

Water Stewardship Malawi: Implementing the Alliance for Water Stewardship Standard with the Queen Elizabeth Central Hospital

This report documents the lessons generated by the application of the Alliance for Water Stewardship (AWS) Standard with the Queen Elizabeth Central Hospital (QECH) in Blantyre, Malawi. Under the Scottish Government funded Water Stewardship Malawi initiative, Water Witness International began working with the hospital management in 2017 to implement the AWS Standard, one of the first applications of the Standard in a hospital globally. The objectives of the exercise were to:

1. Secure cost-effective and long-term management of water risks for QECH at the site and catchment level through supported implementation of the AWS Standard.
2. To explore the benefits, challenges and value of the AWS Standard in improving water security and wellbeing for the hospital, its patients and catchment stakeholders.
3. To generate lessons regarding water security in the health sector in Malawi and build positive impact of AWS in the health sector in Africa and globally.

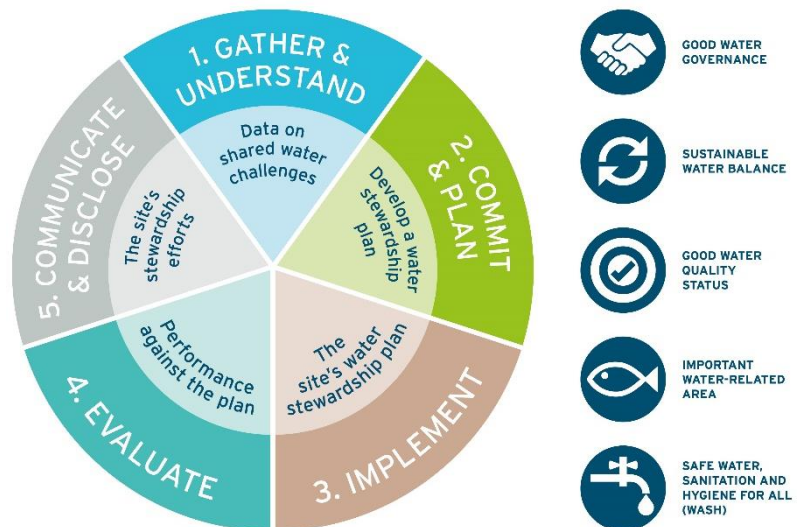
The results, benefits and challenges are presented below, together with conclusions and recommendations for improving the AWS system and water stewardship practice in the health sector.

Background and methodology

Queen Elizabeth Central Hospital (QECH) is a publicly owned health facility opened in 1957. Since then it has grown from a 400-bed hospital to a 1,400-bed hospital, making it the largest hospital in Malawi. Located in Blantyre city, QECH has approximately 1,200 staff members and services around 1,500 in-patients and 3,000 out-patients daily. As the country’s largest health care provider, QECH is exceptionally aware of the importance of proper water and waste management for health outcomes.

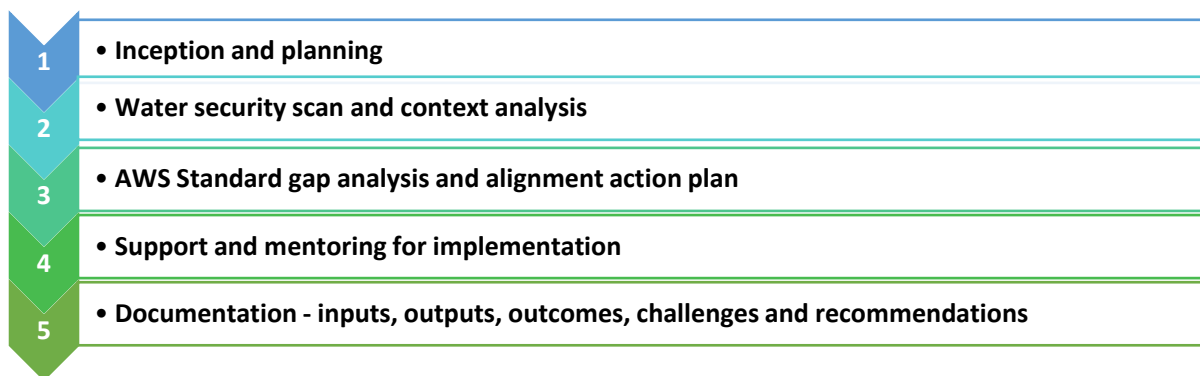
What is the Alliance for Water Stewardship Standard?

The AWS Standard offers a credible, globally applicable framework for major water users to understand their own water use and impacts, and to work collaboratively and transparently with others for sustainable water management within the wider water catchment context. Implementers follow the steps and guidance in the AWS Standard to achieve good water stewardship practices that improve site water performance and contribute to wider sustainability goals.



The AWS Standard is built around five steps, which each contain a series of criteria and indicators. Following the steps and criteria will lead to improved performance in five areas: water balance, water quality, healthy status of important water-related areas, good water governance and safe water, sanitation and hygiene for all. Sites making claims to good water stewardship are audited and certified by credible, third party auditors.

Implementation methodology



WWI conducted an initial desk-based review of the site and catchment water security context for QECH to identify likely water risks and opportunities. Through site visits and documentation review, WWI then conducted a gap analysis with the site to assess current performance relative to the criteria of the AWS Standard. This identified priority areas and needs for compliance. Following the gap analysis, the team drafted an action plan for QECH to begin demonstrating compliance against the criteria of the Standard. The WWI team provided training, guidance and support to QECH staff and management throughout the implementation process in the form of site visits, calls, and review of materials and plans.

Water security: Site and catchment context

QECH is located in Blantyre, within the Wamkulumadzi sub-basin of the Shire River Basin. Water resources and the wider ecosystem in Blantyre are highly degraded, largely due to the pressures of large, dense urban population. Many rivers within the sub-basin are contaminated by sewage and solid waste, and are negatively impacted by invasive species, sedimentation, unsustainable cultivation practices and deforestation.

Drought and flood events have increased in frequency, intensity and magnitude over the past two decades in the Wamkulumadzi sub-basin as a result of climate change. These frequent dry spells and floods have affected Blantyre city's water supply, which is already under stress from a rapidly growing population.

QECH relies entirely on the Blantyre Water Board (BWB) for its water supply. However, there are frequent interruptions which cause water shortages at the hospital. QECH also suffers from pipe breakages and blockages, and leaking taps and toilets, which contribute to inflated water tariffs for the hospital. Wastewater from the hospital is disposed of through the sewer network of the Blantyre City Council. QECH has bathrooms accessible to staff, patients and guardians for sanitation and hygiene purposes. However, many of the facilities are not fully functioning due to poor maintenance and widespread vandalism and theft.

A Water Security Scan identified the following priority water risks:

- Water shortages caused by interruptions to water supply and insufficient on-site storage capacity.
- Contamination of water sources from inadequate treatment of sewage and chemical waste.
- Potential health impacts of poor water, sanitation and hygiene provision.
- Costs incurred from water leakages and damage to on-site water supply infrastructure.



Changes driven by AWS Standard implementation

Wastewater treatment

Wastewater from QECH is collected and treated at the Blantyre City treatment works, however it was found that the sewer line which transports all of the hospital's waste was broken some 300 meters from the site's boundary, and that the waste was flowing over residential and farm land and into the Naperi river. This situation posed a severe public health risk. Blantyre City Council are responsible for operation and maintenance of the sewerage network and the issue was taken up with them by the QECH team. QECH's engagement of the Council initiated the repair of the sewage line, ensuring the proper treatment of wastewater from the hospital and improving the water quality of the Naperi river.



Untreated waste from sewage line



Sewage line repair

Chemical waste disposal

It was observed during initial site visits that chemical waste from the hospital's laboratory and radiology department was being inappropriately disposed of through the sewer network, with an untold effect on water quality downstream. Upon learning of the regulations for chemical waste disposal, the site enlisted support from the Blantyre City Council to advise and support the hospital to implement proper chemical waste disposal and treatment, which is underway.



Disposal of chemical waste at QECH

Water leakages

The hospital's ageing water supply infrastructure suffers from constant leakages. It's estimated that 50% of the hospital's water is lost to leakages, which leads to water shortages and excessive water tariffs. QECH had previously engaged the Blantyre Water Board (BWB) regarding the leakages, however, progress stalled. QECH reinitiated engagement on this issue in regard to AWS Standard implementation, and the BWB have assisted by carrying out an assessment of underground leakages at the hospital. Plans for maintenance of the network and repair of leaking pipes are underway.

Benefits of AWS Standard implementation

Improved stakeholder relationships

Stakeholder engagement and collective action are at the heart of water stewardship and the AWS Standard. QECH have engaged the Blantyre City Council and Blantyre Water Board on water stewardship, and by doing so have significantly improved their working relationships with these key stakeholders.

“The working relationship between the hospital and the City Council has improved tremendously”.

Kondwani Chisi – Health Services Administrator

Understanding water risks and impacts

While QECH was previously aware of many of the water issues faced at the hospital, the framework of the AWS Standard to systemically identify water risks enabled the site to identify and prioritise issues of sewage and chemical waste management which had previously gone unrecognised.

Challenges of AWS Standard implementation

Financial constraints

As a publicly funded hospital in Malawi, QECH faces severe financial constraints and must balance many competing needs. While implementation of the Standard assisted the hospital in identifying priority water risks, the resources required to address the issues were often not available. Likewise, QECH cannot justify any additional costs related to implementing the Standard or seeking Certification. The government stakeholders of the hospital, Blantyre City Council and Blantyre Water Board, faced similar financial constraints, limiting their ability to address the issues raised by QECH through Standard implementation.

Conclusions

The exercise shows that the AWS Standard is valuable in identifying, documenting and driving action on water issues which pose strategic risks to the cost-effective functioning of a hospital, and public health. However, it also highlights the human resource constraints and financial barriers faced by public sector institutions seeking to implement, and gain certification against the AWS Standard.

In the case of QECH, applying the AWS Standard enabled the hospital to identify key water risks and initiate action to address some of these issues, namely waste disposal and the assessment of leakages. However, improvements to on-site water supply infrastructure and provision of WASH have yet to be realised, largely due to limited resources. This is an important lesson regarding the viability of AWS Standard implementation for sites that lack the necessary resources to ensure their own water security.

Recommendations

1. **AWS Self-Verification for public institutions:** AWS currently operates a self-verification system which allows sites to do an internal assessment of their compliance with the Standard and make a claim about performance. However, it largely functions as a temporary measure for sites pursuing certification, as it can only be renewed twice. For public institutions such as QECH, who largely utilise the Standard as a framework for water management, yet lack the resources to become certified, self-verification offers the opportunity to be recognised and rewarded for their water stewardship efforts.