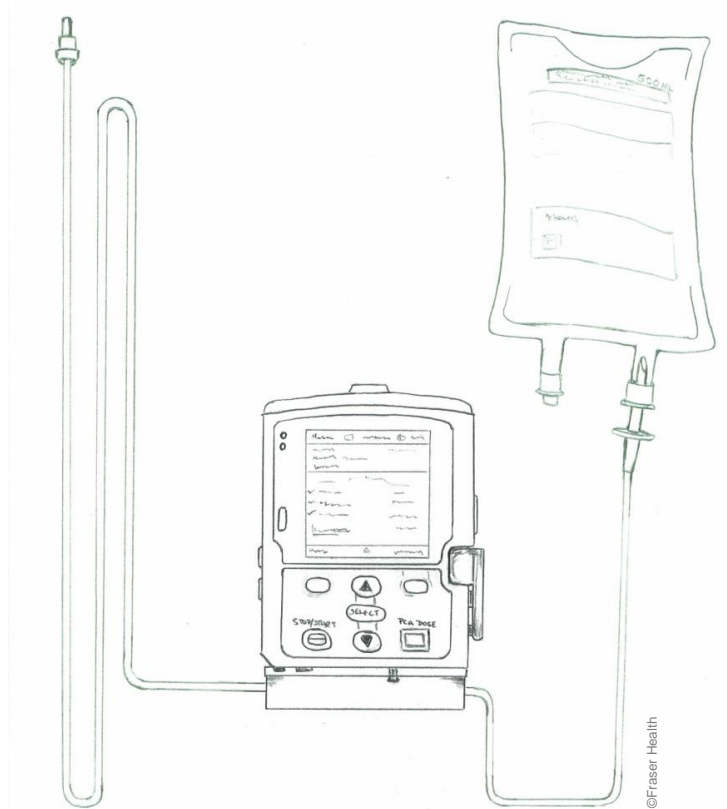


How to Give Medication Through Your Central Venous Catheter

Non-Valved central venous catheter (CVC)

CADD®-Solis VIP Pump (with Medication Library)

Intermittent with **Keep Vein Open (KVO)** Mode



This booklet belongs to: _____

	Every 3 days	Every 7 days
Change the battery	<input type="checkbox"/>	<input type="checkbox"/>
Change the tubing	<input type="checkbox"/>	<input type="checkbox"/>
See Page 23 for your pump (delivery) settings.		

Community IV Program

This book goes together with your **Introductory Book** on the Fraser Health Community IV Program.

This book has more information to help you care for your IV system and contact information if you need to speak to a nurse about your IV system.

Always keep your 'client information' materials close by so you can follow the steps and for easy reference.

A nurse will go through this information with you and show you how to take care of your Central Venous Catheter (CVC).

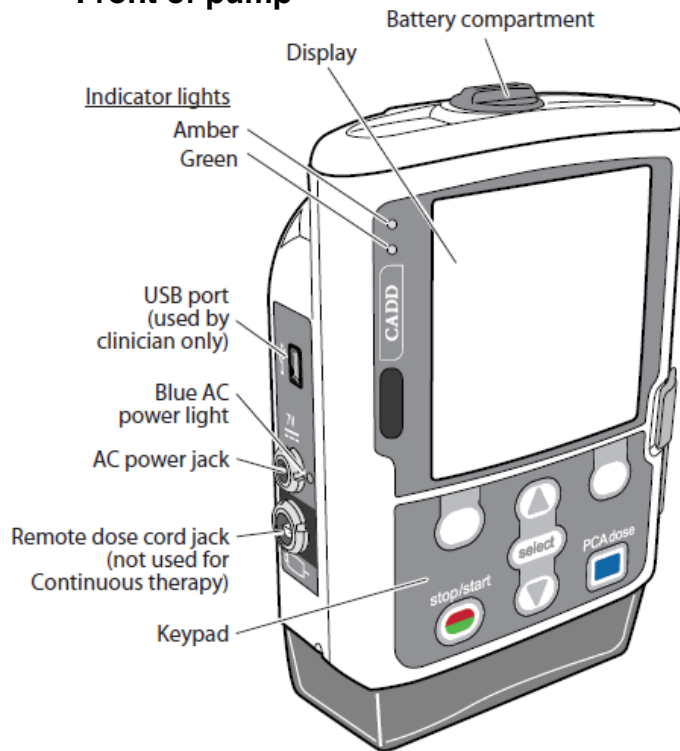
Images/photos © Fraser Health except where indicated
© Smiths Medical used with permission

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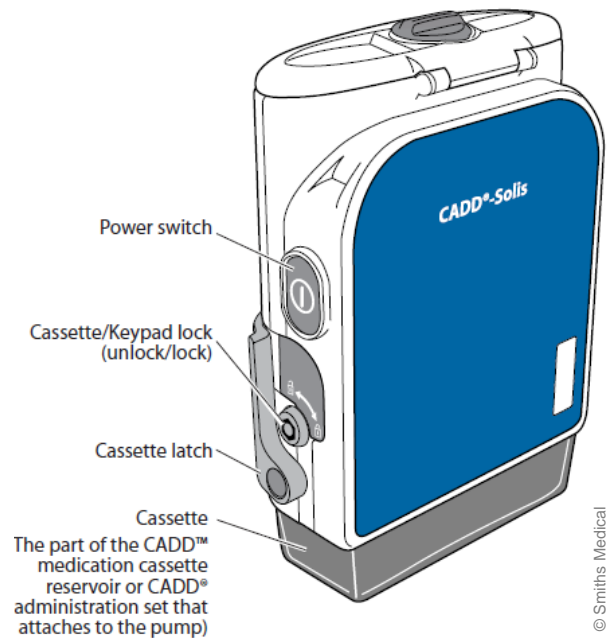
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About the CADD®-Solis VIP Pump

Front of pump

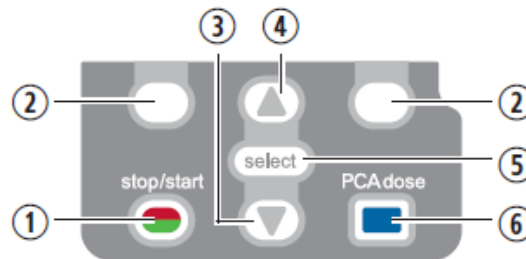


Back of pump



© Smiths Medical

Keypad close-up

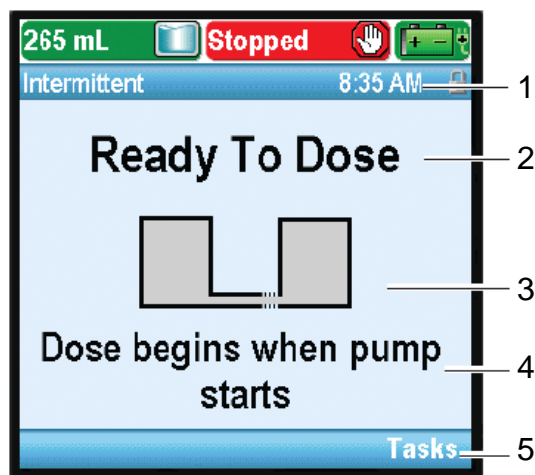


1. Start and Stop pump.
2. 'Soft Keys'. Use to answer question on the pump display or move through pump screen options.
3. Scroll down the Menu Screen or decrease number on screen.
4. Scroll up the Menu Screen or increase number on screen.
5. Select or choose the menu item.
6. This key is not used for your therapy.

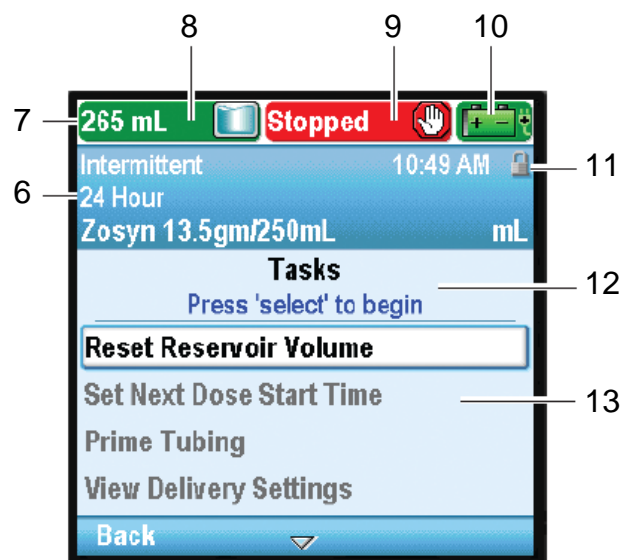
About the CADD®-Solis VIP Pump

Pump Screens

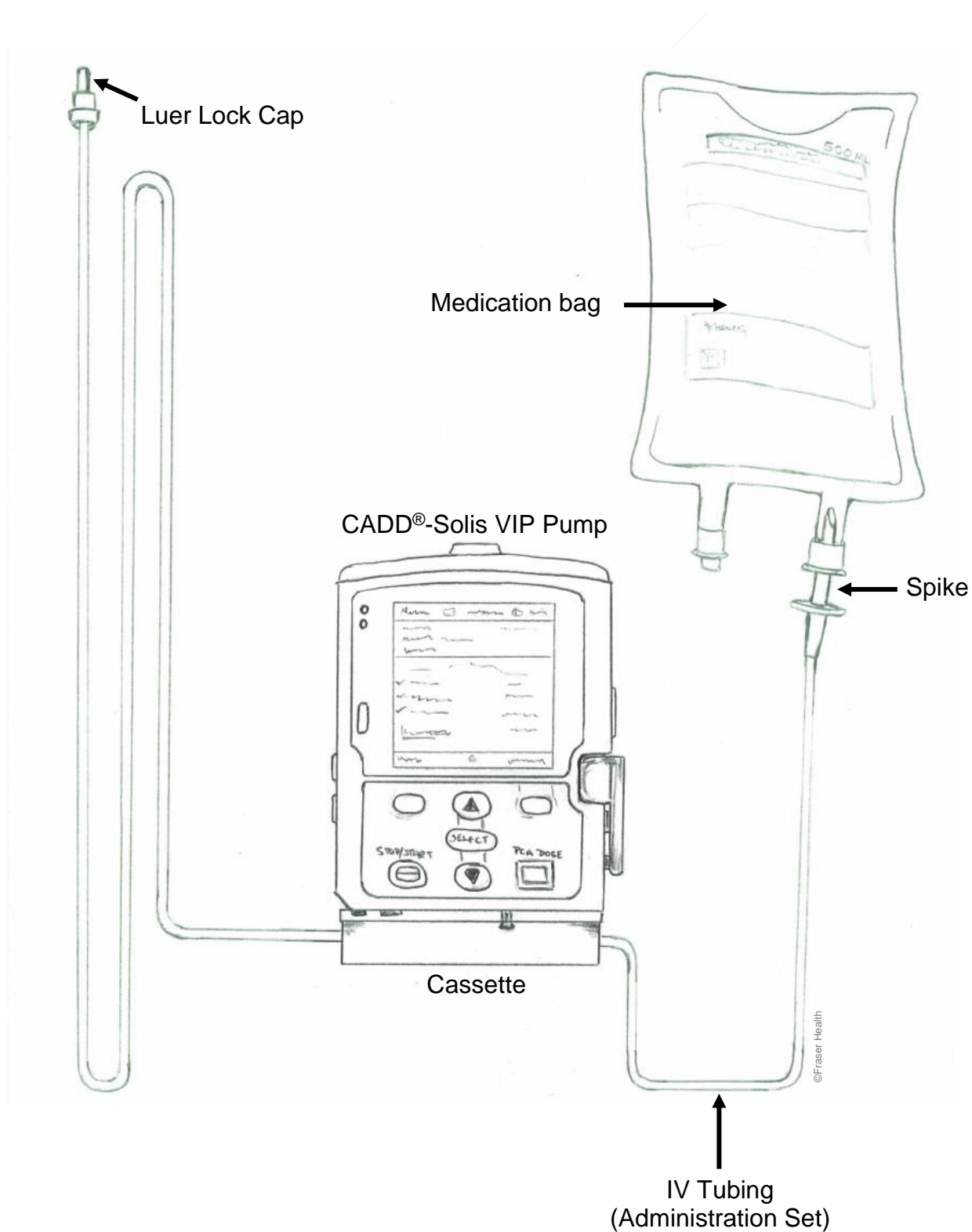
Home Screen



Menu Screen



About the CADD®-Solis VIP Pump Administration Set and IV Medication Bag Set-up



Every Day

Get yourself ready

1. Prepare a clean work area.
2. Clean your hands with soap and water or alcohol based hand sanitizer.



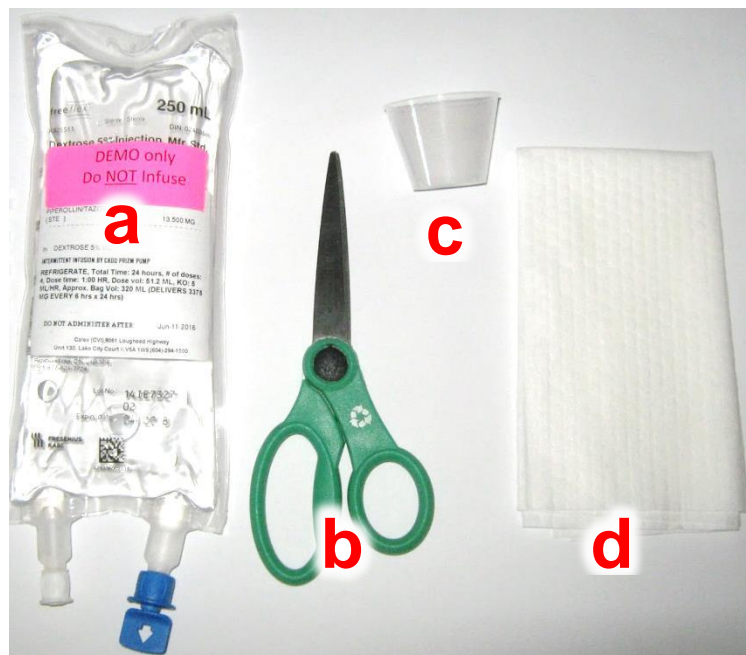
Clean work area and hands help prevent infection

3. Check your CVC site and dressing.

If it is red, puffy, painful, or draining, call your nurse.
The nurse will instruct you as to what to do next.

4. Gather your supplies:

- | | |
|-----------------------------|----------------------------|
| a. medication bag | c. small plastic 30 mL cup |
| b. scissors (for Flex bags) | d. paper towel |



5. Check the label on the medication bag for:
 - ✓ Your name
 - ✓ Correct drug
 - ✓ Correct amount and/or dose
6. Check the expiry date.
7. Squeeze the medication bag gently to check for leaks.

Note

Do not use the bag if it is:

- cloudy
- leaking
- discoloured
- expired

Do not use if bag has floating particles in it.

Contact the nurse or pharmacy.

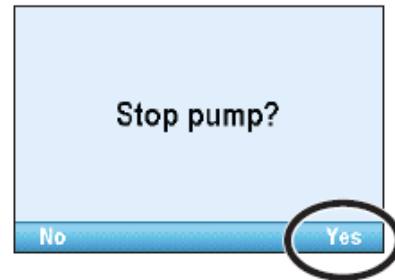
Change the medication bag

8. Press **(select)** to light up the screen.

The screen will say **Between Doses** and the reservoir volume in mL (in the top left corner of the screen) should be a low number.

9. Press **stop/start** 

10. Press the soft key below **Yes**.



11. Close the clamp on the Administration Set.



12. On the new medication bag, remove the protective cover (usually blue) from the port. How the cover comes off depends on the type of bag.

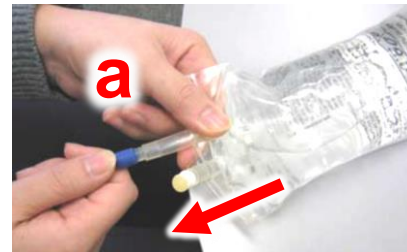
either

- a. Baxter - Pull cover straight off.

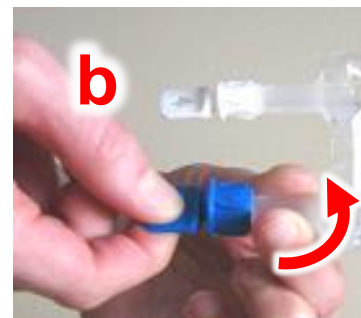
or

- b. Flexbag - Hold above the blue port of the medication bag with one hand.

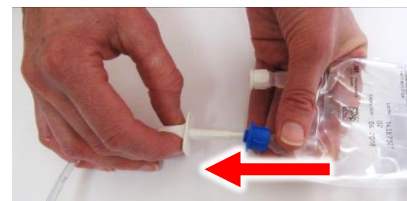
Twist off the bottom part of blue port with the other hand.



Make sure the opening does not touch anything



13. Take the spike out of the used medication bag.



Make sure the spike end does not touch anything

14. Insert the spike into the new medication bag port using a push and twisting motion.



15. Open the clamp on the Administration Set.



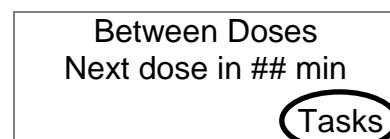
Reset Reservoir Volume, clear Total Given mL, and start Pump

Note

The following steps must be done in order for the pump to deliver your medication for the next 24 hours.

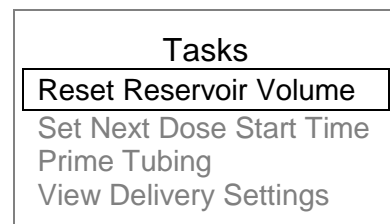
16. Press **select** to light up the screen.

17. Press the soft key below **Tasks**.



18. The **Reset Reservoir Volume** should be in the highlighted bar on the screen.

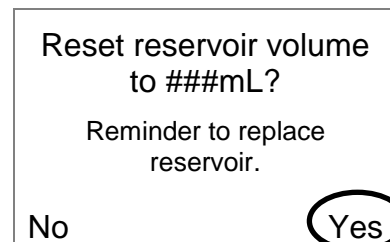
If not, press or until **Reset Reservoir Volume** is highlighted.



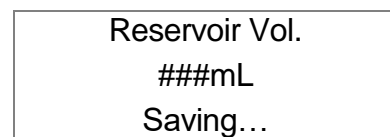
19. Press **select**

The pump displays this question.

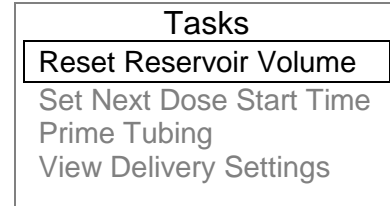
Press the soft key below **Yes**.



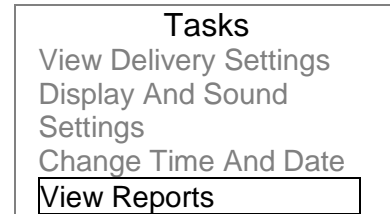
The screen briefly shows this as it saves.



The screen goes back to the **Tasks** screen.
In the Pump Status Bar (top left), the mL amount is now reset to the starting reservoir volume.

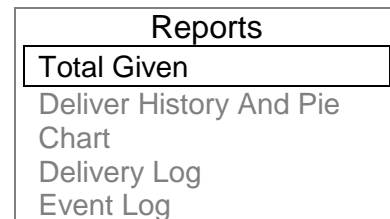


20. Press until **View Reports** is highlighted.

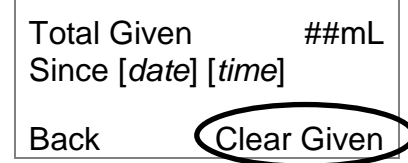


21. Press

22. With **Total Given** highlighted, press

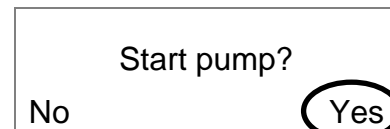


23. Press the soft key below **Clear Given**.
Total Given will clear to zero (0) mL.



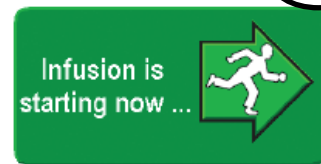
24. Press **stop/start**

25. Press the soft key below **Yes**.

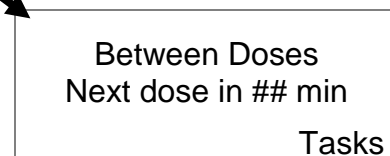


Infusion is starting now... briefly appears.

The pump now says **Running** in the green Pump Status Bar, and the screen shows between dose information.



The small green light on the upper left of the pump blinks every 3 seconds when the pump is running.



You know the pump is working when you hear the motor turning.

- During the **Between Doses** phase, you hear the motor once in a while.
- During the **Dosing** phase, you hear the motor regularly.

Measure what is left in used bag

26. Measure the amount of fluid left in the used medication bag.
(If the bag does not drain on its own, use your scissors to cut the port off where the spike entered the bag.)
27. Drain the remaining amount of fluid into the small plastic 30 mL cup.
28. Pour the fluid out onto paper towel.
29. Keep track of the total number of millilitres you emptied. Write the total number of millilitres (mLs) left in the bag on page 9 of your 'Introductory Book' – Medication Sheet.
30. Throw the wet paper towel and empty medication bag into the garbage.



Do not throw the fluid down the sink or toilet. This keeps the medication out of the water system.

Note

Show your entries in your 'Introductory Book' to your nurse each week.

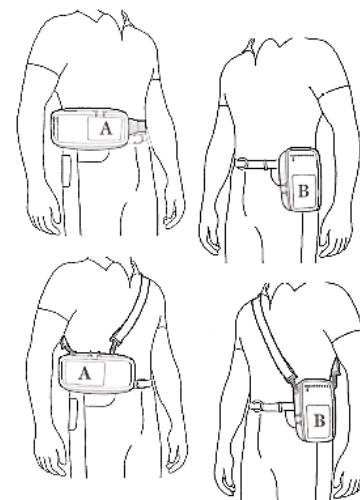
Your pump settings might need adjusting if the bag consistently has no fluid in it at all or has **more than**:

- 25 mLs left from a 250 mL medication bag **or**
- 50 mLs left from a 500 mL medication bag

Carrying your Pump

Pack up your pump and new medication bag into the belt or shoulder pouch.

Double-check to see if the green light is flashing to make sure you remembered to start the pump.



Every 3 or 7 Days

****Check the front cover for how often****

Get yourself ready

1. Prepare a clean work area.
2. Clean your hands with soap and water or alcohol based hand sanitizer.



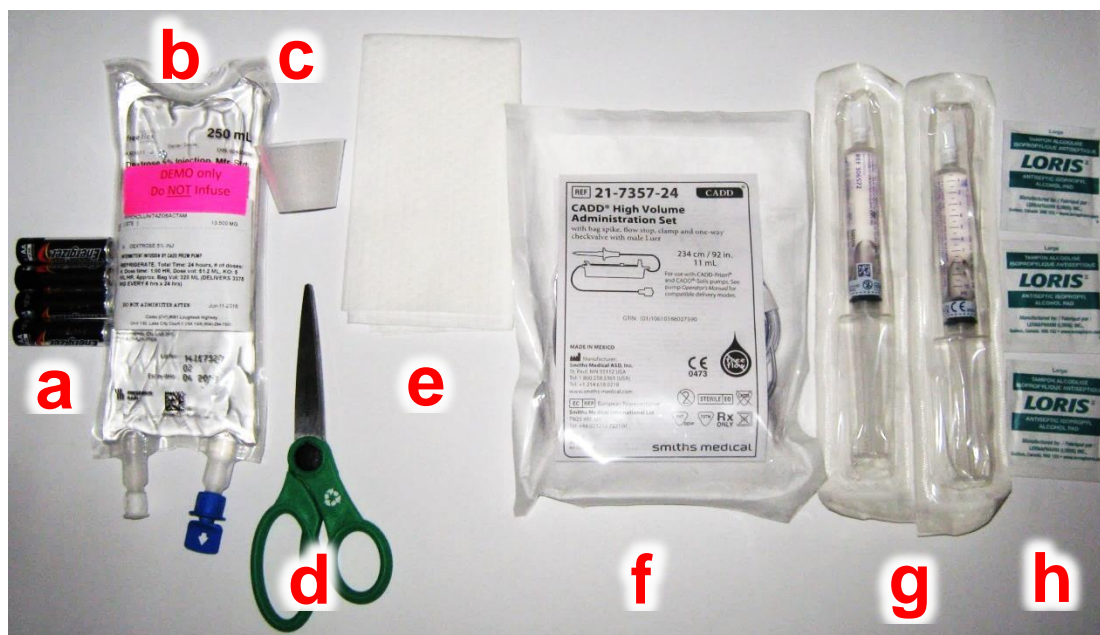
Clean work area and hands help prevent infection

3. Check your CVC site and dressing.

If it is red, puffy, painful, or draining, call your nurse.
The nurse will instruct you as to what to do next.

4. Gather your supplies:

- | | |
|----------------------------|--------------------------------|
| a. 4 AA batteries | e. paper towel |
| b. medication bag | f. CADD® Administration Set |
| c. small plastic 30 mL cup | g. 2 prefilled saline syringes |
| d. scissors (for Flex bag) | h. 3 alcohol swab packages |



5. Check the label on the medication bag for:
 - ✓ Your name ✓ Correct drug ✓ Correct amount and/or dose
6. Check the expiry date.
7. Squeeze the medication bag gently to check for leaks.

Note

Do not use the bag if it is:

- cloudy
- leaking
- discoloured
- expired

Do not use if bag has floating particles in it.

Contact the nurse or pharmacy.

Change the 4 AA batteries (as directed or as needed)

8. Press **select** to light up the screen.

The screen will say **Between Doses** and the reservoir volume in mL (in the top left corner of the screen) should be a low number.

Between Doses
Next dose in ## min

Tasks

9. Press **stop/start** 

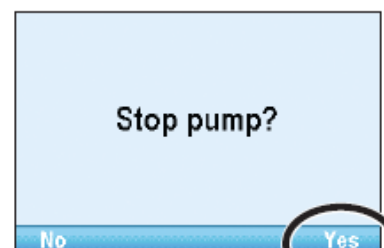
10. Press the soft key below **Yes**.

Pump is stopping... briefly appears.

Where it said **Running** in the green Pump Status Bar at the top, it now is red and says **Stopped**.

The screen shows between dose information.

A small amber light will now flash on the upper left of the pump.



Between Doses
Next dose in ## min

Tasks

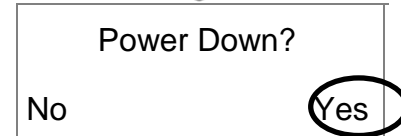
11. Press the power button on the side of the pump, located just above the latch.



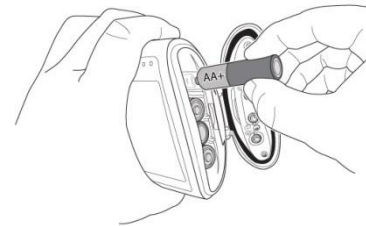
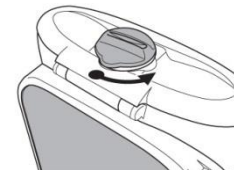
On screen, it will ask if you want to **Power down?**

Press the soft key below **Yes**.

The screen will go dark.



12. Using your fingers or a coin, open the battery door by turning the gray knob on the top of the pump.
13. Remove the old batteries. Put 4 new AA batteries in, matching the **+** and **-** symbols on the battery with those on the pump.
14. Close the battery door and turn the knob to lock the door.
15. Turn the pump on by pressing the power button.



The amber light flashes to say the pump is on but not running.

Note: If the batteries were not put in correctly, the pump will not power up. You will not see the amber light flashing. Check to make sure you have put the batteries in correctly and try turning the pump on again.

Change the Administration Set and medication bag

Note: The pump needs to be turned on and in the **Stopped** mode before changing the Administration Set.

16. Close the clamp on your Central Venous Catheter.

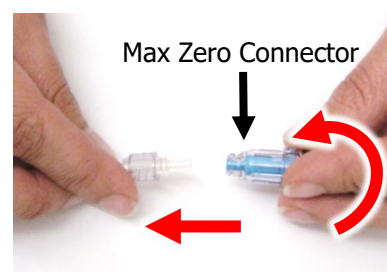


17. Close the clamp on the Administration Set.



18. To disconnect the Max Zero Connector (blue) from the Administration Set:

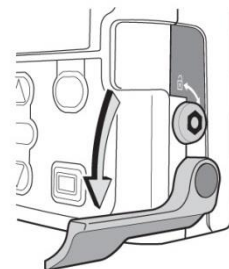
- Firmly hold the Max Zero Connector (blue).
- Untwist and pull the Administration Set connector from the Max Zero Connector.



'Blue stays with you'

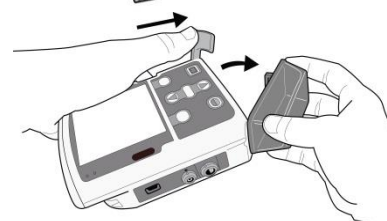
19. To release the cassette:

- Flip the cassette latch toward you.
- Push down on the latch until the cassette releases.



20. Remove the cassette from the bottom of the pump.

Set aside for now.



21. Take the new Administration Set out of the package.

22. Remove the paper wrapper.

23. Straighten the tubing while holding both ends.

24. Close the clamp on the new Administration Set.



25. Remove the protective cover (usually blue) from the port of the new medication bag. How the cover comes off depends on the type of bag.

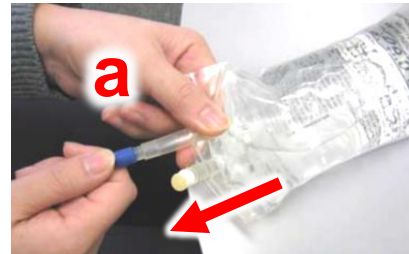
either

a. Baxter –Pull cover straight off.

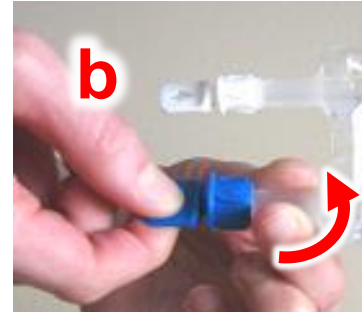
or

b. Flexbag –Hold above the blue port of the medication bag with one hand.

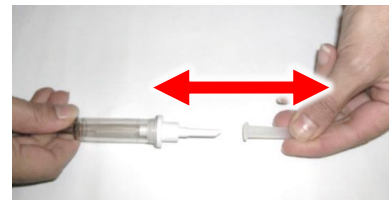
Twist off the bottom part of blue port with the other hand.



Make sure the opening does not touch anything



26. Take the cover off the spike of the new Administration Set.

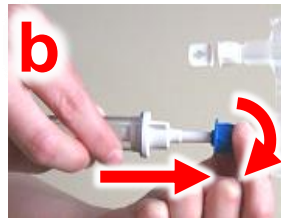


Make sure the end does not touch anything

27. Insert the spike into the new medication bag port using a push and twisting motion.



or

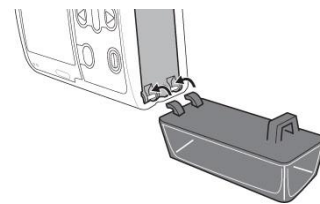


28. Remove the blue clip from the cassette of the new Administration Set by pulling and lifting it off.



29. Insert the cassette hooks into the hinge pins on the bottom of the pump.

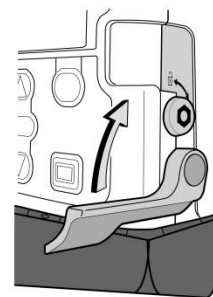
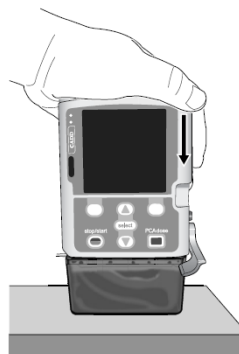
Make sure the cassette latch is still in the open position.



30. To lock the pump cassette:
 - Push the cassette onto the pump until it clicks into place.

or

- Place the pump upright on a firm flat surface.
- Press the pump down on to the cassette until it clicks into place.



31. Once clicked into place, lift the latch up into the closed position.

Note: If the pump does not latch easily, unlatch the cassette and try again. **Do not force** the latch.

Once the cassette is in place, a brief message appears on the top of the screen saying: **High Volume Admin Set Latched.**

Reset Reservoir Volume, prime the Administration Set, and clear Total Given mL

Note

The **following steps must be done in order** for the pump to deliver your medication for the next 24 hours.

Note: Leave the protective cap on the Luer Lock end of the Administration Set.

32. Open the clamp on the Administration Set.



33. The pump asks this question.

Press the soft key below **Yes**.

Reset reservoir volume to ###mL? Reminder to replace reservoir.	
No	Yes

The screen briefly shows this as it saves.

Reservoir Vol. ###mL Saving...

34. Next it asks if you want to prime the tubing.

Press the soft key below **Yes**.

Prime tubing?	
No	Yes

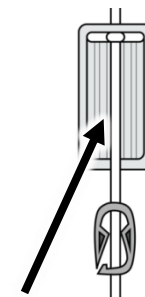
35. The screen now says this:

Press the soft key below **Prime**.

Disconnect tubing from patient, open clamps, then press 'Prime'	
Exit	Prime

Only if the Administration Set has an Air-Eliminating Filter:

- Hold the rectangle-shaped tubing filter upright in the other hand. Have ribbed side facing you and tubing with clamp below the filter.
- Watch as fluid fills this filter. Once filled, hold the Luer Lock end of the Administrations set.



Air-Eliminating Filter

36. Once you see a drop of fluid at the Luer Lock end of the Administration Set, press the soft key under **Stop Priming**.

Amount Primed ## mL
Press 'Stop Priming' to end
Stop Priming

37. The screen asks if you want to continue priming.
Press the soft key below **No**.

mL Primed
Continue priming?
No Yes

38. The screen now asks if you want to start the pump.
Press the soft key below **No**.

Start the pump?
No Yes

39. Press the soft key below **Tasks**.

Between Doses Next dose in ## min
Tasks

40. Press  until **View Reports** is highlighted.

Tasks
View Delivery Settings
Display And Sound
Settings
Change Time And Date
View Reports

41. Press **select**

42. With **Total Given** highlighted, press **select**

Reports
Total Given
Deliver History And Pie
Chart
Delivery Log
Event Log

43. Press the soft key below **Clear Given**.
Total Given will clear to zero (0) mL.

Total Given	##mL
Since [date] [time]	
Back	Clear Given

Prepare to flush CVC

44. Open one syringe package and remove the syringe.

45. Hold the syringe with the tip up.



46. Push up on the plunger until you hear a popping sound.



47. Slightly loosen the white cap but **do not remove the cap.**

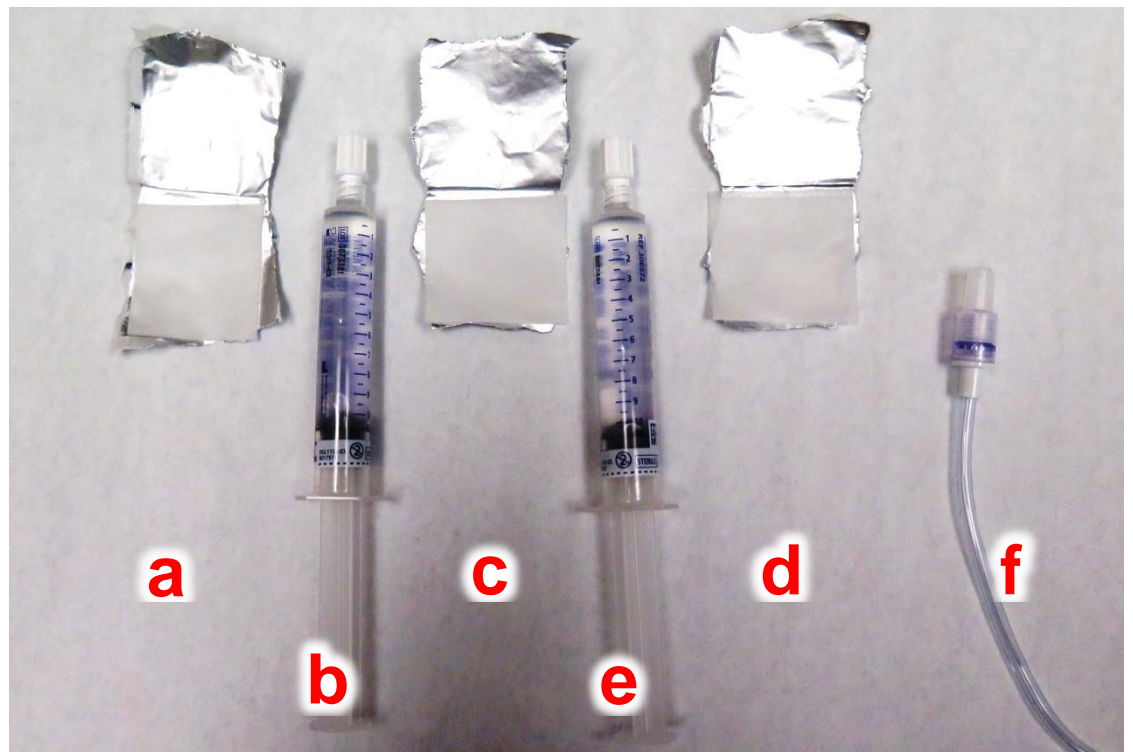


48. Gently push the plunger until you see a drop of fluid at the tip.

49. Tighten the white cap.

50. **Repeat steps 44 to 49** for the second syringe.

51. Prepare remaining supplies, placing each item in order of use:
- a. alcohol swab package opened on 3 sides
 - b. saline syringe
 - c. alcohol swab package opened on 3 sides
 - d. saline syringe
 - e. alcohol swab package opened on 3 sides
 - f. Luer Lock end of Administration Set



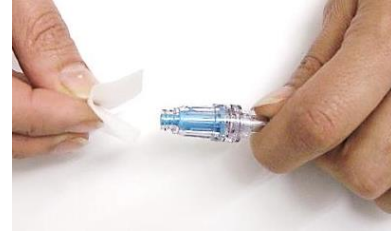
52. Pull the Luer Lock end of the Administration Set up under your top (shirt/blouse) from the waist.
- If you have a PICC (peripherally inserted central catheter), pass the end of the Administration Set down the sleeve of your top to your PICC.

Flush your CVC

53. Starting with your CVC, clean the end of the Max Zero Connector on the end of your CVC:

- Firmly hold the Max Zero Connector with one hand.
- Clean the Max Zero Connector with an alcohol swab for thirty (30) seconds.
- Let it dry.

Cleaning with an alcohol swab helps prevent infection in the blood



Make sure nothing touches the cleaned end

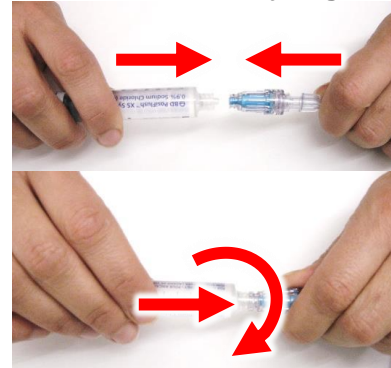
54. Remove the cap from the end of the syringe.



Make sure nothing touches the end of the syringe

55. To connect the syringe to the Max Zero Connector:

- Firmly hold the Max Zero Connector.
- Gently push and twist the syringe clockwise into the centre of the Max Zero Connector.



56. Open the clamp on your Central Venous Catheter.



57. Push the plunger with a 'push/pause motion' until you have flushed with 10mLs of saline.

A push/pause motion allows the saline to flush your CVC and helps prevent it from plugging.

58. Close the clamp on your Central Venous Catheter.



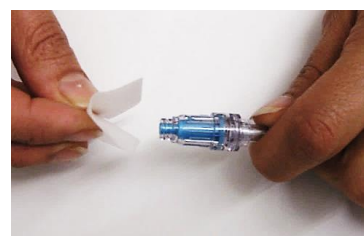
59. To remove the syringe:
 - Firmly hold the Max Zero Connector.
 - Remove the syringe from the Max Zero Connector by twisting counter-clockwise until the syringe separates from the Max Zero Connector.
60. **Repeat steps 53 to 59** with the second syringe.



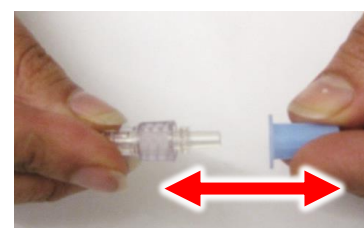
'Blue stays with you'

Connect the Administration Set to CVC

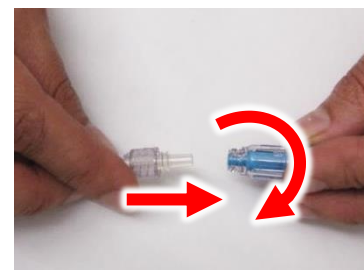
61. To clean the Max Zero Connector on the end of your CVC:
 - Firmly hold the Max Zero Connector with one hand.
 - Clean the Max Zero Connector with an alcohol swab for thirty (30) seconds.
 - Let it dry.
62. Remove the protective cap off the Luer lock end of the Administration Set
63. To connect the Administration Set to the Max Zero Connector:
 - Firmly hold the Max Zero Connector.
 - Push and twist the end of the Administration Set clockwise into the centre of the Max Zero Connector.
64. Open the clamp on your Central Venous Catheter.



Make sure nothing touches the cleaned end



Make sure nothing touches the open end



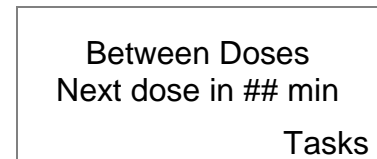
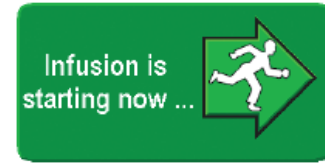
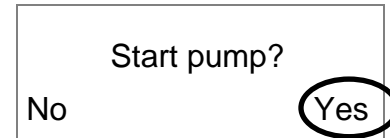
Start the pump

65. Press **stop/start** 



66. Press the soft key below **Yes**.

Infusion is starting now... briefly appears.

The screen shows between dose information.



To view your Delivery Settings: Press the soft key below **Tasks**.

Press  until **View Delivery** is highlighted, then press .

When finished viewing, press soft key below **Back** 2 times.

<Delivery Settings>

Dose Volume: _____ mL
 Dose Duration: _____ Hrs _____ Min
 Dose Cycle: _____ Hrs _____ Min
 Dose Rate: _____ mL/hr
 Next Dose: (*time changes*)
 KVO Rate: _____ mL/hr
 Reservoir Vol: _____ mL (*changes*)

The pump now says **Running** in the green Pump Status Bar.

The small green light on the upper left of the pump blinks every 3 seconds when the pump is running.

On the screen, the Reservoir Volume number counts down (top left corner).

- During the **Between Doses** phase, this number counts down slowly and you hear the motor run once in a while.
- During the **Dosing** phase, this number counts down quickly and you hear the motor run regularly.

Measure what is left in used bag

67. Measure the amount of fluid left in the used medication bag.
(Pull the spike out of the used bag. If the bag does not drain on its own, use your scissors to cut the port off where the spike entered the bag.)
68. Drain the remaining amount of fluid into the small plastic 30 mL cup.
69. Pour the fluid out onto paper towel.
70. Keep track of the total number of millilitres you emptied. Write the total number of millilitres (mLs) left in the bag on page 9 of your 'Introductory Book' – Medication Sheet.
71. Throw the wet paper towel, used Administration Set, and empty medication bag into the garbage.



Do not throw the fluid down the sink or toilet. This keeps the medication out of the water system

Note

Show your entries in your 'Introductory Book' to your nurse each week.

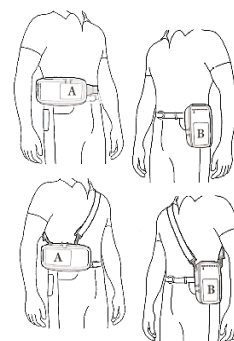
Your pump settings might need adjusting if the bag consistently has no fluid in it at all or has **more than**:

- 25 mLs left from a 250 mL medication bag **or**
- 50 mLs left from a 500 mL medication bag

Carrying your Pump

Pack up your pump and new medication bag into the belt or shoulder pouch.

Double-check to see if the green light is flashing to make sure you remembered to start the pump.



Troubleshooting CVC

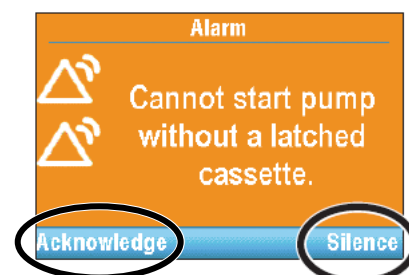
Problem	What you should do
Fluid or blood is leaking from the insertion site of your CVC	<p>Stop activities that pull or hit the extension tubing.</p> <p>Contact a nurse as soon as possible.</p>
Leaking at the connections	Tighten all of the connections.
Not able to flush or you have difficulty flushing the CVC with saline	<p>Make sure there are no kinks in tubing.</p> <p>Continue to try the 'push/pause motion' about 5 to 10 more times.</p> <p>Do not force the plunger.</p> <p>If it is still difficult to flush, contact your nurse.</p>

Troubleshooting Alarms and Messages

The pump can sound a number of different alarms.

For most of the alarms, you have the option to either:

- **Acknowledge** the alarm which clears the alarm message on the screen
- **Silence** which keeps the alarm message on the screen but stops the alarm sound for 2 minutes



Depending on the type of alarm:

- the screen could be red, amber, or blue
- the sound might be:
 - a continuous 2-toned alarm and the amber light on or flashing
 - 2 beeps every 2 seconds and the amber light flashing
 - 3 beeps every 5 minutes
- the screen might show 1, 2, 3, or 4 triangles
- if the alarm has added information, **Help** appears above the right soft key











Alarm message	Take this action...
Battery low. Replace battery	Press the soft key below Acknowledge .
Battery depleted. Pump stopped	Replace the 4 AA batteries.
Battery depleted. Pump will not run.	
Battery removed. Pump stopped	
Battery removed. Pump will not run.	
Cannot start pump with depleted battery	
Cannot start pump without a battery	

Alarm message	Take this action...
Reservoir volume is low. Cannot start pump with reservoir volume of zero Reservoir volume is zero. Pump stopped	Press the soft key below Acknowledge . Attach a new medication bag (page 7). Reset the reservoir volume (page 8). Start the pump.
Check for empty tubing or reservoir. Pump stopped.	Press the soft key below Acknowledge . Check to see if medication bag is empty. Remove the cassette and check for air in the tubing. <ul style="list-style-type: none"> • If the medication bag is empty or there is air in the tubing, follow the instructions to put on a new bag and Administration Set (page 14). • If the medication bag is not empty and/or there is no air in the tubing, reattach the cassette and start the pump.
Cassette not attached properly. Reattach cassette. Cassette was partially unlatched. Fully remove and reattach the cassette. Cassette detached. Pump stopped. Remove and reattach the cassette.	Press the soft key below Acknowledge . Check that the cassette is properly attached. Remove the cassette and reattach it. Restart the pump.

Alarm message	Take this action...
<p>Dose is scheduled to start in [minutes]. Pump is stopped.</p> <p>Dose is now overdue. Pump stopped.</p> <p>Infusion is scheduled to start in [minutes]. Pump is stopped.</p> <p>Infusion now overdue. Pump is stopped.</p> <p>Pump stopped reminder. When ready, press the Stop/Start key.</p>	<p>Press the soft key below Acknowledge.</p> <p>Make sure the medication bag and Administration Set is ready to go (see Page 7 to 9).</p> <p>Start the pump.</p>
Upstream occlusion. Clear occlusion between pump and reservoir	<p>Look for kinks or pinching of the pump tubing between medication bag and the pump.</p> <p>Check that the clamp on the CVC is open.</p> <p>Once the block (occlusion) is cleared, the pump will restart on its own.</p>
Downstream occlusion. Clear occlusion between pump and patient	<p>Check tubing between the pump and your intravenous site. Make sure the clamp is open and there are no kinks or pinches in the tubing.</p> <p>Select Stop Pump to stop the pump and silence the alarm for 2 minutes. Remove the obstruction.</p> <p>Once the block (occlusion) is cleared, the pump will restart on its own.</p> <p>If alarm continues after you have found no blockages in the tubing, your CVC itself could be blocked. Remove the 4 AA batteries and contact your nurse.</p>

Remember - If you have any questions, write your questions down and ask your nurse on your next visit.

Quick Steps

Every Day	Every 7 Days
<ol style="list-style-type: none"> 1. Wash your hands and get ready <ul style="list-style-type: none"> • Gather your supplies 2. Change medication bag 3. Reset Reservoir Volume and clear Total Given mL <ul style="list-style-type: none"> • Press select • Press soft key below Tasks • Press  or  until Reset Reservoir Volume is highlighted • Press select and soft key below Yes • Press  or  until View Reports is highlighted • Press select • Press  or  until Total Given is highlighted • Press select • Press soft key below Clear Given 4. Start the pump <ul style="list-style-type: none"> • Press stop/start  • Press soft key below Yes 5. Measure and record the amount of fluid in used medication bag 	<ol style="list-style-type: none"> 1. Wash your hands and get ready <ul style="list-style-type: none"> • Gather your supplies 2. Change the 4 AA batteries 3. Change Administration Set and medication bag, then reset Reservoir Volume, Prime tubing and clear Total Given mL <ul style="list-style-type: none"> • Remove the used Administration Set from Max Zero Connector and remove cassette from pump • Put new Administration Set and medication bag together. • Attach the new cassette to pump. • Open the clamp on the CVC and Administration Set. • Press soft key below Yes to reset reservoir volume • Press soft key below Yes to prime the tubing • Press soft key below Prime • Press soft key below Stop Priming when you see a drop of fluid at the end of the tubing. • Press soft key below No when asked Start the Pump? • Press soft key below Tasks. Press  to View Reports then select • With Total Given highlighted, press select • Press soft key below Clear Given 4. Bring end of Administration Set up under your top at waist (and down sleeve, if you have a PICC) 5. Clean the Max Zero Connector on the end of your CVC and flush with Saline Syringes 6. Clean the Max Zero Connector again and connect to Administration Set 7. Start the pump <ul style="list-style-type: none"> • Press stop/start • Press soft key below Yes 8. Measure and record the amount of fluid in used medication bag.



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This information does not replace the advice given to you by your healthcare provider.

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