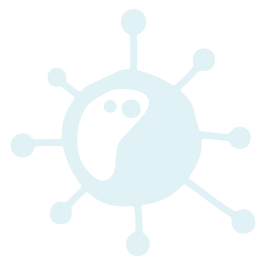
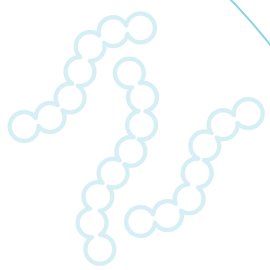
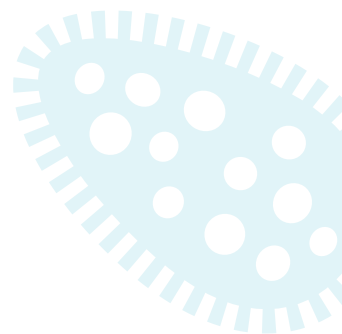


2022
UPDATE



Antimicrobial Modification

Quick Reference Guide



AMR&S
WORKING GROUP

Antimicrobial Modification

AIM

Provision of effective antibiotic treatment to maximize benefit, while avoiding unnecessary antibiotic use that would promote development of resistance^{1,2}

Initiate³⁻⁵

- Select empirical antibiotics based on treatment guidelines and local susceptibilities
- Consider patient factors*
- Anticipate common pathogens for suspected source

Evaluate³⁻⁵

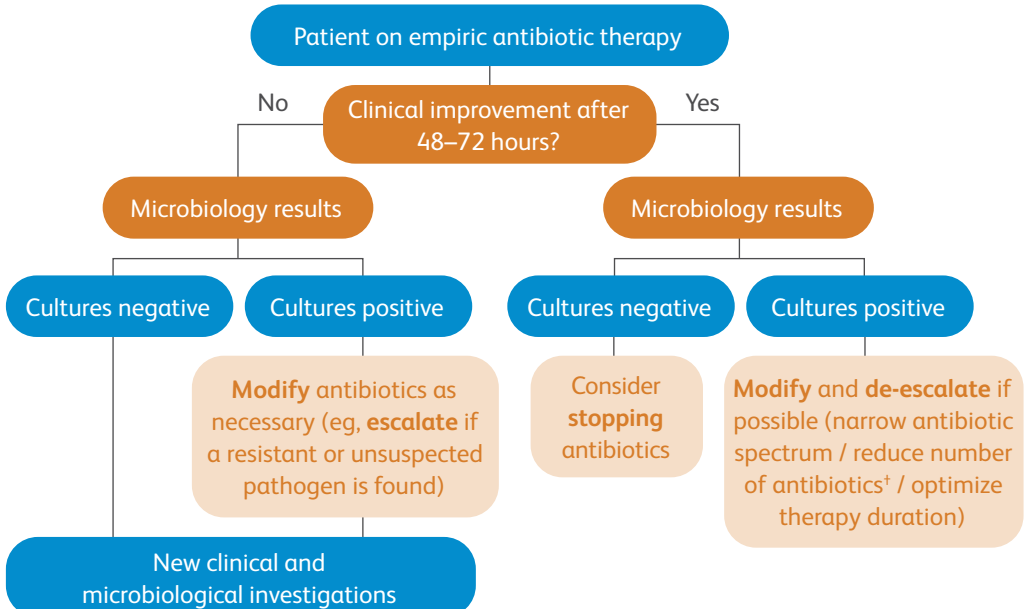
- Assess clinical signs and symptoms daily
- Check cultures and molecular diagnostics
- Review dosing strategy

Optimize¹⁻⁶

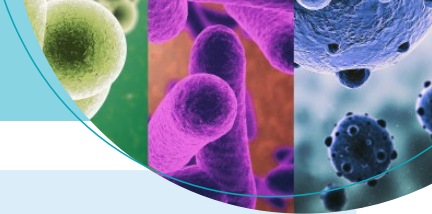
- Once microbiological results are known, optimize antibiotic therapy (by **de-escalation** or **escalation** as deemed necessary) based on clinical response, patient factors*, and culture and susceptibility results (Figure)

*Patient factors to be considered during antibiotic selection³⁻⁵:

- Kidney and liver functions
- Previous healthcare exposure
- Recent antibiotic use
- Immunocompromised status
- Potential drug-drug interactions
- Allergy



¹Use the least number of antibiotics to cover the identified pathogen(s)
Adapted from Zilahi et al. 2016⁶



Consider ALL patients on antibiotics with a **POSITIVE** culture for antibiotic modification^{6,7}

1. Review the type, source and status of the culture
2. Is an infection present?
3. Is the positive culture complete – are other cultures pending?
4. What is the pathogen's susceptibility profile?
5. What antibiotic is the patient on – is a narrower spectrum antibiotic appropriate?
- 6. Are there any patient-specific factors to consider (eg, allergies, concomitant drugs)?**

Benefits of de-escalation^{2,3,8,9}



- Unaltered clinical outcomes compared to maintenance of initial therapy



- Prevent emergence of antimicrobial resistance



- Decreased antibiotic adverse events



- Reduced overall antimicrobial costs
 - Reduced unnecessary antibiotic use
 - Optimized duration of therapy

Timely de-escalation^{10,11}



- Assess daily for potential to de-escalate



- Consider de-escalation as soon as the causative pathogen has been identified and susceptibility profile is known

“Each physician prescribing antibiotics should be challenged for the quality of her/his prescription on a daily basis”¹¹

Recommending optimization of antibiotics to prescribers

TEMPLATE¹²

[Patient name] was started empirically on [name of broader spectrum antibiotic] for the treatment of [infection syndrome] [number of days] days ago.

The [culture type] sent before antibiotics were started came back positive for [pathogen name] which is susceptible to [name of narrower spectrum antibiotic].

The patient is improving clinically. [Provide specific parameters such as temperature, blood pressure, white blood cell count, degree of pain/cognition, or other objective/subjective parameters as evidence to support clinical improvement] after starting antibiotic therapy.

Based on culture results, I would recommend de-escalating antibiotic therapy to [name of narrower spectrum antibiotic, dose, route, frequency] and would continue this therapy for [number of days].

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