Infection prevention and control

Standardised care process

Objective
To promote evidence-based practice in the prevention and control of infection for older people who live in residential settings.

Why the management of infection is important
Older adults with multiple comorbidities and high care needs residing in residential aged care facilities are at risk of acquiring infections because of close living proximity and frequent contact between resident and nurse and resident and co-resident (Lim et al. 2015; van Buul et al. 2012).

The Aged Care Quality Standards identify that organisations must demonstrate the following: Minimisation of infection-related risks to consumers, the workforce and the broader community through implementing:
   a) standard and transmission-based precautions to prevent and control infection
   b) practices to promote appropriate antibiotic prescribing and use to support optimal care and reduce the risk of increasing resistance to antibiotics (Standard 3) (Department of Health 2018)

Antimicrobial stewardship is an important component of an infection prevention and control program. This SCP should be read/used in conjunction with the Antimicrobial stewardship SCP.

Definitions

Infection: 'when an infectious agent enters the body and multiplies to levels where it causes disease’ (NHMRC, 2013. p2)
Infectious agents: organisms that cause infection (bacteria, viruses, fungi and parasites) (NHMRC, 2013. p2)
Colonisation: “when an infectious agent establishes itself on, or in, the body but does not cause disease” (NHMRC, 2013. p2)
Contamination: “when infectious agents spread to a surface or item, creating risks for the spread of infection” (NHMRC, 2013. p2)
Transmission: “The spread of infectious agents from one person to another” (NHMRC, 2013. p2)
Multi-resistant organism (MRO): “a type of infectious agent that has become resistant to a number of different antibiotics normally used in its treatment”. Examples of MROs include Methicillin-resistant Staphylococcus aureus (MRSA), Vancomycin-resistant enterococci (VRE) and Clostridium difficile (NHMRC, 2013. p7).

Standardised care process (SCP): This has been developed for the Department’s Strengthening Care Outcomes for Residents with Evidence (SCORE) initiative through comprehensive review of evidence and consultation with public sector residential aged care stakeholders and experts to mitigate significant clinical risk in residential aged care services.

Clinical risk: is where action or inaction on the part of the organisation results in potential or actual adverse health outcome on consumers of health care (Department of Health, 2012, p5)

Team
Manager, registered nurses (RNs), enrolled nurses (ENs), personal care attendants (PCAs), leisure and lifestyle, general practitioner (GP), infection control professionals, residents and/or family/carers; and access to microbiologist, infectious disease physician, continence advisor, wound consultant, allied health professionals such as physiotherapist, occupational therapist.

Acknowledgement

This SCP has been developed and reviewed by the Australian Centre for Evidence Based Care, La Trobe University for the Department of Health and Human Services based on the best available evidence in 2018.
Brief standardised care process

Recognition and assessment

Early detection of infection can help prevent the transmission to other residents, staff and visitors. When an infection is suspected, a diagnosis should be sought. Collect clinical and diagnostic evidence to confirm presence, source and type of infection.

- Carry out a physical examination and collect vital signs
- Seek resident report of symptoms
- Review history for previous infections, predisposing illness, vaccination status, medicines, lifestyle factors and previous living environment
- Consider non-infective causes
- Observe for new, rapidly increasing or atypical signs and symptoms of infection
- If new or increasing signs or symptoms of infection are present carry out diagnostic testing and follow up results promptly as treatment is based on these results
- If there are no typical or atypical signs or symptoms of infection there is no need for microbiology or other tests

Document and communicate any assessment findings, including signs and symptoms of infection in a timely and effective manner to the appropriate members of the health care team and in the resident’s health care record.

Interventions

Prevention strategies should be implemented to prevent infections in residential aged care. These include:

- the exemplary practice of standard and transmission-based precautions
- identifying residents who are susceptible to infection
- identifying and addressing the organisational and staff risk factors for transmission of infection
- enhancing the resident’s ability to resist infections
- staff and resident immunisation program
- early identification of gastroenteritis and respiratory outbreaks and implementation of outbreak management.

Referral

- General Practitioner
- Microbiologist
- Public Health Unit
- Pharmacist
- Infection control professionals
- Infectious disease physician
- Continence advisor/wound consultant

Evaluation and reassessment

Maintain ongoing monitoring for:

- continuing compliance with recommended interventions
- improvement in clinical picture and resolution of symptoms
- evidence of new infection
- continuing compliance with the organisation’s infection prevention and control policy and procedures by staff
- factors that might increase the risk of infection

Continue to document progress in the notes.

Resident involvement

Provision of general education to residents and family:

- How to prevent the spread of infection through correct hand hygiene practices and cough etiquette
- Information on the requirements for transmission-based precautions
The difference between bacterial and viral infections and the role of antimicrobials

**Staff knowledge and education**

A member of the clinical team holds the portfolio for infection prevention and control. The whole clinical care team receives education on recognising signs and symptoms of infection; recognising and acting on possible outbreak situations; infection prevention and control interventions and the importance of accurate and descriptive documentation.
Full standardised care process

Recognition

Early detection of infection can help prevent the transmission to other residents, staff and visitors.

Assessment

When an infection is suspected, a diagnosis should be sought.

Collect clinical and diagnostic evidence to confirm presence, source and type of infection
- Carry out a physical examination and collect vital signs (temperature, pulse, blood pressure, respiration rate, oxygen saturation).
- Seek resident report of symptoms (although caution should be taken for accuracy where there is cognitive impairment, communication impairment and uncorrected hearing impairment).
- Review history for previous infections, predisposing illness, vaccination status, medicines, lifestyle factors and previous living environment.
- Consider non-infective causes (e.g. underlying co-morbidities or medication changes).

Observe for new or rapidly increasing signs and symptoms of infection, which include:
- fever of single oral temperature ≥37.8oC, repeated oral temperatures ≥37.2 or rectal temp ≥37.5oC or single temperature ≥1.1oC over baseline from any site (oral, tympanic, axillary)
- acute change in mental status from baseline and delirium
- acute functional decline
- malaise and loss of energy
- inflammation
- pain
- increased respiratory rate (over 25 breaths per minute), oxygen saturation of 90% or less
- increased pulse
- skin changes (rash, blisters)
- body fluids (amount, colour, turbidity, odour)
- elevation in white blood cell count (leucocytosis)

Note signs and symptoms of infection may be slow onset, vague, masked or absent in the older adult, particularly where the resident has decreased immune function. Observe for atypical signs and symptoms:
- low grade fever or afebrile
- fever with lethargy
- fever in the absence of any other indications or source
- subtle change in mental status and confusion
- behaviour change (e.g. uncooperative, increased lethargy)
- falls and functional decline
- incontinence
- loss of appetite
- vague systemic symptoms
- complicating comorbidities

If new or increasing signs or symptoms of infection are present carry out diagnostic testing:
- Where bacterial or viral infection is suspected, obtain appropriate microbiology specimens prior to the commencement of the antimicrobial
- Transfer microbiological specimens to laboratories in a timely manner to maintain specimen quality. Check with your pathology provider for storage requirements and handling of specimens
- Follow up diagnostic results promptly as treatment is based on these results
- Radiology (as required)
If there are no typical or atypical signs or symptoms of infection there is no need for microbiology or other tests.

In the case of suspected urinary tract infection (UTI), do not rely on microbiology results alone, as diagnosis of a UTI is based on the presence of a typical clinical presentation. Screening for, or treatment of, asymptomatic bacteriuria is not recommended. Urinary dipstick testing is only ‘necessary’ if there is a typical clinical presentation of UTI.

Document and communicate any assessment findings, including signs and symptoms of infection in a timely and effective manner to the appropriate members of the health care team and in the resident’s health care record.

**Interventions**

**Prevention**

There are a number of strategies that can be implemented to prevent infections in residential aged care. These include identifying and minimising risk factors for transmission of infection and the exemplary practice of standard and transmission-based precautions.

Residents who are susceptible to infection should be identified. The risk factors include:

- compromised immune system
- immunosuppression caused by medications and health conditions
- multiple or prolonged recent hospitalisations
- prior exposure to [broad spectrum] antimicrobials
- a wound or pressure injury
- frailty, poor functional status or immobility
- urinary and faecal incontinence (increases the risk of UTI)
- presence of indwelling devices (e.g. urinary catheters, percutaneous feeding tubes, central lines, peritoneal dialysis and haemodialysis)
- social and lifestyle factors such as exposure to toxic substances, malnutrition, stressful life events

Organisational risk factors for transmission of infection should be identified and addressed. These include:

- an inadequate infection prevention and control policy
- staffing deficits (high resident-to-staff ratio, frequent staff turnover and inadequate numbers of clinical staff)
- limited facilities for hand hygiene

Standard precautions are practised at all times by all staff, for all work practices and following every contact with all residents. These include:

- personal hygiene practices, particularly hand hygiene
- the use of personal protective equipment
- safe handling and disposal of sharps
- routine cleaning of the environment and managing spills (blood and other body substances)
- reprocessing (cleaning, disinfection, sterilisation) of reusable instruments and equipment
- respiratory hygiene and cough etiquette
- aseptic non-touch technique for all clinical procedures
- safe handling of waste and linen
- provision of alcohol-based hand sanitizer in publicly accessible areas and resident bedrooms

Transmission-based precautions should be initiated in addition to standard precautions to prevent transmission of significant pathogens to other residents, staff and visitors during an outbreak. This includes:

- appropriate use of personal protective equipment by staff and visitors when in direct contact with the resident or their care environment
- the use of dedicated equipment for the resident
- allocation of single rooms or cohorting of residents
• enhanced cleaning and disinfection of the resident’s environment. Frequency of environmental cleaning and disinfection during an outbreak should be increased to at least twice daily, particularly for frequently touched surfaces such as overbed tables and door handles. Use appropriate disinfectant as per dilution ratios in DHHS guidelines
• restrict or safe transfer of residents within and between facilities and other locations
• restrict movement of staff within, and between, facilities
• encourage immunization of unvaccinated staff and residents

Staff infection control measures
• encourage staff to maintain the recommended health care worker immunisations and yearly influenza vaccinations and maintain a record of staff vaccinations
• encourage staff to report if they are experiencing symptoms related to possible infection (diarrhoea, vomiting, fever, sore throat or jaundice) or infected skin lesions; and to take sick leave as recommended by local infection control guidance or their GP
• Minimise wearing of jewellery. False fingernails have been associated with infection transmission and should not be worn by clinical staff
• Manage work clothing if soiled with blood or body fluids, and wash daily

Minimise resident exposure to infection
• identify care-based interactions and resident risk factors that increase the transmission of infection including multidrug resistant organisms
• minimise the use of invasive devices where possible (urinary catheters) and remove when no longer required
• ensure compliance with standard precautions

Enhance the resident’s ability to resist infections
• encourage recommended immunisation for older adults; e.g. seasonal influenza, herpes zoster and pneumococcal
• optimise nutritional status and fluid intake
• stress management
• mobility/exercise (according to the resident’s capabilities)

**Outbreak management**
The most common outbreaks in the residential aged care setting are gastroenteritis and respiratory illness. Always access DHHS guidelines to ensure adequate management of outbreaks

Respiratory outbreak management strategies should be initiated when three or more residents in a unit or facility are symptomatic within a 3-day period.

Gastroenteritis outbreak management strategies should be initiated when two or more residents or staff in a unit or facility are symptomatic within a 2-day period.

The following outbreak management strategies should be swiftly instigated:
• early identification and reporting of residents who are unwell
• the facility’s infection control procedures must be followed
• consultation with public health authorities
• post signage to alert visitors of outbreak
• initiate transmission-based precautions in addition to standard based precautions

**Referral**
• General Practitioner
• Microbiologist
• Public Health Unit
• Pharmacists to ensure antimicrobial are ordered and managed correctly and to review microbiology data
• Infection control professionals
• Infectious disease physician
• Continence advisor/wound consultant

**Evaluation and reassessment**

• Monitor for continuing compliance with recommended interventions
• Monitor for improvement in clinical picture and resolution of symptoms
• Monitor for evidence of new infection in the individual resident and in the general resident population
• Monitor staff for continuing compliance with the organisation's infection prevention and control policy and procedures.
• Monitor and report any factors that might increase the risk of infection for individual residents or the general resident population.
• Continue to document progress in the notes, including signs and symptoms of infection

**Resident involvement**

Provision of general education to residents and family:
• How to prevent the spread of infection
• Correct hand hygiene practices and cough etiquette
• Information on the requirements for transmission-based precautions
• The difference between bacterial and viral infections and the role of antimicrobials
• Expectations and goals of care

**Staff knowledge and education**

A member of the clinical team holds the portfolio for infection prevention and control with appropriate training.

The whole clinical care team receives education on:
• recognising signs and symptoms of infection
• recognising and acting on possible outbreak situations
• infection prevention and control interventions
• importance of accurate and descriptive documentation
Evidence base for this standardised care process

Australian Commission on Safety and Quality in Health Care (ACSQHC), 2018, Antimicrobial Stewardship in Australian Health Care, ACSQHC, Sydney.


Centres for Disease Control and prevention (CDC) 2015, The Core Elements of Antibiotic Stewardship for Nursing Homes, US Department of Health and Human Services, CDC, Atlanta, GA


Lim CJ, Stuart RL, Kong DC 2015, Antibiotic use in residential aged care facilities, Australian Family Physician, vol.44, no.4, pp. 192-196

National Health and Medical Research Council (NHMRC) 2013, Prevention and control of infection in residential and community aged care, Australian Government Department of Health and Ageing, Canberra


