

# Surgical Antibiotic Prophylaxis Guidelines

## Thoracic Surgery

### Pre-Operative Considerations

**Consider individual risk factors for every patient** – need for prophylaxis, drug choice or dose may alter (e.g. immune suppression, presence of prostheses, allergies, obesity, malnutrition, diabetes, infection at another site, available pathology or malignancy).

**Pre-existing infections (known or suspected)** – if present, use appropriate treatment regimen instead of prophylactic regimen for procedure. Doses should be scheduled to allow for re-dosing just prior to skin incision.

\*For patients with cardiac conditions refer to [Antibiotic Prophylaxis Guidelines for Prevention of Endocarditis](#) for further information

### Practice Points

#### Drug administration

- > IV bolus – should be timed  $\leq$  60 minutes before skin incision (optimal 30 minutes). Administration after skin incision or > 60 minutes before incision reduces effectiveness
- > IV infusion – should be commenced 30-60 minutes prior to skin incision (e.g. metronidazole). See below for vancomycin administration.

**MRSA risk** (defined as history of MRSA colonisation or infection, OR inpatient of metropolitan or other high risk hospital for more than the last five days)

- > Add vancomycin to cefazolin

#### Vancomycin administration

- > Give vancomycin 1g (1.5g for patients >80kg actual body weight) by IV infusion started 30-120 minutes before surgical incision and given at a recommended rate of 1g per hour (1.5g over 90 minutes). Note: Infusion can be completed after skin incision.

#### Repeat doses

A single pre-operative dose is sufficient for most procedures, however repeat intra-operative doses are advisable:

- > for delayed or prolonged surgery (> 4 hours from the time of first preoperative dose) when a short-acting agent is used (e.g. cefazolin), OR
- > if major blood loss occurs, following fluid resuscitation

#### Obese patients

- > Consider increased dose of cefazolin (3g) if patient is obese (>120kg). Consult ID for advice.

### Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
<b>Pneumonectomy / Lobectomy</b>	<p><b>cefazolin 2g</b> IV (child: 30mg/kg up to 2g)</p> <p>THEN</p> <p><b>cefazolin 2g</b> IV (child: 30mg/kg up to 2g) 8-hourly for 2 more doses commencing 4 hours after the initial dose</p> <p><i>If anaerobic cover required (empyema or abscess) then ADD:</i></p> <p><b>metronidazole 500mg</b> IV infusion (child: 12.5mg/kg), repeated 12 hourly for 2 more doses commencing 6 hours after initial dose</p> <p><u>High risk of MRSA infection:</u></p> <p><b>ADD vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>	<p><b>vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p> <p>THEN</p> <p><b>vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>) 12 hourly for 2 more doses commencing 8 hours after the initial dose</p> <p><i>If anaerobic cover required (empyema or abscess) then ADD:</i></p> <p><b>metronidazole 500mg</b> IV infusion (child: 12.5mg/kg), repeated 12 hourly for 2 more doses commencing 6 hours after initial dose</p>
<b>Decortication / Pleurectomy</b>	<p><b>cefazolin 2g</b> IV (child: 30mg/kg up to 2g)</p> <p><i>If anaerobic cover required ADD:</i></p> <p><b>metronidazole 500mg</b> IV infusion (child: 12.5mg/kg)</p> <p><u>High risk of MRSA infection:</u></p> <p><b>ADD vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>	<p><b>vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p> <p><i>If anaerobic cover required ADD:</i></p> <p><b>metronidazole 500mg</b> IV infusion (child: 12.5mg/kg)</p>
<b>Video-assisted thoracoscopic surgery (VATS)</b>	<p><b>cefazolin 2g</b> IV (child: 30mg/kg up to 2g)</p> <p><u>High risk of MRSA infection:</u></p> <p><b>ADD vancomycin 1g</b> IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>	<p><b>vancomycin 1g</b> by IV infusion (1.5g for patients &gt; 80kg <b>actual body weight</b>)</p>

## Post-Operative Care

Except where included above, post-operative antibiotics are NOT indicated unless infection is confirmed or suspected, regardless of the presence of surgical drains.

If infection is suspected, consider modification of antibiotic regimen according to clinical condition and microbiology results.

## Definitions / Acronyms

**DRESS** Drug rash with eosinophilia and systemic symptoms

**ID** Infectious Diseases

**IV** Intravenous

**MRSA** Methicillin-resistant *Staphylococcus aureus*

**SJS / TEN** Stevens-Johnson syndrome / Toxic epidermal necrolysis

\* High Risk penicillin/cephalosporin allergy: History suggestive of high risk (eg. anaphylaxis, angioedema, bronchospasm, urticaria, DRESS/SJS/TEN)

## References

Antibiotic Expert Groups (2014). [Therapeutic Guidelines: Antibiotic. Version 15](#). Melbourne, Therapeutic Guidelines Limited.

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Bratzler, D, et al (2013). "Clinical practice guidelines for antimicrobial prophylaxis in surgery." [Am J Health Syst Pharm](#) 70 (3): 195-283.

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