EPI WATCH

Monthly Epidemiology Newsletter

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Disease Reporting
To report diseases and clusters of illness:
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To report HIV/AIDS by mail:
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Using Wastewater to Track SARS-CoV-2 Outbreaks

By: Renee Veleva

Surveillance plays a critical role in public health. The information collected from these surveillance systems helps address public health issues in our communities. The COVID-19 pandemic enhanced the way we monitor and prevent the spread of diseases using surveillance systems. One approach that has rapidly evolved is wastewater surveillance. Wastewater surveillance measures pathogen levels in wastewater to evaluate community-level infection trends. In response to the pandemic, the Center for Disease Control and Prevention established the National Wastewater Surveillance System (NWSS) to measure SARS-CoV-2 virus levels in communities across the United States.

Wastewater represents a pooled sample that can provide information on infection trends in the communities served by these sewer networks. People who are infected with SARS-CoV-2 can shed the RNA virus in their stool regardless of if they are symptomatic or asymptomatic. Unlike other surveillance methods, this approach is not influenced by healthcare access or clinical data, and it can detect SARS-CoV-2 before these metrics. Complementary with existing surveillance systems, it can be a useful tool to indicate potential COVID-19 surges before they happen.

Image retrieved from: here

During the summer of 2022, The Florida Department of Health established the Florida Wastewater Surveillance Program. The Bureau of Public Health Laboratories (BPHL) worked with the CDC laboratory vendor, Biobot Analytics, to establish a state-level extension of NWSS. Wastewater testing began this year and there are currently eleven wastewater treatment facilities participating in this program. These facilities periodically send their wastewater samples to these labs to measure the SARS-CoV-2 concentration levels of the water. The concentrations are calculated by the number of copies of SARS-CoV-2 adjusted to the amount of water present and the population served by these wastewater systems. These concentration levels are observed over several weeks to analyze COVID-19 infection levels in communities. For example, if the concentrations of a particular wastewater facility have been consistently decreasing, then there is less SARS-CoV-2 virus circulating in the community. If there is an increasing trend, then there is more SARS-CoV-2 virus present which can indicate a possible surge. Overall, the Florida Wastewater Surveillance Program can help track and prevent the spread of COVID-19 and guide health professionals to make informed decisions regarding public health.

Resources:

[1] Introduction to Public Health Surveillance|Public Health 101 Series|CDC
[2] National Wastewater Surveillance System (NWSS) | National Wastewater Surveillance System | CDC
[3] How Wastewater Monitoring Works | National Wastewater Surveillance System | CDC
[4] About CDC's National Wastewater Surveillance System (NWSS) | National Wastewater Surveillance System | CDC
[5] Wastewater Surveillance Data Reporting and Analytics | National Wastewater Surveillance System | CDC
[6] CDC COVID Data Tracker: Wastewater Surveillance

Cases of Dengue Fever Reaching Record Highs

By: Rebecca Bohinc, MPH, CPH

*Photo obtained from: Here

As 2023 comes to a close, cases of Dengue Fever are not slowing down. A total of 4.2 million cases leading to over 2,000 deaths have been reported so far this year throughout the Americas and Caribbean. These numbers represent a 52% increase over numbers reported in 2022 and remarkable 108% increase compared to the most recent five-year average[1]. Locally in Florida, 167 cases of local transmission have been identified as of December 9, primarily from Miami-Dade County[2].

Dengue Fever is spread through the bite of an infected, *Aedes* species mosquitos. Taking precautions to prevent mosquito bites is critical as Dengue Fever is caused by four different viruses allowing individuals to be infected multiples times. In addition, the species of mosquito that transmits Dengue Fever can also spread other infections such as Zika virus and chikungunya. Symptoms of Dengue Fever include but are not limited to nausea, vomiting, rash, myalgia, arthralgia, and/or pain behind the eye. Although some infections are asymptomatic, those that do experience symptoms will often become ill within 3-10 days following the exposure and some patients may go on to experience severe disease, especially if this is their second infection. Severe illness can cause shock or respiratory distress, internal bleeding, and even death.

Those that reside or travel to areas with a risk of Dengue Fever should contact their provider if they become ill. Testing for Dengue Fever can be performed through a blood test. Although there is no specific treatment, supportive care can be provided to treat symptoms[3].

References:

1. Pan American Health Organization. (2023, December 14). *Dengue Situation Report Region of the Americas*. www.paho.org/en/documents/dengue-americas-2023-situation-report-1
2. Florida Department of Health. (2023, December 9). *Florida Arbovirus Surveillance Week 49.* www.floridahealth.gov/diseases-and-conditions/mosquito-borne-diseases/_documents/2023-w49-arbovirus-surveillance-report.pdf

HAN 503: Urgent Need to Increase Immunization Coverage for Influenza, COVID-19, and RSV and Use of Authorized/Approved Therapeutics in the Setting of Increased Respiratory Disease Activity During the 2023 – 2024 Winter Season

Summary

The Centers for Disease Control and Prevention (CDC) is issuing this Health Alert Network (HAN) Health Advisory to alert healthcare providers to low vaccination rates against influenza, COVID-19, and RSV (respiratory syncytial virus). Low vaccination rates, coupled with ongoing increases in national and international respiratory disease activity caused by multiple pathogens, including influenza viruses, SARS-CoV-2 (the virus that causes COVID-19), and RSV, could lead to more severe disease and increased healthcare capacity strain in the coming weeks. In addition, a recent increase in cases of multisystem inflammatory syndrome in children (MIS-C) following SARS-CoV-2 infection in the United States has been reported **Healthcare providers should administer influenza, COVID-19, and RSV immunizations now to patients, if recommended. Healthcare providers should recommend antiviral medications for influenza and COVID-19 for all eligible patients, especially patients at high-risk of progression to severe disease such as older adults and people with certain underlying medical conditions**. Healthcare providers should also counsel patients about testing and other preventive measures, including covering coughs/sneezes, staying at home when sick, improving ventilation at home or work, and washing hands to protect themselves and others against respiratory diseases.

To read the full article, see here: https://emergency.cdc.gov/han/2023/han00503.asp

Select Reportable Diseases in Pinellas County

Disease	Pinellas		YTD Total		Pinellas County Annual Totals		
	Nov 2023	Nov 2022	Pinellas 2023	Florida 2023	2022	2021	2020
A. Vaccine Preventable							
Coronavirus 2019	**1151**	**2584**	**23628**	**517831**	**119224**	**103356**	**44852**
Measles	**0**	**0**	**0**	**2**	0	0	0
Mpox	**0**	**4**	**4**	**69**	162	0	0
Mumps	**0**	**0**	**0**	**15**	0	1	1
Pertussis	**0**	**0**	**1**	**59**	2	1	8
Varicella	**1**	**1**	**23**	**533**	24	25	18
B. CNS Diseases & Bacteremias							
Creutzfeldt-Jakob Disease (CJD)	**0**	**0**	**1**	**31**	3	1	0
Meningitis (Bacterial, Cryptococcal, Mycotic)	**1**	**1**	**5**	**95**	12	5	5
Meningococcal Disease	**1**	**1**	**2**	**33**	2	1	2
C. Enteric Infections							
Campylobacteriosis	**21**	**16**	**187**	**3997**	208	213	247
Cryptosporidiosis	**0**	**4**	**27**	**564**	38	28	38
Cyclosporiasis	**0**	**1**	**11**	**342**	21	9	9
E. coli Shiga Toxin (+)	**2**	**2**	**32**	**972**	28	16	10
Giardiasis	**3**	**3**	**31**	**1104**	34	29	28
Hemolytic Uremic Syndrome (HUS)	**0**	**0**	**2**	**9**	0	0	0
Listeriosis	**0**	**0**	**2**	**39**	3	3	2
Salmonellosis	**20**	**14**	**155**	**5958**	174	182	200
Shigellosis	**7**	**3**	**44**	**1074**	37	37	19
D. Viral Hepatitis							
Hepatitis A	**0**	**1**	**1**	**89**	20	6	3
Hepatitis B: Pregnant Woman +HBsAg	**1**	**2**	**15**	**438**	20	10	18
Hepatitis B, Acute	**2**	**3**	**26**	**551**	33	51	40
Hepatitis C, Acute	**1**	**8**	**83**	**1066**	120	91	117
E. Vectorborne/Zoonoses							
Animal Rabies	**0**	**0**	**1**	**54**	0	0	0
Rabies, possible exposure	**20**	**16**	**174**	**5458**	151	135	118
Chikungunya Fever	**0**	**0**	**0**	**1**	0	0	0
Dengue fever	**1**	**0**	**3**	**563**	7	0	1
Eastern Equine Encephalitis	**0**	**0**	**0**	**2**	0	0	0
Lyme Disease	**2**	**0**	**19**	**247**	11	7	11
Malaria	**0**	**0**	**4**	**63**	4	2	2
West Nile Virus	**0**	**0**	**0**	**13**	0	0	0
Zika Virus Disease	**0**	**0**	**0**	**0**	0	0	0
F. Others							
Hansen's Disease	**0**	**0**	**1**	**24**	0	0	0
Legionellosis	**1**	**3**	**13**	**388**	38	36	33
Mercury Poisoning	**0**	**0**	**0**	**20**	0	2	1
Tuberculosis	**0**	**2**	**14**	**283**	22	21	24
Vibrio Infections	**1**	**2**	**12**	**309**	13	12	18
G. Sexually Transmitted Infections							
	Nov 2023	**Nov 2022**	**Pinellas 2023**	**Pinellas 2022**	**2022**	**2021**	**2020**
Chlamydia	**339**	**332**	**3199**	**3074**	4032	4090	3953
Gonorrhea	**149**	**122**	**1314**	**1388**	1753	1883	1634
Syphilis, Total	**42**	**70**	**511**	**596**	762	634	466
Syphilis, Infectious (Primary and Secondary)	**19**	**33**	**271**	**265**	348	274	212
Syphilis, Early Latent	**15**	**19**	**156**	**222**	275	239	159
Syphilis, Late Syphilis (Late Latent; Neurosyphilis)	**8**	**18**	**80**	**104**	134	114	91
Syphilis, Congenital	**0**	**0**	**4**	**5**	5	7	4

*YTD up to November 30, 2023. n/a = not available at this time