

Battle to contain worst-ever Legionnaires' outbreak

130 VICTIMS OF KILLER BUG

BRITAIN was on the brink of its biggest ever outbreak of Legionnaires' disease last night.

A man of 89 has already died of the killer bug, 18 other cases have been confirmed, and another 11 suspected victims have been identified.

And experts are warning that up to 130 could be struck down by the pneumonia-like illness.

Urgent investigations are under way to identify the source of the outbreak in Barrow-in-Furness, Cumbria.

Last night the Forum 28 arts complex, in the busy town centre, emerged as the most likely culprit.

Police cordoned off the building and were standing guard outside.

The complex, the only town centre building with the type of water-cooled air-conditioning system associated with Legionnaires', has up to 1,000 visitors a day. Tests are being

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carried out on water samples from the system and if it proves to be the source then anyone who has passed through the centre of Barrow recently could be at risk.

Legionnaires', which has an incubation period of ten days and is a particular threat to the elderly and unfit, is carried by water droplets which are pumped out by air-conditioning systems.

On average the disease can kill up to 15 per cent of its victims, although an outbreak in Stafford in 1985 affected 68, of whom 23 died.

Dr Nigel Calvert, a consultant in communicable disease control, who is in charge of tracking down the source, said: 'This is the largest outbreak I am aware of.'

Anyone who has visited Barrow since July 1 could have contracted the disease and if they display any

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On guard: Police outside the building at the centre of the outbreak

Legionella and the law

- Acts
- Regulations
- Approved Code of Practice
- Guidance

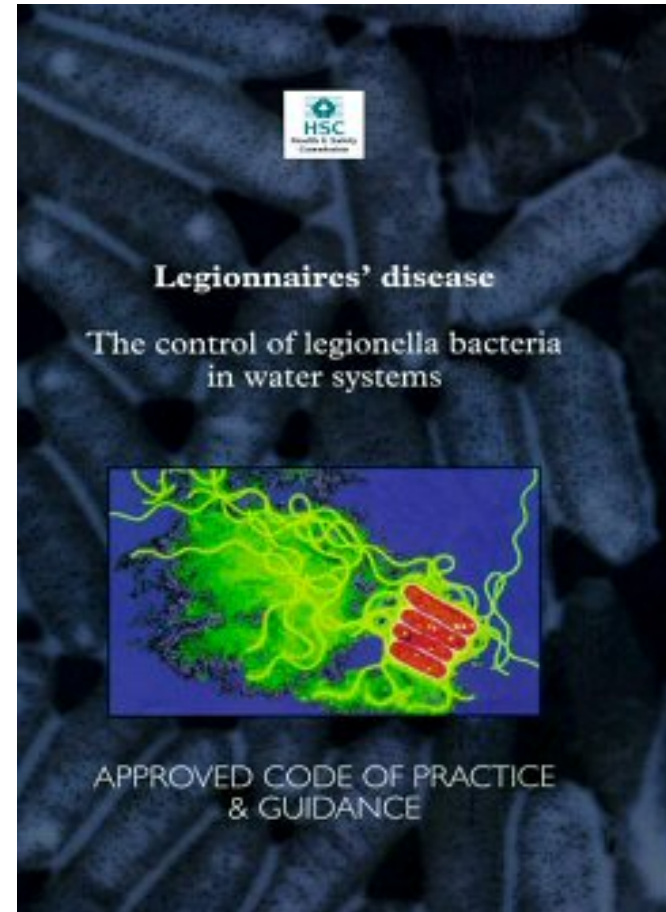


Guidance on legionella control

- 1987 Guidance Note EH48 (HSE)
- 1991 ACOP & HS(G)70 (plus revisions)
- 1991 TM13 (CIBSE)
- 1993/4 Health Technical Memorandum 2040/2027
- 1990's WMS/BACS
- 2001 ACOP and Guidance (L8)
- HTM 07 2007

Approved Code of Practice (L8)

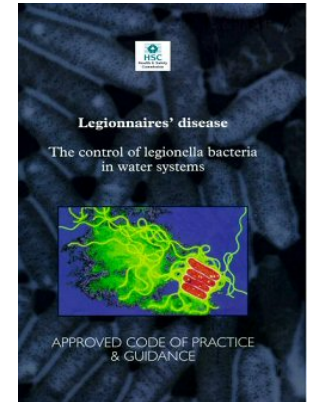
- Advice on how to comply with the law
- Guide to what is 'reasonably practicable'
- Examples of good practice
- Special legal status
- Burden of proof on duty holders



Guidance



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



ACoP - principles

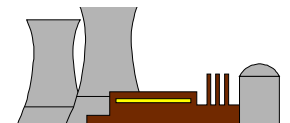
- Avoid water temperatures/conditions that favour growth of legionella
- Ensure water cannot stagnate
- Avoid materials that encourage growth of legionella
- Keep the system and the water in it clean
- Ensure release of water spray is controlled
- Treat water to either kill or limit growth of legionella

ACoP

SIGNIFICANT CHANGES



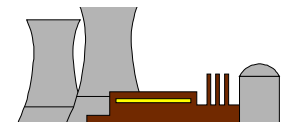
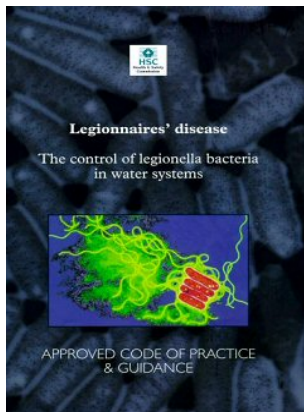
- **legal obligations under MHSW Regs**
- **applies to ALL hot water systems**
- **extra duties on producers and suppliers**
- **Code of Conduct for service providers**



L8 - GUIDANCE : SIGNIFICANT CHANGES



- **weekly dipslides**
- **routine sampling for legionella**
- **'effective' drift elimination**
- **more on commissioning and operation of systems**



Management of the risk



CONTROL not ERADICATION

- Risk assessment
- Written Scheme
- Implement, **manage** and monitor precautions
- Keep records
- Appoint a responsible person



Management responsibilities



- Employer
- Self employed
- Person who controls premises
- **Where there is a foreseeable risk**
- Assessment must be carried out on behalf of above

Management responsibilities

- Required to have access to **competent** help
- To:
 - Assess risks
 - Provide control measures

Competence

- Product of:
 - Sufficient training
 - Experience
 - Knowledge

- Who
 - Risk assessors
 - Water treatment specialists
 - Cleaning and disinfection contractors

Responsible person

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



Management questions

- Has a 'responsible person' been identified?
- Is there a deputy?
- Are there contact details?
- Are roles and responsibilities clearly defined?

Management responsibilities

- Also need:
 - External support (consultants)
 - Reasonable steps to ensure competence
 - Effective lines of communication
 - Legionella Control Association

Risk assessors

Water treatment consultants

Cleaning & disinfection contractors

Code of conduct - service provider



- Allocation of responsibilities
- Training and competence of personnel
- Control measures
- Communication and management
- Record keeping
- Reviews
- Internal auditing
- Distribution of the code

The approach

- Written scheme for controlling the risk
- Identify sources of risk
 - Schematic plan
 - Description of safe operation
 - Precautions to be taken
 - **Emergency actions**

Schematic

- Tower and system
 - Pumps
 - Softeners
 - Machines
 - Isolation valves

Records/log book system

- To include:
 - Named personnel with responsibilities
 - Risk assessment
 - Management strategy for controlling risks
 - Monitoring procedures

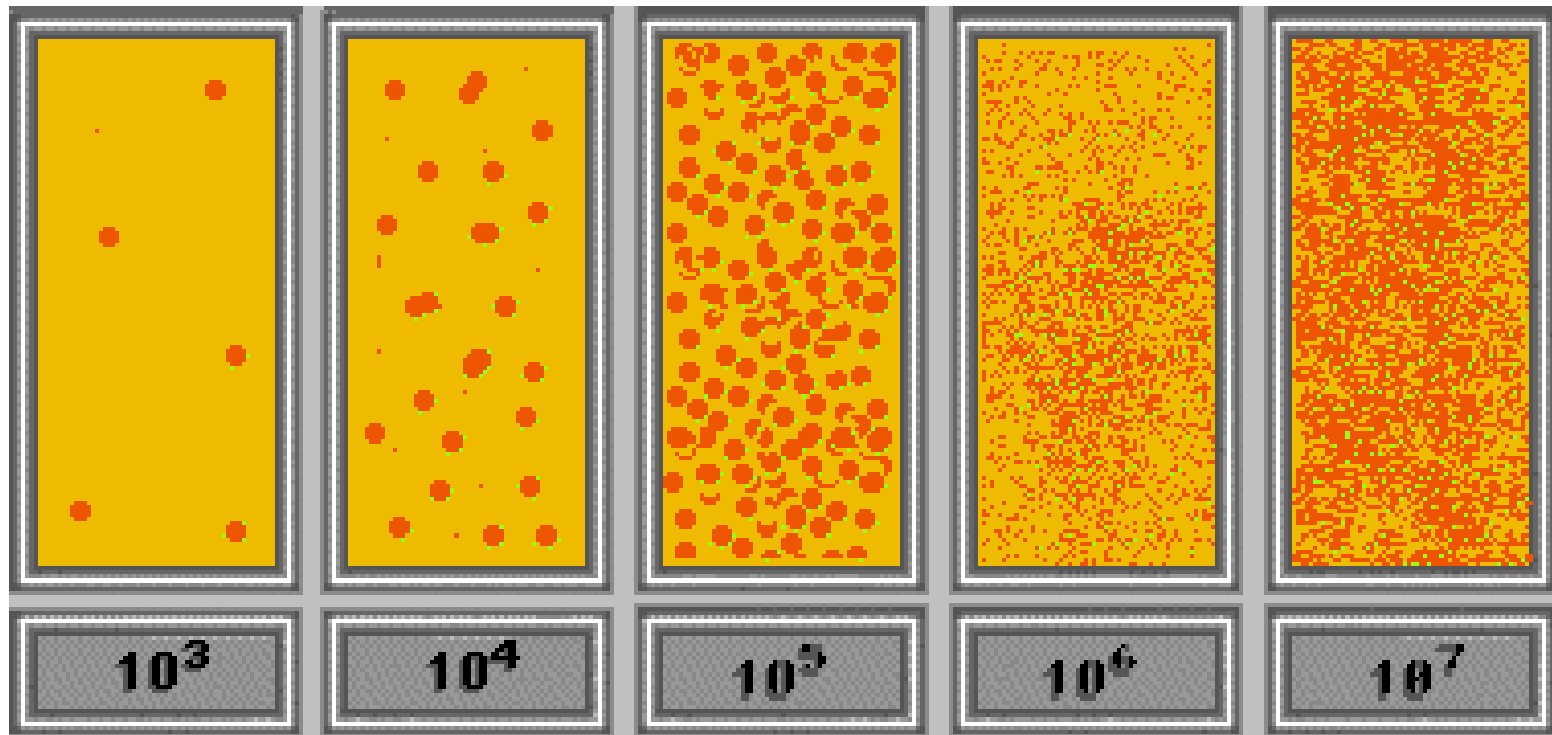
Log books

- Usually provided by WTC
 - Daily
 - Weekly
 - Monthly
 - Summer/winter shutdowns
 - Annual

Cleaning and disinfection

- Arrangements – who does it
- Written methodology
- Frequency – assessment
- Whole system – not just towers

Dip slide - interpretation





Microbiological sampling

- Rapid techniques a alternative to dipslide
 - Instant results
 - Follow manufacturer recommendations
 - help with interpretation

Legionella sampling

- standard for sampling & testing
- Larger volumes - up to 2 litres
- Where to sample from
- timing of sample
- Laboratory analysis - (Accredited lab)
- Cultures results - up to 10- days

Microbiological monitoring



- Aerobic count – dip slide
 - Where taken
 - When taken
 - How often taken
 - Incubation temperature and time
 - Interpretation
 - Trends



When to sample for legionella in cooling towers



- At least quarterly
- During outbreaks
- During commissioning to establish an effective treatment plan (continue monthly until control achieved)
- If positive sample found, more frequent sampling may assist review of assessment

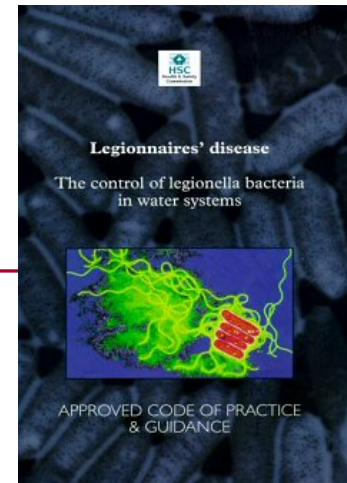
Action levels following microbial monitoring for cooling tower



Aerobic count cfu/ml at 30°C (minimum 48hr incubation)	Legionella bacteria cfu/litre	Action required
10,000 or less	100 or less	System under control
>10,000 and up to 100,000	>100 and up to 1000	Review programme operation - plus
>100,000	>1000	Implement corrective action - plus

Technical updates to L8

- Plans to review L8?
- Technical Guidance Notes:
 - Removal of pack from cooling towers



Removal of pack from cooling towers for cleaning and disinfection

- To provide guidance for dutyholders and inspectors
- ACOP para 54(e) requires 'maintenance of cleanliness of the system and the water in it
- **Guidance** para 138 **recommends** removal of pack at least annually where practicable



Removal of pack from cooling towers for cleaning and disinfection

- If not **practicable**, may be necessary to apply supplementary strategies (side-stream filtration, enhanced monitoring)
- Expectation is that dutyholders follow ACOP and guidance i.e., default position is that pack comes out
- If not, other measures must be equally effective
- Must be **demonstrable**

Removal of pack from cooling towers for cleaning and disinfection

Evidence

- Endoscopy
 - Photographs
 - Weight of pack
 - Representative
 - Frequent monitoring
- <http://www.hse.gov.uk/legionnaires/coolingtowers.ntm>



Questions?

