



# 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**

JAMA Surgery | Original Investigation

## Association of Duration and Type of Surgical Prophylaxis With Antimicrobial-Associated Adverse Events

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**CONCLUSIONS AND RELEVANCE** Increasing duration of antimicrobial prophylaxis was associated with higher odds of AKI and *C difficile* infection in a duration-dependent fashion; extended duration did not lead to additional SSI reduction. These findings highlight the notion that every day matters and suggest that stewardship efforts to limit duration of prophylaxis have the potential to reduce adverse events without increasing SSI.

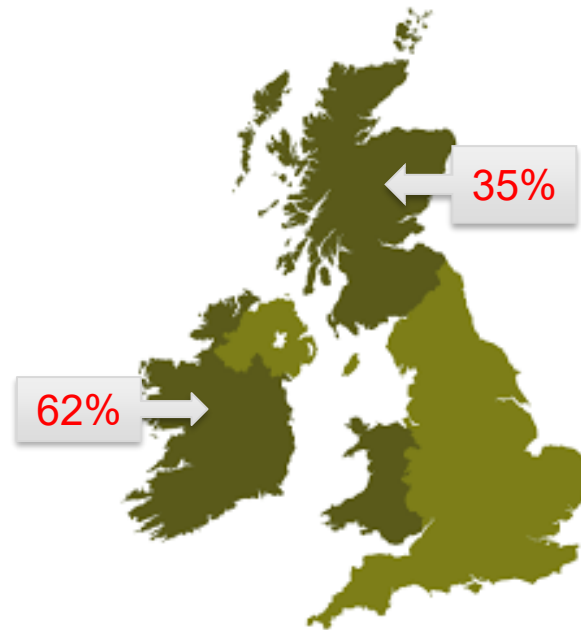
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**Author Affiliations:** Author affiliations are listed at the end of this article.

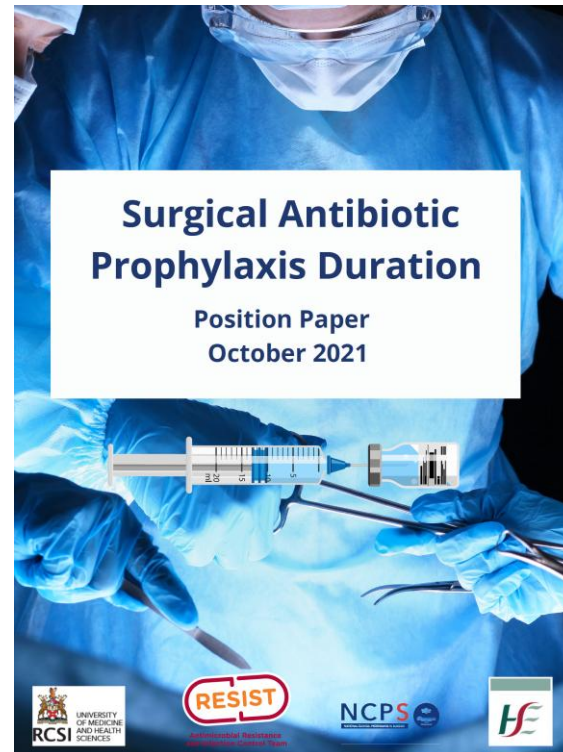
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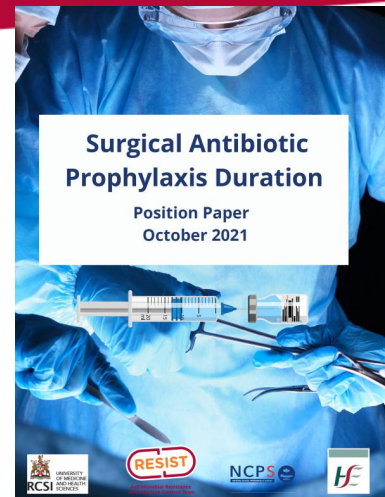
- **2020 national antimicrobial point prevalence study showed 62% of cases exceeded a single dose**
- **2017 European Study showed Scotland only 35% of cases exceeded a single dose**
- **Scope for improvement**
- **Development of position statement & associated resources to assist in that improvement**



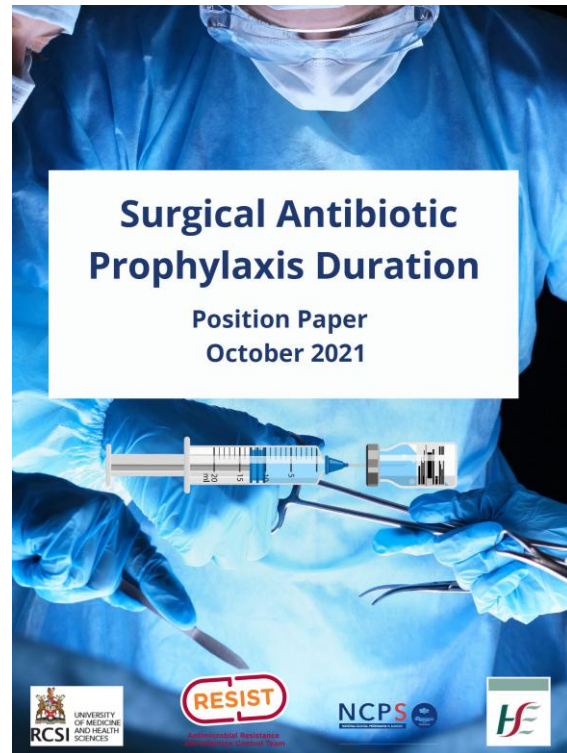
- Position statement on duration of antibiotic prophylaxis in surgery
- Developed jointly by National Clinical Programme for Surgery (NCPS) & HSE antimicrobial resistance and infection control team (AMRIC)
- Review & feedback provided by:
  - Royal College of Surgeons Ireland
  - National Clinical Programme 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



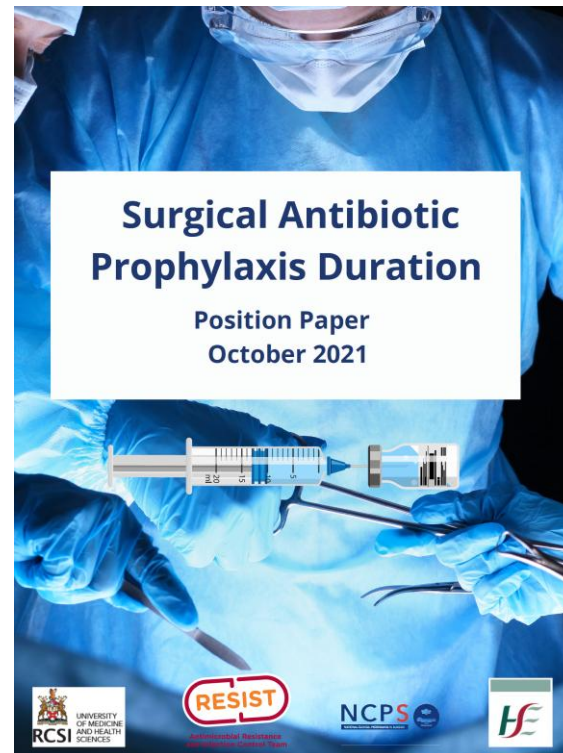
- Recommendations
  - Maximum durations of surgical antibiotic prophylaxis depending on the type of surgery
  - Supported by evidence
- Durations
  - **Most procedures do not require post-operative antibiotics**
  - Otherwise depending on type of procedure
    - Maximum of 24 hours
    - Maximum of 48 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.

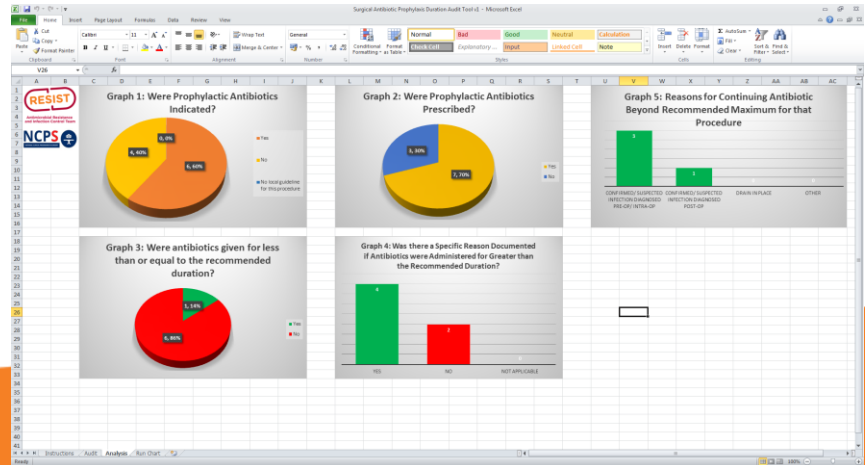


- Local discussions to progress implementation:
  - Surgical/theatre directorate
  - Antimicrobial advisory committee or Pharmacy & therapeutics committee
  - Quality & safety committee
  - Audit committee
- Suggested local quality improvement actions:
  - Amendment of operative notes proforma to encourage 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: [antibioticprescribing.ie](http://antibioticprescribing.ie)>acute hospital guidelines>surgical antibiotic prophylaxis
  - 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](mailto:antibiotics.prescribing@hse.ie)

Surgical Antibiotic Prophylaxis Audit Tool - Microsoft Excel

		Patient 1		Patient 2		Patient 3		Patient 4	
		Answer	If 'Other', please specify	Answer	If 'Other', please specify	Answer	If 'Other', please specify	Answer	If 'Other', please specify
Question 1	Quantity of 'Other', specify in next column	Correct		Correct		Gynaecology		Maxillofacial/Dental	
Question 2	Please specify the procedure carried out. If 'Other', specify in next column	Other	Lap right hemicolectomy with anastomosis	Other	Lap right hemicolectomy with anastomosis	Laparotomy		Otolaryngology maxilla with IF, bilateral	
Question 3	Is surgical antibiotic prophylaxis indicated for this procedure according to local guidelines?	Yes		Yes		Yes		Yes	
Question 4	Was an antibiotic prescribed? <b>If 'Yes', no further questions require completion</b>	Yes		No		Yes		Yes	
Question 5	What is the recommended maximum duration of antibiotic for this procedure according to local guidelines? If no local guidelines in place, what is the recommended maximum duration as per the RSE position statement on duration? <b>If 'Other', specify in next column</b>	Pre-op dose only				Pre-op plus intra-op dose(s)(where indicated)		Pre-op dose only	
Question 6	What duration was the antibiotic given for?	Pre-op plus intra-op dose(s)(where indicated)				4 days		3 days	
Question 7	Were antibiotics given for less than or equal to the recommended duration (as recommended by local guidelines or RSE position statement if no local guidelines)? <b>If 'Yes', no further questions require completion</b>	No				No		No	
Question 8	If antibiotics were administered for greater than the recommended maximum duration (local guidelines or RSE position statement) was there a specific documented reason?	Yes				Yes		No	
Question 9	If 'Yes' to Question 8, what was the reason for continuing the antibiotics beyond the recommended maximum for that procedure?	Confirmed/suspected infection diagnosed pre-op/ intra-op				Confirmed/suspected infection diagnosed pre-op/ intra-op			
Question 10	If (pre-)op/ post-operative antibiotics were decided on during the procedure, the reason for this documented in the operative notes?	No				Yes			



- Resources to support implementation:
- 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.

PractiLearn LMS - Google Chrome


HELP EXTEND MY LEARNING

### Learning outcomes

By the end of this course you will be able to:

- Indicate the factors that influence the right agent and right dose for surgical antibiotic prophylaxis.
- Identify the appropriate timings for initial dosing and re-dosing during surgical procedures to support better patient outcomes.
- Decide on the appropriate duration of surgical antibiotic prophylaxis to promote patient centred-care.

This course should take you approximately 30 minutes to complete.



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### Case study: Meet Tom

Tom is a 45-year-old man undergoing a transurethral resection of the prostate (TURP). He has a history of multiple UTIs.

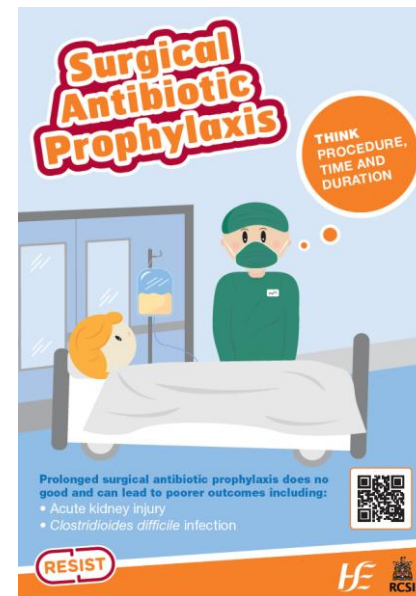
You've cared for previous patients who've developed a post-operative bloodstream infection after the TURP procedure and want to prevent that from occurring in Tom.

Select NEXT to continue.



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- Resources to support implementation: <https://www.healthpromotion.ie/products>
  - A3 posters and pens with key messaging
  - Patient information leaflet



- Resources to support implementation:
  - Communications e.g. RCSI bulletin, RESIST newsletter, Health Matters



HSE-AMRIC along with other HSE national programmes & colleges for surgery, anaesthesia and obstetrics have agreed a position paper about the use of antibiotic prophylaxis for the prevention of surgical site infection. The key message is that in most cases no further antibiotic is needed once the operation is finished but in some cases it may be useful to continue for 1 day and in others for 2 days.

The idea behind antibiotic prophylaxis is to have enough antibiotic in the tissues for the critical period at the time of surgery and in some cases for a short period afterwards. This has huge benefit in reducing the risk of infection but if the antibiotic is continued for too long there is no additional benefit and there is an increasing risk of harm from the antibiotic. Stopping antibiotic prophylaxis gives the best of both worlds with all the benefit and very little risk of harm.



# Thank you for your support in implementing this quality & patient safety initiative

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

