

**Communicable Disease Epidemiology
and Immunization Section**

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Health Advisory: Cluster of Non-toxicogenic Cutaneous Diphtheria Among Persons Experiencing Homelessness, King County, WA – 15 APR 2019

Action requested:

- Be aware of a cluster of non-toxicogenic *Corynebacterium diphtheriae* wound infections occurring among persons experiencing homelessness in King County.
- Consider *C. diphtheriae* cutaneous infection in patients with chronic non-healing ulcers, abscesses, or other wounds, particularly patients at high risk for cutaneous diphtheria, including those experiencing homelessness, with alcoholism, or injection drug use as well as persons with recent international travel. Non-toxicogenic *C. diphtheriae* can cause invasive disease.
- Swab wounds for culture (using medium containing tellurite) and antibiotic susceptibility testing on patients with suspected *C. diphtheriae* infection to distinguish from non-pathogenic *Corynebacterium* skin and nasal flora. Submit all *C. diphtheriae* isolates to Washington State Public Health Laboratory for toxigenicity testing at CDC.
- Recommend diphtheria toxoid vaccine (Td or Tdap for adults) to patients with cutaneous diphtheria in the following situations: If more than 5 years have elapsed since their last dose, if vaccine status is unknown, or if they have not completed a primary series (E.g., having fewer than 3 doses – see: <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html>).
- Use standard + contact precautions for hospitalized patients with cutaneous diphtheria. Healthcare providers should be up-to-date on Tdap vaccination.
- Ask patients about risk factors, including international travel history, vaccination history, homelessness or unstable housing including overnight stays in homeless shelters, alcohol and drug use (injection and non-injection), and contact with other ill persons or wounds.
- Report *C. diphtheriae* cases to Public Health at (206) 296-4774. If toxigenic diphtheria is suspected, please notify Public Health immediately for additional guidance. Suspicion for diphtheria should be increased in persons with risk factors and presence of grayish adherent pseudo-membrane (nasopharyngitis, tonsillitis, laryngitis, tracheitis), or toxic appearing (stridor, cervical edema, circulatory collapse, pneumonia, myocarditis).

Background: Since November 2018, 5 locally-acquired cases of non-toxicogenic *C. diphtheriae* cutaneous infection have been reported. All five patients were experiencing homelessness and stayed at emergency shelters for at least one night. Two reported injection drug use (IDU); the others denied IDU but reported non-injection drug use. No other common links have been identified for the cases at this time; the investigation is in process. Molecular testing at CDC to determine if the cases are infected with a common strain is pending.

Cutaneous diphtheria, which can be caused by toxigenic or nontoxicogenic strains of *C. diphtheriae*, is usually mild, typically consisting of nondistinctive sores or shallow ulcers. Vaccination with diphtheria toxoid (DTaP, Tdap, Td) only protects against toxigenic strains. Clusters of cutaneous diphtheria can occur in environments of overcrowding and inadequate access to hygiene or wound care and can be spread by sharing of personal items.

Resources:

- Public Health – Seattle & King County information on diphtheria: <https://www.kingcounty.gov/depts/health/communicable-diseases/disease-control/diphtheria.aspx>
- Public Health – Seattle & King County information on wound care for homeless service providers: <https://www.kingcounty.gov/depts/health/locations/homeless-health/healthcare-for-the-homeless.aspx>
- CDC recommendations for diphtheria including vaccination: <https://www.cdc.gov/diphtheria/>