

## **MS16A Syringe Driver Infusion Training Package**

|                       |   |
|-----------------------|---|
| <b>Author:</b>        | <b>Nicky Ryan, Palliative Care Team; Marion Khan,<br/>Practice Development Team</b> |
| <b>Date of issue:</b> | <b>March 2008</b>   |
| <b>Version:</b>       | <b>1</b>  |
| <b>Owner:</b>         | <b>Palliative Care Team</b>   |
| <b>Approved by:</b>   | <b>Palliative Care Team, Practice Development Team</b>                              |
| <b>Publisher:</b>     | <b>Ms Nichola Greenwood, Medical Governance Manager</b>                             |
| <b>Review date:</b>   | <b>March 2009</b>   |

# Syringe Driver Infusion Training Package

## Contents

|     | <u>Page</u><br><u>No.</u>   |    |
|-----|---|----|
| 1   | Introduction  | 4  |
| 2   | Scope   | 4  |
| 3   | Aims and Learning Objectives  | 5  |
| 4   | Teaching, Learning and Assessment Framework                           | 5  |
| 5   | The MS16A Syringe Driver and the Delivery of Subcutaneous medication: | 6  |
|     | Indications   | 6  |
|     | Advantages  | 6  |
|     | Contraindications   | 6  |
| 6   | Anatomy & Physiology - The subcutaneous layer                         | 7  |
|     | Figure 1: The subcutaneous layer                                      | 7  |
| 7   | Insertion site selection  | 8  |
|     | Figure 2: Anatomical sites for subcutaneous cannula insertion         | 9  |
|     | Table 3: Sites to be avoided for subcutaneous infusions               | 10 |
| 8   | Equipment required for subcutaneous medication administration         | 11 |
|     | Figure 3: Yellow Side-Ported Saf-T-Intima Cannula                     | 12 |
| 8.1 | Guidelines for insertion of Yellow Side-Ported Saf-T-Intima Cannula   | 12 |
|     | Table 4: Guidelines for insertion                                     | 13 |
| 9   | The Graseby MS16a Syringe Driver                                      | 15 |
| 9.1 | Measuring and setting the rate of the MS16a syringe driver            | 15 |
|     | Figure 4: Measurement in mm fluid volume in luer lock syringe         | 16 |
| 9.2 | Calculating rate of infusion of the syringe driver                    | 16 |
|     | Figure 5: the MS16a syringe driver                                    | 17 |
| 9.3 | Setting up of the syringe driver                                      | 17 |
| 9.4 | Risk assessment   | 20 |
| 9.5 | Using two syringe drivers   | 20 |
| 9.6 | Changing prescription and medication                                  | 21 |

|      |   |    |
|------|---|----|
| 9.7  | Changing insertion sites, lines and cannula                       | 21 |
| 9.8  | Care and monitoring of patients                                   | 22 |
| 9.9  | Checking the syringe driver                                       | 22 |
| 9.10 | Problem solving the syringe driver                                | 22 |
| 9.11 | Discontinuing the syringe driver                                  | 23 |
| 10   | Documentation and record keeping                                  | 23 |
| 11   | Complications   | 24 |
| 12   | Other related issues  | 25 |
| 13   | Accountability for training package                               | 25 |
| 14   | Implementation of training package                                | 26 |
| 15   | Monitoring and auditing of training package                       | 26 |
| 16   | Consultation  | 26 |
| 17   | Review Arrangements of training package                           | 26 |
| 18   | Portfolio of Evidence   | 27 |
| 19   | References  | 27 |
|      | Appendix 1: Risk Assessment for patients requiring syringe driver | 29 |
|      | Appendix 2: Choice of Drugs for use in Syringe Drivers            | 31 |
|      | Appendix 3: Portfolio of Evidence, Assessment of Competence       | 36 |
|      | Appendix 4: Declaration of Competence                             | 42 |

## **1. Introduction**

Subcutaneous administration of medication requires the insertion of a needle or cannula into the subcutaneous tissue below the dermis, and is an available route for the continuous delivery of some medication through a mechanical syringe driver device. This infusion route is often associated with the delivery of palliative care therapy, but is also used for delivery of medication for neurological disorders via specific delivery devices (Bruera et al 1990; Dickman et al 2002; Katzenschlager et al 2004).

This training package is underpinned and cross-referenced to the following Trust Policies:

Infection Control Transmission Based Precautions Policy, 2005

Effective Hand Hygiene Policy, 2005

Infection Control Standard Precautions Policy, 2007

Medicines Code, 2005-2006

The Positive Patient Identification Policy, 2006

York Hospital NHS Trust Drug Formulary

## **2. Scope**

This training package is aimed at all registered nursing staff within York Hospitals NHS Trust who will, in the course of their normal duties, be required to assess, plan, implement and evaluate subcutaneous medication infusions and ensure the safe and effective use of the Graseby MS16A (blue) Syringe Driver. Best practice will be maintained through attendance at the training session, supervised practice and declaration of assessed competence. Guidelines for use of the Syringe Driver can be found on Horizon under: <Policies and Procedures ~ Guidelines for the use of the MS16A Syringe Driver> .

This training package will, however, concentrate only on the delivery of medication via the subcutaneous route. Should specific drug prescribing information be required, reference

should be made to the policies and protocols produced by the Palliative Care Team.

### **3. Aims and Learning Objectives**

The aim of this teaching package is to demonstrate good practice in the safe administration of subcutaneous medication infusions. After completion of the training you should be able to:

- Describe the normal dermal structure and recognise sites suitable for subcutaneous access
- Identify the indications and contraindications for administration of subcutaneous medication
- Identify essential equipment required, and demonstrate knowledge of safe technique, when undertaking subcutaneous medication infusions through a Graseby MS16A (blue) syringe driver
- Summarise possible complications associated with subcutaneous medication, and discuss their prevention
- Describe the nurse's role and responsibilities in ensuring that the individual needs of the patient are met throughout the procedure.

### **4. Teaching, learning and assessment framework**

The training package will consist of the following elements: -

- A two hour study period including both theoretical and practical teaching
- Training booklet
- A period of supervised practice
- Assessment of competence both in practical and theoretical work
- Declaration of competence

Teaching on the syringe driver device (Graseby MS16A) and assessment of competence must be undertaken by an approved infusion device trainer i.e. an individual who has

been deemed competent under the 'train the trainer' Graseby company programme.

## 5. The MS16A Syringe Driver and delivery of subcutaneous medication:

### Indications for use

|   |   |
|---|---|
| <b>For control of symptoms:</b> <ul style="list-style-type: none"><li>- Pain</li><li>- Nausea and vomiting</li><li>- Restlessness</li><li>- Increased secretions</li><li>- Pain unrelieved by oral medication or intermittent injection</li></ul> | <b>Patients unable to swallow or absorb oral medication:</b> <ul style="list-style-type: none"><li>- Intractable nausea and vomiting</li><li>- Gastro-intestinal obstruction/malabsorption</li><li>- Mouth, throat, oesophageal lesions</li><li>- Profound weakness/unconsciousness</li></ul> |
|---|---|

### Advantages of use

- Constant plasma drug levels resulting in increased comfort and confidence
- Absorption of drugs more reliable
- Change only every 24 hours
- More effective assessment of symptom control.

### Contraindications to use

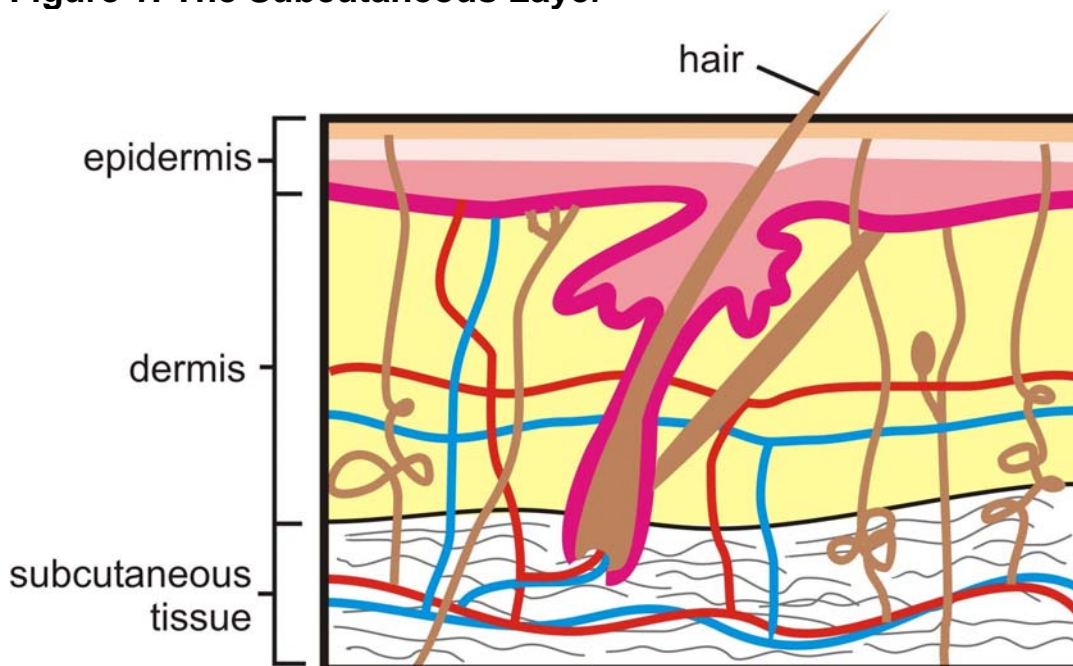
- Infection and broken skin at infusion sites
- Patients with clotting disorders because of risk of bleeding at the infusion site
- Patients who have poor tissue perfusion
- Peripheral vascular disease of lower extremities
- Pre-existing oedema.

(Ferry et al 1999, Sasson and Shvartzman 2001, Jackson 2004)

## 6. Anatomy and Physiology - the Subcutaneous Layer

Beneath the dermis is the subcutaneous layer. It consists of areolar and adipose tissues. Fibres from the dermis extend to the subcutaneous layer and anchor the skin to it. The subcutaneous layer, in turn, attaches to the underlying tissues and organs. This layer is generally much thicker than the dermis and is richly supplied with lymphatic and blood vessels and nerves (Carola et al 1990) (Figure 1).

**Figure 1: The Subcutaneous Layer**



Picture courtesy: Medical Illustrations Department, York Hospitals NHS Trust, York (2007)

The skin is one of the largest organs of the body in surface area and weight, and ranges in thickness from 0.5 – 4.00mm depending on location.

Structurally, the skin consists of three principal parts –

- i) a superficial, thinner portion which is composed of epithelial tissue, called the epidermis
- ii) a deeper, thicker layer composed of connective tissue, called the dermis
- iii) below the dermis is the subcutaneous layer consisting of areolar and adipose tissues. Fibres from the dermis extend to the subcutaneous layer and anchor the skin to it. The subcutaneous layer, in turn, attaches to underlying tissues and organs. This layer is generally much thicker than the dermis and is richly supplied with lymphatic and blood vessels, and nerves. Also within the subcutaneous layer are the coiled ducts and sweat glands and the bases of hair follicles. A principle purpose of the subcutaneous layer is temperature regulation through laying down of adipose (fat) tissue; excretion of sweat; and constriction and dilation of blood vessels (Carola et al, 1990).

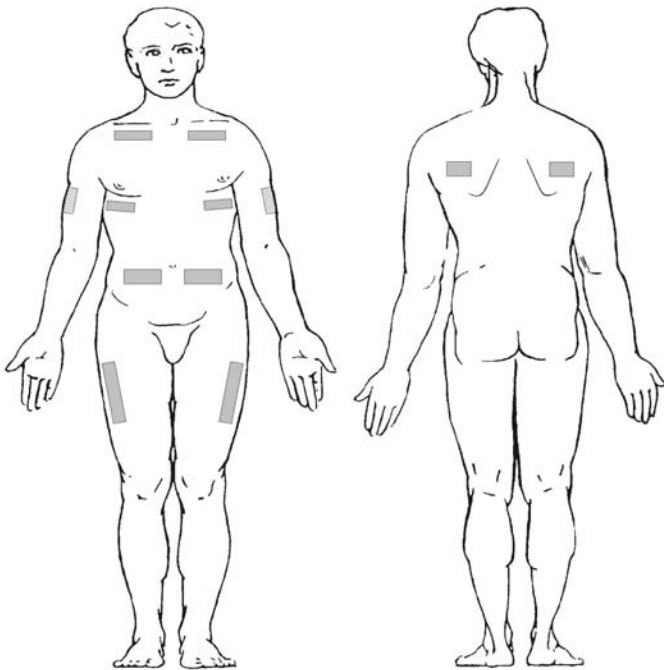
## **7. Insertion Site Selection**

In theory, any skin site with loose subcutaneous tissue is available for insertion. Individual assessment of recommended site areas should be made as the patient's physiological condition may preclude their appropriateness, for example, oedema of thigh. In practice the selected sites of choice for continuous subcutaneous infusion of drugs should have adequate amounts of subcutaneous tissue and good lymphatic drainage (Donnelly 1999). This will enable the most comfortable placement of the cannula, maximum dispersion and absorption of the infusate and allow for secure attachment of the device (Dougherty and Lister 2004; Sasson and Schvartzman 2001). Where possible, selection of an appropriate site should be discussed with the patient.

In ambulatory patients, the suggested sites are the scapula; the abdomen; the anterior chest below the clavicle or over an intercostal space. In patients confined to bed, where there are risks that the patient may lie on or dislodge the cannula, the preferred sites are the thighs; abdomen; or outer aspect of the arm (Figure 2).

Although the arm is recommended and used (Brown and Worobec 2000, Sasson and Schwartzman 2001, Fonzo-Christe et al 2005) suggest that this site be avoided because fluids are better absorbed from central sites as they have large stores of adipose tissue. Practitioners must therefore consider the volume of fluid to be infused when selecting the site.

**Figure 2: Anatomical sites for subcutaneous cannula insertion**



**Sites to be avoided** Sites that should be avoided for placement of subcutaneous cannulae are given in Table 3.


**Table 3: Sites to be avoided for subcutaneous infusions**

| <b>Site to be avoided</b>   | <b>Rationale</b>  |
|---|---|
| <ul style="list-style-type: none"> <li>• Oedematous limbs.</li> </ul>                   | <ul style="list-style-type: none"> <li>• There would be insufficient absorption from the site.</li> <li>• Increased risk of infection via broken skin at cannula site.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Painful sites.</li> </ul>                      | <ul style="list-style-type: none"> <li>• Patient discomfort.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Areas of induration (hard) tissue.</li> </ul>  | <ul style="list-style-type: none"> <li>• Reduced site absorption.</li> <li>• Patient discomfort.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Over bony areas.</li> </ul>                    | <ul style="list-style-type: none"> <li>• Reduced absorption due to lack of subcutaneous tissue.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Near joints.</li> </ul>                        | <ul style="list-style-type: none"> <li>• Limb movement may dislodge cannula or cause patient discomfort.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Irradiated skin area.</li> </ul>               | <ul style="list-style-type: none"> <li>• Radiotherapy can reduce patency of small blood vessels thereby affecting skin perfusion.</li> </ul>                                      |
| <ul style="list-style-type: none"> <li>• Areas of broken skin and infection.</li> </ul> | <ul style="list-style-type: none"> <li>• Risk of infection developing or increasing.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Bruised or scarred tissue.</li> </ul>          | <ul style="list-style-type: none"> <li>• Reduced site absorption.</li> <li>• Patient discomfort.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Areas near breast tissue.</li> </ul>           | <ul style="list-style-type: none"> <li>• Infusate may drain into axillary lymph glands.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Areas near perineum.</li> </ul>                | <ul style="list-style-type: none"> <li>• Infusate may drain into the scrotum or labia.</li> </ul>   |

(Brown and Worobec 2000; Sasson and Shvartzman 2001; Dougherty and Lister 2004; Royal College of Nursing (RCN) 2005)

## 8. Equipment required for subcutaneous medication administration

Before the procedure is undertaken, it is essential that all the equipment required is selected, the expiry date checked, and that any devices used are in good working order (Skills for Health, 2007). The Graseby MS16A Syringe Driver (blue) is the **only** type of portable syringe driver approved for use in York Hospitals NHS Trust to administer continuous subcutaneous medication infusions to adult patients for symptom management.

- Signed appropriate prescription
-  BD Yellow Side-Ported Saf-T-Intima Cannula (Figure 3)
- IV 3000 dressing
- 1 x Bionector
- Trust approved skin cleansing product
- Non-sterile gloves
- Sharps bin
- Graseby MS16A Syringe Driver with plastic transparent cover
- Vygon infusion set (100cm line with clamp)
- Batteries 9V
- BD Plastipak luer lock Syringes: 10ml, 20ml; or Terumo 30ml depending on final volume required
- Water for injection or Sodium Chloride 0.9% (depending on compatibility)
- Orange (23g) needles for drawing up drugs
- Additive label
- Medications prescribed (also used to prime the line after reconstitution)
- Lock Box ( if assessed as necessary – see Page 20)

**Figure 3:  Yellow Side-Ported Saf-T-Intima Cannula**



### **8.1 Guidelines for Insertion of Yellow Side-Ported Saf-T-Intima Cannula**

It is essential with any procedure, invasive or not, to discuss fully with patients the intervention required and obtain their informed consent to continue. Before commencement of subcutaneous therapy, the nurse must ensure that he or she is confident that the prescription and prescribed therapy are suitable for this route. No nurse must undertake any procedure or practice for which he or she has not received adequate training and assessment of competence (Nursing and Midwifery Council (NMC) 2004). Guidelines for insertion are outlined in Table 4.

**Table 4. Guidelines for insertion**

| <b>Action</b>   | <b>Rationale</b>   |
|---|--|
| Explain procedure to patient and obtain informed verbal consent (if possible).  | To ensure patient aware of, and consents to, proposed procedure.   |
| Consider site selection, involving patient in decision if possible.   | To select the appropriate infusion site and encourage patient concordance and tolerance.   |
| Wash hands and wear clean gloves.   | To minimise risk of infection.   |
| Clean selected insertion site with topical cleaning agent and allow to dry.   | To ensure pre-insertion skin cleansing.  |
| Remove white stopper from side arm and prime line with infusion syringe. Attach bionector.  | To remove air from line to reduce the risk of air embolism. Ensure medications are delivered as soon as the syringe driver starts. |
| Grasp “pebbled” side of the cannula wings, pinching wings firmly together. This locks the needle and prevents it from retracting during insertion                                   | To ensure effective insertion of needle into subcutaneous tissue   |
| Ensure the needle is bevel-side uppermost. If the bevel-side is not uppermost, open the wings and gently twist the white shield until the needle is correctly positioned            | To guide the needle through the tissue and reduce patient discomfort.  |
| Gently pinch the skin into a fold. In patients with greater adipose tissue, it may be necessary to keep the skin flat to ensure the needle is inserted into the subcutaneous layer. | To lift the subcutaneous layer away from the muscle layer  |
| Insert the needle subcutaneously at an angle of approximately 45 degrees.   | To ensure the secure entry of the needle into the subcutaneous tissue.   |
| Open the wings (pebbled side down) flat against the skin  | To ensure correct positioning of the cannula   |
| There must be no evidence of blood present in the giving set or cannula on insertion or during treatment.   | This indicates a capillary has been punctured. The device should be removed and resited.   |
| Apply firm finger-tip pressure over the wings of the cannula (avoiding the centre where the needle retracts) and  | To remove the insertion needle and activate the safety mechanism.  |

|   |  |
|---|--|
| simultaneously grasp the pebbled end of the white shield and pull in a <b>straight</b> continuous motion until the needle has fully withdrawn into the coloured cylinder and pops off |  |
| Gently remove the coloured cylinder from the cannula port, if it has not released spontaneously, exposing the adapter with the rubber bung  | To ensure safety needle mechanism as worked effectively.   |
| Place any resultant sharps in sharps bin.   | To reduce the risk of needlestick injury.  |
| Remove rubber bung and connect Vygon infusion set, open clamp   | To maintain closed circuit   |
| Apply IV 3000 over insertion site.  | To ensure secure fixation, allow for site observation and moisture vapour permeability.  |
| Adjust medication delivery rate as prescribed.  | To ensure timely and effective delivery of prescription.   |
| Complete necessary nursing documentation and line labels detailing date/time of insertion; insertion site and device used. Complete and sign Drug Chart.                              | Good record keeping helps protect the welfare of the patient, promotes better communication and ensures the dissemination of information between health professionals. |

(Dawkins and Pugh 2003, RCN 2005)

An evaluation of topical skin antiseptics by the Food and Drug Administration (USA) highlighted the properties of each agent and indicated that the fast action of alcohol combined with the lasting effects and broad spectrum cover of chlorhexidine are of benefit and have advantages over other agents (Jackson, 2005). The RCN (2005) also recommend that chlorhexidine, as a combined agent, would be the most suitable and practical option for pre-insertion skin disinfection.

The aim of IV dressings is to stabilise the device, prevent moisture accumulation and allow visual inspection of the site. Transparent semi-permeable membrane dressings allow moisture vapour permeability, enable continual visual inspection, are showerproof and can remain *in situ* for as long as the device, provided that dressing integrity is maintained. Wound dressings must not be used.

It is important that you have full awareness of the policies relating to: -

- ⇒The Safe Disposal of Sharps
- ⇒Safe Disposal of Clinical Waste
- ⇒Blood Spillages
- ⇒Needle Stick Injuries
- ⇒Universal Precautions.
- ⇒Antiseptic & Disinfectant.

These are all found in the Infection Control Policy manual

## **9. The Graseby MS16A syringe driver (Figure 5)**

### **9.1 Measuring and setting the rate of the MS16A syringe driver**

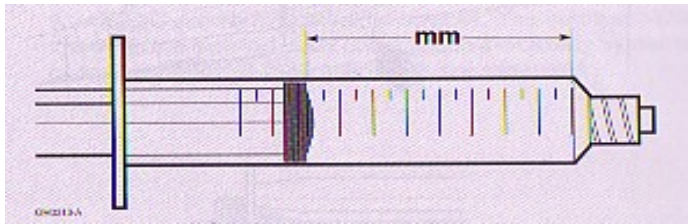
The total fluid to be infused should be measured in millimetres (mm) and the rate set in millimetres per hour (mm/hr) for the MS16A (blue).

The MS16A (blue) Graseby syringe driver will deliver 48mm of fluid over 24hrs at a rate of 2mm per hour. The length of 48mm is used to calculate the rate per hour setting, i.e.  $2\text{mm/hr} \times 24\text{hrs} = 48\text{mm}$

The length of liquid in the syringe is measured using the mm scale on the side of the machine. If the length of liquid in the syringe is 48mm, it will be delivered over 24hrs at a rate of 2mm per hour (Figure 4).

Different brands of syringes give different total volumes of fluid when measured at 48mm. This is why the volume in syringes is measured in mm to ensure the prescribed medication delivery over 24hrs. Within the Trust, BD Plastipak luer lock syringes must be used for 10ml and 20ml syringes, and Terumo luer lock syringes for 30mls.

**Figure 4: Measurement of millimetre (mm) fluid volume in luer lock syringe**



If the total length of required fluid becomes greater than 48mm in length in the 10ml syringe then change the fluid to a 20ml syringe, and measure the 20ml syringe length to 48mm adding in extra diluent as needed to bring the volume up to 48mm. **30ml syringes can also be used, but care must be taken to ensure that the syringe in this case is the Terumo due to the barrel width of the syringe.** The rate remains set at 2mm/hr for MS16A (blue).

## **9.2 Calculating rate of infusion of the syringe driver**

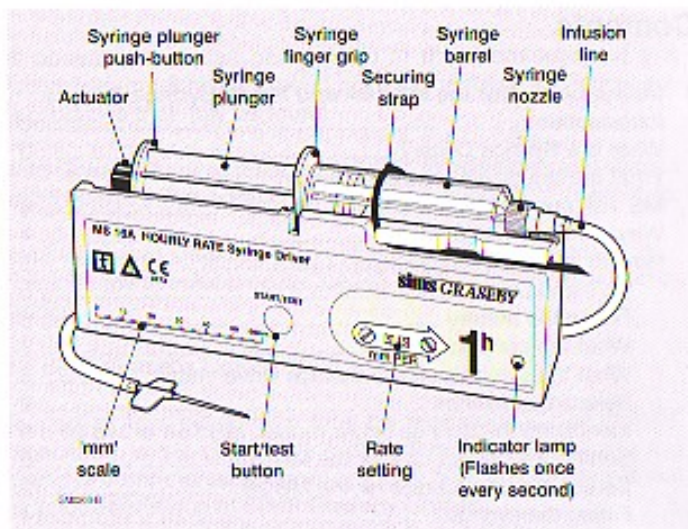
In the MS16A (blue) syringe driver, the following rates of infusion apply:

48mm set at 2mm runs for 24hrs

48mm set at 4mm runs for 12hrs

**Figure 5: The MS 16A Syringe Driver**

*MS 16A and MS 26 Instruction Manual*



**The MS 16A HOURLY RATE Syringe Driver**

### 9.3 Setting up of the syringe driver

| Action   | Rationale  |
|--|--|
| <ul style="list-style-type: none"> <li>• Check service date of syringe driver</li> </ul>   | <ul style="list-style-type: none"> <li>• To ensure syringe driver is in working order and safe to use</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Check driver and plastic transparent cover is cleaned using a detergent wipe before use</li> </ul>    | <ul style="list-style-type: none"> <li>• To reduce risk of cross-contamination and infection</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Insert new 9v battery and press 'Start' button</li> </ul>   | <ul style="list-style-type: none"> <li>• To activate syringe driver and ensure it is working by silencing the alarm and initiating the light to flash</li> </ul> |
| <ul style="list-style-type: none"> <li>• Check medications on syringe driver prescription chart are correctly prescribed and signed</li> </ul> | <ul style="list-style-type: none"> <li>• To confirm and ensure appropriate drugs are prescribed correctly and are compatible</li> </ul>                          |

|  |  |
|--|--|
|  |  |
| <ul style="list-style-type: none"> <li>• Explain procedure to patient and obtain informed verbal consent (if possible).</li> </ul>   | <ul style="list-style-type: none"> <li>• To ensure patient aware of, and consents to, proposed procedure.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• A Lock Box risk assessment form (Appendix 1) should be completed regarding the safe administration of medicines via the syringe driver. Identified risk should be recorded and discussed with the appropriate professionals (see Section 9.4).</li> </ul>   | <ul style="list-style-type: none"> <li>• Careful explanation is necessary to allay fears and anxieties regarding changing of medication route and medications used. To ensure safe administration of prescribed medication.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Wash hands according to Infection Control Policy. Ensure all the equipment has been cleaned prior to use.</li> </ul>  | <ul style="list-style-type: none"> <li>• To reduce risk of infection</li> </ul>  |
| <p>Check compatibility of drugs and diluent.<br/>If concerned please speak with Palliative Care Team, Medicines Information, GP or prescriber. Out of hours, contact St Leonard's Hospice.</p> <ul style="list-style-type: none"> <li>▪ There should be no more than three different drugs in one syringe, due to increased risk of incompatibility and concentration of drugs.</li> <li>▪ Mix drugs with diluents and dilute up to 48mm and measure against syringe driver gauge (See Figure 5).</li> </ul> | <ul style="list-style-type: none"> <li>• Correct drugs are delivered according to prescription.</li> <li>• Reduce possibility of incompatibility.</li> </ul>   |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>▪ Dilute with water for injection or sodium chloride 0.9% depending on which diluent is most compatible with drugs prescribed. (See Appendix 2 for commonly used drugs, and compatibility)</li> <li>▪ Use ampoule breaker if available to avoid sharps injury</li> </ul> |   |
| <ul style="list-style-type: none"> <li>• Complete additive label with information regarding patients' name, date of birth/hospital unit number, drugs, dosage, diluent, date and time, and signature. Attach label to the syringe trying to ensure the syringe measures can be seen.</li> </ul>                 | <p>Ensures correct medication given to correct patient, and enables visible check of syringe flow</p>   |
| <ul style="list-style-type: none"> <li>• Priming of line- Remember on initial priming of line, the infusion will finish 2 or 3 hours earlier (use only 100cms clamped tubing) This is because part of the syringe contents remain unused in the tubing until a new syringe is set up.</li> </ul>                |   |
| <ul style="list-style-type: none"> <li>• Select appropriate site (see Figure 2)</li> </ul>  | <ul style="list-style-type: none"> <li>• Good siting will allow even absorption of drugs without discomfort to patient.</li> </ul>                  |
| <ul style="list-style-type: none"> <li>• Applying syringe and driver to patient<br/>Check the identity of the patient as outlined in the 'Positive Patient Identification Policy' (2008)<br/>Using SAF-T-Intima giving</li> </ul>   | <ul style="list-style-type: none"> <li>• Ensure correct patient receives treatment. Ensure procedure for insertion is correctly followed</li> </ul> |

|   |  |
|---|--|
| <p>set, insert and secure as described in Section 8.1. Document on the monitoring section of the syringe driver drug chart the area used for siting, the date and the time.</p> |  |
| <ul style="list-style-type: none"> <li>• Recheck drug chart and check against label.</li> </ul>   | <ul style="list-style-type: none"> <li>• Confirm correct prescription</li> </ul> |

## 9.4 Risk assessment

A risk assessment must be carried out on all patients who require a syringe driver to deliver medications. Appendix 1 is the approved risk assessment tool. The aim of the risk assessment is to identify which patients may be at risk of accidental or intentional drug overdose from tampering of the syringe driver. If the risk assessment indicates that the patient requires a lock box these can be obtained from the Palliative Care Team. Out of hours, the lock box can be obtained from the Emergency Drug Cupboard.

During use, the lock box keys should be kept with the Controlled Drug keys.

## 9.5 Using two syringe drivers

If two syringe drivers are to be used on one patient, extra care should be taken:

- The same type of syringe driver must be used if two drivers are needed for one patient to reduce the risk of error.
- Ensure each syringe driver prescription is clearly identified on drug chart.
- Ensure prescription chart drugs and labels are checked carefully to ensure correct drugs used for each syringe driver
- Use separate documentation for each syringe driver

## 9.6 Changing prescription and medication

If prescription medication and/or dosages are changed, a new syringe and line must be set up and primed. The prescription chart should be re-written with new medication and dosages. The monitoring section of the syringe driver drug chart and labelling of the syringe should be completed accordingly.

**Rationale:**

This allows patient to get new drugs and dosage as soon as possible. Documentation should be updated and completed to show new delivery of drugs.

**9.7 Changing insertion sites, lines and cannula**

When resiting or restarting an infusion, it is recommended that the site selected is rotated using a figure-of-eight principle to maximise site absorption. Frequency of resiting of the selected device is dependent on the manufacturer's instructions; volume and type of infusate and local policies. It is reported in the literature (Brown and Worobec 2000, RCN 2005) that the time *in situ* of the device can vary between one to seven days, and must therefore be guided by regular site assessment and local policies.

Record any site reaction on nursing documentation. If reaction occurs again, may need to look at the compatibility of drugs and amount of diluent.

The manufacturers instructions must be followed changing equipment:

- Vygon 100cm line – every 24 hours and when the syringe is changed
- Saf-t-intima – Every 72 hours, after each infusion of 2 litres of fluid (see above) and if the area or site becomes inflamed or sore.
- Syringe – each time a new syringe is made up

## 9.8 Care and monitoring of patients

It is the responsibility of healthcare professionals to monitor patients at regular intervals in accordance with local protocols. Regular monitoring of patients enables healthcare professionals to evaluate the infusion site and assess patients' tolerance and response to the intervention. This will enable prompt identification and management of any complications.

## 9.9 Checking the syringe driver

The following checks must be undertaken at least every 4 hours

- Check the syringe driver is still running
- Light is flashing
- Whirr sound can be heard
- Syringe volume has decreased since last check and contents clear
- Syringe remains in place in driver
- Correct rate
- Record check on syringe driver documentation

Also check

- The line for kinks and to ensure clamp is off
- The site for signs of inflammation
- The patient for symptom control

## 9.10 Problem solving the syringe driver

| <b>Problem:</b>           | <b>Indication for the problem:</b>                                | <b>Solution:</b>  |
|---------------------------|---|---|
| Infusion running too slow | Clamp may be on or tubing kinked, battery may need changing. Site | Unclamp line, unkink tubing, change battery, check site for blockage or |

|  |  |  |
|--|--|--|
|  | may be blocked or inflamed   | inflammation and if occurred remove cannula and resite.              |
| Infusion running too fast  | Rate may be set wrong<br>Patient may have tampered with syringe driver   | Check calculation and rate<br>Recheck reassessment                   |
| The light stays on   | The battery is low   | Change the battery as soon as possible                               |
| The light stops flashing   | The infusion may be blocked  | Re-site syringe driver and change the line                           |
| Alarm sounds   | This means the syringe driver has stopped. This could be due to the following:<br>a. Syringe empty<br>b. Tubing kinked<br>c. Tubing is clamped | a. Renew syringe<br>b. Unkink or replace tubing<br>c. Unclamp tubing |
| If none of the above- change syringe driver and send for servicing<br>Syringe drivers must be serviced annually. |  |  |

## 9.11 Discontinuing the syringe driver

When the syringe driver is discontinued: -

- Remove Saf-T-Intima and place in clinical waste. Apply sterile dry dressing (if appropriate)
- Discard syringe, its contents and line into sharps box in accordance with hospital policy. Ensure to record the amount of discontinued medication on the prescription chart or checklist
- Clean driver and discard battery before storing away.

## 10. Documentation and record keeping

Documentation of site selection and assessment is fundamental to the care and monitoring of the patient receiving subcutaneous infusions.

Ensure the Syringe Driver Drug Chart [including Monitoring Sections] are completed accurately in accordance with NMC record keeping guidelines. Documentation must be completed for each syringe driver set up, when the syringe driver is changed, and at every drug round in the hospital.

**Rationale:**

- Maintain safe practice.
- Maintain safe accuracy of drug delivery

**11. Complications**

With appropriate and correct usage, the risks and complications associated with subcutaneous infusions are generally minimal and easily resolved. Any complication that does arise, however, requires potential resiting and review of patient needs and prescription.

| <b>Complications</b>      | <b>Prevention &amp; Management of complications</b>  |
|---------------------------|--|
| <b>At insertion site:</b> |  |
| Oedema                    | Ensure cannula inserted as per Section 8.1 and cover and secure with sterile dressing. Change equipment and rotate sites as described in Section 5.7. If complications occur remove cannula and resite. Treat patient symptoms with analgesia / antipyretics, may require antibiotics / surgical intervention for abscess. |
| Infection                 |  |
| Irritation                |  |
| Pain and inflammation     |  |
| Abscess                   |  |
| <b>Infusion induced:</b>  |  |
| Drug incompatibility      | Ensure drugs are compatible (use compatibility tables see Appendix 2)  |
| Patient drug allergies    | Ensure allergies identified prior to prescribing and allergy band in situ. If allergic reaction occurs, stop infusion treat symptoms and document on alert sheet and in records  |
| Circulatory collapse      | Stop infusion, support patient and summon medical help.  |

|                 |   |
|-----------------|---|
| Crystallisation | <p>Observe for crystallization within the line or syringe. Management:</p> <p><b>1. Increase the volume to allow for more diluent by:</b><br/> Using a 20ml BD Plastipak/30ml Terumo syringe for the prescription instead of 10ml<br/> Measure again up to 48mm<br/> Continue to run at 2mm= 02mm/hr in MS16A(blue) for 24hrs <b>OR</b></p> <p><b>2. Change to a 12 hourly regime by:</b><br/> Measure the syringe contents up to 48mm<br/> Run at 4mm= 04mm/hr in MS16A(blue) for 12 hour regime</p> |
|-----------------|---|

It must be considered that the more serious complications of abscess, allergies and circulatory collapse may be the result of inappropriate prescribing or administration.

## 12. Other Related Issues

### ADVICE and INFORMATION

Palliative Care Team Hospital – 01904 725835 are available for advice between: Monday – Friday, 8.30am – 4.30pm

Out of hours – advice can be sought from:  
St Leonard’s Hospice – 01904 708553

## 13. Accountability

Individual practitioners are accountable for their actions through their registered bodies.

All practitioners are responsible for ensuring their attainment and maintenance of competency within this training package framework.

## **14. Implementation**

Training of nurses in Saf-t-Intima usage, and handling and setting up a syringe driver, will be the responsibility of the Trust. Nurses attending the formal training (by Graseby) will be identified as trainers within the Trust to deliver training and assess competence to other registered health care professionals.

Education sessions regarding symptom control, via syringe driver and medications used in the syringe driver will be undertaken by the Palliative Care Team across both Trusts.

## **15. Monitoring and Auditing**

Monitoring of the syringe driver infusion training package will be through the Adverse and Incident Report Systems (AIRS) and by evaluation of training sessions and examination of competency data.

Audit of AIRS forms will be undertaken regularly to ensure training issues are highlighted and addressed. This is in order to monitor effectiveness and promote high quality of nursing care to patients.

## **16. Consultation**

This training package has been produced through Consultation with:

Syringe Driver Group; Palliative Care Pharmacy Group; Specialist Palliative Care Team; Practice Development Team; End of Life Care Co-ordinator; District Nursing Teams.

## **17. Review Arrangements**

The training package will be reviewed every two years by the authors or sooner if clinical practice indicates.

## 18. Portfolio of Evidence and Assessment of Competence

See Appendix 3

## 19. References

Brown MK, Worobec F (2000) Hyperdermoclysis: another way to replace fluids. *Nursing*. 30, 5, 58-59

Bruera E, Legris MA, Keuhn N, Miller MJ (1990) Hypodermoclysis for the administration of fluids and narcotic analgesics in patients with advanced cancer. *Journal of Pain and Symptom Management*. 5, 4, 218-220.

Carola R, Harley JP, Noback CR (1990) *Human Anatomy and Physiology*. McGraw-Hill, New York NY.

Dawkins L, Pugh J (2003) *Paper entitled "Guidelines for the use of Saf-T-Intima for the Administration of Subcutaneous Infusions and Bolus Medication"*. Earl Mountbatten Hospice, Barnsley

Dickman A, Littlewood C, Varga J (2002) *The Syringe Driver. Continuous subcutaneous infusions in palliative care*. Oxford University Press, Oxford.

Ferry M, Dardaine V, Constans T (1999) Subcutaneous infusion or hypodermoclysis: a practical approach. *Journal of the American Geriatrics Society*. 47, 1, 93-95.

Hypodermoclysis Working Group (1998) *Hypodermoclysis: Guidelines on Technique*. CP Pharmaceuticals, Wrexham.

Jackson A (2004) *Subcutaneous Fluid Administration (Hypodermoclysis)*. Rotherham General Hospitals Trust, Rotherham.

Katzenschlager R, Hughes A, Evans A *et al* (2004) Continuous subcutaneous apomorphine therapy improves dyskinesias in Parkinson's disease: a prospective study using single-dose challenges. *Movement Disorders*. 20, 2, 151-157.

Khan M, Younger G (2007) Promoting safe administration of subcutaneous infusions. *Nursing Standard* 21, 31, 50-56.

Nursing and Midwifery Council (2004) *The NMC Code of Professional Conduct: Standards for Conduct, Performance and Ethics*. NMC, London.

Rochon PA, Gill SS, Litner J, Fischbach M, Goodison AJ, Gordon M (1997) A systematic review of the evidence for hypodermoclysis to treat dehydration in older people. *The Journals of Gerontology*. 52, 3, M169-176.

Royal College of Nursing (2005) *Standards for Infusion Therapy*. RCN, London.

Sasson M, Shvartzman P (2001) Hypodermoclysis: an alternative infusion technique. *American Family Physician*. 64, 9, 1575-1578.

## Appendix 1

### York Hospitals NHS Foundation Trust Risk Assessment for patients requiring syringe driver

Aim: The reduction of non-professional incidents of drug overdose to patients, by accident or intention (see Section 9.4 of Syringe Driver Infusion Training Package).

**Patient name:**

**Ward:**

|   |                           |           |                           |           |
|---|---------------------------|-----------|---------------------------|-----------|
| Codes: (M) = medium risk (H) = high risk  | <b>Initial assessment</b> |           | <b>Further assessment</b> |           |
| <b>Signature of nurse carrying out assessment:</b>  |                           |           |                           |           |
| <b>Date assessment carried out:</b>   |                           |           |                           |           |
| <b>Identification of risk factors</b>   | <b>Yes</b>                | <b>No</b> | <b>Yes</b>                | <b>No</b> |
| 1. Is the patient confused? (M)   |                           |           |                           |           |
| 2. Is the patient agitated? (M)   |                           |           |                           |           |
| 3. Does the patient interfere with equipment in general? (H)  |                           |           |                           |           |
| 4. Has the patient a history of attempted suicide, or expressed a wish to self-harm? (H)                  |                           |           |                           |           |
| 5. Has the patient a history of drug abuse?   |                           |           |                           |           |
| 6. If a syringe driver is in situ has the patient attempted to/dismantled it? (H)                         |                           |           |                           |           |
| 7. Has the patients delivered SD medication to themselves? (H)  |                           |           |                           |           |
| 8. If independently mobile, does the patient continually forget a SD is in situ, allowing it to fall? (M) |                           |           |                           |           |

|  |  |  |  |  |
|--|--|--|--|--|
| 9. On checking SD medication, is there an unaccountable discrepancy in amount delivered? (H) |  |  |  |  |
|--|--|--|--|--|

| <b>Assessment results:</b>     | <b>Risk:</b> | <b>Action:</b>  |
|--------------------------------|--------------|---|
| No and/or N/A to all questions | Low          | Reassess if change occurs   |
| Yes to 1 or 2 (M) questions    | Moderate     | Monitor over 1 <sup>st</sup> 24 hours for increased score then PRN<br>– Consider Lock box |
| Yes to all (M) questions       | High         | Lockbox needed  |
| Yes to 1 or more (H) questions | Very high    | Lockbox needed  |

**Outcome of Initial assessment:**

|                      |   |                             |
|----------------------|---|-----------------------------|
| Lock box required?   | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
| Lock box available?  | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
|                      | If no state action taken:                 |                             |
| Lock box in place?   | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
|                      | Date put in place:<br>If no state reason: |                             |
| Removal of lock box: | Date:<br>Reason for removal:              |                             |

**Outcome of further assessment:**

|                      |   |                             |
|----------------------|---|-----------------------------|
| Lock box required?   | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
| Lock box available?  | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
|                      | If no state action taken:                 |                             |
| Lock box in place?   | Yes <input type="checkbox"/>              | No <input type="checkbox"/> |
|                      | Date put in place:<br>If no state reason: |                             |
| Removal of lock box: | Date:<br>Reason for removal:              |                             |

(Adapted with courtesy of St Leonards' Hospice)

## Appendix 2

### CHOICE OF DRUGS FOR USE IN SYRINGE DRIVERS (USUAL DOSE RANGES QUOTED)

**Note MORPHINE**  
Parenteral morphine is 2 x stronger than oral morphine. If pain not controlled, increase dose by 30% to 50%

| DRUG                                   | USE  | STAT DOSE S/C | 24 HRS S/C DOSE IN SYRINGE DRIVER (SD) | MAX DOSE IN 24 HRS (PRN + SD) |
|--|--|---------------|--|-------------------------------|
| <b>Anti emetic</b>                     |  |               |  |                               |
| CYCLIZINE<br>50mg in 1ml               | Centrally acting on vomiting centre.<br>Good for nausea associated with bowel obstruction or increased intracranial pressure<br>Dilute with water  | 50mg          | 100 - 150mg                            | 150mg                         |
| HALOPERIDOL<br>5mg in 1ml              | Good for chemically induced nausea   | 1.5 - 3mg     | 3 - 5mg                                | 5mg                           |
| METOCLOPRAMIDE<br>10mg in 2ml          | Antiemetic<br>(1) prokinetic (accelerates GI transit)<br>(2) centrally acting on chemo-receptor trigger zone (CTZ), blocking transmission to vomiting centre   | 10mg          | 40 - 60mg                              | 120mg                         |
| LEVOMEPRAMAZINE<br>25mg in 1ml         | Broad spectrum antiemetic, works on CTZ and vomiting centre (at lower doses)<br><br>Dilute with saline when used alone   | 5 - 6.25mg    | 5 - 25mg                               | 25mg                          |
| <b>Anti-agitation</b>                  |  |               |  |                               |
| MIDAZOLAM<br>10mg in 2ml               | Sedative/anxiolytic (terminal agitation). Also anticonvulsant and muscle relaxant  | 2.5 - 5mg     | 5 - 30mg                               | 60mg                          |
| <b>Antisecretory</b>                   |  |               |  |                               |
| HYOSCINE BUTYLBROMIDE<br>20mg in 1ml   | Antisecretory - useful in reducing respiratory tract secretions<br>Also has antispasmodic properties<br><br>May precipitate when mixed with CYCLIZINE or HALOPERIDOL<br>Less sedating than HYOSCINE HYDROBROMIDE | 20mg          | 40 - 120mg                             | 240mg                         |
| HYOSCINE HYDROBROMIDE<br>400mcg in 1ml | Antisecretory - useful in reducing respiratory tract secretions<br>Also has antispasmodic properties   | 400mcg        | 400mcg - 2.4mg                         | 2.4mg                         |

For pathway problems – seek advice from the Palliative Care Team: ext 5835

For out of hour's symptom control – seek advice from St. Leonard's Hospice: Tel 708553 7

**Morphine combinations:**

|          |                       |                       |  |
|----------|-----------------------|-----------------------|--|
| Morphine | ^Cyclizine            |                       |  |
| Morphine | Metroclopramide       |                       |  |
| Morphine | Haloperidol           |                       |  |
| Morphine | Hyoscine Butlybromide |                       |  |
| Morphine | Hyoscine Hydrobromide |                       |  |
| Morphine | *Levomepromazine      |                       |  |
| Morphine | Midazolam             |                       |  |
| Morphine | ^Cyclizine            | Haloperidol           |  |
| Morphine | ^Cyclizine            | Midazolam             |  |
| Morphine | ^Cyclizine            | Hyoscine Butylbromide |  |
| Morphine | ^Cyclizine            | Hyoscine Hydrobromide |  |
| Morphine | Metroclopramide       | *Levomepromazine      |  |
| Morphine | Metroclopramide       | Midazolam             |  |
| Morphine | Midazolam             | Hyoscine Butylbromide |  |
| Morphine | Midazolam             | Hyoscine Hydrobromide |  |
| Morphine | Haloperidol           | Hyoscine Hydrobromide |  |
| Morphine | Haloperidol           | Midazolam             |  |
| Morphine | Haloperidol           | Hyoscine Butylbromide |  |
| Morphine | *Levomepromazine      | Hyoscine Hydrobromide |  |
| Morphine | *Levomepromazine      | Midazolam             |  |
| Morphine | *Levomepromazine      | Hyoscine Butylbromide |  |
|          |                       |                       |  |
|          |                       |                       |  |
|          |                       |                       |  |

**Oxycodone combinations:**

|           |                       |                       |  |
|-----------|-----------------------|-----------------------|--|
| Oxycodone | ^Cyclizine            |                       |  |
| Oxycodone | Metroclopramide       |                       |  |
| Oxycodone | Haloperidol           |                       |  |
| Oxycodone | *Levomepromazine      |                       |  |
| Oxycodone | Hyoscine Butylbromide |                       |  |
| Oxycodone | Hyoscine Hydrobromide |                       |  |
| Oxycodone | Midazolam             |                       |  |
| Oxycodone | ^Cyclizine            | Haloperidol           |  |
| Oxycodone | Metroclopramide       | *Levomepromazine      |  |
| Oxycodone | Haloperidol           | Hyoscine Butylbromide |  |
| Oxycodone | Haloperidol           | Hyoscine Hydrobromide |  |

|           |                       |                       |  |
|-----------|-----------------------|-----------------------|--|
| Oxycodone | Haloperidol           | Midazolam             |  |
| Oxycodone | *Levomepromazine      | Hyoscine Butylbromide |  |
| Oxycodone | *Levomepromazine      | Midazolam             |  |
| Oxycodone | *Levomepromazine      | Hyoscine Hydrobromide |  |
| Oxycodone | ^Cyclizine            | Hyoscine Butylbromide |  |
| Oxycodone | ^Cyclizine            | Hyoscine Hydrobromide |  |
| Oxycodone | ^Cyclizine            | Midazolam             |  |
| Oxycodone | Metroclopramide       | Midazolam             |  |
| Oxycodone | ^Cyclizine            | Midazolam             |  |
| Oxycodone | Hyoscine Butylbromide | Midazolam             |  |
| Oxycodone | Hyoscine Hydrobromide | Midazolam             |  |

**Diamorphine combinations:**

|             |                       |                       |  |
|-------------|-----------------------|-----------------------|--|
| Diamorphine |                       |                       |  |
| Diamorphine | Metroclopramide       |                       |  |
| Diamorphine | Haloperidol           |                       |  |
| Diamorphine | *Levomepromazine      |                       |  |
| Diamorphine | Hyoscine Butylbromide |                       |  |
| Diamorphine | Hyoscine Hydrobromide |                       |  |
| Diamorphine | Midazolam             |                       |  |
| Diamorphine | ^Cyclizine            | Haloperidol           |  |
| Diamorphine | Metroclopramide       | *Levomepromazine      |  |
| Diamorphine | ^Cyclizine            | Midazolam             |  |
| Diamorphine | ^Cyclizine            | Hyoscine Butylbromide |  |
| Diamorphine | ^Cyclizine            | Hyoscine Hydrobromide |  |
| Diamorphine | Haloperidol           | Hyoscine Butylbromide |  |
| Diamorphine | Haloperidol           | Midazolam             |  |
| Diamorphine | *Levomepromazine      | Hyoscine Butylbromide |  |
| Diamorphine | *Levomepromazine      | Hyoscine Hydrobromide |  |
| Diamorphine | *Levomepromazine      | Midazolam             |  |
| Diamorphine | Haloperidol           | Hyoscine Hydrobromide |  |
| Diamorphine | Hyoscine Butylbromide | Midazolam             |  |
| Diamorphine | Hyoscine Hydrobromide | Midazolam             |  |
| Diamorphine | Metroclopramide       | Midazolam             |  |
|             |                       |                       |  |
|             |                       |                       |  |

### Some examples of Non Analgesic Drug Combinations:

|                      |                          |                          |
|----------------------|--------------------------|--------------------------|
| Octreotide           | *Levomepromazine         |                          |
| Octreotide           | ^Cyclizine               |                          |
| Octreotide           | Haloperidol              |                          |
| Octreotide           | *Levomepromazine         | Midazolam                |
| Octreotide           | *Levomepromazine         | Hyoscine<br>Butylbromide |
| ~Dexamethasone       | Hyoscine<br>Butylbromide |                          |
| ~Dexamethasone       | Hyoscine<br>Hydrobromide |                          |
| ~Dexamethasone       | Metroclopramide          |                          |
| Hyoscinehydrobromide | *Levomepromazine         | Midazolam                |
| Haloperidol          | Hyoscine<br>Butylbromide | Midazolam                |
| ^Cyclizine           | ~Dexamethasone           | Hyoscine<br>Butylbromide |
| ~Dexamethasone       | Clonazepam               |                          |

Some medications at high dosages/concentrations are at risk of crystallizing:

^Cyclizine preparations use Water for injection only. At high doses there is an increased risk of crystallisation with Cyclizine and Hyoscine Butylbromide. Please observe syringe driver and line.

\*Levomepromazine preparations use Sodium Chloride 0.9% for injection only. Increased risk of irritation at injection site.

~Dexamethasone preparations there is an increase in risk of crystallisation. Use as much diluent as possible when drawing up preparations and add Dexamethasone last to preparation. If precipitation is seen in preparation then discard and administer Dexamethasone separately.

## Portfolio of reflective evidence and assessment of competence for syringe driver infusions

Date attended training session:

### Reflective Log

#### Guidelines

##### Nature of Learning Activity

Briefly describe the learning activity: for example, reading a relevant article, attending a course, observing practice.

##### Description of learning Activity

Of what did it consist?

Describe what the learning activity consisted of – include for example: why you decided to do the learning activity or how the opportunity came about: where, when and how you did the learning activity: the type of learning activity: and what you expect to gain from it.

##### Reflective Evaluation / Outcome of Learning Activity

How did the learning relate to your work ?

Give a personal view of how the learning informed and influenced your work, what effect has this learning had on the way you work, or intend to work in the future? Do you have any ideas or plans for follow up learning?



Name:

Methods of assessment codes:  
 SP=Supervised Practice  
 D=Discussion  
 Q&A=Question and Answer  
 Qi=Quiz

**ASSESSMENT CRITERIA – MS16A Syringe Driver Infusion Training**

| Essential Criteria:<br><br>Understanding & Knowledge  | Mandatory Method of assessment<br>* This must be completed | Additional Method of Assessment | Intermediate Stage |          | Final assessment Stage |          |
|---|--|---------------------------------|--------------------|----------|------------------------|----------|
|   |  |                                 | Practitioner       | Assessor | Practitioner           | Assessor |
| <b>Procedure Preparation</b>  |  |                                 |                    |          |                        |          |
| Describe the normal dermal structure of the skin  | Q&A  |                                 |                    |          |                        |          |
| Identify the indications and contraindications for the use of subcutaneous medication infusions | Q&A  | SP                              |                    |          |                        |          |
| Describe/demonstrate correct site selection and sites to be avoided, giving rationale for both  | SP<br>Q&A  |                                 |                    |          |                        |          |
| Identify essential equipment required for subcutaneous infusion of medication.                  | SP   |                                 |                    |          |                        |          |
| Demonstrate accurate risk assessment of the patient on the appropriate form                     | SP   |                                 |                    |          |                        |          |

|  |     |   |  |  |  |  |
|--|-----|---|--|--|--|--|
| Describe where you may obtain a lock box, keep the keys and return when finished with.   | Q&A |   |  |  |  |  |
| Describe possible scenarios when a lock box is required but not available  | D   | D |  |  |  |  |
| <b>Procedure Implementation</b>  |     |   |  |  |  |  |
| Demonstrate correct insertion of the Saf-t-Intima including hand washing, cleaning site, priming the device, insertion technique, application of bionector, sharps disposal  | SP  | D |  |  |  |  |
| Demonstrate correct drawing up of medications into syringe including checking of the prescription, compatibilities, correct diluents, calculations, equipment (correct syringe and needles), sharps disposal, labelling. | SP  |   |  |  |  |  |

|   |           |    |  |  |  |  |
|---|-----------|----|--|--|--|--|
| Demonstrate correct setting up of the syringe driver including safety checks, battery insertion, cleaning of the device prior to use, hand washing, placement of syringe into device and buttons. | SP<br>Q&A |    |  |  |  |  |
| Describe how you would set up 2 syringe drivers and the indications for this  | D         | SP |  |  |  |  |
| Describe what you would do if there was a change to the prescription  | D         |    |  |  |  |  |
| Explain the procedure for discontinuing a syringe driver infusion   | D         | SP |  |  |  |  |
| Describe problems which may occur when the syringe driver is in use and how to solve them   | Q&A       |    |  |  |  |  |
| Describe how often giving sets, lines, cannula and dressing need to be changed, and give the rationale for this   | Q&A       |    |  |  |  |  |

|  |    |   |  |  |  |  |
|--|----|---|--|--|--|--|
| Describe the nurse's role and responsibilities in ensuring that the individual needs of the patient are met throughout the procedure | D  |   |  |  |  |  |
| Demonstrate completion of appropriate documentation  | SP | D |  |  |  |  |
| Recognise when you need help/advice and explain where you would obtain this advice in and out of hours                               | D  |   |  |  |  |  |

**Appendix 4**

**York Hospitals NHS Foundation Trust**

**DECLARATION OF COMPETENCE**

**NAME:**

**PIN NO:**

**WARD:**

**DESIGNATION:**

I hereby declare my competence to perform safely:

MS16A Syringe Driver Infusions

I have demonstrated my competence by: -

- Attending a study session on MS16A Syringe Driver Infusions
- Completion of a period of supervised practice and assessment as arranged by Clinical Manager
- Assessment of competence as arranged by Clinical Manager

\_\_\_\_\_  
**Name:.....Signature:.....**

**Manager:.....Signature:.....**

**Date:.....**

**Photocopy twice, giving one copy to the Practice Development Team; one copy is to be sent to your line manager; the original should be kept by you in this booklet.**