



WA diphtheria outbreak case and contact management interim guidance

Note: This guidance has been developed for the current diphtheria outbreak as of 24 April 2026 and applies specifically to this context. It may be revised as the situation evolves.

Case management

<p>Case definitions</p>	<p>A confirmed case requires laboratory definitive evidence and clinical evidence:</p> <ul style="list-style-type: none"> • laboratory definitive evidence: isolation of toxigenic <i>C. diphtheriae</i> from site of clinical evidence • clinical evidence: upper respiratory tract infection or skin lesion. <p>Outbreak cases may be further categorised by Public Health as: severe respiratory diphtheria, mild respiratory diphtheria (including pharyngeal infections), or cutaneous (skin) diphtheria.</p>
	<p>A probable case requires laboratory suggestive evidence and clinical evidence, or clinical evidence and epidemiological evidence:</p> <ul style="list-style-type: none"> • laboratory suggestive evidence: isolation of <i>C. diphtheriae</i> 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.
<p>Signs and symptoms</p>	<ul style="list-style-type: none"> • Cutaneous diphtheria: <ul style="list-style-type: none"> ○ 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: <ul style="list-style-type: none"> ○ 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.
<p>Education and advice</p>	<ul style="list-style-type: none"> • The case should be advised of the nature of the infection and isolation/exclusion requirements. • Provide diphtheria factsheet and/or AHCWA diphtheria flyer.
<p>Testing</p>	<ul style="list-style-type: none"> • 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.
<p>Antibiotic treatment of cases</p>	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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 <ul style="list-style-type: none"> ▪ 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 benzathine benzylpenicillin or 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. <i>Staphylococcus</i> and <i>Streptococcus</i> species are frequently co-isolated).

<p>Diphtheria antitoxin (DAT)</p>	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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.
<p>Vaccination</p>	<ul style="list-style-type: none"> • 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.
<p>Isolation, restriction and clearance testing</p>	<ul style="list-style-type: none"> • Cases with non-severe disease may be managed in the community. <p>Cutaneous diphtheria</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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. <p>Respiratory diphtheria</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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), an additional course of antibiotics is recommended. • 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 clearance testing returns a negative result. • Within their household, encourage relative isolation of cases, avoidance of shared towels or utensils, and to wear 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.
<p>Asymptomatic carriers</p>	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ 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: 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.

<p>High-risk contacts</p> <p>Cutaneous diphtheria</p> <ul style="list-style-type: none"> • 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, dressings, or contaminated items. • Inpatient contacts: direct contact with skin lesions, dressings or contaminated items (e.g. towels or bedding). • Healthcare workers: direct contact with wound in a situation where droplets may be generated (e.g. wound irrigation while not wearing a mask). <p>Respiratory diphtheria</p> <ul style="list-style-type: none"> • Household-like contacts: majority of day and/or overnight stay, intimate partner, close co-traveller. • Inpatient contacts: stayed in same room/bay ≥24 hours or overnight. • Healthcare workers: direct unprotected exposure to respiratory secretions or droplets (e.g. mouth-to-mouth resuscitation, intubation/airway procedures without appropriate use of PPE including mask and hand hygiene). 	
Education and advice	<ul style="list-style-type: none"> • Provide diphtheria factsheet and/or AHCWA diphtheria flyer. • Self-monitor for symptoms for at least 7 days after contact. • Provide diphtheria high-risk contact letter.
Testing	<ul style="list-style-type: none"> • 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 sores) should be tested and treated as a suspected case (see Case management).
Chemoprophylaxis	<ul style="list-style-type: none"> • Macrolides are preferred due to reduced susceptibility to penicillin in the current outbreak strain, for example, if no contraindications: <ul style="list-style-type: none"> ○ 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 benzathine benzylpenicillin or alternative agents in discussion with an infectious disease physician or clinical microbiologist.
Vaccination	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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. • 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 until they are cleared.

Medium-risk contacts

Cutaneous diphtheria

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

Respiratory diphtheria

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

Education and advice	<ul style="list-style-type: none">• Provide diphtheria factsheet and/or AHCWA diphtheria flyer.• Self-monitor for symptoms for at least 7 days after contact.• Provide diphtheria medium-risk contact letter.
Testing	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Macrolides are preferred due to reduced susceptibility to penicillin in the current outbreak strain, for example, if no contraindications:<ul style="list-style-type: none">◦ 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 benzathine benzylpenicillin or alternative agents in discussion with an infectious disease physician or clinical microbiologist.
Vaccination	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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

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 hours cumulative when wound uncovered.
- **Healthcare workers:** no direct exposure to skin lesions or wound droplets (includes appropriate use of PPE), or uncertain exposure is assessed as unlikely.

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 (includes appropriate use of PPE), or uncertain exposure is assessed as unlikely.

Education and advice	<ul style="list-style-type: none">• Provide diphtheria factsheet and/or AHCWA diphtheria flyer.• Self-monitor for symptoms for at least 7 days after contact.• Provide diphtheria low-risk contact letter.
Vaccination	<ul style="list-style-type: none">• 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.