

Water and Sanitation in the News

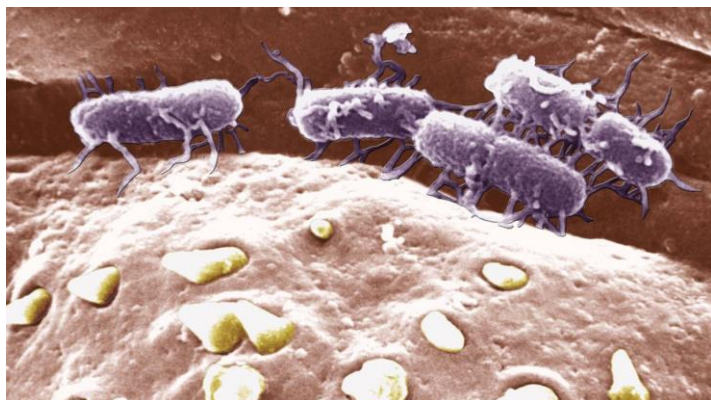
Typhoid — “Shaken or Stirred?”

- by Mike Nord – WAMTech Sales Executive

General knowledge from media and news reports have confirmed we are in one of the biggest crises South Africa is facing. We are facing water shortages at critical level and old failing water infrastructure with a repair cost outweighing Government budget. The effects on the economy speak for itself and with increasing service delivery protests and inefficient funding allocated to municipalities to run day to day operations at WWTW and WTW, it seems to be two steps forward and ten steps back.

Measures are being put in place to improve the situation, but now we face a consequence (one of many), that if steps were taken earlier, could have been possibly averted.

Recently, there has been reports of a typhoid outbreak in our neighbouring country Zimbabwe, with two lives claimed by the disease. This has placed South Africa on high alert.



BSIP SA/Alamy

Bacterium *Salmonella Typhi* is spread by faeco-oral contamination. It is transmitted into the human body by direct contact or through swallowing food or [water that has been contaminated with the bacteria](#).

In Zimbabwe, experts indicated the cause of the outbreak to be contaminated water supplies. Because of drought, there has been a breakdown of both water supply and sanitation systems. This has led to contamination of open water sources.

South Africa does record a few cases of typhoid every year. In 2013, there were 69 confirmed cases, and 115 in 2014, 81 in 2015 and 124 in 2016.

Do these escalating numbers and the fact that Zimbabwe has now had a typhoid outbreak pose a threat to South Africa?

A Little Perspective

In South Africa, the monitoring and management of water quality is governed by regulations and policies that are based on international standards. WSA's such as metro's, district or local municipalities, are required by the national Blue Drop System to submit information regarding water quality and the management thereof regularly. Since 2009, urban municipalities have been consistently showing improvement in their water quality management, however, some of the rural and under resourced municipalities are falling behind. A major concern has been that rural municipalities are failing to report the required information and are not complying with some of the regulator's requirements regarding the overall management of water.

The seeming concern of a typhoid outbreak looks more to affect rural communities given that water quality in urban areas is managed and monitored more efficiently. However, a major concern is that our urban areas has vast informal settlements where sewerage in some areas are clearly visible and children are exposed to it. We also need to take into account that education in health relating to water is not efficient.

Drug-resistant typhoid fever becoming an epidemic in Africa and Asia

Our local water and sanitation challenges with the attendant health risks are occurring at a time when the world is facing an epidemic of multidrug-resistant typhoid fever. That's the conclusion of the largest study recently of genomes of the bacterium that causes the diseases, *Salmonella enterica* Typhi. According to the researchers, a clone of the bacterium that is frequently multidrug-resistant, called H58, is rolling across Asia and Africa. Its spread is likely to increase the cost of treatments and lead to more complications, they warn. "There is a sense of urgency now," says Gordon Dougan, a geneticist at the Wellcome Trust Sanger Institute in Hinxton, U.K., and an author of the paper.

Typhoid spreads through contaminated water or food, causing fever, headache, and other symptoms. If not treated, the disease can lead to complications like gastrointestinal perforation and kill up to 20% of patients. Estimates range from 10 million to 30 million cases a year. Globally, about 200,000 people die each year of the disease. *S. enterica* Typhi that are resistant to multiple antibiotics first appeared in the 1970s. But H58 has been particularly worrying to scientists, because it is cropping up in more and more countries.

WAMTech are specialists in implementing technology systems for improved governance, focussing on Water and Public Health Information Systems

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Picture: BBC

Dr Kerrigan McCarthy, Head of Outbreak Response at National Institute of Communicable diseases, says that there is no risk of an outbreak at the moment in South Africa and that the NCID is at present just creating awareness on the disease because it is highly contagious.

Still, with what we know about the facts of the status of infrastructure and the demographics of our population as well as the socio economic factors a vast majority of our communities live in, the question remains: are we in the short term facing this reality as our neighbour Zimbabwe are now contending with?

Sources: *News24, SABC, VOCFM, 702, AAAS*

An increasing scarcity of water, as well as health risks from pollution, is fuelling the need for more efficient and innovative water and health management solutions. Actively implementing and water and asset management systems can go a long way in preventing risks such as disease and water scarcity due to operation and infrastructure failures.

WAMTechnology is a provider of technological solutions and specialist engineering services in both the health and water sectors. WAMTech provides integrated solutions that are cost effective and that maximise efficiency to help achieve good governance. Our methodology is as follows:

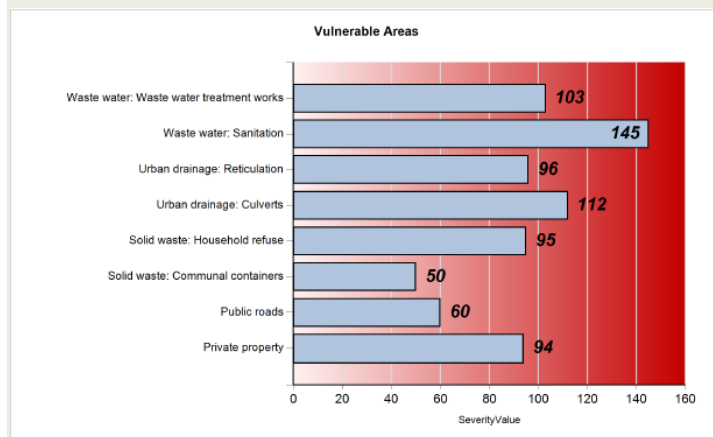
- **ASSESSING** your information gathering / systems monitoring processes, while providing software programs and tools to effectively manage this information
- **INNOVATING** by using the information gathered / monitored in better ways through technology to enhance analysis accuracy and presentation of data
- **TRAINING** and supporting staff and stakeholders in how to use programs, and
- **EMPOWERING** and supporting staff and stakeholders in how to use applications, and
- **SUSTAINING** the systems we help put in place via testing, reporting, updates and feedback.

Water infrastructure challenges are in no way unique to South Africa, and the WAMTech system has been deployed immediately with great success in various countries to facilitate the management, administrative and operational functions of a water care works and related activities. The value of having done work in other parts of Africa (including Botswana, Namibia, Zambia, Zimbabwe and Malawi) has given us a huge advantage in building systems aimed at meeting local requirements, both in terms of available skills sets and limited technology infrastructure.

Our water infrastructure operational management system has been implemented in 54 municipalities in southern Africa. Along with our Municipal Assistant™ system, we provide engineering services and assist municipalities in managing and operating water and waste water plants on a daily basis.

In addition to supplying water infrastructure operational management systems and engineering services, WAMTechnology is an experienced provider of **community vulnerability and risk assessments**. WAMTech has conducted recent projects for ICLEI whereby selected cities and communities across six African countries were assessed for vulnerabilities related to the supply of drinking water and public health risks related to sanitation.

Risks are assessed according to a range of identified hazards including the impact on components of the infrastructure critical for water supply and public health and safety.



Among others, hazards associated with relevant water infrastructure age, capacity and condition; as well as operations and maintenance; floods or droughts; theft and vandalism; and socio-economic factors are assessed in order to determine a rating on a cumulative events matrix – indicating the likelihood and severity of a community's vulnerability to experience events ranging from 'insignificant/minor' to 'major/catastrophic' in terms of water supply and public health.

In addition to the above core areas of expertise, we also develop software applications on an ad hoc basis and provide various specialist services in numerous water related areas.

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