



Hydro Politics

Newsletter

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COVID-19 pandemic shows the importance of water and sanitation management

The COVID-19 pandemic demonstrates the importance of human right to water and sanitation and efficient water management. Since the beginning of the pandemics water based hygien plays crucial role to recovery and prevention. In other words ;timely and sufficient availability of water of adequate quality is a prerequisite for the provision of safe water, sanitation and adequate hygiene.

Billions of people around the world are continuing to suffer from poor access to water, sanitation and hygiene, according to a new report by UNICEF and the World Health Organization. Some 2.2 billion people around the world do not have safely managed drinking water services, 4.2 billion people do not have safely managed sanitation services, and 3 billion lack basic handwashing facilities.

As the world confronts the coronavirus pandemic, experts say that a key way to minimize the odds of getting sick is by washing your hands thoroughly and frequently. It's harder to practice hygiene when you have less access to water, and hygiene is critical for health. One should never stop thinking about why water is so important.



The Water Supply and Sanitation Collaborative Council (WSSCC), a UN-based organisation, says the coronavirus pandemic is a “hygiene crisis”, and there is a clear link between water access and a community’s ability to contain the spread of the virus. Nearly 3 billion people lack handwashing facilities with soap and water at home, while 900 million school children, as well as one in six health care facilities, have no basic hygiene services. In addition, many of those 3 billion people are in the most vulnerable situations



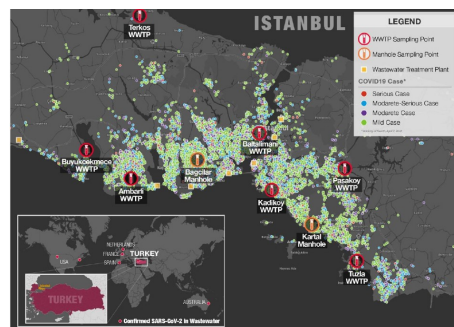
The human rights to water and sanitation and the 2030 Agenda for Sustainable Development Safe drinking water and sanitation are recognized as basic human rights, as they are indispensable to sustaining healthy livelihoods and fundamental in maintaining the dignity of all human beings.

Improving water resources management and providing access to safe and affordable drinking water and sanitation for all is essential for not only building peaceful and prosperous societies, but also to ensure healthy World

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Wastewater-Based Epidemiology Detects COVID-19 Virus



Coronavirus: Testing sewage

Wastewater-based epidemiology (WBE) is the monitoring and analysis of wastewater in sewer systems to glean epidemiological information. The practice has already proven itself useful over the years. For instance, it provided early detection of a 2013 polio outbreak in Israel, and it already is an accepted tool to monitor legal and illegal drug use in a population. The list of uses for WBE is expected to lengthen to include a wide range of diseases, substance exposures, and effects of temperature increases, but right now it's being discussed in the context of the COVID-19 pandemic, with more than a dozen research teams around the world testing wastewater for SARS-CoV-2 viral RNA.



Early in the Covid-19 pandemic, research revealed that people infected with the virus "shed" viral material in their faeces. That insight prompted an interest in "sewage epidemiology"

While many countries, including Spain, have started monitoring their wastewater, there have been some early problems - one result that suggested the coronavirus was present in Barcelona in March 2019 may have been the result of laboratory contamination.

There are problems to be solved in order to maximise the accuracy

and value of a sewage-based surveillance system: the propensity of the virus to break up when it is in water, the effect on the result of other contaminants and how many sampling points need to be included in a UK-wide network in order to build up a useful picture of the outbreak.

Sewage could be early warning system for COVID-19

Researchers are monitoring genetic traces of COVID-19 in wastewater to track the course of the pandemic, find hotspots and predict outbreaks. Now standard methods are needed for a global sewage epidemiology system

Wastewater surveillance is routinely used to track drug and pesticide concentrations, and in monitoring the spread of antimicrobial resistance.

This has shown the need for standard methods of testing to ensure results are comparable between different locations. For example, results will depend on the time of day samples are taken. The Sewers 4 COVID team believes clear rules are needed on how to track COVID-19 in wastewater.

There is a wider agreement among scientists that we need to come up with worldwide protocols on how to do sewer surveillance

SARS-CoV-2 Detection for Istanbul Wastewaters in Turkey

The wastewater samples were collected from inlets of seven WWTPs in Istanbul, Turkey and 2

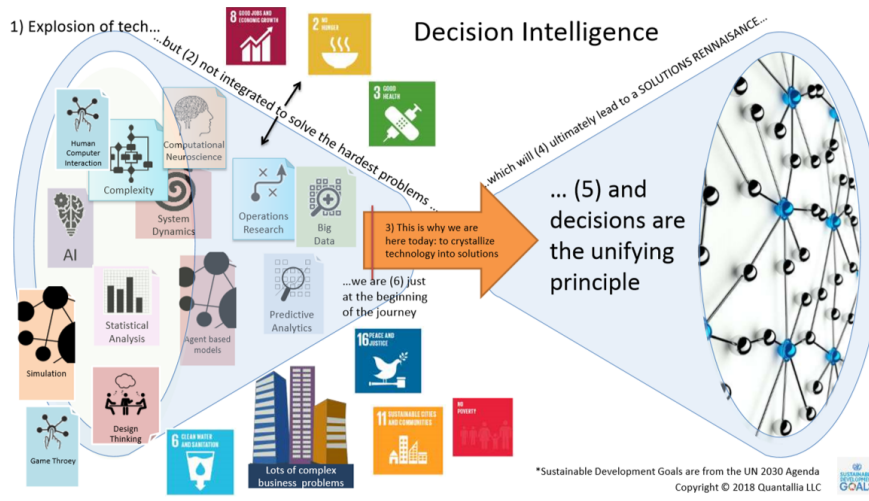
manholes nearby Istanbul epidemic hospitals in 250 ml sterilized bottles. Figure 2 presents a map indicating the first confirmed SARS-CoV-2 detections in the world together with the detection points in Istanbul WWTPs and manholes in Turkey. The map demonstrates sampling points together with the reported Covid-19 cases in the districts of the WWTPs and manholes.

It is stated that starting from Istanbul, the distribution of epidemic was followed not only with blood test but with wastewater monitoring in Turkey. This may allow us to identify the districts not exhibiting many Covid-19 cases, but under high risk. Continuous monitoring of wastewater for SARS-Cov-2 may provide an early warning signs before an epidemic starts in case of infection resurgence



Turkey has been one of the first country to implement the wastewater-based epidemiology detects. HPA played an important role to be implemented this method in Turkey.

Digital Water-Artificial Intelligence– Wise Water Management



Digital thinking will impact every aspect of water, from management of sources, treatment technology and efficiency, consumption and customer engagement, through to re-use, collection and recovery of economically and environmentally important resources. In fact, it has the potential to revolutionise the water sector and its interaction with customers and the supply chain in ways that were previously unimaginable

Digital Water. Smart Water. Internet of Water. Water 4.0.

There are many terms being used to describe the exciting transformation currently taking place in the water sector



Digital technologies offer unlimited potential to transform the world's water systems, helping utilities become more resilient, innovative, and efficient, and in turn helping them build a stronger and more economically viable foundation for the future. Exploiting the value of data, automation, and artificial intelligence allows water utilities to extend water resources, reduce non-revenue water, expand infrastructure life cycles, provide the basis for financial security, and more. With increasing complexity in water systems and management, there is growing potential and need to adopt transformative digital solutions.

For example, remote sensing and digital twin technologies provide connectivity between a utility and its diversified water supply. Various digital technologies then provide connectivity within a utility's operations.

These solutions all leverage the

latest in enabling technologies: cloud, mobile, intelligent infrastructure, sensors, communication

Financial Benefits	Long-term Resiliency Benefits
REDUCED OPERATIONAL EXPENDITURE - Optimised operations reduce energy and maintenance costs - Reduction in costs and risks associated with ad-hoc field maintenance	INCREASED RESILIENCE - Improved operational flexibility from changing climate and demographics - Increased safety through rapid customer engagement on public safety concerns
INCREASED CAPITAL EFFICIENCY - Improved cash flow as a result of targeted rehabilitation of faulty infrastructure - Reduced liability and costs from unexpected water main breaks and sewage overflows	WORKFORCE DEVELOPMENT - Improved cross-department collaboration through systems integration - Reduced safety risk to workforce through lower emergency call-outs
INCREASED REVENUE - Targeted interventions with faulty meters increases revenue - Value-added digital services available to bulk water customers	BRAND AND INNOVATION - Elevates utility brand and engagement in the water industry - Enables the utility to more easily pilot and adopt latest technologies

networks, and analytics and big data. There is no question that the digital age has arrived. Digital technologies are now embedded in our daily lives transforming sectors such as communications, transportation, entertainment, education, manufacturing and healthcare.

The transformation is inevitable as water and wastewater utilities are now facing new risks from increasing demand, water scarcity, water quality and water security, exacerbated by aging and underfunded infrastructure, out of date public policies and climate change. The adoption of digital technologies will become increasingly necessary to provide improved, more reliable, secure, efficient, and cost-effective water and wastewater services.





We need to built a future,
Where people live in harmony with nature

HPA

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