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 aged care settings.

Why the management of infection is important

Older adults with multiple comorbidities and high care needs living in residential aged care facilities are at risk of acquiring infections because of close living proximity and frequent contact between residents and staff and among residents (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 (Aged Care Quality and Safety Commission, 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

Clinical risk: Where action or inaction on the part of the organisation results in a potential or actual adverse health outcome on consumers of health care (Department of Health 2012, p. 5).

Colonisation: 'When an infectious agent establishes itself on, or in, the body but does not cause disease' (NHMRC 2013, p. 2).

Contamination: 'When infectious agents spread to a surface or item, creating risks for the spread of infection' (NHMRC 2013, p. 2).

Infection: 'When an infectious agent enters the body and multiplies to levels where it causes disease' (National Health and Medical Research Council (NHMRC) 2013, p. 2).

Infectious agents: Organisms that cause infection (bacteria, viruses, fungi and parasites) (NHMRC 2013, p. 2).

Multi-resistant organism: 'A type of infectious agent that has become resistant to a number of different antibiotics normally used in its treatment'. Examples include methicillin-resistant Staphylococcus aureus, vancomycin-resistant enterococci and Clostridium difficile (NHMRC 2013, p. 7).

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

Transmission: 'The spread of infectious agents from one person to another' (NHMRC 2013, p. 2).

Team

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

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Brief standardised care process

Recognition and assessment

Early detection of infection can help prevent transmission to other residents, staff and visitors. When an infection is suspected, a diagnosis should be sought.

Collect clinical and diagnostic evidence to confirm the presence, source and type of infection.

- Carry out a physical examination and collect vital signs.
- Ask the resident about their symptoms.
- Review the resident's 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 – 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 healthcare team and in the resident's health 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 infection transmission
- enhancing the resident's ability to resist infections
- implementing a staff and resident immunisation program
- early identification of gastroenteritis and respiratory outbreaks and implementing outbreak management.

Referral

- General practitioner
- Microbiologist
- Public Health authority
- Pharmacist
- Infection control professional
- Infectious disease physician
- Continence advisor/wound consultant

Evaluation and reassessment

Maintain ongoing monitoring for:

- continuing compliance with recommended interventions
- improvement in the clinical picture and resolution of symptoms
- evidence of a 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

Provide general education to residents and families on:

- how to prevent the spread of infection through correct hand hygiene practices and cough etiquette
- 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 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 the presence, source and type of infection.

- Carry out a physical examination and collect vital signs (temperature, pulse, blood pressure, respiration rate, oxygen saturation).
- Ask the resident about their symptoms (although caution should be taken for accuracy where there is a cognitive impairment, communication impairment or uncorrected hearing impairment).
- Review the resident's history for previous infections, predisposing illness, vaccination status, medicines, lifestyle factors and previous living environment.
- Consider non-infective causes (for example, underlying comorbidities or medication changes).

Observe for new or rapidly increasing signs and symptoms of infection, which include:

- fever of single oral temperature ≥ 37.8°C, repeated oral temperatures ≥ 37.2°C or rectal temp ≥ 37.5°C or single temperature ≥ 1.1°C 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 per cent or less
- increased pulse
- skin changes (rash, blisters)
- bodily 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 older adults, 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 (for example, 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 before starting an 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.
- Refer to 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 a 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 healthcare team and in the resident's health record.

Interventions

Prevention

A number of strategies 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 (for example, 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 a resident. 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
- providing alcohol-based hand sanitiser 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
- allocating 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 departmental guidelines)
- restricting or safely transferring residents within and between facilities and other locations
- restricting movement of staff within, and between, facilities
- encouraging immunisation of unvaccinated staff and residents.

Staff infection control measures

- Encourage staff to maintain the recommended healthcare 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 such as seasonal influenza, herpes zoster and pneumococcal.
- Optimise nutritional status and fluid intake.
- Manage stress.
- Encourage 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 public health 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 three-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 two-day period.

The following outbreak management strategies should be swiftly instigated:

- early identification and reporting of residents who are unwell
- follow the facility's infection control procedures
- consult with public health authorities
- post signage to alert visitors of the outbreak
- initiate transmission-based precautions in addition to standard precautions.

Referral

- General practitioner
- Microbiologist
- Public Health authority
- Pharmacist to ensure antimicrobial are ordered and managed correctly and to review microbiology data
- Infection control professional
- 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 a 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

Provide general education to residents and families on:

- how to prevent the spread of infection
- correct hand hygiene practices and cough etiquette
- 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
- the importance of accurate and descriptive documentation.

Evidence base for this standardised care process

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Important note: This SCP is a general resource only and should not be relied upon as an exhaustive or determinative clinical decision-making tool. It is just one element of good clinical care decision making, which also takes into account resident/patient preferences and values. All decisions in relation to resident/patient care should be made by appropriately qualified personnel in each case. To the extent allowed by law, the Department of Health and Human Services and the State of Victoria disclaim all liability for any loss or damage that arises from any use of this SCP.

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