

# Teaching guide

## AMBULATORY AND HOME INTRAVENOUS ANTIBIOTIC THERAPY REGIONAL PROGRAM (ATIVAD)

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### METHOD USING A CADD®-SOLIS VIP PUMP

#### Antibiotic costs

Antibiotics can be partially or fully reimbursed by your private insurance or by the Quebec Prescription Drug Insurance Plan, just as other drugs. Check with your insurer for more details.

#### What is the method using an ambulatory infusion pump (CADD®-Solis VIP)?

- ▶ This method allows for your antibiotic to be given at hours prescribed by the physician, in an automatic way via the infusion pump.
- ▶ The antibiotic is prepared in a bag, which is connected to the tubing. This tubing is fixed at all times to your catheter.
- ▶ The pump will administer, 24 hours per day, a small amount of medicine in order to prevent your intravenous catheter from blocking.

#### Precautions to follow for the CADD®-Solis VIP Pump

- ▶ Always keep the pump in the bag provided by the hospital.
- ▶ Always sleep with the pump in bed, do not put it on the bedside table.
- ▶ Do not immerse the pump in water.

#### Other precautions to follow

- ▶ Do not get your dressing wet (do not immerse in water).
- ▶ Cover your catheter with a plastic wrap during bathing or showering, to make it watertight.
- ▶ Avoid contact sports or repeated gestures (e.g., playing tennis). These activities can displace or damage your catheter.
- ▶ *For children: avoid physical education, and activities with a risk of falling (e.g. skateboarding, tubing, fighting or squabbling), as these activities can displace or damage your catheter. Elementary school children must stay with their supervisor in the schoolyard or stay inside.*
- ▶ Avoid manual labour requiring great physical strength.
- ▶ Do not remove your catheter dressing. Ensure that the extension is properly attached.
- ▶ Avoid undue pressure under the arm on the same side as your catheter (e.g., do not press a crutch directly under the armpit on the same side as the catheter).
- ▶ *If your child has a catheter, care not to put too much pressure under the armpit on the same side as the catheter when lifting him/her.*



## BATTERY CHANGE (FOUR AA CELLS) EVERY \_\_\_\_\_ DAYS

During the entire duration of the treatment, you will have to change batteries of your pump and know what to do if it generates an alarm. The following two sections present these steps.

Ensure to stop the pump by pressing the **arrêt/marche** key before changing batteries.



- ▶ Arrêt pompe? **OUI**.



Press the button on the side of the pump to shut the device down

- ▶ Shut down? **YES**.



- ▶ Open the door of the battery compartment by turning the button counterclockwise.



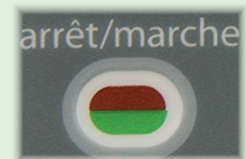
- ▶ Remove the old batteries and insert four new ones. Ensure that the + and – signs on the batteries correspond to those indicated on the pump.
- ▶ Close the door of the compartment and turn the button clockwise to lock it.



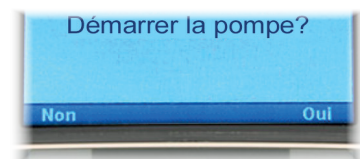
- ▶ Press the button on the side of the pump to turn it on.



- ▶ Restart the pump by pressing the **arrêt/marche** key.



- ▶ The proposition *Démarrer la pompe?* appears, choose **OUI**.



### ANTIBIOTIC BAG CHANGE

#### Cleanliness of the work surface

- ▶ Tie your hair before getting started.
- ▶ Choose a clean and calm area where you will not be disturbed and where there are no animals.
- ▶ Wash the work surface with water, soap and a clean cloth. Rinse with clear water and dry.
- ▶ Avoid children and animals from touching the surface.

#### Cleanliness of hands

- ▶ The person who changes the antibiotic bag must always wash hands before touching the material.
- ▶ Remove your rings, bracelets and watch.
- ▶ Rewash your hands if you touch something else.
- ▶ To wash hands:
  - Soap and rub for 30 seconds;
  - Rinse, then dry with a clean towel.

**ATTENTION!** It is important not to talk, blow or cough towards the material that is on the work table. You must not touch the piercing spike with your fingers when you make the antibiotic bag change.

#### Material required for the antibiotic bag change (removing the empty one and putting a new one)

- ▶ CADD®-Solis VIP pump (including the antibiotic bag to change and the tubing).
- ▶ Bag containing the antibiotic.

#### Preparation

- ▶ Check the site of your catheter (if redness, warmth or tenderness along the vein, refer to section "*Monitoring points*").
- ▶ Take the antibiotic out of the refrigerator before administration.
- ▶ Verify that the antibiotic's appearance is normal.
- ▶ Verify if the inscription on the antibiotic is accurate:
  - your name, the name of your antibiotic and the expiry date.

## Preparation – Continued

**ATTENTION! You do not have to change the tubing.** The CLSC or hospital nurse will do it during visits.

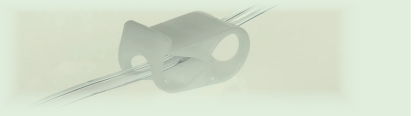
a) Make sure to close the pump by pressing the **arrêt/marche** key.



▶ Arrêt pompe? **OUI.**



▶ Make sure to close the tubing clamp.



b) Prepare the new antibiotic bag.

- ▶ Take the new antibiotic bag.
- ▶ Hold firmly, between the thumb and forefinger, the junction located between the bag and the tip covered by a white cap (or blue). Remove the white cap (or blue) by pulling strongly, then put the bag on the pump so that the tip intended to receive the tubing does not touch anything: neither the table nor the antibiotic bag. Put aside.

c) Remove the empty bag.

- ▶ Hold firmly between the thumb and forefinger the tubing part located near the wings. Using the other hand, hold firmly the empty antibiotic bag by the side where the tubing is located.
- ▶ Remove the empty bag by pulling the tubing upward.
- ▶ Discard the empty bag in the garbage.



d) Connect the tubing to the new antibiotic bag.

- ▶ Enter the piercing spike deeply into the tip of the antibiotic bag in order to pierce the plastic membrane.
- ▶ Push the piercing spike up to the mark (part where it widens). Do not push the piercing spike up to the wings, because you might damage the antibiotic bag.



e) Reset the residual volume.

- ▶ On the menu **Tâches**:
  - Press **Sélect** to select *Réinitialiser volume résiduel* (the first task);
  - Answer **Oui** (the pre-recorded volume is already adequate);
  - The screen of the pump will display "Enreg...".



f) Start the infusion..

- ▶ Open the tubing clamp.
- ▶ Press the **arrêt/marche** key:
  - The proposition *Démarrer la pompe?* will appear, choose **OUI**.

## Management of pump alarms

ALARM / MESSAGE	DESCRIPTION	WHAT TO DO?
<b><i>Impossible to start the pump with residual volume at zero.</i></b>	Remaining volume of the antibiotic, indicated on the screen of the pump, is down to zero.	<p>Silence the alarm:</p> <ul style="list-style-type: none"> <li>– Select Acceptor by pressing the arrows;</li> <li>– Change the antibiotic bag (if it is not already done);</li> <li>– Follow the steps to reset the residual volume;</li> <li>– Restart the pump.</li> </ul>
<b><i>Upstream occlusion. Eliminate occlusion between the pump and the tank.</i></b>	Fluid is not flowing from the antibiotic bag to the pump, because it detects a blockage. Infusion is on pause and will resume when the situation is corrected.	<p>Silence the alarm:</p> <ul style="list-style-type: none"> <li>– Select Acceptor by pressing the arrows;</li> <li>– Clear the occlusion to resume the operation;</li> <li>– Make sure that the tubing is not kinked.</li> </ul>
<b><i>Downstream occlusion. Eliminate occlusion between the pump and the patient.</i></b>	Fluid is not flowing from the pump to your catheter, because it detects a blockage. Infusion is on pause and will resume when the situation is corrected.	<p>Silence the alarm:</p> <ul style="list-style-type: none"> <li>– Select Acceptor by pressing the arrows;</li> <li>– Clear the occlusion to resume the operation;</li> <li>– Make sure that the tubing between the pump and your catheter is not kinked;</li> <li>– Relax the arm and stretch it.</li> </ul>
<b><i>Empty battery, the pump does not function.</i></b>	Battery power is too low to make the pump work.	<ul style="list-style-type: none"> <li>– Stop the pump;</li> <li>– Remove the batteries and install new ones (see previous section);</li> <li>– Restart the pump.</li> </ul>
<b><i>Empty battery, the pump is stopped.</i></b>	Pump was stopped during infusion since battery power is too low to make it work.	<ul style="list-style-type: none"> <li>– Stop the pump;</li> <li>– Remove the batteries and install new ones (see previous section);</li> <li>– Restart the pump.</li> </ul>
<b><i>Residual volume at zero, the pump is stopped.</i></b>	Remaining volume of the antibiotic, indicated on the screen of the pump, is down to zero. Pump was stopped during infusion since there is no more content (antibiotic) in the bag.	<p>Silence the alarm:</p> <ul style="list-style-type: none"> <li>– Select Acceptor by pressing the arrows;</li> <li>– Change the antibiotic bag (if it is not already done);</li> <li>– Follow the steps in the previous section to reset the residual volume;</li> <li>– Restart the pump.</li> </ul>
<b><i>Low residual volume.</i></b>	Contents of the antibiotic bag will end soon.	<p>Silence the alarm:</p> <ul style="list-style-type: none"> <li>– Select Acceptor by pressing the arrows;</li> <li>– Change the antibiotic bag (if it is not already done);</li> <li>– Follow the steps in the previous section to reset the residual volume;</li> <li>– Restart the pump.</li> </ul>

**Contact the CLSC nurse or the 24/7 service at all times if the alarm continues**

## Monitoring points and required interventions

The following table presents some **monitoring points** as well as **required interventions**. For any additional questions, contact the nurse at your local community service center (CLSC) or your pharmacist (if your questions concern your antibiotic).

Monitoring points	What to do?
Redness, warmth or tenderness along the vein	▶ Contact the CLSC nurse or the 24/7 service
Presence of fever, chills	▶ Contact the CLSC nurse or the 24/7 service (for validating the need to consult)
Accidental removal of the catheter (partial or total)	<ul style="list-style-type: none"> <li>▶ Do not attempt to push it back into your arm</li> <li>▶ Compress the site if bleeding</li> <li>▶ Contact the CLSC nurse or the 24/7 service</li> </ul>
If the dressing detaches	▶ Contact the CLSC nurse or the 24/7 service
If there is a discharge at the site of the catheter	▶ Contact the CLSC nurse or the 24/7 service
If your dressing is wet	▶ Contact the CLSC nurse or the 24/7 service

## The nurse to reach in case of a problem

The nurse from your CLSC, from \_\_\_\_\_ o'clock to \_\_\_\_\_ o'clock

CLSC: \_\_\_\_\_

Telephone: \_\_\_\_\_

Name of the nurse: \_\_\_\_\_

During after-hours of your CLSC, contact the 24/7 service: \_\_\_\_\_

## Personal notes

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## Sources and references

Smiths Medical (2013). CADD<sup>®</sup>-Solis VIP Ambulatory Infusion Pump. Clinician Guide. Model 2120. Version 1.02 du logiciel.

Centre hospitalier universitaire de Sherbrooke (CHUS) (2014). Antibiothérapie intraveineux à domicile. Administration par pompe CADD<sup>®</sup> SOLIS VIP.

Centre intégré en santé et services sociaux de Chaudières-Appalaches (2015). Pompe CADD<sup>®</sup> SOLIS VIP. Programme d'antibiothérapie intraveineuse à domicile. Informations et recommandations à l'utilisateur en lien avec une médication

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