

# Quick Reference Guide

## BENEFITS AND RISKS OF ANTIBIOTIC PROPHYLAXIS

- The final decision regarding the benefits and risks of prophylaxis for an individual patient will depend on:
  - ▶ the patient's risk of surgical site infection (SSI)
  - ▶ the potential severity of the consequences of SSI
  - ▶ the effectiveness of prophylaxis in that operation
  - ▶ the consequences of prophylaxis for that patient (e.g. increased risk of colitis).

## PRINCIPLES OF PROPHYLAXIS

- The single dose of antibiotic for prophylactic use is, in most circumstances, the same as would be used therapeutically.
- A** Prophylaxis should be started preoperatively (in most circumstances), ideally within 30 minutes of the induction of anaesthesia.
- A** Prophylaxis should be administered immediately before or during a procedure.

## ADMINISTERING INTRAVENOUS PROPHYLACTIC ANTIBIOTICS

- C** The antibiotics selected for prophylaxis must cover the common pathogens.
- B** Patients with a history of anaphylaxis or urticaria or rash occurring immediately after penicillin therapy are at increased risk of immediate hypersensitivity to penicillins and should not receive prophylaxis with a beta-lactam antibiotic.
- Patients with a history of minor rash or rash occurring more than 72h after administration of penicillin are probably not allergic to penicillin.
- B** An additional dose of prophylactic agent is not indicated in adults, unless there is blood loss of up to 1500 ml during surgery or haemodilution up to 15 ml/kg.
- Fluid replacement bags should not be primed with prophylactic antibiotics because of the potential risk of contamination and calculation errors.

## ECONOMIC EVALUATION OF SURGICAL ANTIBIOTIC PROPHYLAXIS

- Use NNTs to compare when the consumption of prophylactic antibiotics would be lower than the consumption of therapeutic antibiotics.

## IMPLEMENTING THE GUIDELINE

- C** Inappropriate prolongation of surgical prophylaxis can be reduced by use of specific order forms for surgical prophylaxis, or recording of prophylaxis in single dose sections of existing drug prescription charts.
- C** Recording the minimum dataset in the case notes and drug prescription chart will facilitate audit of the appropriateness of surgical antibiotic prophylaxis.

KEY

**A** **B** **C**

indicates grade of recommendation

good practice point

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Derived from the national clinical guideline recommended for use in Scotland by the Scottish Intercollegiate Guidelines Network (SIGN), Royal College of Physicians of Edinburgh, 9 Queen Street, Edinburgh EH2 1JQ

Available on the SIGN website: [www.sign.ac.uk](http://www.sign.ac.uk)

This guideline was issued in July 2000 and will be reviewed in 2002

## INDICATIONS FOR ANTIBIOTIC PROPHYLAXIS

### CARDIOTHORACIC SURGERY

A	Cardiac pacemaker insertion: <b>recommended</b>
B	Open heart surgery, including: <ul style="list-style-type: none"> <li>▶ Coronary artery bypass grafting</li> <li>▶ Prosthetic valve surgery: <b>recommended</b></li> </ul>
A	Pulmonary resection: <b>recommended</b>

### ENT SURGERY

A	Head and neck surgery (contaminated/clean-contaminated): <b>recommended</b>
A	Ear surgery (clean): <b>not recommended</b>
C	Head and neck surgery (clean): <b>not recommended</b>
C	Nose or sinus surgery: <b>not recommended</b>
C	Tonsillectomy: <b>not recommended</b>

### NEUROSURGERY

A	Craniotomy: <b>recommended</b>
A	CSF shunt: <b>recommended</b>

### OPHTHALMOLOGY

C	Cataract surgery: <b>recommended*</b>
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### ORTHOPAEDIC SURGERY

A	Total hip replacement: <b>highly recommended</b>
B	Prosthetic knee joint replacement: <b>highly recommended</b> (regardless of use of antibiotic cement)
A	Closed fracture fixation: <b>recommended</b>
A	Hip fracture repair: <b>recommended</b>
A	Spinal surgery: <b>recommended</b>
C	Insertion of prosthetic device (extrapolated from trials of specific devices): <b>recommended*</b>
C	Orthopaedic surgery without prosthetic device (elective): <b>not recommended</b>

### GENERAL SURGERY

A	Colorectal surgery: <b>highly recommended</b>
A	Appendicectomy: <b>recommended*</b>
A	Biliary surgery (open): <b>recommended*</b>
C	Breast surgery: <b>recommended*</b>
C	Clean-contaminated procedures (extrapolated from specific clean-contaminated procedures): <b>recommended*</b>
A	Endoscopic gastrostomy: <b>recommended*</b>
A	Gastroduodenal surgery: <b>recommended*</b>
C	Oesophageal surgery: <b>recommended*</b>
C	Small bowel surgery: <b>recommended*</b>
C	Laparoscopic or non-laparoscopic hernia repair <ul style="list-style-type: none"> <li>▶ with mesh: <b>recommended*</b></li> </ul>
A	▶ without mesh: <b>not recommended</b>
C	Laparoscopic cholecystectomy: <b>not recommended</b>

### OBSTETRICS AND GYNAECOLOGY

A	Caesarean section: <b>recommended*</b>
A	Hysterectomy (abdominal or vaginal): <b>recommended*</b>
A	Induced abortion: <b>recommended*</b>

### UROLOGY

A	Transrectal prostate biopsy: <b>recommended</b>
A	Shock-wave lithotripsy: <b>recommended*</b>
A	Transurethral resection of the prostate: <b>recommended*</b>
C	Transurethral resection of bladder tumours: <b>not recommended</b>

### VASCULAR SURGERY

A	Lower limb amputation: <b>recommended</b>
A	Vascular surgery (abdominal & lower limb): <b>recommended</b>

\* local policy makers may identify exceptions

Note: four different types of recommendations have been made, depending on the nature of the supporting evidence on clinical and cost-effectiveness. However, the *grade* of recommendation relates to the strength of evidence on *clinical effectiveness* alone.

- **Highly recommended** – prophylaxis unequivocally reduces major morbidity, reduces hospital costs and is likely to decrease overall consumption of antibiotics
- **Recommended** – prophylaxis reduces short-term morbidity, is highly likely to reduce major morbidity, reduce hospital costs and may decrease overall consumption of antibiotics
- **Recommended but local policy makers may identify exceptions** – although prophylaxis is recommended for all patients, it may not reduce hospital costs and could increase consumption of antibiotics, especially if given to patients at low risk of infection.
- **Not recommended** – prophylaxis has not been proven to be clinically effective and as the consequences of infection are short-term morbidity, is likely to increase hospital antibiotic consumption for little clinical benefit.