

Australasian College for Emergency Medicine

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Reducing the Spread of Communicable Infectious Disease in the Emergency Department

Guideline

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Document review

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V4	Sep 2017	Suggestions and small edits to content made
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V6	July 2023	Revisions based on COVID-19 pandemic and further changes to contemporary practice

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1. Purpose

Preventing the transmission of infectious diseases in healthcare settings is vital to delivering safe patient care and ensuring a safe working environment for healthcare workers. This document outlines the Australasian College for Emergency Medicine's (ACEM) recommendations and guidelines to mitigate the risk of spreading communicable infectious diseases in the emergency department (ED).

2. Scope

This guideline is applicable to all EDs in Australia and Aotearoa New Zealand. It should be applied in conjunction with relevant jurisdictional (national, state or territory) guidelines, (1) including any additional recommendations related to specific public health emergencies or novel infectious diseases.

All staff have a role to play in reducing communicable disease transmission to keep patients, staff, and visitors safe. This includes clinical staff, support staff, administrators, and managers. The hospital executive is also responsible for ensuring that infection prevention and control measures are supported and implemented effectively.

3. Definitions

Aerosol

A collection of pathogen-laden airborne particles emanating from an infectious person. They are deposited onto or are inhaled by a susceptible person. Aerosol transmission is seen with diseases such as COVID, measles and tuberculosis. (2)

Airborne infection isolation room

A dedicated, self-contained room, such as a negative pressure or Type 5 (respiratory) isolation room, used to isolate a suspected or actual infectious patient from other patients. Ideally, patients that are suspected or confirmed to have an infection that requires airborne precautions should be isolated in such rooms. (3)

Communicable infectious disease

Communicable infectious diseases are spread from one person to another. They include pathogens such as bacteria, viruses, fungi and parasites. (4)

Contact Transmission

Infectious disease transmitted when an infected person has direct bodily contact with an uninfected person and the microbe is passed from one to the other. Diseases transmitted via contact. (5)

Droplet

Bacteria or viruses travel on relatively large respiratory droplets, secreted when an infectious person's sneezes, coughs, or exhales. These droplets can travel up to 2.4 metres. (5)

Epidemic

An increase, often sudden, in the number of cases of a disease above the expected level. (6)

Pandemic illnesses

The global outbreak of an infectious disease, with viral respiratory diseases like coronavirus COVID-19 and influenza being the most likely to turn into a pandemic. (7-9)

Personal Protective Equipment (PPE)

The general term given to equipment that protects the wearer from a workplace infection or injury. Examples of PPE include gloves, goggles, face masks, impervious gown, and powered air purifying respirator (PAPR) devices. (1,7)

Standard precautions

The work practices required to achieve a basic level of infection prevention and control, which should be performed universally for all patients, regardless of perceived infectious status. Such practices include hand hygiene, use of PPE, safe disposal of sharps, aseptic 'non-touch' techniques for invasive procedures, appropriate reprocessing of reusable instruments/equipment, environmental cleaning, waste management, respiratory hygiene and cough etiquette, and the appropriate handling of linen. (1, 10)

Transmission Based Precautions

Transmission-based precautions are recommended as additional work practices in situations where standard precautions alone may be insufficient to prevent transmission. (1) The precautions applied are tailored to the mode of transmission of the suspected or confirmed pathogen, e.g., contact, droplet, airborne. (12)

4. Background

The core function of an ED is to provide unscheduled acute care for undifferentiated patients. This places ED staff and patients at risk of exposure to infectious illnesses before a microbiological diagnosis is possible. Effective mitigation of risk requires a collaborative and coordinated approach, in which interventions are implemented in accordance with the hierarchy of control measures, and in consultation with frontline staff. (13) All staff have a role to play in reducing the risk of transmission of infectious diseases, including clinical staff, support staff, administrators, managers, and hospital executive.

Effective infection prevention and control is very difficult to achieve or maintain in the setting of ED overcrowding. Access block and overcrowding are the most serious issues facing our hospital system and are the direct result of lack of inpatient bed capacity in Australia and Aotearoa New Zealand. Furthermore, the occurrence of infectious disease surge events (such as seasonal, epidemic, or pandemic outbreaks) can exacerbate these existing risks for patients and staff.

Strict adherence to standard precautions is a core measure to prevent hospital-acquired infections. In addition to standard precautions, transmission-based precautions should be applied to patients suspected of, or with confirmed infections transmitted by contact, droplet, airborne or a combination of routes. (10) This should include the physical isolation or cohorting of infectious patients where appropriate. (13) The COVID-19 pandemic has illustrated some of the challenges and complexities of implementing precautions for staff.

5. Recommendations

Hospitals, EDs and individual staff all have responsibilities to reduce the risk of transmission of infectious disease in the ED.

5.1 Hospital responsibilities

The hospital executive must ensure that the ED is supported to deliver safe patient care and a safe working environment for staff. Specific recommendations are as follows:

- A whole of system approach is employed to reduce access block and ED overcrowding, which are major contributors to patient risk and the transmission of infectious disease in ED.
- Policies and procedures are in place to ensure that patient care is not delayed or restricted to ED due to a patient's infectious status, either confirmed or suspected.
- EDs have access to the necessary resources to adhere to standard and transmission-based precautions. Adequate PPE should be available, in a range of sizes to meet the needs of staff, including fit-tested equipment where required. This also includes safe procedures for cleaning and

management of contaminated waste, (such as used PPE, linen, clinical waste).

- EDs have the requisite infrastructure, such as adequate total ventilation, to allow implementation of applicable infection prevention and control guidelines during routine operations. Isolation and engineering controls are more reliable and offer higher levels of protection than administrative controls or PPE, and therefore should be preferentially implemented to mitigate risk as far as reasonably practicable. (12, 13)
- ED design imperatives must reflect the principles of infection control as applied throughout the patient journey.
- Quality improvement systems are in place to collect data, monitor and report on performance in infection prevention and control. (11) Example indicators include rates of healthcare-associated infections or adequacy of access to isolation and negative pressure rooms in the ED.
- Effective communication strategies should be established between the ED, inpatient services, and hospital executive to assist in the assessment, mitigation, and management of risk from communicable infectious diseases.
- Additional surge capacity for local outbreaks, pandemics or seasonal epidemics must be accounted for in ED design and infrastructure. This must include considerations for adaptability in space use, zoning and partitioning, and associated airflow and ventilation controls to permit surge processes such as patient flow separation and cohorting based on risk stratification.
- The ED is provided with additional resources to manage unplanned, increased workload during surge events such as local outbreaks, seasonal epidemics, or pandemics. This includes physical resources, e.g., PPE, as well as adequate workforce to maintain safe operation.
- The hospital plans for and implements alternative models of care during surge events to reduce ED overcrowding and to divert infectious patients to other appropriate locations for ongoing care (e.g., flu clinics).
- Healthcare workers meet immunisation requirements to safeguard from vaccine-preventable diseases, and, where there are vaccine contraindications, appropriate risk management strategies are in place for individual staff. Staff should be supported to access annual vaccinations, such as for influenza, through their workplace.
- The ED has Increased staffing capacity, with governance recognising the effects of furlough, sickness, and PPE fatigue.
- Hospital disaster planning and exercises should include pandemics and infectious disease outbreaks.

5.2 Emergency department responsibilities

EDs should have systems in place to support, promote and monitor compliance with infection control guidelines to ensure safety for staff, patients, and visitors.

Specific recommendations for EDs are:

- Ensure staff have adequate training to prevent and control infection transmission in the ED. (12)
- Implement regular quality monitoring of adherence to standard and transmission-based precautions, for example hand hygiene audits, rates of hospital-acquired infections, rates of central line infections for lines placed in ED.
- Ensure access to appropriate PPE to facilitate adherence to standard and transmission-based precautions. Where applicable, PPE should be available in a range of sizes appropriate to staff requirements. Where scientific knowledge (such as mode(s) of transmission) is lacking, emerging, or rapidly evolving, a precautionary approach in mitigating transmission risk to staff and patients should be adopted. (12)
- Ensure that staff who will need to use PPE as part of transmission-based (such as contact, droplet or airborne) precautions are taught how to safely apply and remove the PPE and undergo fit-testing for N95/P2 masks and respirators on an annual basis, with appropriately personalised training that reflects individual fit-test results. (14, 15)
- Have policies and procedures in place to manage surge events and to escalate risks to the hospital executive where these are identified.

- Ensure that staff are provided with access to relevant and up-to-date information regarding infection prevention and control, especially in the situation of local outbreaks and emerging infectious threats.

Sources of Jurisdictional Information

Department of Health (DOH) website in Australia:

[NSW Health – Infectious Diseases Communicable Diseases Weekly Report](#)

[Queensland Health – Notifiable Conditions Report](#)

[NT Department of Health – Notifiable Diseases](#)

[WA Health – State-wide Notifiable Diseases Weekly Report](#)

[SA Health – Surveillance of Notifiable Conditions](#)

[VIC Health Department – Infectious Diseases Surveillance in Victoria](#)

[ACT Government Health- Disease Surveillance](#)

[Tasmanian Government: infectious Diseases Guides and Factsheets](#)

Ministry of Health (MOH) website in Aotearoa New Zealand:

[New Zealand Public Health Action– Monthly Surveillance Report](#)

EDs should support staff compliance with public health recommendations to exclude themselves from work when unwell with infectious conditions. Disease-specific exclusion periods for healthcare workers are defined in national guidelines and should be incorporated in local ED policy and practice. (1) Ensuring systems are in place to manage rosters and sick leave are vital to creating a supportive culture that enables sick leave uptake.

Similarly, during outbreaks and pandemics, EDs should support and manage staff who are required to isolate and quarantine following infection or exposure. There should be clearly defined contingency strategies in place to maintain adequate workforce for safe service provision should there be significant staff absenteeism, including clear escalation procedures where safety is at risk of being compromised. (12)

5.3 ED staff responsibilities

All staff in the ED have a responsibility to practice in accordance with the relevant professional guidelines and to maintain their knowledge and skills to reduce transmission of infectious diseases in ED. Specific responsibilities are as follows:

- ED staff should maintain their training and competence in relation to current infection control practices and should ensure their knowledge is current, particularly in relation to emerging risks (e.g. seasonal outbreaks, local outbreaks, novel infectious diseases). This includes practical competence in the safe and effective use of standard and transmission-based precautions.
- ED staff should exercise due professional diligence in their adherence to infection prevention and control practices and should support their colleagues to do the same.
- ED staff have a responsibility to follow public health guidelines when they are affected by an infectious condition, to reduce the risk of transmission to colleagues and patients. This includes those with suspected disease and those who have been exposed to an infectious disease.
- Individuals should ensure they are up to date with all relevant recommended immunisations to prevent vaccine-preventable disease transmission in the ED.

6. Guidelines to Reduce the Risk of Hazards within the ED

6.1 Hazard identification and communication

Emergency departments must ensure that patients who are at risk of having an infectious condition (either suspected or confirmed) are identified in a timely manner and that any relevant transmission-based precautions are implemented as soon as practicable. This includes isolation or cohorting of patients where applicable. Early identification and management is particularly important for high-risk diseases, for example, novel infections, highly infectious conditions, or infections with high rates of significant morbidity or mortality. Travel surveillance should operate at triage in all cases of actual or reported fever.

During a surge event, enhanced screening for infectious symptoms should be employed at triage and appropriate signage should be employed to alert patients and families to volunteer relevant information, such as symptoms, exposure or overseas travel.

Hospitals and EDs should have procedures in place to identify, record and communicate risk for patients with confirmed or suspected infectious conditions, and these should be easily accessible to all staff. Examples may include an alert system on the electronic medical record (EMR), bedside signage, wrist bands and/or alert stickers on paper records. Infection risk status should be communicated at every handover or transfer of care.

Hospitals should have procedures in place to escalate to the hospital Infection Prevention and Control (IPC) service and other relevant clinical teams (for example, Infectious Diseases) when a high risk infectious condition is identified or suspected. EDs should have systems in place to follow up results of high-risk infectious disease testing carried out in the department and to ensure that important results are acted upon in a timely manner. Notifiable diseases should be notified to the relevant jurisdictional body as soon as practicable.

6.2 Reducing the risk of generating and spreading infective aerosols

Aerosol-generating procedures (AGPs) include endotracheal intubation, non-invasive ventilation (NIV), nebulisers, and high flow nasal oxygenation (HFNO). Aerosols may also be generated by patients with “aerosol-generating behaviours”, e.g., coughing, sneezing, vomiting. Previously utilised COVID-19 Guidelines can be used for other aerosol diseases within the ED. Isolation precautions should be utilised for patients who are suspected or confirmed to have an airborne infection when AGPs are being undertaken or when aerosol-generating behaviours are observed, for example placement in a negative pressure isolation room.

When an ED is unable to safely maintain isolation precautions consideration should be given to activating disaster strategies to reduce the risk of disease transmission. This is especially so for very high-risk communicable diseases, e.g., viral haemorrhagic fever.

6.3 Reducing exposure from contaminated objects, surfaces, and spaces

Good hand hygiene, surface hygiene and waste management are key elements of standard precautions.

Dispensers for hand sanitisers should be readily available and accessible within the ED, and in areas such as at the ED front counter and entrances. (16,17) Signage should be prominently displayed advising patients and visitors on the importance of hand hygiene and correct technique. (18,19)

Hand hygiene by ED staff should be actively supported, adequately resourced to ensure availability of devices, and regularly audited to ensure compliance by staff. (11) Non-sterile disposable gloves should also be freely available, with double gloving advised for high-risk procedures. Hands should be washed with soap and water if potentially or visibly contaminated with blood or body substances.

ED staff should be competent and compliant in the use of aseptic technique for applicable procedures. (10)

Consideration should be given to single-patient-use medical equipment for individuals presenting with a potential high-risk infectious disease that will be disposed of once the patient had been discharged from the ED. Other equipment such as ultrasound and mobile x-ray machines, must be appropriately cleaned and disinfected after use. Procedures should be in place for safe handling, labelling and transport of high-risk pathology specimens. (17,20) Close attention must be paid to the safe management of clinical waste, including used PPE and linen.

Depending on the microorganism, disinfection of clinical spaces may be required in addition to cleaning after use and adequate time must be allowed after patient departure for removal of at least 99% of airborne contaminants (noting that time requirements will vary depending on the amount of air exhausted from the room, size of room and room air mixing).

7. Harm Minimisation

7.1 Protecting vulnerable staff and patients

Careful adherence to standard and transmission-based precautions and maintaining currency with all relevant immunisations are the core strategies for protecting all staff from transmission of infectious diseases. However, additional precautions may be required for staff who are especially vulnerable to contracting infection or experiencing a higher risk of adverse outcomes. For example, staff who are immunocompromised, pregnant, have underlying comorbidities or have contraindications to vaccination.

A risk assessment should be carried out for staff with potential vulnerabilities to devise a risk management plan. Measures should then be taken to minimise hazard exposure wherever possible, for example use of additional PPE, allocation to a different area of the department or deployment outside of the ED during surge events.

Similarly, vulnerable patients with increased susceptibility or risk of infection, such as immunocompromised patients, should be systematically identified at triage, and isolated or cohorted away from potentially infectious patients in the ED.

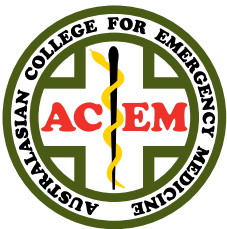
All ED staff should be up to date with the required immunisations against vaccine-preventable diseases, including influenza. ED staff should actively encourage vaccinations among patients and families and promote relevant national guidelines.

Where applicable, risk assessment and post-exposure prophylaxis (PEP) should be offered to any staff exposed to an infectious disease for which PEP is available and indicated. This should ideally be conducted by the hospital IPC team wherever possible, including ongoing monitoring, clinical management and follow up testing.

8. References

1. National Health and Medical Research Council, 2019. Australian Guidelines for the Prevention and Control of Infection in Healthcare. Australian Government
2. Jones R, Brosseau L. Aerosol Transmission of Infectious Disease. *Journal of Occupational & Environmental Medicine* [Internet]. 2015 [cited 23 March 2022];57(5):501-508. Available from: <https://pubmed.ncbi.nlm.nih.gov/25816216/>
3. Coulter C, 2016. Infection control guidelines for the management of patients with suspected or confirmed pulmonary tuberculosis in healthcare settings. National Tuberculosis Advisory Committee, Department of Health. Canberra, Australia
4. World Health Organization, 2017. Communicable Diseases. Regional Office for Africa. [online] As viewed on 07 February 2017 at <http://www.afro.who.int/health-topics/communicable-diseases>
5. Transmission-Based Precautions [Internet]. Clinical Excellence Commission. [cited 23 March 2022]. Available from: <https://www.cec.health.nsw.gov.au/keep-patients-safe/infection-prevention-and-control/transmission-based-precautions>
6. Principles of Epidemiology [Internet]. Centers for Disease Control and Prevention. Centers for Disease Control and Prevention; 2012 [cited 31 March 2023]. Available from: <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section11.html>
7. Safe Work Australia, 2018. Personal Protective Equipment. [online] As viewed on 07 February 2018 at <https://www.safeworkaustralia.gov.au/ppe#overview>

8. Australian Government Department of Health and Aged Care. Coronavirus (COVID-19) translated information [Internet]. Australian Government Department of Health and Aged Care. Australian Government Department of Health and Aged Care; 2023 [cited 1 March 2023]. Available from: <https://www.health.gov.au/health-alerts/covid-19/coronavirus-covid-19-translated-information>
9. Covid-19: Minimisation and protection strategy for Aotearoa New Zealand [Internet]. Ministry of Health NZ. [cited 1 March 2023]. Available from: <https://www.health.govt.nz/covid-19-novel-coronavirus/covid-19-response-planning/covid-19-minimisation-and-protection-strategy-aotearoa-new-zealand>
10. Department of Health, 2018. Infection control – standard and transmission-based precautions. State of Victoria, Australia.
11. Australian Commission on Safety and Quality in Health Care [Internet]. NSW: Australian Commission on Safety and Quality in Health Care 2021; 2021 [cited 23 March 2022]. Available from: https://www.safetyandquality.gov.au/sites/default/files/2021-07/final_draft_national_safety_and_quality_primary_and_community_healthcare_standards_june_2021.pdf
12. Regli A, Ungern-Sternberg B. Fit testing of N95 or P2 masks to protect health care workers. Medical Journal of Australia [Internet]. 2020 [cited 24 March 2022];213(7):293. Available from: <https://www.mja.com.au/journal/2020/213/7/fit-testing-n95-or-p2-masks-protect-health-care-workers>
13. Quality Standards for Emergency Departments and Hospital-Based Emergency Care Services. Australasian College for Emergency Medicine.
14. Australian Commission on Safety and Quality in Health Care, 2018. Standardised Infection Prevention and Control Signage co-badged by the Australian Commission on Safety and Quality in Health Care and State and Territory Departments of Health. [online] as viewed on 12 February 2018 at <https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-infection-control-guidelines/>
15. Cheruku S, Dave S, Goff K, Park C, Ebeling C, Cohen L et al. Cardiopulmonary Resuscitation in Intensive Care Unit Patients With Coronavirus Disease 2019. Journal of Cardiothoracic and Vascular Anesthesia [Internet]. 2020 [cited 24 March 2022];34(10):2595-2603. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7286272/>
16. COVID-19: infection prevention and control (IPC) [Internet]. GOV.UK. 2022 [cited 24 March 2022]. Available from: <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control>
17. Australian Standard 1071:2015. Placement and Presentation of Hand Hygiene Materials in Relation to the Basin in Healthcare Settings. SAI Global Limited, Sydney.
18. Requirements for the packaging and transport of pathology specimens and associated materials [Internet]. National Pathology Accreditation Advisory Council; 2013 [cited 24 March 2022]. Available from: [https://www1.health.gov.au/internet/main/publishing.nsf/Content/4F97263708B66C49CA257BF0001E012A/\\$File/Reqmts%20PackagingTransport%202013.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/4F97263708B66C49CA257BF0001E012A/$File/Reqmts%20PackagingTransport%202013.pdf)
19. Atkinson J, Chartier Y, Pessoa-Silva C, Jensen P, Li Y, Seto W. Natural Ventilation for Infection Control in Health-Care Settings [Internet]. World Health Organization; 2009 [cited 24 March 2022]. Available from: https://www.who.int/water_sanitation_health/publications/natural_ventilation.pdf
20. Code of Practice: How to manage work health and safety risks. Safe Work Australia; 2018.



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