AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

GENERAL PRINCIPLES

1. The goal of antimicrobial surgical prophylaxis is to achieve serum and tissue antibiotic concentrations that exceed the minimum inhibitory concentrations (MICs) of the majority of organisms likely to be encountered, at the time of the incision and for the duration of the procedure.
   a. **Preoperative** doses should be given within 60 minutes before incision. For exceptions and administration details, see Table 1.
   b. **Intraoperative** repeat dosing is recommended if prolonged surgical procedure (> 2 half-lives of the antimicrobial), or major blood loss (> 1.5L). See Table 2 for redosing interval.
   Patients receiving therapeutic antimicrobials for an infection before surgery should also be given antimicrobial prophylaxis pre-op to ensure adequate serum and tissue levels of antimicrobials with activity against likely pathogens at the time of incision. If the agents used for treatment are appropriate for surgical prophylaxis, administering an extra dose within 60 minutes prior to surgical incision is sufficient.

2. **Dosing:** Recommended adult doses for patients with normal weight and renal function. Refer to Table 1 for more information.

3. **β-lactam allergy** – use **ALTERNATIVE REGIMENS if allergy to cefazolin, or severe non-IgE-mediated reaction to any β-lactam** (specifically, interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. Stevens-Johnson syndrome, toxic epidermal necrolysis, drug rash with eosinophilia & systemic symptoms]). In the absence of these findings, cefazolin can be used as surgical prophylaxis. See β-lactam allergy assessment algorithm.

4. **Postoperative** doses for prophylaxis are not routinely indicated. If the surgery is contaminated, it should be indicated that the postoperative antibiotic orders are for treatment.

5. **Drains:** The practice of continuing antimicrobials started as prophylaxis until all drains/catheters (intravascular or urinary) are removed is not recommended due to lack of evidence, risk of development of antimicrobial resistance or superinfection, and drug toxicity.

6. **MRSA:** For patients with known methicillin resistant S. aureus (MRSA) colonization or past infection, consider adding vancomycin to the surgical prophylaxis regimen, particularly when prosthetic material/devices are implanted. Vancomycin alone is less effective than cefazolin for preventing surgical site infections due to methicillin susceptible S. aureus (MSSA).

7. **Patients colonized with antibiotic-resistant organisms (other than MRSA), or immunosuppressed**: Consider consultation with Infectious Diseases to tailor antimicrobial surgical prophylaxis.

8. **Topical antimicrobials:** With the exception of ophthalmic procedures, the safety and efficacy of topical antimicrobials* (irrigations, pastes, washes) have not been established, therefore routine use of topical antimicrobials is not recommended in any other surgical procedure.
   * This does not include topical antiseptics, e.g. chlorhexidine, isopropyl alcohol.

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Table 1: Pre-Op Antibiotic Administration

Timely administration (within 60 minutes before initial skin incision) of antibiotic prophylaxis can significantly decrease the incidence of postoperative infections. The goal is to achieve optimal serum and tissue antibiotic concentrations at the time of the initial skin incision and for the duration of the procedure. To best achieve this, antibiotics can be given in the operating room (OR) by the anesthesiologist at induction of anesthesia, but depending on the circumstances of the procedure may also be given in the holding area, or on the patient care unit if prolonged infusion is necessary. Administering antibiotics "on call to the OR" is not recommended as it often results in suboptimal antibiotic concentrations due to surgery schedule changes or transport delays.

Prophylactic Antibiotic	Recommended Adult Dose	Recommended Administration
Cefazolin IV	2g*	IV push within 60 minutes before initial skin incision
Cefuroxime IV	1.5g	IV push within 60 minutes before initial skin incision
Ceftriaxone IV	1g	IV push within 60 minutes before initial skin incision
Ciprofloxacin PO	500mg	Administer 1-2 hours pre-op
Clindamycin IV	600mg	Administer over 20 minutes just prior to procedure
Co-trimoxazole PO	1 DS tablet	Administer 1-2 hours pre-op
Gentamicin IV	1.5mg/kg** or 5mg/kg**	Administer over 30 minutes just prior to procedure Administer over 60 minutes just prior to procedure
Levofloxacin IV	500mg	Administer over 60 minutes just prior to procedure
Metronidazole IV	500mg	Administer over 20 minutes just prior to procedure
Vancomycin IV	15mg/kg***	Administer ≤1g over at least 60 minutes, > 1g- 1.5g over at least 90 minutes, and > 1.5g over 120 minutes just prior to procedure

* Available evidence[1-7] indicates that cefazolin 2g is sufficient, regardless of body mass index (BMI), including for patients 120kg or more.

** Use 5mg/kg single pre-op dose if: anticipated duration of surgery is greater than 5 hours. Gentamicin dose should be based on ideal body weight (IBW), or dosing weight (DW) if patient's actual body weight is > 20% above IBW, rounded to the nearest 20mg.

*** Vancomycin dose should be based on total body weight, rounded to the nearest 250mg and to a maximum of 2g/dose.

Table 2: Intraoperative Antibiotic Administration

Intraoperative repeat dosing is recommended if:

- prolonged surgical procedure (> 2 half-lives of the antimicrobial), or
- major blood loss (> 1.5L).

Prophylactic Antibiotic	Recommended intraoperative redosing interval (from time of administration of pre-op dose):
Cefazolin	q4h (q3h with cardiopulmonary bypass[8])
Cefuroxime	q4h
Clindamycin	q4h
Levofloxacin	q12h
Metronidazole	q8h
Vancomycin	q8h

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SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
GENERAL			
Gastroesophageal endoscopy		**Prophylaxis not routinely indicated** **NB:** Patients with cirrhosis and ascites/GI bleed should be receiving medical prophylaxis for SBP.	
Endoscopic ultrasound: • **with drainage of mediastinal cysts** • **for drainage of walled-off pancreatic necrosis/ cysts, biliary drainage, fine-needle injection of cysts, fiducial placement**		• ceftriaxone 1g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
ERCP *if biliary obstruction or known pancreatic pseudocyst*		• cefazolin 2g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
Percutaneous endoscopic gastrostomy (PEG)		• cefazolin 2g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose

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GENERAL			
Gastroduodenal surgery **Duodenal/gastric resections for ulcers/ cancer** **Perforated ulcer procedures** **Pancreaticoduodenectomy (Whipple's)** **Bariatric surgical procedures** (gastric bypass, gastric banding, gastroplasty, biliopancreatic diversion) **Gastroplasty** – *high risk only: gastric outlet obstruction, decreased gastric acidity or motility, morbid obesity, hemorrhage*	• Enterobacteriaceae • Gram positive cocci	• cefazolin 2g IV x 1 pre-op dose **Pre-op biliary stent in-situ, add:** • vancomycin 15 mg/kg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose **Pre-op biliary stent in-situ, use:** • gentamicin 1.5mg/kg IV + vancomycin 15 mg/kg IV x 1 pre-op dose

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GENERAL			
Hepatobiliary surgery **High risk**: *open cholecystectomy, emergency laparoscopic cholecyst-ectomy, insertion of prosthetic device, acute cholecystitis, biliary colic within 30 days, biliary spillage, biliary obstruction, obstructive jaundice or common bile duct stones, non-functioning gallbladder, recent (within 1 month) biliary surgery, > 65 yrs old, diabetes, pregnancy, obesity, immunosuppression* **Liver resection**	• Enterobacteriaceae • Enterococcus spp • Clostridium spp • Streptococcus spp • Staphylococcus spp	• cefazolin 2g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV + metronidazole 500mg IV x 1 pre-op dose
Low risk: • elective laparoscopic cholecystectomy • liver biopsy		**Prophylaxis not routinely indicated**	
Bowel surgery Small intestine - nonobstructed	• Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose

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GENERAL			
Bowel surgery **Elective colorectal surgery**	• Enterobacteriaceae • Anaerobes	• Optional: Mechanical bowel preparation then neomycin* 1g PO + metronidazole 1g PO at 1300h, 1500h, 2000h day before surgery + • cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose * Neomycin is not commercially available in Canada but MAY be available through a retail compounding pharmacy. Confirm availability prior to prescribing.	• Optional: Mechanical bowel preparation then neomycin* 1g PO + metronidazole 1g PO at 1300h, 1500h, 2000h day before surgery + • gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV + metronidazole 500mg IV x 1 pre-op dose
Appendectomy **Emergency bowel surgery** **Bowel obstruction** **Fistulas/Discontinuous bowel segments**	• Enterobacteriaceae • Anaerobes	• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV + metronidazole 500mg IV x 1 pre-op dose
Perforated viscus, gangrene, peritonitis, or abscess	• Enterobacteriaceae • Anaerobes • Enterococcus spp	**Institute treatment for Peritonitis rather than prophylaxis (considered contaminated)**	

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GENERAL			
Anal surgery **Low risk:** • sigmoidoscopy • colonoscopy • fissurectomy • fistulectomy/fistulotomy • hemorrhoidectomy-ligation/banding • sphincterotomy	• Enterobacteriaceae • Anaerobes	**Prophylaxis not routinely indicated**	
High risk: • sphincteroplasty • rectovaginal fistula closure/repair • proctocolectomy		• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV + metronidazole 500mg IV x 1 pre-op dose
Herniorrhaphy (suture repair) **Hernioplasty (mesh insertion)**	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV x 1 pre-op dose If MRSA colonization/past infection, **use**: • vancomycin 15 mg/kg IV x 1 pre-op dose

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GENERAL			
Splenectomy		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose
Sclerotherapy		**Prophylaxis not routinely indicated**	
Insertion of long term/ tunneled central venous catheters • Hickman • Broviac **Insertion of implantable vascular access devices** • Port-a-Cath		**Prophylaxis not routinely indicated**	

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OBSTETRICAL/GYNECOLOGICAL			
Therapeutic termination of pregnancy	• Enterobacteriaceae • Anaerobes • Group B Streptococci • Enterococcus spp	• doxycycline 100mg PO 1h pre-op + 200mg PO 1/2 h post-op or • azithromycin 1g PO x 1 pre-op dose	
Hysterosalpingogram **Chromotubation** **Sonohysterography** **High risk:** • dilated fallopian tubes • peritubal adhesions • previous PID	• Enterobacteriaceae • Anaerobes • Group B Streptococci • Enterococcus spp	**Prophylaxis not routinely indicated unless high risk** **High risk**: • If previous PID, give doxycycline 100mg PO x 1 pre-op dose and then doxycycline 100mg PO bid x 5 days post-op • If dilated fallopian tubes or peritubal adhesions seen, give doxycycline 100mg PO bid x 5 days post-op	
Caesarean section *elective* *non-elective*	• Enterobacteriaceae • Anaerobes • Group B Streptococci • Enterococcus spp	• cefazolin 2g IV x 1 pre-op dose NB: Dosing prior to skin incision more effective than dosing after cord clamping.	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose NB: Dosing prior to skin incision more effective than dosing after cord clamping.

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OBSTETRICAL/GYNECOLOGICAL			
Hysterectomy *abdominal* *laparoscopic* *vaginal* **Note:** Treat bacterial vaginosis pre-operatively if present. If found incidentally at time of surgery, treat immediately intra-op and for 4 days post-operatively.	• Enterobacteriaceae • Anaerobes • Group B Streptococci • Enterococcus spp	• cefazolin 2g IV +/- metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
Adnexal procedures that enter uterus or vagina (including vaginal repair/ vaginal sling/transvaginal tape/bladder repair/ cystocele/rectocele/pelvic organ prolapse +/- graft/mesh) **Note:** Treat bacterial vaginosis pre-operatively if present. If found incidentally at time of surgery, treat immediately intra-op and for 4 days post-operatively.	• Enterobacteriaceae • Anaerobes • Group B Streptococci • Enterococcus spp	• cefazolin 2g IV x 1 pre-op dose If entry into rectum, add: • metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose

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OBSTETRICAL/GYNECOLOGICAL			
Endometrial ablation **Endometrial biopsy** **Cervical tissue excision** **Intrauterine device Insertion**		**Prophylaxis not routinely indicated**	
Dilatation and curettage • postpartum • menorrhagia • missed abortion		**Prophylaxis not routinely indicated**	
Laparoscopic procedures that do not enter uterus and/or vagina **Hysteroscopy**		**Prophylaxis not routinely indicated**	

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Open or laparoscopic procedures with: • entry into urinary tract • entry into vagina (including vaginal repair/ vaginal sling/transvaginal tape/bladder repair/ cystocele/rectocele/pelvic organ prolapse +/- graft/mesh) • percutaneous renal surgery	• Enterobacteriaceae • Enterococcus spp • Staphylococcus spp • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose If entry into rectum, add: • metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
Open or laparoscopic procedures with placement of prosthetic material (penile implant, artificial sphincters)	• Enterobacteriaceae • Enterococcus spp • Staphylococcus spp • Streptococcus spp	• cefazolin 2g IV +/- gentamicin 1.5mg/kg IV x 1 pre-op dose	• vancomycin 15mg/kg IV + gentamicin 1.5mg/kg IV x 1 pre-op dose
Adrenalectomy **Nephrectomy**	• S. aureus • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Urodynamic studies and: • neurogenic bladder • bladder outlet obstruction • elevated residual volume • > 70 yrs old • immunodeficiency/chronic corticosteroid use • chronic urinary catheterization		Oral regimens: (give 1-2 h pre-op) • co-trimoxazole 1 DS tablet PO x 1 dose Alternative: • ciprofloxacin 500mg PO x 1 dose	Oral regimens: (give 1-2 h pre-op) • co-trimoxazole 1 DS tablet PO x 1 dose Alternative: • ciprofloxacin 500mg PO x 1 dose

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Cystoscopy, no risk factors	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	**Prophylaxis not routinely indicated unless risk factors**	
Cystoscopy with risk factors: • prolonged indwelling catheter • intermittent catheterization • urinary retention • previous urinary tract infection • neutropenia **Cystourethroscopy with:** manipulation, dilatation, biopsy, fulguration, resection or ureteral instrumentation **Ureteroscopy ± stent**	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimens*: • ceftriaxone 1g IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV x 1 pre-op dose ***Note:** consider parenteral regimen for patients who have received multiple previous antibiotic courses.	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimen*: • gentamicin 1.5mg/kg IV x 1 pre-op dose ***Note:** consider parenteral regimen for patients who have received multiple previous antibiotic courses.

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Shock-wave lithotripsy, no risk factors	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	**Prophylaxis not routinely indicated unless risk factors**	
Shock-wave lithotripsy with risk factors: • large stone burden • proximal stone • stone ≥ 2 cm • associated pyuria • history of pyelonephritis • stent in place	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimens*: • ceftriaxone 1g IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV x 1 pre-op dose ***Note:** consider parenteral regimen for patients who have received multiple previous antibiotic courses.	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimen*: • gentamicin 1.5mg/kg IV x 1 pre-op dose ***Note:** consider parenteral regimen for patients who have received multiple previous antibiotic courses.

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Percutaneous nephro-lithotomy **Nephrostomy insertion** **Nephrostomy tube change – high risk:** • advanced age • anatomical abnormality of urinary tract • immunodeficiency/chronic corticosteroid use • prolonged hospitalization • externalized catheter • prolonged indwelling catheter • poor nutritional status • smoking	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimens*: • ceftriaxone 1g IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV x 1 pre-op dose *__Note:__ consider parenteral regimen for patients who have received multiple previous antibiotic courses.	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO or • co-trimoxazole 1 DS tablet PO or Parenteral regimen*: • gentamicin 1.5mg/kg IV x 1 pre-op dose *__Note:__ consider parenteral regimen for patients who have received multiple previous antibiotic courses.

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Transrectal prostatic biopsy **Transurethral prostatectomy** (TURP) **Transurethral resection of bladder tumour**	• Enterobacteriaceae • Pseudomonas spp • Enterococcus spp	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose Moderate risk: antibiotic therapy in last 6 months, chronic indwelling urinary catheter, diabetes mellitus, chronic corticosteroid use, immunodeficiency, prostate volume ≥ 75mL/severe voiding disturbance, recent (6 months) international travel (other than to South Asia), previous urine culture with ciprofloxacin or co-trimoxazole-resistant organism, previous sepsis following prostate biopsy) Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose **PLUS**	Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose Moderate risk: antibiotic therapy in last 6 months, chronic indwelling urinary catheter, diabetes mellitus, chronic corticosteroid use, immunodeficiency, prostate volume ≥ 75mL/severe voiding disturbance, recent (6 months) international travel (other than to South Asia), previous urine culture with ciprofloxacin or co-trimoxazole-resistant organism, previous sepsis following prostate biopsy) Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose

		• ceftriaxone 1g IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV x 1 pre-op dose High risk: recent (6 months) travel to South Asia, previous urine/blood culture with ESBL or AmpC organism Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose **PLUS**: • meropenem 500 mg IV x 1 pre-op dose	**PLUS** • ceftriaxone 1g IV x 1 pre-op dose or • gentamicin 1.5mg/kg IV x 1 pre-op dose High risk: recent (6 months) travel to South Asia, previous urine/blood culture with ESBL or AmpC Oral regimens: (give 1-2 h pre-op) • ciprofloxacin 500mg PO x 1 dose or • co-trimoxazole 1 DS tablet PO x 1 dose **PLUS**: • meropenem 500 mg IV x 1 pre-op dose

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UROLOGY			
Note: If positive urine culture pre-operatively, institute treatment according to culture and susceptibility results.			
Prostatectomy: – radical – suprapubic **Cystectomy**	• Enterobacteriaceae • Staphylococcus spp • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
Cystectomy with ileal conduit/urinary diversion	• Enterobacteriaceae • Anaerobes • Staphylococcus spp • Streptococcus spp	• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• gentamicin 1.5mg/kg IV + clindamycin 600mg IV x 1 pre-op dose
Vasectomy		**Prophylaxis not routinely indicated**	

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CARDIAC			
- Preoperative assessment of nasal culture for S. aureus carriage should be considered. • If nasal S. aureus (MSSA or MRSA) carrier, suggest intranasal mupirocin 2% bid for 4 days prior to surgery ± chlorhexidine 4% body wash the day prior to surgery. NB: No evidence of benefit if not nasal S. aureus carrier. - The safety and efficacy of topical antibiotics applied to the sternum has not been established and is currently not recommended. - Vancomycin alone should be restricted to true cefazolin allergy as it is associated with a higher frequency of postoperative infections (including Gram positive infections). - For patients with known MRSA colonization or past infection, **add** vancomycin to surgical prophylaxis regimen. (NB: Evidence for adding vancomycin is based on bundled interventions.)			
Open heart surgery **Prosthetic valve** **Coronary artery bypass** **Other open heart surgery**	• S. aureus • Coagulase negative staphylococcus (CoNS) • Corynebacterium spp • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose • If patient hospitalized ≥ 3 days prior to surgery, or saphenous vein procedure, **add** gentamicin 5mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
CARDIAC			
- Preoperative assessment of nasal culture for S. aureus carriage should be considered. • If nasal S. aureus (MSSA or MRSA) carrier, suggest intranasal mupirocin 2% bid for 4 days prior to surgery ± chlorhexidine 4% body wash the day prior to surgery. **NB**: No evidence of benefit if not nasal S. aureus carrier. - The safety and efficacy of topical antibiotics applied to the sternum has not been established and is currently not recommended. - Vancomycin alone should be restricted to true cefazolin allergy as it is associated with a higher frequency of postoperative infections (including Gram positive infections). - For patients with known MRSA colonization or past infection, **add** vancomycin to surgical prophylaxis regimen. (NB: Evidence for adding vancomycin is based on bundled interventions.)			
Placement of electrophysiologic devices (e.g. pacemaker, implantable cardioverter-defibrillator (ICD), ventricular assist devices) **Transcatheter aortic valve implantation (TAVI)** **Left atrial occlusion devices** **Ventriculoatrial shunts** **Arterial patches**	• S. aureus • Coagulase negative staphylococcus (CoNS) • C. acnes	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose
Cardiac catheterization including angioplasty +/- stenting **Transesophageal echocardiogram**		**Prophylaxis not routinely indicated**	

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
THORACIC			
Esophageal procedures WITH mucosal breach, including laparoscopic	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp • Enterobacteriaceae • Oral anaerobes	• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose
Excision of Zenker's diverticulum		• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose
Esophageal procedures withOUT mucosal breach, e.g. anti-reflux surgery, Heller myotomy		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose
Radical thymectomy, open or VATS		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
THORACIC			
Pneumonectomy **Lobectomy (complete or partial)** **Thoracotomy** **Thorascopy, including video-assisted thoracoscopic surgery (VATS)** **Mediastinoscopy**	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp • Enterobacteriaceae • Oral anaerobes	• cefazolin 2g IV x 1 pre-op dose or • cefuroxime 1.5g IV x 1 pre-op dose	• [vancomycin 15mg/kg IV or clindamycin 600mg IV] +/- gentamicin* 5mg/kg IV x 1 pre-op dose * Consider adding gentamicin if: • patient hospitalized ≥ 3 days prior to surgery and/or • chronic obstructive pulmonary disease with Gram negative colonization.
Thoracentesis **Chest tube insertion for spontaneous pneumothorax**		**Prophylaxis not routinely indicated**	
Closed chest tube insertion for chest trauma with hemo/pneumothorax	• S. aureus • Streptococcus spp • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV +/- gentamicin 5mg/kg IV x 1 pre-op dose
Chest wall resection with mesh insertion		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
VASCULAR			
Arterial surgery involving the abdominal aorta or a groin incision	• S. aureus • Coagulase negative staphylococcus (CoNS) • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose or • vancomycin 15mg/kg IV + gentamicin 5mg/kg IV x 1 pre-op dose
Arterial surgery involving placement of prosthetic material	• S. aureus • Coagulase negative staphylococcus (CoNS) • Enterobacteriaceae	• cefazolin 2g IV If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

<table>
<tr><th>SURGERY</th><th>COMMON PATHOGENS</th><th>REGIMEN(S) OF CHOICE
(See General Principles and Table 1 and Table 2)</th><th>ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])</th></tr>
<tr><td colspan="4">VASCULAR</td></tr>
<tr><td>Carotid endarterectomy
Brachial artery repair
Endovascular stenting
Low risk</td><td rowspan="2">• S. aureus
• Coagulase negative staphylococcus (CoNS)</td><td colspan="2">Prophylaxis not routinely indicated</td></tr>
<tr><td>High risk:
• placement of prosthetic material
• repeat intervention within 7 days
• prolonged indwelling arterial sheath
• procedure > 2 h duration
• presence of other infected implants
• immunosuppression</td><td>• cefazolin 2g IV x 1 pre-op dose

If MRSA colonization/past infection, add:
• vancomycin 15 mg/kg IV x 1 pre-op dose[1]
[1] Evidence for adding vancomycin is based on bundled interventions.</td><td>• clindamycin 600mg IV x 1 pre-op dose
or
• vancomycin 15mg/kg IV x 1 pre-op dose</td></tr>
</table>

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
VASCULAR			
Renal access procedures • native AV fistula		Optional: • cefazolin 2g IV x 1 pre-op dose	Optional: • vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose
• artificial AV graft		• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose
Peritoneal dialysis • catheter placement		• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
VASCULAR			
Insertion of long term/ tunneled central venous catheters • Hickman • Broviac **Insertion of implantable vascular access devices** • Port-a-Cath		**Prophylaxis not routinely indicated**	

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
PLASTICS			
Clean procedures **Low risk:** • dermatologic • facial bone fracture • tumor excision • simple rhinoplasty/ septoplasty • simple lacerations • flexor tendon injury • clean hand surgery	• S. aureus • Streptococcus spp	**Prophylaxis not routinely indicated**	
High risk: • placement of prosthetic material • surgery involving bone • skin irradiation • devitalized tissue • procedures below waist		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
PLASTICS			
Clean-contaminated procedures • involving contaminated skin/mucosa/intertriginous areas (oral cavity, upper respiratory tract, axilla, groin, perineum) • wedge excision lip/ear • flaps on nose/head/neck • grafts	• S. aureus • Streptococcus spp • Enterobacteriaceae • P. aeruginosa	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
PLASTICS			
Breast surgery **Low risk:** • simple clean procedures • lumpectomy/local excision	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp	Optional: • cefazolin 2g IV x 1 pre-op dose	Optional: • vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose
High risk: • breast reduction • reconstruction mammoplasty • previous breast biopsy/ surgery • placement of prosthetic material • morbid obesity (>100kg) • breast cancer procedures (axillary lymph node dissection, primary nonreconstructive surgery) • skin irradiation		• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
PLASTICS			
Autologous breast reconstruction • deep inferior epigastric perforators (DIEP) flap • transverse rectus-abdominus myocutaneous (TRAM) flap	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose or • clindamycin 600mg IV x 1 pre-op dose
Reconstructive surgery **Tissue flaps** **Panniculectomy**	• S. aureus • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose
Reconstructive limb surgery **Traumatic/crush hand injuries**	• S. aureus • Streptococcus spp • Enterobacteriaceae • Anaerobes	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection and use of prosthetic material, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV pre-op x 1 pre-op dose If heavily soiled/contaminated, consider **adding**: • gentamicin 5mg/kg IV x 1 pre-op dose to above regimens

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
PLASTICS			
Carpal tunnel **Low risk**	• S. aureus • Streptococcus spp	**Prophylaxis not routinely indicated**	
High risk: • morbid obesity (> 100kg) • immunocompromised		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
ORTHOPEDIC			
Diagnostic or operative arthroscopy		**Prophylaxis not routinely indicated**	
Fractures with internal fixation (nails, plates, screws, wires)	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose
Joint replacement **Joint revision surgery** - hip - knee - elbow - ankle - shoulder Note: withholding prophylactic antibiotic prior to revision arthroplasty is not recommended unless there is a high suspicion of infection and pre-op cultures are negative or not obtained	• S. aureus • Coagulase negative staphylococcus (CoNS)	- Preoperative assessment of nasal culture for S. aureus carriage should be considered. • If nasal S. aureus (MSSA or MRSA) carrier, suggest intranasal mupirocin 2% bid for 4 days prior to surgery ± chlorhexidine 4% body wash the day prior to surgery. NB: No evidence of benefit if not nasal S. aureus carrier. - Vancomycin alone should be restricted to true cefazolin allergy or severe non-IgE mediated reaction as it is associated with a higher frequency of postoperative infections (including Gram positive infections). - For patients with known MRSA colonization or infection, **add** vancomycin to surgical prophylaxis regimen. (NB: Evidence for adding vancomycin is based on bundled interventions.) - Insufficient evidence to recommend use of antibiotic-impregnated bone cement in primary arthroplasties.	
Rotator cuff repair - surgical/arthroscopic		• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection,	• clindamycin 600mg IV x 1 pre-op dose

		add: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
ORTHOPEDIC			
Fractures, complex (open)	• S. aureus • Coagulase negative staphylococcus (CoNS) • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose If heavily soiled/contaminated (Grade III), **add**: • gentamicin 5mg/kg IV x 1 pre-op dose
Amputation of lower limb	• S. aureus • Coagulase negative staphylococcus (CoNS) • Enterobacteriaceae • Clostridium spp	• cefazolin 2g IV x 1 pre-op dose If ischemic limb, **add**: • metronidazole 500mg IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 1.5mg/kg IV x 1 pre-op dose
Fasciotomy	• S. aureus • Streptococcus spp	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose or • vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
SPINAL SURGERY			
- Preoperative assessment of nasal culture for S. aureus carriage should be considered. • If nasal S. aureus (MSSA or MRSA) carrier, suggest intranasal mupirocin 2% bid for 4 days prior to surgery ± chlorhexidine 4% body wash the day prior to surgery. NB: No evidence of benefit if not nasal S. aureus carrier. - Vancomycin alone should be restricted to true cefazolin allergy as it is associated with a higher frequency of postoperative infections (including Gram positive infections). - For patients with known MRSA colonization or past infection, **add** vancomycin to surgical prophylaxis regimen. (NB: Evidence for adding vancomycin is based on bundled interventions.)			
Laminectomy **Microdiscectomy**	• S. aureus • Coagulase negative staphylococcus (CoNS)	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose
Spinal fusion **Insertion of foreign material**	• S. aureus • Coagulase negative staphylococcus (CoNS)	• cefazolin 2g IV x 1 pre-op dose If MRSA colonization/past infection, **add**: • vancomycin 15 mg/kg IV x 1 pre-op dose[1] [1] Evidence for adding vancomycin is based on bundled interventions.	• vancomycin 15mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
NEUROSURGERY			
Craniotomy **Stereotactic brain biopsy/procedure**	• S. aureus • Coagulase negative staphylococcus (CoNS)	• cefazolin 2g IV x 1 pre-op dose	• vancomycin 15mg/kg IV x 1 pre-op dose
Cerebrospinal fluid shunting operations NB: Antimicrobial-impregnated devices are not recommended.	• S. aureus • Coagulase negative staphylococcus (CoNS)	• cefazolin 2g IV x 1 pre-op dose	• vancomycin 15mg/kg IV x 1 pre-op dose
External ventricular drain (EVD) **Intracranial pressure (ICP) monitor** NB: Evidence for antibiotic prophylaxis inconclusive. Antimicrobial-coated EVD catheters not recommended.	• S. aureus • Coagulase negative staphylococcus (CoNS)	• cefazolin 2g IV x 1 dose pre-insertion	• vancomycin 15mg/kg IV x 1 dose pre-insertion
Contaminated procedures • compound skull fractures • open scalp lacerations • CSF fistulae		**Institute treatment rather than prophylaxis**	

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
HEAD AND NECK SURGERY			
Clean procedures: no incision through oral/nasal/ pharyngeal mucosa, no insertion of prosthetic material: • thyroidectomy • submandibular gland excision • lymph node excision • tympanoplasty/ear surgery • mastoidectomy • septoplasty **Low risk procedures:** • Tonsillectomy • Adenoidectomy	• S. aureus • Streptococcus spp • Oral anaerobes	**Prophylaxis not routinely indicated**	
High risk procedures: • Insertion of prosthetic material		• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles and Table 1 and Table 2)	ALTERNATIVE REGIMENS if allergy to ceFAZolin, or severe non-IgE-mediated reaction to any β-lactam (interstitial nephritis, hepatitis, hemolytic anemia, serum sickness, severe cutaneous reactions [e.g. SJS, TEN, DRESS])
HEAD AND NECK SURGERY			
Clean contaminated procedures with incision through oral/nasal/ pharyngeal mucosa **Low risk**	• S. aureus • Streptococcus spp • Oral anaerobes • Enterobacteriaceae	• cefazolin 2g IV x 1 pre-op dose	• clindamycin 600mg IV x 1 pre-op dose
High risk: • Head and neck cancer: o Radical/bilateral neck dissection o Reconstructive surgery with myocutaneoous flaps or microvascular free flaps • Mandibular surgery if tobacco/alcohol/illicit drug use		• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose +/- • cefazolin 2g IV q8h + metronidazole 500mg IV q12h x 24h post-op	• levofloxacin 500mg IV + metronidazole 500mg IV x 1 pre-op dose +/- • levofloxacin 500mg IV once post-op + metronidazole 500mg IV q12h x 24h post-op **Note:** Limited evidence for this regimen; recommendation based on poor outcomes with clindamycin prophylaxis.
Excision of Zenker's diverticulum		• cefazolin 2g IV + metronidazole 500mg IV x 1 pre-op dose	• clindamycin 600mg IV + gentamicin 5mg/kg IV x 1 pre-op dose

AHS RECOMMENDED DRUG REGIMENS FOR SURGICAL PROPHYLAXIS IN ADULT PATIENTS

SURGERY	COMMON PATHOGENS	REGIMEN(S) OF CHOICE (See General Principles)	
OPHTHALMOLOGY NB: Pre-op disinfection with povidone-iodine 5% solution recommended. Chlorhexidine 0.05% is alternative for iodine-allergic patients. Higher chlorhexidine concentrations are associated with corneal toxicity. Avoid leakage of either povidone-iodine or chlorhexidine into the anterior chamber.			
Cataract extraction **Corneal transplant** **Retinal detachment** **Vitrectomy** **Dacryocystorhinostomy** **Eyelid Surgery** **Enucleation**	• S. aureus • Coagulase negative staphylococcus (CoNS) • Streptococcus spp • Enterobacteriacea e • Pseudomonas spp	Eye drops every 5-15 minutes for 5 doses within 1 hour prior to start of procedure*: • moxifloxacin or • polymyxin B - gramicidin +/- At end of procedure: Intracameral injection**: • cefazolin 1-2.5mg or • cefuroxime 1mg or Subconjunctival injection: • cefazolin 100mg or • cefuroxime 50mg * Necessity of continuing topical antimicrobials postoperatively has not been established. **Intracameral antibiotics may be more effective than subconjunctival antibiotics.	

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