News in brief

SCIENTISTS WARN: DON'T DRINK THE STAGNANT WATER

As some regions prepare to lift the lockdowns imposed in response to COVID-19, scientists who study water are worried about the potential for a secondary health crisis waiting in the dormant plumbing of offices, gyms, restaurants and schools, which could house increased levels of pathogens and heavy metals.

"There really isn't a lot of scientific awareness of these larger buildings," says Andrew Whelton, an environmental engineer at Purdue University in West Lafayette, Indiana. "Because of that, there's no guidance."

When Purdue's campus shut down in March, Whelton's laboratory began sampling water in several large buildings across the university.

Water quality in a complex building can vary by season, by time of day or even from room to room. So one-size-fits-all guidelines for flushing systems are unlikely to help, says Purdue environmental engineer Caitlin Proctor. The most common advice is to run all taps at full flow for a set amount of time — usually 5 or 10 minutes — to flush the stagnant water from the pipes.

But one building that the Purdue team studied required more than a full day to flush.

WATER: EDUCATION IMAGES/UNIVERSAL IMAGES GROUP VIA GETTY; REMDESIVIR: ZHANG YAZI/CHINA NEWS SERVICE VIA GETTY; GRAPHIC DATA SOURCE: RESIN/UNIV. SOUTHAMPTON

DRUG REMDESIVIR AUTHORIZED TO TREAT CORONAVIRUS

One of the world's best hopes for treating COVID-19 — a compound called remdesivir — has been authorized as a therapy against the disease. On 1 May, the US Food and Drug Administration (FDA) granted an 'emergency-use authorization' for clinicians to use the drug, which is administered intravenously, in hospitals for people with severe COVID-19.

The authorization came after results from the largest and most rigorous clinical trial yet of the compound showed that the antiviral could shorten the time to recovery from coronavirus infection. Several smaller trials had reported mixed results in the past few weeks, but some had no placebo-controlled arm, making the results hard to interpret.

On 29 April, Anthony Fauci, director of the US National Institute of Allergy and Infectious Diseases (NIAID), said that the latest clinical trial, involving more than 1,000 people, showed that those taking remdesivir recovered in 11 days on average, compared with 15 days for those on a placebo. "Although a 31% improvement doesn't seem like a knockout 100%, it is a very important proof of concept," Fauci said. "What it has proven is that a drug can block this virus." He added that remdesivir would become a standard treatment for COVID-19 in the United States.

Remdesivir, which was previously tested against Ebola, interferes with an enzyme that some viruses use to replicate; these include SARS-CoV-2, which is responsible for the current pandemic.

The latest trial results , which have not yet been published in a peer-reviewed journal, also showed that there were fewer deaths among participants who received the drug, Fauci said, but that trend was not statistically significant. However, the shortened recovery time was significant and beneficial enough for investigators to stop the trial early to ensure that participants receiving a placebo could access the drug.

The FDA's authorization is not a final drug approval, and can be revoked when the conditions required for emergency use are no longer in effect. US distribution of the drug will be government-controlled.

"It may not be the wonder drug that everyone's looking for, but if you can stop some patients from becoming critically ill, that's good enough," says virologist Stephen Griffin at the University of Leeds, UK. The drug's maker is Gilead Sciences in Foster City, California.

HISTORICAL SPEND ON CORONAVIRUS RESEARCH WAS TINY

Before the COVID-19 pandemic, funding for coronavirus research made up just 0.5% of global infectious-diseases spending by public and philanthropic research organizations.

From 2000 to the start of this year, about US$550 million was spent on coronavirus-related research, reveals an analysis by researchers at the University of Southampton, UK. By comparison, Ebola-related research got $1.2 billion (1.1%).

Spending has risen to $985 million since the current outbreak began. Some $275 million of COVID-19 research funding is focused on vaccine development; $40 million is focused on therapeutics and $18 million on diagnostic tests. The figures cover spending by more than 1,000 funders worldwide.

The researchers note that the spending has generally been reactive — explaining spikes in 2004 and 2015, after outbreaks of the coronaviruses that cause the diseases SARS and MERS, respectively.

CORONAVIRUS CASH

Public and philanthropic bodies have spent US$985 million on coronavirus research since 2000. But before 2020, this constituted only 0.5% of total spending on infectious-disease research.