

Comments on: CDC RFI on Effective Methods for Implementing Water Management Programs (WMPs) To Reduce Growth of Transmission of Legionella spp.

By: John Letson

Vice President Plant Operations
Memorial Sloan Kettering Cancer Center

(1) **What existing standards or guidance does your organization use for the prevention of *Legionella* growth and transmission?**

Memorial Sloan Kettering Cancer Center (MSK) established our own WMP back in 1999/2000 following a positive patient case. The plan provided a common sense approach to protect a large at risk patient population from Legionella and other waterborne pathogens. The thought process was that if we killed or controlled Legionella, being a higher life form of the bacteria, we would kill everything else too. The plan was based on a zero tolerance for legionella; meaning if we got any positive cultures we would review the test results, system operation, other possible contributing factors or potential causes for the positive result. Based on that review we would mitigate accordingly, report as needed to our Infection Control group, and retest until the levels were again at zero. At the time the primary source of exposure was identified as being from shower water; more specifically potable hot water. Modalities for long term mitigation of legionella in potable hot water were reviewed and copper-silver ionization was selected, purchased and installed on all inpatient areas. The systems are regularly monitored and maintained and have been highly effective in eliminating legionella ever since (2000).

(2) **Are there other standards or guidance for the prevention of *Legionella* growth and transmission that you would find useful but do not exist or are not currently available to you? If so, what information should those standards or guidance contain?**

If there are methods to better design plumbing and piping systems to reduce the instance of stagnant water where Legionella can thrive, those design concepts should be integrated into building code and should complement any associated code for water conservation. Realistically, legionella bacteria that comes into buildings through their source water is the largest problem. But without clearly defined laws, regulations and standards buildings and their occupants are at the mercy of the potable water utility. MSK has multiple water utilities for our different facilities and has only started testing potable water recently at our outpatient locations. Initial results indicate that water utilities who's water is derived from deep wells have less incidence of legionella in the source water than utilities using open reservoirs. This is an indication of the effectiveness of ground water filtration or any filtration in the removal of bacteria and or the sediment that they feed on. Keeping in mind that potable water utilities represent over 50% of the travel distance of water from source to use; the federal and state governments need to completely overhaul, and bring up to date, drinking water regulations and change them to require minimum filtration rates as well as minimum sanitizing standards to prevent legionella and other waterborne pathogens from thriving in municipal water systems. For buildings and building water systems, the existing standards and guidance are sufficient at this time. Every organization and entity from source to user has to take ownership of this and develop what works best for their organization and location.

- (3) What is your organization's role, and your role within the organization, in achieving implementation of WMPs by owners and managers of buildings at increased risk for *Legionella* growth and transmission?

The organization's and my role are identical; which is to provide a safe environment for our immunocompromised patients.

- (4) In your organization's experience, what are the principal barriers to implementation of WMPs by building owners and managers?

Financial support for the purchase and maintenance of effective long term mitigation modalities and the dedicated staff to support mitigation and regular testing. In terms of water management plan implementation, having defined roles and responsibilities within a department and a method for proper record keeping seems vital. To streamline collection of data and ensure that records are consistently up to date, it would be most efficient if the regulating body created an online portal where required data could be submitted on a defined, periodic basis. This would also help to monitor and police any requirements for timely testing and or documentation that are not in compliance.

- (5) Where there are barriers, what has your organization done to overcome these barriers?

Once the need and risk are conveyed to the organization financial support was provided.

- (6) Where implementation of WMPs has gone smoothly, what factors (e.g., resources, guidance, activities) contributed to this success?

WMP and successful mitigation strategies were all well in place and well publicized to executive management long before the attention of recent days (1999). Unlike recent requirements for escalated plans to be put together MSK had the luxury of being able to put our plan together and enhance the plan over time.

- (7) Has your organization had experience with approaches to WMP implementation that are specific to certain settings (e.g., hotels, hospitals) or devices (e.g., cooling towers, potable water)? If so, have you learned anything from these different approaches that could be used to improve WMP implementation? Have you looked for or experienced any unintended consequences related to a WMP?

Yes absolutely. MSK has had 18 years of experience developing our plans for our facilities in the New York and New Jersey areas and we learn something new that changes our WMP's regularly. MSK is the leading cancer center in the country with very high number of at risk patients. Each time we have a positive culture or even a positive patient case we review the circumstances surrounding that case and modify our plan accordingly. Our primary focus is potable water systems, both hot and cold, and cooling towers. One aspect that is common to all systems is Legionella testing. Testing is one area that has seen the most changes over the 18 years. In 1999 we tested domestic water tanks annually, random shower head swabs every two weeks and cooling towers haphazardly were tested quarterly. Today we test potable water tanks every 90 days, domestic water distribution quarterly and cooling towers EVERY month except February and November to get around the every 90 day violations. As far as unintended consequences it has been difficult to accept punitive actions from the NYC DOH for non-compliance on miniscule points where the WMP, that has been in existence and highly effective for 17 years, missed some of the specific requirements of the law but met the basic intent. As an example MSK's plan called for quarterly 3rd party testing. NYC legislated 90 days so we received violations and punitive fines for 98 and 105 days even though both consecutive tests were 100% negative for legionella. I should be preventing legionella and protecting my patients in the institution not representing the institution in court.

- (8) A limited number of jurisdictions have implemented regulations to reduce the risk of *Legionella* growth and transmission (e.g., New York, New York City). In your state or local jurisdiction,

should building codes or other types of public health regulation or legislation be used to help prevent Legionnaires' disease? Why or why not?

Yes regulations are an excellent tool as long as they are not too punitive and ensure that buildings and building owners and operators meet the intent of the regulations. Reporting requirements are onerous and resource intensive for building owners and managers, so if there is to be a reporting requirement it should focus on a primary point of infection, as opposed to focusing on less risky building systems such as cooling towers. In terms of rules and regulations in New York and New York City, two issues related to monitoring and preventing growth and transmission of Legionella come to mind: (1) there is a lack of alignment between codes and rules coming from the State and the City and (2) current codes and reporting requirements don't necessarily target the building systems that are the primary source for infection. The primary or most likely source for infection is a buildings interior potable water system because that is the method through which people primarily come into contact with aerosolized Legionella, but there are only reporting requirements for cooling towers in NYC unless you are a healthcare facility. All buildings should be treated equally in regulations too regardless of occupancy and all building water systems should be treated equally as well. I've said it many times, the patients at MSK are as safe as can be from legionella while they are in the hospital, but when they leave to go home we cannot say the same is true!!

(9) Are there other approaches to reducing the risk of Legionnaires' disease that your organization has found to be useful besides implementation of WMPs?

MSK tests all sputum samples taken from patients for legionella. Patients with respiratory symptoms are tested for legionella via a bronch wash or urine antigen. While the testing does not reduce incidents it does identify early patients who may be infected or to qualify nosocomial or community acquired.

(10) What additional considerations are relevant to developing guidance for preventing Legionnaires disease?

As stated in (2) above: Keeping in mind that potable water utilities represent over 50% of the travel distance of water from source to use; the federal and state governments need to completely overhaul, and bring up to date, drinking water regulations and change them to require minimum filtration rates as well as minimum sanitizing standards to prevent legionella and other waterborne pathogens from thriving in municipal water systems.

(11) Has your organization implemented specific approaches to reducing the risk of disease due to other opportunistic waterborne pathogens besides *Legionella*? If so, please explain. Do these approaches conflict in any way with your approaches to reducing the risk of Legionnaires disease?

No not specifically. As stated above the general thought is that if we are controlling legionella we were controlling other waterborne bacteria as well.