



**OBSTETRICS AND GYNAECOLOGY
CLINICAL PRACTICE GUIDELINE**

Infections (obstetrics and gynaecological): Antibiotic prophylaxis for caesarean section

Scope (Staff):	WNHS obstetrics and anaesthetic staff
Scope (Area):	Perioperative clinical areas at KEMH and OPH

This document should be read in conjunction with this [Disclaimer](#)

Background

Evidence supports administration of antibiotic prophylaxis prior to skin incision for caesarean section (both elective and non-elective) for prevention of wound infection and endometritis.^{1, 2}

Studies show that administering antibiotic prophylaxis prior to skin incision compared to after cord clamping significantly reduces the incidence of maternal infection.¹⁻³

Antibiotic indications

- All patients giving birth by caesarean section.
- Surgical prophylaxis should still be administered even if the patient is receiving antibiotics for prolonged rupture of membranes, intra-amniotic infection (chorioamnionitis) or group B streptococcus prophylaxis unless the antibiotic regimen has activity against the organism(s) most likely to cause postoperative infections (e.g. cefazolin, clindamycin plus gentamicin)¹.



Antibiotic regimen¹

Prophylaxis for caesarean section:

Do not give additional doses once the procedure is completed ¹

- **Cefazolin 2g intravenous (IV) infusion.** The dose should be administered no more than 60 minutes before skin incision.
 - For women with a BMI >40 the cefazolin dose may be increased to 3g. This is a discretionary decision as there is presently insufficient evidence to recommend this practice routinely.⁴⁻⁶
- **If colonisation or infection with methicillin-resistant *Staphylococcus aureus* (MRSA- micro alert B or C), or at increased risk* of being colonised or infected with MRSA:**
 - **ADD Vancomycin** to the above regimen

⚠ **Vancomycin is a HIGH RISK Medication and must be infused slowly as per WNHS Pharmacy [Vancomycin IV Adult Medication Monograph](#)**

Patients with **non-severe** (immediate or delayed) **hypersensitivity to penicillins:**

- Use **cefazolin**, with or without vancomycin, as above

Patients with **severe** (immediate or delayed) **hypersensitivity to penicillins:**

- Who are neither colonised nor infected with MRSA:
 - **Clindamycin 600mg IV** given as an infusion, within the 120 minutes before skin incision¹ (must be given as infusion over 20 minutes). Refer to Pharmacy [Clindamycin Adult Medication Monograph](#) for further information
 - AND**
 - **Gentamicin 2mg / kg IV** over 3-5 minutes, within the 120 minutes before surgical incision.
 - If BMI ≥30: use **adjusted** body weight to calculate dose
 - **Adjusted weight = IBW + 0.4 x (actual body weight – IBW)**

Height	155	160	165	170	175	180	185	190	195	200
IBW- females (kg)	48	53	57	62	66	71	75	80	84	89

IBW = Ideal body weight ([IBW calculator on eTG- external website](#))

See also [Pharmacy Gentamicin Dosing and Monitoring guideline](#).

- If **colonised or infected with MRSA** (micro alert B or C) or at increased risk* of being colonised or infected with MRSA, use:
 - **Vancomycin PLUS Gentamicin** (as above)

⚠ **Vancomycin and Gentamicin are HIGH RISK Medications and must be infused slowly as per WNHS Pharmacy Adult Medication Monographs: 'Vancomycin' and 'Gentamicin'**

* 'increased risk' of colonisation with MRSA- [see eTG Risk Factors for Infection with MRSA \(Box 2.31\) list \(external website\)](#) and [Infection Prevention and Management: Micro Alerts and Multi-Resistant Organisms \(MROs\) Policy](#).

Table 1: Antibiotic prophylaxis in women with and without MRSA or penicillin hypersensitivity undergoing caesarean section surgery

Note: Give BOTH antibiotics where two are indicated

MRSA status	Penicillin hypersensitivity	Cefazolin	Vancomycin	Gentamicin	Clindamycin
NO MRSA colonised or infected	NO penicillin hypersensitivity	●			
	Penicillin hypersensitivity** : Non-severe	●			
	Penicillin hypersensitivity** : Severe			●	● Give both
MRSA colonised or infected*	NO penicillin hypersensitivity	●	● Give both		
	Penicillin hypersensitivity** : Non-severe	●	● Give both		
	Penicillin hypersensitivity** : Severe		●	● Give both	

* Or at increased risk of being colonised or infected with MRSA

** Immediate or delayed

Colonisation or infection with MRSA - micro alert B or C

- Offer decolonisation therapy as per WNHS Infection Prevention and Management Policy: [Micro Alerts And Multi-Resistant Organisms](#)
- At the time of caesarean section, **ADD** vancomycin to the regimen. Administration of both cefazolin and vancomycin is recommended **unless** cefazolin is contraindicated.
- For dosage, administration details and further information, refer to the Pharmacy: '[Vancomycin IV Adult Medication Monograph](#)'.

 **Vancomycin is a HIGH RISK Medication and must be infused slowly as per WNHS Pharmacy 'Vancomycin IV Adult Medication Monograph'**

Prevention of surgical site infection

- For advice regarding general measures to prevent surgical site infection including skin preparation, refer to [WNHS IPM: Prevention of Surgical Site Infections Guideline](#)

References

1. eTG Complete. Surgical prophylaxis for obstetric surgery: Therapeutic Guidelines Ltd 2021; (Mar). Available from: <http://online.tg.org.au.kelibresources.health.wa.gov.au/ip/desktop/index.htm>
2. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG). Prophylactic antibiotics in obstetrics and gynaecology: C-Gen 17. **RANZCOG**. 2021. Available from: <https://ranzcoq.edu.au>
3. Mackeen AD, Packard RE, Ota E, Berghella V, Baxter JK. Timing of intravenous prophylactic antibiotics for preventing postpartum infectious morbidity in women undergoing cesarean delivery. **Cochrane Database of Systematic Reviews**. 2014 (12). Available from: <https://doi.org/10.1002/14651858.CD009516.pub2>
4. Maggio L. Cefazolin prophylaxis in obese women undergoing cesarean delivery: A randomized controlled trial. **Obstet Gynecol**. 2015;125(5):1205-10.
5. Kram JJF, et al. Does current cefazolin dosing achieve adequate tissue and blood concentrations in obese women undergoing cesarean section? . **Eur J Obstet Gynecol Reprod Biol**. 2017;210:334-41.
6. Swank ML, et al. Increased 3-gram cefazolin dosing for cesarean delivery prophylaxis in obese women. **Am J Obstet Gynecol**. 2015;213(3):415.e1-8.

Bibliography

- eTG Complete. [Surgical antibiotic prophylaxis for obese patients](#) (external website): Therapeutic Guidelines Ltd; 2021.
- eTG Complete. [Principles of surgical antibiotic prophylaxis](#) (external website). Melbourne: Therapeutic Guidelines Ltd.; 2021 March.
- Western Australian Therapeutic Advisory Group. Surgical Antibiotic Prophylaxis Guideline: Adult. http://www.wataq.org.au/wataq/docs/Surgical_Antibiotic_Prophylaxis_Guideline.pdf (external website)

Related WNHS policies, procedures and guidelines









WNHS Clinical guidelines:

- Infection Prevention and Management: [Prevention of Surgical Site Infections](#); [Micro Alerts And Multi-Resistant Organisms](#)
- [Obstetrics and Gynaecology](#): Infections (Obstetrics & Gynaecology):
 - Prophylaxis: Gynaecological Urogynaecological Surgery;
 - Antibiotic Treatment: Endocervical infections; HSG for Infertility; Treatment for UTI; Treatment for Vaginal Infections
- Pharmacy: [Adult Medication Monographs](#): Cefazolin; Clindamycin ; Gentamicin; Vancomycin

WNHS [Antimicrobial Stewardship](#) (available to WA Health employees through HealthPoint)

Useful resources (external websites)

- ACSQHC [Surgical Antimicrobial Prophylaxis](#) and [AMS Clinical Care Standard \(2020\)](#)
- [Australian Injectable Drugs Handbook](#) 8th ed.
- [Therapeutic Guidelines: Penicillin Allergy Assessment Guide](#)

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Version history

For a list of changes- see OGD [Guideline Updates](#) by month/year of review date

Date	Summary
Prior to Sept 2014	Contact Pharmacy for versions prior to 2015. Previously within section Pharmacy and Medications guidelines: Specific Medication guidelines, P4.2, titled 'Antibiotic Prophylaxis for Caesarean Section'.
Sept 2014	Reviewed. Changed to P3.2 within Pharmacy 'Antimicrobial Guidelines'. Refer to pharmacy for details.
Dec 2015	Amended. Moved to O&G guidelines (section A14 'Obstetric and Gynaecological Infections').
June 2018	<ul style="list-style-type: none"> • Title changed to 'Infections: Antibiotic Prophylaxis for Caesarean'. • Surgical prophylaxis should still be administered if the woman is receiving antibiotics for GBS prophylaxis • Antibiotic regime: <ul style="list-style-type: none"> ➢ Commence 60 minutes, ideally 15-30 minutes, before skin incision ➢ Cefazolin: For women with BMI>40 the obstetrician may elect to increase the cefazolin dose to 3g ➢ In patients with immediate penicillin hypersensitivity: Clindamycin dose and infusion time changed • 'Colonisation or infection with MRSA - micro alert b or c' section updated • Link added to IPM: Prevention of surgical site infection policy
Jan 2022	<ul style="list-style-type: none"> • Do not give additional prophylaxis once the procedure is completed • Vancomycin instructions updated within the pharmacy medication monograph- guideline now links to monograph for instructions • In patients with severe (immediate or delayed) hypersensitivity to penicillins - added gentamicin to regimen • Added alert boxes for high risk medications and added table 1

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