

# Legionella: Complying with TJC Environment of Care Standard

## Legionella: Complying with Joint Commission Environment of Care Standard

presented by Tim Keane  
Environmental Infection Control Consultants (EICC)

Cost Effective Engineering Solutions to  
Engineering System Pathogens

EICC

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## Environmental Infection Control Management

The process of recognizing potential for and minimizing risk of healthcare associated infections linked to the physical environment. The physical environment pertains to the built systems including air, water, equipment and surfaces.

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Environmental infections increase length of stay and needlessly waste billions of dollars each year in medical and insurance resources.

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## Madison hospitals consider shutting down waterfalls due to Cudahy Legionnaires' outbreak

Posted: Mar 18, 2010 6:04 PM EDT

MADISON (WKOW) -- Madison hospitals consider shutting down waterfalls in light of a Legionnaires' outbreak at a facility in Cudahy.

Eight people who visited St. Luke's South Shore in Cudahy between the end of February and early March tested positive for the disease. Two of them are still hospitalized.

Officials say the hospital's decorative water wall is the source of the Legionnaires' outbreak. Aurora Health Care has shut down the waterfall at St. Luke's and at five other health care facilities in Wisconsin.

Just to be safe, St. Mary's Hospital in Madison opted to shut down its water features. In a statement, St. Mary's spokesperson Steve Van Dinter says, "St. Mary's has and continues to follow a regular maintenance and cleaning program to ensure our water features remain a safe and calming part of our healing environment. However, as a precautionary measure, we have shut down the water features this week to conduct additional testing."

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The screenshot shows a news website interface. At the top, there is a banner for "EYEWITNESS NEWS 03 KYW" with the website URL "www.kyw.com" and a "Send Us Your News Tips" link. Below the banner, there is a yellow headline: "Issues with new construction (9 month old building) and critical event". The main content area features a headline: "Six Cases of Legionnaires' Disease Confirmed". The article text includes: "(KYW) (HORSHAM, PA) Jun 12, 2002 5:10 pm US/Eastern Six residents of the Madyln and Leonard Abramson Center for Jewish Life in Horsham, Montgomery County, have now been diagnosed with Legionnaires' Disease. Two residents of the geriatric center are hospitalized at Abington Memorial Hospital - both are listed in stable condition. Four others, all said to be between 90 and 100-years old, are receiving hospital care at the nursing home." There are also "Related Links" for "Centers for Disease Control and Prevention - Questions and Answers about Legionnaires' Disease" and "Montgomery County Health".

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## \$5.2 million settles hospital outbreak suit

By Elizabeth Allen - Express-News 10/30/2008 12:00 CDT

Different players in a lawsuit over a deadly 2006 hospital outbreak of Legionnaires' disease used different words to describe the circumstances that bred the bacteria. A lawyer called it a "perfect storm," a widower referred to "Keystone Kops" and a scientist said it was like "the sun and the moon and the stars lining up together" while discussing a \$5.2 million settlement Wednesday. The outbreak, tied to a combination of construction problems and flaws in water heaters at North Central Baptist Hospital, claimed three lives and sickened seven other people, with most of those linked to the hospital water system.

Al Evans said all his wife did was drink a glass of water and use the restroom while visiting a sick friend in early May 2006. He and Ruth Evans, his wife of 39 years, were visiting Susan Tripp, who was recovering from surgery in a new wing of the hospital.

"The same day we were in there, they came rushing in, took her (Tripp) out of there, said not a word to us and put her in the ICU," Evans said. Tripp would be diagnosed with Legionnaires' disease within days, and a little more than a week later Ruth Evans went to the emergency room, gravely ill. She died May 22. Tripp survived but remains in poor health, according to court documents.

Building was less than 9 months old at time of outbreak

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## LEGIONELLOSIS, NURSING HOME - USA (PENNSYLVANIA)

Source: The Philadelphia Inquirer [edited] Date: Wed 12 Jun 2002

9 elderly residents of a new nursing home in Montgomery County (Pennsylvania) are reported to be ill, 5 of them diagnosed with Legionnaires' disease and the other 4 being tested for it, authorities said yesterday.

"This is a potentially life-threatening situation for everyone involved," said Susan Denman, medical director for the Madlyn and Leonard Abramson Center for Jewish Life in Horsham.

All 9 persons had lived in their own rooms on the "D Wing" of the sprawling that wing were moved into other rooms of the facility as a precaution while authorities searched for a possible source of the noncontagious bacterial illness.

Building was less than 9 months old at time of outbreak

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## UF's cancer hospital takes steps against Legionella

By Diane Chun

Published: Wednesday, December 9, 2009 at 5:54 p.m.

University of Florida College of Medicine and Shands officials have moved to treat the water system at the new Shands Cancer Hospital after Legionella bacteria was found in a patient room Tuesday.

When one patient tested positive for the bacteria, water samples were taken from the two sinks in the patient's room and the bacteria was discovered. Shands CEO Tim Goldfarb said steps have already been taken to determine the source of the bacteria and treat the hospital's water system.

In the meantime, patients and their families are asked not to drink the hospital water due to the high chlorine levels, not to use the ice machines, not to shower due to the high water temperature, and to continue to wash their hands thoroughly with cold water.

About 140 patients are currently hospitalized at the Shands Cancer Hospital. Not all are cancer patients. No further information was provided on the patient who tested positive for Legionella.

Each year, between 8,000 and 18,000 people are hospitalized with Legionnaires' disease in the United States. The disease is not spread from person to person.

Those most at risk from the bacteria are those over the age of 65, smokers, or those with a chronic lung disease. Those with a weakened immune system, due to cancer, diabetes or kidney failure, are also more likely to be sickened by Legionella.

"What we have is hardly an outbreak, let alone an epidemic," Flynn said.

Building was less than 1 month old at time of outbreak

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## TJC "Environment of Care" Standard (2010) Facility EC.02.05.01 requires

"The organization manages risks associated with its utility systems."

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# Legionella: Complying with TJC Environment of Care Standard

## TJC "Environment of Care" Standard (2010) Facility EC.02.05.01 requires

"Engineering controls of waterborne pathogens in:  
✓ potable water,  
✓ cooling tower systems and  
✓ other aerosolizing water systems."

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## TJC "Environment of Care" Standard (2010) Facility EC.02.05.01 requires

The organization identifies in writing inspection & maintenance activities for all operating components of utility systems. The activities are based on criteria such as manufacturers' recommendations and risk levels.

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## TJC Direct Impact Requirements

"An organization's failure to resolve these compliance issues has a direct impact if noncompliance is likely to create an immediate risk to patient safety or quality of care. The difference between Direct Impact Requirements and other requirements is that the direct risk usually results because there are no or few processes intervening between the noncompliance and the impact on the safety of a patient's care."

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## Risk Factors

- # Organ Transplant
- # HIV
- # Diabetes
- # COPD
- # Corticosteroids
- # Cytotoxic Chemotherapy
- # Radiation Therapy
- # Age (> 40)
- # Gender (Male)
- # Heavy Smoking
- # Heavy Drinking

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## Waterborne Pathogens - Compliance with TJC Requirements

ASHE - TJC Advisory 2001

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## "TJC Surveyor expectations for hospitals

### The Facility Manager should:

- ✦ Assess the environmental risk from potential amplification factors such as:
  - Domestic hot water systems
  - Design (i.e. dead legs or low flow conditions)
  - Operation (i.e. water temperature)
  - Maintenance (i.e. flushing and cleaning of hot water tanks)

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## "TJC Surveyor expectations for hospitals

### The Facility Manager should:

- ✦ Cooling and humidifying system which produce an aerosol
  - Design (i.e. drift eliminators)
  - Operation (i.e. sterile water in room humidifiers)
  - Maintenance (i.e. cleaning cooling towers and use of an effective biocide)

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## "TJC Surveyor expectations for hospitals

### The Facility Manager should:

- ✦ a) Develop a management plan as a result of the assessment (step 1) that includes standard operating procedures (SOP's) for maintenance and operation of water systems

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## "TJC Surveyor expectations for hospitals

### The Facility Manager should:

- ✦ b) Develop a system to document and log findings as a result of these SOP's such as temperatures, blow down of hot water tanks, cooling tower inspections etc.

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## "TJC Surveyor expectations for hospitals

### The Facility Manager should:

- ✦ c) Included in these SOP's should be a maintenance and audit program for any systems

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## AIA Guidelines for Construction of Healthcare Facilities

"Provisions shall be included in the domestic hot water system to limit the amount of Legionella bacteria and opportunistic waterborne pathogens."

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## CDC Guidelines for Environmental Infection Control in Health-Care Facilities 2003

Conducting environmental surveillance would obligate hospital administrators to initiate water-decontamination programs if *Legionella spp. are* identified. Therefore, periodic monitoring of water from the hospital's potable water system and from aerosol-producing devices is not widely recommended in facilities that have not experienced cases of health-care-associated legionellosis.

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## CDC Guidelines for Environmental Infection Control in Health-Care Facilities 2003

The second strategy to prevent and control health-care-associated legionellosis is a clinical approach, in which providers maintain a high index of suspicion for legionellosis and order appropriate diagnostic tests (i.e., culture, urine antigen, and direct fluorescent antibody [DFA] serology) for patients with health-care-associated pneumonia who are at high risk for legionellosis and its complications.

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**WHY?**



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**Health officials will stay on the lookout for Legionnaires' bacteria even after all-clear**

April 12, 2010

KINGSTON - The Ulster County Health Department may have given the Golden Hill Health Care Center in Kingston the all-clear after all traces of Legionnaires' disease bacteria were flushed from the air ventilation system, but they are keeping an eye on it. Two elderly patients in the county-owned nursing home died as a result of the disease. The county heat flushed the system and found the system all clear. County Health Director Dr. LaMar Hasbrouck said, though, the county will keep an eye out for it. "This is one of those bacteria that if you go searching for it and it is ubiquitous and can be in hot water systems as well as air conditioning systems and things like that," he said. **"We usually don't go looking for it. We usually wait for a clinical clustering of illness."** That, said Dr. Hasbrouck, is because people may have the bacteria in them, but not express any of the symptoms if the illness.

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**Environmental Infections & LITIGATION**

Legionella, like mold, is not covered by most insurance policies

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## Building Types & Inherent Risks for Waterborne Pathogens

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## System Risk Factors Temperature

< 68°F	no growth
68°F to 113°F	growth
86°F to 110°F	rapid growth
110°F to 122°F	growth
> 122°F	no growth
> 130°F	die in hours
> 140°F	die in minutes
> 160°F	die in seconds

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## Effective Engineering Solutions to Engineering System Pathogens

Environment of Care Consultants  
providing Water & Airborne Pathogen  
Risk Management Consulting to  
Healthcare Facilities

<http://www.legionellae.org/guidelines/guidelines.htm>

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