



## QUESTIONS & ANSWERS: LEGIONELLA IN SOUTH AFRICA

*What is Legionella? What are my responsibilities?* There are countless questions pertaining to the uncertainty around *Legionella*. Some of these questions will be answered below.

### **Q. What is Legionella?**

**A.** *Legionella* are bacteria that grows in water systems that present favourable growth conditions. There are over 40 species of *Legionella* of which *Legionella pneumophila* serogroup 1 is responsible for the majority of Legionnaire's disease.

### **Q. What is Legionnaires' disease?**

**A.** It is a progressive pneumonia type illness that has a fatality rate of 12,5% in the general population and a much higher fatality rate if contracted in hospital/frail care facilities. It has an incubation period of 2 – 10 days and is treatable with antibiotics.

### **Q. Other forms of Legionellosis?**

**A.** Pontiac fever and Lochgoilhead fever are both flu-like illnesses that are non-fatal. Incubation period is < 2 days and recovery is usually 2 – 5 days without antibiotics. *Legionella longbeachea* can be contracted from potting soil and compost and can lead to hospitalization.

### **Q. How does infection occur?**

**A.** The most common form of transmission is by inhalation of fine aerosols from contaminated water systems. Infection can also occur by aspiration of contaminated water or ice, particularly in hospital patients. Only one case of person-to-person transmission has been recorded.

### **Q. Where does the Legionella bacteria grow?**

**A.** *Legionella* bacteria can be found in small amounts in natural water systems such as lakes, rivers, hot water springs and soil. Engineered systems can present favourable growth conditions that will allow the bacteria to proliferate. If people are then exposed to this water - the potential for them to be infected escalates depending on their susceptibility.

### **Q. What man made systems have Legionella been found in?**

**A.** Any water system that can create a fine mist is a potential risk system. The most common systems are:

- Cooling towers / Evaporative Condensers
- Spas / Jacuzzis / Saunas / Hot tubs
- Ornamental fountains
- Showers and taps (hot and cold water systems)

- Process water sprayers
- Misters / sprinkling systems
- Water storage tanks
- Ice machines
- Dental sprays
- Vehicle wash systems – especially those that recycle water
- Vehicle window wash water
- Compost, potting soil
- Other systems

**Q. Where are favourable conditions for growth?**

**A.** Optimal conditions for growth are:

- Temperature optimal growth range of 20 – 45°C
- Stagnant / low flow water areas
- Systems that have corrosion, deposition and/or biological growth
- Where there is a source of iron and other nutrients
- Where there are biofilms

**Q. What is the required temperatures in potable water systems?**

**A.** Geyser / hot water calorifier needs to be set at a minimum of 60°C and all hot water outlets to reach 50°C within 1 minute. Cold water outlets to reach maximum 20°C within 2 minutes.

**Q. Who is more susceptible to contracting Legionnaires’ disease?**

**A.** Everyone is susceptible, but the higher risk group are considered to be:

- Males
- >40 years of age
- Smokers
- Heavy drinkers
- People with impaired immune systems
- People with respiratory and kidney disease

**Q. No of *Legionella* cases?**

**A.** The real no of community acquired Legionnaires’ disease is unknown as the level of surveillance, testing and reporting vary from country to country. In South Africa, it is a notifiable disease, but testing is not done on a routine basis. There have however, been studies done by the CIDC and there are a few hospitals that do routine tests. Based on the CIDC study, a number of cases in South Africa were identified in 2015, 2016 as well as some year to date in 2017.

In Europe, Australia and USA there are about 10 – 15 cases detected per million people. The USA have reported that they have an average of 5000 cases / year, while England/Wales had 345 cases in 2016.

Other countries report cases and positive results – one only has to put in “current *Legionella* cases” in online search engines to find current cases.

**Q. What does the legislation say about *Legionella* in South Africa?**

**A.** Up until 2013, South Africa had no regulation pertaining specifically to *Legionella*. However, the government did identify the *Legionella* bacterium as a hazardous biological agent, group 2 (HBA – Group 2) and as such its control formed part of the requirements of OHS Act (Occupational Health & Safety Act, no 85 of 1993).

For the past few years, the *South African Bureau of Standards* has worked together with members of the *Legionella Action Group (LAG)*, water treatment companies and members of industry to set up a standard specifically for *Legionella* risk reduction for South African industries.

The standards were released to the public in 2013 and goes hand in hand with the OHS Act, but provides more detailed guidelines on management risk reduction, requirements for various systems in terms of treatment, testing, corrective actions and record keeping.

**Q. What are the relevant acts and standards pertaining to *Legionella* in South Africa?**

**A.** Occupational Health and Safety Act, no 85 of 1993  
SANS 893-1, Legionnaires' disease Part 1: Risk management  
SANS 893-2, Legionnaires' disease Part 2: The control of *Legionella* in water systems.

**Q. What do I have to do to comply?**

**A.** According to the *OHS act – HBA Regulations, Section 6.1: Risk assessment by employer or self-employed person:*

“An employer or a self-employed person contemplated in regulation 2 shall, after consultation with the relevant health and safety representative or relevant health and safety committee, cause a risk assessment to be made and thereafter at intervals not exceeding two years, to determine if any person might have been exposed to a HBA.”

*OHS act – HBA Regulations, Section 4: Information and training*

“An employer shall, before any employee is exposed or may be exposed to HBA and after consultation with the H&S committee established for that section of the workplace, ensure that he employee is adequately and comprehensively informed and trained, on both practical aspects and theoretical knowledge with regards to:

- The contents of the regulation
- The potential risks to health caused by the exposure
- The measures to be taken by the employer to protect an employee against any risk of being exposed
- The precautions to be taken by an employee to protect him-or herself against the health risks associated with the exposure, including the wearing and use of protective clothing and respiratory protective equipment
- The necessity, correct use, maintenance and potential of safety equipment, facilities and engineering control measures

To summarise requirements as set out in OHS Act and SANS 893:

- Have a risk assessment done by a competent person (OHS Act and SANS 893)
- Establish a *Legionella* Risk Management system for continuous control and review (SANS 893 part 1)
- Ensure specific water systems are treated correctly, tested, actioned and recorded (SANS 893 part 2)
- Ensure temperature settings on calorifiers and point of use temperatures meet SANS 893 requirements
- Train and inform your staff on all *Legionella* related matters (OHS Act and SANS 893)

**Q. Who can assist with *Legionella* training, *Legionella* Risk Assessments and Consultancy?**

**A.** WW Independent Consultants (WWinc) can assist you with all your requirements.

Competency is essential to ensure validity of assessments and advise and is a requirement of SANS 893. Credentials are available to interested parties

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