Trust Policy

Water Management Policy

<table>
<thead>
<tr>
<th>Issue Date</th>
<th>Review Date</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2017</td>
<td>September 2022</td>
<td>3</td>
</tr>
</tbody>
</table>

Purpose

To outline the policy for the safe management of water systems within the Trust

Who should read this document?

- Senior managers, department managers and ward managers as they are responsible for the implementation of the policy in their area;
- All staff as they are all responsible for complying with the arrangements for safe water management;
- All contractors as they must comply with this policy.

Key Messages

The objectives of the Water Management Policy (WMP) are:

- To ensure compliance with legislation, approved codes of practice, guidance and relevant standards;
- To ensure the provision, management and operation of an efficient, safe Estate.
- To ensure the Trusts Water Safety Group is formed and sustained.
- To ensure that the Trusts Water Safety Plan is developed and maintained.
- To ensure the Trusts hot and cold water supply, storage and distribution is safe, robust and resilient;
- To ensure the Trusts drinking water is safe, robust and resilient;
- To ensure the Trusts water outlets are safe and free from contamination.
- To ensure all staff and contractors are appropriately trained.

Core accountabilities

<table>
<thead>
<tr>
<th>Owner</th>
<th>Review</th>
<th>Ratification</th>
<th>Dissemination</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate Director of Estates</td>
<td>Infection Control Committee</td>
<td>Director of Planning and Site Services</td>
<td>Trust Wide</td>
<td>Infection Control Committee</td>
</tr>
</tbody>
</table>

Links to other policies and procedures

- Trust wide Health and Safety Policy.
- Policy for the Control of Contractors, Maintenance and Construction Activities.
- Water Flushing Standard Operating Procedure.
- Water Safety Plan.
- Guideline Infection Control Input into Design, Construction and Renovation Projects
The Trust is committed to creating a fully inclusive and accessible service. Making equality and diversity an integral part of the business will enable us to enhance the services we deliver and better meet the needs of patients and staff. We will treat people with dignity and respect, promote equality and diversity and eliminate all forms of discrimination, regardless of (but not limited to) age, disability, gender reassignment, race, religion or belief, sex, sexual orientation, marriage/civil partnership and pregnancy/maternity.

An electronic version of this document is available on Trust Documents on StaffNET. Larger text, Braille and Audio versions can be made available upon request.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Purpose, including legal or regulatory background</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Definitions</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Duties</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Key Elements</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Overall Responsibility for the Document</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Consultation and Ratification</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Dissemination and Implementation</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Monitoring Compliance and Effectiveness</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>References and Associated Documentation</td>
<td></td>
</tr>
<tr>
<td>Appendix 1</td>
<td>Dissemination Plan and Review Checklist</td>
<td></td>
</tr>
<tr>
<td>Appendix 2</td>
<td>Equality Impact Assessment</td>
<td></td>
</tr>
</tbody>
</table>
1 | Introduction

The National Health Service (NHS) has a corporate responsibility to account for the stewardship of its publicly funded assets. This includes the provision, management and operation of an efficient, safe estate that supports clinical services and strategy.

The objectives of the Water Management Policy (WMP) are :-

- To ensure compliance with legislation, approved codes of practice, guidance and relevant standards;
- To ensure the provision, management and operation of an efficient, safe Estate.
- To ensure the Trusts Water Safety Group is formed and sustained.
- To ensure that the Trusts Water Safety Plan is developed and maintained.
- To ensure the Trusts hot and cold water supply, storage and distribution is safe, robust and resilient;
- To ensure the Trusts drinking water is safe, robust and resilient;
- To ensure the Trusts water outlets are safe and free from contamination.
- To ensure all staff and contractors are appropriately trained.
- To ensure all systems are appropriately designed and installed.

This document is written for all persons who influence the design, installation, commissioning, maintenance and operation of hot and cold water supply, storage and distribution systems and associated equipment and systems in Trust occupied premises.

By following the guidance and legislation captured by HTM04-01 the Trust will ensure that all of the above persons will be aware of their individual and collective responsibility for the provision of safe wholesome hot and cold water supplies, and storage and distribution systems in Trust occupied premises.

Adhering to the guidance outlined in HTM 04-01 will be taken into account as evidence towards compliance with legal requirements and governance standards.

2 | Purpose

Plymouth Hospitals NHS Trust operates a number of properties for the purpose of delivering Healthcare.

This policy covers all of the existing and future water system installations within Trust occupied properties, including external infrastructure.

The provision of safe wholesome hot and cold water supplies, and storage and distribution systems in Trust occupied premises will be achieved by adhering to the following key legislation, regulation and guidance :-

- Health Technical Memorandum 04-01 (Safe water in healthcare premises)
- Health and Safety at Work etc. Act 1974
- Health and Safety Executive Approved Code of Practice for Legionella (L8)
- Health and Safety Executive HSG274
- Health and Social Care Act 2008 (regulated activities) Regulations 2014
- Care Quality Commission (registration) Regulations (2009)
- NHS Constitution.
- Health Act 2009.
- NHS Premises Assurance Model
- Control of Substances Hazardous to Health Regulations 2002
- Water Supply (Water Fittings) Regulations 1999
- Water Regulations Advisory Scheme.
- Water Supply (Water quality) Regulations 2000
- Private Water Supplies Regulations 2009

The following diagram shows how best practice guidance on the safety of and quality of healthcare estates and facilities fits in with the legislative and policy framework, this diagram is not exhaustive.
This policy has Trust-wide relevance, Derriford Hospital and its satellite sites form a large Healthcare Estate with complex water systems providing water to areas where there are vulnerable patients who have compromised immunity and are therefore particularly susceptible to water-related hazards.

The growth of a range of opportunistic waterborne pathogens such as Legionella, Pseudomonas aeruginosa, Mycobacteria, Stenotrophomonas, is a serious health concern and poses a significant risk.

The hot water systems comprise one or more cold water storage tanks, one or more hot water generators in the form of plate heat exchangers and storage vessels complete with
interconnecting pipe work. There are 10 systems installed on the Derriford Site and a number of satellite sites as follows:-

<table>
<thead>
<tr>
<th>Building</th>
<th>Area supplied by System</th>
<th>Location of HWS source unit</th>
<th>Cold water tank supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derriford</td>
<td>Phase 1 lower podium</td>
<td>Level 1</td>
<td>Level 14</td>
</tr>
<tr>
<td></td>
<td>Phase 1 Podium And Tower</td>
<td>Level 5</td>
<td>Level 14</td>
</tr>
<tr>
<td></td>
<td>SDU</td>
<td>Level 5</td>
<td>Level 14</td>
</tr>
<tr>
<td></td>
<td>Phase 2 Tower</td>
<td>Level 5</td>
<td>Level 14</td>
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<tr>
<td></td>
<td>ED</td>
<td>Level 5</td>
<td>Level 14</td>
</tr>
<tr>
<td></td>
<td>West Extension</td>
<td>Level 5</td>
<td>Level 8</td>
</tr>
<tr>
<td></td>
<td>Maternity</td>
<td>Level 3</td>
<td>Level 8</td>
</tr>
<tr>
<td></td>
<td>NICU</td>
<td>Level 3</td>
<td>Level 8</td>
</tr>
<tr>
<td></td>
<td>TLB</td>
<td>Level 10</td>
<td>Level 10B</td>
</tr>
<tr>
<td></td>
<td>Chest Clinic</td>
<td>Level 5</td>
<td>Level 5</td>
</tr>
<tr>
<td>Estates &amp; NBS</td>
<td>Ground floor &amp; 1st floor</td>
<td>1st floor</td>
<td>Ground floor</td>
</tr>
<tr>
<td>PET - CT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCHW</td>
<td>Ground floor &amp; 1st floor</td>
<td>Ground floor</td>
<td>2nd floor void</td>
</tr>
<tr>
<td>Occ Health</td>
<td>Ground floor</td>
<td>Ground floor</td>
<td>Ground floor</td>
</tr>
<tr>
<td>PGMC</td>
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<td>2nd floor void</td>
<td>N/A</td>
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<tr>
<td>Bircham Park</td>
<td>All</td>
<td>Office</td>
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<tr>
<td>Offices</td>
<td></td>
<td></td>
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<tr>
<td>Security Centre</td>
<td>All</td>
<td>Office</td>
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</tr>
<tr>
<td>Chiller Hall</td>
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<tr>
<td>Boiler House</td>
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<td>Direct</td>
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<tr>
<td>NU Building</td>
<td>Ground floor</td>
<td>Ground floor</td>
<td>Ground floor</td>
</tr>
<tr>
<td>John Bull</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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</tbody>
</table>
The Trust also has a bore hole located to the south of the site. Borehole water is used to service WC and sluices of TLB only, this system is protected by UV treatment.

The cold water tanks described previously also supply cold water to each of the areas outlined and drive the hot water generators. Cold drinking water generally comes from the mains distribution pipework with the exception of maternity and west extension which are supplied from independent potable cold water storage tanks on level 8.

The provision of safe wholesome hot and cold water supplies, and storage and distribution systems in Trust occupied premises will be achieved by adhering to the following key legislation, regulation and guidance :-

Health Technical Memorandum (HTM) 04-01 (Safe water in healthcare premises)

HTM 04-01 is the definitive national guidance for delivering safe water in healthcare premises, all necessary regulation, legislation and guidance is referenced in the current version.
Its purpose is to move users of the document towards a holistic management of water systems via Water Safety Groups, Water Safety Plans and other initiatives
HTM 04-01 comprises three parts :-

- HTM-04-01 part A : Design, installation and commissioning.
- HTM-04-01 part B : Operational Management.
- HTM 04-01 part C : Pseudomonas aeruginosa – advice for augmented care units.

Health and Safety at Work etc. Act 1974

This Act of Parliament is the main piece of UK health and safety legislation.
Employers have a general duty under the Health and Safety at Work etc. Act 1974 to ensure, so far as is reasonably practicable, the health, safety and welfare of patients, visitors and staff and the public who may be affected by workplace activities.

Health and Safety Executive Approved Code of Practice for Legionella (L8)

HSE L8 is the approved code of practice for the control of legionella bacteria in water systems, its purpose is to inform duty holders, including employers, those in control of premises and those with health and safety responsibilities for others, to help them comply with their legal duties in relation to legionella. These include identifying and assessing sources of risk, preparing a scheme to prevent or control risk, implementing, managing and monitoring precautions, keeping records of precautions and appointing a manager to be responsible for others.

Health and Safety Executive HSG274

HSG274 supports the purpose of HSE L8 and comprises three parts:

- Part 1: The control of legionella bacteria in evaporative cooling systems – not applicable to Plymouth Hospital NHS Trust property portfolio
- Part 2: The control of legionella bacteria in hot and cold water systems.
- Part 3: The control of legionella bacteria in other risk systems.

Part 2 is applicable and self-explanatory.

Part 3 provides guidance on managing other risk systems such as:

- ultrasonic humidifiers/foggers
- misting devices used for humidifying vegetables, meat and other food products
- spray humidifiers
- air washers
- wet scrubbers
- particle and trivial gas scrubbers
- water softeners
- emergency showers
- eyebaths and face wash fountains
- sprinkler and hose reel systems
- spa pools
- whirlpool baths
- horticultural misting systems
- vehicle washers including automatic washers for cars, buses, lorries and railway rolling stock
- powered dental equipment
- fountains and decorative water features including those on display for sale
- non-disposable nebulisers used for respiratory therapy
- industrial effluent treatment plants
- irrigation systems
- fire, dust and odour suppression systems
- paint spray preparation equipment
- tunnel pasteurisers and similar equipment

Health and Social Care Act 2008 (regulated activities) Regulations 2014

Regulation 12(2)(h) decrees that registered providers must assess the risk of, and prevent, detect and control the spread of, infections, including those that are health care associated.

Regulation 15 states that :-

- All premises and equipment used by the service provider must be :-
  - Clean
  - Secure
  - Suitable for the purpose for which they are being used
  - Properly used
  - Properly maintained
  - Appropriately located for the purpose for which they are being used.

- The registered person must, in relation to such premises and equipment, maintain standards of hygiene appropriate for the purposes for which they are being used.


Provides statutory guidance about compliance with regulation 12(2)(h)

Care Quality Commission (CQC) (registration) Regulations (2009)

The CQC independently regulates all providers of regulated health and adult social care activities in England.

NHS Constitution.

The NHS Constitution for England sets out the objectives of the National Health Service, the right and responsibilities of the various parties involved in health care and the guiding principles which govern the service.

Health Act 2009.

The Health Act 2009 implements those parts of the “NHS Next Stage Review” that require primary legislation.

NHS Premises Assurance Model
The NHS PAM is a management tool that provides NHS organisations with a method of assessing how safely and efficiently they run their estate and facilities services.

Control of Substances Hazardous to Health Regulations 2002

COSHH is the law that requires employers to control substances that are hazardous to health.

Water Supply (Water Fittings) Regulations 1999

Regulations imposed on England and Wales water industry by statutory instrument. They set legal requirements for the design, installation, operation and maintenance of plumbing systems, water fittings and water using appliances.

Water Regulations Advisory Scheme.

The purpose of WRAS is to contribute to the protection of public health by preventing contamination of public water supplies and encouraging the efficient use of water by promoting and facilitating compliance with the Water Supply (Water Fittings) Regulations and Scottish Water Byelaws.

Water Supply (Water quality) Regulations 2000

These regulations cover the quality of water provided by water undertakers for public distribution which is intended for domestic purposes i.e. the provision of wholesome water.

Private Water supplies Regulations 2009

These regulations cover private sources of water intended for human consumption.

### Definitions

In addition to the definitions listed below, other definitions can be found in the Water Supply (Water Fittings) Regulations 1999; BS 6100; BS 8558; and BS EN 806.

**Alert organisms**: Alert organisms are microorganisms that have the potential to cause harm and disease in individuals and which can cause an outbreak of infection in a hospital environment. An alert organism is identified by the microbiology laboratory and referred to the infection prevention and control (IPC) team for assessment of possible healthcare-associated acquisition and to identify any possible environmental/equipment sources.

**Augmented care units/settings** – There is no fixed definition of “augmented care”; individual providers may wish to designate a particular service as one where water quality must be of a higher microbiological standard than that provided by the supplier. While this document provides broad guidance, the water quality required will be dependent on both the type of patient and its intended use. Most care that is designated as augmented will be that where medical/nursing procedures render the patients susceptible to invasive disease from environmental and opportunistic pathogens such as *Pseudomonas aeruginosa* and other alert organisms. In broad terms, these patient groups will include:
a. those patients who are severely immunosuppressed because of disease or treatment: this will include transplant patients and similar heavily immunosuppressed patients during high-risk periods in their therapy;
b. those cared for in units where organ support is necessary, for example critical care (adult paediatric and neonatal), renal, respiratory (may include cystic fibrosis units) or other intensive care situations;
c. those patients who have extensive breaches in their dermal integrity and require contact with water as part of their continuing care, such as in those units caring for burns.

**Backflow** – Flow upstream, that is in a direction contrary to the intended normal direction of flow, within or from a water fitting.

**Biofilm:** A biofilm is a complex layer of microorganisms that have attached and grown on a surface. This form of growth provides a niche environment for a wide range of microorganisms to interact and where the secretion of exopolysaccharides by bacteria will form an extracellular matrix for both bacteria and other unicellular organisms such as amoebae and flagellates to remain in a protected state.

**Colony forming unit:** Unit that gives rise to a bacterial colony when grown on a solid medium; this may be a single bacterial cell or a clump of cells.

**Dead-leg** – a length of water system pipework leading to a fitting through which water only passes infrequently when there is draw-off from the fitting, providing the potential for stagnation.

**Flow straightener:** A device inserted into the spout outlet of a tap to modify flow, take out turbulence and create an even stream of water.

**Healthcare-associated infections (HCAI):** encompasses any infection by any infectious agent acquired as a consequence of a person’s treatment or which is acquired by a healthcare worker in the course of their duties.

**Healthcare facility/building – all buildings:** infrastructure, equipment, plant, embedded systems and related items that support the delivery of healthcare and services of all types, irrespective of their ownership or operation by third parties.

**Healthcare organisations:** organisations that provide or intend to provide healthcare services for the purposes of the NHS.

**Legionellosis:** a collective term for diseases caused by *Legionella* bacteria including the most serious Legionnaires’ disease, as well as the similar but less serious conditions of Pontiac fever and Lochgoilhead fever.

**Manual mixing tap** – a tap that controls both the flow and temperature of water delivered.

**Point-of-use (POU) filter:** a filter with a maximal pore size of 0.2 μm applied at the outlet, which removes bacteria from the water flow.

**Redundant pipework (also known as blind end):** a length of pipe closed at one end through which no water passes.

**Remediation:** Any process that reduces the risk from harmful agents such as microorganisms.

**Thermostatic mixing tap:** a tap that controls the flow and by thermostatic means the temperature of water delivered.
**Thermostatic mixing valve**: valve with one outlet, which mixes hot and cold water and automatically controls the mixed water to a user-selected or pre-set temperature.

**Transmission**: Any mechanism by which an infectious agent is spread from a person or environmental source to a susceptible person.

**Waterborne pathogen**: microorganism capable of causing disease that may be transmitted via water and acquired through ingestion, bathing, or by other means.

**Water outlet**: (In this document) refers mainly to taps and showerheads, but other outlets, as indicated by risk assessments, may be considered important.

**Water Safety Group (WSG)**: A multidisciplinary group formed to undertake the commissioning and development and ongoing management of the water safety plan (WSP). It also advises on the remedial action required when water systems or outlets are found to be contaminated and the risk to susceptible patients is increased.

**Water safety plan (WSP)**: A risk-management approach to the safety of water that establishes good practices in local water distribution and supply. It will identify potential hazards, consider practical aspects, and detail appropriate control measures.

**Water supply [to the healthcare facility]**: The water supplied can be via:
- the mains water supply from the local water undertaker;
- a borehole (operated by the healthcare organisation as a private water supply);
- a combination of mains water and borehole supply;
- emergency water provision (bulk tankered water or bottled drinking water).

**Water undertaker** – the role of a water undertaker is defined in a number of sections of the Water Industry Act 1991.

**Wholesomeness**: standards of wholesomeness are defined in section 67 of the Water Industry Act 1991. Separate legislation for public and private supplies sets out the prescribed concentrations and values for water and are detailed in the following legislation: the Water Supply (Water Quality) Regulations 2000 for water from a public supply; or the Private Water Supplies Regulations 2009 for water from a private supply.

List of abbreviations

**cfu** – colony forming units

**COSHH** – Control of Substances Hazardous to Health [Regulations]

**CQC** – Care Quality Commission

**DWI** – Drinking Water Inspectorate

**EA** – Environment Agency

**EPDM** – ethylene propylene diene monomer

**HBN** – Health Building Note

**HSE** – Health & Safety Executive
HSG274 – The Health & Safety Executive’s technical guidance on the control of Legionnaires’ disease.

HTM – Health Technical Memorandum

MCA: milk cetrimide agar

MRD: maximum recovery diluent

POU – point-of-use

PWTAG – Pool Water Treatment Advisory Group

SHTM – Scottish Health Technical Memorandum

WMP – Water Management Policy

WRAS – Water Regulations Advisory Scheme

WSG – Water Safety Group

WSP – Water safety plan

4 Duties

Organisational

This document is written for all persons who influence the design, installation, commissioning, maintenance and operation of hot and cold water supply, storage and distribution systems and associated equipment and systems in Trust occupied premises.

Therefore everyone is responsible for complying with the organisations arrangements for safe water management, including implementing local management controls.

In order to comply with this policy all staff must be aware of the lines of communication and levels of responsibility, which exist to ensure that all matters of safe water management, are dealt with effectively.

Individual

Chief Executive

The Chief Executive (CE) will hold the role of statutory duty holder.

The statutory duty holder is the person in control of the health care premises and who is ultimately accountable, and on whom the duty falls, for the safe operation of health care premises.

The duty holder will :-

- Identify and assess sources of risk
- If appropriate prepare a written scheme for preventing or controlling risk
- Implement, manage and monitor precautions
- Keep records of the precautions
- Appoint a competent person with authority and knowledge of the installation to help take the measures needed to comply with the law
• To appoint a Water Safety Group.
• To appoint an independent Authorising Engineer.

**Infection Prevention and Control Officer**

A consultant microbiologist employed by the Trust is a person nominated by the CE to advise on the infection prevention and control policy and the microbiological quality of the water.

**Designated Person (water systems)**

The director of Planning and Site Services has designated responsibility for ensuring that the processes and procedures detailed in the Trusts WMP are implemented and will nominate a Lead Officer/Authorised Person/Responsible Person. The Director with designated responsibility for safe water will :-

• Publicly endorse the organisations WMP
• Publicly endorse the organisations WSG
• Publicly endorse the organisations WSP
• Empower staff to take the necessary actions

**Lead Officer/Authorised Person/Responsible Person**

The Lead Officer/Authorised Person/Responsible Person, the Head of Estates Engineering, will facilitate and coordinate all aspects of safe water management in conjunction with the other members of the WSG.

**Service Managers/Department Managers/Ward Managers**

All managers are responsible for the implementation and monitoring of the policy within their specific area of responsibility, ensuring that :-

• Risk assessments in relation to safe water management are carried out, recorded and reviewed regularly.
• Safe water management procedures and safe working practices resulting from them are produced, documented and implemented in their area.
• Arrangements with regard to safe water management are included in local induction and regular documented staff training.
• Regular monitoring and recording of findings are undertaken and reported back to Site Services and the WSG.

**Employees**

All employees have an individual responsibility for safe water management in line with their duties and working environment. Each employee or agent of the Trust has an individual responsibility to :-

• Cooperate with the Trusts management in the implementation of this policy.
• Report any poor management in relation to safe water management to their supervisor/line manager.
• To undergo appropriate training as defined by this policy.
• Demonstrate the appropriate level of water hygiene competence.

**Contractors**
Other employers or individuals providing goods and/or services to the Trust shall be required to comply with Trust policies and procedures with regard to safe water management. Specific requirements for Contractors will be detailed in the Trusts Policy for the Control of Contractors, Maintenance and Construction Activities.

All contractors working on Trust water systems must be Watersafe accredited.

**Water Safety Group**

The Water Safety Group is a multi-disciplinary team, it provides a forum in which people with a range of competencies can be brought together to share responsibility and take collective ownership for ensuring it identifies water-related hazards, assesses risks, identifies and monitors control measures and develops incident protocols.

The Water Safety Group (WSG) will:

- Undertake the commissioning, development, implementation and review of a Water Safety Plan.
- Ensure the safety of all water used by patients/residents, staff and visitors.
- Minimise the risk of infection associated with waterborne pathogens
- Ensure that the duty holder is aware of the requirement to provide an adequate supply of wholesome hot and cold water.
- Ensure that the appropriate expertise and competence is available to ensure the delivery of safe water for all uses through the organisation.
- Have clearly identified lines of accountability up to the CE and board.
- To advise the CE on the appointment of an Authorising Engineer.
- Report to the Infection Prevention Sub Committee which in turn reports to the board.

The WSG will comprise of the following membership:

- Estates
- Planning (as required)
- Infection Prevention and Control
- Medical microbiology
- Nursing (as required)
- Augmented Care (as required)
- Facilities
- House Keeping/support services
- Authorising Engineer (as required)
- Medical Technical Officers (as required)
- Specialist users of water (such as renal and Hydrotherapy, as required)
- Sterile Services (as required)
- Local Security Management Specialist (as required)
- Water Systems Specialist Contractor
Estates Membership

Head of Estates Engineering (core member) RP trained
The Head of Estates Engineering line manages the Estates Team and carries overall responsibility for the operational management of the Estate. The WSG will be led and chaired by a person with appropriate management responsibility, knowledge, competence and experience. This role will be filled by the Trusts Head of Estates who will also retain the position of Responsible Person (RP)/ Authorised person in accordance with HSE L8 and HTM00. The Head of Estates Engineering reports to the Associated Director of Estates and Planning who in turn reports to the Deputy Chief Executive Officer who in turn reports to the Chief Executive Officer, giving a direct line of reporting from the WSG to board level.

Engineering Operations Manager (core member)
The Engineering Operations Manager line manages the directly employed labour force who in turn deliver the majority of the mechanical, Electrical and Building planned and reactive maintenance including water system maintenance.

Mechanical Services Manager (core member) RP trained
The mechanical Services Manager is responsible for contracted mechanical maintenance, mechanical backlog maintenance and mechanical strategic development.

Mechanical Supervisor (core member) RP trained
The Mechanical Supervisor line manages the mechanical directly employed labour force who in turn deliver the majority of the mechanical planned and reactive maintenance including water system maintenance.

Planning Membership
The planning department are responsible for the delivery of the majority of the Estates strategic capital programme, they will provide representation at the WSG
meetings as required and will provide a monthly report detailing any emerging works impacting on the Trusts water systems.

Infection Prevention and Control Membership

Infection Prevention and Control Lead Nurse (core member)

The Trusts Lead Nurse Infection Prevention and Control will assist the Lead Consultant Microbiologist in advising on the Trusts Infection Prevention and Control Policy and the microbiological quality of the water.

Infection Prevention and Control Junior Sister

The Infection Prevention and Control Junior Sister will assist the Lead Nurse Infection Prevention and Control in advising on the Trusts Infection Prevention and Control Policy and the microbiological quality of the water.

Medical Microbiology Membership

Consultant Microbiologist (core group member)

The Trusts Lead Consultant Microbiologist will advise on the Trusts Infection Prevention and Control Policy and the microbiological quality of the water.

Nursing Membership

Heads of Nursing

The Trust Heads of Nursing are responsible for the line management of Trust staff working in their areas and will have direct responsibility for the implementation of the policy within their areas, they are required to notify the WSG of any new equipment or planned system changes for risk assessment, they will be required to attend WSG meetings in the event of exceptional circumstances.

There will be a Matron nominated as a core member responsible for the dissemination of information to the Operational Matrons and Ward Sisters.

Augmented Care

The departmental leads for Augmented care areas have direct responsibility for the implementation of the policy within their areas, they are required to notify the WSG of any new equipment or planned system changes for risk assessment, they will be required to attend WSG meetings in the event of exceptional circumstances.

Facilities Membership

Facilities and Commercial Services Manager (core member)

The Trusts Facilities and Commercial Services Manager is responsible for the management of the incumbent soft FM services provider and subsequently responsible for the implementation of the policy within the areas serviced by the contractor. They are required to notify the WSG of any new equipment or planned system changes for risk assessment. They will be required to attend WSG meetings.

House Keeping/Support Services Membership

Soft FM services are provided by the incumbent soft FM contractor, the contractor will be required to attend WSG meetings in the event of exceptional circumstances.
Authorising Engineer Membership (core member)

The Authorising Engineer (AE) provides independent professional advice, guidance and audit of the specialist service being delivered. Whilst a core member of the WSG the AE will attend WSG meetings as required.

Medical Technical Officers Membership

Medical Technical Officers (MTO) are responsible for the implementation of the policy in their area, they are required to notify the WSG of any new equipment or planned system changes for risk assessment. MTOs will be required to attend WSG meetings in the event of exceptional circumstances.

Specialist Users of Water Membership

Specialist Users of Water such as Hydrotherapy, Dental and Renal Services are responsible for the implementation of the policy in their area, they will need to notify the WSG of any new equipment or planned system changes for risk assessment. They will be required to attend WSG meetings in the event of exceptional circumstances.

Sterile Services Membership

Head of Department SDU

The Head of Department SDU is responsible for the implementation of the policy in their area, they will need to notify the WSG of any new equipment or planned system changes for risk assessment. They will be required to attend WSG meetings in the event of exceptional circumstances.

Local Security Management Specialist

The Local Security Management Specialist (LSMS) will advise the WSG on security issues with respect to the security and access control of water systems. They will be required to attend WSG meetings in the event of exceptional circumstances.

Water Systems Specialist Contractor (core member)

The Water Systems Specialist Contractor(WSSC) provides secondary biocidal control via Silver Copper Ionisation, the WSSC will advise on the performance of the control system and on any test results arising.

5 | Key Elements

Governance and Management Responsibility

The organisation will direct, manage and monitor its activities to ensure compliance with statutory and legislative requirements while ensuring the safety of patients, visitors and staff is not compromised.

The organisation will ensure that this policy is approved at board level, this policy will :-

- ensure safe processes, working practices and risk-management strategies are in place to safeguard all their stakeholders and assets in order to prevent harm or loss.
- be backed up with adequate resources and suitably qualified staff.

Via the duty holder the organisation will appoint a WSG.
The aim of the WSG is to ensure the safety of all water used by patients/residents, staff and visitors, and to minimise the risk of infection associated with waterborne pathogens.

The WSG will undertake the commissioning, development, implementation and review of the WSP.

The WSP will demonstrate that the duty holder fully appreciates the requirement to provide an adequate supply of hot and cold water of suitable quality. The WSP is a holistic approach to manage water for all uses so that it is safe for all users including those at risk of waterborne infections as a consequence of their illness or treatment.

The implementation of the WSP will be carried out even if there is minor disruption to healthcare services. Comprehensive records will be maintained.

A risk assessment forms an integral part of the WSP and is a legal requirement in accordance with HSE L8.

The risk assessment is necessary to identify potential hazards in the system, risk of infection to patients, staff and visitors and other indicators of water quality.

The risk assessment will be carried out by a competent person who can demonstrate competence to the WSG – expertise will be measured against the requirements detailed in the World Health Organisations (WHO)(2011) “water safety in buildings”

The Risk assessor with be given access to :-

- Trust engineering and building expertise
- As-fitted drawings and schematics
- Clinical expertise
- Building occupancy and use knowledge including patient vulnerability and groups
- Bespoke equipment plus policies, procedures and protocols.

For Legionella risk assessments contractors will work to :-

- HTM 04-01
- HSG 274 “the control of legionella bacteria”

**Statutory Requirements**

It is the responsibility of the duty holder to ensure that their premises comply with all Statutes.

Duty holders have an overriding general duty of care under the Health and Safety at Work etc. Act 1974 to ensure that the water supply, storage, and distribution services are installed and operated within the terms of the following legislation :-

- Health and Safety at Work etc. Act 1974
- The Management of Health and Safety at Work Regulations 1999
- Control of Substances Hazardous to Health (COSHH) Regulations
- Public Health (Infectious Diseases) Regulations 1988
- Water Supply (Water Quality) Regulations 2000
- Private Water Supplies Regulations 2009
• Food Safety Act 1990
• The Health and Safety Executive’s (4th edition) Approved Code of Practice L8 2013
• Water Supply (water Fittings) Regulations 1999
• British and European Standards
  o BS EN 805
  o BS EN 806
  o BS 8558
  o BS 1710
  o PD 855468
  o BS 8551
  o BS 8554
  o BS 7592

Legionella: overview

Source of the Bacteria
Legionella bacteria are ubiquitous in both the natural and constructed aquatic environment. Airborne dispersal may occur when aerosols are created and there is a strong likelihood of low concentrations of legionella existing in all open watercourses including those supplying building services. It is important to prevent legionella from proliferating in Trust water systems.

Ecology
Legionella colonisation and growth are influenced by the following:

• Water temperature: Legionella will thrive in water where temperatures are between 20 degC and 45 degC
• Water flow: poor flow or stagnation will assist the proliferation of legionella and the creation of Biofilm.
• Biofilm: Biofilm provides a favourable environment for the proliferation of legionella. Biofilms in water systems are heterogeneous consist of multiple micro-organisms, debris and corrosion products etc.
• Legionella are unable to grow in sterile water.
• Water fittings, pipework and materials can encourage growth of waterborne pathogens. Organic materials or those subject to corrosion contribute to growth.

Epidemiology
Legionnaires disease is an atypical acute pneumonia of rapid onset cause by the inhalation of L.pneumophila serogroup 1- the most common cause of legionnaires disease. Other non-pneumophila species also cause disease such as Pontiac fever – a self-limiting form of the disease.

Factors affecting the risk of healthcare associated legionellosis include:

• Presence of legionella in sufficient numbers (see HTM04-01 Part B paragraph 5).
• Water temperatures between 20 and 45 degC.
• Nutrients such as biofilm and rust.
• A means of generating and releasing aerosols containing viable legionella, i.e. showers.
• The presence of susceptible persons such as those with compromised immune or respiratory systems.

Control Measures
Temperature control is the primary measure for the control of water borne pathogens.
• Cold water will be stored and distributed where possible at a temperature below 20 degC.
• Hot water will be stored at 60 degC
• Hot water will be distributed so that it reaches all outlets at 55 degC within 1 minute.

In addition to temperature control secondary biocidal control is achieved by the implementation of silver copper ionisation maintained and monitored by external contract. Validation of the treatment system is achieved by on-going monitoring i.e. in-house water quality sampling reported to the WSG.

Route of Infection
Legionnaires disease is largely contracted through inhalation of the bacteria aerosols. The risk rises with the number of bacteria inhaled.

Aerosol Generation
Contaminated water dispersed into the air as an aerosol present a risk with the small aerosols (<5µm diameter) remaining airborne for longer and penetrating deeply into the lungs.

Number of Infections Bacteria
The number of infectious bacteria required to cause infection is not determined and will vary from person to person, factors affect infection are as follows :-
• The concentration of bacteria in the air
• The duration of the exposure to the contaminated air

Susceptibility of Individuals
Factors influencing susceptibility are as follows :-
• Age : increasing age especially over the age of 50.
• Gender : men are 3 times more susceptible
• Existing respiratory disease
• Illness and weakened defences
• Smoking
• Patient who are immunocompromised
Pseudomonas aeruginosa and other waterborne pathogens: overview

Ecology
P. aeruginosa is a Gram-negative bacterium, commonly found in wet or moist environments.
It has the potential to cause infections in almost any organ or tissue, especially in compromised patients.
P. aeruginosa is resistant to antibiotics, virulent and adaptable to a wide range of environments.
P. aeruginosa thrives in nutrient poor environments such as water systems and biofilms.

Transmission
P. aeruginosa is an opportunistic pathogen which can colonise and cause infection in immunocompromised patients or those with defences have been breached.
Colonisation generally precedes infection, colonised patients can act as a source for colonisation and infection of other patients.
Contaminated water in healthcare settings can transmit P. aeruginosa to patients through the following routes:
- Direct contact:
  - Ingesting
  - Bathing
  - Contact with mucous membranes or surgical site.
  - Through splashing from water outlets or splash-back from basin surfaces
- Inhalation of aerosols from equipment
- Medical devices/ equipment rinsed with contaminated water.
- Indirect contact via healthcare workers.

Source
The source of P. aeruginosa is not certain, its presence is particularly evident within the last 2 meters of the water system before the discharge point.
Complex devices fitted close to the outlet may provide and nutrients which support growth such as mixing valves etc., a rigorous maintenance regime must be implemented in accordance with HTM04-01 part B
Given the above the source could be:
- Incoming water supply
- The water supply storage and distribution system
- The waste water system
- Retrograde contamination:
Discarding of patient secretions or cleansing of clinical equipment at the wash-hand basin.

Contaminated users contaminating outlets by contact.

Poor hygiene, process, cleaning resulting in contamination of the outlet from the drain or surrounding environment.

Splash-back from contaminated drains

Contaminated mops/cloths/ cleaning equipment.

The WSG has a duty to risk assess operational practices to minimise contamination from any of these sources.

Mycobacteria

Non-tuberculous mycobacteria infections occur worldwide, they usually involve sternal or plastic surgery infections or post-injection abscesses.

Infections in patients undergoing dialysis have been reported.

Infections during cardiac surgery due to contaminated heater-cooler units have also been reported – (see HTM 04-01 part B paragraph 8.23).

Stenotrophomonas

There are 14 species of Stenotrophomonas, the key waterborne pathogen is Stenotrophomonas maltophilia which is an infectious emerging opportunistic environmental pathogen which causes HAI's and is found in water sources.

Its habits within the healthcare environment are very similar to P.aeruginosa with more heat sensitivity; it will not grow above 40 degC.

It has been associated with the colonisation of the majority of water systems and water consuming equipment in the healthcare environment – (see HTM04-01 part B paragraph 5.10)

Management of control

Management of water systems to reduce the risk of waterborne pathogens is vital to patient safety.

It requires the following:-

- Surveillance

- Maintenance of control measures :-
  - Temperature control
  - Usage
  - Cleaning
  - Disinfection

All in accordance with the risk assessment and WSP for both hot and cold water systems.

The water system will be managed before and after the outlet.

The WSG will ensure that :-
The Trust has accurate and up-to-date records, drawings and diagrams showing the layout and operational manuals of the whole water system.

The Trusts staff receive adequate water hygiene training as appropriate (see HTM04-01 part b paragraphs 6.29 – 6.30) and be fully aware of their responsibilities with strict adherence to HSG 274 Part 2.

Infection prevention and control team have received adequate training to ensure :-
  o Compliance with national evidence based guidelines for preventing healthcare associated infections
  o The following of best practice advice relating to clinical wash-hand basins (see HTM04-01 Part C Chapter 3)

IPC team and WSG will monitor testing and sampling including the presence of P.aeruginosa as an alert organism in augmented care areas to ensure awareness of outbreaks or infection clusters.

Management of control will be undertaken in accordance with the following :-

- The HCAI Code of Practice
- CQC
- Regulation 12
- Regulation 15

Operational Management

The Trust has an explicit duty under the Health and Safety at Work Act etc. 1974 to assess and manage risks posed by water systems on Trust premises. The Trusts CEO is responsible for having systems in place to manage and monitor the prevention and control of infection.

These systems will make use of WSP’s and risk assessments.

The Trust will fulfil its duties in relation to the provision of safe water systems.

A programme of audit will be in place to ensure that this policy and any related procedures and practices are implemented appropriately.

This will inform the Trusts assurance framework.

The Trust will demonstrate suitable governance and compliance via its WSG and WSP.

The Water Safety Group (WSG)

The WSG is a multidisciplinary group formed to oversee the commissioning, development, implementation and review of the WSP in order :-

- to ensure the safety of all water used by all occupants of Trust premises.
- to minimise the risk of infection associated with waterborne pathogens.

The WSG will bring together all required competencies to :-

- share responsibility
• take collective ownership
• identify water related hazards
• assess risks
• identify control measures
• implement control measures
• monitor control measures
• develop incident protocols

The WSG will ensure that there are clearly identified lines of accountability up to the duty holder.

The roles, responsibility and accountability of the WSG is identified in chapter 4 of this policy.

The WSG will ensure that appropriate expertise is available and that all elements of the WSP are fully implemented.

Assurance will be sought from:
• installers
• maintainers
• users
  with regard to the safety of all water used by occupants of Trust premises to minimise the risk of infection associated with waterborne pathogens.

The WSG will have representation from:–
• Estates operations
• Estates projects
• Infection Prevention and control
• Medical microbiology
• Nursing
• Augmented care
• Facilities (Housekeeping and support services)
• Authorising Engineer
• Medical technical officers
• Specialist users of water :-
  o Renal
  o SDU
  o Hydrotherapy
• Local security specialist management – as required.

The WSG will be chaired by the Trusts Head of Estates Engineering or deputy.
The WSG will appoint an Authorising Engineer to provide services in accordance with HTM04-01 Part B, HSG 274 Part 2.

The WSG will deliver the following assigned tasks:

- To work with and support the IPC team;
- To ensure effective ownership of water quality management for all uses;
- To determine the particular vulnerabilities of the at-risk population;
- To review risk assessments;
- To ensure the WSP is kept under review including risk assessments and other associated documentation;
- To ensure all tasks indicated by the risk assessments have been allocated and accepted;
- To ensure new builds, refurbishments, modifications and equipment are designed, installed, commissioned and maintained to the required water standards;
- To ensure maintenance and monitoring procedures are in place;
- To review clinical and environmental monitoring data;
- To agree and review remedial measures and actions, and ensure an action plan is in place, with agreed deadlines, to ensure any health risks pertaining to water quality and safety are addressed;
- To determine best use of available resources;
- To be responsible for training and communication on water related issues;
- To oversee water treatment with operational control monitoring and to provide an appropriate response to out-of-target parameters such as silver copper ion levels;
- To oversee adequate supervision, training and competency of all staff;
- To oversee adequate supervision, training and competency of all staff;
- To ensure surveillance of both clinical and environmental monitoring.

Detailed minutes will be recorded, distributed promptly and retained in accordance with this policy demonstrating good management, appropriate and timely actions and good governance.

The WSG will act appropriately and in a timely manner. Individual member’s responsibilities and duties will not be restricted by the need to hold formal meetings.

Episodes of colonisation or infection of patients that could be related to the water system will be referred by the IPC team to the chair of WSG for any additional action to be determined.

The WSG will review any proposed or existing developments associated with the water supply and distribution system to ensure that they:

- Minimise the risk to patients/service users/occupants of Trust premises, especially those treated in augmented care settings;
- Are compliant with all extant legislation and DH policy and guidance and Trust policy.

All systems and equipment that use water to which patients, staff and visitors could be exposed to will be presented to the WSG for approval. When procuring equipment,
assurance will be sought from the manufacturer regarding safety for patients and service-users.
The WSG will ensure that decisions affecting the safety and integrity of the water system do not proceed without its agreement.

Water Safety Plans (WSP)

In order to understand and mitigate the risks associated with waterborne hazards in water systems and associated equipment, The Trust will develop and maintain a WSP, which provides a risk management approach to the safety of water and establishes good practices in local water usage, distribution and supply. It will identify potential water-related hazards, consider practical aspects and detail appropriate control measures.

The WSP will include governance arrangements related to the management of water safety. The following diagram details the procedure management process.
The WSP is a living document and will be kept under continual review to ensure adequate assessment and control of the risks from waterborne pathogens. The WSP will be a standing agenda item at WSG meetings.

The Trust will retain accurate and up to date water system drawings, O&M manuals and records.

The Estates members of WSG will have demonstrable extensive knowledge of these documents and of the Trusts water systems.

The WSP will :-

- Assess the risks that may be posed to patients, staff and visitors (consider susceptibility)
- Put in place appropriate management systems to ensure the risks are adequately controlled.
- Ensure there are supporting programmes, including :-
  - Communication
  - Training
  - Competency checks

The WSP will incorporate:-

- A clinical risk assessment to identify those settings where patients are at significant risk from waterborne pathogens.
- An engineering and bacterial risk assessment of all water systems.
- Operational monitoring and control measures and record keeping methodology.
- Information on the age and condition of the water system and materials of construction.
- Links to clinical surveillance.
- Early warnings of poor or unsuitable water quality.
- Plans for the sampling and microbiological testing of water in identified at-risk areas.
- Adequate supervision, training and competency for all levels of staff including housekeeping staff and those employed by FM organisations.
- Communication and documentation.
- Appropriate design, installation, commissioning and maintenance of all components and equipment.
- Remedial actions to be taken to remedy high counts for P.aeruginosa and Legionella and other relevant pathogens where appropriate.
- Adjustments to clinical practice until remedial actions have been demonstrated to be effective.
- Regular removal/cleaning/descaling or replacement of water outlets, hoses, and thermostatic mixing valves (TMVs) and other components where risk assessment necessitates.
• Amendments when changes are carried out including new builds, refurbishments, and recently decommissioned clinical departments or units.

• Amendments made when changes are made at the annual review.

The WSP will identify potential alert organisms and microbiological hazards caused by Legionella, P.aeruginosa and other relevant pathogen, and will consider practical aspects and detail appropriate control measures.

Risk Assessments.

The risk assessments that inform the WSP will identify potential hazards caused by Legionella, P.aeruginosa and other relevant pathogens, chemicals, temperature and events that may arise during supply, storage, delivery, maintenance and use of water in Trust premises.

Potential hazards and hazardous events will be identified and the severity of the risk will be assessed so that priorities for risk management are established. The risk assessment will consider the likelihood and severity of hazards and hazardous events in the context of exposure and the vulnerability of those exposed. The aim will be to identify and mitigate those risks likely to cause harm (see BS8580 for guidance on legionella risk assessments).

Issues considered will include:-

• Governance and accountability.
• Susceptibility.
• Scalding risk.
• Failure to maintain hot and cold system supply temperatures.
• Clinical practice.
• Cleaning of the environment and equipment
• Disposal of fluids
• Maintenance and cleaning of wash-hand basins and taps, specialist baths and other water outlets.
• Suitable siting of wash-hand basins including appropriate positioning of soap, antimicrobial scrub and hand towel dispensers.
• Change of use, i.e. clinical area to office area.
• Other devices that increase/decrease the temperature of water.
• Engineering assessment of water systems including appropriate design, installation, commissioning, maintenance and verification of the effectiveness of the control measures.
• Infrequently used outlets.
• Previous risk assessment, current control measures and documentation.
• Policies and procedures.
• Use of flexible hoses.
• Sampling, monitoring and testing programmes.
• Backflow protection.
- Safe access to equipment.
- Prevention of unauthorised access to equipment.
- Education and training.

Staff Training and Competence.

The WSG will implement a programme of staff training to ensure that those appointed to devise strategies, carry out control measures and undertake associated monitoring are appropriately informed, instructed and trained. They will be assessed as to their competency. They will have an overall appreciation of the practices affecting water hygiene and safety; they will interpret the available guidance and perform their tasks in a safe and competent manner.

The WSG will review the competence of staff on a regular basis and refresher training will be given; records of training attendance will be maintained. – note, training is only one aspect of competence, experience, knowledge and personal qualities are all needed to work safely and effectively.

Water Hygiene Training.

Individuals whom tasks have been allocated will receive adequate training in respect of water hygiene and microbiological control appropriate to the task they are responsible for conducting. The training and competence assessment will be clearly defined and will include those responsible for simple housekeeping tasks through to maintenance staff and up to those who define strategy and develop procedures.

Every person working on water distribution systems or cleaning water outlets will complete a water hygiene awareness training course to gain a good understanding of the need for good hygiene and how to prevent contamination of the water supply or outlets.

The water Hygiene training will encompass the following :-

- Organisational governance arrangements in relation to water hygiene and safety.
- Familiarisation with local policies/procedures in relation to the management and provision of water hygiene and safety.
- Information on prominent waterborne pathogens and their consequences.
- The ways in which water distribution systems, water outlets, components and any associated equipment can become contaminated.
- The responsibilities of individuals to prevent the contamination of the water distribution system and water outlets and assisting in ensuring control measures in place are effective.
- How the safety of water can be maintained by good hygiene practices.
- When not to work with water intended for domestic purposes.
- System design.
- Components/accessories (taps, TMV’s).
- Disinfection and cleaning equipment/materials.
- How to store and handle pipes.
• Organisation-specific control measures.
• The impact of getting it wrong.
• Role of persons being trained.
• Personal hygiene along with dealing with clothing, footwear, cleaning equipment/materials, tools and storage when considering water hygiene.

Management of Water Safety Risks and Issues

Identified water safety risks and issues will be assessed, prioritised and included on the Trusts risk register (Datix) for discussion and management by the WSG, advice will be given on when these should be escalated to senior management/board level. Potential and known threats from unauthorised access to the water supply for malicious purposes will be assessed by WSG.

When the risks have been identified an action plan will be developed with defined roles and responsibilities, and agreed timescales to minimise these risks.

The action plan will include:

• Appropriate remedial actions, monitoring details and schedules for validation that show the remedial actions are effective and subject to on-going verification.
• Any training and competency issues required to ensure compliance with this policy and HTM04-01.

Documentation.

All records pertaining to the risk assessment and action plan will be held and managed by the WSG.

Safe Hot water Temperature.

To reduce the risk of scalding thermostatic mixing valves are required for specific hot water outlets – see the following table for locations:-
A scalding risk assessment is necessary to establish the need and type of device to be installed. Routine checks will be necessary to ensure continued satisfactory operation in accordance with chapter 11 HTM04-01: Supplement – “Performance specification D 08).


Utilisation

One of the critical factors affecting the quality of water within hot and cold water distribution systems is the extent of the utilisation. Where stagnation occurs or utilisation is low, cold water temperatures can increase significantly and approach the range that is conducive to the growth of a variety of waterborne pathogens such as Legionella. Where hot and cold water is mixed, further opportunities arise for deterioration of water quality.

TMV’s will not be installed in series with mixing taps (thermostatic or manual).

The WSG will ensure that there is good liaison between the Estates Officers/maintenance team and the clinicians to ensure that the water services are sufficiently used.
For infrequently used outlets, flushing is carried out every 48 hours for general areas and every 24 hours for augmented care areas or areas carrying a greater risk in accordance with the Trusts SOP for water flushing. Monitoring of water usage can indicate when usage falls and increases. Reductions in normal usage patterns will be investigated and remedial measures introduced following investigation by the WSG.

Temporary Closure of Wards/Departments

During the temporary closure of wards or departments a flushing regime will be put in place in accordance with the Trusts SOP for water flushing to maintain system hygiene. Flushing should be continued until stable temperatures are achieved.

When this is impractical or should the closure become permanent, the area will be disconnected from the system, ensuring there are no dead-legs.

Before the system is reconnected it will be recommissioned and disinfected in accordance with the chapter 15 of HTM 04-01 Part A.

Leak Detection/ Water Conservation.

Systems and components will be regularly checked for leaks.

Consumption will be monitored for increases or decreases.

Water conservation will be considered so long as there is no detrimental impact on water quality, or the operation of the water or drainage systems. See HTM 07-04.

Energy Management.

Energy conservation will be considered so long as there is no detrimental impact on water safety management. See HTM 07-02.

Maintenance Practice.

The Trust will ensure that all personnel that work on water systems can demonstrate competence and have been inducted in local procedures, which should include safe water hygiene practices.

The Trust will ensure compliance with the Water Supply (Water Fittings) Regulations 1999 to protect and preserve water quality for the safety of patients, staff and visitors.

Maintenance will be carried out in order to achieve optimum economic life and maximum operational efficiency of the plant. Maintenance will be planned and preventative to ensure maximum availability of the system in accordance with manufacturers operation and maintenance guidance and as agreed by the WSG.

Maintenance is the responsibility of the Trusts Estates Operations Manager, responsibilities include:-

- The provision of adequately trained and supervised labour.
- Clear definitions of the equipment and services to be maintained, together with the procedures to be carried out on them.
- Monitoring of the quality of the work carried out to ensure that it is consistently acceptable.
- The identification of appropriate resources and the implementation of financial control procedures.
- Ensuring that risk assessments and method statements have been completed for all maintenance activities.
Contract Maintenance.

Contracts between contractors and the Trust will be clearly defined and executed in accordance with Trust SFI’s, NHS standard terms and conditions and HBN 00-08. Contracts will be subject to regular review with period meetings and agreed KPI’s.

All staff working on water systems will have the necessary knowledge, competence and experience needed to complete their tasks, each individual will have a full understanding of their role and the impact of their actions on patient care. Only installers with the appropriate qualifications, regulatory knowledge and competence will be used to install and maintain water systems.

All contractors must be a member of one of the seven approved contractor schemes authorised by the Water Supply (water fittings) Regulations 1999:-

- APHC
- Aplus
- CIPHE
- Snipef
- Taps
- WaterMark
- WIAPS

The WaterSafe register holds details from all seven Approved Contractors Schemes.

Maintenance Brief.

The Trusts Estates Operations Manager will manage the maintenance programme which is developed from the maintenance brief in line with the requirements of the WSP and approved by the WSG, this will include:

- The scope of work.
- Budgeting.
- Level of reliability.
- Response time required to correct faults.
- Criteria for quality of service, works and equipment.
- Reporting procedure.
- Accountability and responsibility.
- Energy saving policy.
- Health and Safety policy.
- Environmental and sustainability factors.

Performance Monitoring

Regular inspection of systems and records will take place in such detail that the WSG are able to assess compliance with the agreed criteria.
Performance monitoring will establish that:-

- The required level of service is met.
- All the required plant is being maintained.
- System performance is being maintained by the implementation of microbial sampling and temperature/biocide level monitoring regimes.
- Maintenance is being carried out to the agreed standard.
- Correct replacement parts are being used.
- The agreed spares stocks are being held on site.
- Records are being correctly maintained.
- The agreed standards, number of staff, and number of visits are being achieved.
- Plant is being operated to achieve optimum energy usage.
- Health and safety requirements are being dealt with.
- Only agreed and approved subcontractors with the appropriate knowledge and competence are being employed.
- The client and typical users of the building are satisfied.
- Invoices accurately reflect work carried out including materials expended.
- Breakdowns do not occur too often.
- Adequate consideration is being given to the potential environmental impact of contractors actions.

Monitoring Systems.
The Trust will ensure that water systems are subject to automatic monitoring and reporting via the Trusts Building Energy Management System (BEMS).

To ensure the BEMS provides optimum performance it will be subject to routine maintenance and calibration. Critical alarms will be subject to 24hr monitoring and 24 hr response.

Water System Installation Work
All installation work will be completed in accordance with :-

- HTM04-01 part a,b,c,
- HSG274 Part 2
- The Trusts standards suite of specific engineering guidance

Emergency Action
Contingency Plans will be available covering the following events :-

- A power interruption or a plant failure affecting the temperature control strategy or the delivery of effective control measures being maintained as designed.
• A water supply failure that could last beyond the period for the designed capacity.
• Monitoring and sampling results that indicate patient safety may be compromised unless remedial action is undertaken with immediate effect.
• Emergency action in the event of a case or an outbreak of healthcare associated waterborne infection.
• Tampering and sabotage of the water supply which could impact on patient and staff safety.

Data Management and Record Keeping.
In order to facilitate effective management of water systems the Trust will use electronic data management tools to enable the intelligent use of data for the WSG to easily monitor trends and analyse chemical and microbiological parameters.

Comprehensive operation and maintenance manuals (O&M,s) will be retained for all items of plant that include requirements for servicing, maintenance tasks and frequencies of inspection. The O&M’s will also contain all commissioning data.

Documentation will be delivered as part of the health and safety file, the following items will be recorded.

• The names and positions of those responsible for conducting risk assessments and managing and implementing the WSP.
• The significant findings of risk assessments.
• Details of the procedures including sufficient detail to identify that the work was completed correctly and when the work was carried out.
• Results of any monitoring inspection tests or checks carried out.

Records will be kept for at least 5 years and in accordance with Trust records management policy.

As-Fitted Drawings
As-fitted drawings are essential for the safe operation of hot and cold water service systems and to inform the risk assessment. The drawings are necessary to perform the temperature control checks on the systems and will assist in identifying any potential problems with poor hot water circulation and cold water dead-legs where flow to infrequently used outlets is low. The drawings will identify all key components in the installations and they will be kept up to date and amended when any changes are made to the system.

Schematic Drawings.
Separate schematic drawings will be prepared and displayed such that all plant items, control valves etc. can be identified.

Drawings will be kept up to date and amended when any changes are made to the system.

In addition to drawings the Trust will have comprehensive schedules of outlets, lists of sentinel taps, other outlets to be tested (in accordance with the WSP) and other components in the system.
Asset Register.

The WSG will ensure that an accurate record of assets relating to the hot and cold water distribution system is set up and regularly maintained. The WSG will also ensure that records of maintenance, inspection and testing activities are kept up to date and properly stored.

The asset register will provide the following information:-

- An inventory of plant and water associated equipment.
- A basis for identifying plant details.
- A basis for recording maintenance requirements.
- A basis for recording and assessing information associated with maintenance.
- A basis for accounting to establish depreciation and the provision needed for plant replacement.
- Information for insurance purposes.

All record will have a comprehensive audit trail indicating dates, times, and individuals concerned where appropriate.

Description of Systems, Operational Considerations and Requirements.

This policy covers the following Trust occupied premises.

- Derriford Hospital
  - Main Building
  - Estates & Blood Services
  - PET-CT.
  - Derriford Health & Leisure.
  - Post Graduate Medical Centre.
  - Bircham Park offices.
  - Security Centre.
  - Chiller Hall.
  - Boiler House
- NU Building
- Bircham House
- Petite Bois
- Bush Park Medical Records
- Haemodialysis
- CDC Scott hospital
- Erme House

Each of the premises will have various water systems of varying complexity. The water systems on the Derriford Site will be described in detail below.

Derriford Hospital
Derriford hospital is the Trusts main site and consist of multiple phases of build, the various phases are as follows:

- Phase 1.
- Phase 2.
- Freedom Daycase Extension – supplied from Phase 1
- Plym Day Case Extension – supplied from Phase 1
- Phase 3 (Maternity).
- Phase 4
  - Oncology – supplied from Phase 1
  - Chest Clinic – separate supply.
• West Extension – separate supply.

• Phase 5
  
  o Terrence Lewis Building – separate supply
  o Cardiac Theatre Extension – supplied from West Extension.
  o MRI Mansfield – supplied from Maternity.

Phase 1
Phase 1 incorporates the East section of the site and comprises the following water services:-

• Mains Cold Water.
• Domestic Tank Cold Water
• Domestic Hot Water
• Process Tank Cold Water
• Process Hot Water

The services are delivered via a number of systems:-

• Mains Cold Water
  
  Mains cold water (MCW) enters the site at a number of points, for phase 1 the main entry point is via level 2 mains cold water boosting station, from the boosting station MCW is delivered to the following Phase 1 areas:-
  
  o Phase 1 potable water outlets.
  o Level 14 main storage tanks via Cu-AG ionisation plant
  o Level 14 process water storage tank
  o Level 14 Heating F&E tank

• Domestic Tank Cold Water
  
  Domestic tank cold water (DTCW) is supplied by the level 14 storage tanks and is subject to secondary biocidal protection via Silver Copper Ionisation, and is delivered to the following Phase 1 areas:-
  
  o Phase 1 DTCW outlets
  o Level 1 plant room domestic hot water calorifiers
  o Level 5 05 plant room phase 1 domestic hot water calorifiers
  o ED plant room domestic hot water calorifiers

• Domestic Hot Water
  
  Domestic hot water (DHW) is derived from the following plants:-
  
  o Level 1 plant room domestic hot water calorifiers
  o Level 5 05 plant room domestic hot water calorifiers
  o ED plant room domestic hot water calorifiers

• Process Tank Cold Water
Process Tank Cold Water (PTCW) is supplied by level 14 process water storage tank, PTCW is delivered to the following Phase 1 areas:-
   o Phase 1 PTCW outlets (labs & SDU)
   o Level 5 05 plant room process hot water calorifier

• Process Hot Water
  Process Hot Water (PHW) is derived from the following plant:-
   o Level 5 05 plant room process hot water calorifier.

Areas Served by Phase 1 are as follows:-

• Level 1
  o Level 1 Plant room.

• Level 2
  o Oncology level 2
  o Medical Physics
  o Stores
  o Kitchens
  o Freedom Day Case
  o Level 2 main cold water boosting station.

• Level 3
  o Oncology level 3
  o Royal Eye Infirmary.
  o Mayflower Ward
  o Hydrotherapy Department.
  o Equipment library

• Level 4
  o Pathology
  o Mortuary
  o Fal Ward
  o Erme Ward
  o Mooregate Ward
  o Postbridge Ward
  o Theatre Staffroom
  o Theatre suites 1,2,3,4,6
  o Theatre Anaesthetic Stores
Theatre Sterile Stores
- Pharmacy Fluid Stores

- Level 5
  - Microbiology
  - SDU
  - Lyd Ward
  - Lynher Ward
  - Meavy Ward
  - O5 plant room

- Level 6
  - Main Laboratories
  - Nuclear Medicine
  - Orthopaedic Outpatients
  - Tamar Ward
  - Tavy Ward
  - Thrushel Ward
  - Medical Photography
  - X-ray East
  - Fracture Clinic
  - ED X-ray
  - ED Department
  - Plym Day Case Unit
  - Main Concourse
  - Imaging Office Suite

- Level 7
  - Main Laboratories
  - REI Theatres 14&15 Suite
  - Primrose Breast Care Unit.
  - Administration
  - On-call rooms
  - Stonehouse Ward
  - Wolf Ward
  - Hound Ward
  - Directorate Office Suite
  - Eden Unit
- Chapel
- Physiotherapy
- Doctors Mess.

- **Level 8**
  - Birch Ward
  - Brent Ward

- **Level 9**
  - Hartor Ward
  - Hembury Ward

- **Level 10**
  - Meldon Ward
  - Marlborough Ward

- **Level 11**
  - Sharp Ward
  - Stannon Ward

- **Level 12**
  - CYPOD
  - Wildgoose ward

- **Level 13**
  - Plant room A
  - Plant room B
  - Lift Motor room

- **Level 14**
  - Main Tank room

---

**Phase 2**

Phase 2 incorporates the central section of the site and comprises the following water services:

- Mains Cold Water.
- Domestic Tank Cold Water
- Domestic Hot Water

The services are delivered via a number of systems:

- Mains Cold Water
Mains cold water (MCW) enters the site at a number of points, for phase 2 the main entry point is via level 2 mains cold water boosting station, from the boosting station MCW is delivered to the following Phase 2 areas:-

- Phase 2 potable water outlets.
- Level 14 main storage tanks via Cu-AG ionisation plant
- Level 14 process water storage tank
- Level 14 Heating F&E tank

- **Domestic Tank Cold Water**
  Domestic tank cold water (DTCW) is supplied by the level 14 storage tanks and is subject to secondary biocidal protection via Silver Copper Ionisation, and is delivered to the following Phase 1 areas:-
  - Phase 2 DTCW outlets
  - Level 5 05 plant room phase 2 domestic hot water calorifiers

- **Domestic Hot Water**
  Domestic hot water (DHW) is derived from the following plant:-
  - Level 5 05 plant room phase 2 domestic hot water calorifiers

Areas Served by Phase 2 are as follows:-

- **Level 4**
  - Theatres suites 7,8,9,10,11,12
  - Recovery 2
  - Theatre staff change
  - Theatre staff welfare

- **Level 5**
  - Male and female changing rooms
  - Pharmacy

- **Level 6**
  - Staff change
  - L6 concourse
  - Outpatients
  - Cardiology
  - X-ray west

- **Level 7**
  - Chapel
  - ENT
  - Physiotherapy
- Speech therapy
- Dietetics
- L7 restaurant
- CEO suite
- Maxillo Facial (not including surgery 3,4,5,office 17/56,clinical lab 17/55)
- Dental

- Level 8
  - Bracken Ward
  - Burrator Ward

- Level 9
  - Hexworthy Ward
  - Honeyford Ward

- Level 10
  - Merrivale Ward
  - Monkswell Ward

- Level 11
  - Shaugh Ward
  - Shipley Ward

- Level 12
  - CAU
  - Woodcock Ward

Phase 3 Maternity

Phase 3 incorporates the south-west section of the site there are two separate systems:-

- Maternity main system.
- NICU stand-alone system

The systems comprise of the following water services:-

- Mains Cold Water.
- Domestic Tank Cold Water (separate tanks for hot and cold supply water)
- Domestic Hot Water

The services are delivered via a number of systems:-

- Mains Cold Water

  Mains cold water (MCW) enters the site at a number of points, for phase 3 the main entry point is via level 3 maternity plant room. MCW is delivered to the following Phase 3 areas:-

  - Phase 3 potable outlets
- Level 3 NICU break tanks which feed level 8 NICU water storage tanks.
- Level 8 Maternity water storage tanks.

**Domestic Tank Cold Water**

Domestic tank cold water (DTCW) is supplied by the level 8 storage tanks and is subject to secondary biocidal protection via Silver Copper Ionisation, and is delivered to the following Phase 3 areas:-

- Phase 3 DTCW outlets
- Level 3 plant room Maternity domestic hot water calorifiers
- Level 3 plant room NICU domestic hot water calorifiers

**Domestic Hot Water**

Domestic hot water (DHW) is derived from the following plants:-

- Level 3 plant room Maternity domestic hot water calorifiers
- Level 3 plant room NICU domestic hot water calorifiers

Areas Served by Phase 3 are as follows:-

- **Level 3**
  - Level 3 maternity plant-room

- **Level 4**
  - Level 4 maternity plant-room
  - Maternity Theatres
  - Maternity recovery
  - Central Delivery Suite

- **Level 5**
  - Transitional Care Ward
  - NICU (stand-alone system)
  - Maternity level 5 west
  - MRI Mansfield staff area

- **Level 6**
  - Anti-natal
  - Lancaster suite
  - Ocean suite
  - MRI Mansfield

- **Level 7**
  - Norfolk Ward
  - Medical Admin
Water Management Policy

Argyll Ward

- Level 8
  - Maternity level 8 plant room

Phase 4

Phase 4 incorporates the west section of the site and also the oncology wing (fed from phase 1 and detailed earlier) there are two separate systems:-

- West Extension system.
- Chest clinic system

The systems comprise of the following water services:-

- Mains Cold Water.
- Domestic Tank Cold Water (separate tanks for hot and cold supply water).
- Domestic Hot Water.

The services are delivered via a number of systems:-

- Mains Cold Water
  Mains cold water (MCW) enters the site at a number of points, for phase 4 West extension the main entry point is via level 5 main plant room. For Chest Clinic the main entry point is level 5 chest clinic plant room, MCW is delivered to the following Phase 4 areas:-
    - Phase 4 potable outlets
    - Level 8 west extension water storage tanks.
    - Level 5 chest clinic water storage tanks.
- Domestic Tank Cold Water
  For west extension domestic tank cold water (DTCW) is supplied by the level 8 storage tanks, for chest clinic DTCW is supplied by the level 5 storage tanks, both tank sets are subject to secondary biocidal protection via Silver Copper Ionisation, and deliver DTCW to the following Phase 4 areas:-
    - Phase 4 DTCW outlets
    - West extension level 5 plant room domestic hot water calorifiers.
    - Chest clinic level 5 plant room domestic hot water calorifiers
- Domestic Hot Water
  Domestic hot water (DHW) is derived from the following plants:-
    - West extension level 5 plant room domestic hot water calorifiers
    - Chest clinic level 5 plant room domestic hot water calorifiers

Areas Served by Phase 4 are as follows:-
• Level 4
  o Theatre suites 16,17 and 18.
  o Staff change
• Level 5
  o S.H.I.P
• Level 6
  o Cardiac theatre suite.
  o Cardiac recovery
  o Catheter lab suite.
  o Staff change
  o Chest clinic
• Level 7
  o Endoscopy
  o Chestnut unit
  o Maxillo Facial – surgery 3,4,5, room 171/56, lab 171/55 only
• Level 8
  o West Extension plant room

Phase 5
Phase 1 incorporates Terrence Lewis Building - the south section of the site, and comprises the following water services:-
  • Mains Cold Water.
  • Domestic Tank Cold Water
  • Domestic Hot Water
  • Borehole Water

The services are delivered via a number of systems:-
  • Mains Cold Water

Mains cold water (MCW) enters the site at a number of points, for phase 5 the main entry point is via level 2 mains cold water boosting station, from the boosting station MCW is delivered to the following Phase 5 areas:-
  o Phase 5 potable water outlets.
  o Level 11 main storage tanks via Cu-AG ionisation plant
• Domestic Tank Cold Water

Domestic tank cold water (DTCW) is supplied by the level 11 storage tanks and is subject to secondary biocidal protection via Silver Copper Ionisation, and is delivered to the following Phase 5 areas:-
- Phase 5 DTCW outlets
- Level 10 plant room domestic hot water calorifiers

- Domestic Hot Water
  Domestic hot water (DHW) is derived from the following plants:
  - Level 10 plant room domestic hot water calorifiers

- Borehole Water
  Borehole water is derived from the Trusts borehole located on the border of carpark D, water is pumped to a holding plant and then sterilised before being pumped to a storage tank on level 11 of TLB. Borehole water is delivered to sluices and WC’s in TLB only.

Areas Served by Phase 5 are as follows:

- Level 3
  - Level 3 cafe
  - Level 3 W.C.

- Level 4
  - Penrose Ward
  - Pencarrow Ward

- Level 5
  - R&D
  - Peninsular medical school
  - Discovery library

- Level 6
  - Torcross Ward
  - Torrington Ward

- Level 7

- Level 8
  - Bickleigh Ward
  - Braunton Ward

- Level 9
  - Admin

- Level 10
  - Plant room

- Level 11
  - Tank room
Temperature control regime.

Temperature control regime is the traditional strategy to control Legionella and other waterborne pathogens. Regular monitoring is completed automatically via the Trusts Building Energy Management System (BEMS) at key points and also via regular planned checks in accordance with HTM04-01 part B Table 1.
Note, the BMS system must be subject to regular calibration to ensure ongoing accuracy of the sensor readings.
Hot water flowing from the calorifiers must be a minimum of 60 deg C and a minimum of 55 deg C on flow and returns of all outlets and at the start of the hot water return.

Biocide regime.

The Trust contracts Proeconomy to provide silver copper ionisation to the water systems in the main Derriford building in order to provide secondary biocidal control. The systems must be managed and monitored as part of the contract with regular performance reporting back to the WSG including testing for TVC’s, Legionella and Pseudomonas.

Metering.

Systems will be metered and sub-metered where practicably possible to allow the Trusts to monitor consumption and trends. Meters will be maintained and tested at regular intervals to ensure accuracy. Meters should ideally provide a pulsed output to allow remote monitoring via the Trusts BEMS

Water Storage.

On-site storage will nominally provide 12 hours limited supply in order to balance resilience with the risk of stagnation. All storage cisterns will be examined and maintained in accordance with HTM 04-01 part b and returned to use in accordance with HSG 274 Part 2 chapter 2.

Pressurisation / supply pumps.

All pressurisation pumps will have automatic control and changeover to prevent stagnation.

Cold water distribution system
The cold water system will be designed and installed in accordance with:

- Water Supply (water fittings) Regulations 1999
- BS EN 806-2
- BS 8558
- HTM04-01 parts a&b

Stored and distributed cold water should be kept at 20 deg C or below by means of turnover and sufficient insulation – note, extreme weather may influence incoming water temperatures.

Schematic diagrams must be accurate and available showing all points of isolation.

System checks must be carried out to show that:

- The system components show no sign of leakage or corrosion or scale;
- The system insulation is in good condition;
- The system filters and strainers have been changed and/or cleaned in accordance with manufacturers recommendations;
- All isolating valves have been periodically exercised through their full range of travel;
- Every water outlet complies with the backflow requirements of Water Supply (water fittings) Regulations 1999

Drinking water.

All domestic water services installed in Trust buildings will deliver water of potable quality. Dedicated drinking water outlets must be clearly labelled.

Hot water storage and distribution

Hot water services will be designed and installed in accordance with:

- the Water Supply (water fittings) Regulations 1999
- BS EN 806-2
- BS 8558
- HTM04-01 parts a&b

Hot water will be stored at a minimum of 60 deg C and be no less than 55 deg C at any point on the flow and return.

Calorifiers will be subject to regular procedures as per HTM 04-01 part b paragraph 7.34.
Hot water circulating pumps will be sized to provide adequate circulation of hot water on a balanced system so ensure the minimum temperature witnessed on the system is no less than 55 deg C.

Duty and standby pumps will be automatically regularly brought in to service to prevent stagnation. Circulation must be maintained at all times of use. Dead legs are not acceptable, flow and return pipework must be installed to within 100mm of the outlet on new installations.

Pressure and expansion vessels

All pressure and expansion vessels will be subject to routine inspection and maintenance in accordance with O&M’s, all new and replacement vessels will be flow through type to avoid stagnation, the Trust will support a programme of retrospective replacement of existing vessels

Safe hot water delivery devices

TMV’s will only be installed where a risk assessment indicates their need – see HTM 04-01 part a table 2. Temperature settings, operation and maintenance will be in accordance HTM 04-01 part b 7.41

All pipework supplying existing thermostatic mixing taps must be inspected to ensure that there are no preceding TMV’s.

Showers

Disinfection of shower heads has only a short lived effect, Trust policy demands that all showers will be installed with disposable hoses and heads – fixed heads are preferable. The frequency of replacement will be in accordance with the Trust’s risk assessment.

Point-of-use filtration.

Point-of-use (POU) filtration will only be considered by the WSG as an interim safeguard where control measures have been ineffective:

- Prior to and during remedial works
- During periods of refurbishments and maintenance works
- Where additional protection is required for vulnerable patients

Long term use is unacceptable unless no alternative is available, a strict replacement regime in accordance with manufacturers recommendation must be employed.

Where POU filters have been installed and are no longer required the outlet must be disinfected, flushed and tested prior to being returned to service.
Removal of redundant services

In existing systems or during refurbishments water systems will be inspected to identify redundant pipework or services – all redundant pipework will be stripped back to the main including replacing the branch T with a straight coupling to eliminate stagnation.

Cleaning and disinfection

Cleaning and disinfection of the hot and cold water systems will be completed in accordance with the following documentation when required :-

- HSG 274 part 2
- BSI PD855468
- HTM04-01 Part a chapter 4

Planned cleaning and disinfection will always require liaison with the affected department.

Summary checklist for hot and cold systems

The following table is extracted from HTM04-01 part b and summarises the essential checks as detailed in HSG 274 part 2
<table>
<thead>
<tr>
<th>Service</th>
<th>Action to take</th>
<th>Frequency (see paragraph 7.53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calorifiers</td>
<td>Inspect calorifier internally by removing the inspection hatch or using a borescope, and clean by draining the vessel. The frequency of inspection and cleaning should be subject to the findings and be increased or decreased based on conditions recorded. Where there is no inspection hatch, purge any debris in the base of the calorifier to a suitable drain. Collect the initial flush from the base of hot water heaters to inspect clarity, quantity of debris and temperature. Check calorifier flow temperatures (thermostat settings should modulate as close to 60°C as practicable without going below 50°C). Check calorifier return temperatures (not below 50°C).</td>
<td>Annually, or as indicated by the rate of fouling. Annually, but may be more frequent as indicated by the risk assessment or result of inspection findings.</td>
</tr>
<tr>
<td>Hot water services</td>
<td>For non-circulating systems: take temperatures at sentinel points (nearest outlet, furthest outlet and long branches to outlets) to confirm they are at a minimum of 55°C within one minute. For circulating systems: take temperatures at return legs of principal loops (sentinel points) to confirm they are at a minimum of 55°C. Temperature measurements may be taken on the surface of metallic pipework. For circulating systems: take temperatures at return legs of subordinate loops; temperature measurements can be taken on the surface of pipes, but where this is not practicable, the temperature of water from the last outlet on each loop may be measured, and this should be greater than 55°C within one minute of running. If the temperature rise is slow, it should be confirmed that the outlet is on a long leg and not that the flow and return has failed in that local area. All HWS systems: take temperatures at a representative selection of other points (intermediate outlets of single pipe systems and tertiary loops in circulating systems) to confirm they are at a minimum of 55°C to create a temperature profile of the whole system over a defined time period.</td>
<td>Monthly.</td>
</tr>
<tr>
<td>POU water heaters (no greater than 15 litres)</td>
<td>Check water temperatures to confirm the heater operates at 55°C, or check the installation has a high turnover.</td>
<td>Monthly, six monthly, or as indicated by the risk assessment.</td>
</tr>
<tr>
<td>Combination water heaters</td>
<td>Inspect the integral cold water header tanks as part of the cold water storage tank inspection regime; clean and disinfect as necessary. If evidence shows that the unit regularly overflows hot water into the integral cold water header tank, instigate a temperature-monitoring regime to determine the frequency, and take precautionary measures as determined by the findings of this monitoring regime. Check water temperatures at an outlet to confirm the heater operates at 55°C.</td>
<td>Annually.</td>
</tr>
<tr>
<td>Service</td>
<td>Action to take</td>
<td>Frequency (see paragraph 7.53)</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cold water storage cisterns</td>
<td>Inspect cold water storage cisterns and carry out remedial work where necessary</td>
<td>Annually</td>
</tr>
<tr>
<td></td>
<td>Check the cistern’s water temperature remote from the ball valve and the incoming mains temperature. Record the maximum temperatures of the stored and supply water recorded by fixed maximum/minimum thermometers where fitted</td>
<td>Annually (summer) or as indicated by the temperature profiling</td>
</tr>
<tr>
<td>Cold water services</td>
<td>Check temperatures at sentinel taps (typically those nearest to and furthest from the cold cistern, but may also include other key locations on long branches to zones or floor levels). These outlets should be below 20°C within two minutes of running the cold tap. To identify any local heat gain, which might not be apparent after one minute, observe the thermometer reading during flushing</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Take temperatures at a representative selection of other points to confirm they are below 20°C to create a temperature profile of the whole system over a defined time period. Peak temperatures or any temperatures that are slow to fall should be an indicator of a localised problem</td>
<td>Representative selection of other sentinel outlets considered on a rotational basis to ensure the whole system is reaching satisfactory temperatures for Legionella control</td>
</tr>
<tr>
<td></td>
<td>Check thermal insulation to ensure it is intact, and consider weatherproofing where components are exposed to the outdoor environment</td>
<td>Annually</td>
</tr>
<tr>
<td>Showers and spray taps</td>
<td>Dismantle, clean, descale and disinfect removable parts, heads, inserts and hoses where fitted</td>
<td>Quarterly or as indicated by the rate of fouling or other risk factors, e.g. areas with high-risk patients</td>
</tr>
<tr>
<td>POU filters</td>
<td>Record the service start date and lifespan or end date and replace filters as recommended by the manufacturer (bacterial-retention filters should be used primarily as a temporary control measure while a permanent solution is developed, although long-term use of such filters may be needed in some healthcare applications)</td>
<td>According to manufacturer's guidelines</td>
</tr>
<tr>
<td>Base exchange softeners</td>
<td>Visually check the salt levels and top up salt, if required. Undertake a hardness check to confirm operation of the softener</td>
<td>Weekly, but depends on the size of the vessel and the rate of salt consumption</td>
</tr>
<tr>
<td>Service and disinfect</td>
<td></td>
<td>Annually, or according to manufacturer's guidelines</td>
</tr>
<tr>
<td>Multiple-use filters</td>
<td>Backwash and regenerate as specified by the manufacturer</td>
<td>According to manufacturer's guidelines</td>
</tr>
</tbody>
</table>
Other operational considerations

Vending, chilled-water and ice making machines.

Installation of this equipment will be in accordance with HTM 04-01 Part A.
Each type of equipment will have a Trust SOP in place for operation and decontamination to ensure the on-going safe use.

Water fountains should avoid internal cooling and storage, mains fed direct on-line fountains are the Trusts preferred solution. Water coolers are generally not acceptable in augmented care areas and approval will need to be sought via the WSG.

Bottled dispensers are not acceptable.
All equipment will be maintained in accordance with the manufactures guidance.
Ice machines will not be installed in augmented care units. Ice production in these areas may be possible after risk assessment with Infection Prevention and Control and Estates and agreement of an appropriate Standard Operating Procedure.

Portable/ room humidifiers or coolers

Portable / room humidifiers and coolers are not acceptable.

Non-wholesome water storage

All non-wholesome water storage should be risk assessed by the WSG

Deluge showers

Deluge showers must not be installed end of line, they must be regularly dismantled, descaled and disinfected along with maintenance in accordance with manufacturers guidance. They must also be flushed in accordance with HSG 274 Part 3.

Garden hoses etc.

Hoses used on site must be constructed of materials suitable for use with wholesome water, hoses must be stored drained and capped in a cool area when not in use and subject to decontamination (emersion in hypochlorite) before being returned to use. Any connected equipment must have category 5 backflow protection.

Decorative internal and external water features

Decorative internal and external water features are not acceptable.

Wet fire and automatic sprinkler systems.

Wet systems must be isolated from the potable water supply by a method permitted by the Water Supply (Water Fittings) Regulations 1999.

Systems must be regularly risk assessed and if possible removed from use in favour of early professional intervention. Any redundant services must be removed entirely back to the main with the branch tee removed and replaced by a straight coupling.

Patient contact equipment.
Patient contact equipment must be used, drained, cleaned, rinsed, and dried in accordance with manufacturers guidance and agreed by the WSG. Refer to chapter 3 HTM 04-01 part c.

Heater cooler units

Heater cooler units (HCU) must be operated and decontaminated in accordance with manufacturer's instructions and SOP. Their use must be subject to a risk assessment approved by WSG. Sampling of HCU's will be performed in line with extant national recommendations.

Flowers and Plants

Waste water and compost must be disposed of outside of in-patient accommodation, it must not be disposed of via the dirty utility facilities.

Buried pipelines

Plastic pipelines can be susceptible to hydrocarbons such as fuels and oils, whenever a spill is reported an assessment of the services in the areas should be undertaken see paragraphs 12.8 – 12.16 HTM04-01 part a.

New installations must be installed in barrier pipe to mitigate this risk.

Other risk systems.

See appendix 3.1 of HSG 274 part 3

Microbiological monitoring

Where there are odour or taste issues microbiological monitoring for total viable counts (TVCs) may be considered necessary. Routine monitoring is not recommended as there is no direct association with TVC's and the presence of waterborne pathogens.

The Trust must perform regular TVC sampling to analyse trends, all sample analysis must be United Kingdom Accredited Laboratories (UCAS) and all samples results will be presented with analysis at WSG meetings.

Testing for Legionella

It is Trust policy to test for legionella at key outlets on a monthly basis to demonstrate that the control regime is effective. Test results will be responded to in accordance with HTM 04-01 part b paragraph 10.1
WSG will use risk assessments to determine where and when to test which will include the following circumstances:

- When storage and distribution temperatures do not achieve those recommended and a biocidal regime is in place – test monthly.
- When temperature or biocidal regimes are not consistently achieved – test weekly until the system is brought under control.
- Where a nosocomial outbreak is suspected or has been identified.
- Where there are at-risk patients with increased susceptibility.

<table>
<thead>
<tr>
<th>Legionella bacteria (cfu/L)</th>
<th>Action required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not detected or up to 100</td>
<td>The primary concern is protecting susceptible patients, so any detection of \textit{Legionella} should be investigated and, if necessary, the system resampled to aid interpretation of the results in line with the monitoring strategy and risk assessment. Either: If the minority of samples are positive, the system should be resampled. If similar results are found again, a review of control measures and a risk assessment should be carried out to identify any remedial action necessary, or if the majority of samples are positive, the system may be colonised, albeit at a low level. An immediate review of control measures and a risk assessment should be carried out to identify any other remedial action required. Disinfection of the system should be considered.</td>
</tr>
<tr>
<td>&gt;100 and up to 1000</td>
<td>The system should be resampled and an immediate review of the control measures and a risk assessment should be carried out to identify any remedial actions, including possible disinfection of the system. Relisting should take place three days following systemic chemical or thermal disinfection and at frequent intervals thereafter until a satisfactory level of control is achieved as agreed by the WSG.</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>The system should be resampled and an immediate review of the control measures and a risk assessment should be carried out to identify any remedial actions, including possible disinfection of the system. Relisting should take place three days following systemic chemical or thermal disinfection and at frequent intervals thereafter until a satisfactory level of control is achieved as agreed by the WSG.</td>
</tr>
</tbody>
</table>

In addition to the testing of key outlets standard sampling for each system will take place as follows:

- From the cold water storage tank and the furthest outlet from the tank
- From the calorifier flow, or the closest tap to the calorifier, and the furthermost tap on the hot water service circulating system.
- Additional samples will be taken from the base of the calorifier where drain valves have been fitted.
- Additional random pre- and post- flush samples may be considered appropriate where systems are known to be susceptible to colonisation in line with BS 7592 guidance.
- Methods will be in accordance with BS7592.

Analysis of samples will be performed in a UKAS accredited laboratory to the current ISO standard. The laboratory will be able to achieve a minimum theoretical detection limit of ≤100 legionella bacteria/litre sample.

Action following Legionella sampling in hot and cold water systems will be as follows:
<table>
<thead>
<tr>
<th>Legionella bacteria (cfu)</th>
<th>Results from Pre-flush samples</th>
<th>Systemic results (Post-flush samples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Continue with current control scheme</td>
<td>Post-flush samples (multiple positive samples) may be an indication that the whole water systems is contaminated and that controls are not effective.</td>
</tr>
<tr>
<td>100-1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Action required           | Identify remedial actions, Investigate:  
  - Usage frequency  
  - Outlet for corrosion and scale  
  - Local heat gain  
  - Local (test) ends  
  - Cross flow between hot and cold and vice versa  
  - Localised failure of the HWS return  
  It may be appropriate to immediately respond to indicate if initial remedial actions have been effective. The locations should then be resampled after 3 to 6 months to confirm any actions taken have remained effective.  
In addition to the above, and if the outlet is served by a TMV:  
- Review the need for the TMV taking into account the relative risks of scaling. Remove the TMV if considered appropriate  
- If the TMV is to remain, clean and disinfect the TMV, the outlet and the strainers on both cold and hot feeds.  
- Identify any flexible hoses particularly after the TMV and consider replacement, avoiding the use of flexible hoses where practicable. | |
| 1000-10,000              | Review immediately the local control measures and risk assessment to identify any required remedial action (head ends etc)  
- Cleaning and Disinfection of the outlet should be undertaken – (especially showers and spray taps)  
  If a shower (spray outlet) cannot be taken out of use, consider installing point of use microbiological filters on all affected showers.  
- It is likely to be appropriate to re-sample, between two and seven days after, to indicate if initial remedial actions have been effective.  
- The locations should then be resampled (e.g. 1 to 3 months) to confirm any actions taken have remained effective. | Action required  
- In addition to the above  
- Cleaning & Disinfection of the entire system is likely to be required  
- To confirm effective disinfection microbiological samples should be taken between two and seven days after the system is treated. (Samples taken immediately after a disinfection process might give false negative results). |
| >10,000                  | Action required  
- In addition to the above  
- Take immediate measures to prevent exposure from this outlet until remedial measures are taken and shown to be effective.  
- If the outlet cannot be taken out of use, install a point of use microbiological filter on all affected outlets.  
- Resample, between two and seven days after, to indicate if initial remedial actions have been effective.  
- The locations should then be regularly resampled to confirm any actions taken have remained effective. | Action required  
- In addition to the above  
- Take immediate measures to prevent exposure from all outlets fed by the system until remedial measures are taken.  
- Clean & Disinfect the entire system as soon as possible. |
Water Management Policy
Water quality

All water and water systems in healthcare facilities will be risk assessed according to their intended use and patient immune status taking into account any identified inherent hazards within the facility and the quality of the water supply to systems being assessed.
The assessment of risk will take account of the most vulnerable population likely to be exposed to each potential source. See the table below for different categories of water for differing uses.

<table>
<thead>
<tr>
<th>Healthcare area</th>
<th>Application</th>
<th>Physical, chemical or microbial quality indicators</th>
<th>Water quality parameters given in:</th>
<th>Particular hazards (based on an assessment for each system)</th>
<th>See also</th>
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<tr>
<td>All settings</td>
<td>Circulated hot water systems and cold water systems</td>
<td>Legionella spp.: colony counts per litre Pseudomonas aeruginosa colony counts per 100 mL</td>
<td>HTM 04-01 Parts A, B and C BS 7652 Sampling for Legionella bacteria in water systems Codes of practice</td>
<td>Legionella spp., Pseudomonas aeruginosa and other waterborne pathogens</td>
<td>For Legionella, see Health and Safety Executive (2014), Legionnaires’ Disease HSG 274 Part 2. The control of Legionella bacteria in hot and cold water systems.</td>
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<td>Flexible endoscope reprocessing units</td>
<td>Initial flush</td>
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<td>HTM 01-06 Decontamination of flexible endoscopes Part B – Design and installation HTM 01-06 Decontamination of flexible endoscopes Part E – Testing methods</td>
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<td>Intermediate flush</td>
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<td>• Total organic carbon</td>
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<td></td>
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<td>• pH</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Total viable count</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• E. aeruginosa</td>
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<tr>
<td></td>
<td></td>
<td>• Environmental mycobacteria</td>
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<td>See also</td>
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<td>Water for haemodialysis</td>
<td>Total viable counts and endotoxin concentrations</td>
<td>• BS ISO 13959: Water for haemodialysis and related therapies. • BS ISO 11863: Quality of dialysis fluid for haemodialysis and related therapies. • BS ISO 13958: Concentrates for haemodialysis and related therapies.</td>
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<td>• HBN 07-01 Satellite dialysis units • HBN 07-02 Main renal units</td>
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<td>Augmented care units</td>
<td>Pseudomonas aeruginosa: Colony counts per 100 mL</td>
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<td>• See the PWTAG's 'Swimming pool water: treatment and quality standards for pools and spas'.</td>
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<tr>
<td>Spa pools and whirlpools</td>
<td>pH, free residual halogen and other treatment parameters</td>
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<td></td>
<td>• See HSE/PHED's 'Management of spa pools: controlling the risks of infection'.</td>
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Note
This document is currently being revised and will become HSG274 Part 4 – “The control of Legionella and other infectious agents in spa pool systems.”
Action in the event of an outbreak of legionellosis

Legionnaires disease is notifiable under the Health Protection (Notification) Regulations 2010. Registered medical practitioners must report cases of Legionnaires disease. Human diagnostic laboratories must notify PHE of cases of Legionnaires disease identified during lab testing.

An outbreak is defined as two or more cases where the onset of illness is closely linked in time and location and where there is a common source of infection, with or without microbiological evidence. An outbreak control team will be convened to investigate outbreaks. If the hot and cold water system is implicated in an outbreak of Legionnaires disease, the WSG will consider cleaning and disinfection of part or all of the system in accordance with HSG 274 part 2.

Example temperature test sheets.
Each outlet/mixing device will have a unique identification as well as identification of its type.

At commissioning, hot and cold water pressures will be recorded in addition to all in service tests in accordance with HTM 04-01 supplement D08 to monitor performance trends over the life of the installation.
Testing for *P. aeruginosa*

*P. aeruginosa* may be resent within the water storage, distribution and delivery systems and also the water supplied to the healthcare facility.

Sampling for *P. aeruginosa* will be in accordance with appendix E of HTM04-01 part b in order to establish if contamination is waterborne and if so to locate its origin and monitor the efficacy of remedial measures.

*P. aeruginosa* contamination is generally found in the last two meters of the point of water delivery, therefore pre-flush samples will be collected to assess the highest risk to outlets users and at-risk patients. Sampling should be after a period of no use at least two hours or low use.

Where to sample outlets

The water outlets sampled will be those that supply water which:

- Has direct contact with patients
- Is used to wash staff hands
- Is used to fill or clean equipment that will have contact with patients as determined by risk assessment.

When and how to sample outlets

The outlets identified above will be sampled to provide an initial assessment of contamination levels. Sampling will be completed in batches to assist effective processing by the receiving laboratory.

Interpretation of *P. aeruginosa* test results

If test results are satisfactory (not detected) there is no need to re-test for a period of 6 months unless there are system changes. WSG have the option to increase this frequency if there is evidence to do so.

If tests show counts of 1 to 10 cfu/100ml, the WSG will risk assess the use of the water while simultaneously retesting the water outlet,

if the test results are not satisfactory (>10cfu/100ml), further sampling along with an engineering survey of the water system will be used to identify any issues and also any remedial actions to improve water quality. After interventions the water will be resampled as per the chart below.
Interpretation of pre and post flush counts

High counts in pre-flush sample but low counts or none detected in post flush samples could indicate that areas/fittings at or near the outlet are the source of contamination.

A few positive outlets, where the majority of the outlets are negative would also indicate that the source of contamination is at or close to the outlet.

If both pre and post flush samples from a particular outlet are >100 cfu/100ml and other nearby outlets have no or low counts this shows that the single outlet is heavily contaminated.

If the sampling indicated that the water services are the problem i.e. the majority of the outlets are positive then sampling will need to take place on a wider scale to identify the extent of the problem.

See the tables below for sampling procedure and interpretation of results.
What to do if a contamination problem is identified

Should risk assessment or water testing identify contamination with \textit{P. aeruginosa}, the following risk reduction and preventative measures must be put in place:

- Inform WSG and hold a focused incident control meeting including IPC, Estates and clinical staff to ensure patient safety is prioritised and to formulate an action plan.
• If a water outlet has been risk assessed by WSG and taken out of service due to contamination with P. aeruginosa, daily flushing must continue while the outlet is out of use to prevent stagnation and increased contamination.

• Where practical remove flow straighteners, if flow straighteners are deemed to be needed then they must be periodically removed and cleaned/disinfected or replaced, frequency to be determined by WSG and swabbing.

• Investigate outlets for splashing which can promote dissemination of organisms resulting in back contamination of outlets, if splashing occurs investigate the causes, examples include:
  o Tap incompatible with basin
  o Tap discharges directly into the waste
  o Incorrect height between tap and basin
  o Excess water pressure
  o Blocked or malfunctioning straightener

• Hand-washing to be supplemented with antimicrobial hand-rub

• Check for infrequently used outlets – assess frequency of use and if necessary remove.

• Check connections to mixing taps to ensure that there are no upstream TMV’s

• Risk-assess the water system for redundant pipework and dead-legs – any pipework removed must be cut back to the main and the branch T replaced with a straight coupling.

• Assess the water distribution system for non-metallic materials that may be used in items such as inline valves, test points and flexible hoses, replace these items in accordance with safety alert DH (2010) 03-“Flexible water supply hoses”.

• All materials in contact with water must be assessed and demonstrate that they are appropriate for the intended purpose (see paragraph 1.15 HTM04-01 part a) and are WRAS approved. Flexible pipes are only acceptable in exceptional circumstances such as rise and fall baths and shower hoses.

• Temporary POU filters may be used as a last option to provide water free of P. aeruginosa.

• WSG may decide to carry out a disinfection of the hot and cold water in accordance with HSG 274 part 2 – note hyperchlorination is not effective against established biofilms and therefore removable taps capable of remote decontamination are required where practical.

Water sampling for P. aeruginosa, Stenotrophomonas maltophilia and Mycobacterium spp.

Sampling must be undertaken by staff trained in the appropriate technique for taking water samples including the use of aseptic technique to minimise extraneous contamination.

Carefully label samples with the sample type (pre or post flush) and outlet such that the outlet can clearly be identified: system schematics must be marked up indicating each numbered outlet to be sampled.
Take the first sample of water (pre-flush) delivered from a tap at a time of no use (2 hours or longer), if not possible then at a period of lowest use. Disinfectants in the water have residual activity and can inactivate bacteria in the sample prior to processing – WSG to take advice from the receiving laboratory in order to neutralise disinfectants by dosing the sample bottles.

Taps must not be disinfected before pre-flush sampling.

Label a sterile collection vessel containing a suitable neutraliser for any biocide. Labelling must include:

- details of the taps location
- senders reference
- pre or post flush
- person sampling
- date and time of sample

If P.aeruginosa is found in a pre-flush sample a second pair of sample must be taken:

- pre-flush as before.
- Post-flush sample after 2 minutes flushing.

Where sample collection cannot be obtained immediately for analysis, in the event of an outbreak swabbing can be used to provide a means of assessing a water outlet – this does not replace sampling – see HTM04-01 part b Appendix E section E8

Procedure for obtaining the samples

Pre-flush sample: Aseptically (without touching the screw thread, inside the cap or inside the collection vessel) collect at least 200ml water in a sterile collection vessel containing neutraliser. Replace cap and invert or shake to mix the neutraliser with the collected water. Depending on the water distribution system design and the type of water outlet, the water feed to the outlet may be provided by:

- A separate cold water supply and hot water supply to separate outlets:
- A separate cold water supply and hot water supply, which may have its final temperature controlled by the use of an integral TMV within the outlet: or
- A separate cold water supply and a pre-blended hot water supply that has had its temperature reduced by a TMB prior to delivery to the outlet.

For separate hot and cold outlets, each outlet is individually tested with its own collection vessel and outlet identifier.

For blended outlets, sample the water on fully cold using an individual collection vessel and outlet identifier noting the temperature, repeat on fully hot.

Post-flush sampling – where required run the tap for at least two minutes before collecting the sample.
If a shower sample it required, place a sterile bag over the outlet and then using sterile scissors, cut a small section off the corned and collect the sample – note, endeavour to minimise aerosol production as described in BS 7592.

The water collected should be processed within two hours. If that is not possible then it should be refrigerated within two hours, kept at 2-8 deg C and processed within 24 hours.

To take a swab sample refer to HTM 04-01 part b Appendix E section E15

Microbiological examination of water samples for P.aeruginosa

Refer to HTM 04-01 part b Appendix F noting that P.aeruginosa isolates must be retained for typing.

Standard Operating Procedures.

The following are examples of Trust Standard Operating Procedures (SOP’s) which must be applied :-

- Cleaning WHB.
- Ice making SOP.
- Birthing Pool SOP.
- NICU Laundry.
- Water dispensers Cleaning and Maintenance.
- Flushing of low use outlets.
- Staff training.

6 Overall Responsibility for the Document

The overall responsibility for developing, implementing and reviewing this policy sits with the WSG and it is the responsibility of all members of Trust staff to adhere to this policy. This policy is ratified by the Infection Control Committee.

7 Consultation and Ratification

The design and process of review and revision of this policy will comply with The Development and Management of Formal Documents.

The review period for this document is set as default of five years from the date it was last ratified, or earlier if developments within or external to the Trust indicate the need for a significant revision to the procedures described.

This document will be reviewed by the WSG and ratified by the Infection Control Committee.
Non-significant amendments to this document may be made, under delegated authority from the Infection Control Committee, by the WSG. These must be ratified by the Infection Control Committee.

Significant reviews and revisions to this document will include a consultation with named groups, or grades across the Trust. For non-significant amendments, informal consultation will be restricted to named groups, or grades who are directly affected by the proposed changes.

8 | Dissemination and Implementation

Following approval and ratification, this policy will be published in the Trust's formal documents library and all staff will be notified through the Trust's normal notification process, currently the ‘Vital Signs’ electronic newsletter.

Document control arrangements will be in accordance with The Development and Management of Formal Documents.

The document owner will be responsible for agreeing the training requirements associated with the newly ratified document with the Director of Site Services and for working with the Trust's training function, if required, to arrange for the required training to be delivered.

9 | Monitoring Compliance and Effectiveness

On-going monitoring of water quality will take place via regular WSG meetings where the following agenda items will be reviewed :-
Water quality will be monitored via the BEMS, using in house staff and externally via contractors.

Water temperature control regimes will be continually monitored via the BEMS.

Planned and preventative maintenance and temperature testing will take place in accordance with HSE L8, HSG 274, HTM04-01 part b.

TVC testing will take place weekly via 36 in house samples in augmented care areas.

TVC and legionella testing will take place monthly via samples collect by external contractors in key areas as per HTM04-01 part b.

P.Aeruginosa testing will take place at 6 monthly intervals or ad-hoc as required in accordance with HTM04-01 part b.
Annual external audit will be completed by external AE with any actions arising being formalised in an action plan and executed by the WSG.

Legionella and pseudomonas planned risk assessment will take place every 2 years or earlier if there are any major system changes. Actions arising will be formalised in to an action plan and executed by the WSG.

Shortfalls will be incorporated in to an action plan and executed by the WSG.

Results will be monitored by the WSG with further performance reports being published and presented at the monthly Infection Prevention and Control Sub-Committee meeting.

Actions arising will be given to the appropriate owner and deadlines will be set, all actions will be monitored and performance managed on a monthly basis by the WSG.

All members of staff are required to undertake appropriate water hygiene training; it is the responsibility of all staff to ensure that they are adequately trained in accordance with HSAW 1974.

References and Associated Documentation


Food Safety Act 1990.  

Food Safety and Hygiene (England) Regulations 2013.  


Health and Social Care Act 2012.  
http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted


Public Health (Infectious Diseases) Regulations 1988. SI 1988 No 1546  

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR).  
http://www.legislation.gov.uk/uksi/2013/1471/contents/made


http://www.opsi.gov.uk/si/si1999/19991148.htm
http://www.opsi.gov.uk/si/si2000/20003184.htm
Department of Health publications NHS Premises Assurance Model (NHS PAM).
Health Building Notes Health Building Note 00-07 – Planning for a resilient estate.
Health Building Note 00-08 – (Estatecode) Part B: Supplementary information for Part A.
Health Building Note 00-09 – Infection control in the built environment.
Health Building Note 07-01 – Satellite dialysis unit.
Health Building Note 07-02 – Main renal unit.
Health Building Note 13 – Sterile services department.
Health Technical Memoranda Health Technical Memorandum 00 – Policies and principles of healthcare engineering.
Health Technical Memorandum 07-02 – Encode. 2015.

Estates and Facilities Alerts DH (2010) 03 – Flexible water supply hoses. Appendix F

Microbiological examination of water samples for P. aeruginosa 85 NHSE SN (96)06 – Evaporative type cooling fan.


Other government publications


British Standards


Other publications

http://www.riscauthority.co.uk/free-document-library/RISCAuthority-Library_detail.si-legionella-andfirefighting-systems.html
Health and Safety Executive/Care Quality Commission/Local Government Association (2015). Memorandum of understanding between the Care Quality Commission, the Health and Safety Executive and local authorities in England.
(The) NHS Constitution. The NHS belongs to us all.
Public Health England. Guidelines for the collection, microbiological examination and interpretation of results from food, water and environmental samples taken from the healthcare environment (forthcoming).
http://www.wras.co.uk
Water Management Policy

http://www.wmsoc.org.uk/publications/59/
## Dissemination Plan and Review Checklist

### Document Title
- Water Management Policy

### Date Finalised
- 27/09/2017

### Previous Documents
- Action to retrieve old copies: N/A new policy

### Dissemination Plan

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<td>Information Governance Team</td>
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### Review Checklist

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<th>Menu Item</th>
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<tr>
<td>Is the title clear and unambiguous?</td>
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<tr>
<td>Is it clear whether the document is a policy, procedure, protocol,</td>
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<td>framework, APN or SOP?</td>
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<td>Does the style &amp; format comply?</td>
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### Core Information

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| **What are the aims, objectives & projected outcomes?** | To outline the policy for the safe management of water systems within the Trust  
To ensure safe water Trustwide. |

### Scope of the assessment

### Collecting data

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### Impact Assessment

| Overall assessment and analysis of the evidence | |

### Action Plan

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