

ENGAGING MUNICIPALITIES AND WATER SERVICE INSTITUTIONS

EVALUATION OF OCCUPATIONAL EXPOSURE TO MICROBIOLOGICAL CONTAMINANTS AT WASTEWATER TREATMENT PLANTS

Date: 12 November 2021

Time : 11h15 to 13h30

Background

Workers at wastewater treatment plants (WWTPs) play a pivotal role in ensuring the optimal performance of these facilities. However, due to the nature of their work which includes regular adjustments of equipment, constant evaluation of processes, general cleaning, and routine maintenance, workers are inevitably exposed to municipal wastewater, putting their health at risk. Previous research in other countries has confirmed that workers at WWTPs are potentially exposed to various microbiological hazards (bacteria, viruses, fungi and parasites) commonly present in untreated wastewater during their normal work activities. Workers may unintentionally come into contact with wastewater through inhalation of fine wastewater droplets (bioaerosols), direct contact with wastewater, sludge, or touching contaminated tools, handrails, and other surfaces, especially if proper control measures including engineering, administrative, and personal protective equipment (PPE), as advised by site-specific risk assessments, are not in place. This can result in a range of symptoms and illnesses including gastrointestinal symptoms, headache, fatigue, respiratory illnesses, skin disorders, cancers, among others. However, studies to link microbial hazards in wastewater to workers' health outcomes have not been conducted in South Africa.

The National Institute for Occupational Health (NIOH), Immunology and Microbiology department funded by the Water Research Commission (WRC), is conducting studies to understand the occupational exposure to microbiological and chemical contaminants at WWTPs. The findings will help in designing science-based guidelines and policies to reduce exposure and provide safe working environments.

The purpose of this engagement is to share the results of the work completed to date and this includes: 1) assessment of SARS-CoV-2 presence and fate in wastewater treatment plants, and 2) potential occupational exposure to respiratory and enteric bacterial pathogens in wastewater treatment plants. We would also like to share educational information on ways to minimise potential risks of worker exposure to hazardous biological agents present in wastewater during the COVID-19 pandemic and beyond.

Who should attend

The target audience includes the South African Municipal Workers' Unions, other relevant/affiliated trade unions, and municipalities management dealing with wastewater treatment.

Facilitator – Dr Eunice Ubomba-Jaswa, WRC Research Manager

Time	Item	Presenter
11:15 - 11:20	Opening, and Welcome	Facilitator

11:20- 11: 30	WRC research areas in wastewater environments	Dr N Kalebaila (WRC)
11:30 - 11:40	Remarks by Research partner	Dr T Singh (NIOH)
11:40 – 11:50	Municipal Perspective–Health and safety relating to microbial hazards in wastewater	Mr Kerneels Esterhuyse (City of Tshwane Municipality)
11:50 – 12:05	Presentation 1: Detection and fate of SARS-CoV-2 in wastewater	Mr D Jambo (NIOH)
12:05 – 12:25	Presentation 2: Respiratory and enteric pathogens in wastewater	Ms E Poopedi (NIOH)
12:25 – 12:45	Presentation 3: Occupational Health & Safety best practices during COVID-19 and beyond	Dr Noncy Gomba (NIOH)
12:45 - 13:00	Response by Trade Union Representative on Wastewater Worker’s safety	Trade Union (tbc)
13:00-13:15	Q & A	Mrs L Singh (NIOH)
13:15 –13:30	Closing remarks	Drs Nonhlanhla Kalebaila, WRC & Noncy Gomba, NIOH