

## **1. Introduction and who this guideline applies to**

This guideline is aimed at all Health care professionals involved in the care of infants within the Neonatal Service.

### **Related UHL documents:**

[Antibiotics for Neonatal Infection UHL Neonatal Guideline C38/2015](#)

Gentamicin: Procedure for routine intravenous administration  
Gentamicin Therapeutic drug monitoring  
Prescription chart for: IV gentamicin only

### **Key Points:**

- Antibiotics are not recommended for clean non-prosthetic uncomplicated surgery.
- The choice of antibiotic prophylaxis should cover the organisms most likely to cause infection.
- The rationale for antibiotic choice for surgical prophylaxis and infection is based on existing antibiotic choice for early-onset and late-onset sepsis.
- Discuss with on call microbiologist for appropriate antibiotics if gentamicin is contraindicated

## **2. Background & guideline standards**

Antibiotic prophylaxis has been found to be effective in preventing surgical site infections following certain procedures. The term surgical site infection is used to encompass the surgical wound and infections involving the body cavity, bones, joints, meninges and other tissues involved in the operation. Prophylactic antibiotic reduces the growth of contaminating bacteria and thus reducing the risk of infection. The use of antibiotics however is associated risk of adverse side effects in the patient and inducing antibiotic resistance

therefore there should be clear indications of the need to give antibiotics in the first instance. Surgeries that require antibiotic prophylaxis are:

- clean surgery involving the placement of a prosthesis or implant
- clean-contaminated surgery
- contaminated surgery
- surgery on a dirty or infected wound (requires antibiotic treatment in addition to prophylaxis)

Antibiotics are not recommended for clean non-prosthetic uncomplicated surgery.

The choice of antibiotic prophylaxis should cover the organisms most likely to cause infection. There is lack of neonatal data to guide appropriate antibiotic choice and duration for surgical prophylaxis and infection. Thus, the rationale for antibiotic choice for surgical prophylaxis and infection is based on existing antibiotic choice for early-onset and late-onset sepsis.

### 2.1 Class Definition

CLEAN	Operations in which no inflammation is encountered and the respiratory, alimentary or genitourinary tracts are not entered. There is no break in aseptic operating theatre technique.
CLEAN CONTAMINATED	Operations in which the respiratory, alimentary or genitourinary tracts are entered but without significant spillage.
CONTAMINATED	Operations where acute inflammation (without pus) is encountered, or where there is visible contamination of the wound. Examples include gross spillage from a hollow viscus during the operation or compound/open injuries operated on within four hours.
DIRTY	Operations in the presence of pus, where there is a previously perforated hollow viscus, or compound/open injuries more than four hours old.

### 2.2 Common surgical pathogens

The antimicrobial agent chosen should have activity against the most common surgical-site pathogens. The predominant organisms causing surgical site infections (SSIs) after clean procedures are skin flora, including *S. aureus* [1]. In clean-contaminated procedures, including abdominal

procedures and heart, kidney, and liver transplantations, the predominant organisms include gram-negative rods and enterococci.

### 3. Audit standards

- Intravenous Flucloxacillin and Gentamicin is used as first line antibiotics for surgical prophylaxis and treatment.

### 4. References:

1. Hidron AI, Edwards JR, Patel J, et al. for the National Healthcare Safety Network Team and participating National Healthcare Safety Network facilities. Antimicrobial-resistant pathogens associated with healthcare-associated infections: annual summary of data reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention, 2006– 2007. *Infect Control Hosp Epidemiol.* 2008; 29:996–1011.
2. NICE Guidance Quality Standard QS49. Surgical Site Infection. October 2013
3. NICE Guidance NG125. Surgical Site Infections. Prevention and Treatment. April 2019, updated August 2020  
[nice.org.uk/guidance/ng125/surgical-site-infections-prevention-and-treatment-pdf](https://www.nice.org.uk/guidance/ng125/surgical-site-infections-prevention-and-treatment-pdf)
4. Carrie Laituri, Meghan A. Arnold. Standardized guideline for antibiotic prophylaxis in surgical neonates: *Seminars in Pediatric Surgery* 28 (2019) 53–56

### 5. Key Words

Clean surgery, Clean-contaminated surgery, Contaminated surgery, Dirty or infected surgery, Prophylactic antibiotic

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**The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.**

**As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.**

**Contact and review details**

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<b>Details of Changes made during review:</b>			
Date	Issue Number	Reviewed By	Description Of Changes (If Any)
<b>Apr 2014</b>	1	Neonatal Guidelines Meeting	New document
<b>Dec 2015</b>	2	Neonatal Guideline Meeting Neonatal Governance meeting	
<b>Dec 2019 – Jan 2020</b>	3	Neonatal Guideline Meeting Neonatal Governance meeting	
April 2024	4	Neonatal Guideline Meeting Neonatal Governance meeting UHL AWP UHL Women’s Quality & Safety Board	Added D/W on-call microbiologist if gentamicin contraindicated. Updated flow chart to include the above, tracheostomy under clean procedure and repeat flucloxacillin following prolonged surgery or severe blood loss now has cefotaxime as an alternative.

# Appendix1: Flow Chart for Surgical Prophylaxis

