

NEWS RELEASE

WASTEWATER NEVER LIES

UK-India sewage-surveillance research partnership

calls for global technology and investment in early warning of virus outbreaks

A new and expanding UK-India sewage-surveillance research partnership is working to demonstrate that amidst public-health crises such as COVID-19, sewage epidemiology can critically strengthen global responses and save lives. A recent webinar by India's International Academy of Sanitation and Public Health (IAESPH) New Delhi, UK's NVH Global Ltd and UK's University of Surrey called for urgent global technology and investment in embedding and improving early-warning sewage-surveillance systems.

University of Surrey's Dr Devendra P Saroj Head of the Centre for Environmental Health & Engineering said: "We provide multidisciplinary research support globally through international agencies such as the WHO, Pan American Health Organisation and UNICEF. Our scoping studies over the last two years have identified Delhi as a city for further work. We are now seeking funding to help roll out a pilot project in select municipalities in Delhi where sewage samples can be collected periodically and analysed for SARS-Cov-2 RNA to better inform public health responses even when communities within municipalities are asymptomatic and there is insufficient or delayed clinical data. If successful the Government of India and state governments can consider scaling up such interventions across the country."

UK's Professor Davey L Jones said, 'Wastewater never lies; wastewater epidemiology can significantly improve the prediction and management of virus outbreaks.' His Soil and Environment Science team in UK's University of Bangor is leading risk-assessment monitoring of the SARS-Cov-2 RNA in communities and wastewater treatment plants. Jones said that secondary and tertiary treatment can reduce the presence of viruses in treated wastewater by a 1000-fold.

Dr Arunabha Majumder former Director-Professor All India Institute of Hygiene & Public Health said that in the absence of adequate clinical surveillance and given the high proportion of asymptomatic and undiagnosed cases in outbreaks such as COVID-19, early warning systems can help more swiftly and effectively manage pandemics.

Netherlands' Professor Gertjan Medema at KWR Water Research Institute said that a study of six cities across the Netherlands showed a correlation between surge in COVID positive cases and subsequently discovered concentrations of SARS-Cov-2 RNA in wastewater. His team found that virus detection in wastewater preceded detection in communities by at least a few days. Frequent sampling of wastewater treatment plants can provide trends to inform decisions on testing, personal protection and social distancing, including by reducing bias in COVID-19 testing.

Dr Manish Kumar, Assistant Professor at the Indian Institute of Technology (IIT), Gandhinagar said that sewage-surveillance can complement, not replace, human testing but early-warnings can help better target public health responses toward communities at greater risk.

ADB's Chief of Water Sector Group Thomas Panella said that of ADB's \$16 billion in emergency and co-financing in 41 countries much of it was for fiscal stimulus and health response but that the Bank had a strong interest in efforts to improve early warning detection of viruses in water and wastewater. He said investment and technology in such sewage surveillance could save millions of lives, especially

those of children at risk from water-borne diseases and untreated or unmonitored wastewater. He called for greater public and private partnership globally, 'the challenge is to get technology and investment right since public resources are scarce; it costs \$1-2 million to establish testing protocols in a city of 3-5 million.'

Notes for Editors/Background:

The webinar on 24 July 2020 titled "UK-India Webinar on Covid-19 & Wastewater Sewage Surveillance for Early Warning" brought together leading scientists and practitioners from across the world to discuss research on SARS-Cov-2 RNA in wastewater and its implications for public health responses and for present and future water and wastewater systems.

The University of Surrey UK, NVH Global Ltd UK and IAESPH India partnership on sewage-surveillance is part of similar UK research partnerships with teams around the world. Dr Devendra P Saroj from UK's University of Surrey is working with researchers in the Philippines. Scientists at UK's Newcastle University and the University of Santiago de Compostela Spain are working with water industry partners Northumbrian Water UK and Labaqua, part of the SUEZ Corporation to monitor sewage networks in Spain and North-East England to better detect COVID-19 across regions. Professor Davey Jones from UK's University of Bangor is working with UK Centre for Ecology & Hydrology (UKCEH) teams and others including those funded by the UK's EPSRC.

Health authorities find COVID-19 testing daunting in densely populated large cities, exacerbated by the need for repeat tests at different intervals to keep track of the spread of infection. Early warning of virus prevalence through embedded and improved sewage-surveillance provides an urgent and sustainable way to complement this tracking of infection and spread. It can also reduce the infection-risk of sanitation workers cleaning sewer-pipes and wastewater and sewage treatment or faecal-sludge systems exposed to raw or semi-stabilised faecal matter.

SDG6 indicator 6.3.1 tracks the percentage of wastewater flows from households, services and industrial premises treated in compliance with national or local standards; the household component includes sewage and faecal sludge, treated on-site and off-site and monitored as part of the sanitary chain. WHO and UN-Habitat are the custodians of 6.3.1 but it is of interest to a range of public and private water, sanitation, housing, planning, health authorities, utilities and service providers. SDG6/water & sanitation is a critical part of the world's Climate Change Adaptation & Resilience agenda to be discussed when the UK hosts COP26 in November 2021.

For details, please contact Rudy Fernandez at the British Deputy High Commission Chennai, email: r.fernandez@fco.gov.uk Rudy is championing UK-India conversations and connections on SDG6/water & sanitation ahead of COP26.

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