STREPTOCOCCUS - PNEUMONIAE, INVASIVE DISEASE

*Streptococcus pneumoniae* is a bacteria also known as pneumococcus. It causes many types of infections, the most common being ear infections, sinus infections, pneumonia, blood stream infections, and meningitis (infection of the brain and spinal cord).

### Symptoms
Symptoms start 1-3 days after exposure, and depend on where the infection is located.

- **Meningitis:** High fever that starts suddenly, sleepiness, irritability, headache, and stiff neck. Young infants may appear slow or inactive, irritable, have vomiting, or feed poorly.
- **Pneumonia:** Fever, chills, difficult or rapid breathing, pain in the chest that is worsened by breathing deeply, and a cough. In infants and young children, signs and symptoms may include fever, cough, and rapid breathing or grunting when trying to breathe.
- **Blood stream infection:** Symptoms may be vague, including fever, irritability, and dizziness.
- **Ear infection:** painful ear, eardrum is often red and swollen.

### Transmission
- The bacteria are spread through droplets from the nose or mouth of a person with a pneumococcal infection. When an infected person coughs or sneezes, droplets can be propelled up to 3 feet into the air around them. Other people can get the infection by breathing the droplets or touching hands or objects where they have freshly landed. Bacteria can also be spread by kissing or touching an infected person.
- Many people, especially children, carry the bacteria in their throats without being ill from it.
- Children under 2, children in daycares, older adults, and people who have certain illnesses (for example sickle cell disease, HIV infection, chronic heart or lung conditions) are at higher risk.

### Treatment
- Pneumococcal disease is treated with antibiotics. Some pneumococcal bacteria have become resistant to antibiotics over the years.
- Meningitis is the most severe type of pneumococcal disease. It may cause death or long-term problems such as hearing loss. Many people with pneumococcal pneumonia or blood stream infections will be ill enough to be hospitalized. Nearly all children with ear infections recover, although children with recurrent infections can suffer hearing loss.

### Prevention
- Thorough hand washing is one of the best ways to prevent pneumococcal infection, especially after coughing and sneezing and before preparing foods or eating.
- Avoid overcrowding in schools, child care centers, residence facilities, and other institutions.
- Vaccines are available for the most common strains of the bacteria. They are recommended for children, older adults, and people with chronic illnesses that decrease the immune system.

All information is general in nature and is not intended to be used as a substitute for appropriate professional advice.