



**NORTHEAST**  
BUSINESS GROUP ON HEALTH

# **COVID-19 Update**

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Medical Director, NEBGH

Monday, February 7<sup>th</sup>, 2022

# Some Good News!

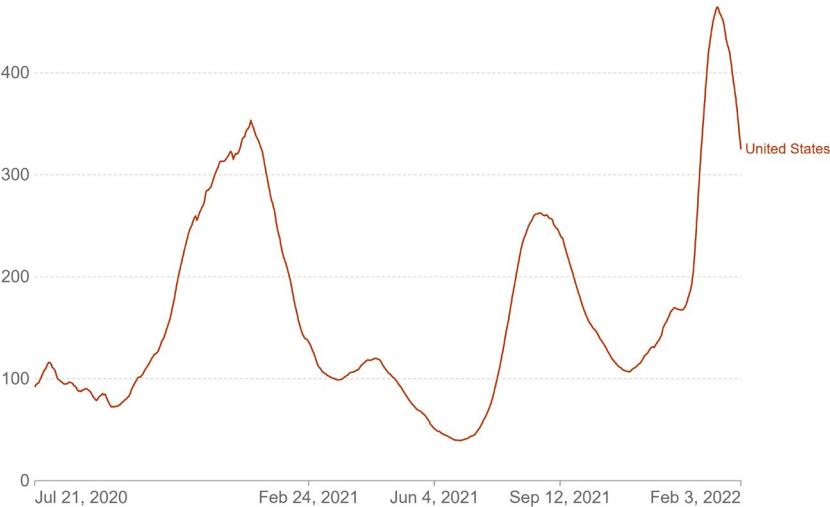
Daily new confirmed COVID-19 cases per million people  
7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.



Source: Johns Hopkins University CSSE COVID-19 Data



Weekly new hospital admissions for COVID-19 per million people  
Weekly admissions refer to the cumulative number of new admissions over the previous week.



Source: Official data collated by Our World in Data



# 901,000 deaths

## Daily new confirmed COVID-19 deaths per million people

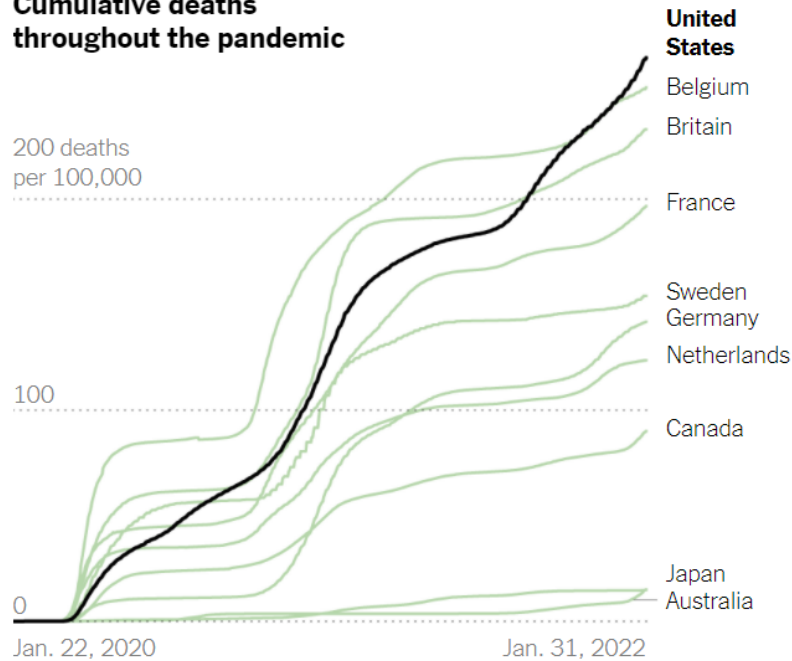
7-day rolling average. For some countries the number of confirmed deaths is much lower than the true number of deaths. This is because of limited testing and challenges in the attribution of the cause of death.



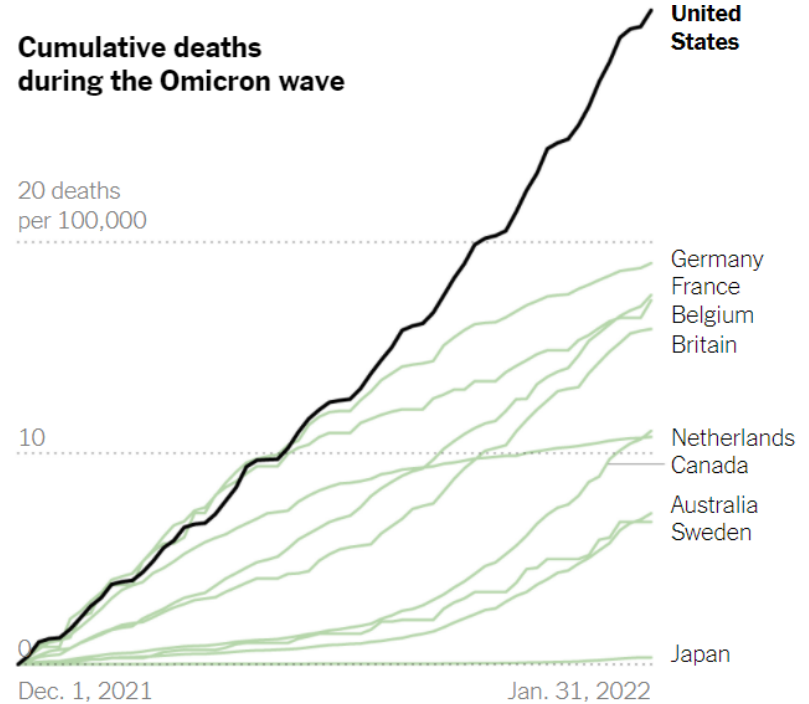
Source: Johns Hopkins University CSSE COVID-19 Data

# US vs. other large, high-income countries

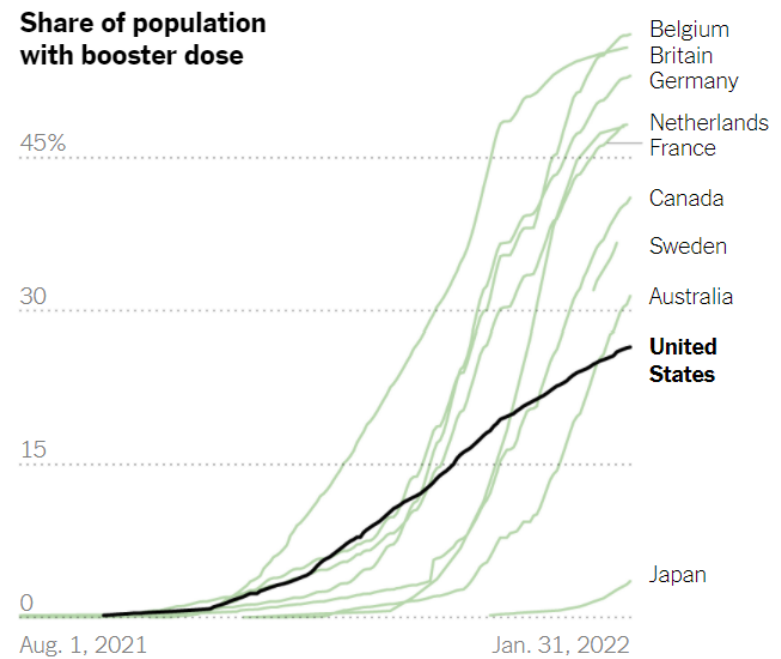
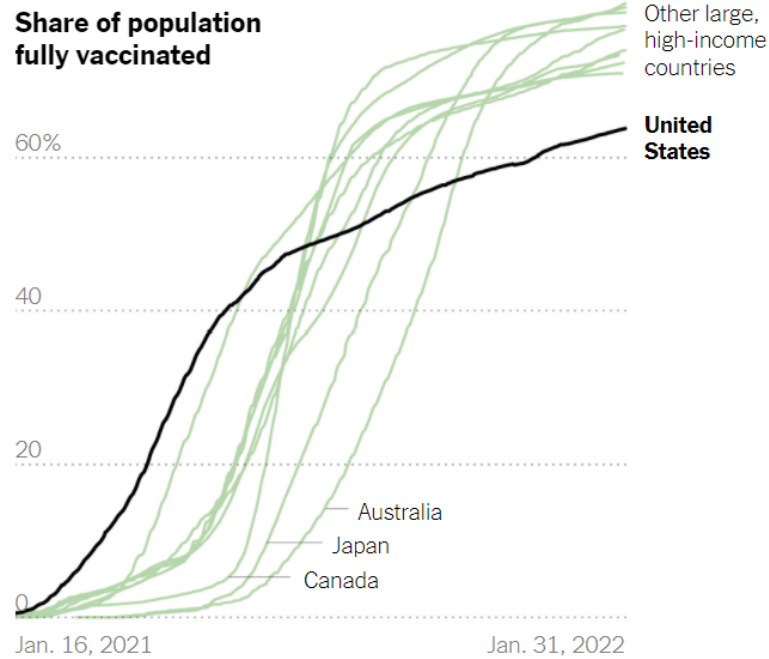
Cumulative deaths throughout the pandemic

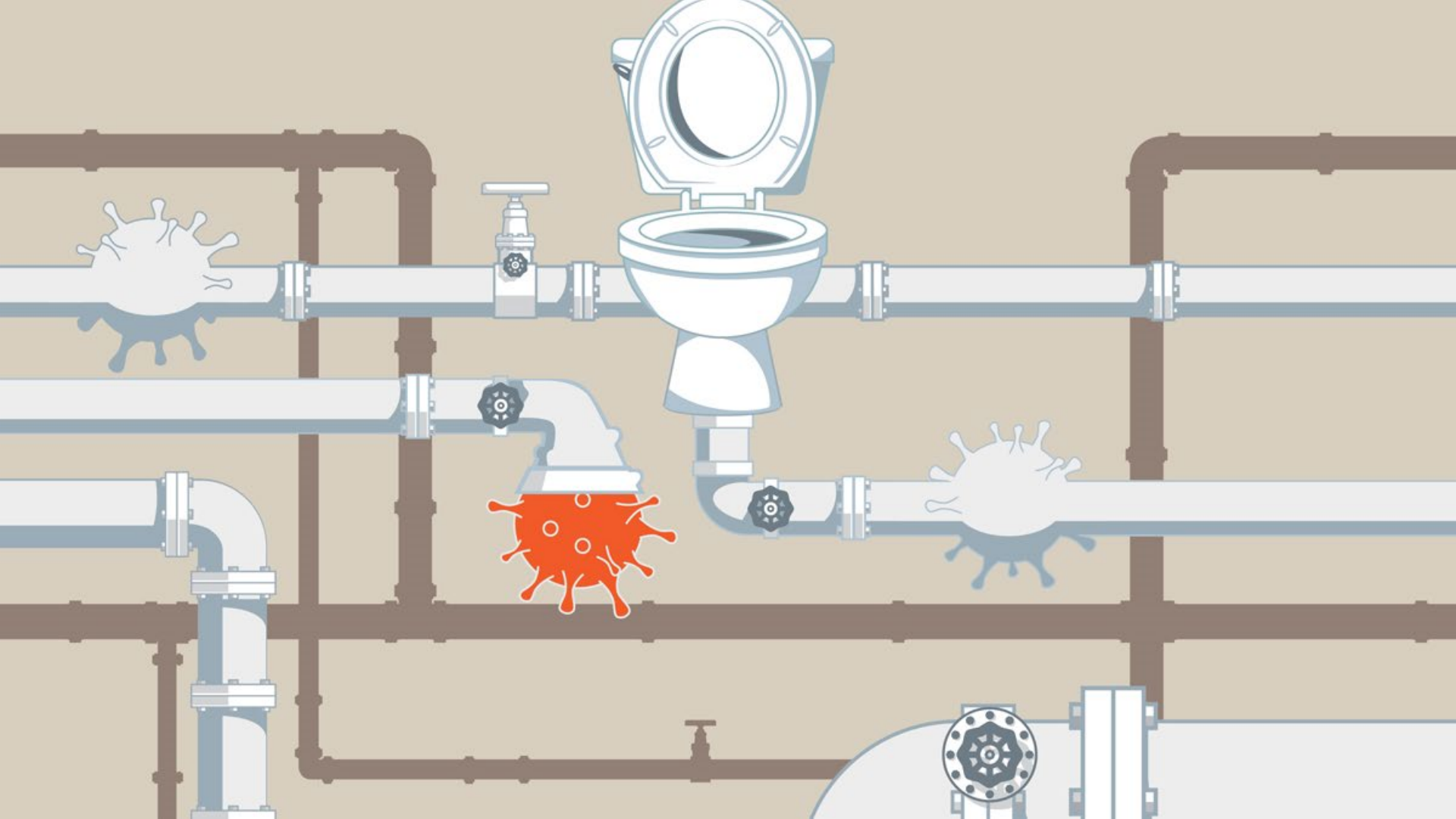


Cumulative deaths during the Omicron wave

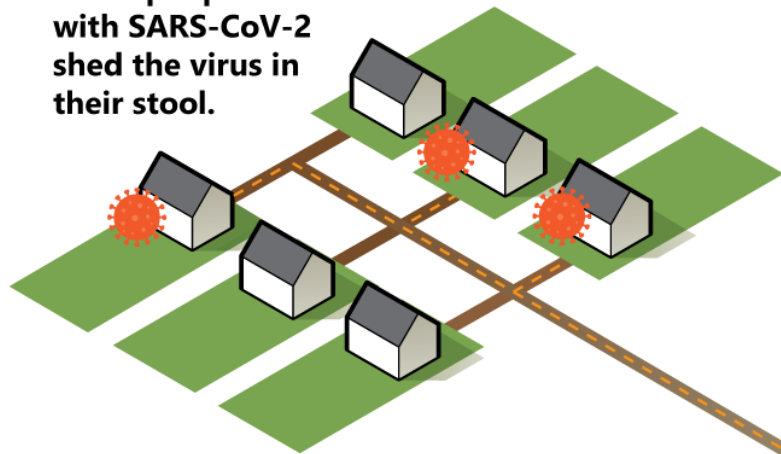


# US Vaccination rates vs. Other large wealthy countries



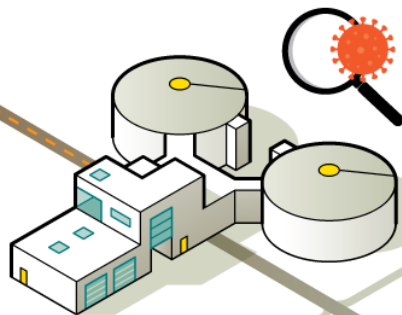


**Some people infected with SARS-CoV-2 shed the virus in their stool.**



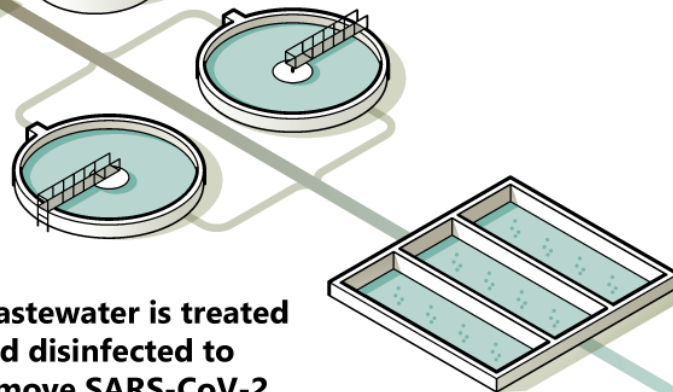
**Stool in household wastewater (or sewage) is treated at a treatment facility.**

**Treatment facilities sample wastewater, which is tested for SARS-CoV-2.**

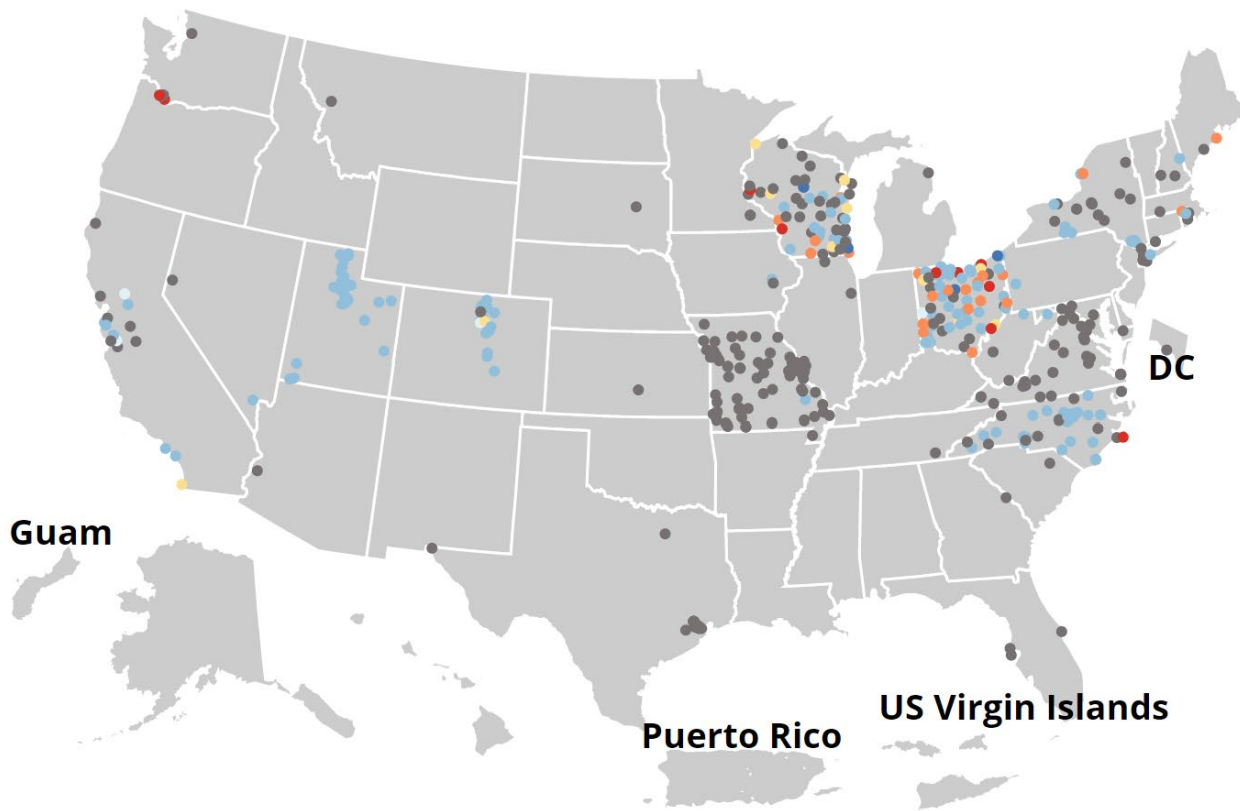


**Positive wastewater samples are reported to public health.**

**Wastewater is treated and disinfected to remove SARS-CoV-2.**







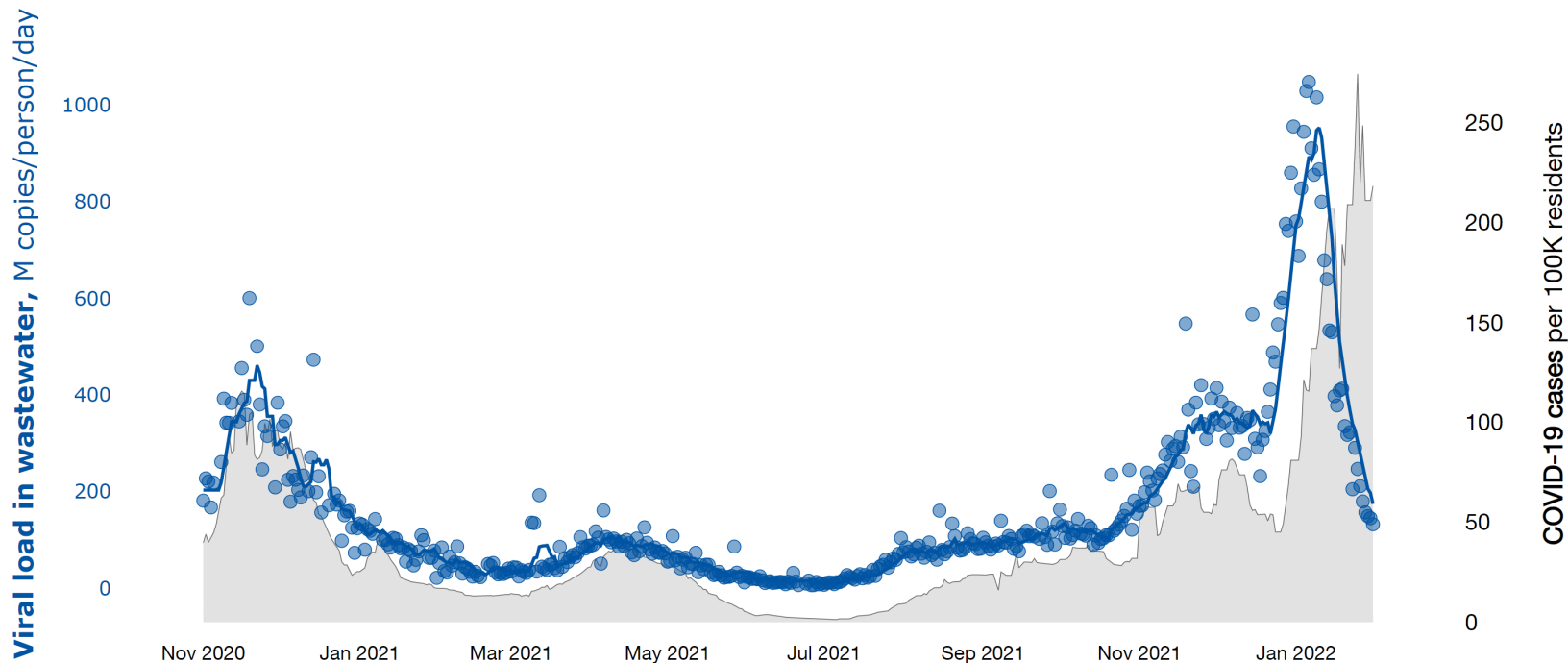
SARS-CoV-2 RNA wastewater levels,  
United States:  
15-day percent change by  
sewershed

% change	Num. sites	% sites
-100% or less	5	2
-99% to -10%	150	74
-9% to 0%	4	2
1% to 9%	1	0
10% to 99%	11	5
100% to 999%	23	11
1000% or more	10	5

Total sites with current data: 204



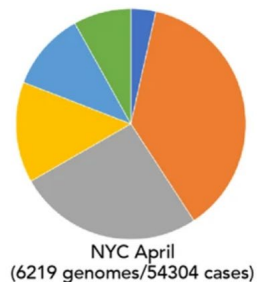
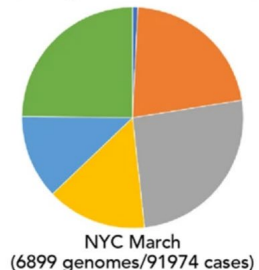
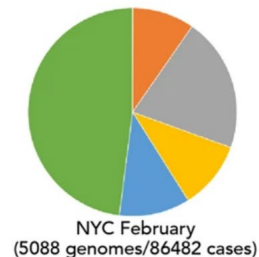
# St Paul Metro Wastewater COVID Surveillance



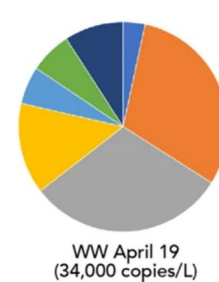
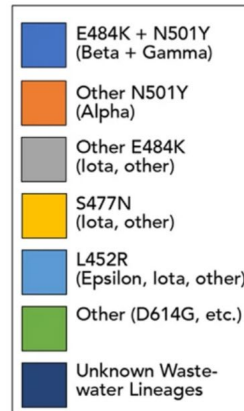
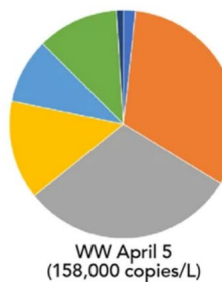
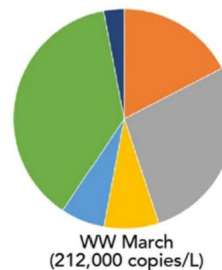
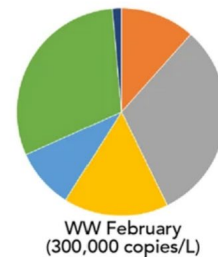
# Cryptic lineages

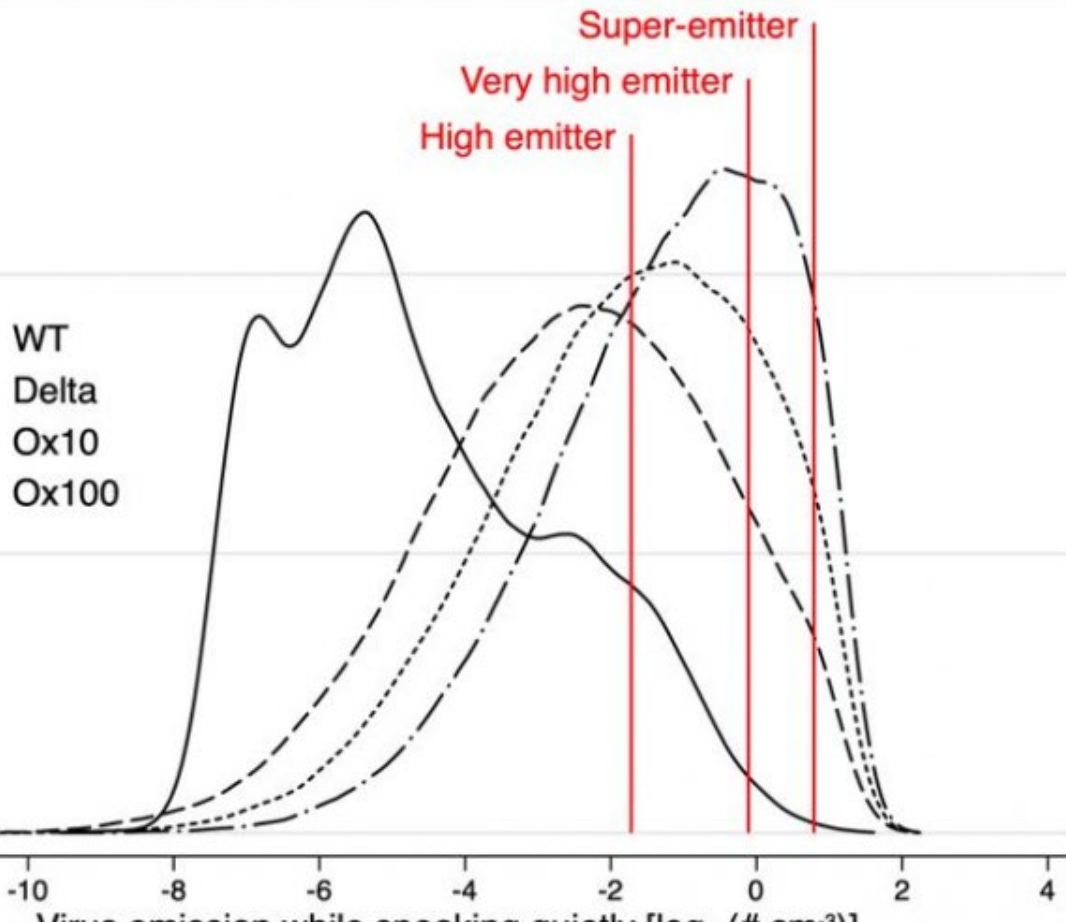
- Viral fragments with a unique constellation of mutations that had never been reported before in human patients
  - New variants?
  - Maybe from people whose infections aren't being captured by sequencing
  - Or the lineages may be coming from virus-infected animals

**B.** Clinical:  
Lineage distribution  
patient sequences



NYC Wastewater:  
Lineage distribution  
WW Surveillance





### Super-emitters

- WT – 1 in 1,000
- Delta - 1 in 30
- Omicron – 1 in 20 or 1 in 10, depending on the viral load estimate used

<https://smw.ch/article/doi/smw.2022.w30133>

Scenario	Dose in far field	Interpretation for virus variant		
		[copies received]	WT	Delta
4 hours in small office (50 m <sup>3</sup> , 1 ACH), 5% talk	479	OK	Critical	Very critical
4 hours in open space office (1,000 m <sup>3</sup> , 1 ACH), 5% talk	24	OK	OK	OK
4 hours in open space call centre (1,000 m <sup>3</sup> , 1 ACH), 60% talk	100	OK	OK	Borderline
2 hours in meeting room (100 m <sup>3</sup> , 3 ACH), 50% talk, 5% loud	390	OK	Critical	Very critical
30 minutes in small shop / boutique (100 m <sup>3</sup> , 3 ACH), 20% talk	451	OK	Critical	Very critical
2 hours in restaurant (500 m <sup>3</sup> , 1 ACH), 20% talk, emitter no mask	153	OK	OK	Critical
2 hours in disco (300 m <sup>3</sup> , 3 ACH), 20% loud, 50% heavy dancing, receiver only FFP2	379	OK	Critical	Very critical
1 hour travel by train (57 m <sup>3</sup> , 7.1 ACH), 20% talk	40	OK	OK	OK
1 hour travel by train (57 m <sup>3</sup> , 7.1 ACH), 20% talk, emitter no mask	180	OK	OK	Critical
30-minute trolleybus ride (100 m <sup>3</sup> , 2 ACH), 20% talk, emitter no mask	220	OK	OK	Critical

<https://smw.ch/article/doi/smw.2022.w30133>

# Omicron sub-variants

- Four identified:

- BA.1
- BA.1.1
- BA.2 – Now classified as a variant of concern (VoC)
- BA.3

- BA.2: Danish Study<sup>1</sup>

- Transmission advantage of Omicron BA.2 over BA.1
- Increased susceptibility for both unvaccinated, fully vaccinated and booster-vaccinated individuals in BA.2 households
- Fully-vaccinated or boosted people were less likely to infect others in the in their households

1. <https://www.medrxiv.org/content/10.1101/2022.01.28.22270044v1.full.pdf>



# Questions

## Upcoming NEBGH virtual events:

- **Feb. 10** – Software to Treat Disease: Prescription Digital Therapeutics
- **Feb. 14** – Monday COVID-19 Update w/ Dr. Mark
- **Mar. 22** - Prevention and Support for Substance Use Struggles