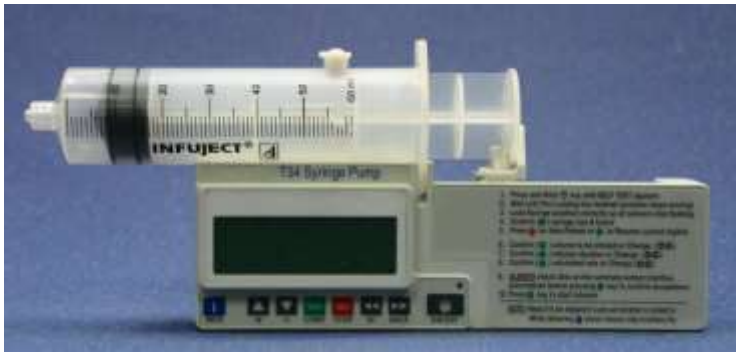
Syringe Driver Medication Administration and Management Policy

A syringe driver (SD) is a portable battery powered device that administers medication subcutaneously over a designated time period. A syringe containing medication is attached to the driver, which drives the plunger forward at a controlled rate.
Currently the Niki T 34 is the main SD approved by MOH for in use in NZ. Niki T 34 are calibrated in mls per hour.



Main Indications For Use

Oral administration of medication is inappropriate due to:
- Persistent nausea and vomiting
- Dysphagia
- Gastro-Intestinal obstruction
- Poor absorption of oral medication
- Alteration in level of consciousness

Prescription and Administration

1. A registered medical practitioner prescribes and signs for medications. ***In the community*** this is the responsibility of the General Practitioner (GP). A copy of the prescription is kept in patient's notes.
2. In the community it is the responsibility of the GP to write the new prescription and fax it to the pharmacy and hospice. The community nurse ensures a copy of the new prescription is placed in the patients' notes.
3. In the community the community nurse uses prefilled syringes provided by the pharmacy in accordance with the prescription supplied by the GP. The family/caregivers pick the syringes up from the pharmacy and store them in the fridge.
4. In the community, any change to the SD setting should be checked by contacting the TCHS Nurse Manager/Nurse Leader to talk through any changes in settings
5. Ideally there should be no more than 3 drugs in one syringe, however on a rare occasion 4 drugs can be acceptable.

6. Familiarise yourself with the Nikki T34 syringe driver before you use it.
7. Saf-T-Intima subcutaneous administration sets are the giving sets preferred by hospice The longevity of the site can vary considerably from 1 to 14 days. Site should be changed minimally unless indicated otherwise (i.e. site reaction, backflow of blood).
8. The keypad lock facility may be used in circumstances where there is a risk of individuals tampering with the infusion delivery.
9. A lock box may be applied in circumstances where there is risk of tampering with the medications within the syringe itself.

Equipment

(Supplied by referrer and contained in a tool box type container left at clients home)

1. T34 Syringe driver – ***check syringe driver screen to ensure setting is for 24 hours***.
2. Nine volt, alkaline battery.
3. Infusion set:
   - BD Saf-T Intima 22 g 0.9 x 19 mm **–** this is an enclosed s/c needle system that leaves a cannula in place, minimising site reactions and needlestick injuries to staff. (Dawkins et al, 2000).
   - Baxter Extension Set (2C5685) – 91cm x 0.9m
4. Tegaderm transparent dressing to secure cannula.
5. Luer lock syringe - size dependant on volume to be infused.
6. 1ml, 2ml or 5ml syringe as appropriate for drawing up medication.
7. 18G x 1½ blunt drawing up needle.
8. Prescribed drug/s from pharmacy in pre prepared syringe.
9. Normal saline 0.9% for injection or if indicated, sterile water as diluent.
10. Medication label.
11. Alcohol swabs.
12. Razor (if necessary).
13. Spare battery available at all times.
14. Holster, or pouch to support syringe driver. A dark cover gives protection from light for medications.
15. The lockbox may be used as a protective cover, and held snugly inside a holster.
16. Ensure identification label is applied flat onto the syringe as wrinkles or flaps affect the ability of the driver to detect type and size of syringe.

Site Selection

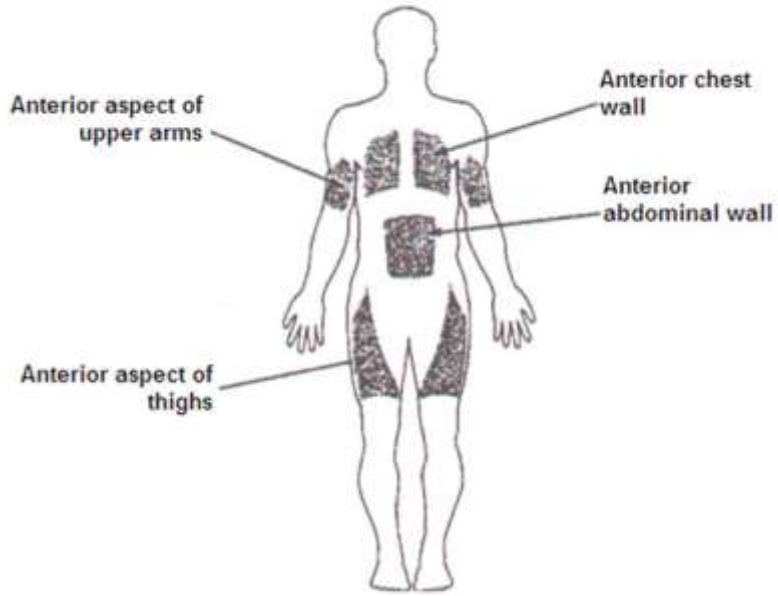
1. The choice of sites is determined by patient preference and practical considerations (e.g. mobility, comfort, lymphoedema, delirium/confusion etc).

2. Do not site in tissue which is oedematous, bruised, scarred or recently irradiated.

3. Avoid skin folds, bony prominences or close proximity to a joint and use

- Upper arms (anterior aspect preferred for bed-bound patients);

- Abdomen;
- Back of shoulders (scapula);
- Chest wall (avoid if person is severely emaciated)
- Thighs.



Procedure:

Inserting line

Preparation

1. Explain to the patient and caregiver the use and merit of a syringe driver and ensure the patient and/or caregiver has given consent.
2. Check syringe driver medication and rate as prescribed by Doctor on prescription Sheet. Prescription must have the prescribing doctors signature.
3. Check correct client by asking name and date of birth. If client unable to respond, check correct client with family member.
4. Apply the extension tubing to the syringe, and manually prime (approximately 0.9ml).
5. Wash and dry hands
6. Select the appropriate site:
   - Select a site in consultation with the patient if possible.
   - Sites that are hairy must be shaved to allow Tegaderm dressing to seal the site well.
7. Swab the skin

For restless or confused patients use the shoulder or back to prevent dislodgement.

When changing the site, the needle should be sited at least three cm away from a previous site.

8. Prepare the Saf-T Intima by:
    - Holding catheter, rotate the safety barrel to loosen the needle – a faint "click" is heard. This reduces the risk of the canula kinking under the skin.
    - Make sure bevel is oriented and not covered by the catheter.
9. Grasp the side of wings, ***pebble side to skin***, and insert the Saf-T Intima at 35- 40 degree angle, with the sharp bevel of the needle against the skin. There is more potential for pneumothorax if the needle is inserted horizontally into the chest wall.
10. Secure with Tegaderm and date. Stabilise catheter wings - grasp white shield, where marked by pebbles, and pull the needle into the safety casing in a straight continuous motion.
11. Connect Saf-T Intima to the extension tubing

Procedure:

Setting up the Infusion

1. Attach syringe to extension tubing and manually prime the line. Apply the clamp to the line.
2. Insert a 9V battery into the Niki T 34 battery compartment aligning the + / - contacts and slide the cover back on
3. Ensure the syringe driver is turned off and the barrel clamp is down
4. Press and hold the ON/OFF key. Wait until the actuator stops moving and the LOAD SYRINGE screen appears
5. If the actuator is not in the correct position to hold the syringe use the FF or BACK keys to reposition it
6. Lift and turn the barrel clamp and load the syringe into the pump ensuring the flange sits in the central slot and the plunger clicks into the actuator
7. Lower the barrel clamp
8. The screen will display the size and brand of syringe detected. If it is correct press YES to confirm. If not scroll using up and down arrows until the correct selection appears then press YES to confirm.
9. The next screen shows an infusion summary
10. Check that all the information on the screen is correct (use a calculator to check the rate) then press YES to confirm
11. The screen will display START INFUSION

The syringe driver should not be immersed in water, or worn while showering or bathing.

Simple acceptable method for temporary interruption of infusion when showering:

Leave the pump running.
Disconnect the line from the syringe.
Apply the luer plug to the line and the connector to the syringe.
After showering, reconnect the line to the syringe.

*This method is simple particularly for patients and family **in the community**, reducing the risk of patients pressing the wrong buttons and inadvertently under-dosing themselves. Minimal wastage occurs – e.g. for a 10 minute shower, approx 0.1ml of the infusion will be wasted.*

Documentation

Will include

- the date and time
- s/c site – where, condition of site.
- the rate
- volume to be infused
- battery life
- pain score/infusion managing pain
- Any side effects i.e. nausea or vomiting.

Monitoring Continuous Subcutaneous Infusion

1. Assess regularly for symptom control - daily on ***community*** patients (or at each visit), or prn.

2. Document the date and time, s/c site, the rate, volume to be infused and battery life.

3. Infusion and site check daily or prn in the community. This check is to confirm:
   - The site appears healthy and there is no sign of irritation, inflammation, tenderness, bruising, or tissuing, nor needle displacement, leakage or blood in tubing.
   - The syringe to infusion set connection is free of leakage, no kinking and there is no precipitation or crystallisation of medication present.
   - Check the LCD display to confirm the pump is still running at the same infusion rate as originally set.
   - Check the Green LED is flashing intermittently and "<<<<<< Pump delivering" animation is appearing on the LCD display.
   - Check that syringe indicated on pump LED screen correlates to syringe attached to pump.
   - Check that dose rate and time left is comparable to what is expected to ensure a 24 hour delivery.
   - Check for signs of physical damage to the pump and accessories.

4. For community clients on a syringe driver - check the battery life on the INFO key when reloading a new syringe. *If the battery has 30% or less life, replace.* Ensure patient/family know how to change the battery. This is likely to be approx every 5 - 6 days for a non-rechargeable battery.

Intervention Suggestions to Avoid Site Problems and Skin Reactions

1. Consult with doctor to reassess drugs to be used.
2. Avoid oedematous areas.
3. Use of Saf-T Intima canula is first choice for infusion.
4. Change insertion site as often as necessary.

Checklist if Symptoms are Uncontrolled:

1. Reassess patients' pain/symptom status;
2. Give PRN dose if charted;
3. Check site for irritation/inflammation/leakage;
4. Check line or block/kink**/**leakage/ crystallisation;
5. Check syringe not empty or dislodged;
6. Check/ trouble shoot pump;
7. Report to clients GP (or hospice if involved) if further follow-up is required.

CARE OF SYRINGE DRIVERS:

1. Do not immerse in water.

2. Do not hold or push the LCD screen – this may cause it to not display for a period of time.

1. Cleaning of syringe driver once it is no longer needed:
   - Remove any sticky residue.
   - Remove battery from syringe driver and store both in drug room. The outside surfaces of pump and lockbox are cleaned by wiping them with Janola wipes (benzalkonium chloride 0.7% w/v) only. .

Material holsters and blue pouches are laundered in a normal wash and air dried.

4. Ensure it is returned to provider of Syringe Driver.

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