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IMPLEMENTING LONG-TERM CARE INFECTION CONTROL GUIDELINES INTO PRACTICE: A Case-Based Approach

Annals of Long-Term Care: Clinical Care and Aging, Volume 18, Issue 2 (February 2010) **by Jon P. Furuno, PhD; Keith S. Kaye, MD, MPH; Preeti N. Malani, MD, MSJ and Lona Mody, MD, MSc** (Accessed: 1 August 2012)

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Infections cause significant morbidity and mortality in LTC facilities. However, infection control is often not straightforward and must be balanced with other clinical goals and the optimisation of residents' functional status, comfort and quality of life. This article relates five scenarios and provides infection control guidelines and key recommendations from the Society for Healthcare Epidemiology of America (SHEA) and Association for Professionals in Infection Control and Epidemiology (APIC).

Case 1: A resident with mild dementia, a neurogenic bladder (with a chronic indwelling urinary catheter) presents with increasing agitation, abdominal discomfort, reduced appetite and a low-grade fever. Physical examination shows a blood pressure of 120/54 mm Hg, 85/min pulse rate, 14/min respiration rate.

Key Questions
- Should I give my resident antimicrobial medication?
- How can I prevent future catheter-related urinary tract infections (UTIs)?

Diagnosing UTIs

Nearly all residents with chronic urinary catheters (>30 days) are likely bacteriuric even if asymptomatic. The following criteria helps to determine symptomatic UTI, and hence to decide if there is a need for antimicrobial medication:
- At least *three* of the following in non-catheterised patients: (i) fever (>38°C) or chills; (ii) new/increased burning pain on urination, frequency or urgency; (iii) new flank/suprapubic pain/tenderness; (iv) change in urine character; and/or (v) worsening of mental/functional status; or
- At least *two* of the following in patients with urinary catheters: (i) fever (>38°C) or chills; (ii) new flank/suprapubic pain/tenderness; (iii) change in urine character; and/or (iv) worsening of mental/functional status.

Preventing Catheter-Associated UTIs:

- Maintain a sterile and closed drainage system;
- Discourage the use of leg bags due to increased risk for interruption of a closed drainage system;
- Ensure sufficient hydration;
- Ensure proper hand hygiene before/after catheter care; and
- Implement a UTI prevention programme: Develop criteria on the use of long-term indwelling urinary catheters and protocols to limit/eliminate unnecessary catheter use. *Routine urinalysis/urine culture to screen for bacteriuria/pyuria and irrigation of indwelling catheters with saline/antiseptics are not recommended*.

Case 2: A resident with congestive heart failure, advanced dementia and moderate impairment of activities of daily living (ADL) presents with confusion, cough, fever and visual hallucinations. Physical examination shows a blood pressure of 101/40 mm Hg, 125/min pulse rate, 26/min respiration rate and pulse oximetry is 84 per cent.

Key Questions
- What are the next steps in management of this resident?
- How can pneumonia be prevented in residents?

Diagnosing Pneumonia

Signs of pneumonia in the elderly are frequently atypical. The following should also be considered to determine pneumonia: Fever, new/increased cough, altered mental status and increased respiratory rate above 30 bpm. The work-up for suspected pneumonia should include: Pulse oximetry; chest radiograph; and complete blood count with differential, serum creatinine and blood urea nitrogen.

Preventing Pneumonia

Practise infection control measures which include:
- Good hand hygiene after contact with respiratory secretions;
- Wearing gloves for suctioning;
- Elevating the head of the bed 30° to 45° during and at least an hour after tube feeding to decrease aspiration; and
- Vaccinating high-risk residents with pneumococcal vaccine.

Case 3: An anterior nasal surveillance culture performed during a resident's stay in the hospital yields Methicillin-resistant Staphylococcus aureus (MRSA). Upon discharge to his LTC facility, he is asymptomatic, healthy, continent and requires minimal assistance with ADLs.

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Key Questions
- Does this resident require a private or shared room with another MRSA-positive resident?
- Should this resident be allowed to attend communal meals and activities?
- Should an attempt be made at decolonisation?

Managing MRSA-Colonised Residents
- MRSA-colonised residents do not necessarily need to be isolated or prohibited from attending communal meals/activities if they are healthy, as illustrated in this case.
- Avoid systematic antimicrobial agents as part of decolonisation therapy as this increases MRSA resistance and limits therapeutic options during infections.
- Decolonisation is not recommended.

Preventing the Spread of MRSA
- Practise infection control measures and use gowns/gloves only when there is potential contact with body secretions and/or wounds/stool; and
- Adjust infection control policies based on changes in the resident's clinical condition (e.g., restrict resident's movement if they are unable to control bodily secretions).

Case 4: A urine culture yields Acinetobacter baumannii, which is resistant to all antimicrobials except *imipenem*. The resident is otherwise healthy, continent but requires assistance with ADLs.

Key Questions
- The resident has no urinary symptoms. Is there a role for treatment/repeating of diagnostic tests such as urine culture/urinalysis?
- Should this resident be placed in a private room or isolated from others?
- Should contact precautions be used by staff?
- Is there a role for sending other types of cultures such as perirectal/nares swab?
- Is there a role for decolonisation/empiric treatment with antimicrobial agents?

Managing Multi-Drug Resistant Organisms (MDROs)
- There is no need to treat asymptomatic bacteriuria or conduct further tests;
- Contact precautions, room isolation or movement restrictions are not required, except when residents have draining wounds or uncontrolled secretions.
- There is no need to send a culture from another anatomic site.
- Decolonisation is not recommended.

Preventing the Spread of MDROs
- Contact precautions, room isolation or movement restrictions are not required, except when residents have draining wounds or uncontrolled secretions.

Case 5: A resident has Clostridium difficile (C.difficile) but no longer experiences diarrhoea after a 10-day course of oral *vancomycin*.

Key Questions
- What type of transmission-based precautions should be followed?
- Is there a role for repeat stool testing to document clearance of toxin?

Managing C.difficile
- Treated asymptomatic residents do not need contact precautions or restrictions in activities.
- Stool toxin test for asymptomatic C.difficile patients who have completed treatment and are clinically well is not recommended.

Preventing the Spread of C.difficile
Implement contact precautions for residents with C.difficile-related diarrhoea, which include:
- Adhering strictly to hand hygiene protocols;
- Monitoring patients with recurrence of diarrhoea closely with testing done based on the clinical index of suspicion; and
- Washing hands with soap and water (alcohol-based products are not effective against C.difficile spores).

Additional Resources:
- Society for Healthcare Epidemiology of America at **shea-online.org**
- Association for Professionals in Infection Control and Epidemiology at **apic.org**

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