



**Water Safety Groups have a tough job ensuring holistic management of water hygiene and that response to risk is fit for purpose.** With the right support, you can reliably reduce contamination risk and provide evidence and assurances of control to 'highest standards'.

## Relevance

Healthcare organisations including NHS Trust and Care Home staff, H&S Committee representatives, Infection Prevention representatives, Compliance officers, Estate Managers, Maintenance Delivery Managers, Senior Operations Managers, Legionella Duty Holders, Governance Leaders, Housekeeping, Specialist Departments, FMs, Risk Assessors, External Auditors, Consultants and Water Contractors.

## Scope

Most Water Safety Groups are formed to maintain safe and healthy working conditions, equipment and systems in respect of water safety, public health, risk of waterborne pathogens such as *Pseudomonas Aeruginosa*, *Stenotrophomonas Maltophilia*, *Mycobacteria* and *Legionella*.

## HTM04-01

This Health Technical Manual was updated in 2016 in line with guidance issued by the Health & Safety Executive in the Approved Code of Practice L8.

## Fundamentals

Water safety principles can be summarised as follows;

- No healthcare operation is completely risk-free because waterborne bacteria naturally occur in managed water systems which can impact health
- Health risks can only be accepted if they are very low (the principle is to manage risk proactively and control risk in order to avoid nasty surprises)
- All the benefits of water-related bacterial management must be taken in to account when making a balanced judgment of whether risks are acceptable or whether further risk control measures are necessary
- All the disbenefits and costs of water-related bacteria risk must also be weighed – including pools, hydro pools and spas – even water features and fountains because they too represent potential sources of water-related health risk
- Learn from the past, best practice, ill-health, outbreaks of *Legionella* and how higher bacteria levels have been controlled and reversed successfully
- In particular, keep the following in focus:
  - **RESPONSIBILITY** (collective)
  - **PATRNETERSHIP** (internally and with external hygiene specialists)
  - **AWARENESS** (mandatory)
  - **COMPETENCE** (on-going training is required. Outsourced support can add enormous value)
  - **COMMUNICATION** (multiple audiences)

## Fundamentals of control and risk management include;

**Water Safety Plan** – understand what plant, equipment, assets you have on site(s), their interdependence and holistic operating risk.

**Schematics** – up-to-date and fit for purpose schematics should describe the water system in place from installed assets to systems / pipework layout for visible and all hidden assets. Schematics should be reviewed on a regular basis and for initial measures or major changes. They should also be updated where remedial works uncovers pipework and equipment that was perhaps forgotten or unutilised.

**Hazards and risks** – hazard analysis and critical control points is a well-used and recommended approach. Systematic, designed for preventative risk / hazard identification and management, this should be embedded within a practical water safety and Legionella management strategy.

**Control measures** – whilst no single measure is often suited or advisable, methods are usually categorised as either physical or chemical. For example;

### Physical

Temperature, Flushing, Materials, Ultraviolet, Tap Design, Filtration, Dead-legs, old or obsolete equipment etc.

### Chemical

Chlorination, Chlorine Dioxide, Monochloramine, Copper-silver ionisation (Cu-Ag), (Silver) Hydrogen peroxide, Titanium advanced oxidisation process (AOP).

**Operating limits** – it is worth remembering that compromises between safety / water hygiene and operating limits for water treatment must be put in place and recorded. There will be decisions to be made about asset life cycle, time of maintenance, refurbishment or removals for example. There will be secondary disinfection decisions. Parameters to keep in mind include time, temperature, dose, pH, water hardness, water consumption, energy consumption, age and complexity of equipment and site(s), accuracy and frequency of data.

**Monitoring** – once control measures have been put in place, system performance and KPIs need to be monitored. Typical options include paper records, Electronic Log Books, Remote Monitoring (state of the art temperature monitoring for Legionella now enables you to add ALL critical systems to one platform with cost saving implications over its lifespan, Process-control and trend analysis.

**Corrective actions** – Monitoring and consistently referenced data will enable better decision-making, more timely asset life cycle management, less reactive (costly) maintenance, unforced shutdowns and lower levels of operating risk. Keep in mind prioritisation, safety, cost and timescale.

**Record Keeping** – records are a statutory compliance deliverable and also allow you and specialist advisors to monitor, analyse, assess and recommend timely changes. Most Water Safety Groups have a Water Safety Plan which is flexible and evolutionary but based on a comprehensive and formalised water safety and Legionella policy framework. Records have to be retained for five years.

**Validation and Verification** – is best achieved through a combination of equipment and manufacturer data, on-site performance data, peer-review evidence, best-in-class KPIs, insights and intelligence supplied by your outsourced specialist water treatment and hygiene company.

## Questions:

- 1 Are you confident susceptible patient safety is as good as it should be?
- 2 Are your external water hygiene specialists true partners and accountable to / form part of the Water Safety Group – if not, why not?
- 3 Do you have the right support for audits and liaising for authorities such as HSE?
- 4 Can you provide consistent, timely robust assurance of water hygiene and safety control?
- 5 Do you have sight of comparable best practice benchmarks?
- 6 Is sampling sufficiently robust?
- 7 Are average Pseudomonas Aeruginosa and Legionella positive rates acceptable and how is your data trending?

Truly effective and successful Water Safety Plans keep NHS Trusts and healthcare operators out of the headlines, maintain high standards of water hygiene and safety, identify, isolate and reduce operating risk, reduce the high cost of unplanned reactive maintenance and forced shut-downs. They also save lives and ensure uncompromising compliance enabling you to put patient safety first.

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