

Syringe driver training

Learning outcomes

- ▶ Outline relevant clinical guidelines associated with syringe drivers
- ▶ Identify risks/benefits involved with the use of a syringe driver
- ▶ Demonstration of safe use of a syringe driver

Policy and Guidelines

▶ National

- ▶ NMC Code (2018)
- ▶ NMC Standards for medicine management
- ▶ MHRA

▶ Local

- ▶ Syringe driver clinical guidelines
- ▶ Medicines management policy
- ▶ Infection control
- ▶ Waste disposal policy
- ▶ Risk assessment

Indications for use

- ▶ Oral or pharyngeal lesions
- ▶ Persistent nausea or vomiting
- ▶ Intestinal obstruction
- ▶ Too weak to swallow orally
- ▶ (When PEG/oral route is not appropriate)

Explanation for patient/relatives

- ▶ Often a negative association (hastening death)
- ▶ Simple terms
- ▶ Stable symptom management (same dose over a long period)
- ▶ 'Same dose, different route'.

Infusion sites

- ▶ Upper arms, thighs, abdomen, (back of shoulders, chest- less common)
- ▶ Consider:
 - ▶ Mobility
 - ▶ Condition of skin
 - ▶ Underlying structures/tissue
 - ▶ Restless patient

Pre-set-up assessment

- ▶ Consider with the doctors/MDT what symptoms the patient has and what current medication they are on.
- ▶ What medications can be stopped, what needs to continue?
- ▶ Which symptoms are you trying to relive?

What medications?

- ▶ A syringe driver can hold a maximum of 3 medications at a time.
- ▶ Once the medicinal content has been drawn up the volume should be made up to either 18ml (for a 20ml syringe) or 23ml (for a 30ml syringe) with water for injection.
- ▶ Dilute as much as possible for less stinging at site.
- ▶ Compatibility of medications can be checked at: [Palliative Care Guidelines Plus \(pallcare.info\)](http://palliativecareguidelinesplus.org.uk)

Syringe/label

- ▶ Luer lock syringe
 - ▶ Must correctly identify make on the syringe driver
 - ▶ 18ml in 20ml
 - ▶ 23ml in 30ml
- ▶ Label- on syringe
 - ▶ Do not obscure the mls
 - ▶ Do not fold under the barrel arm

Needle and line

- ▶ SAF-T-intima
 - ▶ Check that bevel up (twist white end to rotate)
 - ▶ Pebbles down on wings
 - ▶ Insert at 45 degree angle
 - ▶ Place transparent breathable dressing
 - ▶ Hold insertion area whilst withdrawing needle/wire
 - ▶ Leave a needle free port in sub cut tissue.
- ▶ Attach the primed BD extension line (anti-syphon, anti-kink)

SAF-T-intima



Equipment

- ▶ Syringe driver
- ▶ Battery 9V alkaline (6LR61 only)
- ▶ SAF-T-intima
- ▶ Line
- ▶ Needles to draw up
- ▶ Luer lock syringe 20 or 30ml
- ▶ Transparent dressing (opside)
- ▶ Alcohol swabs
- ▶ Sharps box
- ▶ Red bung
- ▶ Lock box
- ▶ Prescription chart
- ▶ Drug additives label
- ▶ Syringe driver checklist
- ▶ Clinnell/cleaning wipes

Syringe driver



Pre load instruction

- ▶ No syringe in place- barrel clamp must be down
- ▶ Turn on
- ▶ Says 'preloading' allow actuator to move until stops.
- ▶ Move actuator back using arrow keys to the furthest point
- ▶ This clears the memory.
- ▶ At the end of 24 hours pump must be switched off and syringe removed to clear memory again.

Pre-load

- ▶ Always prime the line (manually) and attach to syringe before attaching to pump.
- ▶ On a 2nd/3rd day line can remain insitu and change just the syringe.

Setting up the infusion

- ▶ Draw up medication and add diluent (2 nurses)
- ▶ Attach label to syringe
- ▶ Attach line to syringe and prime
- ▶ Turn on driver and allow pre-load to take place
- ▶ Check battery level
- ▶ Insert syringe (3 sensors)
- ▶ Follow instructions on screen
- ▶ Check rate setting is correct....

Setting up continued

- ▶ Lock keypad (blue button)
- ▶ Put driver in lockbox
- ▶ Check infusing- pump delivering, green light flashing
- ▶ Complete documentation

Monitoring infusion progress

- ▶ Check
 - ▶ Patient symptoms
 - ▶ Site
 - ▶ Line and syringe, syringe driver
 - ▶ Volume remaining
- ▶ 4 hourly visual check
- ▶ Plan to go back before the 24 hours are up

Checklist

Syringe driver pump initial set up

Patient name:

Date of birth:

Medicinal content/strength	Dose	Prepared by	Checked by:	Date/Time
e.g Diamorphine 5mg ampoule	e.g 5mg (1ml)	e.g A.Brown	e.g B.Brown	e.g 19/03/21

Dilution fluid	Water for injection
	Yes/No
	Amount in mls:

Made up to a total volume of:	ml	Battery level %:
Infusion over number of hours:	hours	

Line primed:	Yes/No
Rate to be infused (TBI):	
Time started:	
Pump green light flashing:	Yes/No
Expected finish time:	

Connected and initiated by:	Name	Signature	Time/Date
Registered nurse 1			
Registered nurse 2			

Infusion stopped/completed	Name	Signature	Time/Date

Checklist

Syringe driver observation chart

Patient name:

Date of birth:

Syringe driver visual checks should be conducted by a registered nurse a minimum of every 4 hours.

<u>Date/Time</u>	
<u>Battery level</u>	%
<u>Pump flashing</u>	Yes/No
<u>Rate to be infused (TBI)</u>	ml/hr
<u>Volume infused (VI)</u>	ml
<u>Volume to be infused/remaining(VTBI)</u>	ml
<u>Amount left in syringe (visual check)</u>	ml
<u>Infusion site</u>	Good/red/swelling
<u>Name/Signature</u>	

<u>Date/Time</u>	
<u>Battery level</u>	%
<u>Pump flashing</u>	Yes/No
<u>Rate to be infused (TBI)</u>	ml/hr
<u>Volume infused (VI)</u>	ml
<u>Volume to be infused/remaining(VTBI)</u>	ml
<u>Amount left in syringe (visual check)</u>	ml
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<u>Name/Signature</u>	

Stopping

- ▶ Stop BEFORE disconnecting by pressing the red button
- ▶ Turn off syringe driver
- ▶ Disconnect line from syringe
- ▶ Place red bung on line for infection control
- ▶ Remove syringe from driver
- ▶ Complete documentation

- ▶ Draw up new syringe, start again!

Troubleshooting

- ▶ Alarms- paused too long, end of battery, occlusion, air in line
- ▶ Alerts- infusion nearly complete (30 mins) or battery low
- ▶ Occlusion- re-site cannula. Pause infusion.
- ▶ Too fast/slow- check calculations of delivery, line change?, syringe make correct, line occluded, paused.

Care, cleaning and servicing

- ▶ Visual check of device
- ▶ Cleaning between patient use
- ▶ Annual service

Advice and help

- ▶ Macmillian community team
- ▶ Phyllis Tuckwell Hospice

What next?

- ▶ Read guidelines, competency
- ▶ Familiarise yourself with equipment and practice with demo kit
- ▶ When you feel ready ask senior nurses to assess competency