Provincial Health Services Authority

ANTIMICROBIAL DE-ESCALATION PRACTICE GUIDELINES

(ANTIMICROBIAL STEWARDSHIP PROGRAM)

Summary of Changes

	NEW	Previous
BC Cancer	Updated criteria to guide IV-PO stepdown Updated IV-PO stepdown options dosing table	A clinical practice guideline to support decision making to de-escalate antimicrobials.

1. Introduction

1.1. Focus

The de-escalation practice guideline supports decision making to de-escalate antimicrobials.

The benefits of this antimicrobial stewardship intervention include minimizing the risks associated with broad-spectrum antimicrobial exposure, such as patient adverse events like *C.difficile* infection and antimicrobial resistance, and intravenous administration of medications, in addition to decreasing the cost of antimicrobial treatments.

1.2. Health Organization Site Applicability

BC Cancer Vancouver Centre Inpatient Unit.

1.3. Practice Level

Prescribers and pharmacists

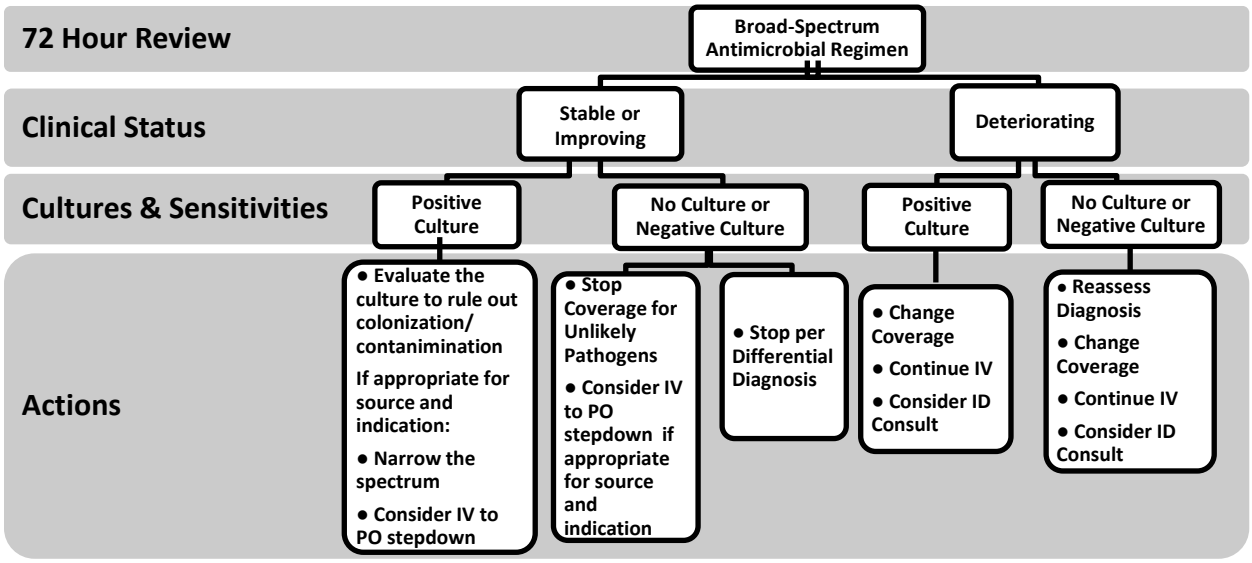
1.4. Definitions

De-Escalation comprises of two principles:

1) **Narrow the Antimicrobial Spectrum:**
   Switching from a broad-spectrum antimicrobial regiment to a narrower-spectrum antimicrobial regimen based on the specimen's culture and sensitivity results.
2) **IV-PO step down:**
   Switching from an intravenous form of antimicrobial to its equivalent oral dosage form if oral antibiotics are clinically appropriate.

2. Practice Guidelines

1. **Narrow the antimicrobial spectrum if clinically appropriate:**
   72 hour post antimicrobial initiation, consider narrowing the antimicrobial spectrum based on clinical assessment, culture/sensitivities results and indication/source.



2. **Assess the appropriateness of IV-PO Stepdown:**
   The following patient specific criteria can be utilized to guide the IV-PO stepdown decision:
   - Continues to require antimicrobial
   - Oral antimicrobial is an appropriate option for the indication
   - Clinically stable or improving
   - Afebrile for greater than or equal to 24 hours without antipyretic administrations
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   - Functional GI absorption and able to swallow oral dosage forms

3. Choose IV-PO Stepdown option:

When considering IV to PO stepdown, the bioavailability and overall dose equivalency of the PO formulations should be considered. These dosing recommendations assume normal renal and hepatic function.

Clinical Scenario	IV Medication	Oral Medication
Clinicians are encouraged to interchange to these PO formulations whenever possible. These PO anti-infectives are considered equivalent given IV or PO. They are highly bioavailable and can achieve comparable serum drug concentrations as IV formulations.	**Antibiotics**	
	Metronidazole 500 mg IV q12h	Metronidazole 500 mg PO BID
	Moxifloxacin 400 mg IV q24h	Moxifloxacin 400 mg PO daily
	Antifungals	
	Fluconazole IV	Fluconazole 200 mg PO daily (400-800 mg PO daily if severe)
Patients must be clinically improving before step down. These PO anti-infectives are moderately bioavailable and/or achieve lower serum drug concentrations compared to IV formulations.	**Antibiotics**	
	Amoxicillin/clavulanate IV	Amoxicillin/clavulanate 500 mg PO TID or 875 mg PO BID
	Ampicillin 2 g IV q6h	Antibiotic choice/dosing depends on indication and culture/sensitivities. Option: Amoxicillin 500 mg PO TID (1 g PO TID if severe)
	Azithromycin 500 mg IV q24h	Antibiotic choice/dosing depends on indication and culture/sensitivities. Azithromycin 500 mg PO daily
	Cefazolin 1 to 2 g IV q8h	Antibiotic choice/dosing depends on indication and culture/sensitivities. Cephalexin 500 mg PO four times daily (1 g PO four times daily if severe)
	Ceftriaxone 1 to 2 g IV q12h	Antibiotic choice/dosing depends on indication and culture/sensitivities. For respiratory infections – cefuroxime 500 mg PO BID (500 mg PO TID if severe)
	Piperacillin/tazobactam 3.75 to 4.5 g IV q6h	Antibiotic choice/dosing depends on indication and culture/sensitivities. Amoxicillin/clavulanate 500 mg PO TID or 875 mg PO BID (If *Pseudomonas* coverage needed, add ciprofloxacin 750 mg PO BID)
	Antivirals	
	Acyclovir	Herpes simplex (HSV) treatment – Valacyclovir 1 g PO BID Herpes zoster (VZV) treatment – Valacyclovir 1 g PO TID HSV/VZV prophylaxis – see protocol specific dosing

3. Related Document and References

3.1. References

1. Akhloufi, H et al. Development of operationalized intravenous to oral antibiotic switch criteria. J Antimicrob Chemother 2017;72:543-46.
2. Barlam TF et al. Implementing an antibiotic stewardship program: guidelines by the Infectious Diseases Society of America and the Society of Healthcare Epidemiology of America. CID 2016; 62:e51-77.
3. Beique L and Zvonar R. Addressing concerns about changing the route of antimicrobial administration from intravenous to oral in adult inpatients. Can J Hosp Pharm 2015;68(4):318-26.
4. Dellit, TH et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. CID 2007; 44:159-77.
5. Garnacho-Montero J et al. Antibiotic de-escalation in the ICU: how is it best done? Curr Opin Infect Dis 2015;28(2):193-8.
6. Lew KY et al. Safety and clinical outcomes of carbapenem de-escalation as part of an antimicrobial stewardship programme in an ESBL-endemic setting. J Antimicrob Chemother 2015;70:1219-1225.
7. Lexicomp Online®, Hudson, Ohio: Lexi-Comp Inc; May 1, 2017.
8. Public Health Ontario, Antimicrobial Stewardship Strategy: De-escalation and streamlining, accessed May 1 2017, http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/AntimicrobialStewardshipProgram/Documents/ASP_Strategy_De-escalation_Streamlining.pdf
9. Zilahi G et al. Duration of antibiotic therapy in the intensive care unit. J Thorac Dis 2016 Dec;8(12):3774-3780.
10. Gilbert, D et al. Sanford guide to antimicrobial therapy 2018. Sperryville, VA: Antimicrobial Therapy Inc; 2018.
11. Choosing Wisely, Antibiotic Treatment in Hospital, accessed Jan 20 2020, https://www.choosingwisely.org/patient-resources/antibiotic-treatment-in-the-hospital/
12. BC Provincial Antimicrobial Clinical Expert Group. Sequential Antimicrobial Therapy in Adults – Best Practice Recommendations, accessed April 19, 2023. bccdc.ca/Documents/SBAR%20Sequential%20Antimicrobial%20Therapy%20Best%20Practice%20Recommendations.pdf

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