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	PREVENTION AND CONTROL OF LEGIONELLOSIS	<i>Supersedes</i>	7/31/04

KEY WORDS: Legionella, Legionellosis, Legionnaires Disease, Pontiac fever, pneumonia, water restrictions, water testing

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I. POLICY:


- A. OBJECTIVE:** The primary objective of this policy is to outline the prevention and control measures that have been instituted at the Johns Hopkins Hospital to minimize the risk of nosocomial legionellosis.
- B. INDICATIONS FOR USE:** This policy shall be used for prevention and control of Legionella and to minimize the risk of nosocomial legionellosis.

C. DEFINITIONS:

LEGIONELLA SP.	<ul style="list-style-type: none"> ▪ Gram negative bacillus commonly found in various natural and man-made aquatic environments. ▪ Cooling towers, evaporative condensers, and hot potable-water-distribution systems within the hospital can provide a suitable environment for legionella to multiply. ▪ Patient populations who are immunosuppressed or who have chronic underlying illnesses are most at risk for acquiring legionellosis (Legionnaires disease; Pontiac fever).
DEFINITE NOSOCOMIAL	<ul style="list-style-type: none"> ▪ A health care associated case will be considered nosocomial if <i>Legionella sp.</i> is identified by culture, DFA or urinary antigen in a patient that has been hospitalized continuously for 10 days before the onset of illness.
POSSIBLE NOSOCOMIAL	<ul style="list-style-type: none"> ▪ A possible health care associated case is laboratory-confirmed infection that occurs 2-9 days after a JHH admission in which the onset of symptoms is 2-9 day

II. RESPONSIBILITIES:

LEGIONELLA TASK FORCE	<p>A. The Task Force will include representatives of Hospital Epidemiology and Infection Control (HEIC), Facilities and Engineering, Risk Management, Nursing, Infectious Diseases, Health Safety, & Environment, Hospital Administration, Microbiology Lab, and Public Affairs.</p> <p>B. The task force will meet on an ad hoc basis when convened by the Hospital Epidemiologist.</p>
FACILITIES	<p>A. Responsible for water testing – (see primary prevention below).</p> <p>B. May be contacted with questions related to this policy.</p>
HOSPITAL	<p>A. Monitors the occurrence of nosocomial Legionella by daily review of</p>

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EPIDEMIOLOGY/INFECTION CONTROL (HEIC)	microbiological laboratory data. B. Responsible for reporting case(s) to the local health department. C. May be contacted with questions related to this policy.
MICROBIOLOGY LAB	A. Identify and notify HEIC and Facilities of positive legionella culture results.


III. PROCEDURE:

A. Process

1. Surveillance
 - a. Any positive culture/Direct Fluorescent Antibody (DFA) and/or urinary antigen for *Legionella sp.* is immediately reported to HEIC and is assessed for nosocomial acquisition.
 - b. Pulse field gel electrophoresis (PFGE) maybe used to verify the nosocomial status of legionella cultures.
 - c. All BAL specimens obtained for the diagnosis of pneumonia in the adult and pediatric population shall be sent for Legionella DFA/culture.
2. Secondary prevention
 - a. When a single case of laboratory-confirmed nosocomial Legionnaire’s disease is identified, **or** at least 2 possible cases exposed to the same water system in 6 months, the following procedures will go into effect in the specific buildings.
 - 1). Epidemiological and Environmental Investigation
 - Review of recent nosocomial pneumonia cases.
 - Consult with Occupational Health Service on possible pneumonia cases among employees.
 - Culture water on the unit(s) where the affected patients resided including aerators and showerheads.
 - Use PFGE to compare isolates from the patient to environmental isolates in the event of positive cultures.
 - If culture results are positive for Legionella sp.:
 - Bone marrow transplant and solid organ transplant patients will bathe with water that is not contaminated with Legionella sp.
 - Patients will not be allowed to shower in water contaminated with Legionella sp.
 - Bottled water will be used for drinking and medications in affected building(s).
 - Local and State Health Departments will be notified.
 - Recommendations mandated by the Health Department will be followed.
 - Restrictions will continue until recommendations made by Health Department have been met. The Health Department will lift the restrictions based on those results.
 - 2). Water System
 - If the isolate from the patient and the environment are identical as identified by DNA analysis or a nosocomial case is documented, the water system will be disinfected.
 - Selection of the method will be a decision of Legionella Task Force.
 - Specific precedures for water cooling towers are in Appendix A.

IV. REPORTABLE CONDITIONS:

- A. Any positive culture/Direct Fluorescent Antibody (DFA) and/or urinary antigen for *Legionella sp.* is immediately reported to HEIC and is assessed for nosocomial acquisition.

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B. For nosocomial cases, in addition to the health department, appropriate individuals in Administration, including the President, Chief Operations Officer, Vice President of Nursing, and Vice President of Medical Affairs shall also be notified by HEIC.

V. SUPPORTIVE INFORMATION:

A. REFERENCES:

- Brundrett, G.W. (1992). *Legionella and building services*. 1st ed. Oxford, GB: Butterworth-Heinemann Ltd.
- Centers for Disease Control. (2002). *Guideline for the Prevention of Nosocomial Pneumonia*.
- Center for Disease Control. (2000). *Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients*.
- State of Maryland. (2000). *Report of the Maryland scientific working group to study Legionella in water systems in healthcare institutions*, June 14.

B. COMMUNICATION & EDUCATION:

1. This policy will be communicated to the appropriate JHH personnel via the following channels:
 - a. HEIC Committee will communicate this policy to departments.
 - b. Department Managers will ensure compliance.
 - c. This policy will be placed in the Interdisciplinary Clinical Practice Manual on the JHH Intranet site <http://www.insidehopkinsmedicine.org/icpm>. Paper distributions will be made to the Functional Unit Nursing offices in the event of web access difficulty.

SPONSOR:

- Medical Care Evaluation Committee

DEVELOPER:

- Hospital Epidemiology and Infection Control

REVIEW CYCLE	▪ Three (3) years	MEDICAL BOARD	Approval Date: 1/29/08 Effective Date: 2/1/08
VICE PRESIDENT FOR NURSING & PATIENT SERVICES		VICE PRESIDENT FOR MEDICAL AFFAIRS	
_____		_____	
Date:		Date:	