



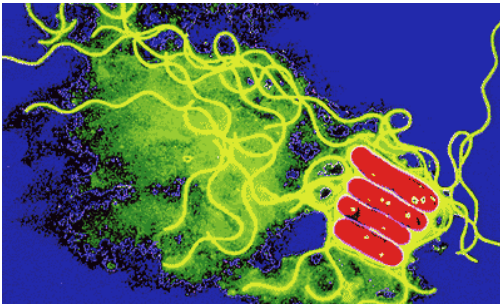
IOSH Webinars

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RM ASSOCIATES

Legionnaires Disease – A Global Perspective



Legionella Bacteria

Naturally occurring, commonly found in lakes, rivers, creeks, hot springs and other bodies of water

Legionnaires' disease is believed to occur worldwide

Most likely way of entering a building water system is through the mains at low levels

Legionnaires Disease

In July 1976 the American Legion Department of Pennsylvania hosted the 58th state convention at the Bellevue-Stratford Hotel in Philadelphia.

Outbreak of pneumonia (*221 cases*) resulting in 34 deaths

A Rod shaped bacterium isolated as the cause, now known as;

'Legionella pneumophila'

- 10% mortality rate
- Symptoms include cough, fever, breathing difficulties, diarrhoea and delirium



Legionnaires Disease

More than 50 species of legionella bacteria have been identified;

Legionella pneumophila is one type of legionella bacteria

Legionella pneumophila is responsible for over 90% of legionellosis cases

16 different types of *Legionella Pneumophila* identified, known as serogroups

Legionella Pneumophila Serogroup 1 considered the most serious

Legionnaires Disease

The identified incidence of Legionnaires' disease varies widely according to the level of surveillance and reporting.

Since many countries lack appropriate methods of diagnosing the infection or sufficient surveillance systems, the rate of occurrence is unknown.

In Europe, Australia and the USA there are about 10–15 cases detected per million population per year.

Legionnaires Disease

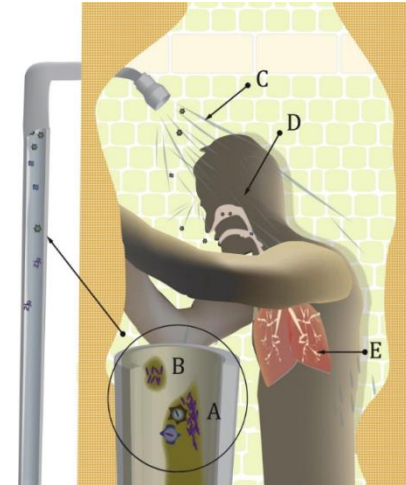
How is Legionnaires Disease Caught?

Inhalation of small water droplets that contain

Legionella bacteria

No evidence of person to person spread

2 – 10 day incubation period



Who is at risk?

Highest risk group– hospitalised immunocompromised patients

Other factors – Men, >50years old, smokers, alcoholics

Conditions for growth

Water

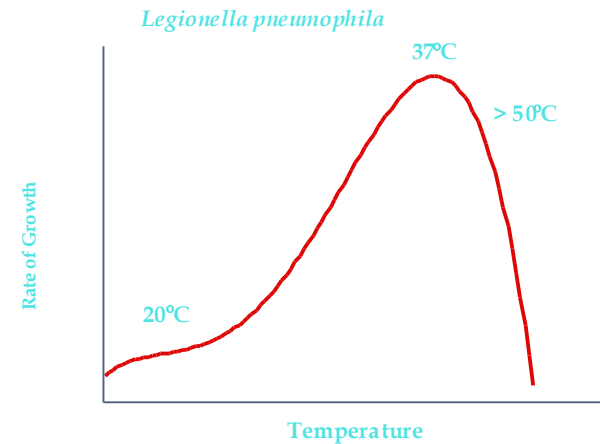
Nutrition

- Rust
- Organic material

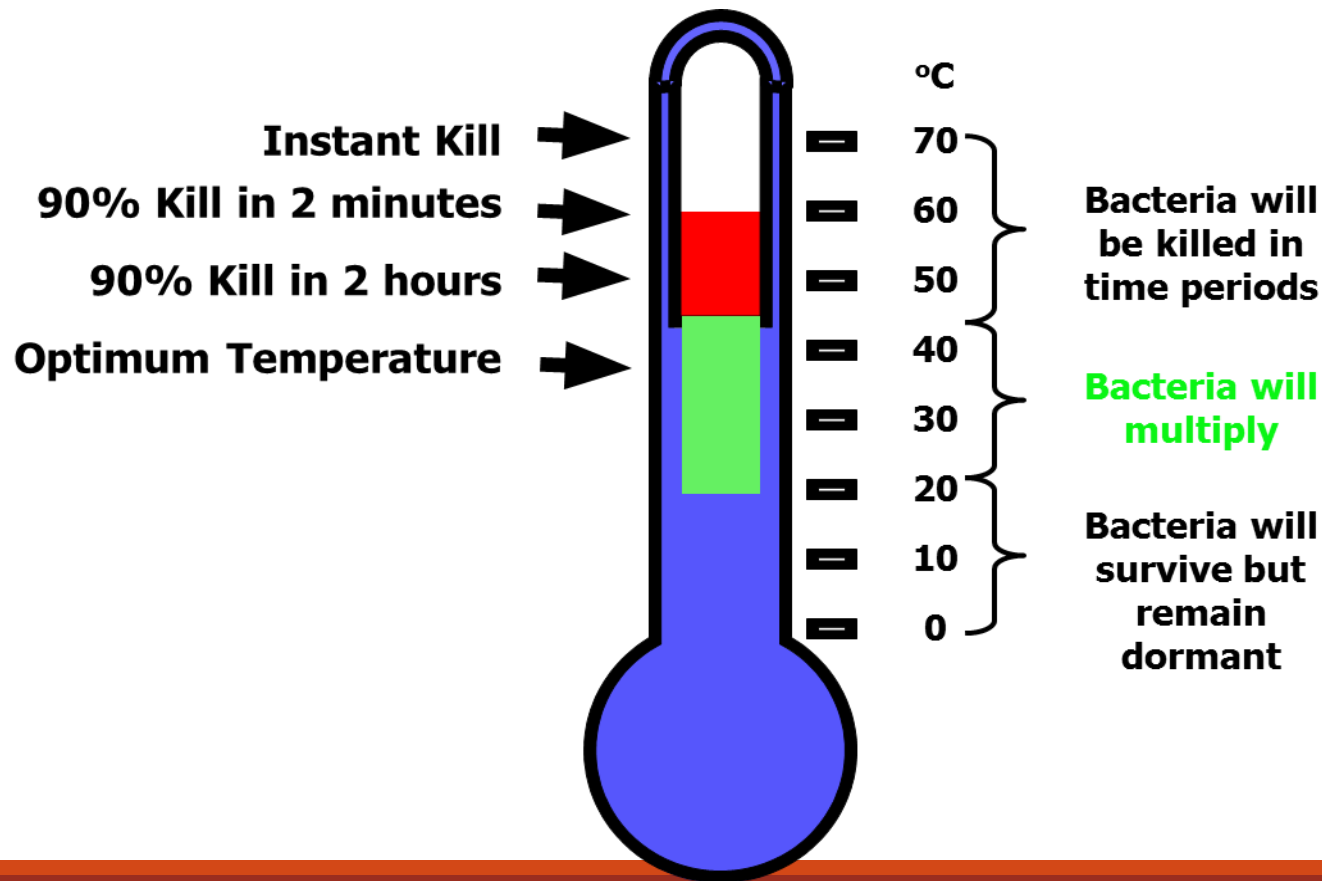
Stagnation

- Sediment
- Scale
- Biofilm

Temperature



Effect of temperature



Guidance

Local Governments may have guidance in place, all will draw from the following:

Key Source Documents

WHO – Water Safety in Buildings (2011)

European Technical guidelines (2014)

UK- Health and Safety Executive

The Control of legionella bacteria in water systems (L8)

(plus associated Technical guidance HG274)

Rules for controlling the risk

No matter what the geographic location or the local guidance—the rules are the same

Keep hot water hot (above 60°C)

Keep cold water cold (below 20°C)

Keep water moving

Keep systems clean

Risk Management

Identify a Water Management Team

Local/Central Responsibilities must be allocated – all should know what's expected of them.

Create a Water Safety Plan

Assess Risk – understand how building works and the type of occupant

Monitor Key Asset – based on guidance and risk assessment put in place a programme to monitor on site conditions

React to issues – be prepared for life not to be perfect

Continually Review– talk with local teams, audit results, be prepared to change

Written Scheme

All guidance document focus on:

Monitoring of cold water services

- Tank supply? tank condition
- Cold water Temperature at the taps

Monitoring of hot water services

- Hot water generator output
- Hot water Temperature at the taps
- Circulation efficiency in hot water secondary systems

Showers

- Regular use
- Periodic descale and cleaning of heads

Low use outlets

- Forced flushing of outlets which are used less than weekly

Key Issues

Warming of cold supply

Low hot water temperatures

Poor install standards

Effect of low use