

**POLICY FOR THE ADMINISTRATION OF PRE-OPERATIVE ANTIBIOTICS FOR SURGICAL PROPHYLAXIS**

**SECTION**

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**PURPOSE/GOAL**

To ensure all patients who undergo surgical procedures requiring pre-operative antibiotics receive the correct antibiotic(s) at the recommended dosage within one hour of initial skin incision (except for C-sections), and repeated intra-operatively if required.

**INTRODUCTION**

Timely administration of appropriate antibiotics pre-operatively can significantly decrease the incidence of post-operative infection. In order to achieve optimal antibiotic concentrations in the serum and tissues, the antibiotic should be administered as close as possible (ideally within one half-hour) of initial skin incision. Administering antibiotics "on call to OR" often results in sub-optimal antibiotic levels due to transport delays or schedule changes. There is potential for improvement in timing when the anesthesiologist administers the antibiotic(s) before induction of anesthesia.

**PROCEDURE**

The procedure outlined below should be followed for pre-operative surgical prophylaxis (unless otherwise clinically indicated).

**1) Pre-operative Antibiotic Orders**

The attending surgeon or delegate will write orders for pre-operative antibiotics in the patient's chart for those procedures requiring prophylaxis. Orders written as "pre-op" or "on call to OR" will be administered as per protocol (see #3). Doses will be verified based on patient's weight/body mass index. (see Appendix I)

**2) Processing of Prophylactic Antibiotic Orders**

Pre-op antibiotics (prepared by pharmacy) will be attached to the patient's chart, and sent with the patient to the OR.

The pre-operative antibiotic(s) will be provided to the anesthesiologist to administer prior to induction of anesthesia. **Exceptions:** vancomycin and clindamycin are to be started on the ward/SDCU due to longer infusion times.

**3) Antibiotic Administration Protocol**

Unless otherwise specified, pre-operative antibiotics (including those ordered as "pre-op" or "on call to OR") will be administered in the operating room by the anesthesiologist, or on the ward in the case of vancomycin or clindamycin. For those caesarean sections requiring prophylaxis, the anesthesiologist will give the dose immediately after umbilical cord clamping at the request of the surgeon. The surgeon is ultimately responsible for ensuring the administration of the required prophylactic antibiotic(s).

**4) Administration Of Additional Antibiotic Doses**

For procedures exceeding 4 hours in duration, or where blood loss exceeds 1500 ml, the prophylactic antibiotic will be re-dosed. The peri-operative team should advise the surgeon when the duration of the OR exceeds 4 hours. The surgeon is to request that the anesthesiologist administer any required additional doses.

**DOCUMENTATION**

- The OR nurse will review the pre-op checklist document including information regarding pre-operative prophylaxis.
- The anesthesiologist will indicate administered antibiotic dose and time on the anesthesia record.
- For antibiotics started prior to transfer to the OR (i.e. vancomycin, clindamycin), the nurse will indicate the administration time on the appropriate nursing documentation record.

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### Selected References

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# POLICY FOR THE ADMINISTRATION OF PRE-OPERATIVE ANTIBIOTICS FOR SURGICAL PROPHYLAXIS

## APPENDIX I

### RECOMMENDATIONS FOR DOSING AND ADMINISTRATION OF USUAL PERI-OPERATIVE ANTIBIOTIC AGENTS

**Table 1: Usual Prophylactic Antibiotics and Recommended Administration**

ANTIBIOTIC	RECOMMENDED ADMINISTRATION TIME
Ampicillin	over 15 minutes
Cefazolin	over 3 to 5 minutes
Cefazolin/metronidazole premixed bag	over 20 minutes
Metronidazole	over 20 minutes
Clindamycin *	over 30 minutes
Gentamicin ≤ 100 mg	over 15 minutes
Gentamicin > 100 mg	over 30 minutes
Vancomycin ≤ 1000 mg *	over 60 minutes
Vancomycin > 1000 mg *	over 90 minutes

\*To be started by nurse on the ward or in PAU/SDU on call to OR.

Decrease vancomycin infusion rate if patient experiences flushing, hypotension, rash or dyspnea

For more information, please refer to The Ottawa Hospital Parenteral Drug Therapy Manual

### **Dosing of Cefazolin and Vancomycin:**

Recommended dosing of cefazolin and vancomycin for pre-operative prophylaxis is listed in Table 2 based on Body Mass Index (BMI). If height is unavailable, dosing can be based on weight. Pre-operative antibiotic orders should be written "as per protocol".

**Table 2: Recommended Dosing of Cefazolin and Vancomycin**

DRUG	RECOMMENDED DOSE	
	BMI <30 or WEIGHT <90 kg	BMI ≥30 or WEIGHT ≥ 90 kg
CEFAZOLIN	1 GRAM	2 GRAM
VANCOMYCIN	1 GRAM	1.5 GRAM