Orange County Sanitation District

Agenda Report

File #: 2020-1229, **Version:** 1

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SUBJECT:

COVID-19 SEWAGE SURVEILLANCE PROJECT UPDATE

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

Information Item.

BACKGROUND

Sewage Surveillance, also known as Wastewater-Based Epidemiology, is the study of community-level infection prevalence through measuring the concentration of the pathogen either directly or indirectly (i.e., using biomarkers) in the pooled community sewage samples.

Under certain circumstances, sewage surveillance can be used to gather crucial information on the occurrence, intensity, distribution, and duration of an outbreak. The Centers for Disease Control and Prevention (CDC) considers it to be a part of the public health toolbox, since it has the potential to capture subclinical infections, can be implemented independent of healthcare-seeking behavior and testing access, and the data can be made available within days of shedding onset compared to the up to two-week lag for other surveillance data.

According to the CDC, while sewage surveillance cannot and is not intended to replace clinical surveillance, it can complement case- and symptom-based surveillance in the community where a significant portion of the population is connected to sewers. It could be especially helpful where testing data are not readily available, assist with monitoring high-risk facilities (e.g., prisons and nursing homes) through sub-sewershed level sampling, and provide infection information during sub-clinical phases. To date, sewage surveillance has been successfully utilized for population-level infectious disease surveillance for polio and hepatitis. However, a standardized method for detecting and measuring SARS-CoV-2, the virus responsible for causing COVID-19, does not currently exist.

Multiple research efforts are underway to develop valid analytical methods and to examine the potential application of sewage surveillance. The Orange County Sanitation District (Sanitation District) became a part of these efforts shortly following the World Health Organization declaration of a COVID-19 pandemic, and we are actively collaborating with industry and academic partners to understand the available technologies, analytical protocols, costs, and usefulness of sewage surveillance data.

Specifically, the Sanitation District has been providing samples to the California State Water Resource Control Board's Direct Potable Reuse Pathogen Removal Study ("DPR-2"), Stanford University's SCAN: Sewer Coronavirus Alert Network, and the University of Arizona's Water and Energy Sustainable Technology Center to safeguard employee safety and support development of reliable methods for detecting and quantifying SARS-CoV-2.

Staff will present an update on the status of the Sanitation District's sewage surveillance efforts to date with some preliminary data.

Currently, the United States Environmental Protection Agency is overseeing the development of a standardized analytical methods to detect and quantify SARS-CoV-2, the virus responsible for causing COVID-19, in wastewater. To coordinate the collection, validation, and dissemination of sewage surveillance information, the CDC established the National Wastewater Surveillance System in mid-August to collect and manage the analytical data. The Sanitation District has volunteered to be a part of these efforts.

In the interim, most of the currently publicized sewage surveillance data are highly variable and should be considered preliminary in nature.

RELEVANT STANDARDS

- Maintain collaborative and cooperative relationships with regulators, stakeholders, and neighboring communities
- Make it easy for people to understand OCSD's roles and value to the community
- Commitment to safety & reducing risk in all operations

ATTACHMENT
The following attachment(s) may be viewed on-line at the OCSD website (www.ocsd.com) with the complete agenda package:

N/A