CDC Campaign to Prevent Antimicrobial Resistance in Healthcare Settings

12 Steps to Prevent Antimicrobial Resistance Among Surgical Patients

Prevent Infection

Step 1. Prevent surgical site infections
- Monitor and maintain normal glycemia
- Maintain normothermia
- Perform proper skin preparation using appropriate antiseptic agent and, when necessary, hair removal techniques
- Think outside the wound to stop surgical site infections

Step 2. Prevent device-related infections: get the devices out
- Use catheters only when essential
- Use proper insertion and catheter-care protocols
- Use drains appropriately
- Remove catheters and drains when they are no longer essential

Step 3. Prevent hospital-acquired pneumonia
- Wean from the ventilator when appropriate
- Elevate head of bed to 30°
- Drain circuit/tubing condensate away from patient
- Prevent contamination of respiratory therapy equipment, ventilator circuits and respiratory medications

Diagnose and Treat Infection Effectively

Step 4. Target the Pathogen
- Target empiric antimicrobial therapy to likely pathogens
- Obtain appropriate cultures
- Target definitive antimicrobial therapy to known pathogens
- Optimize timing, regimen, dose, route, and duration of antimicrobial therapy
- Practice safe source control (e.g. debridement, or open wound as indicated)

Step 5. Access the Experts
- Consult the appropriate expert for complicated infections: surgeons; infectious disease experts; clinical pharmacists
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Use Antimicrobials Wisely

Step 6. Start prophylactic antimicrobials promptly
– Give the initial dose within one hour preceding incision
– Use the appropriate antimicrobial and dosing
– Repeat the dose during surgery as needed to maintain blood levels

Step 7. Stop prophylactic antimicrobials within 24 hours
– Discontinue use even with catheters or drains still in place

Step 8. Use local data
– Know your antibiogram
– Know your formulary
– Know your patient population

Step 9. Know when to say “no” to vanco
– Vanco should be used to treat known infections, not for routine prophylaxis
– Treat staphylococcal infection, not contaminants or colonization
– Consider other antimicrobials in treating MRSA

Step 10. Treat infection, not contamination or colonization
– Use proper antisepsis for drawing blood cultures
– Get at least one peripheral vein blood culture, if possible
– Avoid culturing vascular catheter tips
– Treat bacteremia, not the catheter tip

Prevent transmission

Step 11. Contain your contaminant and contagion
– Follow infection control precautions
– Consult infection control teams

Step 12. Practice Hand Hygiene
– Set an example
– Wash your hands or use an alcohol-based handrub
– Do not operate with open sores on hands
– Do not operate with artificial nails
– Promote good habits for the entire surgical team

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