Fact Sheet

Diphtheria

Also Known As: Corynebacterium Diphtheriae

What is Diphtheria?

Diphtheria once was a major cause of illness and death among children. The U.S. recorded 206,000 cases of diphtheria in 1921, resulting in 15,520 deaths. Before there was treatment for diphtheria, up to half of the people who got the disease died from it.

Starting in the 1920s, diphtheria rates dropped quickly in the U.S. and other countries that began widely vaccinating. In the past decade, there were less than five cases of diphtheria in the U.S. reported to CDC. However, the disease continues to play a role globally. In 2011, 4,887 cases of diphtheria were reported to the World Health Organization (WHO), but there are likely many more cases.

Causes and Transmission
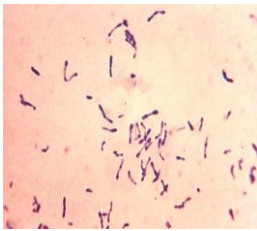
Diphtheria is an infection caused by *Corynebacterium diphtheriae* bacteria. It is spread (transmitted) from person to person, usually through respiratory droplets, from coughing or sneezing. Rarely, spreading may occur from skin lesions (like an abnormal sore) or clothes that are contaminated with discharge from skin lesions of an infected person.

A person also can get infected with diphtheria by coming in contact with an object, like a toy, that has been contaminated with the bacteria that causes diphtheria.

Signs and Symptoms

When the bacteria that cause diphtheria invade the respiratory system, they produce a poison (toxin) that can cause:

- Weakness
- Sore throat
- Fever
- Swollen glands in the neck.

Within two to three days, a thick coating can build up in the throat or nose, making it very hard to breathe and swallow. This thick gray coating is called a "pseudomembrane" and it can build up over the nasal tissues, tonsils, voice box and throat.

The pseudomembrane is formed from dead tissue caused by the toxin that is produced by the bacteria. The pseudomembrane sticks to the tissue below and may get in the way of breathing. The toxin may be absorbed into the blood stream and may cause damage to the heart, kidneys and nerves.

Diagnosis

Diagnosis of diphtheria is usually made based on signs and symptoms. A swab specimen is taken from the throat to test for the bacteria. A doctor can also take a sample from a skin lesion and try and grow bacteria to confirm the diagnosis of diphtheria.

Treatment and Complications

It is important to start treatment right away if diphtheria is suspected and not wait for laboratory confirmation. In the U.S., before there was treatment for diphtheria, up to half of the people who got the disease died from it.

Diphtheria treatment today involves:

- Using diphtheria antitoxin to neutralize the toxin produced by the bacteria
- Using antibiotics to kill and eliminate diphtheria bacteria

Diphtheria patients are usually kept in isolation until they are no longer able to infect others – usually about 48 hours after antibiotic treatment begins.

Complications from diphtheria may include blocking of airway, damage to the heart muscle, inflammation of nerves, paralysis, and lung infection. For some people diphtheria can lead to death. Even with treatment about 1 out of 10 diphtheria patients die. Without treatment, as many as 1 out of 2 patients die from the disease.

Prevention

The best way to prevent diphtheria is to get vaccinated. In the U.S., there are four combination vaccines used to prevent diphtheria: DTaP, Tdap, DT and Td. Each of these vaccines prevents diphtheria and tetanus; DTaP and Tdap vaccines also prevent pertussis (whooping cough). DTap and DT vaccines are given to children younger than seven years of age, and Tdap and Td vaccines are given to older children, teens and adults.

> ***For more sources of information on this topic visit:***
> ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co
> CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov