Government of Western Australia
Department of Health

WA diphtheria outbreak case and contact management interim guidance

Note: This guidance is specific to the current diphtheria outbreak as of **11 May 2026** and will be reviewed and updated as new evidence and recommendations emerge.

Case management

Case definitions	A **confirmed case** requires laboratory definitive evidence **and** clinical evidence: • **laboratory definitive evidence:** isolation of toxigenic *C. diphtheriae* from site of clinical evidence • **clinical evidence:** upper respiratory tract infection or skin lesion. Outbreak cases may be further categorised by Public Health as: severe respiratory diphtheria, mild respiratory diphtheria (including pharyngeal infections), or cutaneous (skin) diphtheria.
	A **probable case** requires laboratory suggestive evidence **and** clinical evidence, **or** clinical evidence **and** epidemiological evidence: • **laboratory suggestive evidence:** isolation of *C. diphtheriae* from a respiratory tract specimen (toxin production unknown) • **clinical evidence:** upper respiratory tract infection **with** an adherent membrane of the nose, pharynx, tonsils or larynx • **epidemiological evidence:** contact between two people involving a plausible mode of transmission when: one of them is likely to be infectious (usually 2 weeks or less, and seldom more than 4 weeks after symptom onset); **and** the other has an illness which starts around 2-5 days after contact; **and** at least one laboratory confirmed case in the chain of epidemiologically linked cases.
Signs and symptoms	**Cutaneous diphtheria:** • Usually presents on exposed limbs as a secondary infection of skin lesions or wounds, or as primary punched-out ulcers with well demarcated edges and a grey necrotic slough. • Rarely associated with systemic toxicity but plays an important role in transmission through contact with wounds or contaminated fomites and can cause respiratory disease in contacts. **Respiratory diphtheria:** • Typically presents with fever and sore throat, ranging from mild pharyngeal disease to severe disease with patches of greyish-white pharyngeal exudate that may form an obstructive and life-threatening pseudomembrane and/or clinical warning signs of systemic toxicity.
Education and advice	• The case should be advised of the nature of the infection and isolation/exclusion requirements. • Provide diphtheria factsheet **or** AHCWA diphtheria flyer.
Testing	• Ensure nasopharyngeal/throat and/or wound swabs have been taken (including nasopharyngeal/throat swabs for confirmed cutaneous cases) using charcoal swab and clearly mark "culture for diphtheria" on the request form. • Ensure standard, contact and droplet precautions are used when performing all swabs.

Antibiotic treatment of cases	• Antibiotics should be given immediately but **after** initial swabs are taken wherever possible.
	• Azithromycin is preferred for empiric treatment due to reduced susceptibility to penicillin in the current outbreak strain, for example:
	  ○ **cutaneous** and **mild respiratory (pharyngeal) diphtheria**: azithromycin 500 mg (10mg/kg up to 500mg in children) orally once daily for 7 days, if no contraindications
	  ○ **severe respiratory diphtheria:** start treatment as below if no contraindications, and consult an infectious disease physician or clinical microbiologist for further antibiotic and diphtheria antitoxin advice, including step down to oral of therapy and overall duration
	  ▪ azithromycin 500 mg (10mg/kg up to 500mg in children) intravenously, daily **AND**
	  ▪ benzylpenicillin 1.2g (50mg/kg up to 1.2g in children) intravenously 6 hourly.
	• Where there are contraindications to azithromycin and/or concerns about adherence to oral antibiotics, consider alternative agents in discussion with an infectious disease physician or clinical microbiologist.
	• Also ensure appropriate treatment of other organisms consistent with the clinical presentation (e.g. streptococcal throat infections) or identified on wound swabs (e.g. *Staphylococcus* and *Streptococcus* species are frequently co-isolated).

Diphtheria antitoxin (DAT)	• DAT is **not** usually required for cutaneous or mild respiratory disease and has no proven role in the prophylaxis of contacts or treatment of carriers.
	• DAT should be considered in **severe** respiratory diphtheria – characterised by any of the following:
	  ○ presence of a pseudomembrane in the pharynx
	  ○ significant neck swelling ("bull neck" associated with lymphadenopathy)
	  ○ difficulty breathing/respiratory distress (e.g. stridor, tachypnoea, chest indrawing)
	  ○ signs of sepsis (e.g. tachycardia, cold extremities, cyanosis, delayed capillary refill, lethargy).
	• DAT is only to be used in an acute care setting with oversight and approval by an infectious disease physician and may be accessed in discussion with Public Health.
	• When indicated, DAT should be given promptly – it is most effective against circulating diphtheria toxin and less effective once toxin is bound to tissue.
	• Adults and children receive the same dose; preferred route is intravenous, particularly in severe cases – see WHO Guideline: Clinical management of diphtheria for dose recommendations.
	• Additional doses may be considered based on symptoms and clinical response, noting repeated doses are not usually of additional benefit.

Vaccination	• Cases of cutaneous and respiratory diphtheria should be vaccinated during recovery, as clinical infection may not induce adequate immunity. • Cases who have completed a primary course of diphtheria-containing vaccines should receive one booster dose of a diphtheria-containing vaccine if it is more than 12 months since their last dose. • Unvaccinated or incompletely vaccinated cases should commence a primary or catch-up course of diphtheria vaccination as per the Australian Immunisation Handbook. • If a case received DAT, diphtheria vaccination should be delayed for 4 weeks.

Isolation, restriction and clearance testing	• Cases with non-severe disease may be managed in the community.
	Cutaneous diphtheria
	• Cases should be excluded from work, school and childcare settings until their wounds are healed or clinically improving and can be covered with an occlusive waterproof dressing **and** until at least 72 hours of appropriate antibiotics have been completed.
	• When admitted to a healthcare facility, all cases should be managed with standard precautions and with additional precautions as outlined below:
	  ○ cover wounds with an occlusive waterproof dressing
	  ○ use contact precautions until all wounds are healed or clinically improving **and** until at least 72 hours of appropriate antibiotics have been completed
	  ○ use droplet precautions until initial screening nasopharyngeal/throat swabs are negative **or** until at least 72 hours of appropriate antibiotics have been completed.
	• If a wound is not healing following appropriate antibiotic treatment or shows signs of deterioration, re-assessment, including consideration of repeat screening and re-treatment, may be warranted.
	Respiratory diphtheria
	• Where possible, mild cases should receive clearance testing with at least one negative nasopharyngeal/throat swab taken at least 24 hours after antibiotics are completed:
	  ○ it is recognised that this may be difficult in an outbreak setting and cases who attend high-risk settings (e.g. school, childcare, healthcare workers, prisons) should be prioritised
	  ○ if microbiological clearance by negative nasopharyngeal/throat culture is not achieved (where performed), consult with an infectious disease physician or clinical microbiologist for advice about an additional course of antibiotics.
	• Wherever possible, cases should avoid contact with people beyond their household at least for the duration of their antibiotic course, and be excluded from work, school and childcare settings until their clearance testing returns a negative result.
	• Within their household, encourage relative isolation of the case, avoidance of shared personal items (e.g. towels or utensils), and wearing a mask in communal areas, to the extent possible.
	• Cases requiring hospital admission, should be managed with standard precautions, and contact and droplet precautions until **two** negative nasopharyngeal/throat swabs taken at least 24 hours apart and more than 24 hours after antibiotics have been completed.

Asymptomatic carriers	• If a contact returns a positive toxigenic diphtheria result from a **wound swab**, they will fulfill the case definition for a confirmed case and should be managed as such. • If **asymptomatic** contacts (or others, such as screened cutaneous cases) return a positive toxigenic diphtheria nasopharyngeal/throat swab, they should be **clinically** managed as per a confirmed mild respiratory case, but do **not** meet the definition of a confirmed or probable case: ○ for clearance: azithromycin 500 mg (10mg/kg up to 500mg in children) orally once daily for 7 days, if no contraindications. • Public Health will determine if further contact tracing for asymptomatic carriers is required.

Contact management

Infectious period:

- **cutaneous diphtheria:** commences the date the skin infection began (as best determined); for long-standing sores or ulcers without a clear history of recent deterioration, consider commencement of the infectious period as 7 days prior to the swab date
- **respiratory diphtheria:** commences 7 days prior to onset of respiratory symptoms or 7 days prior to positive nasopharyngeal/throat swab (if asymptomatic), or the date skin infection began.

High-risk contacts (if any criterion is met)

Cutaneous diphtheria

- **Household-like contacts:** majority of day and/or overnight stay in same room, intimate partner or close physical contact **and** had direct contact with skin lesions or exudate, dressings or contaminated items (e.g. towels or bedding.
- **Inpatient contacts:** direct contact with skin lesions or exudate, dressings or contaminated items.
- **Healthcare workers:** direct contact with wound in a situation where droplets may be generated **without** appropriate personal protective equipment (PPE) (e.g. wound irrigation while not wearing a mask).

Respiratory diphtheria

- **Close range respiratory exposures:** direct exposure of mucous membranes to respiratory secretions or droplets (e.g. being coughed or sneezed on at close range).
- **Household-like contacts:** majority of day and/or overnight stay, intimate partner, close co-traveller, or direct sharing of utensils, drinks or bongs.
- **Inpatient contacts:** stayed in same room/bay overnight or for at least 24 cumulative hours.
- **Healthcare workers:** direct unprotected exposure to respiratory secretions or droplets **without** appropriate PPE (e.g. mouth-to-mouth resuscitation, intubation/airway procedures, swabbing/examining throat while not wearing a mask).

Education and advice	• Provide diphtheria high-risk contact letter **or** AHCWA diphtheria flyer. • Self-monitor for symptoms for at least 7 days after contact.
Testing	• Testing of **asymptomatic** high-risk contacts is **not** routinely required if provided with chemoprophylaxis +/- booster vaccination but may be considered in situations where there may be increased risk of infection (e.g. based on infectiousness of the case, contact vaccination status, or repeated exposure) particularly where the contact attends a high-risk setting (e.g. childcare, school, healthcare facility, prison). • **Symptomatic** contacts (e.g. with a sore throat or suspicious skin lesions) should be tested and treated as a suspected case (see Case management).
Chemoprophylaxis	• Macrolides are preferred due to reduced susceptibility to penicillin in the current outbreak strain, for example, if no contraindications: ○ azithromycin 500 mg (10mg/kg up to 500mg in children) orally once daily for 5 days. • Where there are contraindications to azithromycin and/or concerns about adherence to oral antibiotics, consider alternative agents in discussion with an infectious diseases physician and/or clinical microbiologist.
Vaccination	• If vaccination is up-to-date for age, provide diphtheria-containing booster vaccination if it has been more than 12 months since last dose received. • Unvaccinated or incompletely vaccinated contacts should commence a primary or catch-up course of diphtheria vaccination as per the Australian Immunisation Handbook.
Isolation and restriction	• Where possible, avoid contact with vulnerable populations (e.g. young infants, elderly, those requiring dependent care, immunosuppressed individuals) until at least 72 hours of appropriate antibiotics have been completed, **or** any swabs (where performed) have returned negative results. • Where possible, furlough high-risk **healthcare worker** contacts until at least 72 hours of appropriate antibiotics have been completed, **or** any swabs (where performed) have returned negative results. Where this would significantly impact essential service provision, asymptomatic healthcare worker contacts may continue to work while wearing a mask (surgical or N95) until they are cleared.

Medium-risk contacts (if no high-risk criteria are met)

Cutaneous diphtheria

- **Close contacts:** contact in a shared indoor space for at least 20 cumulative hours while case infectious with potential for exposure to uncovered skin lesions or contaminated items.
- **Inpatient contacts:** indirect prolonged exposure for at least 20 cumulative hours when wound uncovered.
- **Healthcare workers:** direct contact with wound while not wearing appropriate PPE (gloves, mask) but no risk of droplet generation during contact, or uncertain level of exposure.

Respiratory diphtheria

- **Close contacts:** contact in a shared indoor space for at least 8 cumulative hours (e.g. classroom, childcare), but no household-like or direct secretion/droplet exposure.
- **Inpatient contacts:** stayed in same room/bay for less than 24 cumulative hours and no overnight stay.
- **Healthcare workers:** close contact without appropriate PPE (mask), but no direct secretion exposure, or uncertain level of exposure.

Education and advice	• Provide diphtheria medium-risk contact letter **or** AHCWA diphtheria flyer. • Self-monitor for symptoms for at least 7 days after contact.
Testing	• Testing of **asymptomatic** medium-risk contacts is **not** required if provided with chemoprophylaxis +/- booster vaccination. • **Symptomatic** contacts should be tested and treated as a suspected case (see Case management).
Chemoprophylaxis	• Macrolides are preferred due to reduced susceptibility to penicillin in the current outbreak strain, for example, if no contraindications: ○ azithromycin 500 mg (10mg/kg up to 500mg in children) orally once daily for 5 days. • Where there are contraindications to azithromycin and/or concerns about adherence to oral antibiotics, consider alternative agents in discussion with an infectious disease physician or clinical microbiologist.
Vaccination	• If vaccination is up-to-date for age, provide diphtheria-containing booster vaccination if it has been more than 12 months since last dose received. • Unvaccinated or incompletely vaccinated contacts should commence a primary or catch-up course of diphtheria vaccination as per the Australian Immunisation Handbook.
Isolation and restriction	• Exclusion of medium-risk contacts is not routinely required but may be considered in situations where there may be increased risk of infection (e.g. based on infectiousness of the case, contact vaccination status, or repeated exposure) particularly where the contact attends a high-risk setting (e.g. childcare, school, healthcare facility, prison). • Furlough of **asymptomatic healthcare workers** is **not** required but they must wear a mask while at work until 72 hours of appropriate antibiotics have been completed.

Low-risk contacts (if no high- or medium-risk criteria are met)

Cutaneous diphtheria

- **Casual contacts:** casual or indirect contact (e.g. same school or workplace without close exposure).
- **Inpatient contacts:** indirect exposure for less than 20 cumulative hours when wound uncovered.
- **Healthcare workers:** no direct exposure to skin lesions or wound droplets.

Respiratory diphtheria

- **Casual contacts:** casual or indirect contact (e.g. same school or workplace without close exposure).
- **Inpatient contacts:** stayed in the same ward/hospital without close contact.
- **Healthcare workers:** no exposure to respiratory droplets nor direct contact with respiratory secretions.

Education and advice	• Provide diphtheria low-risk contact letter **or** AHCWA diphtheria flyer. • Self-monitor for symptoms for at least 7 days after contact.
Vaccination	• Offer a dose of diphtheria-containing vaccine if it has been more than 5 years since their last dose. • Unvaccinated or incompletely vaccinated contacts should commence a primary or catch-up course of diphtheria vaccination as per the Australian Immunisation Handbook.

Appendix: Quick reference guide – diphtheria healthcare worker contact management

		Low risk contacts	Medium risk contacts	High risk contacts
Exposure type	**Cutaneous**	No direct exposure to skin lesions or wound	Direct contact with wound while not wearing appropriate PPE (gloves, mask) but no risk of droplet generation during contact, or uncertain level of exposure	Direct contact with wound in a situation where droplets may be generated **without** appropriate PPE (e.g. wound irrigation while not wearing a mask)
	Respiratory	No exposure to respiratory droplets nor direct contact with respiratory sections	Close contact without appropriate PPE (mask), but no direct secretion exposure, or uncertain level of exposure	Direct unprotected exposure to respiratory secretions or droplets **without** appropriate PPE (e.g. mouth-to-mouth resuscitation, intubation/airway procedures, swabbing/examining throat while not wearing a mask)
Education and advice		• Provide diphtheria low-risk contact letter • Self-monitor for symptoms for at least 7 days after contact	• Provide diphtheria medium-risk contact letter • Self-monitor for symptoms for at least 7 days after contact	• Provide diphtheria high-risk contact letter • Self-monitor for symptoms for at least 7 days after contact
Testing • combined nasopharyngeal/throat charcoal swab + additional swab of any skin lesions • clearly mark 'diphtheria contact, culture for diphtheria' on the request forms		**Nil**	• Testing of **asymptomatic** medium-risk contacts is **not** required if provided with chemoprophylaxis +/- booster vaccination • **Symptomatic** contacts should be tested and treated as a suspected case (see Case management)	• Testing of **asymptomatic** high-risk contacts is **not** routinely required if provided with chemoprophylaxis +/- booster vaccination • Testing may be considered in situations where there may be increased risk of infection (e.g. based on infectiousness of the case, contact vaccination status, or repeated exposure) • **Symptomatic** contacts should be tested and treated as a suspected case (see Case management)
Chemoprophylaxis		**Nil**	Azithromycin 500mg once daily for **5 days*** (note, if contraindications for azithromycin, discuss with infectious disease physician or clinical microbiologist)	
Vaccination		Opportunistic dTpa vaccination if more than 5 years since last dose	ADT or dTpa booster vaccination if more than 12 months since last dose	
Isolation and restriction		**Nil**	• Furlough of **asymptomatic healthcare workers** is **not** required but they must wear a mask while at work until 72 hours of appropriate antibiotics have been completed	• Where possible, furlough high-risk **healthcare worker** contacts until at least 72 hours of appropriate antibiotics have been completed, **or** any swabs (where performed) have returned negative results • Where this would significantly impact essential service provision, asymptomatic healthcare worker contacts may continue to work while wearing a mask (surgical or N95) until they are cleared

**Repeat exposure whilst receiving azithromycin chemoprophylaxis, or within 3 days of completing a course, does not required additional chemoprophylaxis.*