# Safe Water Management (including Legionella)

# Final Internal Audit Report

# 2018/19

# Abertawe Bro Morgannwg University Health Board

## NHS Wales Shared Services Partnership

## Audit and Assurance Services

| **Limited Assurance** |
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|   |
| Previous review rating (October 2014) Limited Assurance |

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| **Committee** | Audit Committee<br>Health and Safety Committee |

**ACKNOWLEDGEMENT**
NHS Wales Audit & Assurance Services would like to acknowledge the time and co-operation given by management and staff during the course of this review.

**Please note:**

This audit report has been prepared for internal use only. Audit & Assurance Services reports are prepared, in accordance with the Service Strategy and Terms of Reference, approved by the Audit Committee.

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## 1. Introduction and Background

The Water Safety Management audit was commissioned in order to evaluate the associated processes and procedures that support its management and control. The audit assessed compliance with relevant legislation and guidance to manage and minimise the risks to health including clinical risks, microbial and chemical contamination and changes to the water system. There was also emphasis on related staff competencies and implementation of water hygiene awareness training.

A previous audit of the systems and controls in place for the management of legionella was undertaken during 2014/15 and determined a limited level of assurance. Issues raised related to manual systems and requirement for enhanced procedures. These have been addressed by the introduction of automated systems, and procedural update. This audit therefore represents the first review of the operation of the revised procedures and systems.

## 2. Scope and Objectives

The review was undertaken to determine the adequacy of, and operational compliance with, the systems and procedures of the University Health Board (UHB), taking account of relevant NHS and other supporting regulatory and procedural requirements, as appropriate.

The audit evaluated the systems and controls in place within the UHB with a view to delivering reasonable assurance to the Audit Committee that risks material to the objectives of the areas covered were appropriately managed.

Accordingly, the focus of the audit was directed to the following areas:

- **Procedures -** to ensure that management were implementing applicable procedures (both internal and external requirements).
- **Governance -** the Health Board had adequate arrangements in place to support the implementation of the approved code of practice. Also, that an appropriate policy was in place to address water safety issues, there were defined allocation of responsibilities, clear lines of communication and approval processes.[1]
- **Monitoring and Reporting -** to ensure that the Health Board had effective monitoring procedures in place across the estate e.g. the establishment of appropriate Water Safety Groups (WSGs) etc. Assurance that there was appropriate record retention and dissemination of information through to the Executive team and Board.
- **Management -** assurance that relevant staff received appropriate training, and appropriate resources were allocated. Assurance that and an appropriate inspection / detection regime was operating.
- **Risk Management -** Assurance that the Health Board performed a suitable and sufficient assessment of risks; and that risks were appropriately managed.

[1] *The functioning of the Health and Safety Committee itself (attendance etc.,) in the wider context of a Health and Safety review was subject of a December 2017 internal audit review, and issues arising from the same are therefore not replicated within this report.*

## 3. Associated Risks

The potential risks considered during the review were as follows:

- Patient Safety
- Prosecution / criminal negligence
- Adverse publicity
- Breach of regulations / Approved Code of Practice
- Fines and defence costs
- Ineffective / inappropriate governance arrangements
- Ineffective / ill-informed management
- Ineffective risk control

# OPINION AND KEY FINDINGS

## 4. Overall Assurance Opinion

We are required to provide an opinion as to the adequacy and effectiveness of the system of internal control under review. The opinion is based on the work performed as set out in the scope and objectives within this report. An overall assurance rating is provided describing the effectiveness of the system of internal control in place to manage the identified risks associated with the objectives covered in this review.

The system was found to benefit from the several key controls including revised procedures, and a risk assessment refresh. Water temperature testing was directed by an automated system, with associated reporting of outcomes and remedial actions. However, key issues included:

- Lack of assurance relating to Legionella testing (including non-compliance with the testing regimes determined within the UHB's Water Safety Plan);
- The lack of formalised risk assessments in the absence of the defined testing regime;
- risks relating to Pseudomonas Aeruginosa within equipment items, with an associated need to enhance assurance arrangements;
- assurance relating to the flushing of infrequently/unused outlets was not identified;
- the need for more effective monitoring and reporting regimes; and
- the need for effective training in system operation.

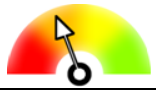
Accordingly, the level of assurance given as to the effectiveness of the system of internal control in place to manage the risks associated with safer water management with the UHB at the time of the audit is assessed as **Limited Assurance.**

| RATING | INDICATOR | DEFINITION |
|---|---|---|
| **Limited Assurance** |  | The Board can take **limited assurance** that arrangements to secure governance, risk management and internal control, within those areas under review, are suitably designed and applied effectively. More significant matters require management attention with **moderate impact on residual risk** exposure until resolved. |

The overall level of assurance that can be assigned to a review is dependent on the severity of the findings as applied against the specific review objectives and should therefore be considered in that context.

## 5. Assurance Summary

The summary of assurance given against the individual objectives is described in the table below:

| **Assurance Summary** | |  |  |  |  |
|---|---|---|---|---|---|
| **1** | Procedures | | ✓ | | |
| **2** | Governance | | ✓ | | |
| **3** | Monitoring & Reporting | | ✓ | | |
| **4** | Management | | ✓ | | |
| **5** | Risk Management | | ✓ | | |

** The above ratings are not necessarily given equal weighting when generating the audit opinion.*

### Design of Systems/Controls

The findings from the review have highlighted **8** issues that were classified as weaknesses in the system control/design for safer water management.

### Operation of System/Controls

The findings from the review have highlighted **6** issues that were classified as weaknesses in the operation of the designed system/control for safer water management.

## 6. Summary of Audit Findings

The key findings are reported within the Management Action Plan (**Appendix A**).

### Procedures

***To ensure that management were implementing applicable procedures (both internal and external requirements).***

Both the Water Safety Policy and Plan (procedures) were recently updated to accord with HTM 04-01 and approved by the Quality and Safety Committee in May 2018. However at the time of the audit fieldwork, the updated procedures had not been widely circulated (or posted at the UHB intranet) (**Recommendation 1**).

Assurance reporting relating to Pseudomonas Aeruginosa testing of procured equipment (with estates and at departmental level) was not identified (**Recommendations 3** & **4**).

Whilst recognising the comprehensive update of both Policies and Procedures, (including expert advice and executive approval), noting the above issues, **limited assurance** has currently been determined in this area.

### Governance

***To ensure that the Health Board had adequate arrangements in place to support the implementation of the approved code of practice. Also, that an appropriate policy was in place to address water safety issues, there were defined allocation of responsibilities, clear lines of communication and approval processes.***

Governance arrangements were formally documented within the updated procedures (see above), including the identification of Responsible and Authorised Person's in accordance with HTM 04 -01. The Health Board had additionally appointed an external adviser (NWSSP: SES) to provide guidance and assurance on safe water management activities.

Good practice was recognised in the establishment of both a Health and Safety Committee (in accordance with The Safety at Work Act 1974), and a Quality and Safety Committee.

The establishment of an effective Water Safety Group with appropriate representation (including technical advice) is a key requirement of HTM 04 – 01. Noting the same, a Water Safety Group was established, which reported to the Health and Safety Committee. However, the Water Safety Group did not meet with appropriate frequency or attendance (as determined within the procedures/HTM04), including the need to ensure advice by a micro-biologist. (**Recommendation 5**). Accordingly **limited**

**assurance** has been determined in respect of the governance arrangements applied.

Ref. also Monitoring and Reporting Section below.

## Monitoring and reporting

***To ensure that the Health Board had effective monitoring procedures in place across the estate.***

Water Safety Procedures state that

- the **Quality & Safety Committee** will "..*receive assurance regarding Water management arrangements through the Health and Safety committee report which will include an update on Water management issues".*
- the **Health & Safety Committee** will *"review and consider ..water management issues....receive exception reports from unit Directorates on water matters and remedial and preventative action taken…develop systems to monitor... and (take) remedial and preventative action taken";* and *"appoint subcommittees".*
- the **Water Safety Group (WSG)** has delegated responsibility to ensure that effective monitoring systems operate and are effectively monitored and reported.

The Water Safety Group was briefed by the Assistant Director of Operations (Estates) on water safety issues (as relevant). The monthly compilation of the ZetaSafe[2] report "*Estates analysed performance reports and graphs for in-house Estates staff work*" was utilised as a key document to inform this briefing. Detailed reporting of the work performed / not undertaken (testing/rectification etc.) was provided via this report. However, the focus was on in-month reporting. Outlets with on-going / cumulative issues, or outstanding actions (backlog) across time periods were not featured. While Statutory and Planned Preventative Maintenance was reported, this did not separately identify closure of water related reactive/planned maintenance issues etc. There was therefore a need to enhance the current reports (**Recommendation 6**).

A briefing by the Assistant Director of Operations (Estates) to the Health and Safety Committee "Water Assurance Report" was evidenced in January 2018. However, regular exception/update reports (on water matters and remedial and preventative action taken etc.), were not evidenced to either the Quality and Safety Committee or the Health and Safety Committee in accordance with their defined remits.

It was noted that planned temperature control checks had an 81.5% compliance rate at the time of the audit (though with variability from 58% to 100% between the sites). While these matter were advised to the Water Safety Group, no exception reporting relating to such results or anomalies was identified to the appropriate (superior) committees. Similarly, specific monitoring and reporting regimes for Pseudomonas Aeruginosa; Legionella, and flushing of infrequently used outlets were not identified (**Recommendations 7** & **8**).

Accordingly, noting the previous issues re attendance at key groups together with the absence of appropriate assurance in respect of flushing, pseudonoma & legionella, together with the absence of exception reports to superior groups, **Limited assurance** has been determined in respect of the monitoring and reporting arrangements currently being applied.

[2] *The "ZetaSafe" system is a system to collect, manage and share compliance data. It is utilised to list testing requirements, and log and report results. As such it may flag needs for Planned Preventative Maintenance (PPM) with resultant PPM being logged to action.*

## Management

***Assurance that relevant staff received appropriate training, and appropriate resources were allocated. Assurance that and an appropriate inspection / detection regime was operating.***

Task management was delegated within UHB Water Safety procedures from the Responsible Person, to Deputy Responsible Persons (DRP) (i.e. the site Estates managers), with further delegations to their staff (the Authorised Persons) for implementation.

Key operational responsibilities include, system directed temperature sampling, bacteria sampling, and associated maintenance. System directed testing and rectification of temperatures and bacteria sampling was generally seen to operate (excepting non-completed tasks associated with staffing constraints).

However, noting the monitoring/reporting issues identified above, there was a corresponding lack of familiarity at the DRP levels with the full functionality of ZetaSafe. While training was evidenced of responsible and authorised persons this related to hygiene training, rather than the use of ZetaSafe. Accordingly, recommendations have been made to ensure the appropriate application of the Zetasafe system and that associated training is provided (**Recommendation 9**).

The audit also identified a number of concerns in respect of the accuracy and consistency of data (for individual sites) contained within the ZetaSafe system (**Recommendation 10**).

Non-compliance with the Water Safety Plan legionella testing regime together with the outdated infrastructure risk assessments (at the time of the current review), which were not being referenced. Therefore, there was an absence of risk assessments to direct testing (in accordance with the WHTM) **(Recommendation 11**). There was also a lapse in the external testing contract and associated lack of records at the time of audit (**Recommendation 12**).

The audit also found marginal differences in approach between the sites e.g. documenting relevant outlets for action at maintenance instructions (**Recommendation 13**).

While we were informed that a review of system parameters was being undertaken (informed by recently commissioned risk assessments), noting the above issues, a **limited** assurance has therefore been determined in this area.

## Risk Management

***Assurance that the Health Board performed a suitable and sufficient assessment of risks; and that risks were appropriately managed.***

The Water Safety plan details the "risk based approach" to legionella testing i.e. monthly testing initially, reducing to bi-monthly and quarterly (as a minimum) subject to test results.

At the time of the current review, infrastructure risk assessments were out of date and were not being referenced. Noting the same, a specialist water management company had subsequently provided revised risk assessments for all ABMU properties which were to be applied.

Whilst periodic reporting to the Health and Safety Committee (Water Assurance Reports) were evidenced, a regular formatted report relating to water management risks and/or risk register (as appropriate) was not evidenced to relevant committees (e.g. testing of various types with percentage failure etc.).

Similarly escalation of key water risks to Health and Safety / Corporate risk registers was not evidenced (risks at this level being denoted generically as risk of water contamination). A key risk at the time of audit was the lapse of the legionella testing contract meaning that such an exception report would have profiled no test results (i.e. non-compliance with the dynamic test regime) (**Recommendation 14**). Management commented that risk registers were to be reviewed in the context of the new UHB risk prioritisation, and escalation / reporting arrangements.

Whilst noting the updated infrastructure risk assessment and the proposed refresh of associated systems to recognise the same, **limited** assurance is currently determined in respect of risk management. This assessment would improve on the implementation of revised (corporate) risk management and reporting arrangements.

## 7. Summary of Recommendations

The audit findings and recommendations are detailed in **Appendix A** together with the management action plan and implementation timetable.

A summary of these recommendations by priority is outlined below.

| Priority | H | M | L | Total |
|---|---|---|---|---|
| **Number of recommendations** | 8 | 5 | 1 | **14** |

| Finding 1: Procedures: Publication/Circulation | Risk |
|---|---|
| The Water Safety Policy states that "*The Health & Safety Committee is responsible for approving the Water Policy for recommendation to the Quality and Safety Committee"*.<br><br>The Water Safety Policy and associated procedures i.e. Water Safety Plan, were reviewed by both NWSSP: Audit & Assurance and NWSSP: Specialist Estates Services (appointed in the capacity of authorised engineer) prior to approval by the UHB Quality and Safety Committee in May 2018.<br><br>However, the updated policy/procedures were not found to be widely circulated e.g. at the UHB's Intranet. | Incorrect procedural requirements may be applied. |
| **Recommendation 1** | **Priority level** |
| The approved Water Policy and Procedures should be circulated to all key personnel and posted at the UHB Intranet for wider application. (**O**) | **Medium** |
| **Management Response 1** | **Responsible Officer/ Deadline** |
| Agreed, while noting that the Policy is being put through approval with name change of organisation. | Assistant Director of Operations and Estates<br><br>July 2019 |

| Finding 2: Procedures: Currency of Supplemental Procedures | Risk |
|---|---|
| Additional water management policy documents were noted at the UHB intranet e.g. drinking supply failure disaster recovery plan, NPT Waterflow (both dated 2010), amongst others.<br><br>Neither the UHB Water Safety Policy nor the Water Safety Plan made reference to further water safety procedures. | Incorrect/outdated procedures may be applied. |
| **Recommendation 2** | **Priority level** |
| All water related policies at the intranet should be reviewed for currency, and either removed or referenced from the main procedures / policy as appropriate. (**O**) | **Low** |
| **Management Response 2** | **Responsible Officer/ Deadline** |
| Accepted. It is considered that there is no conflict between the requirements of the Water Safety Plan and other policies currently posted at the UHB intranet. This will be confirmed and the Water Safety Plan/Policy (as appropriate) will be updated to reflect other associated UHB policies. These will be presented to the next scheduled meeting of the Water Safety Group. | Assistant Director of Operations and Estates<br><br>August 2019 |

| Findings 3 & 4: Procedures: Pseudomonas Aeruginosa | Risk |
|---|---|
| Procedures currently require water testing for Pseudomonas Aeruginosa in high risk areas. However, HTM 04-01 (Addendum) states:<br><br>*"In contrast to Legionella ..its presence becomes evident at outlets from the system (for example taps) and can be found within the last two metres before the point of discharge of water".*<br><br>The Assistant Director of Operations and Estates confirmed that responsibility for the cleaning of taps and sinks rested with Hotel Services. However, a regime for testing of drainage outlets was not identified within existing procedures.<br><br>HTM 04-01 also states that sources can include splash-back from contaminated drains, and *"…other areas should be considered e.g. …..ice machines, drinking water fountains, bottled water dispenses…"*<br><br>Noting the same, estates should be advised of any locally procured equipment items which use/supply water, to enable appropriate risk assessment, monitoring/testing and maintenance. The Assistant Director of Operations and Estates advised that the estates maintenance team were not always notified of equipment purchases. Responsibility for maintenance etc., therefore rested with the relevant Departments.<br><br>Management advised post audit fieldwork, that the Water Safety Group were advised that going forward no such equipment purchases were being approved. | Risks are not mitigated. |

| Recommendation 3 and 4 | Priority level |
|---|---|
| **3.** Procedures should be updated to detail assurance reporting relating to Pseudomonas Aeruginosa testing and cleaning regimes in appropriate areas e.g. taps, and sink drainage outlets (with associated monitoring and reporting arrangements). (**D**) | **High** |
| **4.** All existing equipment items which use/supply water, should be reviewed to ensure appropriate risk assessment, monitoring/testing and maintenance regimes are applied. (**D**) | **High** |
| **Management Responses 3 & 4** | **Responsible Officer/ Deadline** |
| 3. Agreed. The water safety reporting regimes will be included as an agenda item for discussion at the next meeting of the Water Safety Group. Appropriate monitoring and reporting arrangements will be implemented.<br><br>4. Agreed. | (3) Assistant Director of Operations and Estates<br>July 2019<br><br>(4) Director of Nursing/ Assistant Director of Operations and Estates<br>July 2019 |

| Findings 5: Governance: Water Safety Group | Risk |
|---|---|
| Good practice was evidenced in the establishment of a Health and Safety Committee (in accordance with The Safety at Work Act 1974), and a Quality and Safety Committee.<br><br>The Water Safety Policy states that *"The Health & Safety Committee has responsibility for the following:*<br><br>• *to review and consider ..water management issues.*<br>• *to develop systems to monitor ..*(and).. *receive exception reports .. and* (take) *remedial and preventative action taken; and*<br>• *to appoint subcommittees.*<br><br>The Water Safety Group (WSG) has delegated responsibility to ensure that effective monitoring systems operate. Key tasks include:<br><br>• *"ensuring that appropriate policies and procedures in place..* (including) *for managing incidents;*<br>• *to identify potential hazards and develop appropriate control measures;*<br>• *describing the water systems;*<br>• *develop clear guidance; and*<br>• *provide <u>regular</u> assurance and exception water reports to the Health & Safety Committee & Infection Control Committee."* | Ineffective governance arrangements. |

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| The Water Safety Policy indicated that the Water Safety Group should meet quarterly with extensive membership in accordance with HTM 04 – 01 e.g. Director of Nursing – Chairperson, microbiologist and others.<br><br>At the time of the current audit, management advised that the operational/ management structures were undergoing review and re-organisation.<br><br>Noting the above, the Water Safety Group had not met in accordance with the regularity determined within the Policy[4] and without the required attendance (including the absence of the key technical expert i.e. microbiologist and the stated Chairperson).<br><br>*(Also see recommendations **9** & **10** below – relating to the need for reports relating to flushing by departmental managers).*<br><br>*[4] No meetings evidenced between September 2017 and May 2018, noting the requirement in the Water Safety Policy to meet quarterly.* | |
| **Recommendation 5** | **Priority level** |
| Committees with responsibilities for water safety oversight should:<br><br>a) ensure that appropriate / periodic advisory support has been obtained from a micro-biologist; and<br><br>b) the Water Safety Group should:<br><br>i. meet quarterly in accordance with the Water Safety Policy; and | **High** |

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| ii. ensure required attendance (particularly by key members) unless a bona fide reason has been provided. Requirements should be reiterated to all members to ensure appropriateness of governance and be monitored and feed into the appraisal process to ensure individual accountability. **(O)** | |
| **Management Response** | **Responsible Officer/ Deadline** |
| Agreed – It is accepted that this is a requirement of the HTM. Noting difficulties in attendance, we will review (potentially including Terms of Reference), with a view to ensuring a practical arrangement that best provides compliance. Going forward we will also review potential attendance of the Assistant Director of Nursing Infection & Prevention. | Assistant Director of Operations and Estates<br><br>August 2019 |

| Finding 6: Monitoring and Reporting: Reporting scope | Risk |
|---|---|
| The UHB Water Safety Policy states that a key function of the Water Safety Group is to:<br>*"provide regular assurance and exception water reports to the Health & Safety Committee & Infection Control Committee".*<br><br>It also states that:<br>*"The Water Management Group will identify any specific issues of water management identified within the water risk assessments which warrant further investigation or support..*(and will)*.. Provide regular assurance and exception water reports to the Health & Safety Committee and Infection Control Committee"*<br><br>and that in turn:<br>*"The Health & Safety Committee...has responsibility (to) receive exception reports."*<br><br>Detailed reporting of work performed / not undertaken via ZetaSafe[5] was provided to the Water Safety Group by the "*Estates analysed performance reports and graphs for in-house Estates staff work*" report. This contained data of the percentage of tasks addressed in-month (**Finding 7**[6]). However, a summary of monthly performance and issues was not reported to the Health and Safety Committee.<br><br>With regard to such monitoring and reporting: | Systems do not control risks.<br>Appropriate testing is not assured. |

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| • there was some variability of approach between the sites (margins within which failed or repeat fail results could be accepted) meaning potentially inconsistent data; also<br>• system assurance capabilities were not fully utilised to manage or report e.g. top repeat failures;<br>• the criticality of missed tasks was not evident (e.g. whether they were repeat failures) - reporting to the Water Safety Group showing only in-month testing; and<br>• While Statutory and Planned Preventative Maintenance were reported to the Water Safety Group, these did not separately identify closure of water related reactive/planned maintenance issues etc.<br><br>The systems, as operated and reported did not therefore provide adequate assurance that appropriate testing had been undertaken.<br><br>Certain of the summary / additional reports could also usefully append explanatory commentary e.g. reasons for missed tests (e.g. resource availability/access etc.).<br><br>[5] *The "ZetaSafe" system is a system to collect, manage and share compliance data. It is utilised to list testing requirements, and log and report results. As such it may flag needs for Planned Preventative Maintenance (PPM) with resultant PPM being logged to action.* | |
| **Recommendation 6** | **Priority level** |
| The scope of management reports should be reviewed, including:<br><br>• achievement of test / re-test targets<br>• achievement of scheduled water related maintenance; | **Medium** |

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|---|---|
| • exceptional data (e.g. repeat failures / problematic outlets and tasks); and<br>• hand-over certificates. (**D**) | |
| **Management Response 6** | **Responsible Officer/ Deadline** |
| Agreed - noting that acceptance of results has now been standardised. With regard water related maintenance, separate job numbers within Zetasafe and Planet previously precluded this, but this is now being addressed. These are now reported for Singleton with full reporting across all sites to follow (see fuller comment at **recommendation 13**). | Assistant Director of Operations and Estates<br><br>July 2019 |

| Finding 7: Monitoring and Reporting : Assurance | Risk |
|---|---|
| Water Safety Procedures state:<br><br>***Quality & Safety Committee***<br><br>"*..receive assurance regarding Water management arrangements through the Health and Safety committee report which will include an update on Water management issues".*<br>***Health & Safety Committee***<br><br>"*..receive exception reports from unit Directorates on water matters and remedial and preventative action taken*".<br><br>A briefing by the Assistant Director of Operations (Estates) "*Water Assurance Report*" was submitted to the Health and Safety Committee in January 2018 and formed the basis for later updates to the Operational Health and Safety Committee. However, exception / update reports (or agenda items) were not evidenced to either the Quality and Safety Committee or the Health and Safety Committee[6].<br><br>[6] *The percentage of monthly water temperature compliance checks completed in-month (de-facto Key Performance Indicators - KPI's), as logged within ZetaSafe was reported as:*<br><br>*Princess of Wales: Jobs scheduled 2,364; Jobs undertaken 2,364; Percentage 100%*<br>*Singleton: Jobs scheduled 2,623; Jobs undertaken 1,370; Percentage 58%*<br>*Morriston: Jobs scheduled 2,038; Jobs undertaken 1,997; Percentage 98%*<br>*Jobs scheduled 7,025; Jobs undertaken 5,731; Percentage 81.5%* | Management are not appropriately informed.<br><br>Statutory duties are not performed. |

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| *The detail of this variability was not formally reported beyond the Water Safety Group. We were advised that the variability related to staffing levels.* | |
| **Recommendation 7** | **Priority level** |
| Both the Quality and Safety Committee and Health and Safety Committee should receive exception / update reports as appropriate in accordance with their specified remits (**D**). | **High** |
| **Management Response** | **Responsible Officer/ Deadline** |
| Agreed. While a verbal (minuted) update is provided relating to water matters, where relevant, the Health & Safety Committee would not be sighted on the detail of water testing. There are additional updates to the Operational Health and Safety Committee. However, going forward, we will include a standard summary (exception) report of appropriate detail. We will look to agree the format at the May Water Management Group. | Assistant Director of Operations and Estates<br><br>July 2019 |

| Finding 8: Monitoring and Reporting: Flushing | Risk |
|---|---|
| UHB Water Safety Policy states that:<br><br>*"Department / Locality / Ward Managers are responsible for ensuring that the advice in the WSP is followed and adhered to, particularly with regard to the notification of unused water outlets."*<br><br>Health & Safety procedures also require the periodic audit of such systems to ensure compliance.<br><br>HTM 04 -01 further states:<br><br>*"HSG274 Part 2 (HSE 2014) recommends that generally, for infrequently used outlets, flushing is carried out once a week but that in healthcare facilities the risk assessment, as agreed by the WSG, may indicate a higher frequency" and that "Individuals to whom tasks have been allocated (supervisors and managers as well as operatives) need to have received adequate training in respect of water hygiene and microbiological control appropriate to the task they are responsible for conducting....such as outlet flushing and the cleaning of wash-hand basins."*<br><br>However, we did not find mechanisms by which the Water Safety Group were assured in relation to flushing e.g. departmental returns, audits and training etc[7].<br><br>While the Estates department try to ensure that all wards and departments are aware of their responsibilities, the Assistant Director of Operations and Estates | Operational practices are not controlled. |

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| has been requested by the Water Safety Group to support the promotion of these responsibilities via the intranet.<br><br>[7] Note - The June 2018 Health and Safety risk register also noted the need to "*Develop systems to provide assurance that health and safety managed effectively by non-Service Management Units*", and noted that while "*new structures"* had been put in place, that these as yet provided only "*limited assurance*". The September Health and Safety Committee also noted "*the health and safety arrangements in Service Delivery Units were to be reviewed as part of a new Internal Audit review of the management of health and safety."* | |
| **Recommendation 8** | **Priority level** |
| Water safety monitoring arrangements should be enhanced to provide greater assurance in relation to the flushing of infrequently/unused outlets including for example:<br>a) a review of the assurance mechanisms e.g. initial review against the newly provided infrastructure risk assessments (which should inform current requirements);<br>b) detailing roles and responsibilities at the internet;<br>c) regular promotion of flushing regime requirements. **(D)** | **High** |
| **Management Response 8** | **Responsible Officer/ Deadline** |
| Agreed. As of April 2019 it has been agreed that the domestics will undertake water flushing within clinical areas. The Water Safety Plan will be updated to reflect the same after it is confirmed at the May 2019 meeting of the Water Management Group. At the same meeting we will discuss how this is implemented and how we address this in areas where we don't have domestic | Assistant Director of Operations and Estates<br><br>August 2019 |

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| cleaners. Difficulty in obtaining appropriate attendance at the Water Safety Group should be noted | |

| Findings 9: Management - Training | Risk |
|---|---|
| Water monitoring<br><br>UHB Water Safety Policy states that "*The Health & Safety Committee...has responsibility (to):*<br><br>*consider training programs, the staff development related to water management issues.*<br><br>Testing was directed by the Water Management system – Zetasafe. System exception listings were not fully utilised to direct testing. Though some managers were aware of this potential, the system was not being fully utilised to manage and control, with variability between the sites.<br><br>These were found to relate to training needs. It was also found that some issues of system familiarity related to resource / staff absence.<br><br>As part of enhancing local management's understanding of its operation there would appear scope for review and training in light of newly completed infrastructure risk assessments. We understand that ZetaSafe have been commissioned to undertake such review.<br><br>While a training matrix with refresh frequencies was specified within procedures (and evidenced in operation), induction training related to general water hygiene procedures, and not operation of systems (e.g. ZetaSafe, or Planet[8] input). | Control systems are ineffectively applied. |

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| Noting the devolved Health and Safety governance arrangements for operational units (findings **7** & **8**), no monitoring of departmental water hygiene training was evidenced.<br><br>[8] *The "Planet" system is currently used to raise Planned Preventative Maintenance (PPM) instructions to review / rectify outlets identified as failed by testing. While Zetasafe directs testing, and records results, Planet work cards are used to direct and record the detail of the maintenance work i.e. the precise work done.* | |
| **Recommendation 9** | **Priority level** |
| Management should confirm:<br><br>a) that there are sufficient trained officers both to operate local management systems, and address prioritised maintenance; and<br>b) governance mechanisms by which wider water safety training is assured. **(O)** | **Medium** |
| **Management Response** | **Responsible Officer/ Deadline** |
| Agreed. Additional training will be provided. | Assistant Director of Operations and Estates<br><br>July 2019 |

| Findings 10: Management: Record management / adequacy | Risk |
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| The UHB Water Safety Policy states that "*The Health & Safety Committee...has responsibility (to):*<br><br>• *develop systems to monitor Health Board water management arrangements.*<br><br>Reporting to the Water Safety Group showed "un-acknowledged results" i.e. for June 2018 as:<br><br>Princess of Wales 4%<br>Singleton 56%<br>Morriston 100%.<br><br>It is understood that such disparity is long-standing, and that no action has been taken in respect of the same.<br><br>The ZetaSafe system data entries for the Morriston site contained 62 pages of failed results, and 1,081 items with Open Notes (636 POW), where we were informed that these had not been entered to the system. We were advised that the listings provided from ZetaSafe to the audit differed in each site as managers were unable / unfamiliar with the required options for equivalent listings. Direct comparisons were therefore impeded.<br><br>These latter data disparities were not recognised by site managers or reported to the Water Safety Group. | Systems do not control risks.<br>Data is not robust.<br>Reporting is not comparable.<br>Reporting is not comprehensive. |

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| Noting the same, the robustness of data (and therefore the required testing/maintenance results) cannot be assured.<br><br><u>Omitted sites</u><br><br>The UHB Water Policy describes a key task of the Water Safety Group as:<br><br>*"Describing the .. information on the design and operation of the individual water systems, ensuring this information is retained on each site."*<br><br>and required completion of a commissioning checklist.<br><br>A number of areas and buildings were found with no data, including Quarella Road, and the new Trust Headquarters (where initially it was thought that the UHB were not responsible for monitoring the water supply - though management were not provided with assurances from other parties)[9].<br><br>As noted above, due to the absence of monitoring via a fuller range of exception reports by management, including confirming that all relevant assets had been logged on the systems, this was missed.<br><br>New build hand-over certificates were available from the capital project office (detailing water facilities and risk assessments)[10]. However, the staff responsible for water monitoring were not able to provide these to the audit. | |

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| [9] *It is recognised that these buildings are non-healthcare premises, and as such lesser requirements apply to water testing. However, management were not able to explain other areas with no data, and as such they appear illustrative of the risk of incomplete system data.*<br><br>[10] *This forms part of a system operated by the Capital Estates function to ensure that all relevant matters concerning newly acquired, or disposal properties are addressed. This is addressed by completion of a single form, which has been evidenced.*<br><br>*Note – therefore initial audit focus on including remote sites with potentially poor infrastructure, those which may be overlooked, and high risk areas (such as neo-natal). Following initial audit findings, this was extended to include focus on ZetaSafe operation at the three major sites.* | |
| **Recommendation 10** | **Priority level** |
| A full review should be undertaken of the ZetaSafe system to:<br><br>a) ensure accuracy and consistency of data within the ZetaSafe system across sites (e.g. outlets with no data, and unacknowledged results);<br>b) ensure that all (and only) relevant assets are included within ZetaSafe (including new builds, and removal of disposed assets); and<br>c) confirm appropriate operation of system coverage and test selection (setting of system parameters etc.) informed by the new infrastructure risk assessments. **(D)** | **High** |
| **Management Responses** | **Responsible Officer/ Deadline** |
| a) Accepted. We have reviewed and standardised working practices regarding Open Notes. Positive readings now automatically close Open Notes (providing standardisation).<br>b) Agreed. | Assistant Director of Operations and Estates<br><br>July 2019 |

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| c) Accepted. Zetasafe are now reviewing system parameters to ensure consistent approach. | |

| Findings 11 & 12: Legionella sampling | Risk |
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| Legionella<br><br>WHTM 04-01 states:<br>*"Legionella monitoring should be carried out where there is doubt about the efficacy of the control regime or where the recommended temperatures, disinfectant concentrations or other precautions are not consistently achieved throughout the system. The WSG (Water Safety Group) should use risk assessments to determine when and where to test."*<br><br>Whilst noting the same, the UHB's Water Safety Plan (approved by the UHB Quality and Safety Committee in May 2018) states that:<br><br>*"The Health Board is seeking to commence a program of Legionella testing based on the table below (See **Appendix B**) for the area identified as requiring Legionella testing to take place the frequency of testing will be as follows:*<br><br>*Three samples will be taken within the area identified these being the system Sentinel outlets. These outlets will be tested for Legionella on a monthly basis. If there are three clear sets of readings sampling will reduce to bi monthly (retests that are negative will be treated as a clear result). If there are three sets of clear readings sampling will move to 3 monthly sampling. Sampling will never reduce further than three monthly."* | Risks are not mitigated in accordance with regulations.<br><br>Value for money is not assured.<br><br>Service provision is inappropriate. |

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| Infrastructure risk assessments assess "*water risks on all buildings owned or occupied by the Health Board and its equipment…in accordance with the guidance in ACoP L8 (2013), BS8580 (2010), and relevant HTMs in order to identify risks and assess water quality issues from work activities and water sources on the premises and to organise any necessary precautionary measures.*"<br><br>At the time of the current review, the infrastructure risk assessments were out of date and were not being referenced. However, a specialist water management company had recently provided revised risk assessments for all ABMU properties which were to be applied.<br><br>Noting the above, whilst recognising that the WHTM recommends the use of risk assessments to determine when and where to test, at the time of the review, the same were not being applied. Additionally, noting lapse of the testing contract, the audit did not evidence legionella testing in accordance with the above.<br><br>Legionella testing (in accordance with the agreed Water Safety Plan) remained to be formalised with the public health laboratory via a Service Level Agreement. | |
| **Recommendations 11 & 12** | **Priority level** |
| 11. Legionella sampling should be completed in accordance with the approved Water Safety Plan and/or risk assessments produced to determine the testing requirements. (**O**) | **High** |
| 12. A service level agreement / contract for water testing should be appropriately concluded. (**O**) | **High** |

| Management Responses | Responsible Officer/ Deadline |
|---|---|
| Agreed. The Water Safety Plan states that we would routinely test for legionella, although under the WHTM guidance there is no requirement to test for legionella as it is based on an assessment of risk. Whilst the Health Board is aspiring to implement a programme, current practice is that we test for legionella where we have an adverse result or as part of a commissioning / decommissioning process. The water safety plan was not being adhered to at the time of audit. | Assistant Director of Operations and Estates<br><br>July 2019 |

| Finding 13: Management - Work / re-test instructions | Risk |
|---|---|
| The Water Safety Plan states:<br><br>*"Currently, the Department is rolling out the ZetaSafe system. This means that currently we have two procedures for recording the results of water monitoring tests"* stating that for the old system *"the results are logged on the Planned Preventative Maintenance Card itself".*<br><br>However, while some sites appended ZetaSafe instructions to PPM cards, others simply raised a Planet instruction to test in the appropriate ward, thus not instructing test of the specific water outlet which had failed.<br><br>It was additionally observed that some rectification occurs on nightshift when queries cannot be raised with Estates staff as to the outlet issues. | Risks are not addressed.<br><br>Un-actioned risks are reported as addressed. |
| **Recommendation 13** | **Priority level** |
| Zetasafe specification of outlets requiring action should be appended / added to Planet job cards at all sites. (**D**) | **Medium** |
| **Management Response** | **Responsible Officer/ Deadline** |
| Agreed, this has been actioned since audit fieldwork at Singleton, who now additionally input the Planet number to the ZetaSafe system for correspondence of records. We will look to confirm roll-out of this methodology to the other sites. | Assistant Director of Operations and Estates<br><br>July 2019 |

| Finding 14: Risk monitoring and reporting | Risk |
|---|---|
| Welsh Health Technical Memorandum 04 ("Safe water in healthcare premises") is one of the key guidance documents around which the ABMU water policies were developed. This required risk assessment by area, with prioritised water testing, and provides supplemental guidance for" augmented *care*" areas i.e. a risk based approach[11] (see **findings 11** & **12**).<br><br>HSE's ACoP L8, also required a risk assessment to be carried out and reviewed regularly and specifically whenever there was reason to suspect that the current assessment was no longer valid.<br><br>At the time of the current review, the infrastructure risk assessments were out of date and not being referenced (see previous).<br><br>Water risks were not included within the Health and Safety risk register. The outdated risk assessments, together with minuted statements relating to need for investment in infrastructure upgrade, resource, and monitoring systems, points to several risks in this area.<br><br>Reporting / escalation of key water safety risks via a water risk register to Health & Safety / Corporate registers was not evidenced (risks at this level being denoted generically as risk of water contamination). A key risk at the time of audit was the lapse of the legionella testing contract meaning that such an exception report would have profiled no test results (i.e. non-compliance with the dynamic test regime).<br><br>Similarly, whilst management advised that verbal updates / update reports were presented, a regular formatted report profiling water management risks was not | Value for money is not assured.<br><br>Management/Board members are not effectively advised of risks. |

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| evidenced to the relevant committees (e.g. testing of various types with percentage failure etc.).<br>[11] *Welsh Health Technical Memorandum 04 ("Safe water in healthcare premises"), and HSE's ACoP L8 (which requires risk assessment by area, with prioritised water testing, and provides supplemental guidance for "augmented care" areas i.e. a risk based approach.,* | |
| **Recommendation 14** | **Priority level** |
| Appropriate water management risk monitoring and reporting arrangements should be implemented. (**D**) | **Medium** |
| **Management Response** | **Responsible Officer/ Deadline** |
| Agreed. A specialist water management company has recently provided revised risk assessments for ABMU properties in accordance with regulatory requirements. However, this is to be reviewed in the context of the new UHB risk prioritisation, and escalation / reporting arrangements. | Assistant Director of Operations and Estates<br><br>July 2019 |

# Appendix B - Legionella procedures (Water Safety Plan - extract)

**Table 2: Water Samples Undertaken within Health Board Properties**

| Service | Task | Frequency |
|---|---|---|
| | | |
| | | |
| Hot Water Systems | | |
| | Legionella<br>As specified by the Water Management Group | monthly |
| | | |
| Cold water Systems | | |
| | Legionella<br>As specified by the Water Management Group | monthly |
| | | |

**Frequency of Legionella Testing**

The Health Board is seeking to commence a program of Legionella testing based on the table below for the area identified as requiring Legionella testing to take place the frequency of testing will be as follows:

Three samples will be taken within the area identified these being the system Sentinel outlets. These outlets will be tested the Legionella on a monthly basis. If there are three clear sets of readings sampling will reduce to bi monthly (retests that are negative will be treated as a clear result). If there are three sets of clear readings sampling will move to 3 monthly sampling. Sampling will never reduce further than three monthly. If all site readings are clear for three consecutive months site testing will move automatically move to a frequency of three monthly testing. If there are known areas where the temperatures are consistently outside parameters of between 20$^{o}$c / 50$^{o}$c then monthly testing will be implemented. The monthly testing will be undertaken, if there are three clear sets of readings sampling will reduce to bi monthly (retests that are negative will be treated as a clear result). If there are three sets of clear readings sampling will move to 3 monthly sampling. If there are two clear results they will then move to six monthly testing. A list of the areas tested is detailed in Appendix 4[12]

[12] *Audit note – not included here.*

## Audit Assurance Ratings

 **Substantial assurance** - The Board can take **substantial assurance** that arrangements to secure governance, risk management and internal control, within those areas under review, are suitably designed and applied effectively. Few matters require attention and are compliance or advisory in nature with **low impact on residual risk** exposure.

 **Reasonable assurance** - The Board can take **reasonable assurance** that arrangements to secure governance, risk management and internal control, within those areas under review, are suitably designed and applied effectively. Some matters require management attention in control design or compliance with low to **moderate impact on residual risk** exposure until resolved.

 **Limited assurance -** The Board can take **limited assurance** that arrangements to secure governance, risk management and internal control, within those areas under review, are suitably designed and applied effectively. More significant matters require management attention with **moderate impact on residual risk** exposure until resolved.

 **No Assurance** - The Board has **no assurance** that arrangements to secure governance, risk management and internal control, within those areas under review, are suitably designed and applied effectively. Action is required to address the whole control framework in this area with **high impact on residual risk** exposure until resolved

## Prioritisation of Recommendations

In order to assist management in using our reports, we categorise our recommendations according to their level of priority as follows.

| Priority Level | Explanation | Management action |
|---|---|---|
| **High** | Poor key control design OR widespread non-compliance with key controls.<br>PLUS<br>Significant risk to achievement of a system objective OR evidence present of material loss, error or misstatement. | Immediate* |
| **Medium** | Minor weakness in control design OR limited non-compliance with established controls.<br>PLUS<br>Some risk to achievement of a system objective. | Within One Month* |
| **Low** | Potential to enhance system design to improve efficiency or effectiveness of controls.<br>These are generally issues of good practice for management consideration. | Within Three Months* |

* Unless a more appropriate timescale is identified/agreed at the assignment.