

Patient Care Policy/Procedure

Date: December, 2017

Subject: Syringe Infusion Pump (Medfusion) for Medication Delivery

Purpose:

To provide guidelines for the safe and effective use of the Medfusion 4000 syringe pump. The syringe pump is designed for administration of small volumes of medication at a precise rate to ensure safety and accuracy.

Policy:

1. All IV setups should be initiated utilizing the drug library on the syringe pump.
2. If unable to find the drug/IV solution in the drug library in the Medfusion 4000 pump, assure that the drug library has been updated by turning the pump off. If there are any configuration or software updates waiting to be installed in the pump, the “Update(s) Available” message is displayed when you attempt to turn the pump off. Press enter to begin update (takes about 5 minutes). If update not available or unable to find drug/IV solution after updating, contact pharmacy for assistance.
3. Medfusion syringe pumps should be cleaned with PDI wipes after use.
 - A. In the ICU units, 1 pump will remain in each patient room and EVS will clean it upon patient discharge
 - B. In all other patient care areas, clean pump with PDI wipes and return back to centralized unit location after each use.
4. Medications sent from pharmacy that are to be administered through the syringe pump will be labeled “TO BE INFUSED VIA SYRINGE PUMP.” These medications **MUST** be administered utilizing the syringe pump according to the infusion instructions listed in eMAR.



5. Each medication should be followed with a 10 mL NS flush through the extension tubing.
6. Tubing can be used for 96 hours with multiple types of medications (because it is flushed with NS between each medication administered)
7. Syringe pumps are not MRI compatible.
8. Only RNs & LPNs are to program and clear the Medfusion syringe pumps.
9. Syringe pumps are to stay on their designated unit:
 - A. Do not send syringe pumps when patient transferred to a new unit
 - B. If antibiotics are “On Call” for procedure/surgery, send the antibiotic with the patient to be given when they arrive to procedural area

Equipment:

Syringe pump
Syringe pump tubing
Syringe of medication from Pharmacy
10 ml flush
Gloves
Sterile dead ender (blue cap)

Procedure:**1. Preparation**

- A. Hand hygiene
- B. Don gloves
- C. Obtain syringe of medication & tubing
- D. Scan medication (BBMA)
- E. Remove the syringe cap & eject air
- F. Attach the syringe to the tubing. If using tubing for the first time, manually prime the tubing to the end with drug/IV solution to be administered.


2. Loading the Syringe Pump (See Appendix for diagram of machine)

- A. Press power button to on (pump will run through a self-test)
- B. Allow the self-test to complete before loading the syringe into the pump
- C. Lift the syringe barrel clamp and swivel it away
- D. Squeeze the syringe plunger release lever on the syringe plunger driver and pull it out gently to extend it all the way outward
- E. Load the syringe onto the pump. Make sure the flange on the syringe is secure in the syringe flange clip by either pulling syringe clip away from machine and inserting or rotating the flange into the clip.




- F. Squeeze the syringe plunger release lever on the end of the syringe plunger driver and gently advance the plunger driver toward the syringe plunger
- G. Once syringe plunger is touching the syringe plunger holders, release the lever, so that both syringe plunger holders close around the syringe plunger
- H. Turn and lower the barrel clamp onto the barrel of the syringe
- I. Thread the tubing through the tubing holders
- J. Connect tubing to the patient


3. Programming and Starting the Infusion

- A. Chose the “Adult Dosing” drug library
- B. An alphabetical list will appear. Choose the number which corresponds to the first letter of desired medication
- C. Press next until desired medication appears and chose the # which corresponds with correct medication. Confirm correct medication has been selected
- D. Select the syringe model and press Confirm
- E. The dosage & dose rate of medication will appear on the display and you will choose “Enter” if it is correct
- F. Press the start key to  begin the infusion
- G. To slow infusion or change rate, stop pump and press option key.

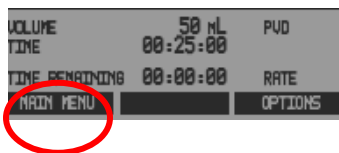
4. Ending the Infusion

- A. When infusion is complete, the pump will alarm. Press the alarm silence key 
- B. Clear the pump by pressing the total volume delivered (TVD) key on the bottom right side of the pump and document amount infused. Only RNs & LPNs may clear the pump
- C. Select YES to confirm clear TVD.
- D. Turn off the machine by pressing and holding the power button (If an update is available, press enter and allow the download which takes approximately 5 minutes)
- E. Remove the empty syringe from pump by lifting the syringe barrel clamp and swivel it away and squeezing the syringe plunger release lever on the syringe plunger driver and pull it out gently to extend it outward.
- F. Ensuring the tubing is clamped, remove the empty infusion syringe and replace it with the 10 mL NS flush syringe.
- G. Flush tubing with a 10 mL NS flush. Leave syringe on the tubing
- H. Disconnect tubing from the patient and cap the end with a sterile dead ender (blue) cap
- I. Label tubing with date and time tubing expires and a patient label
- J. Put tubing with empty NS syringe attached into a ziplock bag (LAWSON# 8088) and place patient label on outside of bag.
- K. Place bag in patient medication drawer or designated medication area until next use.
 - I. Clean the outside of ziplock bag with a PDI wipe if patient in isolation.
 - II. Use a bleach wipe if the patient is in C Diff isolation.
- L. Push the syringe plunger driver into the machine when not in use (see image in Appendix)
- M. Clean the pump with PDI wipe after use and return to designated unit location

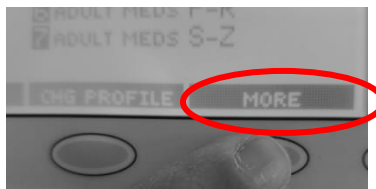
5. Changing the rate during an infusion (Dialysis ONLY for designated medications)

A. Stop the pump 

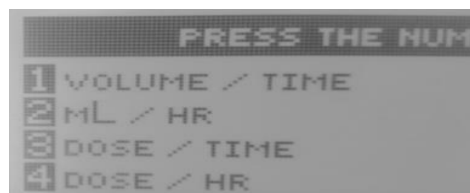
B. Press the “Main Menu” key



C. Press the “More” key



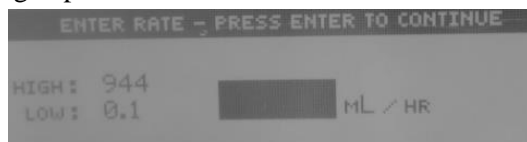
D. Choose the number which correlates to the desired infusion option



E. Confirm option

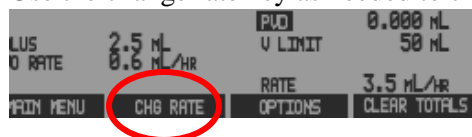
F. Select & confirm syringe model

G. Change option selected to desired infusion rate & enter



H. Press the start button 

I. Use the change rate key as needed to change the infusion rate



References

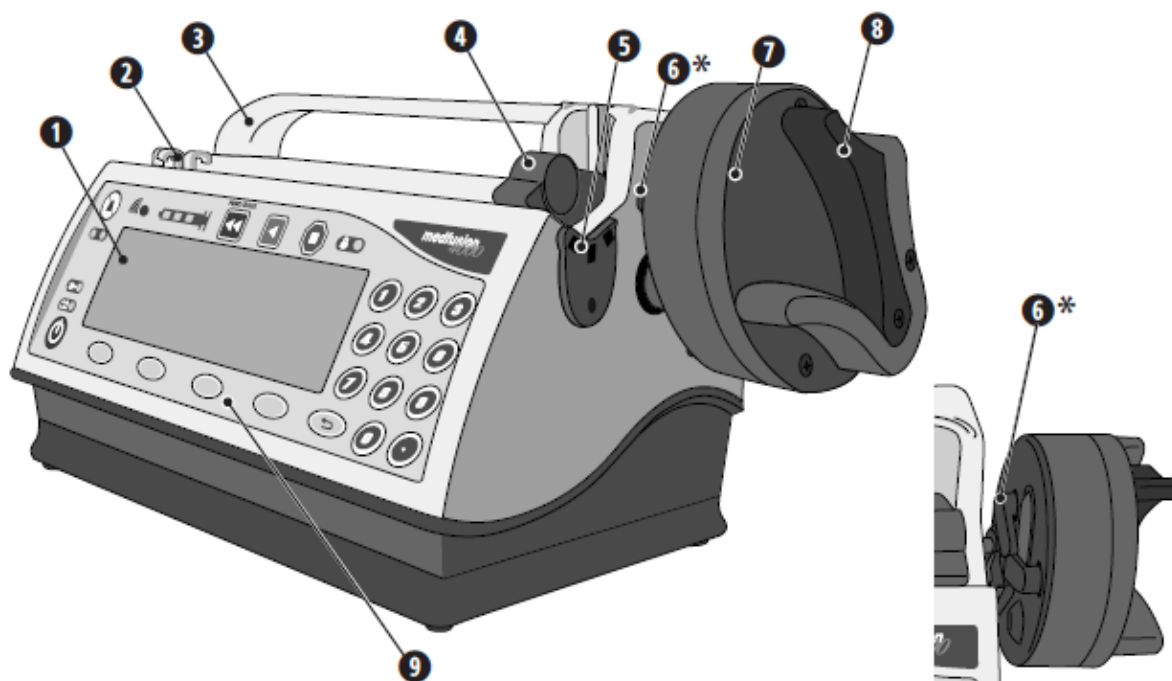
Smiths Medical (2017). *Resource library*. Retrieved from http://www.medfusionpump.com/resource_library/

This policy has been reviewed and approved by:

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Senior Vice President & CNO
Patient Care Services

Written December, 2017

Appendix



- 1 *Display:* all pump operating and status information appears on the display. The lower portion of the display corresponds with the 4 'softkeys' (their function changes depending on the pump programming being accomplished) on the keypad.
- 2 *Tubing Holders:* Thread infusion set tubing between holders to prevent kinking at syringe tip.
- 3 *Carrying Handle*
- 4 *Syringe Barrel Clamp:* The clamp holds the syringe barrel securely in place.
- 5 *Syringe Barrel Flange Clip:* When loading a syringe, slide the syringe flange into the clip.
- 6 *Syringe Plunger Holders:* Holds the syringe plunger securely in place.
- 7 *Syringe Plunger Driver:* Once loaded and delivery is started, the driver pushes the plunger forward at a controlled, precise rate to deliver fluid.
- 8 *Syringe Plunger Release Lever:* Squeeze the release lever to allow placement of the syringe plunger onto the holder during loading, or to remove it during unloading.
- 9 *Keypad:* See Keypad closeup (next page) for identification of the individual keypad keys and what they are used for.