

National Diphtheria outbreak 2024/5

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Diphtheria

- Highly contagious and vaccine preventable
- Respiratory diphtheria illness
 - Caused by toxin producing strains of *Corynebacterium diphtheriae*
 - rarely *C. ulcerans* or *C. pseudotuberculosis*
 - **Toxin is responsible for pathogenesis and clinical presentation (and deaths) of diphtheria**
- Toxin-producing strains can cause skin lesions and may be a reservoir of infection
- Vaccination: 6, 10, 14 weeks with booster at 18 months, 6 years and 12 years
- Pregnant people: vaccine with Dtap to protect the infant
- Life course vaccination: if no vaccine in last 10 years.
- Coverage >85% to prevent outbreaks.



Wellcome Images

Effect of vaccines on Diphtheria cases 1920-2019

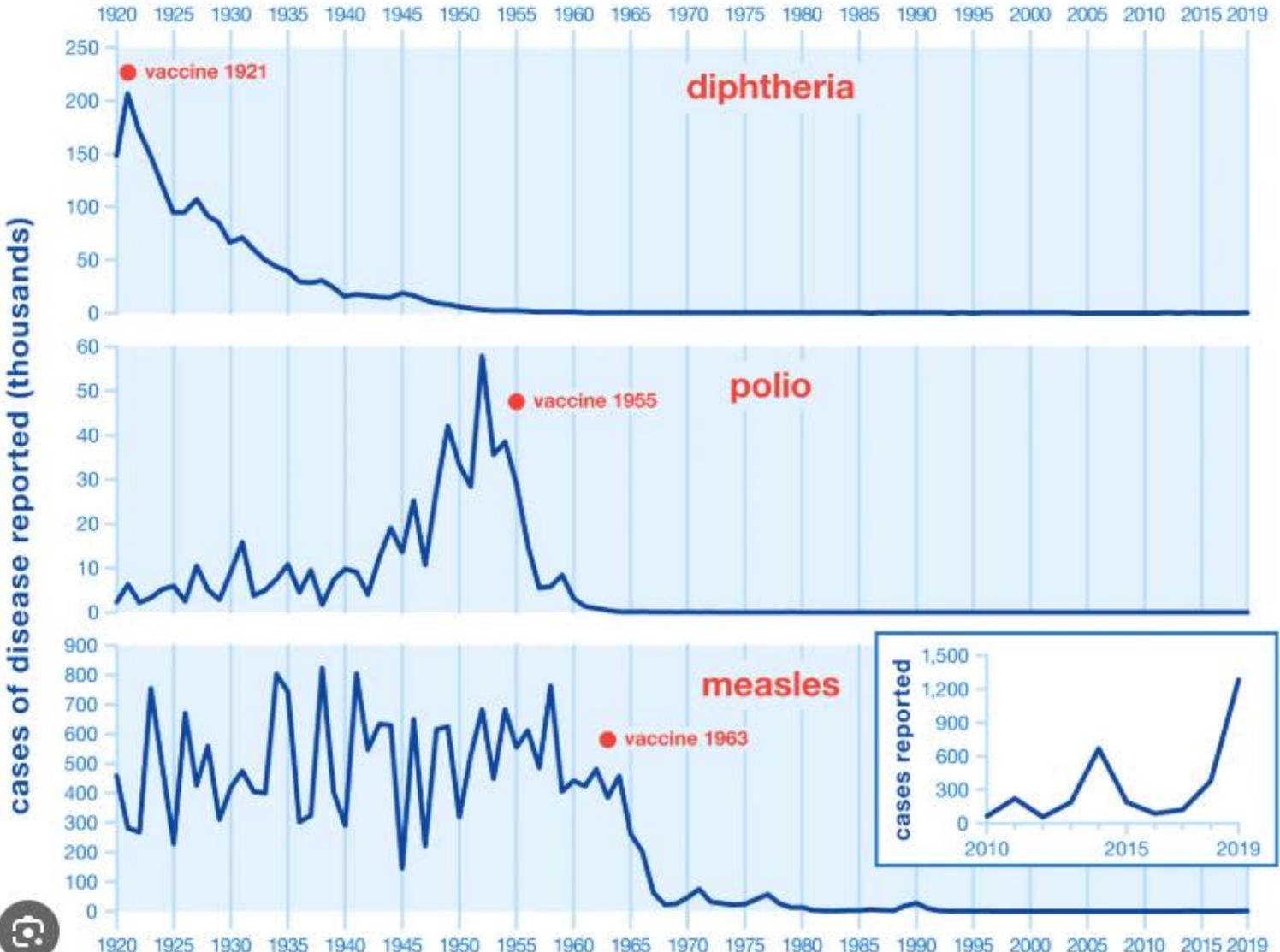
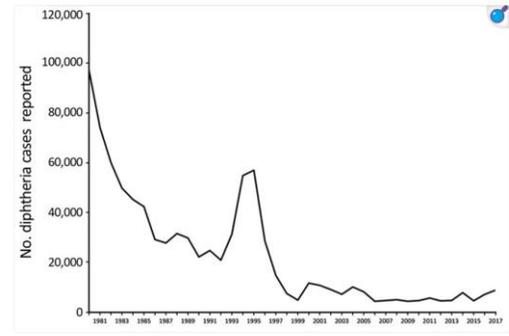


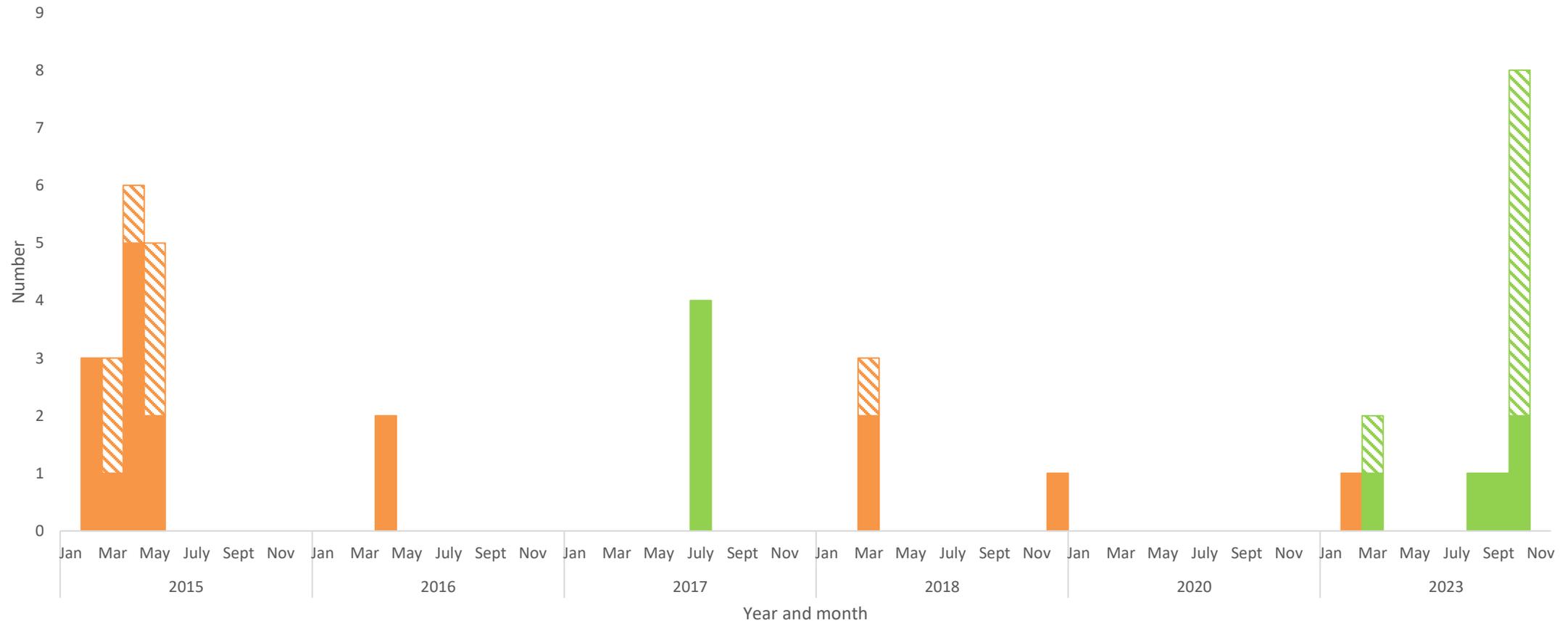
Figure 1.



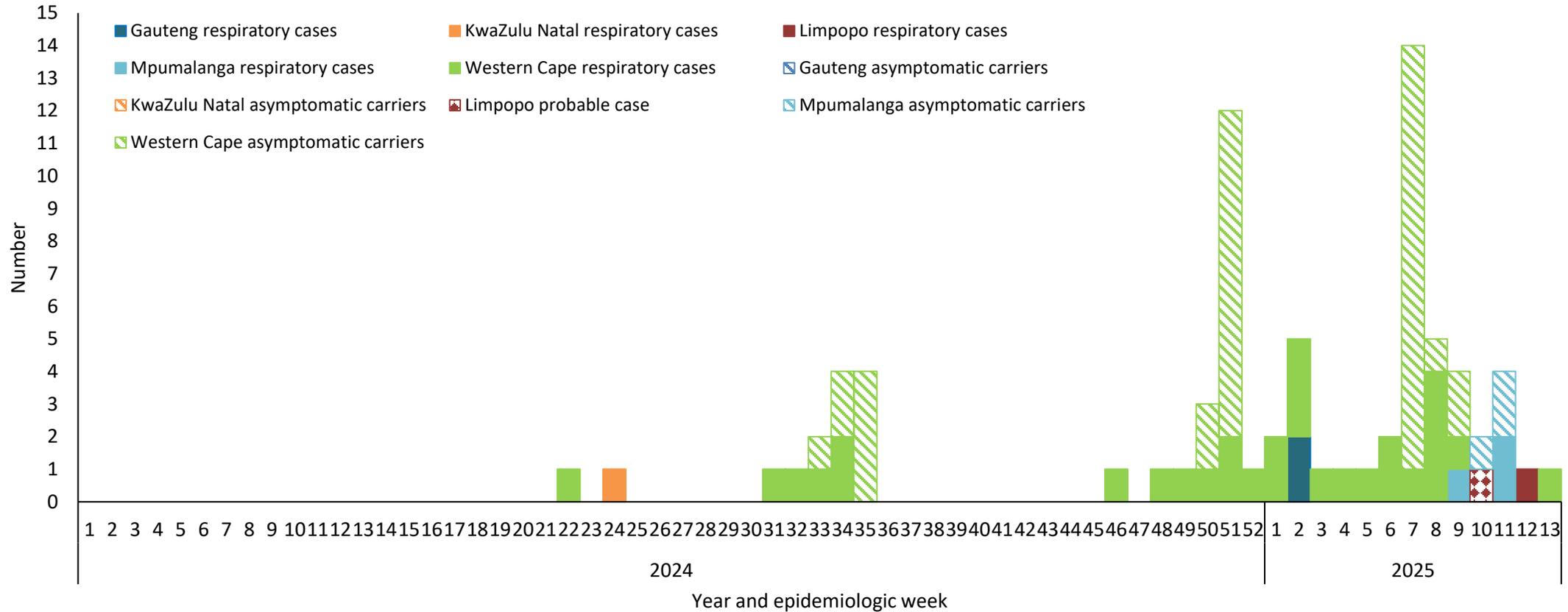
Cases of diphtheria as reported to the World Health Organization and the United Nations Children's Fund, through the Joint Reporting Form, worldwide, 1980-2017.

- Vaccine is inactivated toxoid that develops antibodies to the toxin
- Bacterial carriage may still occur

Respiratory diphtheria cases/contacts 2015-2023, South Africa.

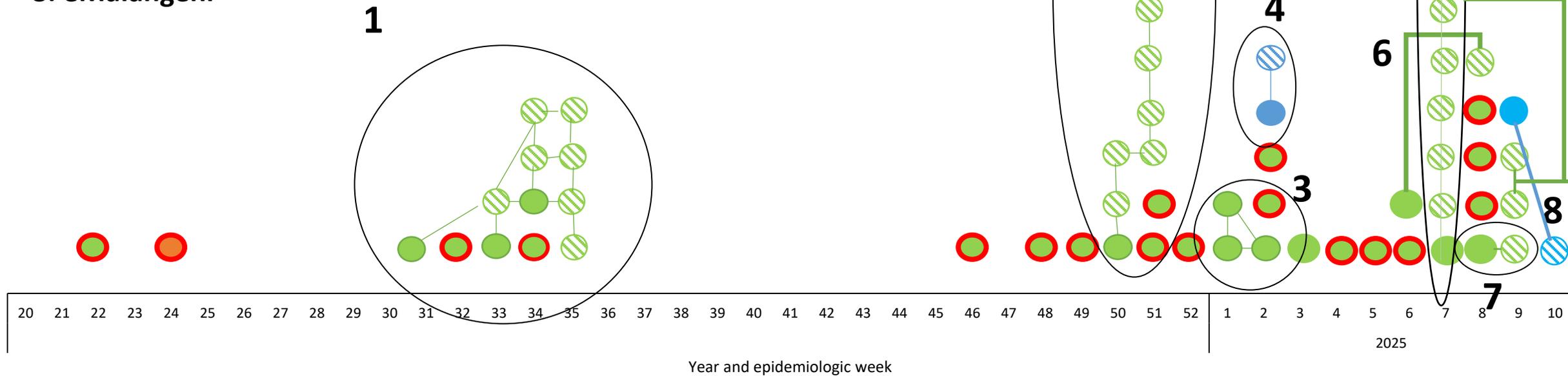


Number of individuals testing positive for toxigenic *C. diphtheriae* (respiratory diphtheria cases and asymptomatic carriers), South Africa, 1 January 2024 to 28 March 2025.

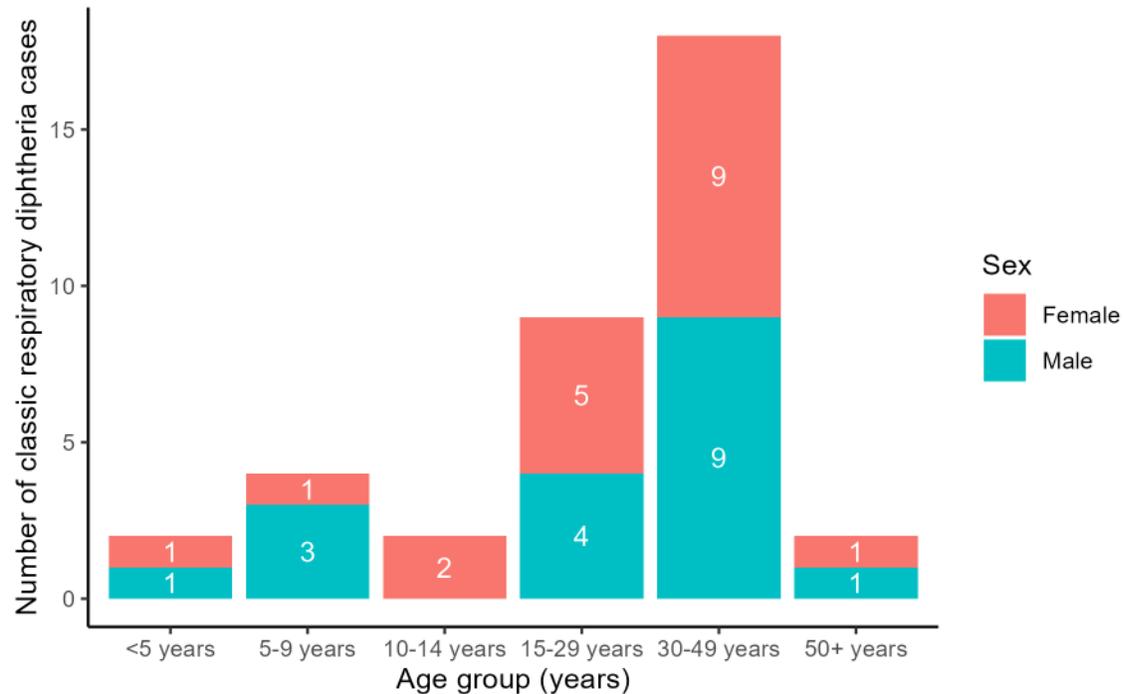


Diphtheria outbreak has included clusters and sporadic cases in South Africa 2024/5

- 1: CPT cluster**
- 2: Correctional Facility WC**
- 3: CPT**
- 4: Gauteng**
- 5: Correctional Facility WC**
- 6: CPT cluster**
- 7: CPT cluster**
- 8: eMalangeni**



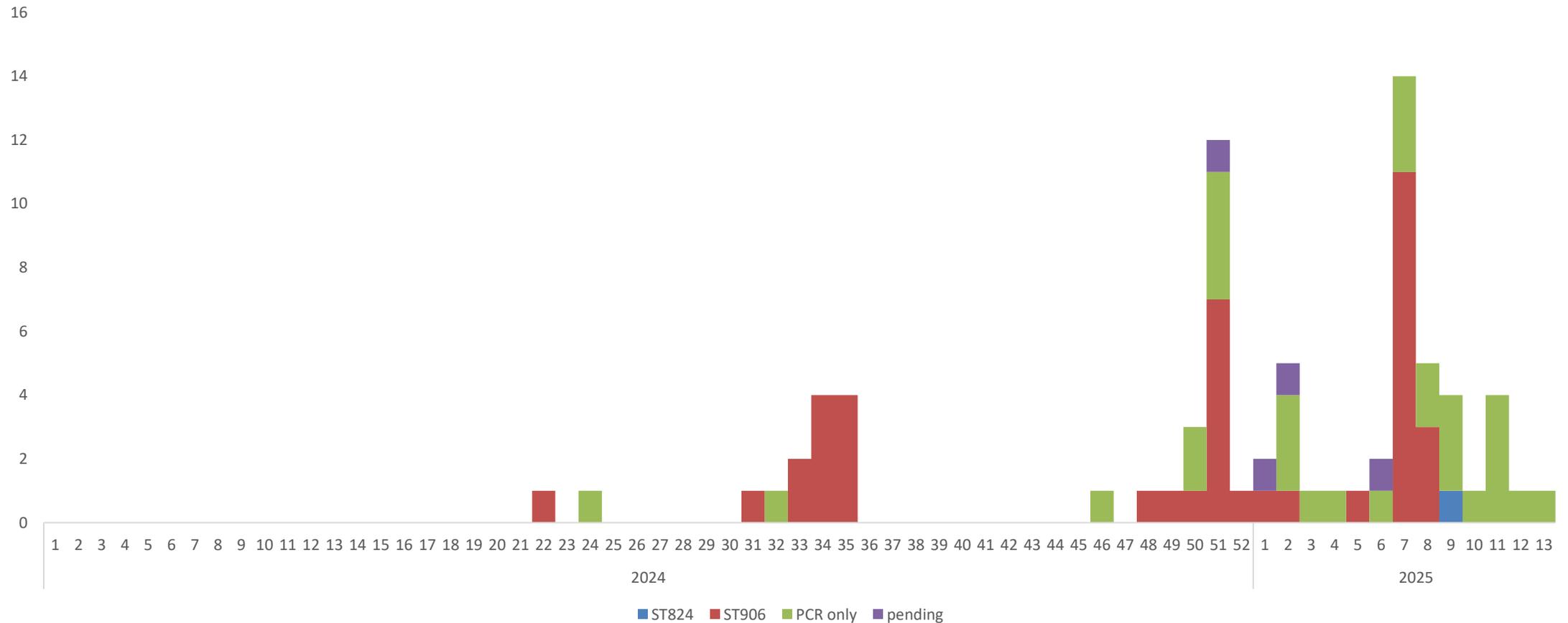
Respiratory diphtheria cases by age and sex, South Africa 2024/5



- Majority (65%) of the individuals are male – 43% occurring in a male correctional facility
- Median age among respiratory diphtheria cases is 31 years (range 2-52 years)
- Median age among asymptomatic carriers is 26 years (range 3-67 years)

Age category	Classic respiratory diphtheria cases	Asymptomatic contacts	Death among classic cases
<18 years	8 (22%)	6 (16%)	2 (22%)
≥18 years	29 (78%)	32 (84%)	7 (78%)
Total	37	38	9 (24%)

Sequencing results of samples that are culture positive 2024/2025, South Africa



Public health response: contact tracing

- **Urgent response, category 1 notifiable condition**
- Notify and complete CIF in detail for patient (please give details of vaccine history)
- All household contacts
- Other contacts:
 - More than 15 minutes with 2 metres of patient (and no PPE)
- Take swabs Nasopharyngeal (wear PPE)
- **Post-exposure prophylaxis 7-day course Azithromycin (? 3 Days)**
- Vaccinate (encourage vaccination of children)
- Self-monitor for development of symptoms – may need DAT
- Isolate at home, avoid contact until swab result
- Positive Contact
 - Trace contacts
 - Reassess for symptoms
 - Consider 14 days of Azithromycin