1. INTRODUCTION

Gloucestershire Hospitals NHS Foundation Trust (the ‘Trust’) attaches the greatest importance to the health, safety and welfare of staff, patients and visitors. It is considered essential that management and staff should work together positively to achieve an environment free of infection from legionella bacteria.

To this end the Trust aims to ensure that its water systems are safely and effectively managed by complying with the guidance set out in:

- HSE Approved Code of Practice L8
- Health Technical Memorandum (HTM) 04-01, the control of Legionella, hygiene, “safe” hot water, cold water and drinking water systems; Part A: Design, installation and testing; Part B: Operational management.
- Health Technical Memorandum (HTM) 04-01, Addendum: Pseudomonas aeruginosa advice for augmented care units.

The Trust accepts that it is for management and staff to do all that is reasonably practicable to achieve compliance with the regard to the control, and where possible, the prevention of Legionella and Pseudomonas aeruginosa bacteria proliferation within the Trust’s premises.

It is the intention of the Trust to ensure the effective implementation of this Policy and to keep it under consideration in all aspects of health practice and decision-making.

2. DEFINITIONS

There are no definitions associated with this document.
3. POLICY STATEMENT

The Trust is aware of and supports the contents, requirements and intentions of the Health and Safety at work etc. Act (1974), COSHH (2002) and the HSE Approved Code of Practice L8, HSE guidance HSG274 and the Department of Health’s HTM 04-01 and associated UK regulations and guidance.

This Policy aims to set out a framework to assess work activities and water systems on Trust premises and to prevent and control the risks associated with:

- The Legionella bacteria and subsequent development of Legionnaires disease ( Legionellosis);
- Pseudomonas Aeruginosa (PA).

4. ROLES AND RESPONSIBILITIES

See also the Management Arrangements flowchart

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<th>Post/Group</th>
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<tr>
<td>Duty Holder (Chief Executive)</td>
<td>• Overall responsibility for all activities undertaken and premises managed by Gloucestershire Hospitals NHS Foundation Trust.</td>
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<tr>
<td>Director of Estates and Facilities Division (EFD)</td>
<td>• Delegated responsibility from the Chief Executive with a specific responsibility for water management, providing strategic direction and leadership. They will regularly liaise with the Responsible Person (see below) to review the safe systems of work put in place through risk assessment and subsequent actions and procedure notes (Written Scheme of Management).</td>
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<tr>
<td>Director of Infection Prevention and Control (DIPC)</td>
<td>• Trust’s nominated lead for Infection Control and Chairs the Infection Control Committee, receiving reports from the Water Action Group (see below). Water-related matters are reported to the Trust Board through the Infection Control Committee.</td>
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| Infection Control Team, Water (see action card LWM3) | Comprises the Infection Control Doctor and the Infection Control Nurse Manager; nominated by the DIPC to:  
  - Advise the Responsible Person (Water) of any issues or concerns regarding Legionella or PA that will require amendment to procedures, changes to water systems, or any other action.  
  - Attend Water Action Group meetings and participate in associated responsibilities.  
  - Review and approve all legionella control policy and procedures. |
| Responsible Person (Water) (see action card LWM1) | Manager or director (preferably engineer) appointed in writing by the Duty Holder to oversee the operation and maintenance of associated plant. The Responsible Person will be supported by specialists in specific subjects such as water treatment and microbiology and will use judgement to call on these individuals when required.  
  The Responsible Person (Water) shall:  
  - Take overall responsibility for the development and implementation of the Water Management Policy and associated documents to ensure compliance;  
  - Chair the Water Action Group;  
  - Ensure that all operational procedures are carried out in an effective and timely manner;  
  - Liaise with staff, managers, contractors, specialist advisors as required to ensure on-going monitoring and working practices are maintained;  
  - Ensure that equipment to be permanently connected to the water supply is properly installed;  
  - Ensure that procedures and maintenance instructions are maintained and reviewed, and appropriate records are kept;  
  - Appoint suitable deputies to carry out delegated responsibilities in the absence of the Responsible Person;  
  - Maintain own expertise in design principles and requirements of water systems and case/effects of waterborne organisms. |
| Deputy Responsible Person(s) (Water) (see action card LWM2) | • Appointed in writing by the RP for each Trust site and premises under management control of the Trust;  
  - to manage the maintenance and routine testing of the water storage and Legionella Control Policy;  
  - Assist in development and implementation of all relevant policy documents and oversee day-to-day activities defined in those procedures. |
| Competent Person (see action card LWM4) | • to undertake, supervise, manage maintenance and routine testing of all water systems;  
  - Maintain own technical knowledge and competence to carry out maintenance, routine testing, work and records keeping in line with the written scheme of all water systems. |
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| **Project Managers** (including staff hosting contractors working on water systems or equipment) | • Ensure Contractors are adequately instructed in all aspects of Trust Water Management Policy and Procedure Notes, are competent and adequately supervised throughout the work;  
  • Ensure that compliant buildings and refurbishments are delivered on behalf of the Trust and that the correct manuals, documentation, pre-handover training and familiarisation of operational personnel are made available.  |
| **Designers** (Architects and Consulting Engineers)                        | • Understand the operational requirements associated with water devices and supplies and ensure that technical standards are met;  
  • Consult with users, including infection control specialists and those involved with management and maintenance of water systems when refurbishing or modifying existing and occupied facilities.  |
| **Contractors** (Person/organisation responsible for supply, installation, validation and/or verification of hot and cold water services; conducts installation checks and tests) | • Demonstrate suitable knowledge and understanding of Trust and legal requirements;  
  • Ensure that they and their staff are competent to carry out any activities assigned to them by Project Managers, and shall provide documentary proof of this;  
  • Follow all procedures and processes detailed in the contract, or specified by the Project Manager responsible for the work they are undertaking.  |
| **Authorising Engineer**                                                   | • Engaged by the RP to provide specialist advice and guidance regarding best practice across all aspects of Water Management;  
  • Undertake management audits and attend Water Action Group meetings as required.  |
| **Trust Managers**                                                        | • Ensure that members of their staff are appropriately trained, as required, and comply with the requirements of this Policy and the associated Procedure Notes;  
  • Promptly report any concerns about the water systems to either the Responsible Person (Water), the Deputy Responsible Person (Water), or the Estates Helpdesk;  
  • Obtain approval from Estates before any plant or equipment that uses or discharges (particularly aerosol droplets) water is purchased, installed, taken into use, modified, or removed. This includes water coolers, air conditioning units, humidifiers, de-humidifiers, ice making machines, and any equipment that holds water or produces spray, mist or water vapour;  
  • In the event of an outbreak of legionella, participate in any actions required by infection outbreak procedures to prevent further infections and identify the source of infection, ensuring that all actions undertaken are recorded.  |
| **Trust Employees with designated water management responsibilities**      | • Carry out any Legionella/PA prevention duties as defined in procedures and training;  
  • Promptly inform Estates of any defects or issues with water systems or equipment;  
  • Obtain approval from Estates before any plant or equipment that uses or discharges (particularly aerosol droplets) water is purchased, installed, taken into use, modified, or removed. This includes water coolers, air conditioning units, humidifiers, de-humidifiers, ice making machines, and any equipment that holds water or produces spray, mist or water vapour;  
  • In the event of an outbreak of legionella, participate in any actions required by infection outbreak procedures to prevent further infections and identify the source of infection, ensuring that all actions undertaken are recorded.  |
| **Trust employees**                                                       | • Take reasonable care for their own health and safety, and that of others who may be affected by their acts and omissions at work;  
  • Adhere to relevant procedures and performing all relevant tasks reasonably requested.  |
| **Water Action Group (WAG)**                                              | Act as the focus of coordination for all aspects of the development and review of the Water Management Policy, effectiveness of the associated Procedure Notes and as a conduit for the communication of water related issues across the Trust. See Terms of Reference. |

5. MANAGEMENT PHILOSOPHY

The Trust will adopt a philosophy of water management based upon the following essential elements:

- To keep the hot water above 55°C and the cold water below 20°C.
- To keep the water moving to prevent stagnation.
- To keep all aspects of the water systems clean and free from scale, silt, rust or biofilm.
- To remove or replace any engineering defects that will contribute toward the proliferation of Legionella or PA bacteria such as rubber hoses, dead-legs, non-compliant fittings, deteriorated pipework, etc.
- To introduce biocide dosing plant where deemed appropriate through risk-assessment.
The Responsible Person will ensure that there is an operational written scheme of management for which the Trust is responsible. It will be reviewed and updated at appropriate intervals. The written scheme comprises a set of written procedure notes.

5.1 General Control Measures

The Trust acknowledges that a range of control measures will be necessary to mitigate the risks associated with Legionella and PA. These include:

- Re-engineering the pipework and distribution system
- Isolating/decommissioning the non-compliant equipment/items
- Improving and maintaining the control of water temperatures
- Removing/replacing the non-compliant equipment/items
- Hyper chlorination
- Pasteurisation (thermal disinfection)
- Chlorine dioxide dosing
- Copper silver ionisation
- Fitting filters
- Relocation of vulnerable/susceptible patients and staff to areas of lesser risk
- Cleaning and flushing water outlets not in regular use
- Inspection and cleaning of storage tanks and vessels
- Inspection and cleaning of calorifiers

5.2 Operations and Maintenance

The Responsible Person, together with the Estates and Infection Control Teams, will ensure that the following measures are in place:

- A schedule of Planned Preventative Maintenance (PPM) tasks to be completed by Trust maintenance staff or specialist contractors.
- All operation and maintenance systems will be conducted in accordance with the relevant Trust Procedure Notes.
- Regular use of cleaning and flushing regimes, particularly in areas where water supply is not subject to regular use. The Head of Domestic Services will ensure that all domestic staff carry out routine flushing of all occupied areas according to the Flushing Management Plan.

5.3 New and Refurbishment Works

The Responsible Person must ensure the following:

- That the Trust mitigates the risks from Legionella (and Pseudomonas aeruginosa in augmented care wards) when undertaking any refurbishment or replacements of water infrastructure. This will include a programme for the removal of dead-legs.
- That an annual programme of re-engineering work is produced (through the Capital and Irregular Maintenance Programme), which are regularly reviewed by the Water Action Group and submitted to the Water Environment Building Group
- Refurbished and new works are constructed in accordance with the Trust’s Design and Construction Requirements
- Any work undertaken by external contractors is subject to the Control of Contractors Procedure
- All plans for water distribution systems in new builds are reviewed by the Responsible Person and the Infection Control Team as part of the planning and construction project
- Full commissioning information is reviewed and accepted prior to use of a new build or refurbishment and the results passed to the Infection Control Team and Water Action Group (see also the Protocol for Change of use of a Room in a Clinical Environment)
- That appropriate risk assessments are carried out following any refurbishment or change of use of an area, or as part of the commissioning process for a new build

5.4 Monitoring
The Deputy Responsible Person/s will ensure that a planned programme of monitoring is carried out, to include:

- Regular taking of temperatures at strategic points across the water systems;
- Regular sampling of water systems, hydrotherapy and birthing pools for total viable count (TVC), and PA sampling, when appropriate.

The Deputy Responsible Person is responsible for the maintenance of a programme of routine sampling and recording of water content and temperatures; written processes are detailed in the Procedure Notes.

Monitoring regimes will be regularly reviewed by the Water Action Group and be used as evidence of appropriate water management.

6. OUTBREAK MANAGEMENT (LOCAL PROCEDURES)

The Trust will manage all cases and outbreaks of hospital acquired Legionella according to the following:

- **Clinical Management**: Outbreaks and Serious Incidents of Infection Guidelines;
- **Buildings/Systems Management**: Suspected Hospital Acquired Legionnaire’s Disease Case Outbreak procedure; the use of other local Estates and Facilities procedures will be used as directed according to the circumstances of the outbreak.

The Infection Control Team, along with the responsible clinicians will ensure that patients are diagnosed and treated appropriately, and that all reporting mechanisms are enacted in a timely manner.

**PROACTIVE WATER MANAGEMENT**

The Trust advocates a range of response strategies to proactively deal with Legionella and water management. These strategies will be regularly reviewed by WAG and reported to the Trust’s Infection Control Committee. The strategies are underpinned by requirements and opportunities for co-ordination and information exchange which include:

- Regular monitoring and reporting upon Legionella and water system management is provided to the Trust Board by the Responsible Person;
- Estates and Facilities Division have local procedures in place to enable a fast response to incidents;
- Estates and Facilities Division have contacts with specialist water and water treatment companies, and have regular and formal reviews of procedures with water stakeholders;
- Infection Control take the lead in the event of a potential Hospital Acquired Legionella infection (see Suspected Hospital Acquired Legionnaire’s Disease/Outbreak procedure PN 04-11) and manage the Trust’s Outbreaks and Serious Incidents of Infection guidelines;
- Links to other Trust systems and external bodies:
  - Membership of HEFMA (South West Trusts)
  - IHEEM and other Technical organisations
  - Microbiological membership of the Hospital Infection Society
  - Links between ICT and colleagues in the local Health Protection Team (South West (North) Health Protection Team) and Regional Epidemiologists.
  - Regular attendance at countywide Infection Control meetings.

7. RISK ASSESSMENTS

The Trust will undertake written risk assessments to identify and assess the risk of exposure to legionella bacteria from water systems on the premises and any precautionary measures necessary. Risk assessments are carried out for new building works, new installations or alterations to water supply and distribution, water treatment, air conditioning, water outlets, showers or hydrotherapy pool. Risk assessment should include anything which may contribute towards a Legionella or Pseudomonas
aeruginosa (in identified augmented care wards) risk including sculptures and decorative installations which involve water. A review of the risk will be undertaken at least every 2 years or when the risk assessment is no longer deemed valid.

Risk assessments, audits and records of legionella control activities are reviewed and monitored by the Water Action Group.

8. ARCHIVING ARRANGEMENTS

- All records appertaining to the control and prevention of Legionella are archived for 5 years.
- The original of this policy will remain with the Associate Director of Estates. An electronic copy will be maintained on the Trust Intranet. Archived copies will be stored on the Trust’s “archived policies” shared drive and will be held for 10 years.

9. TRAINING

All staff are required to have an awareness of this policy. Staff with specific roles will receive relevant training according to their role.

10. MONITORING OF COMPLIANCE

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<th>Monitoring requirements and methodology</th>
<th>Frequency</th>
<th>Further actions</th>
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| Management audit undertaken by Authorising Engineer | Annual | • Written recommendations will form the basis of Water Action Group workplan for the next 12 months.  
• KPI dashboard will be monitored and where agreed improvements and progress against the KPIs is slow, additional focus and support will be provided |

11. REFERENCES


Health and Safety Executive (2014). HSG 274 Parts 1, 2 and 3. London: HSE.


British Standards Institute (2011). *BS 8558-2011 guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages*. London: BSI


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