

LEGIONELLA: Principles of Control

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Reasonably foreseeable risk

“A reasonably foreseeable risk of exposure to legionella bacteria exists in...

....other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol during operation or when being maintained”

ACOP L8

Legionella

- The organism
- What promotes its growth
- How people become infected
- Man made environments
- Principles of control

Legionella

- Bacterium
- > 50 species
- At least 16 associated with human infection
- *Legionella pneumophila* responsible for 80-90% of all infections
- 16 serogroups within *L. pneumophila*
- Serogroup 1- most common cause of illness

Habitat

- **UBIQUITOUS** - natural and man made environments
- Aquatic
- Biofilm
- Growth temperature range
- Nutritionally fastidious

How people are infected

- Inhalation of aerosol particles into the lung
 - Particles must be small enough to penetrate lower parts of the lung but large enough to contain at least one bacterial cell
- Never by person to person transmission

'Man-made' environments

- Contain water
- Recirculating/potential for stagnation
- Temperatures between 20 and 45°C
- Presence of nutrients

- Eg aqueous pre-treatment systems
but there may be others!

How infection occurs

- Presence of airborne droplets containing viable *Legionella*
- Chain of events:
 - Presence of *Legionella*
 - Multiplication to high numbers
 - Means of creating breathable droplets
 - Exposure of susceptible person

What law applies

- Acts – HSW
- Regulations – COSHH, Management
- Approved Code of Practice, L8
- Guidance, L8

COSHH Regulations

- Risk assessment
- Prevention or control
- Use of control measures
- Maintenance, examination and testing
- Health surveillance
- Information, instruction and training

MHSW Regulations

- Risk assessment
- Principles of prevention
- Health and safety arrangements
- Health surveillance
- Health and safety assistance
- Emergency procedures
- Information for employees
- Co-operation and co-ordination

Approved Code of Practice (L8)

- Practical examples of good practice
- Advice on how to comply with the law
- Guide to what is 'reasonably practicable'
- Special legal status
- Burden of proof on duty holders

Guidance

- Interprets the law
- Helps people comply with the law
- Not compulsory
- Gives technical advice and illustrates good practice

L8 ACoP – Principles of Control

- Identify **and** assess **sources of risk**
- Prepare a **scheme** for preventing or controlling the risk
- Implement **and** manage **the scheme**
- **Keep** records **and** check **that what has been done is effective**

ACoP – Principles of Control

- Ensure release of water spray is controlled
 - enclosure, ventilation, lids on tanks
- Avoid water temperatures/conditions that favour growth of legionella
- Ensure water cannot stagnate
 - remove dead legs and unnecessary pipework, ensure circulation
- Avoid materials that encourage growth of legionella
- Keep the system and the water in it clean
 - prevent scale, sediment, biofilm
- Treat water to either kill or limit growth of legionella

Assessing the risks

- Responsible person
 - On site
- External support (consultants)
- Reasonable steps to ensure competence
 - Legionella Control Association (LCA)
(<http://conduct.org.uk>)

Responsible person

- Take managerial responsibility
- Supervise
- Working knowledge of
 - Risks
 - Controls
 - Target levels
 - Action levels
- Deputy

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Remember :

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