Surgical antibiotic prophylaxis duration

Prepared by HSE/RCSI:
Antimicrobial Resistance & Infection Control Team (AMRIC)
National Clinical Programme for Surgery (NCPS)
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Target audience for presentation:

- Anyone involved in the use of Surgical Antibiotic Prophylaxis
  - **Prescribes** – Surgeons, Obstetricians, Gynaecologists, Anaesthetists, Cardiologists
  - **Dispenses** – Pharmacists
  - **Administers** – Nurses
  - **Quality & Patient Safety** Staff

- Contents of this AMRIC/NCPS presentation are not for local amendment however please follow with your own slide deck to include local audit results, plans for quality improvement etc.
• Surgical antibiotic prophylaxis is a critical step in preventing surgical site infection.

• Maximum benefit with the least harm is achieved by:
  • Administering the right agent, at the right dose, at the right time and for the right duration.

• In terms of duration most procedures only require a single dose of surgical antibiotic prophylaxis to reduce the risk of a surgical site infection (SSI)
  • Extended duration of surgical antibiotic prophylaxis is not associated with further reduction in risk of SSI
  • There is evidence of harm such as acute kidney injury and *Clostridioides difficile* infection with extended duration
• 2020 national antimicrobial point prevalence study showed 62% of cases exceeded a single dose

• 2017 European Study showed Scotland only 35% of cases exceeded a single dose

• Scope for improvement

• Development of position statement & associated resources to assist in that improvement
• Position statement on duration of antibiotic prophylaxis in surgery

• Developed jointly by National Clinical Programme for Surgery (NCPS) & HSE antimicrobial resistance and infection control team (AMRIC)

• Review & feedback provided by:
  • Royal College of Surgeons Ireland
  • National Clinical Programme for Anaesthesia
  • Institute of Obstetrics and Gynaecologists
  • National Women & Infants Health Programme
  • National Clinical Programme for Trauma & Orthopaedics
  • College of Anaesthesiologists
  • National Heart Programme
  • HSE Antimicrobial Stewardship Advisory Group

• Consensus of expert opinion supported by all key stakeholders
• Recommendations
  • Maximum durations of surgical antibiotic prophylaxis depending on the type of surgery
  • Supported by evidence

• Durations
  • **Most procedures do not require post-operative antibiotics**
  • Otherwise depending on type of procedure
    • Maximum of 24 hours
    • Maximum of 48 hours
  • Locally agreed maximum may be less than this
• Taking account of evidence & expert opinion a duration greater than 48 hours cannot be reasonably justified.

• Applicable to both parenteral & oral routes.

• Antibiotic prophylaxis should not be continued beyond the limits specified even if drains remain in place.
• Treatment is **NOT** prophylaxis

• If infection is suspected or confirmed pre-op/intra-op/post-op then the model of antibiotic prophylaxis is no longer applicable.

• Treatment agent & duration as per local prescribing guidelines or infection specialist advice.
• Local discussions to progress implementation:
  • Surgical/theatre directorate
  • Antimicrobial advisory committee or Pharmacy & therapeutics committee
  • Quality & safety committee
  • Audit committee

• Suggested local quality improvement actions:
  • Amendment of operative notes proforma to encourage documentation
  • Amendment of drug chart / electronic prescribing record
  • Amendment of sign out theatre documentation
  • Amendment of post-op surgical nursing care plan
• Resources to support implementation:
  • **Excel audit tool** as part of a quality improvement project. (Fulfills audit requirement) Available at: bit.ly/3eGoCKw
  • Tool is for local use and is intended to support quality improvement, there is no reporting requirement associated with its use
  • Video available to guide you through the use of the tool
  • We would like to hear your experience in its use and if further requirements are needed to improve its use antibiotics.prescribing@hse.ie
• Resources to support implementation: bit.ly/3eGoCKw
  • eLearning module on all aspects of surgical antibiotic prophylaxis including “the right duration” on HSeLaND (RCPI 2 CPD credits)
  • Audience: anyone who prescribes, dispenses or administers surgical antibiotic prophylaxis.
• Resources to support implementation: [bit.ly/3eGoCKw](https://bit.ly/3eGoCKw)
  • A3 posters and pens with key messaging.
Antimicrobial Resistance and Infection Control Programme

• Resources to support implementation: [bit.ly/3eGoCKw](https://bit.ly/3eGoCKw)

• A Model 4 hospital has commenced a quality improvement project on this position statement

• Learning from that site will be made available in due course on the resources page [bit.ly/3eGoCKw](https://bit.ly/3eGoCKw)
• Resources to support implementation: bit.ly/3eGoCKw
• A patient information leaflet entitled “Antibiotics before an operation to reduce risk of infection”.

Antibiotics before an operation to reduce risk of infection.

Will I need an antibiotic before my operation?
If you are having an operation you might be prescribed antibiotics just before the time of the surgery. The surgery may be moved forward even though you have no infection at the time. This is done to reduce the risk of developing an infection related to the surgery. This is called antibiotic prophylaxis.

Examples of operations when an antibiotic is given just before the surgery are hip replacement or bowel surgery.

For some operations such as urological, you might not need an antibiotic.

Antibiotics are best used only when needed. Taking an antibiotic when you do not need can cause you harm.

What will the healthcare team do if I need an antibiotic?
For some antibiotics the healthcare team might need to weigh you to work out the best dose of antibiotic to give you. Examples of antibiotics where a weight is needed are cefuroxime, ticarcillin and gentamicin.

For some operations the healthcare team might need to take a swab from you to see if you carry any superbugs on your skin or in your gut. Examples of the superbugs are MRSA and CPE. If you are a carrier of one of these superbugs you might need a different antibiotic.

How will the antibiotic be given to me?
If you need an antibiotic it will be given to you by injection or drip into a vein shortly before the operation.

How long will I be on the antibiotic?
For most operations you will only need one dose of antibiotic about an hour before you have your surgery. There are some operations where the antibiotic may be continued for one or two days after surgery and then stopped. If you develop an infection after your surgery you may need an antibiotic for longer.

Is there anything I need to do if I’ve been prescribed an antibiotic?
You need to talk to your doctor or pharmacist about any other medicines you might be taking, or any other health conditions you have.

Ask yourself the following questions:

• Have you any allergies to antibiotics?

Some antibiotics are not used if you are allergic to them. If you believe you are allergic to an antibiotic it is very helpful to have as much information as you can about what happened to you when you got the antibiotic in the past. This will help the theatre team decide if you had an allergy or some other kind of reaction and if you had an allergy to decide how serious it is.

• Are you taking other medication?

It is important to tell your doctor or pharmacist if you are taking any other medicines or herbal remedies before you get the antibiotic. Antibiotics can interact with other medicines – for example, tetracyclines such as tetracycline, doxycycline and minocycline are used to treat high numbers of infections such as typhoid.

• Could you be pregnant or are you breastfeeding?

Some antibiotics are unsuitable if you are pregnant or breastfeeding.

• Do you have liver or kidney problems?

Some antibiotics do not work, or you may need a different dose if you have kidney or liver problems.

• Have you had a gut infection called C difficile (Clostridium difficile) in the past?

Antibiotics can make the C difficile infection come back again.

If you have questions or doubts, always ask your doctor or pharmacist.

Do antibiotics have harmful side effects?

It is very unusual to suffer harmful side effects from a single dose of antibiotic given to prevent infection prior to surgery. The most common side effects of antibiotics are diarrhoea, stomach pain, a sick tummy and vomiting. If the antibiotic makes you feel unwell, talk to your doctor, pharmacist or nurse.

If you have sudden difficulty with your breathing after taking an antibiotic, you should talk to a doctor or nurse immediately.

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• Resources to support implementation: bit.ly/3eGoCKw

• Communications e.g. RCSI bulletin, RESIST newsletter, Health Matters
Thank you for your support in implementing this quality & patient safety initiative

We would be interested to hear of your local experiences for this quality improvement work or any feedback you have on any of the tools or resources, email antibiotics.prescribing@hse.ie