

Information Sheet *Legionella*

- **What is *Legionella*?** Legionellae are bacteria that are commonly present in natural and man-made aquatic environments.
- **Who is at risk of infection and disease?** Any human is at risk of acquiring the infection, but the risk is much higher for older persons, those who smoke tobacco or have a chronic lung disease. Persons whose immune system is suppressed by certain drugs or by underlying medical conditions appear to be at particularly high risk. Infection frequently requires hospitalization and treatment, and also can and does result in death.
- **What is the risk of infection and disease to humans?** Usually infection is sporadic and can occur at home, work or public places. Risk of infection depends on several factors such as;
 - Conditions favorable for amplification of the organism to include;
 - Water temperatures of 77-108 degrees F
 - Stagnation
 - Scale and sediment
 - Biofilms
 - Presence of single-cell organisms in fresh water (amobae and protozoa)
 - Mechanism of dissemination (aerosolization of colonized water)
 - Inoculation of the organism at a site where it is capable of causing infection
 - Bacterial strain-specific virulence (strength of organism) factors
 - Susceptibility of the host (likelihood the person becomes ill)
- **How do the bacteria infect humans?** In most instances, transmission to humans occurs when water containing the organism is aerosolized in respirable droplets (1-5 micrometers in diameter) and inhaled by a susceptible host.
- **What devices producing aerosolized water have been associated with outbreaks of Legionnaires' disease?** Cooling towers, evaporative condensers, shower nozzles, aerators, whirlpool spas, humidifiers, decorative fountains and grocery store produce misters. Basically any device that breaks up water stream and produces very small droplet sizes (less than 5 micrometers) that can be inhaled deeply into the lungs.
- **What can be done to minimize the risk of exposure to the public?** Good engineering design and maintenance practices can minimize the amplification, dissemination and transmission of *Legionella*. The most effective control is prevention of transmission at as many points as possible in the disease's chain of transmission. The rationale for this is that if one preventive measure fails, others will be in place and act as fail-safe mechanisms.
- **What should be done to prepare your facility to minimize risk of infection to the public?** The Centers for Disease Control and Prevention (CDC), has produced an Environmental Assessment of Water Systems tool that can be used to determine risks related to *Legionella* and should be completed by a multi-disciplinary team at your facility such as; environmental health specialist, industrial hygienist, public health professional, risk management, facility engineer manager, safety manager and others with specific knowledge of the water systems of the facility.

- **What maintenance and engineering practices are recommended for facilities?** The CDC recommends that the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE) Standard Guideline 12-2000, “*Minimizing the Risk of Legionellosis Associated with Building Water Systems*” be used as a guideline for facilities.

- **Who should I contact with questions related to *Legionella*?** Contact the California Area Indian Health Service, Division of Environmental Health Services:
 - Area Office (Sacramento): 916-930-3981 ext. 336/337 (Carolyn Garcia or Aaron McNeil)
 - Escondido District Office: 760-735-6891 (Brian Lewelling)
 - Redding District Office: 530-246-5339 ext. 302 (Molly Madson)

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By

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