

**Attachment 11: Building managers and water maintenance staff interview guide**

<b>Topic</b>	<b>Approximate Allotted Time (Minutes)</b>
Introduction	4
Topic A: Background	5
Topic B: <i>Legionella</i> Knowledge, Attitudes, & Beliefs	5
Topic C: <i>Legionella</i> Prevention Programs	15
Topic D: Barriers to <i>Legionella</i> Prevention	10
Topic E: Materials Testing	15
Topic F: Information Sources & Sharing	5
Closing	1
Total	60

**Introduction [4 minutes]**

Hi, my name is \_\_\_\_\_. I am an independent contractor with the Hannon Group hired to conduct these interviews. I'll be spending the next 60 minutes talking with you about legionellosis — a respiratory disease, more commonly known as Legionnaires' disease and Pontiac fever, that can be caused by breathing in *Legionella* bacteria that are found in water. The purpose of our discussion is to assist the Centers for Disease Control and Prevention, also known as CDC, better understand your current water maintenance and *Legionella* prevention practices. This study is exploratory in nature and we've invited you to participate in this interview because we're interested in the thoughts and views of people who influence how different water systems are maintained.

- I want to **thank you** for your participation.
- This interview is entirely **voluntary**. You can decline to answer any question and "I don't know" is an acceptable response to any question.
- The information you provide will be kept **private and secure to the extent permitted by law**. The responses of everyone I speak with will be compiled and reported in aggregate. Any direct quotes used for illustrative purposes will not be associated with your name or your hospital.
- With your permission, I would like to **record** our conversation so I can use the transcripts to make sure the analysis is accurate. Is that all right?
  - o  Yes [**START RECORDING**]
  - o  No [**NOTES ONLY**]
- Before we get started, do you have any questions?

Public reporting burden of this collection of information is estimated to average 60 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer; 1600 Clifton Road NE, MS D74, Atlanta, Georgia 30333; ATTN: PRA (0920-0800)

## **Topic A: Background [5 minutes]**

1. Please tell me a little bit about you and your building. I'd like to understand the types of water systems and devices you work with and your involvement in maintaining them. [Icebreaker/warm up question]

### **Probes:**

- How many years have you been working in the field?
- Type of building(s) you work at or service [hotel, hospital, conference center, etc.]
- Number of buildings/rooms (or a range if they are a consultant)
- What types of devices do you work on? Cooling towers, decorative fountains, spas, etc.?
- What is your job title/role and responsibility?
- How many other people are involved in maintaining the water systems at your building?
- What is the source of the water used by the building (or most buildings you service)?
- What professional organizations, if any, are you a member of?

### **Listen for and probe if not mentioned:**

- ASHRAE (formerly known as the American Society of Heating, Refrigerating, and Air Conditioning Engineers)
- American Society for Healthcare Engineering (ASHE)
- American Society of Sanitary Engineering (ASSE)
- Association of Pool and Spa Professionals (APSP)
- Association of Water Technologies (AWT)
- Building Owners and Managers Association International (BOMA)
- Cooling Technology Institute (CTI)
- International Association of Plumbing and Mechanical Officials (IAPMO)
- International Facility Management Association (IFMA)
- National Association of Stationary Operating Engineers (NASOE)
- Utility Workers Union of America (AFL-CIO)
- Association of Facility Engineering (AFE)

2. What, if anything, have you heard about *Legionella*, Legionnaires' disease, or Pontiac fever in your area?

### **Probe:**

- In the United States?

3. What is your experience with *Legionella*?

### **Probes:**

- Has the building you work at been associated with a legionellosis case, cluster, or outbreak? That is, Legionnaires' disease or Pontiac fever?
- Have you personally worked at or assisted a building in remediating its water system for *Legionella*? Have any of your coworkers? Did that building have issues with *Legionella* in the past?
- How likely do you think it is that the building (or buildings) you work at are at risk for having *Legionella* in their water system(s)? Why?

4. What type of training, if any, have you received specific to *Legionella* prevention?

**Probes:**

- Who provided the training?
- What topics were covered in the training?
- How helpful was the training?
- What was missing from training?
- What wasn't useful?
- How are you applying what you learned in the training?

**Topic B: Legionella Knowledge, Attitudes, & Beliefs [5 minutes]**

1. Describe the potential sources of *Legionella* that people could be exposed to in your building.

**Probes:**

- Are there any cooling towers or evaporative condensers on the premises?
- Are there any whirlpool spas, hot tubs, hydrotherapy spas, steam rooms, or wet saunas?
- Does the building have centralized humidification or room humidifiers?

2. In your experience, what types of building water systems are most prone to problems with *Legionella*?

3. In your experience, what conditions are most favorable for *Legionella* growth?

**Listen for:**

- "Dead legs" in the plumbing system?
- Following construction, particularly construction on older systems?
- In unbalanced systems (e.g., systems where it is difficult to maintain hot water temperature on taps that are far from the water heater)?
- When the cooling tower and/or hot tub contains debris and/or biofilm (slime)?
- In buildings where you cannot measure disinfectants like chlorine or monochloramine from cold water at all taps?

4. In your experience, do you think that routine environmental testing for *Legionella* should be done at buildings like yours for water systems you help maintain? Why or why not?

**Probes:**

- If so, how often and who should do the testing?
- If not, are there other types of buildings or water systems you think routine testing should be done at?

### Topic C: Legionella Prevention Programs [15 minutes]

1. Thinking about the building(s) where you work, what is the procedures for maintaining water safety?

**Probes:**

- What incoming water parameters are monitored (i.e., residual disinfectant, temperature, pH)? Is there a standard time of day or frequency to these activities? Why were these chosen?
- *For contractors:* What percentage of the buildings you work with monitor incoming water parameters (residual disinfectant, temperature, pH)? Is there a standard time of day or frequency to these activities? Why were these chosen?
- How are these procedures supported by water management programs? What do program documents look like/do they exist?
- How are the devices (i.e. cooling towers, spas, etc.) you maintain part of the system?
- How does this process differ by whether you are examining the water intake system or places where water sits or is stored?
- Is there anything in particular you do related to *Legionella*?
- [For contractors] How do water safety procedures differ among your clients?

2. If you got a positive test for water contaminants, what would you do?

**Probe:**

- How does this differ if *Legionella* is identified?

3. What procedures are used to maintain each device appropriately?

**Probes:**

- Who developed them?
- How is *Legionella* addressed in them?
- How often are they updated?
- Who is responsible for updating them?
- What resources or people are used to inform what updates should be made?
- Are they based off guidelines from another organization?
- Do you get help from outside experts? If so, what kind?

4. *For in-house staff:* Does the building have a supplemental disinfection system for long-term control of *Legionella* or other microorganisms?

*For contractors:* What percentage of the buildings have a supplemental disinfection system for long-term control of *Legionella* or other microorganisms?

**Probes:**

- Please tell me more about that supplemental disinfection system and how it works.
  - o Is it easy to maintain?
  - o What is the cost of installation and maintenance?
- What procedures are in place to make sure the system is properly working?
- Do you feel that some supplemental disinfection systems work better than other systems? Easier to maintain? If so, please explain.

5. What are the procedures for testing *Legionella* in water samples from your building?

**Probes:**

- How often are water samples collected? Who collects them, where they are collected from, how is the testing being done, and who conducts the testing?
- Have you ever found *Legionella* during this testing? If so, what did you do?
- Do you work with an ELITE certified lab when testing water samples? If not, who do you work with?
- Do you test for other microorganisms (e.g., *Cryptosporidium*, *Giardia intestinalis*)?
- Do you test for chemicals (e.g., copper, lead)?

6. Who at your building do you see as the person ultimately responsible for preventing the growth of *Legionella* in the water systems?

**Probes:**

- Can you tell me more about why you feel that way?
- Are there any challenges with getting that person to take responsibility if they aren't currently?
- If that person is currently taking responsibility, do you know what motivated them to do so?

**Topic D: Barriers to *Legionella* Prevention [10 minutes]**

1. Are you aware of guidelines that can be followed to help prevent *Legionella* growth in building water systems? Which ones?

**Probes:**

- Does your building or employer require that any of these guidelines be followed?
- Have you heard of ASHRAE guidelines or standards for preventing *Legionella*? Which ones?
- How familiar are you with ASHRAE Standard 188, which establishes minimum Legionnaires' disease risk management requirements for building water systems?

2. Does your building or do you have access to ASHRAE guidelines and standards?

**Probes:**

- If yes, who has access?
- If no, what's the challenge to gaining access?

3. What, if any, are the challenges to implementing practices outlined in ASHRAE guidelines and standards?

**Probes:**

- What parts of the guidelines or standards are not clear?
- What are the cost considerations to implementing the guidelines or standards, if any?
- What are additional issues that you would have liked covered in those guidelines that are not included?

4. What kinds of materials or tools would make it easier to implement those guidelines and standards?

**Probes:**

- Would you be interested in an app or digital materials? If so, what should these tools focus on?
- Would you use materials if they are developed? How and when?
- If print materials are developed, what size should they be? For example, should they fit in a binder, be a poster for the wall, or maybe even a wallet-sized card?
- What existing materials or tools are you aware of that you think are helpful?
- Would CDC branding, or any other branded materials, be helpful for adoption and adherence to these guidelines?
- Are there groups that you work with where you lack materials? What groups are these and what materials could you use?

**Topic E: Materials Testing [15 minutes]**

When we emailed you confirmation of this interview, you should have also received several documents that I would like to discuss now. These materials were developed by the CDC to raise awareness about preventing Legionnaires' disease.

**[ONE AT A TIME, DISCUSS EACH MATERIAL; RANDOMIZE ORDER]**

**[ASK QUESTIONS E1-3 AFTER EACH MATERIAL]**

1. What did you think of this?

**Probes:**

- In your opinion, what is the main message?
- In your opinion, what, if anything, do you think it is asking you to do?
- Is there any information here that is new to you?
- In your opinion, is it missing any needed information?

2. Who, in your opinion, do you think this material was designed for?

3. What about this, if anything, was confusing or hard to understand?

**Probe:**

- How would you change it to make it better?

4. What did you like best about this design? What did you like least about it?

**Probes:**

- What did you think of the design/layout/colors/images?
- What did you think of the wording?
- What would you change the design or wording?

5. How would this tool help implement ASHRAE 188?

**Probe:**

- What is missing that would be helpful in implementing that standard?

## **Topic F: Information Sources and Sharing [5 minutes]**

1. How does your building get information on current guidelines/standards for *Legionella* prevention?

**Probes:**

- Where do you go for the latest information?
- Who is responsible for staying up to date on the latest information?
- How does your building ensure those who need to be informed have the latest information?
- If your building developed a problem with *Legionella*
  - Is there a particular person or organization you look to? (health department, ASHRAE, ELITE lab, remediation company, CDC, etc.)
  - Is there a particular place, such as a Web site or publication, where you would go to for information?

Who should provide information or training on *Legionella* prevention? *Legionella* disinfection?

2. How is information shared with you about management of building water systems?

**Probes:**

- Are there other ways you would like to be reached with that information?
- Social media, newsletters, etc.? [For each cited, ask from whom they would like to receive them.]
- Of those who send you information, who do you trust the most?

3. How do you share information with other water maintenance professionals?

**Probe:**

- At your building? In your professional community?

4. What additional training related to *Legionella* would you like to have?

- What is the best way to get you training? In-person? Self-study webinar?
- Would having continuing education credits available for a training make you more likely to complete it?
- Have you seen any of the CDC's six *Legionella* training videos? If so, how helpful were they?

## **Closing [1 minute]**

Those are all of the questions I have for you today. Thank you so much for taking time to share your thoughts. Is there anything you wanted to share with me on this topic before we close?