



## Guide to Rational Therapy and Prevention of Infection in Hospitals

### Facts and Figures

- Healthcare associated infections result in **significant morbidity** for your patients:
  - 2-3 times longer stay in hospital, on average
  - Require more procedures and therapy
- Healthcare associated infections carry a high **attributable mortality**:
  - Pneumonia: 10%
  - Bloodstream infection: 25%
- Infections caused by antibiotic resistant bacteria have a **2-3 times higher mortality**, compared to infections caused by antibiotic sensitive bacteria
- The risk of healthcare associated infection and antibiotic resistance can be reduced by:
  - A. Modifying patient risk factors for infection**
  - B. Effective diagnosis of infection**
  - C. Effective treatment of infection**
  - D. Preventing transmission of infection**

Following the simple steps outlined in this guide will minimise the risk of infection in your patients.

More information is available at:

- National Disease Surveillance Centre (NDSC)  
[www.ndsc.ie/SARI](http://www.ndsc.ie/SARI)
- Centers for Disease Control (CDC), USA  
[www.cdc.gov/drugresistance/](http://www.cdc.gov/drugresistance/)
- Health Protection Agency (HPA), UK  
[www.hpa.org.uk/infections/topics\\_az/antimicrobial\\_resistance/menu.htm](http://www.hpa.org.uk/infections/topics_az/antimicrobial_resistance/menu.htm)

## A: Modify patient risk factors

### 1: Vaccinate

- Protect your patients
  - Give influenza and/or pneumococcal vaccine for unvaccinated at-risk children and adults (see immunisation guidelines for details)
  - Ensure children are up to date with routine vaccinations
- Protect yourself
  - Get the influenza vaccine every year

### 2: Get the devices out

- Insert catheters (urinary and vascular) and drains only when essential
- Use the correct catheter for the clinical situation
- Follow proper insertion technique that minimises trauma and infection risk
- Follow proper catheter care protocols
- Review the need for catheters and drains every day
- Remove catheters and drains as soon as they are no longer needed

### 3: Prevent surgical site infection

- Monitor and maintain normal blood glucose levels in surgical patients
- Maintain normothermia
- Perform proper skin preparation using appropriate antiseptic agent
- Avoid shaving the operative site

### 4: Prevent hospital-acquired pneumonia

- Wean patients from ventilators when appropriate
- Drain ventilator breathing circuit condensate away from the patient
- For patients on ventilators or with an enteral tube in place elevate the head of the bed to 30-45°
- Prevent contamination of respiratory therapy equipment, ventilator circuits and respiratory medications

## B: Diagnose infection effectively

### 1: Use appropriate clinical diagnosis of infection

- Always assess and document the clinical signs/symptoms of infection
- Always assess and document:
  - The likelihood of infection
  - The likely source of infection
  - The likely pathogen(s)

### 2: Use appropriate laboratory methods of diagnosis

- Order appropriate lab tests
- Obtain appropriate specimens
- If in doubt, contact your laboratory service for advice
- Always follow up on laboratory results and take appropriate action, where required

## C: Treat infection wisely

### 1: Get expert advice

- Consult a clinical microbiologist or infectious disease physician when dealing with complex infections
- For infections requiring drainage or debridement consult a surgeon or interventional radiologist

### 2: Use surgical antibiotic prophylaxis wisely

- Give the first dose within 1 hour prior to incision
- Use appropriate antimicrobial agent and dose
- Repeat dose during prolonged surgery, if needed to maintain blood levels
- Most procedures only need one dose
- Discontinue prophylaxis within 24 hours (even if catheters or drains are still in situ)

### 3: Practice antimicrobial stewardship

- Optimise timing, regimen, dose, route and duration of antimicrobials
- Avoid unnecessary use of broad spectrum agents
- Follow your local antibiotic policies
- Engage in local antimicrobial stewardship efforts

### 4: Use local data

- Know the common pathogens in your institution
- Know your local antimicrobial resistance patterns
- Know your local antimicrobial formulary
- Know your patient population (risk factors etc.)

### 5: Treat the patient, not the lab report

- Treat only if there is a clinical indication for treatment
  - A positive culture does not automatically mean there is infection
  - Treat bacteraemia, not catheter colonisation or contaminated blood cultures
- Use proper aseptic technique when taking blood and other cultures

### 6: Stop treatment as early as possible:

- When infection is unlikely
- When culture results indicate no need for antimicrobials
- When infection is cured

## D: Prevent transmission of infection

### 1: Practice effective hand hygiene

- Set an example to others
- Wash your hands or use an alcohol-based hand rub immediately after all patient contact
- Do not operate or carry out invasive procedures with:
  - Open sores on hands
  - Artificial nails

### 2: Practice infection control

- Follow local infection control policies
- Stay at home if you are sick
- Consult your local infection control team

Adapted from CDC Campaign to Prevent Antimicrobial Resistance in  
Healthcare Settings