



The PMI Market Outlook – A Valuable, New PMI Member Benefit

By Nate Kogler, President, PMI Board of Directors, Bradley Corporation



Nate Kogler

PMI members continually work with PMI staff to develop new ways to enhance the value of PMI membership. Their collaboration has resulted in a new membership benefit introduced recently that provides key economic trend indicators specific to markets in which your business operates.

The PMI Market Outlook (tinyurl.com/y3fhovta) extends the value of PMI membership by providing you with insights on business cycles, retail sales, residential and commercial building starts, building material costs, wholesale trade, and business conditions across the plumbing manufacturing industry and the U.S. economy.

The report was produced in partnership with ITR Economics, the oldest privately held, continuously operating economic research and consulting firm in the U.S. With a knowledge base that spans six decades, the firm brings an uncommon understanding of long-term economic trends and best practices ahead of critical changes in market conditions.

Report flags trends and provides management advice

The PMI Market Outlook for the first quarter of 2019 shows our industry having benefitted from accelerating growth in 2018, with warning signs portending slower growth ahead. The report's overview also provides important information about private sector employment trends and housing starts while giving planning and budgeting advice.

The economic condition descriptions described in the outlook are flagged by their phases in the current business cycle – A for recovery, B for accelerating growth, C for slowing growth and D for recession. The report suggests management objectives for each phase.

Each section of the report is highlighted with cut-to-the-chase headlines, graphics, and bullet-pointed key messages

providing the current outlook and supporting evidence. Terminology and methodology are thoroughly explained throughout the report.

The report's section on leading indicators summarizes the findings of the ITR Leading Indicator, ITR Consumer Activity Leading Indicator, U.S. Leading Indicator, U.S. Purchasing Managers Index and U.S. Total Capacity Utilization Rate and explains what their findings mean for the U.S. economy.

More enhancements to PMI membership on the way

As you follow these reports from quarter to quarter as a regular reader, you will increase your adeptness at seeing patterns in economic trends, insights and warning signs relating to business conditions and markets. I'm sure these reports will become a valuable resource within our member companies and will enhance important discussions leading to smart decision-making.

The PMI Market Outlook Report is only the first of several enhancements to PMI membership that will be introduced during 2019. Coming soon are the PMI Member Needs Assessment, an Emerging Leaders' Summit, more opportunities for on-demand e-learning, and enhancements to regular PMI activities such as the PMI Conference.

The active engagement of our members will be appreciated and valued as we plan and launch these initiatives. As always, PMI leadership welcomes your feedback on this report and other matters. Contact us at your convenience, and best wishes as you leverage PMI resources to achieved continued success.

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On This Day in History, Our Industry's Innovation Stands Out

By **Kerry Stackpole, FASAE, CAE, PMI CEO/Executive Director**



Kerry Stackpole

and building products industry?

As Team PMI fanned out over the IBS and KBIS Show in Las Vegas last month, one couldn't resist thinking about the striking evolution of our industry. It's almost cliché to say that plumbing products have come a long way. The early days of wooden bathtubs, hand-pumped showers, and silver sinks may be long gone, but the wonder and inventiveness of their creators is certainly not.

The growing popularity of television shows such as Do-It-Yourself Network's "Building Off the Grid" or National Geographic's "Life Below Zero" have repurposed some of the industry's earliest inventions and are leveraging some of the newest ones to support a growing lifestyle choice. Living off the grid usually suggests doing so without access to electricity. When Accenture assessed the impact on electric utilities, the firm estimated 12% of American households will be off the grid by 2035.

The 88% of households remaining on the grid are in for some pretty amazing shifts in how they live in their kitchens and baths. On the grid and growing in popularity rapidly are voice and touch screen-enabled LED mirrors, voice-activated shower pre-set systems, designer faucets, self-cleansing toilets, and Internet of Things (IoT) controls for personal hygiene, water valves, and leak detection products. All of these new products leverage technology to deliver more information to end-users, re-

engineer risk management, and deliver a far more pleasing kitchen, bathroom, and home ownership experience.

Authors **Joe Pine** and **Jim Gilmore** wrote "The Experience Economy" to describe the shift in consumer thinking. "Future economic growth lies in the value of experiences and transformations--goods and services are no longer enough." According to Pine and Gilmore, businesses must orchestrate memorable events for their customers. Managers need to look beyond traditional pricing factors like time and cost and consider charging for the value of the transformation that an experience offers. If this feels like well-worn territory and advice, that's no surprise. While some industries still struggle with the concept, plumbing product manufacturers have embraced it in ways large and small. Simply stated kitchens and bathrooms, fueled by residential and commercial water systems, will never be the same.

Futurists are fond of saying today is the slowest pace of change you will experience for the rest of your life. If that's so, the 20 years it took the automotive industry to establish a 300,000-square-foot beachhead at the Consumer Electronics Show (CES) is instructive. According to AutoWeek, the first automotive-related company, Delphi, brought a concept car showcasing "then-futuristic innovations like collision avoidance, front and side sensors, keyless entry, intrusion sensors, anti-carjacking technology, cell phone integration and OnStar" to CES in 1995.

Twenty years later plumbing product manufacturers and the smart home segment are establishing a fast-growing, futuristic presence at CES and elsewhere. The new array of smart home devices has drawn the attention of home centers and retailers. Home Depot sent 36 representatives to CES 2018, Target had 70, Walmart sent 168, and Amazon's presence dwarfed everyone with 1,105 reps. What's more, the volume of

venture capital flowing to smart home start-ups is growing exponentially. Las Vegas will be the center of the universe for plumbing product innovations being shown at KBIS, IBS and CES come January 2020.

In the interim, ISH – one of the world's largest trade shows and based in Frankfurt, Germany – will draw almost 200,000 visitors and 2,500 exhibitors over five days. They will showcase the latest in water and energy conservation. The ISH "Water Zone" covers both the bathroom experience and plumbing. This year's focus includes design, color, intelligent water management control systems, and regenerative energy for heating water, alongside digitalization, wellness, health, comfort and convenience.

As the British economist **John Maynard Keynes** once pointed out, "Ideas shape the course of history." These are inspiring times for our industry and the coming flood of new ideas and innovations in bath, kitchen, and smart home products are sure to spark the imagination of consumers and historians alike.

PMI Members Win KBIS Best of Show

PMI members LIXIL, TOTO USA, Hansgrohe and Moen won Best of Show honors at KBIS. LIXIL's DXV by American Standard won Best of Show for its Blade 3D Printed Faucet. TOTO USA received the Bath Gold recognition for its Flotation Tub with Zero Dimension, and Hansgrohe won Bath Silver for PowderRain, a splash-less shower experience. Moen gained accolades for Smart Home Technology with Flo by Moen, which detects and stops leaks.

Getting to Know David Farley, Sprite Industries, Inc.



David Farley

Current title and employer:

President/CEO Sprite Industries, Inc.

My first job:

I started my first business painting my neighbors' houses

when I was 12

years old. I saved my money and used it to buy my first car when I was 15½. My only job working for someone else was during the summer of my junior year in high school when I worked as a Shell gas station attendant. After the gas station, I started a business selling Indian clothing and items from Mexico. I would drive down to Mexico, fill up my truck with as many items as I could and then sell them in shops along the California coastline – from Dana Point to Manhattan. I expanded the business with a few more trucks and was able to save enough money to eventually help start Sprite Industries with my dad in 1974.

Length of time in the plumbing manufacturing industry:

Sprite was originally an electronics company that made water test instruments, including pH and conductivity meters and probes for the water filtration industry, in the late 70s and early 80s. In 1986, Sprite created the first shower filter, which was our entry into the plumbing manufacturing industry.

My proudest plumbing manufacturing career achievement:

Sprite is a 45-year-old, family-owned company so there are many memorable moments. Over the years we have received many patents on shower filtration technologies and devices – starting with the first awarded to my father to some of my own. Probably the most memorable and meaningful was when my son received his first patent for a

dual-chambered shower filter with dual showerheads.

I started a career in the plumbing manufacturing industry because:

My dad and I came upon the technology to filter shower water and created the first shower filter, which was how we started in the plumbing manufacturing industry.

Advice I'd give someone just starting a career in the plumbing manufacturing industry:

It's the same advice I received: do something you enjoy and remember why you're doing the things you're doing. For me, it's all about my family. We created the first shower filter in 1985, and we hold over 30 patents on shower filtration and that is exciting to me.

If I weren't in the plumbing manufacturing industry:

I'd be a commodities broker.

What is your current role in PMI? What do you hope to accomplish in this role?

Since we recently joined PMI, I am observing and learning how the organization operates. PMI helps us keep in tune with the daily and weekly matters that affect us most, including all the water issues taking place in California. In the past, I worked closely with NSF International to establish NSF/ANSI shower filtration standard 177. I am currently chairman of the NSF advisory board to standard 177, and I will bring some of that experience with me to PMI.

What I'm currently reading:

Typically, I read physics or astrophysics books written for the layman. Currently, I am reading **Thomas Edison's** authorized biography written in 1917 and containing live interviews and inserts from Thomas Edison.

My hidden professional talent:

Looking at trends in the industry

and spotting what might work with technology and product development. Writing patents may be another not-so-hidden talent. We try to stay out front in shower design and shower filtration technology, and I just wrote another patent in the last few weeks.

Best advice I ever received:

Do something you like because you'll be doing it for the rest of your life. Money is important, but you have to be able to get up in the morning and be excited to go into work. I learned some important lessons when I went back to school in my 30s to study two years of aviation, but found I was a bit too old to become a pilot. I also studied four years of pre-medicine and realized it wasn't for me. I still use what I learned in general Chemistry 101 in our business today!

My favorite movie: The Hunt for Red October

When I face a challenge at work (or in life):

I go back to what motivates me. There are some deep breathing exercises for dealing with any immediate stress. One aspect that has kept me on track is being responsible for other people and working with people that I want to be responsible to/for. You can't always take the easy route. So when faced with a challenge, I know I need to re-set my mindset, step up, and put one foot in front of the other to move forward.

In my spare time: I restore and drive vintage European cars including Porsche 911s. My current projects are a 996 Turbo originally owned by **Jason Giambi**, former major league baseball player with Oakland, New York and Colorado, and a 997 Carrera S.

PMI Staff Engages with PMI Members at KBIS

PMI staff had excellent opportunities to visit and learn from PMI members participating in the annual Kitchen and Bath Industry Show (KBIS), Feb. 19–21, in Las Vegas.

PMI Association Manager **Jodi Stuhrberg** said she was excited to see so many PMI members participating in the show and to learn more about what they see as the value and benefit of PMI membership. PMI Education Manager **Emilee Hughes** said the show was “inspiring, energizing and time well spent.” PMI Technical Director **Matt Sigler** and PMI CEO/Executive Director **Kerry Stackpole** also attended the show.

Next year’s KBIS is scheduled for Jan. 21–23 in Las Vegas.



(l-r) Paul Byrne and PMI Board of Directors President Nate Kogler from Bradley Corporation, with Kerry, Jodi and Matt



The Property Brothers (l) and Mary Garcia (middle) present the World Vision Crystal Vision Partnership Award to Globe Union Group's Keith Yurko and Amy Eaton. Amy also won the Robert P. Atkins Lifetime Achievement Award



(l-r) Masco Corporation's Jay Burnett with Kerry and Matt



(l-r) Emilee, Gary Stanley from the U.S. Department of Commerce, Jodi and Matt



LIXIL's Troy Benavidez



(l-r) Moen CEO Nick Fink, with Moen VP/GM and PMI board secretary/treasurer Todd Teter, Kerry, Matt and Jodi



PMI Federal Government Affairs Consultant Stephanie Salmon



Plumbing Manufacturers International Strategic Advisory Council member Bill Strang (l) from TOTO USA with Kerry

Comments on WaterSense Product Specs Due March 15

By Judy Wohlt and Ray Valek, PMI Communications Team, Valek and Co.

Comments on potential revisions to Environmental Protection Agency (EPA) WaterSense specifications for tank-type toilets, lavatory faucets and faucet accessories, showerheads, flushing urinals, or weather-based irrigation controllers must be submitted to watersense-products@erg.com by March 15.

More than 160 registrants participated in a Feb. 14 webinar about the Notice of Specification Review for these products.

Hosted by the WaterSense program's **Stephanie Tanner** and **Joanna Kind** and **Robert Pickering** of the Eastern Research Group, the presentation (tinyurl.com/y4x26sru) included the current specifications for these products. The Notice of Specification Review came after the signing of America's Water Infrastructure Act of 2018, which requires the EPA to review and consider for revision any WaterSense performance criteria put in place before January 1, 2012.

After providing an overview of the WaterSense program, which certified and labeled 27,000-plus water-saving products collectively saving 2.7 billion gallons of water since 2006, the hosts explained the kinds of conditions that might trigger a technical revision to a specification, including:

- WaterSense products in a specific category comprise a significant portion of market share
- EPA identifies significant and broadly available technology or product design enhancements in any labeled product category that improve the product's water efficiency
- EPA becomes aware of performance issues associated with products labeled under a WaterSense specification
- A water-efficiency standard is adopted nationally that mandates

product efficiency equivalent to a specification, such that the WaterSense label would no longer differentiate more efficient products from those meeting the national standard

The hosts said the EPA always considers the following criteria to determine the feasibility or necessity of developing or revising a product specification:

- Equal or superior product performance
- Potential for significant national water savings
- State of technology development—product categories that rely on a single, proprietary technology will not be eligible for the WaterSense label
- Assurance that the development (or revision) of a specification will not lead to unintended or negative environmental, health and safety, or economic impacts
- Cost-effectiveness of products that would earn the label

The presenters provided these questions to those wishing to provide feedback on these criteria or other factors WaterSense should consider during the specifications review.

- Beyond market transformation and national water savings, what other considerations should WaterSense include in its decision-making process for specification revision (e.g., stakeholder support, rebate availability)?
- For each product specification, what water efficiency improvements should be made to the WaterSense specification?
- For each product specification, what updates to performance criteria or referenced standards should WaterSense consider incorporating into the specification that would benefit the user

experience and ensure long-term water savings?

- For each product specification, what other classes of products or new technologies within the overarching product category should WaterSense consider incorporating into the scope of the specification?
- What new studies or data on water efficiency, performance, or water savings related to these product categories should WaterSense be aware of?
- For each product specification, what unintended consequences could result from increasing water efficiency requirements of a WaterSense specification?
- What other categories of products with quantifiable water savings and proven performance should WaterSense consider labeling? Any suggestions should be accompanied with data and information to support inclusion in the program.

WaterSense will summarize the information collected through the review and feedback process and then make decisions on whether or not to move forward with specification revisions by the end of 2019.

If the WaterSense program finds that major revisions on certain product specifications are needed, it plans to work closely with PMI and other industry groups to make changes and to provide manufacturers plenty of notice and opportunities for involvement.

WaterSense plans to hold more industry meetings on specific product categories to discuss information received as a result of the Notice of Specification Review, with lavatory faucets and showerheads planned for late April, and tank-type toilets and flushing urinals planned for May.

Special March Days Provide Opportunities for Involvement

By Ray Valek, PMI Communications Team, Valek and Co.



Three special days in March give PMI members the opportunity to celebrate the achievements of women, appreciate how plumbing improves the world, and contribute to the goal of water for all by 2030.

International Women's Day on March 8, World Plumbing Day on March 11, and UN World Water Day on March 22 also provide the plumbing manufacturing industry with a chance to align itself with a millennial workforce committed to diversity, environmentalism and sustainability.

The theme of International Women's Day, March 8, is "better the balance, better the world."

Calling for a more gender-balanced world, this global day celebrates the social, economic, cultural and political achievements of women. Given the increasing opportunities available to women in the plumbing manufacturing industry, PMI certainly has every reason to join the festivities.

Women hold key positions from the C suite to the production line within PMI member companies, having backgrounds in manufacturing, engineering, codes and standards, finance, marketing, sales, quality assurance, logistics, supply chain, human resources, and more. Women and men can investigate the opportunities available with PMI member companies at PMI's careers page: safeplumbing.org/advocacy/careers.

Start your participation in International Women's Day by going to its website (internationalwomensday.com), or

Facebook page (facebook.com/internationalwomensday).

The theme of World Plumbing Day on March 11 is "plumbing improves the world."

How so? For starters, since 2000, more than 1 billion people gained access to piped water supplies, which help break the poverty cycle by allowing people to spend their time working and learning rather than spending hours, each day, collecting water. In addition, the World Plumbing Council, which organizes World Plumbing Day, estimates that life expectancy has doubled because of the toilet's ability to flush waste away to a safe location.

The international plumbing community, as represented by the council, uses World Plumbing Day to promote the link between good quality plumbing, health, environmental sustainability and, increasingly, economic prosperity. March 11 is marked by celebrations, competitions, seminars, and activities all around the world. People from within and outside the plumbing industry come together to learn, share knowledge, build connections, and find opportunities to collaborate to improve the quality of, and access to, fresh water and safe sanitation. To get involved, go to (worldplumbing.org/worldplumbingday) and follow World Plumbing Day on Twitter at twitter.com/wplumbingday.

UN World Water Day's sustainable development goal 6 is crystal clear: water for all by 2030.

By definition, this goal means what is

expressed by this year's theme: "leaving no one behind." Today, billions of people are still living without safe water – their households, schools, workplaces, farms and factories struggling to survive and thrive.

Marginalized groups – women, children, refugees, indigenous peoples, disabled people and many others – are often overlooked, and sometimes face discrimination, as they try to access and manage the safe water they need.

This World Water Day, March 22, is about tackling the water crisis by addressing the reasons why so many people are being left behind.

Learn – get familiar with the issues – why are people being left behind without safe water and what can be done to reach them? Browse this collection of stories (worldwaterday.org/theme/stories) to find out more.

Share – engage your friends and contacts with information and stories about the reality of the water crisis and how it affects every aspect of society. Use these resources (worldwaterday.org/resources) to start a conversation and inspire action.

Act – gather people together to share ideas and make them grow. Hold or attend an event to make personal connections that could help people living without safe water. Use this map to see where a World Water Day event (worldwaterday.org/events) is taking place near you and find out how you could hold an event yourself.

Whoever you are, wherever you are, use these days to ensure that the future for girls is bright, equal, safe and rewarding and to assure, as the UN recognized in 2010, "the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights."

Reducing Biofilms in Water Systems to Abate Legionella Risk

By Paul Sturman

Reprinted with permission from Contractor magazine, where the article was first published. View it online at tinyurl.com/y4bbpu55

While biofilms occur naturally on many surfaces, including bodies of water and living tissues, they can become a concern when they invade a building water system, potentially damaging water quality and threatening public health. An example of harmful biofilm formations can be found in those that capture and harbor opportunistic pathogens, such as *Legionella pneumophila*, the bacteria responsible for causing Legionnaires' disease.

The Centers for Disease Control (CDC) has recognized that opportunistic pathogens, or "bad bugs" like *Legionella*, are the primary cause of waterborne disease in the U.S. *Legionella* can multiply to dangerous levels under certain conditions and potentially cause Legionnaires' disease, a serious lung infection caused by inhaling small droplets of contaminated water through aerosolized mist or vapor.

Improperly maintained water supply systems and other factors, including complex system designs, high water age and breaks and leaks, can lead to an environment that allows *Legionella* survival and growth within the water system. The new Plumbing Manufacturers International (PMI) document, "Just the Facts: *Legionella* and Water Supply Systems," (tinyurl.com/y4jcazs6) describes several key elements that can promote the growth of *Legionella* bacteria in a water supply system, including biofilm, a sticky substance created by bacteria that forms on the inside wall of water supply piping and protects *Legionella* from heat and disinfection.

"In my experience, biofilm will be present in all building plumbing systems. Anywhere there is water and a surface, biofilm can form," said **Frank Sidari**, technical director at Special Pathogens Laboratory, a firm internationally recognized for clinical and environmental expertise in Legionnaires' disease

prevention with solutions for detecting, controlling and remediating *Legionella* and other waterborne pathogens. "*Legionella* and other microbes occur naturally in our water supplies. Certain conditions, many of which are still being clarified, tip the balance in favor of *Legionella* in some building water systems. Simple maintenance practices have not been successful in eliminating *Legionella* from these water systems."

Since biofilms are an inherent part of a building's water system and can potentially protect *Legionella* bacteria, proactive management of building water systems to minimize risk is important.

"The design and complexity of current building plumbing systems, the continued exposure to water containing nutrients and microorganisms, and the need to maintain disinfectant levels within drinking water standards provide the opportunity for *Legionella* to exist in potable water systems," Sidari said. Studies have shown that *Legionella* can be found in up to 70% of complex building water systems including large buildings and hospitals compared to 10% to 40% of simpler plumbing systems in residential houses, he added.

Stages of Biofilm Formation

Biofilm forms anywhere non-sterile water comes in contact with a surface, providing an opportunity for *Legionella* and other opportunistic premise plumbing pathogens (OPPPs) to grow and avoid disinfection. Biofilm formation and growth involves three stages: attachment, growth and detachment. Free-floating (or planktonic) bacteria that come into contact with a surface may attach to the surface via cell surface appendages, referred to as adhesions. Following attachment, cells grow and divide, with new cells generally sticking to the biofilm and increasing its coverage and thickness.

Eventually, if the biofilm is not subject to disinfection or some control means, it may grow to a thickness of hundreds of microns. This condition inhibits the efficacy of disinfection efforts and provides a variety of environmental niches in which different types of bacteria can survive, such as both aerobic and anaerobic organisms. A biofilm may reach a quasi-steady state condition, referred to as maturity, in which the thickness stabilizes, but growth continues. In this condition, chunks of the biofilm containing hundreds or thousands of cells may detach and float into the bulk water phase. These cell clusters are also resistant to disinfection because of their size, and they may harbor pathogens, such as *Legionella*.

Although *Legionella* generally do not grow within the biofilm in potable water lines, the presence of a thick biofilm increases the chances of *Legionella* survival and growth. The diversity of environmental niches in a thick biofilm may lead to the entrainment of larger organisms, such as protozoa, which may act as a host for *Legionella*, leading to growth and replication within the biofilm. Thus, cell clusters which detach from a thick biofilm could harbor *Legionella*. If these cell clusters are aerosolized or aspirated, human infection could occur.

It's important to note that older water infrastructure can be more vulnerable to contamination through leaks and breaks, according to PMI's *Legionella* document. A leak or break increases the possibility of OPPPs, like *Legionella*, entering the infrastructure, becoming entrained in biofilms, and then being released into the water supply.

In addition, high water age has possible implications for OPPPs, including *Legionella*, which are more likely to grow when water lies stagnant in pipes leading to the tap. Recent research by

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Reducing Biofilms in Water Systems to Abate Legionella Risk

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Dr. Marc Edwards indicates potential consequences to public health with the increasing number of buildings being built or retrofitted with new types of plumbing systems that keep water in pipes longer. His research also showed that the significant disinfectant loss in buildings with stagnant water needs to be studied further.

The Case for Antimicrobials

Bacteria like Legionella that survive inside biofilm in a water system can be challenging to eradicate. Many established treatment methods, such as chemical and ultraviolet light disinfection, can kill Legionella; however, there can be challenges with achieving the necessary widespread distribution within a water piping system to fully destroy the bacteria and biofilms that harbor them. In addition, some disinfectants, like monochloramine and copper-silver ionization, can be successful in controlling Legionella, but do not remove biofilm in a plumbing system, according to Sidari.

The Center for Biofilm Engineering at Montana State University is currently

working on developing a repeatable laboratory model to assess the efficacy of antimicrobials against Legionella. This model will help determine the necessary chemistries, concentrations and contact times to control biofilm containing Legionella.

Better detection and eradication tools and methods must be developed to minimize the opportunity for Legionella to grow and spread within building water systems. Laboratory models, such as the one being created at Montana State, will offer manufacturers and regulators a way to compare products and treatment regimens for better Legionella control.

To view PMI's "Just the Facts: Legionella and Water Supply Systems," visit the PMI website at tinyurl.com/y7kuengi.

Paul Sturman is research professor and industrial coordinator specializing in biofilms in waste remediation and industrial systems with the Center for Biofilm Engineering at Montana State University, Bozeman.

Legionnaire's Disease Reports Up

Nearly 7,500 people contracted Legionnaires' disease in 2017 - a more than fivefold increase in the number of cases since 2000, according to the Centers for Disease Control and Prevention (CDC).

As reported by USA Today (tinyurl.com/yxogp2eg), increasing reports of the disease are due to better awareness, improved testing, and an aging population that is more susceptible to Legionnaires'. The disease can be cured with antibiotics, but early testing and diagnosis is crucial, as symptoms appear only two to 10 days after exposure to Legionella bacteria.

The USA Today article emphasizes the importance of reducing the exposure to the potentially harmful bacteria in

the first place; building water systems, medical equipment, CPAP machines, hot tubs and saunas should be monitored closely to reduce breeding grounds for Legionella bacteria.

PMI's "Just the Facts: Legionella and Water Supply Systems" content (tinyurl.com/y7kuengi) provides information on how to reduce Legionella risks in water systems. As an advocate for safe plumbing, PMI is working diligently to help keep water delivery safe. PMI supports and promotes research relating to safe plumbing and backs efforts to educate legislative leaders and policymakers on potential threats to safe drinking water, as well as on the need for a restored national underground water infrastructure.

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