Empiric Management of Peritonitis

BC Children's Hospital On-Call Handbook

February 2012

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Support provided by the BCPRA.

ABOUT THIS HANDBOOK

The following pages summarize the current Guidelines, Policies and Procedures as related to the Diagnosis and Treatment of Peritonitis in the BC Children's Hospital Peritoneal Dialysis Program. These recommendations incorporate a comprehensive study of the published literature, numerous face-to-face meetings of the whole Division and have been carefully reviewed in an attempt to avoid any errors. Developed for use within the BC Children's Hospital PD Program, they may also be of use to other Pediatric PD Programs after careful review and consideration of local differences in care delivery or peritonitis rates/organisms.

Application of these guidelines will benefit and standardize the care effectively for most patients in whom they are applied; but it remains the treating physician's responsibility to consider any unique issues that might be pertinent to the current scenario, and to make any adjustments to the application of these guidelines to best treat the individual patient.

This document represents the efforts of many, but would not have been possible without those of Dr. Chanel Prestidge, Jennifer Leechik BSN and Kathleen Collin B.Sc.(Pharm), all of whom put in innumerable hours of work to bring this project to completion.

I also would like to acknowledge the full support of the Division of Nephrology, the BCPRA for funding this project and Linda Coe Graphic Design for their assistance in the design and production of the materials.

Please note it is our intention to review and update these guidelines every two years and all users should ensure that their copy remains current.

Colin White MD
Director of Dialysis, BC Children's Hospital
February 2012

SECTION ONE

Empiric Management of Peritonitis

Empiric Management Flow Chart 3

Antibiotic Dosing Worksheets

i) Cefazolin and Ceftazidime 7

ii) Tobramycin 9

iii) Vancomycin 11

Step-by-Step Instructions for Parents and Allied Health Professionals

i) Cefazolin 16

ii) Tobramycin 18

iii) Vancomycin 20

iv) Ceftazidime 22

SECTION TWO

Contamination: Policy and Procedure

Contamination 26

Transfer Set Change or Attachment 28

Obtaining Specimen

Y-Set 30

Cycler *Using Effluent Sample Bag* 31

CAPD 32

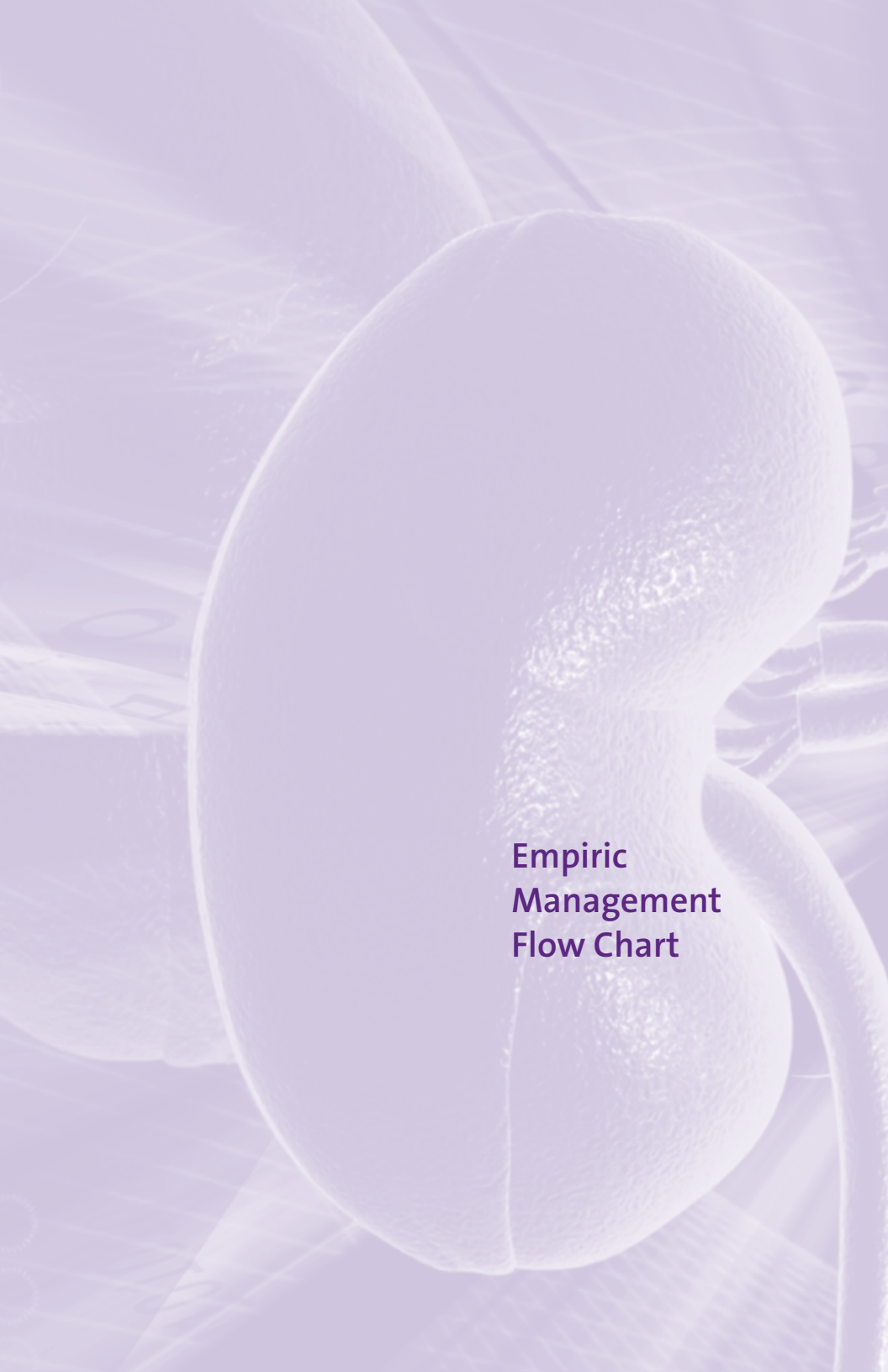
Not on Treatment *During the Day* 33

Appendix

Laboratory Directory 37

1

Empiric Management of Peritonitis



Empiric Management Flow Chart

Empiric Therapy of Peritonitis

Symptoms suspicious for peritonitis: cloudy effluent, abdominal pain, fever

Consider hospital admission if:

- concern for sepsis
- < 2years age
- current or recent immunosuppressants
- associated exit site or tunnel infection

Dialysate Sample[1] for STAT cell count and differential, gram stain, C&S

Diagnosed with peritonitis: Neutrophils >50% ± WBC > 100

Add 500 Units/L heparin IP to all dialysate bags for initial 72 hr therapy

ANTIBIOTIC THERAPY

History of MRSA positive OR Allergy to Cephalosporins

YES

IP Vancomycin and IP Tobramycin[2]

Loading Doses
Refer to dosing worksheet.
Dwell x 6 hours

Maintenance Doses
Tobramycin only required – (refer to dosing worksheet).
Tobramycin for ≥ 6 hour dwell (last fill) once daily x 2 days

NO

IP Cefazolin and IP Tobramycin[2]

Loading Doses
Refer to dosing worksheet
Dwell x 6 hours

Maintenance Doses
Refer to dosing worksheets.
Tobramycin for ≥ 6 hour dwell (last fill) once daily x 2 days
Cefazolin to ALL bags x 3 days

Clinical Improvement at 48 hours?

YES

Review C&S
Proceed to organism specific therapy algorithm

NO

Repeat sample for cell count, gram stain and C&S.
Review initial C&S if available and proceed to organism specific therapy algorithm.
Evaluate for tunnel/ES infection, intra-abdominal or pelvic pathology.

ANTI-FUNGAL THERAPY

Need for Anti-fungal Prophylaxis?

- Hx of IP or IV antibiotic use in past 3 months
- Gastric tube
- ICU inpatient
- Hx of previous invasive fungal infection

YES

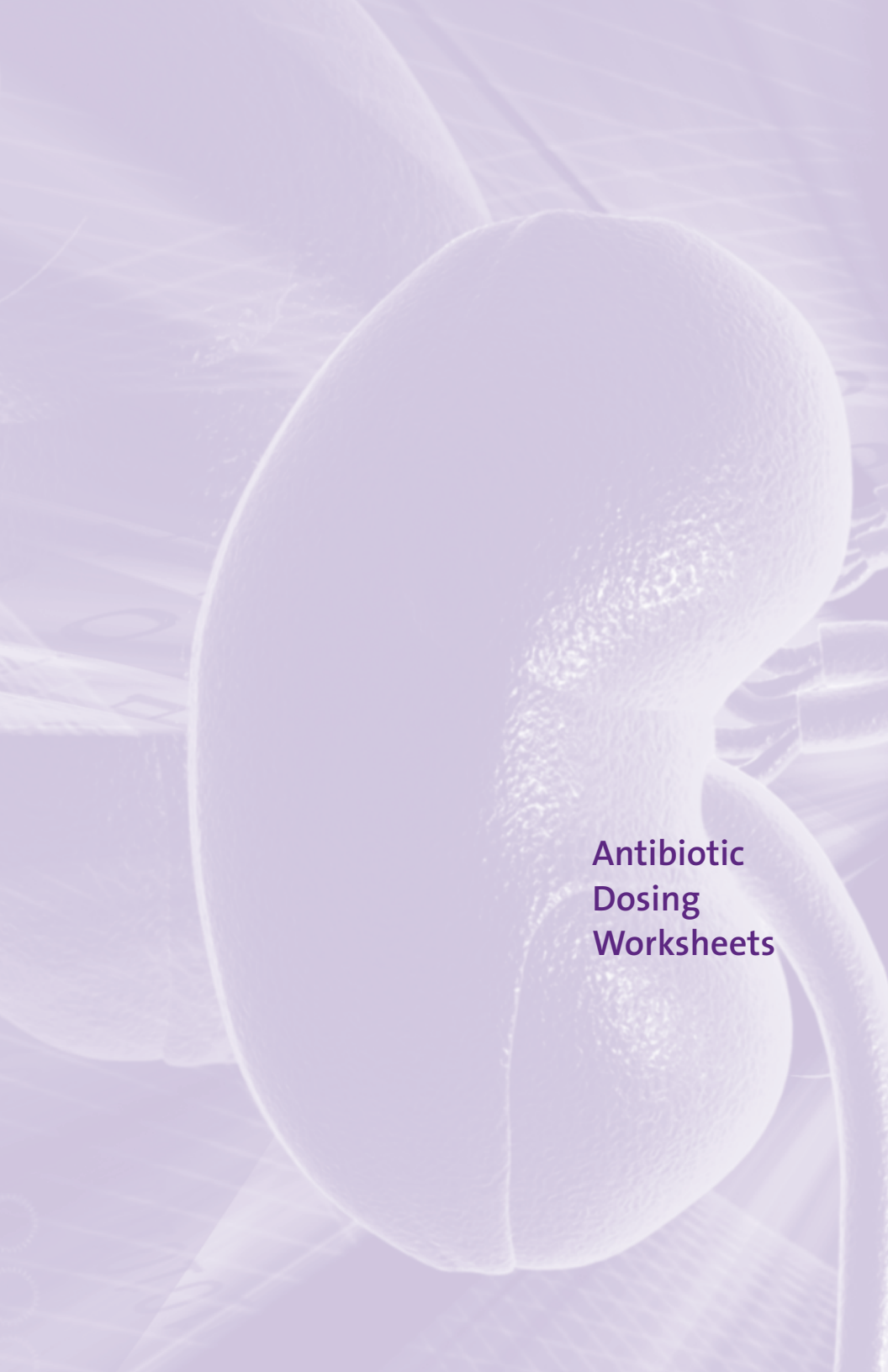
Fluconazole[3] (preferred)
1.5 mg/kg/dose once daily PO/IV (max 100 mg/dose) x 14 days (course extended if antibiotic therapy > 14 days)
Check liver enzymes on **day 5**

OR

Nystatin
Age < 1 year:
200,000 units/dose PO QID
Age > 1 year:
500,000 units/dose PO QID

1. If cloudy effluent – optimal sample irrespective of dwell time. If clear effluent/equivocal initial result – perform 2 hour dwell then sample.
2. If allergic to Tobramycin, suggest IP Ceftazidime (refer to dosing worksheet). Add Ceftazidime to ALL dialysate bags.
3. Avoid using Fluconazole if patient has liver dysfunction or prolonged QT interval. Consider potential drug interactions.

Empiric Management Flow Chart



Antibiotic Dosing Worksheets

Cefazolin and Ceftazidime Dosing Worksheet

Note

Cephalosporins are to be continuously dosed (i.e. antibiotic in all dialysate bags).

Continuously dosed antibiotics are prescribed as a concentration (i.e. mg/L).

1. Patient's Current PD Prescription

(NB. clarify with nursing staff/parent the number and size of dialysate bags used)

2. Patient Anthropometric Data

(Refer to most recent clinic note.)

$$BSA = \sqrt{\frac{\text{\_\_\_\_\_ (height cm) x \_\_\_\_\_ (weight kg)}}{3600}}$$

= _____ m^2 **(A)**

3. "Correction Factor"

(To adjust for use of reduced fill volumes.)

$$\text{Optimal Fill Volume (1100 mL/m2 x A)} = \frac{\text{\_\_\_\_\_ mL}}{\text{\_\_\_\_\_}}$$

$$\text{Fill volume to be used*} = \text{\_\_\_\_\_ mL}$$

= _____•___ **(B)** Express to 1 decimal

(*use patient's usual fill volume or decrease by 25% if in pain)

4. Dosing

(Choose appropriate dose of antibiotic based on residual urine output and multiply by correction factor (**B**) to determine final dose needed to provide required mass of antibiotic.)

Cefazolin or Ceftazidime	Loading Dose (C)	Maintenance Dose (D)
Anuric	500 mg/L	125 mg/L
Non-anuric	625 mg/L	150 mg/L

NB. Anuria: >12 years = <100 mL/day; <12 years = <50 mL/day

Loading Dose (initial dwell for minimum of 6 hours) =

_____ mg/L **(C)** x _____ **(B)** = _____ mg/L **(E)**

Final concentration to provide required mass antibiotic

Maintenance Dose (added to every dialysate bag) =

_____ mg/L **(D)** x _____ **(B)*** = _____ mg/L **(F)**

*Use optimal fill volumes(ie B=1) if possible

Final concentration to provide required mass of antibiotic

5. Administration

(Also refer to parent antibiotic mixing instruction sheets, note cefazolin and ceftazidime are reconstituted by parents to a 100 mg/mL solution.)

Loading Dose (generally use 2 L Twin Bag)

i. 2 L x _____ mg/L **(E)** = _____ mg **(G)**

ii. _____ mg **(G)** ÷ 100 mg/mL = _____mL

(of 100 mg/mL antibiotic) to be added to 2 L bag. Instill and dwell for a minimum of 6 hours, then commence maintenance dosing

Maintenance Dose

(Select bag sizes to be used by patient when on cycler (including last fill bag) or twin bags (if CAPD), as per usual PD prescription.)

Dose (mg/L) (F)

2 L x **(F)** = _____ mg ÷ 100 mg/mL = _____ mL

(of 100 mg/mL antibiotic) added to each 2 L bag

2.5 L x **(F)** = _____ mg ÷ 100 mg/mL = _____ mL

(of 100 mg/mL antibiotic) added to each 2.5 L bag

3 L x **(F)** = _____ mg ÷ 100 mg/mL = _____ mL

(of 100 mg/mL antibiotic) added to each 3 L bag

5 L x **(F)** = _____ mg ÷ 100 mg/mL = _____ mL

(of 100 mg/mL antibiotic) added to each 5 L bag

6. Example Prescription for Outpatients

(Prescribe first 3 days to cover empiric therapy.)

Cefazolin or Ceftazidime for intraperitoneal administration for peritonitis.

Loading Dose

Add _____ mg/L **(E)** x 2 L dialysate x 1 dose.

Maintenance Dose

Add _____ mg/L **(F)** x _____ litres = _____ mg

(total per day) x 3 days

Tobramycin Dosing Worksheet

Note

Tobramycin is to be dosed intermittently (i.e. antibiotic in one long (≥ 6 hours) dwell per day).

Intermittently dosed antibiotics are prescribed based on patient weight (i.e. mg/kg).

All volumes for dialysate to be expressed in litres.

1. Patient's Current PD Prescription

(NB. clarify with nursing staff/parent the number and size of dialysate bags used.)

2. Patient Weight

_____ kg **(A)**

3. Dosing

Tobramycin Dose	Loading Dose **(B)**	Maintenance Dose **(C)**
Anuric	1.5 mg/kg	0.6 mg/kg
Non-anuric	1.5 mg/kg	0.75 mg/kg

NB. Anuria: >12 years = <100 mL/day; <12 years = <50 mL/day

Loading Dose (dwell for minimum of 6 hours) =

_____ mg/kg **(B)** x _____ kg **(A)** = _____ mg **(D)**
Final mass of antibiotic

Maintenance Dose

(Dwell for minimum 6 hours q 24 hourly i.e. add to last fill bag) =

_____ mg/kg **(C)** x _____ kg **(A)** = _____ mg **(E)**
Final mass of antibiotic

4. Administration

(Also refer to parent antibiotic mixing instruction sheets, note tobramycin is available as **40 mg/mL vial.**)

Loading Dose (generally use 2 L Twin Bag)

i. Bag size x _____ mg **(D)** ÷ __•____ L
Fill volume*

= _____ **(F)**
Total mass of antibiotic added to bag

(*use patient's usual fill volume or decrease by 25% if in pain)

ii. _____ mg **(F)** ÷ 40 mg/mL = _____mL
Instill and dwell for a minimum of 6 hours

Maintenance Dose

i. Last fill bag size x _____ mg **(E)** ÷ __•____ L
Last fill volume*

= _____ **(G)**
Total mass of antibiotic added to last fill bag

ii. _____ mg **(G)** ÷ 40 mg/mL = _____mL
To be added to last fill bag every 24 hours

5. Example Prescription for Outpatients

(Prescribe first 3 days to cover empiric therapy.)

Tobramycin for intraperitoneal administration for peritonitis.

Loading Dose

Add _____ mg **(F)** to 2 L dialysate bag x 1.

Maintenance Dose

Add _____ mg **(G)** to _____ L dialysate bag every 24 hours x 2 days.

Tobramycin Dosing Worksheet

Vancomycin Dosing Worksheet

Note

Vancomycin is to be dosed intermittently (antibiotic in one long [≥ 6 hours] dwell) based on serum levels.

Intermittently dosed antibiotics are prescribed based on patient weight (i.e. mg/kg).

All volumes for dialysate to be expressed in litres.

1. Patient's Current PD Prescription
(NB. clarify with nursing staff/parent the number and size of dialysate bags used.)

2. Patient Anthropometric Data
(Refer to most recent clinic note.)

$$BSA = \sqrt{\frac{\text{\_\_\_\_\_ (height cm) x \_\_\_\_\_ (weight kg)}}{3600}}$$

= _____ m^2

3. Patient Weight

_____ kg **(A)**

4. Loading Dose (dwell for minimum of 6 hours)

Vancomycin	Loading Dose (B)
Anuric	30 mg/kg (max 2 g)
Non-anuric	35 mg/kg (max 2 g)

X ___ kg **(A)** = ___ mg **(C)**
Final mass antibiotic

NB. Anuria: >12 years = <100 mL/day; <12 years = <50 mL/day

5. Loading Dose Administration
(Also refer to parent antibiotic mixing instruction sheets, note vancomycin is reconstituted by parents to **100 mg/mL solution**.)

i. Bag size x _____ mg **(C)** ÷ ___•___ L
Fill volume

= _____ mg **(D)**
Total mass added to bag

(*use patient's usual fill volume or decrease by 25% if in pain)

ii. _____ mg **(D)** ÷ 100 mg/mL = _____ mL **(E)**
Instill and dwell for a minimum of 6 hours, then resume dialysis without added antibiotic

If Continued Vancomycin Treatment is Required Based on Specific Organism Sensitivities

Note

- Check serum vancomycin level around Day 3 (non-anuric) and Day 5 (anuric).
- Give next dose IP vancomycin when serum level is (or anticipated to be) ~ 15 mg/L in a cycler patient and ~ 9 mg/L in a CAPD patient.
- Timing of subsequent doses (including decision re need for repeat serum levels) is at the physician's discretion, aiming to maintain serum vancomycin level >15 mg/L in cycler patients and >9 mg/L in CAPD patients.

6. Subsequent Maintenance Dose
(Dwell for minimum of 6 hours.)

Vancomycin	Loading Dose
Anuric	15 mg/kg (max 2 g)
Non-anuric	20 mg/kg (max 2 g)

X ___ kg **(A)** = ___ mg **(F)**
Final mass antibiotic

NB. Anuria: >12 years = <100 mL/day; <12 years = <50 mL/day

7. Maintenance Dose Administration
(Also refer to parent antibiotic mixing instruction sheets, note vancomycin is reconstituted by parents to **100 mg/mL solution**.)

i. Last fill bag size x _____ mg **(F)** ÷ ___•___ L
Last fill volume

= _____ mg **(G)**
Total mass antibiotic added to last fill bag

ii. _____ mg **(G)** ÷ 100 mg/mL = _____ mL **(H)**
To be added to last fill bag only X 1

8. Example Prescription for Outpatients
(Initially only prescribe the loading dose x 1 for empiric therapy.)

Vancomycin for intraperitoneal administration for peritonitis.

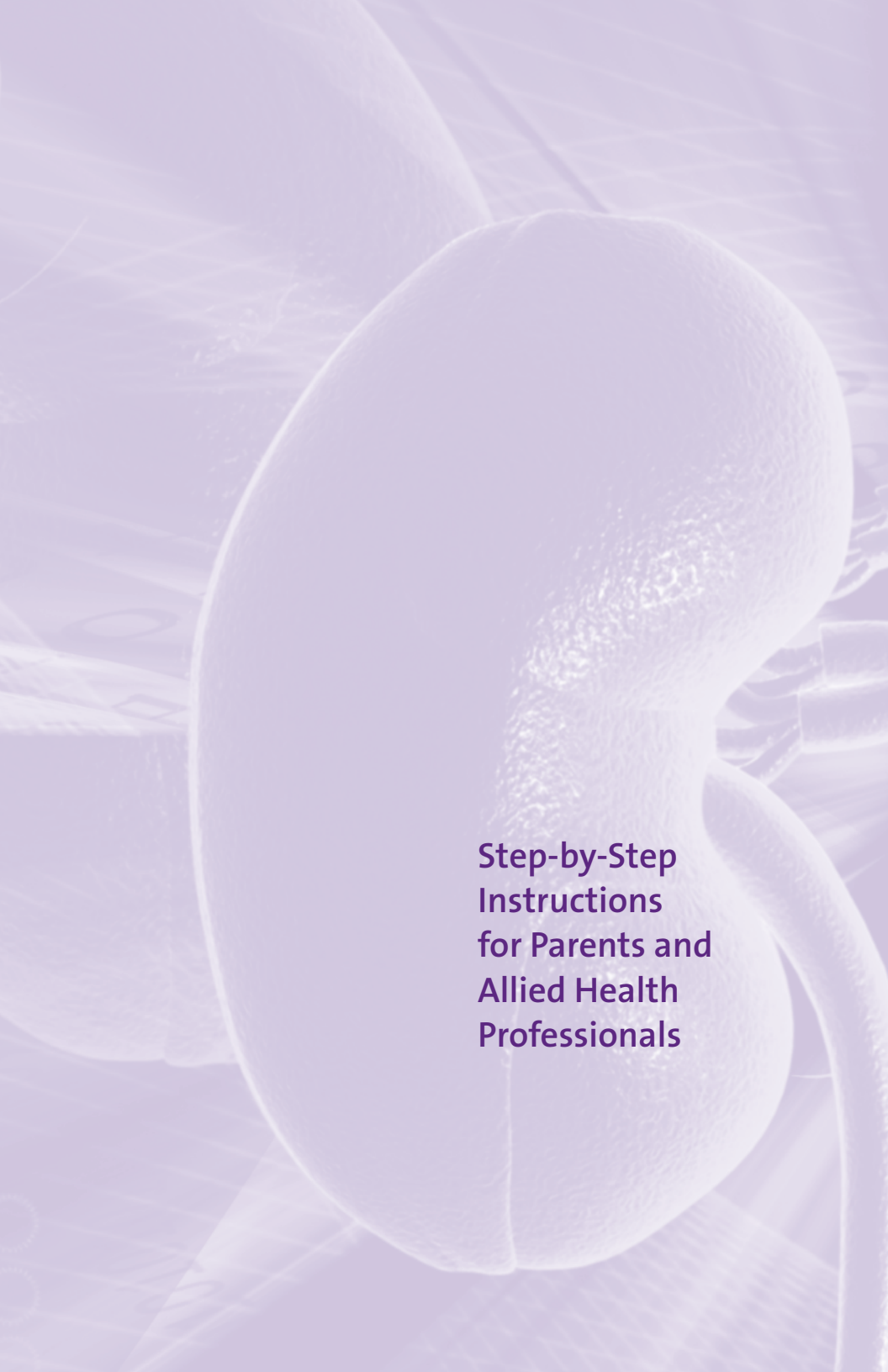
Loading Dose

Add _____ mg **(D)** to 2 L dialysate bag x 1.

Maintenance Dose

Add ____ mg **(G)** to ____ L dialysate bag
every 5–7 days on direction from physician x ____ doses.

Vancomycin Dosing Worksheet



Step-by-Step Instructions for Parents and Allied Health Professionals

BC CHILDREN'S HOSPITAL
An agency of the Provincial Health Services Authority

IMPORTANT INFORMATION

The antibiotics that are added to the dialysis fluid are usually well tolerated. If you notice any of the following signs, stop the treatment and call the nephrologist immediately:

- skin rash
- itching
- hives
- difficulty breathing
- ringing in the ears
- balance problems
- dizziness (severe)

At BC Children's Hospital, we regard the patient and his/her family as our partners. If you have any questions or concerns, please discuss them with your nephrologist, nurse or pharmacist.

Cefazolin Mixing Instructions for Addition to Dialysis Fluid

What supplies do I need to mix Cefazolin?

- one vial cefazolin 1g
  (Brand names: Ancef or Kefzol, for example)
- two alcohol swabs
- one 10 mL syringe, or other convenient size
- one 10 mL Sterile Water for Injection
- one 20 (or 22) gauge needle

What do I do?

"Aseptic technique" means "clean method," and is used to keep needles, syringe parts (plunger and syringe tip) and other important items very clean. Avoid eating, drinking, and talking when you are performing an aseptic technique. Cefazolin should be mixed with "aseptic" (clean) technique according to the following instructions:

1. Check expiration on the vial. Discard if outdated.
2. Clean your work surface with rubbing alcohol. Wash your hands with soap.
3. Remove the top of the cefazolin vial.
4. Wipe the rubber seal on the cefazolin vial with the alcohol swab for 1 minute.
5. Open a needle package, and with the cap on the needle, place the needle on the syringe. Set it aside.
6. Open the Sterile Water vial and swab the rubber seal for 1 minute. Remove the cap from the needle on the syringe. Using the needle and syringe, measure **9.5 mL of Sterile Water.**

7. Add the **9.5 mL of Sterile Water** to the cefazolin vial, slowly against the side of the vial to prevent foaming. Put the cap back on the needle, for safety and sterility. Set aside the needle and syringe.

8. Carefully swirl or "rock and roll" the cefazolin vial until the powder is completely dissolved. If, after lots of swirling, there is still "powder" that won't dissolve, don't use this vial, discard it and start over with a new vial.

9. The strength of the cefazolin in the vial is: **100 mg per milliliter (100 mg/mL)**. Use the alcohol swab again to clean the top. Using the syringe and needle, inject some air into the vial, then pull out the amount of cefazolin you need. The nephrologist will tell you how much you need.

Add _____ mL of cefazolin solution to each

_____ Litre bag of Dialysis fluid

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10. Measure and add the cefazolin to the dialysis solution as the nurse has taught you.

11. Carry out procedures of peritoneal dialysis according to directions from your nephrologist.

12. Unopened and sealed cefazolin powder should be stored at room temperature in the box or a closed cupboard to protect it from light. Once you have mixed the cefazolin, it can be stored in the **fridge for a maximum of 72 hours**. Discard any unused Sterile Water because it has no preservatives.

13. If you like, you can mix several vials of cefazolin all at once, and keep them in the fridge for up to 72 hours until needed. **Throw away after 72 hours**.

Tobramycin Mixing Instructions for Addition to Dialysis Fluid

What supplies do I need to mix Tobramycin?

- one vial tobramycin 40 mg/mL vial (= 80 mg/2 mL vial)
- two alcohol swabs
- one 3 or 5 mL syringe
- one 20 (or 22) gauge needle

What do I do?

"Aseptic technique" means "clean method," and is used to keep needles, syringe parts (plunger and syringe tip) and other important items very clean. Avoid eating, drinking, and talking when you are performing an aseptic technique. Tobramycin should be mixed with an "aseptic" (clean) technique according to the following instructions:

1. Check expiration on the vial. Discard if outdated.
2. Clean your work surface with rubbing alcohol. Wash your hands with soap.
3. Remove the top of the tobramycin vial.
4. Wipe the rubber seal on the tobramycin vial with the alcohol swab for 1 minute.
5. Open a needle package, and with the cap on the needle, place the needle on the syringe.
6. The strength of the tobramycin in the vial is: **40 mg per milliliter (40 mg/mL)**.
7. Using the syringe and needle, inject some air into the vial, then pull out the amount of tobramycin you need. The nephrologist will tell you how much you need.

Add ____ mL of tobramycin solution to

____ Litres of Dialysis fluid

8. Measure and add the tobramycin to the dialysis solution as the nurse has taught you.

9. Carry out procedures of peritoneal dialysis according to directions from your nephrologist.

10. Unopened tobramycin vials should be stored at room temperature in the box or a closed cupboard to protect it from light. Once you have opened the tobramycin, it can be stored in the fridge for a maximum of 72 hours. **Throw away after 72 hours.**

Vancomycin Mixing Instructions for Addition to Dialysis Fluid

What supplies do I need to mix Vancomycin?

- one vial vancomycin 500 mg
- two alcohol swabs
- one 10 mL syringe, or other convenient size
- one 10 mL Sterile Water for Injection
- one 20 (or 22) gauge needle

What do I do?

"Aseptic technique" means "clean method," and is used to keep needles, syringe parts (plunger and syringe tip) and other important items very clean. Avoid eating, drinking, and talking when you are performing an aseptic technique. Vancomycin should be mixed with an "aseptic" (clean) technique according to the following instructions:

1. Check expiration on the vial. Discard if outdated.
2. Clean your work surface with rubbing alcohol. Wash your hands with soap.
3. Remove the top of the vancomycin vial.
4. Wipe the rubber seal on the vancomycin vial with the alcohol swab for 1 minute.
5. Open a needle package, and with the cap on the needle, place the needle on the syringe. Set it aside.
6. Open the Sterile Water vial and swab the rubber seal for 1 minute. Remove the cap from the needle on the syringe. Using the needle and syringe, measure **5 mL of Sterile Water**.

7. Add the **5 mL of Sterile Water** to the vancomycin vial, slowly against the side of the vial to prevent foaming. Put the cap back on the needle, for safety and sterility. Set aside the needle and syringe.

8. Carefully swirl or "rock and roll" the vancomycin vial until the powder is completely dissolved. If after lots of shaking, there is still "powder" that won't dissolve, don't use this vial, discard it and start over with a new vial.

9. The strength of the vancomycin in the vial is: **100 mg per milliliter (100 mg/mL)**. Use the alcohol swab again to clean the top. Using the syringe and needle, inject about some air into the vial, then pull out the amount of vancomycin you need. The nephrologist will tell you how much you need.

Add ____ mL of vancomycin solution to

____ Litres of Dialysis fluid

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10. Measure and add the vancomycin to the dialysis solution as the nurse has taught you.

11. Carry out procedures of peritoneal dialysis according to directions from your nephrologist.

12. Unopened and sealed vancomycin powder should be stored at room temperature in the box or a closed cupboard to protect it from light. Once you have mixed the vancomycin, it can be stored in the **fridge for a maximum of 72 hours**. Discard any unused Sterile Water because it has no preservatives.

13. If you like, you can mix several vials of vancomycin all at once, and keep them in the fridge for up to 72 hours until needed. **Throw away after 72 hours**.

Ceftazidime Mixing Instructions for Addition to Dialysis Fluid

What supplies do I need to mix Ceftazidime?

- one vial ceftazidime 1 g
  (Brand name: Fortaz, for example)
- two alcohol swabs
- two 10 mL syringe, or other convenient size
- one 10 mL Sterile Water for Injection
- two 20 (or 22) gauge needles

What do I do?

"Aseptic technique" means "clean method," and is used to keep needles, syringe parts (plunger and syringe tip) and other important items very clean. Avoid eating, drinking, and talking when you are performing an aseptic technique. Ceftazidime should be mixed with an "aseptic" (clean) technique according to the following instructions:

1. Check expiration on the vial. Discard if outdated.
2. Clean your work surface with rubbing alcohol. Wash your hands with soap.
3. Remove the top of the ceftazidime vial.
4. Wipe the rubber seal on the ceftazidime vial with the alcohol swab for 1 minute.
5. Open a needle package, and with the cap on the needle, place the needle on the syringe. Set it aside.
6. Open the second needle package, again with the cap on the needle, place the needle on the syringe. Pull the plunger out of the syringe. Set it aside. This is your venting needle used to release gas formed inside the vial when you mix the solution.

7. Open the Sterile Water vial and swab the rubber seal for 1 minute. Remove the cap from the needle on the syringe. Using the needle and syringe, measure **9 mL of Sterile Water**.

8. Add the **9 mL of Sterile Water** to the ceftazidime vial, slowly against the side of the vial to prevent foaming. Put the cap back on the needle, for safety and sterility. Set aside the needle and syringe.

9. Remove the cap from the venting needle. Insert the venting needle through the rubber seal and leave it there for 2–3 minutes. You may hear the gas being released from the vial.

10. With one hand holding the venting needle in place, and the other hand holding the vial, gently "swirl" or "rock and roll" the vial until the powder is completely dissolved. Be careful, solution may spill out from the venting needle. If after lots of swirling/rock and roll, there is still "powder" that won't dissolve, don't use this vial, discard it and start over with a new vial.

11. The strength of the ceftazidime in the vial is **100 mg per milliliter** (**100 mg/mL**). Remove the venting needle and put the cap back on for safety. Use the alcohol swab again to clean the top.

12. Using the syringe and needle, add some air into the vial then pull out the amount of ceftazidime you need. The nephrologist will tell you how much you need.

Add ____ mL of ceftazidime solution to each

____ Litre bag of Dialysis fluid

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13. Measure and add the ceftazidime to the dialysis solution as the nurse has taught you.

14. Carry out procedures of peritoneal dialysis according to directions from your nephrologist.

15. Unopened and sealed ceftazidime powder should be stored at room temperature in the box or a closed cupboard to protect it from light. Once you have mixed the ceftazidime, it can be stored in the **fridge for a maximum of 48 hours**. Discard any unused Sterile Water because it has no preservatives.

16. If you like, you can mix several vials of ceftazidime all at once, and keep them in the fridge for up to 48 hours until needed. **Throw away after 48 hours**.

Contamination: Policy and Procedure

Contamination

Rationale

Contamination can lead to peritonitis. If contamination occurs by accidental disconnection during a PD treatment or if equipment failure (e.g. hole in the solution bag or tubing) occurs with an associated potential contamination, treatment should consist of both a sterile transfer set change and antibiotic prophylaxis as soon as possible to reduce the risk of peritonitis.

Note

Touch contamination before the infusion of dialysate can be treated with a sterile transfer set alone, if the clamp on the transfer set remains closed and no fluid has been infused. There is no need for prophylactic antibiotic usage in this case.

Supplies

- 2 Litre Twin Bag
- red clamp
- minicap
- 70% alcohol and paper towel
- mask
- sterile drape

Procedure

1. Immediately place a clamp on the PD catheter close to the skin. If on dialysis, stop and disconnect.

2. Close the twist clamp on the transfer set and cover with minicap. If the transfer set is disconnected, proceed to ***Transfer Set Change or Attachment*** on page 28.

3. Obtain an effluent sample for cell count, microscopy and culture (as per ***Obtaining Specimen*** on page 30).

4. Do three dialysis exchanges (up to a maximum of 500 mL per exchange) without antibiotic and no dwell time (3 quick flushes).

5. For inpatients, proceed to ***Transfer Set Change,*** see page 29.

6. **Antibiotic Therapy**
   - Give Cefazolin (Ancef) intraperitoneally 20 mg/kg (to maximum dose 2 g).
   - Alternative if known colonization with MRSA or allergic – Give 30 mg/kg (maximum 2 g) Vancomycin intraperitoneally.
   - Leave to "dwell" for minimum 6 hours and then can continue with dialysis as normal (without antibiotics).
   - Subsequent dosing of IP antibiotics to be determined by the dialysate results.

Note

If more convenient, a course of oral Keflex® 50 mg/kg per dose BID x 3 days is also reasonable antibiotic prophylactic therapy as an alternative to IP antibiotics.

Transfer Set Change or Attachment

Supplies

- 70% alcohol and paper towel
- chlorhexidine 2% solution
- gauze 4x4 (3)
- transfer set
- minicap
- sterile drape
- red clamp
- mask
- sterile gloves
- sterile dressing tray

Procedure

1. **Gather** supplies.
2. **Identify** the patient and **Explain** the procedure.
3. **Close** curtains around bed or door to room.
4. **Clamp** the catheter close to the patient using a red clamp.
5. **Clean** the working surface using 70% alcohol and a paper towel.
6. **Prepare** supplies using aseptic technique.
7. **Pour** chlorhexidine 2% solution onto gauze in sterile dressing tray.
8. **Mask** and **Perform Hand Hygiene**.
9. **Don** sterile gloves.
10. **Apply** sterile drape over patient and **Expose** the catheter.

For Transfer Set Change

i) **Disconnect** the old transfer set and **Discard**.

ii) Proceed to Transfer Set Attachment.

For Transfer Set Attachment

i) **Wrap** first chlorhexidine soaked gauze around the exposed adapter of the catheter, **Scrub** for 1 minute, and **Hold** in place.

ii) **Clean** with second chlorhexidine soaked gauze from the exposed adapter of the catheter towards the patient up to the red clamp, and **Discard**.

Remove the blue protective cap from the new transfer set.

Tightly **Connect** the new transfer set to the catheter via the titanium adapter.

Close clamp on the new transfer set.

Open Minicap package.

Attach the Minicap to the transfer set.

Remove the red clamp from the catheter.

*Proceed in obtaining an effluent sample for cell count and differential, microscopy and culture if it has not yet been done (as per *Obtaining Specimen* on page 31).

After the new transfer set has been applied, **Follow** the antibiotic therapy in *Contamination: Policy and Procedure*.

Obtaining Specimen

Y-Set

Supplies

- 2 C&S containers
- chlorhexidine swab
- mask

Procedure

1. **Mask** and **Perform Hand Hygiene**.
2. **Obtain** specimens during a drain cycle.
3. Carefully **Remove** spike from the drainage bag.
4. **Clean** the spike with chlorhexidine swab for 1 minute.
5. **Open** drainage roller clamp and **Collect** 60 cc of dialysate into the C&S container.
6. **Close** roller clamp.
7. Carefully **Re-insert** the drainage spike into the drainage bag.
8. **Open** roller clamp and continue with drain cycle.
9. **Pour** 10 cc of dialysate into a second C&S container for cell count and differential. The remaining 50 cc should be sent for C&S and gram stain. Specifically request "Please report sensitivity to vancomycin, cefazolin, ceftazidime and tobramycin."

Label containers and **Send** to lab.

If peritonitis is suspected, send to lab **STAT**.

Cycler Using Effluent Sample Bag

Supplies

- 2 C&S containers
- effluent sample bag
- mask

Procedure

1. **Mask** and **Perform Hand Hygiene**.
2. **Obtain** specimens during Initial Drain or Drain 1.
3. **Close** the clamp on the sample bag.
4. **Connect** the bag to the short line that forms a "Y" on the drain line (Sample line). **Save** caps in empty sterile sample bag package.
5. **Position** bag below the level of the drain line.
6. After draining for 2 minutes, **Open** clamps.
7. When the bag is full, **Close** both clamps.
8. **Disconnect** the sample bag and re-cap sample line (or cover with sterile gauze).
9. **Collect** 50 cc into a C&S container (for gram stain, C&S), specifically request "Please report sensitivity to vancomycin, cefazolin, ceftazidime and tobramycin" and 10 cc into the second C&S container for cell count and differential.

Label containers and **Send** to lab.

If peritonitis is suspected, send to lab **STAT**.

CAPD

Supplies

- 2 C&S containers
- chlorhexidine swab
- 50 mL syringe
- sterile 20 gauge needle
- mask
- minicap (optional)

Procedure

1. **Mask** and **Perform Hand Hygiene**.
2. **Perform CAPD** exchange.
3. **Clean** injection port of drain bag with chlorhexidine swab for 1 minute.
4. Using needle and syringe, **Withdraw** 60 mL of dialysate from drain bag.
5. **Instill** 50 cc into one C&S container (for gram stain, C&S), specifically request "Please report sensitivity to vancomycin, cefazolin, ceftazidime and tobramycin" and 10 cc into the second C&S container for cell count and differential.

Label containers and **Send** to lab.

If peritonitis is suspected, send to lab **STAT**.

Not on Treatment (During the day)

Supplies

- 2 C&S containers
- effluent sample bag
- mask
- minicap (optional)

Procedure

1. **Mask** and **Perform Hand Hygiene**.
2. **Connect** sample bag to transfer set.
3. **Open** the twist clamp of the transfer set and fill the sample bag with at least 60 cc of dialysate.
4. **Close** the twist clamp of the transfer set and **Clamp** the sample bag.
5. **Open** Minicap package.
6. **Disconnect** sample bag from transfer set.
7. **Attach** the Minicap to the transfer set.
8. **Instill** 50 cc into one C&S container (for gram stain, C&S) specifically request "Please report sensitivity to vancomycin, cefazolin, ceftazidime and tobramycin" and 10 cc into the second C&S container for cell count and differential.

NB. If patient has no fluid to drain, fill patient with their regular fill volume preferably using CAPD, dwell for 2 hours and then obtain sample accordingly.

Label containers and **Send** to lab.

If peritonitis is suspected, send to lab **STAT**.

Notes

Appendix
Laboratory Directory

Laboratory Directory

Provincial Health Authority (PHSA)

BC Children's Hospital	604-875-2938

Vancouver Coastal Health Authority (VCHA)

Bella Coola Hospital	250-799-5311 Ex 311 or 2058
Powell River General Hospital	604-485-3211 Ex 4306
Richmond Hospital	604-244-5162 Ex 4143
St. Paul's Hospital	604-806-8810
Vancouver General Hospital	1-800-992-8801

Fraser Health Authority (FHA)

Abbotsford Regional Hospital	604-851-4700 Ex 646520
Burnaby General Hospital	604-434-4211 Ex 533422
Chilliwack General Hospital	604-795-4141 Ex 614108
Delta Hospital	604-940-3431
Eagle Ridge Hospital	604-469-3143
Langley General Hospital	604-533-6403
Ridge Meadows Hospital	604-463-1802
Royal Columbian Hospital	604-520-4300
Surrey Memorial Hospital	604-585-5666 Ex 778611

Vancouver Island Health Authority (VIHA)

Campbell River Hospital	1-866-370-8355
Nanaimo Regional Hospital	1-866-370-8355
Royal Jubilee Hospital	1-866-370-8355
Victoria General Hospital	1-866-370-8355

Interior Health Authority (IHA)

Kelowna General Hospital	250-862-4000 Ex 17501
Penticton Regional Hospital	250-492-9019
Vernon Jubilee Hospital	250-558-1342

Northern Health Authority (NHA)

GR Baker Memorial Hospital (Quesnel)	250-991-7580
Prince Rupert Regional Hospital	250-622-6175
University Hospital of Northern BC (Prince George)	250-565-2420

Division of Nephrology
BC Children's Hospital
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Vancouver, BC V6H 3V4

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BC CHILDREN'S HOSPITAL
An agency of the Provincial Health Services Authority

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agency of the Provincial Health Services Authority