PALL Medical

Recently published guidance on how to manage the water distribution system within premises during the COVID-19 pandemic

"The provision of safe water, sanitation, and hygienic conditions is essential to protecting human health during all infectious disease outbreaks, including COVID-19 outbreak.", states the interim guidance issued by the World Health Organization (WHO) on March 19th, 2020[1]. This interim guidance recommends that current WHO guidance on the safe management of drinking-water and sanitation services should be followed during the COVID-19 pandemic. To date, the COVID-19 virus has not been detected in drinking-water supplies and "currently there is no evidence about the survival of the COVID-19 virus in drinking-water or sewage"[1]. However, "a number of measures can be taken to improve water safety, starting with protecting the source water; treating water at the point of distribution, collection, or consumption; and ensuring that treated water is safely stored"[1].

The German Federal Environmental Agency (Umweltbundesamt, UBA, www.UBA.de) has also published information on the question of possible transmission of SARS-CoV-2 through drinking water (March 12th, 2020[2]). According to current knowledge, coronavirus SARS-CoV-2 is transmitted mainly through aerosols from saliva or discharges from the nose when an infected person coughs or sneezes, or via contaminated surfaces. In Germany the existing multibarrier system, consisting of protection of water resources, water treatment and distribution, in compliance with the Code of Practice for construction and operation of drinking water installations, exerts a safe baseline to avoid waterborne epidemics. Drinking water that is treated and distributed according to the Code of Practice is very well protected against viruses, including coronavirus. In conclusion, the transmission of coronavirus through public water distribution system is, according to current knowledge, highly improbable[2].

Due to the closures and operational interruptions of many buildings globally, including hotels, sports centres, public buildings, schools, kindergartens, swimming pools, etc., a high level of water stagnation is expected. Water stagnation is a significant contributing factor to microbial deterioration of water quality in water systems and can increase the risk from Legionella and other waterborne pathogens. Regular flushing during operational interruption is a common countermeasure suggested by the Code of Practice in several countries.

Alongside existing legislation, several special interest working groups have published specific guidance for in-premise water systems during the COVID-19 pandemic. The ESCMID Study Group for Legionella Infections (ESGLI) has published three guidance documents for the management of Legionella in building water systems. The first guidance, published on March 27th, 2020, is aimed predominantly at hotels, campsites, cruise ships and is relevant to all public, residential and office buildings with similar water systems. By following specific steps, water quality can be maintained for guests, visitors and staff after reopening, without causing health risks[3]. The second guidance, issued on April 9th, 2020, is aimed at hospitals, temporary and converted buildings or parts of buildings and field hospitals used for treating COVID-19 patients. The COVID-19 pandemic may increase the risks of waterborne infections and therefore, appropriate measures should be in place to protect patients and staff from waterborne infections, including Legionnaires' disease. This guidance underlines the importance of updated risk assessments and management plans for controlling risks from Legionella and other waterborne pathogens for all water systems and associated equipment[4]. The third guidance, also published on April 9th, 2020, is aimed at care homes, nursing homes and other residential settings, where there are patients and residents being treated for COVID-19 or for patients with increased susceptibility to infections, such as those who have been transferred from hospitals to make way for COVID-19 patients[5]. In a retrospective study, there was evidence that nearly half of hospitalised COVID-19 patients had a comorbidity, and half of non-survivors experienced a secondary infection[6], suggesting such patients are at increased risk. Among the different measures suggested by these guidance, installation of Point-of-Use (POU) Water Filters for drinking water and water for personal hygiene should be considered, when waterborne pathogens cannot be adequately controlled[4,5].

Public Health England (PHE) has also warned about the risk of Legionella in vacant properties, where water is allowed to stagnate within water systems and as a general principle, outlets on hot and cold water systems should be used at least once a week to maintain a degree of water

flow and to minimise the chances of stagnation[7].
The Centers for Disease Control and Prevention (CDC) has created a guidance with 8 steps to take before a business or building is reopen after a prolonged shutdown, to minimize the risk of Legionnaires' disease and other diseases associated with water[8].

Furthermore, the German Organisation for Gas and Water (Deutscher Verein des Gas- und Wasserfaches e.V., DVGW) published information on the non-permanent interruption of water installations in buildings, on March 24th, 2020[9]. This information refers to schools, holiday apartments, hotels, shops, fitness centres and apartment buildings. For the protection of drinking water, DIN EN 806-5 and DIN 1988-100 should be taken into consideration[9].

Additional guidance was published by the British *Legionella* Control Association on March 25th, 2020[10], listing measures to reduce the growth of waterborne microorganisms during stagnation periods. Similar recommendations have been published on the Spanish Confederation of Hotels and Tourist Accommodation website by Biolinea.com[11] and the Institute of Public Health of Navarre[12] for the prevention and control of *Legionella* in hotels that have been temporarily converted in healthcare facilities in response to the coronavirus outbreak.

References

1 https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19

2 https://www.umweltbundesamt.de/sites/default/files/medien/374/dokumente/stellungnahme_uba_sars-co2_und_trinkwasser-1.pdf

3 https://www.escmid.org/fileadmin/src/media/PDFs/3Research_Projects/ESGLI/COVId_buidling_water_system_guidance_27_3_20_v4_DS_pk.pdf

4 https://www.escmid.org/fileadmin/src/media/PDFs/3Research_Projects/ESGLI/ESGLI_GUIDANCE_FOR_MANAGING_LEGIONELLA_IN_HOSPITAL_WATER_SYSTEMS_DURING_THE_COVID-19_PANDEMIC__20200424_v02.01.pdf

5 https://www.escmid.org/fileadmin/src/media/PDFs/3Research_Projects/ESGLI/ESGLI_GUIDANCE_FOR_MANAGING_LEGIONELLA_IN_NURSING__CARE_HOME_WATER_SYSTEMS_DURING_THE_COVID-19_PANDEMIC__20200424_v02.01.pdf

6 Zhou F., *et al.* (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 395, 1054-1062.

7 https://www.cieh.org/media/4103/covid-19-and-food-water-and-environmental-microbiology-services-phe.pdf

8 https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html

9 https://www.dvgw.de/medien/dvgw/covid19/dvgw-information-trinkwasser-installation-coronavirus.pdf

10 https://www.legionellacontrol.org.uk/news/90/

11 https://cehat.com/adjuntos/fichero_9355_20200330.pdf

12 https://www.navarra.es/NR/rdonlyres/2B788205-9126-4FCC-97DC-D3029D8EDEC5/459971/INSTRUCCIONESPREVENCIONLEGIONELOSISHOTELES1.pdf

medical.pall.com

Pall Corporate Headquarters
25 Harbor Park Drive
Port Washington
NY 11050, USA
Phone +1 516 4843600

Pall International Sàrl
Avenue de Tivoli 3
1700 Fribourg, Switzerland
Phone +41 26 3505300

Pall Asia-Pacific Headquarters
1 Science Park Road, #05-09/15
East Wing, The Capricorn
Singapore Science Park II

International Offices

200420.WGL