Australian Centre for Disease Control

Diphtheria in Australia – Epidemiological update

As at 15 June 2026

Data extracted from NNDSS: 16 June 2026
Latest diagnosis date: 15 June 2026
Due to the dynamic nature of the National Notifiable Diseases Surveillance System (NNDSS) and case investigations, data in this report are subject to retrospective revision and may vary from data reported in other national reports and reports by states and territories. Case definitions for the diseases included in this report are available on the Australian Centre for Disease Control website (https://www.cdc.gov.au/resources/collections/cdna-surveillance-case-definitions).

Background

- Diphtheria is an acute illness caused by toxigenic strains of *Corynebacterium diphtheriae* and *Corynebacterium ulcerans*. Infection may lead to 2 major different clinical outcomes: respiratory disease or cutaneous (skin) disease.
- Since the implementation of vaccination programs in the 1940s, the incidence of diphtheria has declined in Australia, and globally. Although diphtheria is considered rare in Australia, it remains endemic in many developing countries.
- Prior to the COVID-19 pandemic, most Australian cases were imported from overseas, with a high proportion of these cases reported as cutaneous diphtheria.
    - Between 1999 and 2019, cutaneous and respiratory diphtheria occurred mostly among adults.
    - During this period there were 2 deaths reported in unvaccinated adults who both acquired their infections in Australia.
- Between 2020 and 2022, there were 4 localised diphtheria clusters, each in a different geographical area of North Queensland, and involving a high proportion of cutaneous cases and several respiratory cases.
- The Australian Immunisation Handbook recommends diphtheria-toxoid vaccine for: routine vaccination in infants, children and adolescents; routine booster vaccination in adults, including those in special risk groups such as pregnant women, laboratory workers, and travellers to countries where health services are difficult to access. Vaccination is recommended every 10 years for travellers to countries where health services are difficult to access. Travellers to some areas where there is a higher risk of acquiring diphtheria are recommended to be vaccinated every 5 years.

Key summary points

- Diphtheria notifications had been increasing since October 2025, with a marked increase since February 2026, however in recent weeks the number of cases diagnosed nationally appears to have plateaued from mid-April to late May, with a slight decrease at the beginning of June, noting recent diagnosis date trends are likely incomplete.
- A total of 357 cases of diphtheria have been notified in Australia in 2026, including 355 confirmed cases and two probable cases[i].
    - In the past fortnight, there were 46 cases notified[ii] compared to 75 cases in the previous fortnight. Diagnosis dates among cases notified this fortnight (n=46) ranged from 7 May to 14 June 2026, with 13 cases (28.3%) classified as respiratory diphtheria.

[i] CDNA diphtheria case definition: https://www.cdc.gov.au/system/files/2025-09/diphtheria-surveillance-case-definition_0.pdf

[ii] Diagnosis date is the preferred public health indicator of disease transmission activity. However, delays between diagnosis and notification to the NNDSS result in incomplete data for more recent weeks. Analyses by notification date can be used as a proxy for more current trends, with an underlying assumption of a stable distribution of reporting lags.

- Most cases in 2026 have been reported in the Northern Territory (55.2%; n=197) and Western Australia (41.7%; n=149), with a few cases in South Australia (n=8) and Queensland (n=3).
  - Three cases were acquired overseas: two cutaneous diphtheria cases, and one case with clinical presentation information pending.
  - Among locally acquired cases (n=354), almost all are residents in areas classified as 'outer regional' or 'remote and very remote' (99.4%).
    - Over the past fortnight, newly notified cases have predominately acquired their infections in areas with recently reported diphtheria infections.
  - Most cases (94.6%) have been among Aboriginal and/or Torres Strait Islander people.
  - Around two-thirds of cases (67.2%) have been cutaneous diphtheria, with 30.5% classified as respiratory diphtheria, and clinical presentation information pending for eight cases.
    - The proportion of cases notified in the past 4 weeks that have been respiratory diphtheria infections was 28.1%.
    - All of the 109 respiratory diphtheria infections in 2026 have been locally acquired.
  - The median age of cases is 24 years (IQR: 11.0-37.0), with the median age of cutaneous diphtheria cases being higher (28 years) compared to respiratory diphtheria cases (18 years).
  - Overall, around 20% of diphtheria cases have been hospitalised, with the proportion hospitalised being higher for respiratory diphtheria cases compared to cutaneous diphtheria cases and noting that cases may be hospitalised for public health management reasons.
    - The cause of death for a diphtheria case notified in April 2026 indicates that diphtheria was the probable cause.
- AusTrakka genomic analyses indicate recent cases in Western Australia, the Northern Territory, South Australia and Queensland are genomically linked.
  - Previous analyses suggests that the current cluster shares genomic characteristics of cases from a 2020 to 2023 cluster in Queensland, noting that the findings are not considered definitive epidemiological evidence.
- The vaccination status among diphtheria cases has varied by clinical presentation, with a higher proportion of respiratory diphtheria cases (83.2%) in 2026 having received at least three valid vaccine doses (primary course) compared with cutaneous diphtheria cases (74.2%).
  - Consistent with the National Immunisation Program and broader Australian Immunisation Handbook recommendations, the number of doses received tended to increase with increasing age.
  - During 2026, the median period (years) since last vaccine dose among those that had received at least three valid vaccine doses was lower among cutaneous diphtheria cases (3.0 years) than among respiratory diphtheria cases (7.2 years), with the median period since last vaccine dose higher among hospitalised cases with respiratory diphtheria (10.1 years).
  - Vaccination provides strong protection against the severe effects of diphtheria toxin, but it does not consistently prevent carriage or transmission.

Current epidemiology of diphtheria in Australia

As of 15 June 2026, a total of 357 diphtheria cases have been notified in Australia in 2026, including two probable cases[i], representing a substantial increase compared with historical levels (Figure 1). For the equivalent periods in 2022 to 2025[iii], an average of 9.8 cases was reported (Table 1). The previous peak in annual notifications occurred in 2022, with 31 cases, the majority of which were associated with several clusters in northern Queensland (80.6%; 25/31).

Notifications of diphtheria began increasing in October 2025, with a marked increase since February 2026. While the number of cases diagnosed appears to have plateaued between mid-April and late May, there has been a slight decrease at the beginning of June. In the past fortnight, 46 cases were notified[iv], compared with 75 cases in the previous fortnight, with diagnosis dates ranging between 7 May and 14 June 2026. Figure 2 provides an epidemic curve of cases by diagnosis week, noting recent diagnosis date trends are likely incomplete (blue shaded bars) and should be interpreted with caution.

Figure 1: Notifications of diphtheria by confirmation status and year of diagnosis, Australia, 1 January 2014 to 15 June 2026

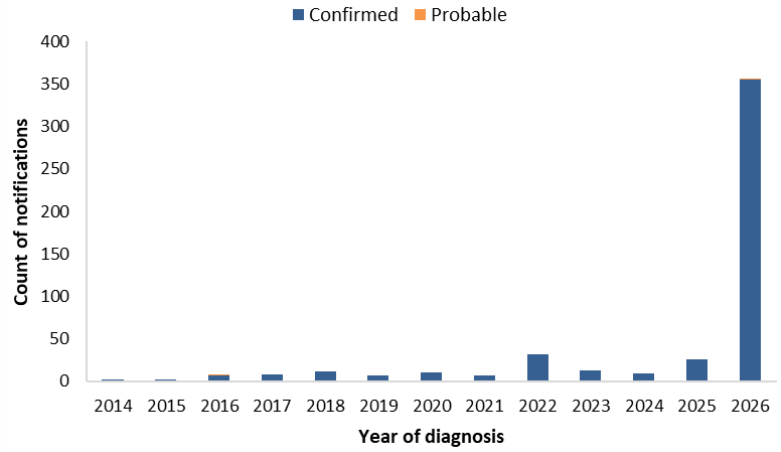
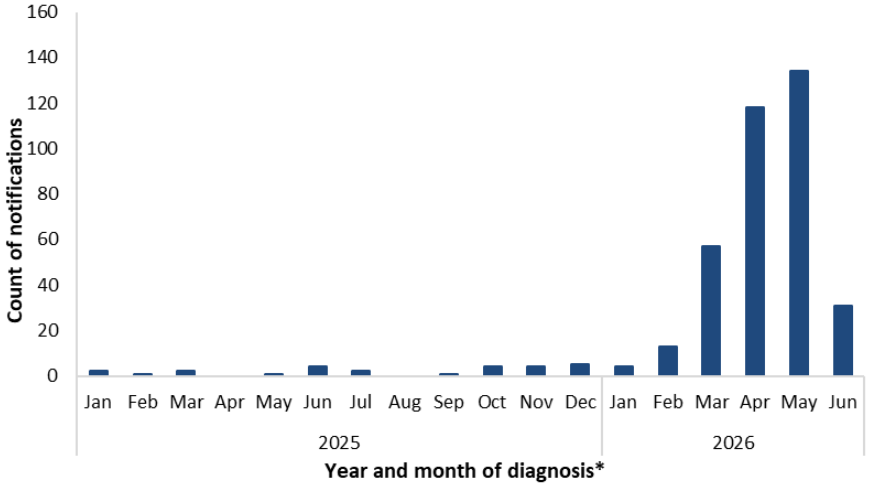


Figure 2: Notifications of diphtheria by month of diagnosis*, Australia, 1 January 2025 to 15 June 2026



** Reporting delays between diagnosis and notification to the NNDSS, particularly in recent weeks, and the incomplete current month affect data completeness. Trends for recent periods should be interpreted with caution.*

[iii] 1 January to 15 June

[iv] Diagnosis date (defined as the earliest of onset or specimen collection) is the preferred public health indicator of disease transmission activity. However, delays between diagnosis and notification to the NNDSS result in incomplete data for more recent weeks. Notification date can be used as a proxy for more current trends, with an underlying assumption of a stable distribution of reporting lags.

Species

Under the national case definition for diphtheria, a confirmed case requires isolation of toxigenic *Corynebacterium diphtheriae* or toxigenic *C. ulcerans* from the upper respiratory tract or skin lesion[i]. In 2026, almost all confirmed cases were reported as *C. diphtheriae* (354/355), with one case of *C. ulcerans* diagnosed in late March this year, and no cases of unknown species reported.

Geographic distribution

Among cases reported in 2026, 55.2% (197/357) were reported in the Northern Territory, 41.7% (149/357) in Western Australia, 8 cases in South Australia and 3 cases in Queensland (Figure 3). Among the 46 cases notified this fortnight, two-thirds (65.2%) were notified from WA, with diagnosis dates between early May and mid-June 2026. By diagnosis date, there has been a steady increase in notifications in WA since April, with notifications in the NT appearing to have plateaued from mid-April to late May.

Among locally acquired cases, there has been a notable increase in the proportion residing in 'remote and very remote' areas since 2021 (Figure 4). In 2026, among locally acquired cases (99.1%; 354/357), 86.7% resided in areas classified as 'remote' and 'very remote', while a further 12.7% resided in 'outer regional' areas. Over the past fortnight, newly notified cases have predominantly been acquired in areas with previously reported diphtheria infections.

Figure 3: Notifications of diphtheria by jurisdiction and year of diagnosis, Australia, 1 January 2025 to 15 June 2026

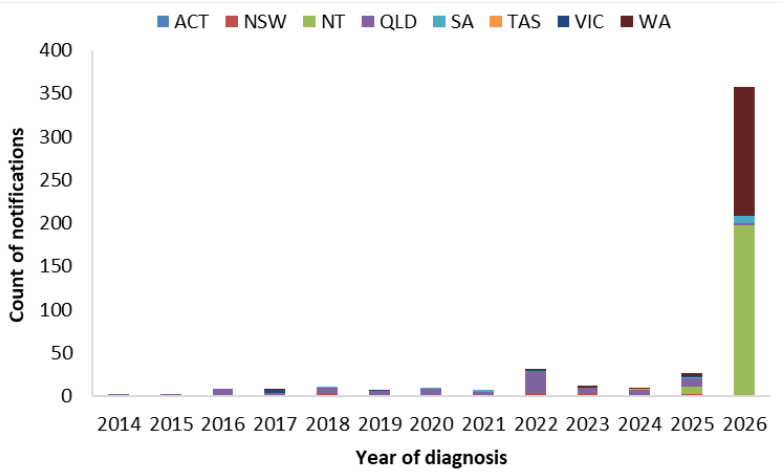
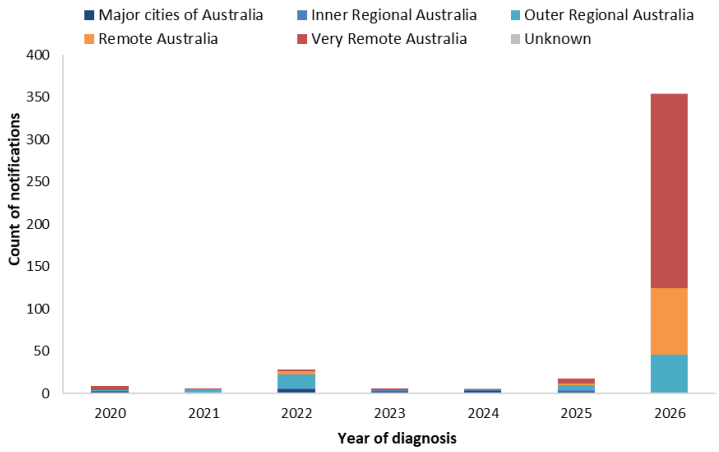


Figure 4: Notifications of locally acquired* diphtheria* by remoteness area and year of diagnosis, 1 January 2020 to 15 June 2026



** Excludes cases acquired overseas.*

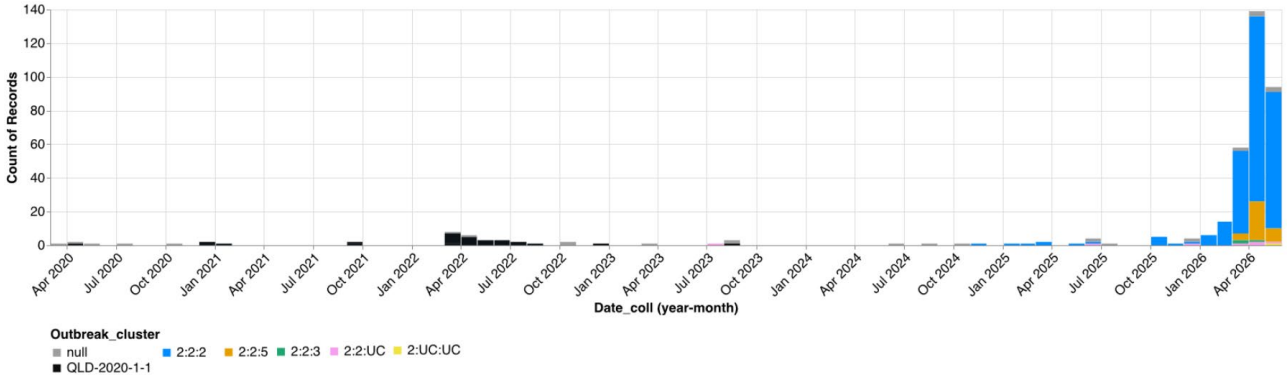
Place of acquisition

By place of acquisition, between 2014 and 2019, the majority of diphtheria cases were acquired overseas, predominantly in the Western Pacific and South-East Asia regions. Since 2020, the majority of diphtheria notifications have been locally acquired. So far in 2026, 3 cases (0.8%; 3/357) are reported to have acquired their infection overseas.

Since 2020, there have been 15 diphtheria clusters (with 2 or more cases) reported by jurisdictions, with 10 of these clusters reported in 2026. The largest epidemiologically linked clusters (10 to 16 cases) occurred in North Queensland with cases involved in these clusters spanning 2020 to 2023. The more recent clusters in 2026 have been in Western Australia, the Northern Territory and South Australia, with the size of these epidemiologically linked clusters ranging from 2 to 7 cases.

Genomic analysis of *C. diphtheriae* sequences uploaded to AusTrakka with dates of collection from 2025 up to 27 May 2026, suggests that the Western Australia, Northern Territory, Queensland and South Australian cases since 2025 are genomically linked (Cluster 2:2:2) (Figure 5). All sequences have been confirmed as *tox* gene positive. Two additional clusters (Cluster 2:2:3 and 2:2:5) linked to the current outbreak at the broader genomic level (Cluster 2:2) were identified in March 2026, which includes cases from the Northern Territory and South Australia. This genetic drift is expected given the timeframe and geographic spread of cases. Previous analyses suggest that the main cluster (Cluster 2:2:2) appears to have descended from a 2020 to 2023 cluster in Queensland (Cluster 1:1:1), and the new clusters (2:2:3 and 2:2:5) have emerged from cluster 2:2:2. However, noting the small number of available intermediate sequences, the findings should be interpreted as evidence of shared genomic characteristics rather than definitive epidemiological evidence of linkage to the earlier Queensland cluster.

Figure 5: AusTrakka* SNP clustering of toxigenic *C. diphtheriae* sequences, 12 March 2020 to 27 May 2026



** AusTrakka Genomic Analysis Report ATOI26001 – Corynebacterium diphtheriae (10 June 2026).*

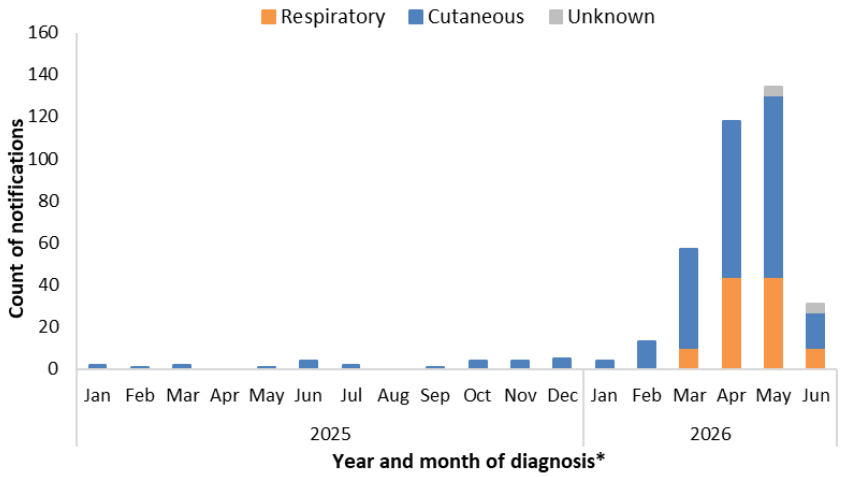
Clinical presentation

Across Australia, from 2016 to 2025, most diphtheria notifications were reported as cutaneous diphtheria, with only a small number of respiratory diphtheria cases reported annually across most years during this period. The increase and upward trend in locally acquired cutaneous diphtheria cases during the latter part of this period may be attributable to changes in testing practices, including toxigenic testing, particularly of wounds, as well as the inclusion of cutaneous diphtheria in the national case definition from 2017[i]. In 2022,

respiratory diphtheria accounted for 19.4% (6/31) of cases, with all of these cases locally acquired.

In 2026, the predominant clinical presentation continues to be cutaneous diphtheria (67.2%; 240/357), with respiratory diphtheria accounting for 30.5% (109/357) of cases, and clinical presentation information pending for eight cases (Figure 6).

Figure 6: Notifications of diphtheria by clinical presentation and month of diagnosis*, Australia, 1 January 2025 to 15 June 2026



** Reporting delays between diagnosis and notification to the NNDSS, particularly in recent weeks, and the incomplete current month affect data completeness. Trends for recent periods should be interpreted with caution.*

Age and sex

Since 2014, notifications of diphtheria have predominantly been reported among those aged 25 years and over, with variability in the proportion of cases reported among those in younger age groups since 2017 (Figure 7). The highest number of cases so far in 2026 are among those in the 25 to 44 years age group (Figure 8), with notification rates highest among the 0 to 4, 5 to 14 and 15 to 24 years age groups. So far in 2026, by clinical presentation, the median age of cutaneous diphtheria cases (28 years; IQR 12.8-41.0) has been higher compared to respiratory diphtheria cases (18 years; IQR 11.0-27.0), with this pattern consistent with previous years (Figure 8).

Between 2022 and 2025, the distribution of cases by sex was relatively balanced (48.1% females), with some variability by age group. In 2026, a higher proportion of cases overall are among females (56.6%), with variability also observed by age group.

Figure 7: Proportion of diphtheria notifications by age group, Australia, 1 January 2014 to 15 June 2026

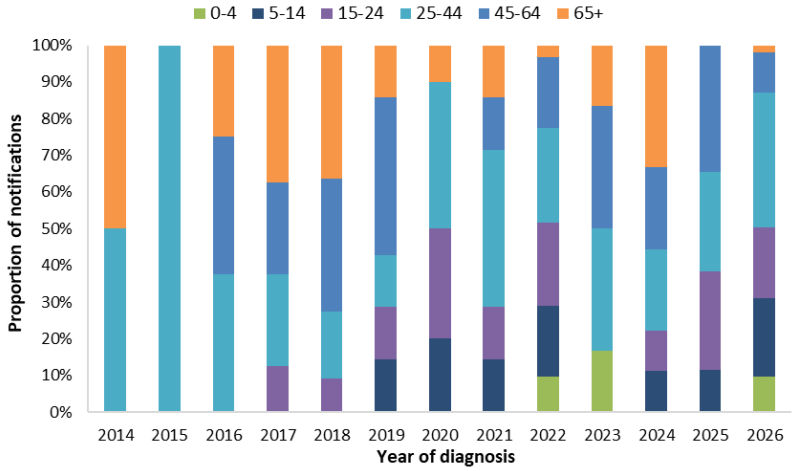
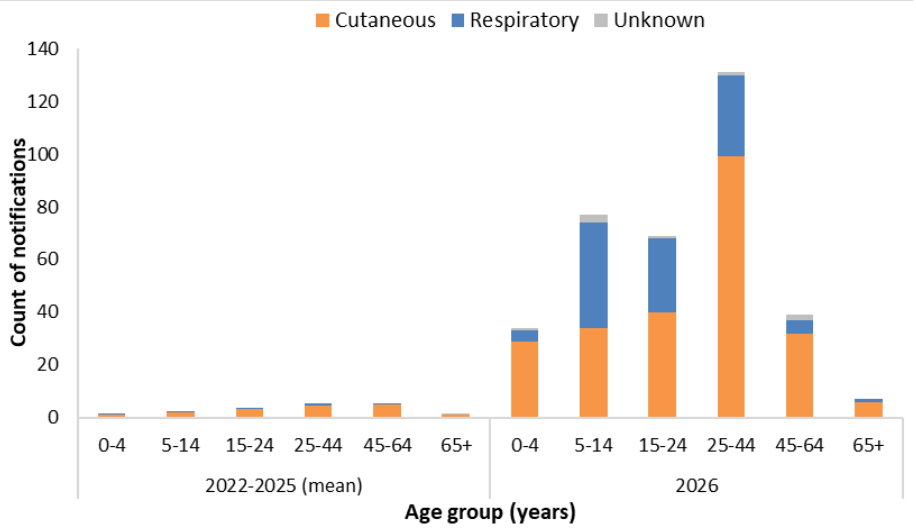


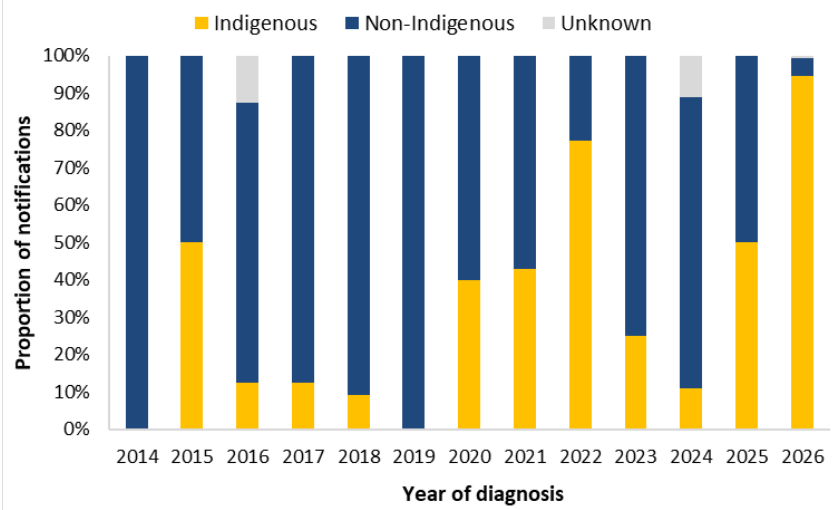
Figure 8: Notifications of diphtheria by age group and clinical presentation, Australia, 1 January 2022 to 15 June 2026



Indigenous status

Indigenous status completeness for diphtheria has remained consistently high, at over 99.0% across 2014 to 2026. Between 2014 and 2019, the proportion of diphtheria cases among Aboriginal and/or Torres Strait Islander people was around 10.5% of cases, noting that there were very few cases reported in 2014 and 2015 (n=4) (Figure 9). Between 2020 to 2022, which included multiple diphtheria clusters in North Queensland, the proportion of cases among Aboriginal and/or Torres Strait Islander people increased to 64.6%. So far in 2026, 94.7% (338/357) of cases have been reported among Aboriginal and/or Torres Strait Islander people.

Figure 9: Proportion of diphtheria notifications by Indigenous status, Australia, 1 January 2014 to 15 June 2026



Severity

Between 2022 and 2025, just over a quarter (28.2%) of diphtheria notifications were reported as being hospitalised, with proportions of cases hospitalised higher among those with respiratory diphtheria. So far in 2026, a lower proportion (19.6%; 70/357) of all diphtheria cases have been hospitalised. The proportion of respiratory diphtheria cases hospitalised (22.0%; 24/109) is higher than the proportion among cutaneous diphtheria cases (17.9%; 43/240). The proportion of cases hospitalised may vary over time and by clinical presentation

type due either to true differences in disease severity or differences in the public health management of infections, including for infection control purposes.

In 2026, one death has been reported in a diphtheria case notified in April, with diphtheria indicated as the probable cause. Prior to 2026, the most recent diphtheria associated death was reported in 2018.

Vaccination status

The vaccination status among diphtheria cases has differed by clinical presentation type. In 2026, a higher proportion of respiratory diphtheria cases (83.2%) had received 3 or more valid doses, compared with 74.2% of cutaneous diphtheria cases.

While vaccination provides strong protection against the severe effects of diphtheria toxin, it does not consistently prevent carriage or transmission of *C. diphtheriae*, regardless of whether the strain produces toxin or not.

Consistent with the National Immunisation Program and broader Australian Immunisation Handbook recommendations, the number of doses received tended to increase with increasing age (Figure 10). In 2026, among diphtheria cases reported to have received at least 3 vaccine doses, the median number of years since last vaccine dose has typically been lower among cutaneous diphtheria cases (3.0 years) than among respiratory diphtheria cases (7.2 years) (Figure 11). For this same period, the median number of years since last vaccine dose was higher among hospitalised cases with respiratory diphtheria (10.1 years).

More broadly, national diphtheria–tetanus–pertussis (DTP) vaccination coverage rates as at September 2025, based on the National Immunisation Program Schedule, was:

- 93.4% (range: 91.9% to 94.8%) among all children aged 5 years
- 94.7% (range: 92.9% to 96.3%) among Aboriginal and Torres Strait Islander children aged 5 years.

However, ‘fully immunised’ rates among the 5-year-old cohort, regardless of Indigenous status, have been gradually declining since peaking in 2020.

Figure 10: Notifications of diphtheria by vaccination status, clinical presentation type and age group, Australia, 1 January to 15 June 2026

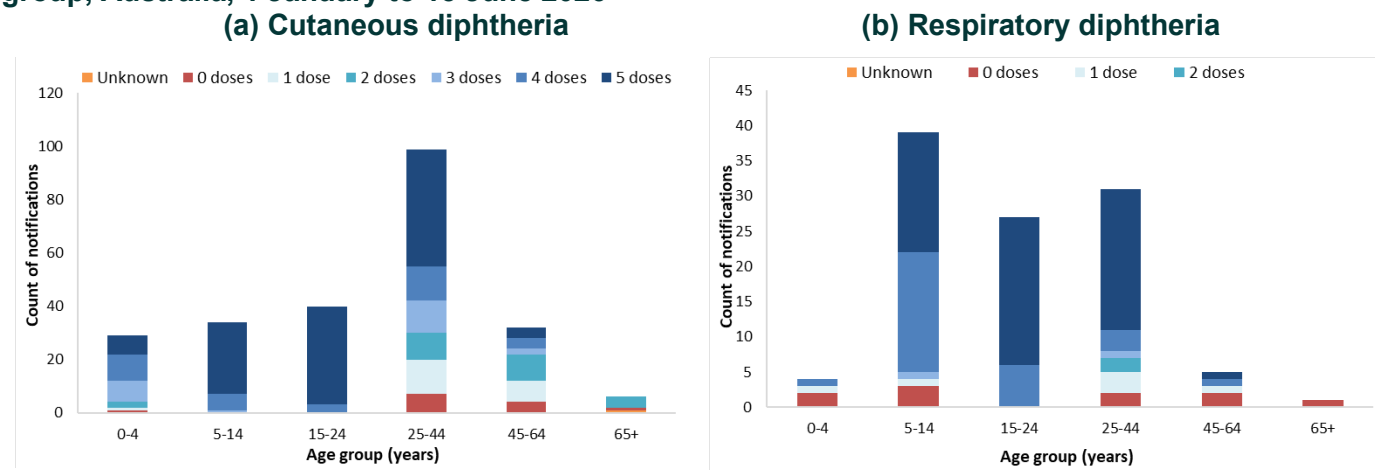
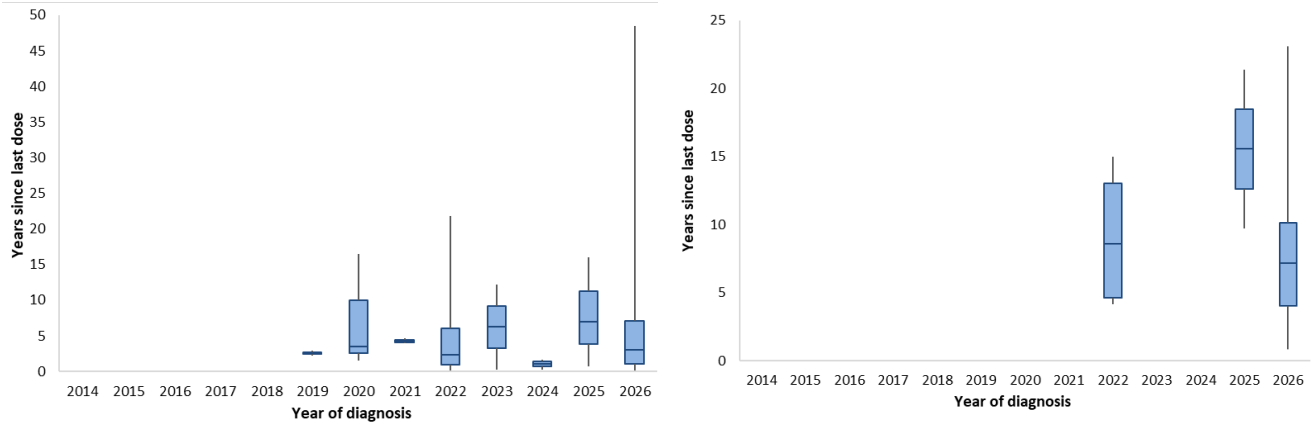


Figure 11: Distribution of years since last vaccine dose for notifications of diphtheria with at least 3 doses*, by clinical presentation type, Australia, 1 January 2014 to 15 June 2026

(a) Cutaneous diphtheria **(b) Respiratory diphtheria**



** Periods where there were less than 2 cases that had received 3 or more vaccine doses are not shown.*

Epidemiological characteristics of diphtheria cases

Table 1: Epidemiological summary of diphtheria cases* in Australia, 1 January 2025 to 15 June 2026

	Past 4-weeks (19 May to 15 June 2026)*	2026 YTD†	2025	2022–2025 YTD† (mean)	2022–2025 (mean)
Total	84	357	26	9.8	19.5
Confirmation status					
Confirmed	83 (99%)	355 (99%)	26 (100%)	9.8 (100%)	19.5 (100%)
Probable	1 (1%)	2 (1%)	0 (0%)	0.0 (0%)	0.0 (0%)
Species					
C. diphtheriae	84 (100%)	356 (100%)	26 (100%)	8.3 (85%)	17.0 (87%)
C. ulcerans	0 (0%)	1 (0%)	0 (0%)	1.5 (15%)	2.5 (13%)
State					
ACT	0 (0%)	0 (0%)	0 (0%)	0.0 (0%)	0.0 (0%)
NSW	0 (0%)	0 (0%)	2 (8%)	1.3 (13%)	2.5 (13%)
NT	29 (35%)	197 (55%)	9 (35%)	0.3 (3%)	2.5 (13%)
QLD	0 (0%)	3 (1%)	9 (35%)	7.0 (72%)	11.5 (59%)
SA	2 (2%)	8 (2%)	2 (8%)	0.5 (5%)	0.5 (3%)
TAS	0 (0%)	0 (0%)	0 (0%)	0.0 (0%)	0.3 (1%)
VIC	0 (0%)	0 (0%)	1 (4%)	0.0 (0%)	0.5 (3%)
WA	53 (63%)	149 (42%)	3 (12%)	0.8 (8%)	1.8 (9%)
Remoteness area					
Major cities	2 (2%)	3 (1%)	6 (23%)	2.0 (21%)	5.3 (27%)
Regional areas	8 (10%)	46 (13%)	11 (42%)	5.8 (59%)	9.5 (49%)
Remote areas	74 (88%)	307 (86%)	9 (35%)	2.0 (21%)	4.5 (23%)
Unknown	0 (0%)	1 (0%)	0 (0%)	0.0 (0%)	0.3 (1%)
Place of acquisition					
Overseas acquired	1 (1%)	3 (1%)	8 (31%)	2.0 (21%)	5.0 (26%)
Locally acquired	80 (95%)	338 (95%)	17 (65%)	6.8 (69%)	12.5 (64%)
Unknown	3 (4%)	16 (4%)	1 (4%)	1.0 (10%)	2.0 (10%)
Clinical manifestation					
Cutaneous	51 (61%)	240 (67%)	24 (92%)	8.8 (90%)	17.0 (87%)
Respiratory	26 (31%)	109 (31%)	2 (8%)	1.0 (10%)	2.3 (12%)
Unknown	7 (8%)	8 (2%)	0 (0%)	0.0 (0%)	0.3 (1%)
Age (years)					
Median (IQR)	15.5 (9.8-31.3)	24.0 (11.0-37.0)	36.5 (19.8-48.5)	37.0 (26.2-46.1)	39.4 (22.8-52.8)
Age group (years)					
0-4	12 (14%)	34 (10%)	0 (0%)	0.5 (5%)	1.3 (6%)
5-14	26 (31%)	77 (22%)	3 (12%)	1.8 (18%)	2.5 (13%)
15-24	16 (19%)	69 (19%)	7 (27%)	2.3 (23%)	3.8 (19%)
25-44	20 (24%)	131 (37%)	7 (27%)	3.0 (31%)	5.3 (27%)
45-64	9 (11%)	39 (11%)	9 (35%)	1.5 (15%)	5.3 (27%)
65+	1 (1%)	7 (2%)	0 (0%)	0.8 (8%)	1.5 (8%)
Sex					
Male	31 (37%)	155 (43%)	15 (58%)	4.8 (49%)	10.3 (53%)
Female	53 (63%)	202 (57%)	11 (42%)	5.0 (51%)	9.3 (47%)

	Past 4-weeks (19 May to 15 June 2026)*	2026 YTD†	2025	2022–2025 YTD† (mean)	2022–2025 (mean)
Indigenous status					
Indigenous	80 (95%)	338 (95%)	13 (50%)	6.0 (62%)	10.3 (53%)
Non-Indigenous	3 (4%)	17 (5%)	13 (50%)	3.5 (36%)	9.0 (46%)
Unknown	1 (1%)	2 (1%)	0 (0%)	0.3 (3%)	0.3 (1%)
Severity					
Hospitalised	7 (8%)	70 (20%)	10 (38%)	1.8 (18%)	5.5 (28%)
Died	0 (0%)	1‡ (0%)	0 (0%)	0.0 (0%)	0.0 (0%)
Vaccination status					
0 doses	8 (10%)	24 (7%)	5 (19%)	1.8 (18%)	3.8 (19%)
1 dose	8 (10%)	29 (8%)	9 (35%)	1.5 (15%)	4.5 (23%)
2 doses	5 (6%)	29 (8%)	2 (8%)	0.8 (8%)	1.8 (9%)
3 doses	6 (7%)	25 (7%)	0 (0%)	1.0 (10%)	1.5 (8%)
4 doses	15 (18%)	68 (19%)	6 (23%)	1.3 (13%)	2.5 (13%)
5 doses	42 (50%)	181 (51%)	4 (15%)	3.3 (33%)	4.8 (24%)
Unknown	0 (0%)	1 (0%)	0 (0%)	0.3 (3%)	0.8 (4%)

** By diagnosis date, noting that data toward the end of the analysis period is likely incomplete.*
†YTD represents the year-to-date diagnosis period of 1 January to 15 June.
‡ The cause of death indicates that diphtheria was the probable cause.