

Teaching guide

AMBULATORY AND HOME INTRAVENOUS ANTIBIOTIC THERAPY REGIONAL PROGRAM (ATIVAD)

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GRAVITY METHOD

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 gravity method?

- ▶ Giving a diluted antibiotic in a mini-bag connected to a tubing system.
- ▶ Tubing binds to the catheter port.
- ▶ The antibiotic is administered by drip.

Precautions to follow

- ▶ Respect the hours planned to give yourself the antibiotic:
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- ▶ 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 school yard 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.*
 - ▶ If your material gets contaminated, dispose of it (e.g., a syringe fallen on the ground).



Cleanliness of the work surface

- ▶ Tie your hair before getting started.
- ▶ Choose a clean and calm place.
- ▶ Wash the work surface with water, soap and a clean cloth. Rinse with clear water and dry.
- ▶ Avoid having children and animals touch the surface.

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Cleanliness of hands

- ▶ The person administering the antibiotic must always wash hands before touching the material.
- ▶ Rewash your hands if you touch something else.
- ▶ To wash hands:
 - ▶ use soap and rub **for 30 seconds**;
 - ▶ rinse, then dry with a clean towel.

Material required



- ▶ Alcohol swabs
- ▶ Two 10 ml pre-filled syringes of sodium chloride (NaCl)
For children: two 5 ml pre-filled syringes of NaCl
- ▶ Diluted antibiotic in a solution mini-bag
- ▶ IV pole or stand to suspend the solution mini-bag
- ▶ Tubing
- ▶ Band-Aid



For administration of heparin, if applicable

(if Port-A-Cath, the nurse will specify the required quantity):

- one 3 ml pre-filled syringe of heparin, 100 units/ml, or
- one 3 ml pre-filled syringe of heparin, 10 units/ml, or
- one vial of heparin, 100 units/ml
- ▶ One 10 ml syringe (if vial)
- ▶ One 20-gauge needle, 2.54 cm (one inch) (if vial)
- ▶ Alcohol swabs
- ▶ Secure container for the disposal of the needle

Preparation

- ▶ Check the site of your catheter (if redness, warmth or tenderness along the vein, see section "Monitoring points").
- ▶ Take the antibiotic out of the refrigerator 30 minutes before administration.
- ▶ Verify that the antibiotic's appearance is normal.
- ▶ Verify that the inscription on the antibiotic is accurate:
 - ▶ your name, the name of your antibiotic and the expiry date.



- ▶ Remove air bubbles from two 10 ml pre-filled syringes of NaCl (5 ml for children):
 - ▶ remove the plug;
 - ▶ hold the syringe vertically and push the plunger to remove the bubble;
 - ▶ replace the plug (do not touch inside the plug or the tip of the syringe).
- ▶ Connect the antibiotic to the tubing:
 - ▶ put the mini-bag on your work surface;
 - ▶ open the tubing package;
 - ▶ close the tubing clamp (white roller);

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Preparation – Continued



- ▶ pull off the protective cover from the mini-bag's tip and the cap from the piercing spike of the tubing (avoid touching the piercing spike and the tip of the mini-bag);
- ▶ insert the piercing spike into the tip of the mini-bag (be careful not to pierce the bag);
- ▶ suspend the bag;
- ▶ squeeze the drip chamber and fill it up halfway;
- ▶ **open all tubing clamps;**
- ▶ slightly open the **roller control clamp** to get a flow of liquid in the tubing;
- ▶ expulse air bubbles;
- ▶ close the roller control clamp.

Flushing the catheter with NaCl

(If required, venous return will be done by nursing staff only)

Flush the catheter with a pre-filled syringe of NaCl:

- ▶ **BEFORE** the antibiotic;
 - ▶ **AFTER** the antibiotic.
1. Disinfect the catheter port with an alcohol swab for 15 seconds:
 - ▶ the top and sides, moving in every direction.
 2. Air-dry for 30 seconds (do not blow, vent or wipe).
 3. Connect the syringe to the catheter port:
 - ▶ hold the port between the thumb and forefinger;
 - ▶ push the pre-filled syringe of NaCl downward and turn **to the right**.
 4. **If there are clamps** on the catheter extension and/or the catheter itself, unclamp them.
 5. Slowly inject in small increments by keeping a finger on the plunger.
 6. **Close the clamps**, if applicable.
 7. Remove the syringe by turning **to the left**.

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Giving the antibiotic

1. Disinfect the catheter port with an alcohol swab for 15 seconds:
 - ▶ the top and sides, moving in every direction.
2. Air-dry for 30 seconds (do not blow, vent or wipe).
3. Connect the tubing of the solution mini-bag to the port:
 - ▶ hold the catheter port between the thumb and forefinger;
 - ▶ remove the tubing cap;
 - ▶ push the tubing of the mini-bag downward and turn **to the right**.



4. Slowly open the roller control clamp of the tubing.
5. **If there are clamps** on the catheter extension and/or the catheter itself, unclamp them.
6. Adjust speed to _____ drops per minute:
 - ▶ often check the prescribed speed and **respect** it;
 - ▶ ensure that the tubing is never kinked.
7. When the tubing is almost empty, quickly close the roller control clamp.
8. Remove the tubing by turning **to the left**.
9. Proceed to flushing the catheter with NaCl, as described in the previous section.

Administering heparin

The nurse will indicate whether this step is:

- required** or **non-required**

If required, proceed to the administration of heparin **after the antibiotic and flushing with the NaCl**.

For adults:

- 3 ml of heparin 100 units/ml or
 3 ml of heparin 10 units/ml
(Exception: Port-A-Cath _____ ml).

For children:

Percutaneous catheter:

- ____ ml of heparin 100 units/ml or
 ____ ml of heparin 10 units/ml

Tunnelled catheter:

- ____ ml of heparin 100 units/ml or
 ____ ml of heparin 10 units/ml

Pre-filled syringe of heparin

1. Disinfect the catheter port with an alcohol swab for 15 seconds:
 - ▶ the top and sides, moving in every direction.
2. Air-dry for 30 seconds (do not blow, vent or wipe).
3. Connect the syringe to the port:
 - ▶ hold the port between the thumb and forefinger;
 - ▶ push the pre-filled syringe of heparin downward and **turn to the right**.

4. **If there are clamps** on the catheter extension and/or the catheter itself, unclamp them.
5. Slowly inject in small increments by keeping a finger on the plunger.
6. **Close the clamps**, if applicable.
7. Remove the syringe by turning **to the left**.

Preparation using a vial

***** NEVER INSERT A NEEDLE INTO THE PORT OF YOUR CATHETER *****

1. Disinfect the vial stopper with an alcohol swab for 15 seconds.
2. Air-dry for 30 seconds (do not blow, vent or wipe).
3. Connect the needle to the syringe.
4. Pull off the needle cap and put it aside (keep it).
5. Draw _____ ml of air in the syringe.
6. Insert the syringe's needle into the vial and inject the air.
7. Place the vial and syringe upside down.

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Administering heparin – Continued

8. Slowly draw ____ml of heparin.
9. Withdraw the syringe and remove the air bubbles.
10. Replace the cap on the needle.
11. Disinfect the catheter port with an alcohol swab for 15 seconds:
 - ▶ the top and sides, moving in every direction.
12. Air-dry for 30 seconds (do not blow, vent or wipe).
13. **If there are clamps** on the catheter extension and/or the catheter itself, unclamp them.



14. Pull off the needle from the syringe and dispose of it in the appropriate container.
15. Connect the syringe to the port:
 - ▶ hold the port between the thumb and forefinger;
 - ▶ push the syringe of heparin downward and turn **to the right**.
16. Inject the product slowly.
17. **Close the clamps**, if applicable.
18. Remove the syringe by turning **to the left**.

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

Monitoring points	What to do?
Pain and/or swelling during the injection (NaCl, heparin or antibiotic)	<ul style="list-style-type: none"> ▶ Do not administer the antibiotic ▶ Contact the CLSC nurse or the 24/7 service
Resistance during the injection	<ul style="list-style-type: none"> ▶ Verify if the clamps are open ▶ Cease administration if the problem persists ▶ Contact the CLSC nurse or the 24/7 service
Redness, warmth or tenderness along the vein	<ul style="list-style-type: none"> ▶ Do not administer the antibiotic ▶ Contact the CLSC nurse or the 24/7 service
Presence of fever, chills (validate with the nurse the necessity to consult)	<ul style="list-style-type: none"> ▶ Contact the CLSC nurse or the 24/7 service
Presence of blood in the catheter extension	<ul style="list-style-type: none"> ▶ Flush the catheter extension according to the administration procedure indicated in the section "Flushing the catheter with NaCl" ▶ Contact the CLSC nurse or the 24/7 service if the problem persists
If there is an accidental removal of the catheter (partial or total)	<ul style="list-style-type: none"> ▶ Fix and do not attempt to push it back into your arm ▶ Compress the site if bleeding ▶ Contact the CLSC nurse or the 24/7 service
If the dressing detaches	<ul style="list-style-type: none"> ▶ Contact the CLSC nurse or the 24/7 service
If there is a discharge at the site of the catheter	<ul style="list-style-type: none"> ▶ Contact the CLSC nurse or the 24/7 service
If your dressing is wet	<ul style="list-style-type: none"> ▶ Contact the CLSC nurse or the 24/7 service 24/7
If there is an accidental removal of the catheter's cap	<ul style="list-style-type: none"> ▶ Close the clamp on the catheter extension if possible ▶ Contact the CLSC nurse or the 24/7 service

