LEGIONELLA CONTROL IN HEALTH CARE FACILITIES

(Compliance with JCAHO Standard EC.1.7 - Utility Systems Management Plan)

References:

Fed/OSHA’S Technical Manual [TED1-0.15A] Section III, Chapter 7 - Legionnaires’ Disease

CDC - Sustained Transmission of Nosocomial Legionnaires’ Disease - Arizona and Ohio

Maryland Dept. of Health & Mental Hygiene - Legionellae in Water Systems in Healthcare Institutions

Background

Legionella, a genus of bacteria causes an estimate of 25,000 cases of Legionnaires’ disease each year in the United States alone. There are over 2,000,000 infections per year which result in 88,000 deaths. A majority of outbreaks are linked to cooling towers and domestic water systems. Other sources include evaporative condensers, respiratory equipment, showers, faucets, whirlpool baths, humidifiers, and decorative fountains. Hot-water systems are also a perfect breeding habitat for Legionellae. Legionellae grows best in water at 95 F to 115 F.

Uncontrollable incidents which can cause Legionellae problems include surges in water pressure which may disburse dirt into the water system or dislodge Legionellae-laden scale and sediment from the water line pipe walls. Major excavation work (construction projects) have also been associated with outbreaks of Legionellae. Entry can be made into cooling towers, air intakes, water pipes, or even by direct inhalation. In addition, new or renovated building water lines which are not properly flushed prior to opening may be infested with Legionellae. Idle building plumbing may also have heavy contamination due to stagnant water.

Legal Considerations:

In spite of litigation, clinical findings, engineering data and regulatory guidelines; many health care professionals have a false impression that Legionaries’ disease is rare. To the contrary, if Legionellae outbreak occurs several issues will have to be weighed with respect to the due diligent effort and liability of management to maintain a safe environment of care. The best defense is to understand its unforeseen presence and adhere to a sound, working action plan relevant to the needs of the facility so legal exposure is minimized.

Organizational Considerations:

Today, the potential for organizational-acquired illness is greater than ever. A large portion of hospital patients are becoming severely immuno-compromised in the course of treatment. Their sensitivity and tolerance to these types of bacteria infestations is becoming lower. Continuous construction and excavation around patient and worker areas has become a health issue around health facilities. Lastly, continued reductions in hospital maintenance staffs and operating budgets is further reducing engineering efficiency.

Management Action Plan:

The development of a sound action plan consists of addressing several legal, safety and engineering considerations. They include:
• EPA, CDC, OSHA and other regulatory requirements
• Evaluating Risk Assessments, Mitigation, Operational Management and Remediation
• Employee Awareness Program
• Identification, Monitoring and Sample Strategies
• Engineering Controls and Emergency Response
• Documentation

JCAHO Standard EC.1.7 - Utility Systems Management Plan:

Beginning January 2001, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has prescribed the requirement for a management program over the broad term of... *managing pathogenic biological agents in cooling towers, domestic hot water, and other aerosolizing water systems.* That definition would incorporate the need and use of a management plan for Legionellae control.

**LIST of NOSCOMIAL PATHOGENS ASSOCIATED with WATER RESERVOIRS**

<table>
<thead>
<tr>
<th>Reservoir Type</th>
<th>Transmission Route</th>
<th>Associated Pathogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potable Water</td>
<td>Contact, Droplet</td>
<td>Legionellae, Pseudomonas, Mycobacteria</td>
</tr>
<tr>
<td>Sinks</td>
<td>Contact, Droplet</td>
<td>Pseudomonas</td>
</tr>
<tr>
<td>Faucet aerator</td>
<td>Contact, Droplet</td>
<td>Pseudomonas</td>
</tr>
<tr>
<td>Showers</td>
<td>Inhalation</td>
<td>Legionellae</td>
</tr>
<tr>
<td>Ice and Ice Machines</td>
<td>Ingestion, Contact</td>
<td>Legionellae, Enterobacter, Pseudomonas, Salmonella, Cryptosporidia</td>
</tr>
<tr>
<td>Eyewash Stations</td>
<td>Contact</td>
<td>Legionellae, Pseudomonas, Amoeba</td>
</tr>
<tr>
<td>Dental Unit Water Lines</td>
<td>Contact</td>
<td>Legionellae, Pseudomonas, Sphingomonas, Acinetobacter</td>
</tr>
<tr>
<td>Dialysis Water</td>
<td>Contact</td>
<td>Gram-negative bacteria</td>
</tr>
<tr>
<td>Water Baths</td>
<td>Contact</td>
<td>Pseudomonas, Acinetobacter</td>
</tr>
<tr>
<td>Ice Baths for Thermodilution Catheters</td>
<td>Contact</td>
<td>Staphylococcus, Ewingells</td>
</tr>
<tr>
<td>Tub immersion</td>
<td>Contact</td>
<td>Pseudomonas</td>
</tr>
</tbody>
</table>

**EnviroAnalysis, Inc.** offers a comprehensive Management Action Program which enables you to oversee organizational as well as legal considerations related to Legionellae control. To afford you maximum efficiency and cost contaminant, the program's system data bases literally bring you 'online' and absolutely current. Program components available include:

’OnLine’ compliant with:

Current regulatory codes and standards

Access Data Files with updates:

Preventive Maintenance and Water Temperature Schedules

Monitoring and Environmental Testing Program

Certified Sampling Report and Data Base

Emergency Response Program

Remedial Recommendations

Disinfection Procedures

Cooling Towers

[http://www.enviroanalysis.com/legionellae.htm](http://www.enviroanalysis.com/legionellae.htm)
Decorative Fountains

Domestic Water Systems

Employee Awareness Program (optional)

Water System Schematics (optional)

Please contact us toll free at (866) 922-1257 for further program and service information.