

GEMSTAR -6-NEONATE
Administration of IV Medications Using the
GemStar® Pump

Drug Name: _____

Volume and Rate: _____

Schedule: _____

FLUSHING:

Saline

Drug

Saline

Heparin

KEY POINTS:

1. Always wash your hands with an antibacterial soap or antiseptic hand gel before any procedure for 15 seconds. Do not touch anything dirty, such as your clothes, glasses or skin after washing your hands. If you do, rewash them.
2. If your medication needs refrigeration, remove at least 2 hours before using.
3. Check the bags and syringes for leaks, expiration dates, color changes and floating materials. If any of these occur, set aside and use another. Notify HomeMed.
4. Always check the bag label for your name, drug name, dose and how frequently the drug should be given. If the information does not match, call HomeMed immediately.
5. Work at a comfortable pace. The risk of contamination increases if you rush.
6. Change your IV tubing every 3 days. Labels will be provided.
7. **YOU WILL PRIME TUBING WITH ONE IV MEDICATION BAG AND CHANGE TO ANOTHER FOR YOUR DOSE. YOU WILL DO THIS ON TUBING CHANGE DAYS ONLY.**

SUPPLIES:

- (2) Prefilled IV medication bag
- (1) GemStar® IV tubing (remove from package)
- (2) Prefilled saline flush syringes (remove from package)
- (1) Prefilled Heparin lock syringe (remove from package)
- GemStar® pump
- (3) Blunt needles
- (2) Locking blunt cannulas (“winged adaptors”)
- (4) Alcohol wipes
- Household cleaner (such as bleach, alcohol or dish soap) & paper towels

PROCEDURE:

1. Place a trash can next to your work area.
2. Wash your hands by first wetting your hands and wrists under running water. Scrub vigorously with antibacterial soap for 15 seconds. Work lather between fingers, under nails, over the palms and back of hands. Rinse hands well by keeping your hands up with fingers pointing up towards the ceiling so that the dirty water runs toward your elbows. Dry your hands with a clean paper towel from the tips of fingers down. Turn off the faucet with the paper towel.
3. Gather your supplies and place in a corner of your work area.
4. Place a clean paper towel on your work surface or clean it with a household cleaner. Let the area air dry.
5. Place the supplies on your clean work area.



Wash your
hands

PREPARING YOUR HEPARIN LOCK AND SALINE SYRINGES

1. Hold the prefilled heparin syringe upward (figure 1).
2. **Do not remove the cap.** Press on the plunger (figure 1). **DO NOT** pull back on the plunger.
3. Remove the protective cap from the end of the prefilled syringe (figure 2).
4. Attach a blunt needle to the syringe by:

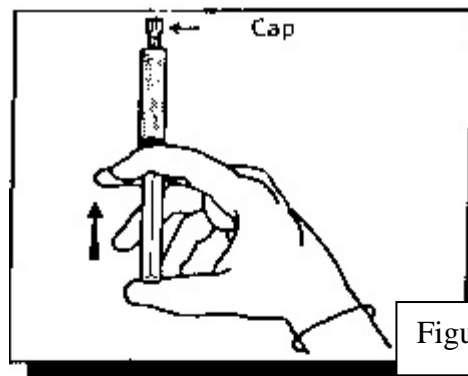


Figure 1

Twisting the green cap off the blunt needle. Attach the needle to the syringe by turning the needle clockwise. Do not remove the gray cap that protects the blunt needle.

5. Hold the syringe with the needle pointing upward. If bubbles appear, gently tap the sides of the syringe. The bubbles will rise to the top of the syringe.
6. Push the plunger to the 3 mL mark to push all the air out of the syringe (figure 3).
7. Repeat steps 1 through 6 with the saline syringes. All flushes are 3 mLs.

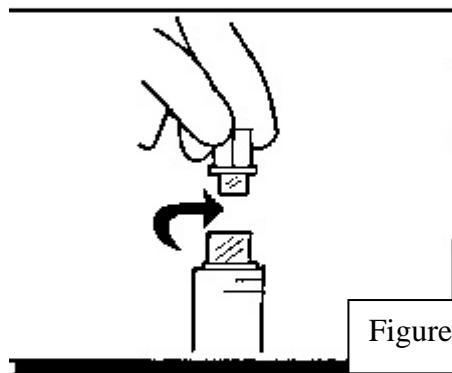


Figure 2

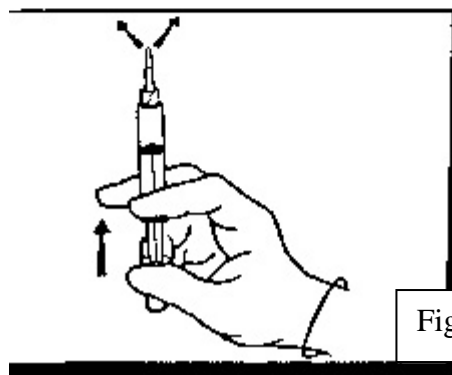
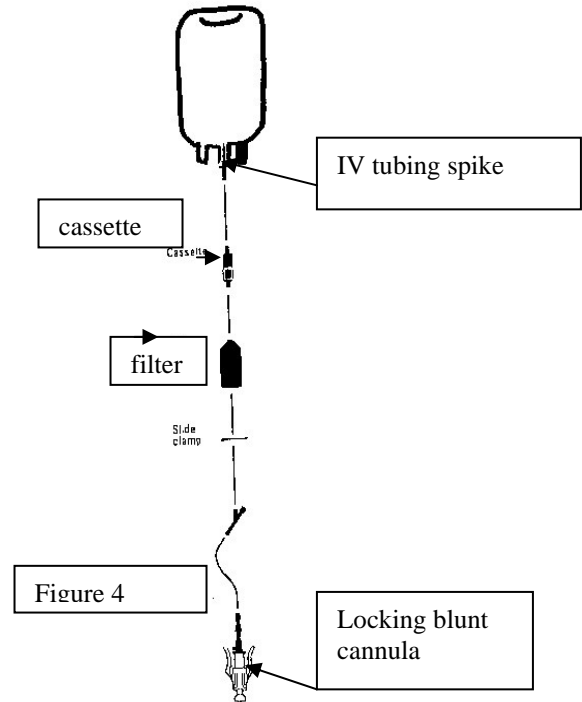
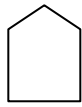


Figure 3

PREPARING YOUR IV TUBING

1. Remove the white tab on the IV bag.
2. Remove the spike cover from the IV tubing (figure 4).
Do not touch the spike. Insert the spike into the port of the IV bag using a pushing-twisting motion.
3. Insert the IV tubing cassette (figure 4) into the pump. Press on cassette until you hear a click. Make sure all four cassette latches are clearly visible after the cassette is installed.
4. Turn the GemStar® pump on. Review the pump program sent to you by *HomeMed*.
5. Prime the tubing on the GemStar® pump by pressing the **[PURGE]** key. The screen will display the following prompts:



SCREEN DISPLAY	WHAT TO DO
<div style="border: 1px solid black; padding: 10px; text-align: center;"> PRIME THE SET? YES OR NO </div>	Press the [YES/ENTER] key to begin priming.
<div style="border: 1px solid black; padding: 10px; text-align: center;"> TO PRIME, PRESS AND HOLD THE PURGE KEY </div>	Press and hold the [PURGE] key, while holding the blue filter with pointed end up. Make sure all air is removed from the container, cassette and tubing. <div style="text-align: right; margin-top: 10px;">  </div>
<div style="border: 1px solid black; padding: 10px; text-align: center;"> PRIME COMPLETE? YES OR NO </div>	When the [PURGE] key is released, you will see this display. If there is no air in the tubing, press [YES/ENTER] key. If you continue to see air in the tubing, press the [NO] key and continue to prime the tubing.

After you have finished priming the tubing:

6. **Remove the IV medication bag from the IV tubing. Make sure not to touch the IV tubing spike. Take the other medication bag remove the white tab. Insert spike into IV bag.**
7. **Press the [CHANGE] key. Press the # [1] key for NEW CONTAINER.**

8. Remove the locking blunt cannula from the package. Touch only the “wings”. Connect the locking blunt cannula to the IV tubing by twisting clockwise. (figure 4)
9. Press the **[PURGE]** key and prime air from locking blunt cannula.
10. Place the expiration label on the IV tubing to remind you to change it every 3 days.

STARTING YOUR MEDICATION

1. **Vigorously** scrub the end of the cap on your catheter with an alcohol wipe.
2. Remove the cap off the blunt needle of the prefilled **saline** syringe.
3. Open catheter clamp on your catheter.
4. Insert the blunt needle into the cap of your catheter and push on the syringe plunger with a pumping action. When you have completed the 3 mL saline flush, remove the saline syringe from your catheter cap.
5. **Vigorously** scrub the end of the cap on your catheter with an alcohol wipe.
6. Remove the clear protective cap from the locking blunt cannula attached to the IV tubing.
7. With one hand, hold your catheter by the hub and with your other hand squeeze the “wings” of the locking blunt cannula together and insert it into the cap of your catheter (figure 5).

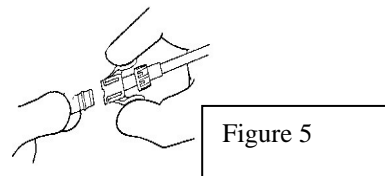


Figure 5

8. Push the green **[START]** key on the GemStar® pump to begin the infusion. Make sure the pump is infusing by checking the screen. There should be arrows moving across the screen.
9. Once your pump has started infusing, place the IV bag and pump onto the IV pole.

STOPPING YOUR MEDICATION

1. Once all the medication is done, press the red **[STOP]** key and wash your hands.
2. With one hand, hold your catheter by the hub and with your other hand squeeze the “wings” of the locking blunt cannula together and gently pull.
3. Remove the locking blunt cannula from the end of the IV pump tubing and attach a new one. This will keep the tubing sterile. Keep the IV bag attached to the tubing. For your next dose, you only need to remove the old bag, keeping the spike on the IV.
4. **Vigorously** scrub the end of the cap on your catheter with an alcohol wipe.
5. Remove the cap off the blunt needle of the prefilled **saline** syringe.



6. Insert the blunt needle into the cap of your catheter and push on the syringe plunger with a pumping action. When you have completed the 3 mL saline flush, remove the **saline** syringe from your catheter cap.
7. **Vigorously** scrub the end of the cap on your catheter with an alcohol wipe.
8. Remove the cap off the blunt needle of the prefilled heparin syringe. Insert the blunt needle into the cap of your catheter and push on the syringe plunger with a pumping action. You will flush with 3 mL of heparin. When 0.5 mL remains in the syringe, gently push forward on the syringe plunger while clamping the catheter.
("Pump-pump-push and clamp")
9. Remove the heparin syringe from your catheter cap.
9. Dispose of the syringes and needles in your sharps container.

CHANGING AN IV BAG OR CONTAINER

SUPPLIES:

- (1) Prefilled IV medication bag
 - (1) GemStar® pump
 - (2) Prefilled saline flush syringes (remove from package)
 - (1) Prefilled heparin syringe (remove from package)
 - (3) Blunt needles
 - (4) alcohol wipes
- Household cleaner (such as bleach, alcohol or dish soap) & paper towels



PROCEDURE

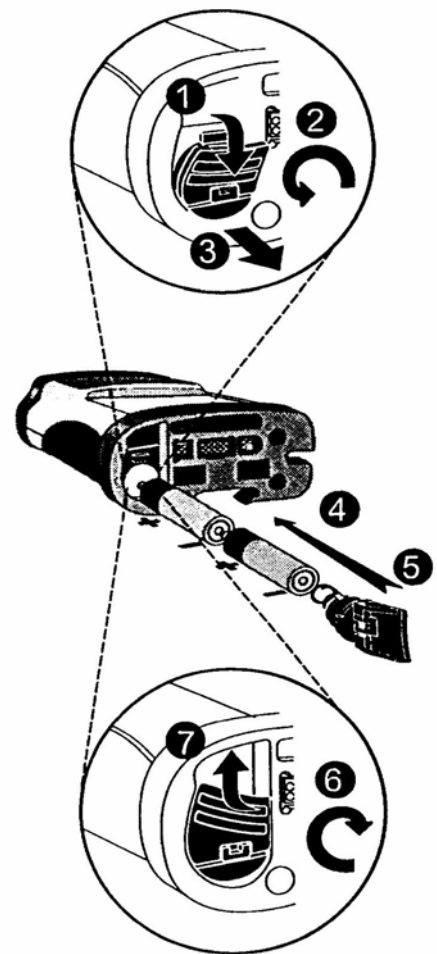
1. Wash your hands by first wetting your hands and wrists under running water. Scrub vigorously with antibacterial soap for 15 seconds. Work lather between fingers, under nails, over the palms and back of hands. Rinse hands well by keeping your hands up with fingers pointing up towards the ceiling so that the dirty water runs toward your elbows. Dry your hands with a clean paper towel from the tips of fingers down. Turn off the faucet with the paper towel.
2. Gather your supplies and place in a corner of your work area.
3. Place a clean paper towel on your work surface or clean it with a household cleaner. Let the area air dry.
4. Place the empty IV bag and pump on the work area.
5. Turn the Gemstar pump **[ON]**. The pump will perform a self-test.
6. Remove the spike from the old IV bag. **Do not touch the spike.**
7. Remove the tab from the new IV medication bag.
8. Insert the IV tubing spike into the new IV medication bag by using a twisting/pushing motion.

9. Press the # [1] key to resume program.
10. Review the program by pressing the [▼] key.
11. Once you have finished reviewing the program, press the [ENTER] key.
12. Press the [CHANGE] key, then select [1] NEW CONTAINER.
13. Press the [START] key to begin your infusion.
14. Place the IV bag and pump on the IV pole.

CHANGING THE BATTERIES

The Gemstar® pump requires two AA-size batteries. If you need to change the batteries, always replace both batteries. To insert or replace batteries:







1. Press the [SILENCE] key.
2. Press [STOP] key.
3. Flip the tab on the bottom of the pump. (#1 on the diagram)
4. Hold onto the tab and turn the battery door to the left (#2 & 3 on diagram).
5. Remove the old batteries and insert new batteries.
6. Replace the battery door (#5 on the diagram).
7. Turn the door to the right (#6 on diagram).
8. Make sure the battery door is secured under the slot.
9. Flip down the tab of the battery door to lock in place (#7 on diagram).
10. Make sure battery door is flush with the bottom of the pump.
11. Screen on pump will display after new batteries inserted: UNIT SELF TEST IN PROGRESS
12. USING BATTERIES Press [ENTER]
13. Press # [1] key to RESUME PROGRAM



14. Press the **[Start]** key to restart your infusion.

INFUSION PUMP GUIDE

Listed below are some important keys on your infusion pump. You will need to become familiar with these keys in order to operate your pump.

Pump key	What it does
	Press the [START] key to begin your infusion. As the pump delivers the medication, you will see the amount infused displayed on the screen.
	The [YES/ENTER] key allows you to enter the correct program to infuse your medication. The screen will tell you when to press this key.
	If you need to stop your pump, press the [STOP] key.
	To quiet an alarm, press the [SILENCE] key. The screen will tell you what the alarm means.
	Press the [HELP] key if you are unsure as to how to correct the alarm problem. Step-by-step instructions will guide you on how to correct the alarm condition. Displays shift totals.
	Press the [BACK-UP] key to exit the help screen or to return to the previous screen.

ALERTS, ALARMS AND TROUBLESHOOTING

The GemStar® pump uses screen messages and audible beeps to let you know about conditions that need your attention. Below you will find some of the most common alerts and alarm messages displayed by the pump and tips on how to solve the problem.

Screen Display	Cause	Solution
LOW BATTERIES	Pump detects drop in battery power	<ol style="list-style-type: none"> 1. Press the [SILENCE] key 2. Press [STOP] key 3. Replace batteries
START	Pump is programmed but has remained in the stop mode for more than 3 minutes	<ol style="list-style-type: none"> 1. Press the [SILENCE] key 2. Press the [START] key or turn the pump off
CHECK CASSETTE	Cassette not installed, or installed improperly	<ol style="list-style-type: none"> 1. Press [SILENCE] key 2. Press [STOP] key 3. Reinstall the cassette 4. Press [START] key to begin infusion.
DIST. OCCLUSION	A blockage has been detected in the IV tubing BELOW the pump (i.e. between the pump and the catheter)	<ol style="list-style-type: none"> 1. Press the [SILENCE] key 2. Press the [STOP] key 3. ✓ IV tubing for kinks or blockages BELOW the pump and correct 4. ✓ that all clamps are open 4. Press firmly down on the cassette 5. Press the [START] key
END OF INFUSION	Pump has delivered container amount programmed	<ol style="list-style-type: none"> 1. Press the [SILENCE] key to mute alarm for 2 minutes 2. Clamp your catheter 3. Press the [STOP] key 4. Flush catheter

<p style="text-align: center; border: 1px solid black; padding: 5px;">PROX. OCCLUSION</p>	<p>A blockage has been detected in the IV tubing ABOVE the pump (i.e. between the pump and the medication container)</p>	<ol style="list-style-type: none"> 1. Press the [SILENCE] key Press firmly down on the cassette. 2. Press the [STOP] key 3. IV tubing for kinks or blockages ABOVE the pump and correct 4. that all clamps are open 5. for blockage in the bag and IV spike 6. Press the [START] key
<p style="text-align: center; border: 1px solid black; padding: 5px;">AIR-IN-LINE</p>	<p>Air has been detected in line</p>	<ol style="list-style-type: none"> 1. Press [SILENCE] to mute alarm for 1 minute 2. Press [STOP] 3. Check line connections Disconnect IV tubing from patient and follow the prime procedure 4. Reconnect the pump set to the patient-access device 5. Press [START] to begin delivery

REMOVING AIR FROM THE IV TUBING

If you need to remove air from the IV tubing:

1. Press the [**SILENCE**] key if the pump is alarming. Then press the [**STOP**] key.
2. Disconnect the IV tubing from the patient. Keep the end of the locking blunt cannula sterile. If the tubing is dropped or touches any unsterile object, you will need to change the locking blunt cannula.
3. Press the [**PURGE**] key. Make sure to disconnect IV tubing from the patient.
4. Press and hold the [**PURGE**] key until the air is removed from the IV tubing. Once all the air is removed, release the [**PURGE**] key.
5. When the priming is complete (there is no air in the IV tubing), press the [**YES/ENTER**] key to return the pump to the stop mode.
6. **Vigorously** scrub the end of the catheter cap with an alcohol wipe and reinsert the locking blunt cannula.
7. Press the [**START**] key and follow the instructions on the screen.

INFUSION PUMP CARE

1. **DO NOT** place the pump in any fluids or cleaning solutions.
2. **AVOID** dropping or hitting the pump. If the pump is dropped or hit, always recheck the program.
3. **NEVER** use sharp objects such as pens, pencils, fingernails, paper clips or needles to clean the pump.
4. *HomeMed* will check your pump every year. Please call if you believe it has been longer than a year without being serviced.
5. If the pump needs cleaning, use a soft cloth dampened with a mixture of household bleach and water (1 part bleach to 10 parts of water). Clean the pump optics surface (across from the pump latch in the cartridge channel), with a cotton swab moistened with the bleach solution at least once a month. Dry the pump after cleaning.
6. You may wash the backpack in regular detergent in your washing machine. After washing, dry under low heat in your dryer.
7. **NEVER** use the pump in the presence of flammable or explosive vapors.
8. **ALWAYS** avoid sources of high intensity electromagnetic radiation such as X-ray machines. While infusing medications with the GemStar® pump stand at least 10 feet away from cell phones or two-way radios that are being used.

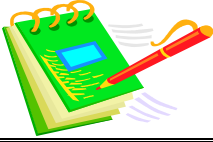


IF YOU WISH TO USE AN ANTISEPTIC HAND LOTION OR GEL

Do **NOT** use if your hands are visibly soiled or have body fluids (such as blood) on them

Off-brand hand gels can be less expensive

Always check the label for the gel or lotion to contain either ethyl alcohol (ethanol), normal propyl alcohol (n-propyl) or isopropyl alcohol in concentrations between 60-90%



FAST FACTS

Organize Yourself!!

Remove bag from refrigerator if needed 2 hours before using

Wash your hands

Prepare prefilled saline and heparin syringes

Spike medication bag with tubing

Place IV tubing into pump

Catheter Flushing:

Flush catheter with 3 mL saline

Infuse medication

Flush catheter with 3 mL saline

Flush catheter with 3 mL heparin

IF YOU ARE REUSING IV TUBING:

Turn pump on. You will see the following screens:

Self test

Using batteries, press [**YES/ENTER**] key

Press # **1** key - RESUME PROGRAM

Review program by pressing the [**▼**] key

Press the [**YES/ENTER**] if program correct

Press the [**CHANGE**] key

Press the # [**1**] key –New Container

Press the [**PURGE**] key to prime air from winged adaptor

Flush catheter with saline

Connect IV tubing to catheter

Open catheter clamp and press the [**START**] key

Flush catheter with saline

Flush catheter with heparin

IF YOU ARE CHANGING IV TUBING:

Turn pump on. You will see the following screens:

Self test

Using batteries, press [**YES/ENTER**] key

Press # [**1**] key - RESUME PROGRAM

Review program by pressing the [**▼**] key

Press the [**YES/ENTER**] if program correct

Press the [**PURGE**] key to prime tubing

Once you have finished priming the tubing:

Remove medication bag and change to new bag for dose

Press the [**CHANGE**] key

Press the # [**1**] key –New Container

Attach winged adaptor and press the [**PURGE**] key to prime the winged adaptor

Flush catheter with saline

Connect IV tubing to catheter

Open catheter clamp and press the [**START**] key

Flush catheter with saline

Flush catheter with heparin



Resource numbers:

Call HomeMed if you have questions or if the instructions are unclear to you. Our 24 hour number is:

1-800-862-2731