



# Summary of Recommendations

1. **The maximum duration of antibiotic prophylaxis is the duration of the surgical procedure** for the majority of surgical procedures including:

- Gastrointestinal surgery (including endoscopic gastrointestinal surgery)
- Obstetrics and gynaecology surgery (including caesarean section)

This is achieved by administering a single dose within 60 minutes prior to incision. An additional intra-operative dose may be required in certain circumstances such as:

- significant blood loss or,
- if the procedure duration extends beyond three or four hours of the initial dose, this timing will depend on the half-life of the antibiotic.

In obstetrics for operative vaginal delivery, this is achieved by administering a single dose within 3 hours of delivery.

2. **The duration of the surgical procedure is appropriate as an option for the duration of antibiotic prophylaxis** for most other categories of surgery also. However given the uncertainty in the evidence currently available, there is a reasonable basis for a surgeon to choose a longer duration of prophylaxis for certain categories of surgery as follows:

- a) **The maximum duration of antibiotic prophylaxis is 24 hours** for the following categories of surgical procedure:

- Orthopaedic surgery (including implant surgery)
- Vascular surgery
- Neurosurgery
- Thoracic surgery
- Ear-nose and throat surgery
- Urology
- Plastic and reconstructive surgery
- Cardiology - percutaneous procedures including placement of implantable devices



- b) **The maximum duration of antibiotic prophylaxis is 48 hours** for the following categories of surgical procedure:

- Maxillofacial surgery
- Cardiac surgery
- Head and neck surgery

3. A duration of antibiotic prophylaxis of longer than 48 hours cannot be reasonably justified for any surgical procedure on the basis of current evidence or by consensus of expert opinion. This applies equally to antibiotic administered by parenteral or oral route.
4. Antibiotic prophylaxis should not be continued beyond the time frames identified above on the basis that **drains** remain in place.

## A position paper on Antibiotic\* Prophylaxis in Surgery

- Scope** The content of this statement including initiation and prompt discontinuation of antibiotic prophylaxis is applicable to all adult and paediatric patients (including neonates). Consult Children's Health Ireland (CHI) or local guidelines for surgical recommendations for specific paediatric indications as these are outside the scope of this guidance.
- Definition** Antibiotic prophylaxis in surgery refers to the planned administration of antibiotics to a patient, who does not have confirmed or suspected infection, for the purpose of reducing the risk that the patient develops infection at the surgical site post-operatively.
- Exclusions** This position paper does not address choice of agent for prophylaxis. Each hospital should have guidance on choice of agent and dosing for categories of surgery provided at that hospital. This position paper does not address which categories of surgery require routine antibiotic prophylaxis. Each hospital should have guidance on which categories of surgery provided at that hospital require antibiotic prophylaxis.

### Stopping of Surgical Antibiotic Prophylaxis

There is evidence of harm from extended duration of surgical antibiotic prophylaxis. This position statement identifies the **maximum duration** for which continuation of surgical antibiotic prophylaxis can reasonably be justified taking account of uncertainty of evidence and reasonable differences of professional opinion. Duration of administration of surgical antibiotic prophylaxis of less than the maximum duration, specified in this statement, which can reasonably be justified may often be agreed as appropriate in individual hospital guidelines.

### Treatment is not Prophylaxis

In the event that infection is suspected or confirmed prior to the surgical procedure, in the course of the surgical procedure or becomes apparent after the surgical procedure then the model of antibiotic prophylaxis is no longer applicable. Infection requires treatment not prophylaxis. The choice of agent for treatment of suspected or confirmed infection and the duration of treatment should be based on relevant therapeutic guidelines and or advice from an infection specialist (Clinical Microbiologist or Infectious Disease Physician). It is best practice that the operation note should record the indication for on-going treatment.

*\*Although there are technical reasons to prefer the term antimicrobial rather than antibiotic, the term antibiotic is used in this document as this term is more widely used in surgical practice.*

Resources to support the implementation of this position statement are available at: [bit.ly/3eGoCKw](https://bit.ly/3eGoCKw)

References supporting this position paper are available on request.

*This position paper has been produced following collaboration between AMRIC, the National Clinical Programme in Surgery (NCPS), the Royal College of Surgeons (RCSI), NCP for Anaesthesia, Institute of Obstetrics and Gynaecologists, National Women and Infants Health Programme, NCP in Trauma and Orthopaedics, National Heart Programme, College of Anaesthesiologists and the HSE Antimicrobial Stewardship Advisory Group.*

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## Introduction

# South East Acute Hospitals Surgical Prophylaxis Guidelines

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## Introduction

Surgical site infections represent one of the most common hospital acquired infections. In a May 2017 prevalence survey, surgical site infections constituted 18.1% of all healthcare acquired infection with a prevalence of 1.2% of inpatients.<sup>1</sup>

Antibiotic prophylaxis in surgery refers to the planned administration of antibiotics to a patient, who does not have confirmed or suspected infection, for the purpose of reducing the risk that the patient develops infection at the surgical site post-operatively.<sup>2</sup> In order to achieve this, appropriate antibiotics must be given at the correct time and for the appropriate duration.

**Increasing the recommended duration of antimicrobial prophylaxis does not lead to an additional reduction in surgical site infection** but it is associated with higher odds of acute kidney injury and *C. difficile* infection.<sup>3</sup> Furthermore, inappropriate use of antibiotics increases both the cost and the selective pressure that favours the emergence of resistant bacteria.

This guideline is adapted from Scottish Intercollegiate Guidelines Network (SIGN) Antibiotic Prophylaxis in Surgery<sup>4</sup> and the joint position statement on surgical antibiotic prophylaxis duration 2021 by HSE Antimicrobial Resistance and Infection Control Team (AMRIC), the HSE Antimicrobial Stewardship Advisory Group & the National Clinical Programme for Surgery (NCPS).<sup>2</sup>

This guidance is based on the best available evidence but its application must be modified by professional judgment. The final risk assessment for administration of antibiotic prophylaxis must be undertaken by the patients' doctor.

## Principles of Surgical Antibiotic Prophylaxis

### Dosage and Administration by Type of Surgical Procedures

## Dosage and Administration by Type of Surgical Procedures

Drug :	Adult prophylaxis dose* (IV):	2 <sup>nd</sup> intra-operative doses for procedures lasting > 4 hours	2 <sup>nd</sup> intra-operative doses if >1.5L major blood loss (after fluid replacement)
Amoxicillin	1g	Repeat original dose	Repeat original dose
Cefuroxime	1.5g	Repeat original dose	Repeat original dose
Clindamycin	900mg	Repeat original dose	Repeat original dose
Co-amoxiclav	1.2g	Repeat original dose	Repeat original dose
Gentamicin	3-5mg/kg (Maximum dose 480mg - see gentamicin dosing guideline for adjustments for renal impairment and obesity where necessary)	Not required	Give half original dose
Metronidazole	500mg	Re-dose after 8 hours of prolonged surgery.	Repeat original dose
Vancomycin	15mg/kg (Maximum dose 2g - see vancomycin dosing guideline for adjustments for renal impairment and obesity where necessary)  Administer at a maximum rate of 10mg/min	No	Give half original dose if 1,500 mL or more blood loss within first hour of operation

\*Please refer to local guidelines on Intravenous (IV) Medication Administration Information for Adults. Dose adjustment may be required in renal/hepatic impairment and according to weight.

## Appendices

## References

# References

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