

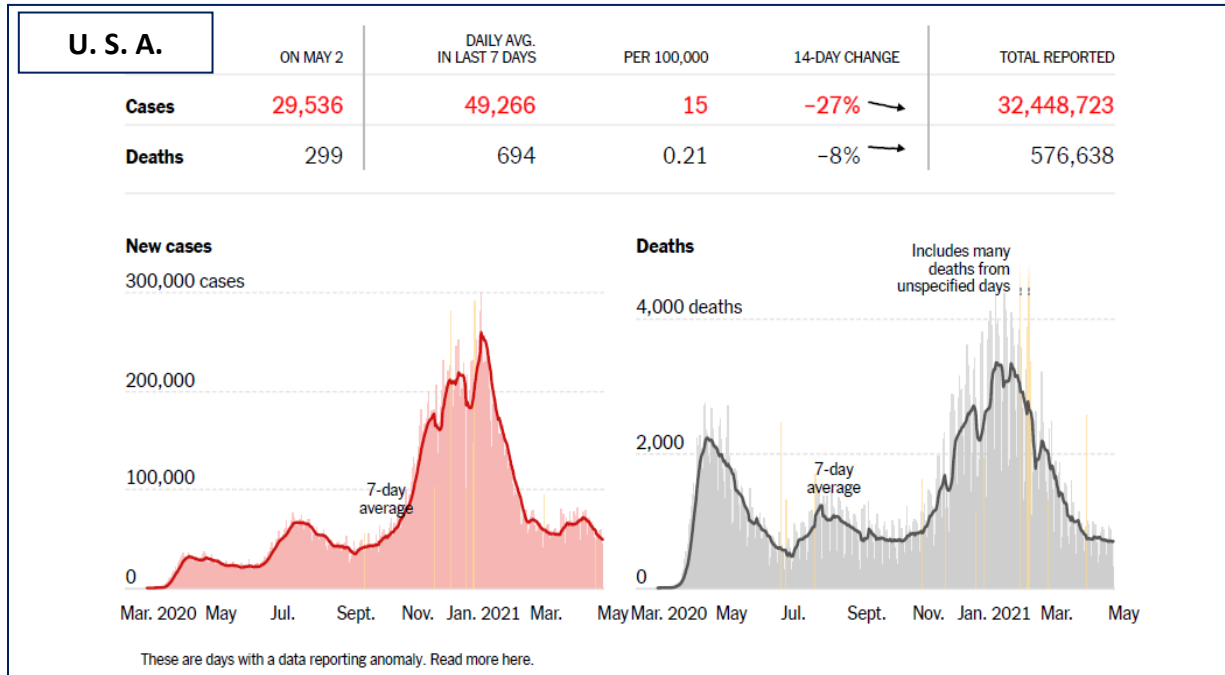
COVID-19 UPDATE – MONDAY, MAY 3, 2021

Dear Members of the DoM Community,

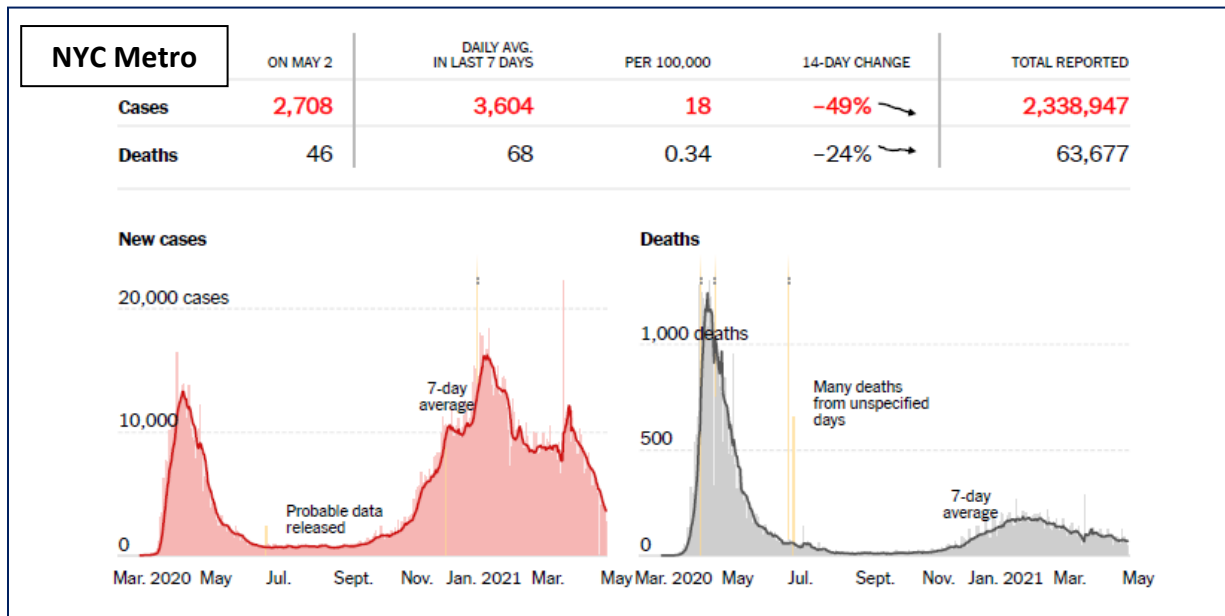
Good morning to you. Here are what’s happening in the COVID-19 pandemic last week. I hope the information keeps you updated on the status of the pandemic.

1. Nationwide COVID-19 Data

Daily new case numbers in the U.S. continued to decline.

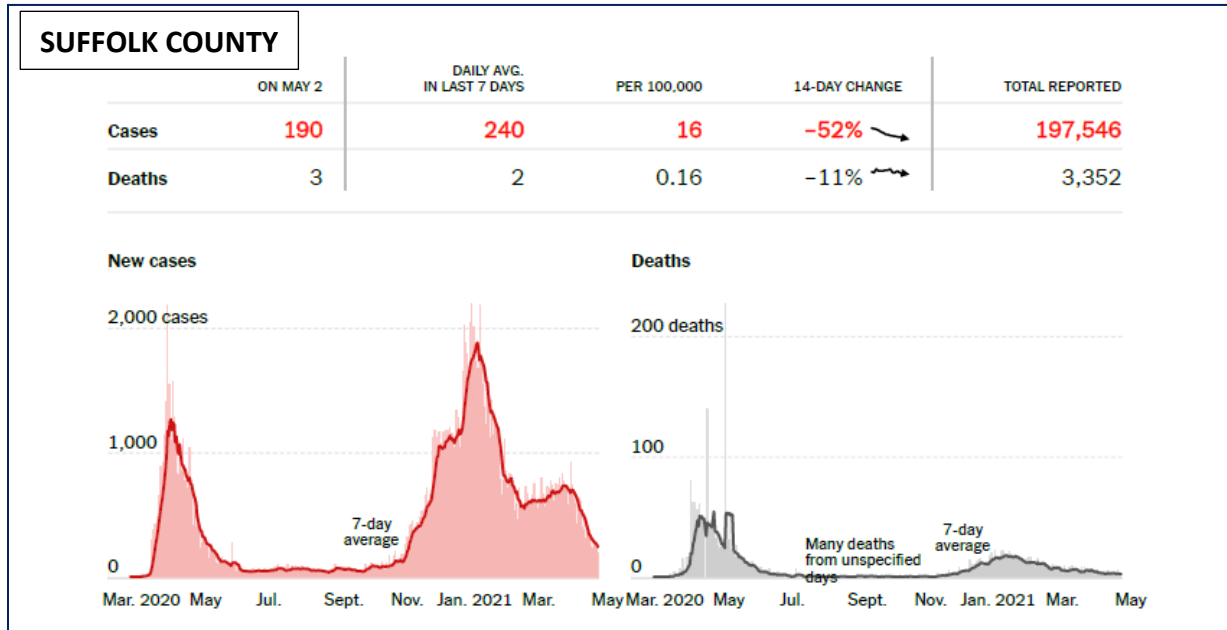


2. New case numbers in New York City Metro Area also continued to decrease.



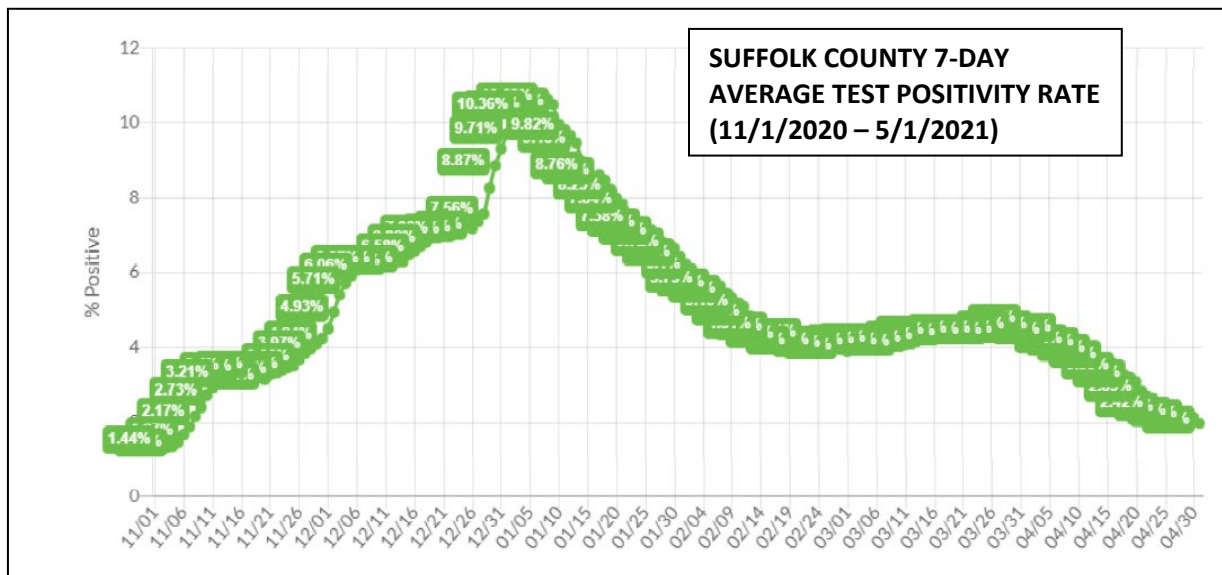
Metro area definition - The New York City area metro area has a population of 19.8 million people and contains Bergen County, Essex County, Hudson County, Hunterdon County, Middlesex County, Monmouth County, Morris County, Ocean County, Passaic County, Somerset County, Sussex County and Union County in New Jersey; Dutchess County, Nassau County, Orange County, Putnam County, Rockland County, Suffolk County, Westchester County and New York City in New York and Pike County in Pennsylvania.

3. Case numbers in Suffolk County have also significantly declined, now at a 7-day average of **16 per 100,000** population. This is a decrease of 6 per 100,000 from a week ago.



COVID-19 Testing Results in Suffolk County on May 2:

- 12,108 COVID-19 tests were administered.
- 190 new cases were reported.; 7-day average = 240, a decrease of 99 from one week ago.
- 197,546 total cases have been reported since March of 2020.
- Seven-day average test positivity rate = 2.0%, **lowest since 11/8/2020** (see 6-month trend below); Infection positivity rate was highest on Jan 4, at 10.6%



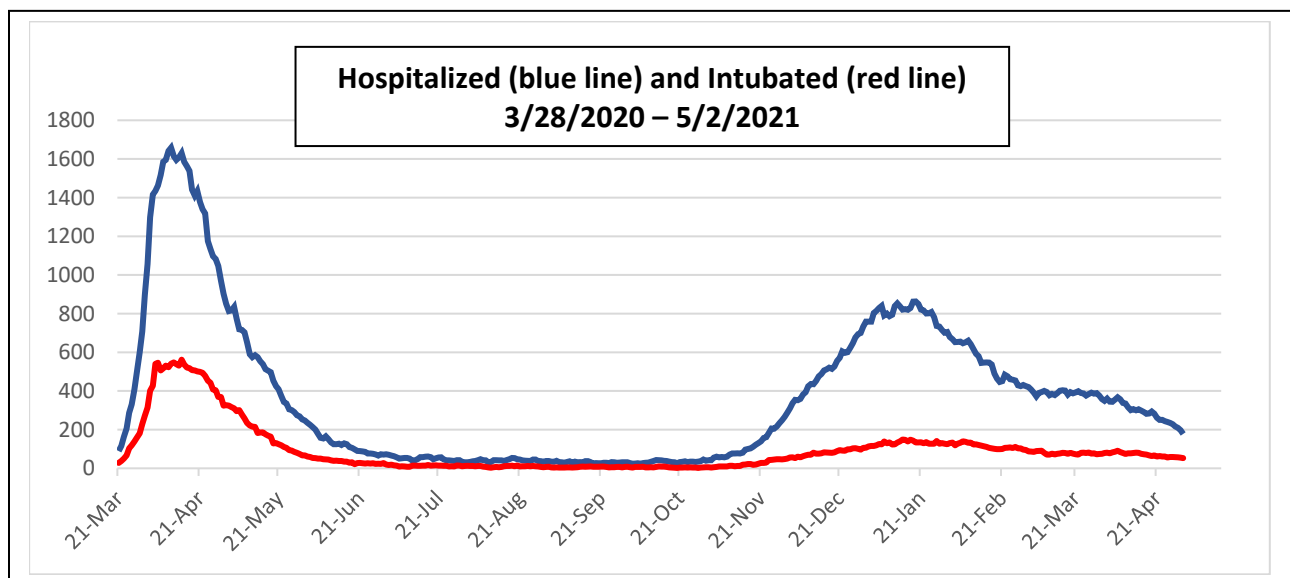
Fatalities:

- 3,352 total fatalities, an increase of 17 from one week before.

COVID-19 Hospitalizations:

- 178 individuals were hospitalized, a decrease of 66 from one week before.
- 53 patients were in the Intensive Care Unit (ICU), a decrease of 8 from a week ago.

4. Daily COVID-19 Hospitalization Data in SBUH



At midnight Sunday, May 2, SBUH census is as follows (see figure above for all-time trend of hospitalization).

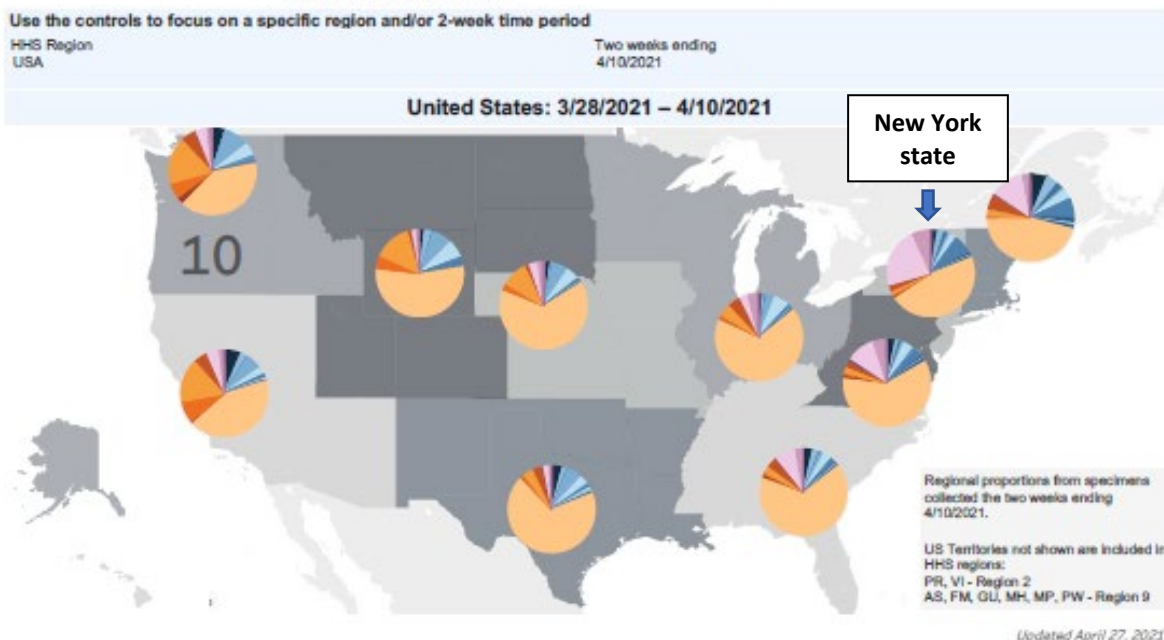
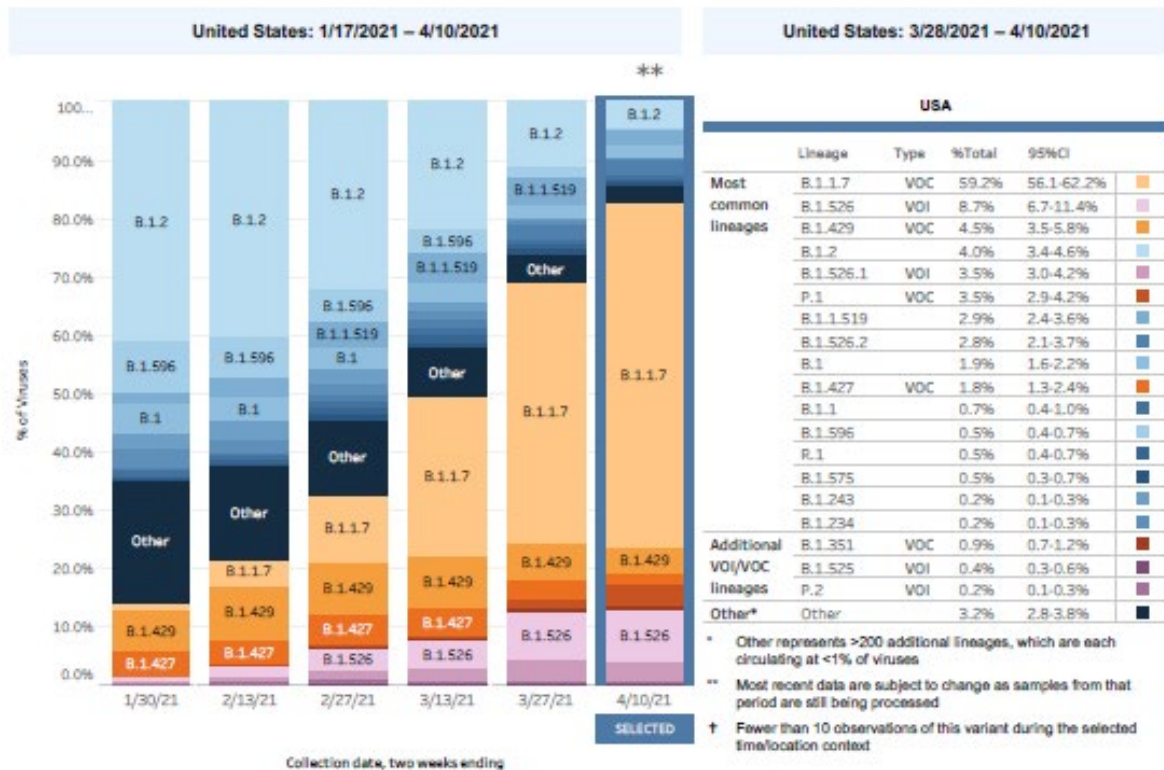
- 45 COVID + inpatients; 7-day average = 48, a **decrease of 16** from one week before.
- 16 patients were in ICU level of care; 13 on ventilators; 5 in ICR.
- Total hospital census = 602; Med/Surg = 460 (104%).

5. SARS-CoV-2 Viral Variants Update (source = CDC; NYC Health Department)

- The Health Department in New York City has identified multiple variants of interest and variants of concern, notably the **B.1.1.7** and the **B.1.526** variants:

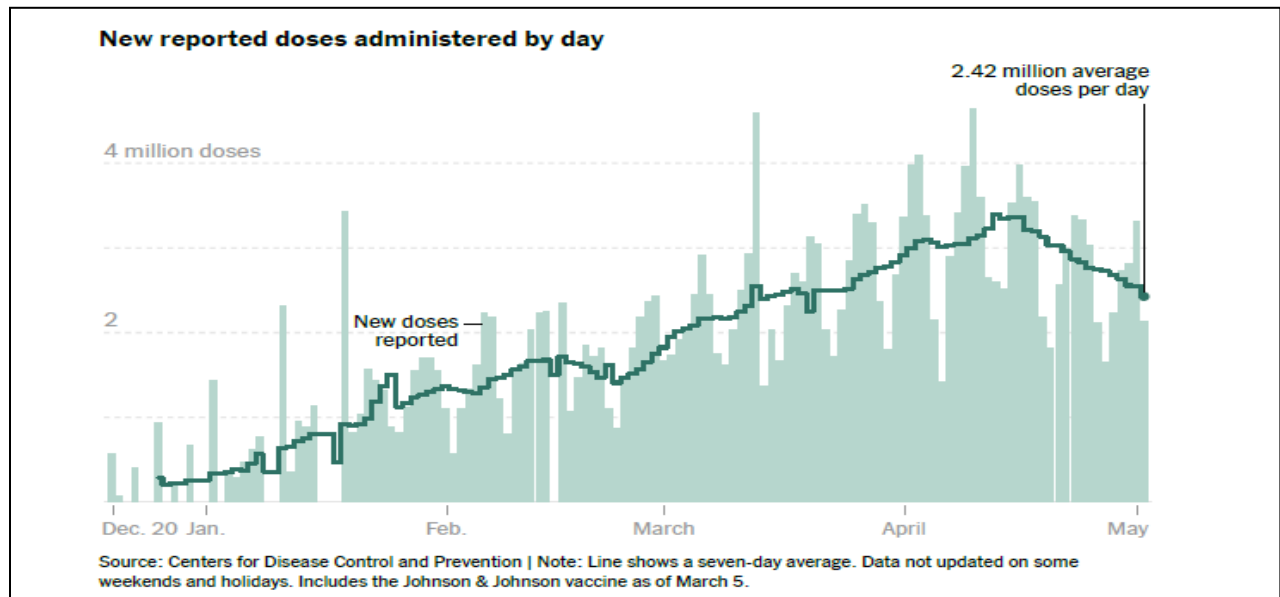
Specimen collection date, week	Total specimens sequenced by PRL	B.1.1.7 (N, %)	B.1.351 (N, %)	B.1.429 (N, %)	B.1.427 (N, %)	P.1 (N, %)	B.1.526 (N, %)*		B.1.525 (N, %)	P.2 (N, %)
							S:E484K+ (N, %)	S:E484K- (N, %)		
Feb 8 - 14	734	52 (7.1%)	0 (0%)	9 (1.2%)	4 (0.5%)	0 (0%)	111 (15.1%)	103 (14%)	1 (0.1%)	3 (0.4%)
Feb 15 - 21	826	69 (8.4%)	2 (0.2%)	5 (0.6%)	8 (1.0%)	0 (0%)	133 (16.1%)	121 (14.6%)	1 (0.1%)	0 (0%)
Feb 22 - 28	990	118 (11.9%)	0 (0%)	12 (1.2%)	4 (0.4%)	0 (0%)	207 (20.9%)	178 (18%)	4 (0.4%)	2 (0.2%)
March 1 - 7	715	125 (17.5%)	0 (0%)	14 (2.0%)	3 (0.4%)	0 (0%)	168 (23.5%)	153 (21.4%)	1 (0.1%)	0 (0%)
March 8 - 14	1481	141 (9.5%)	0 (0%)	13 (0.9%)	2 (0.1%)	1 (0.1%)	227 (15.3%)	254 (17.2%)	0 (0%)	0 (0%)
March 15 - 21	698	183 (26.2%)	2 (0.3%)	8 (1.1%)	5 (0.7%)	4 (0.6%)	195 (27.9%)	105 (15.0%)	2 (0.3%)	0 (0%)
March 22 - 28	1496	441 (29.5%)	4 (0.3%)	17 (1.1%)	5 (0.3%)	19 (1.3%)	381 (25.5%)	295 (19.7%)	3 (0.2%)	0 (0%)
March 29-April 4	1195	425 (35.6%)	4 (0.3%)	6 (0.5%)	9 (0.8%)	15 (1.3%)	305 (25.5%)	201 (16.8%)	6 (0.5%)	0 (0%)
April 5-11	1831	665 (36.3%)	4 (0.2%)	7 (0.4%)	7 (0.4%)	47 (2.6%)	463 (25.3%)	276 (15.1%)	5 (0.3%)	0 (0%)
April 12- 18	1404	532 (37.9%)	5 (0.4%)	11 (0.8%)	6 (0.4%)	47 (3.4%)	366 (26.1%)	196 (14.0%)	9 (0.6%)	0 (0%)

- **B.1.1.7** (first identified in the UK) is classified by CDC as a **variant of concern**, which means that there is evidence that it increases transmissibility and the severity of disease. Specifically, B.1.1.7 has been found to be 50% more transmissible and cause more severe infections.
- **B.1.526** (first identified in NYC) is classified by CDC as a **variant of interest**, because there are signs that it increases transmissibility. Studies are ongoing regarding the impact of B.1.526 on disease severity, reinfection, and vaccine effectiveness.
- The national and regional proportions of all COVID-19 variants are as follows (<https://covid.cdc.gov/covid-data-tracker/#variant-proportions>):

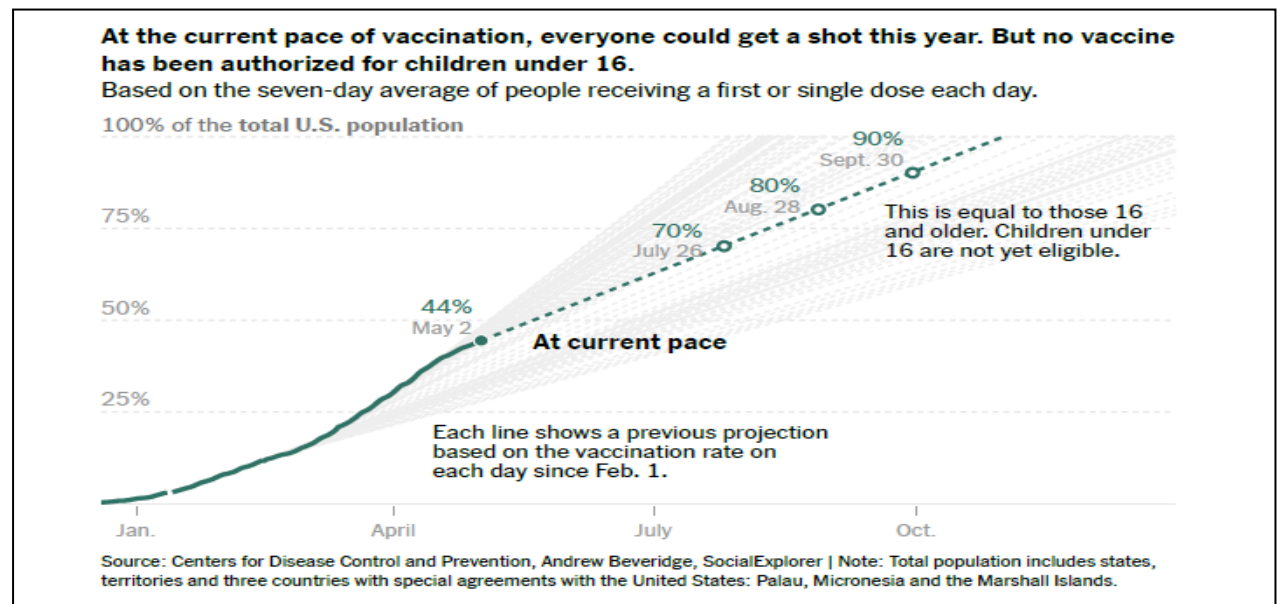


6. **Vaccination Program Update** (sources = CDC, NYS DOH, and NYT)

- On May 2, the 7-day average of COVID vaccine administered in the U.S. was 2.45 million. This was 300,000 fewer than that of a week ago. A total of 246 million+ doses have been administered since the beginning of the rollout.
- **44% of the U.S. population have received at least one dose (NY state and Suffolk County are both at 48%).**



- At the current rate of administration, all people 16 and older will receive at least one shot by late August.






























- However, according to a New York Times article, experts now believe reaching ‘Herd Immunity’ in the U.S. is unlikely due to widely circulation virus variants and persistent vaccine hesitancy (<https://www.nytimes.com/2021/05/03/health/covid-herd-immunity-vaccine.html?action=click&module=Spotlight&pgtype=Homepage>).

Read the article at the end of this newsletter.

7. **Finally, CDC updated its guidelines for fully vaccinated people** (<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html>).

See graph below for a summary of the updated recommendations.

Choosing Safer Activities

	Unvaccinated People	Your Activity	Fully Vaccinated People
		Outdoor	
Safest		Walk, run, or bike outdoors with members of your household	
		Attend a small, outdoor gathering with fully vaccinated family and friends	
		Attend a small, outdoor gathering with fully vaccinated and unvaccinated people	
Less Safe		Dine at an outdoor restaurant with friends from multiple households	
Least Safe		Attend a crowded, outdoor event, like a live performance, parade, or sports event	
		Indoor	
Less Safe		Visit a barber or hair salon	
		Go to an uncrowded, indoor shopping center or museum	
		Ride public transport with limited occupancy	
		Attend a small, indoor gathering of fully vaccinated and unvaccinated people from multiple households	
Least Safe		Go to an indoor movie theater	
		Attend a full-capacity worship service	
		Sing in an indoor chorus	
		Eat at an indoor restaurant or bar	
		Participate in an indoor, high intensity exercise class	

Get a COVID-19 vaccine



Prevention measures not needed



Take prevention measures

Fully vaccinated people: wear a mask
Unvaccinated people: wear a mask, stay 6 feet apart, and wash your hands.

- Safety levels assume the recommended prevention measures are followed, both by the individual and the venue (if applicable).
- CDC cannot provide the specific risk level for every activity in every community. It is important to consider your own personal situation and the risk to you, your family, and your community before venturing out.

That's about it in the world of COVID-19 pandemic last week. Once again, I hope the information provided here is useful to you in keeping track of the progression of the pandemic. While the decreasing infection rates and increasing rollout of COVID vaccines are encouraging trends, we should remain vigilant. So please do keep safe and healthy.

Sincerely Yours,

A handwritten signature in black ink, appearing to read 'VW Yang', written in a cursive style.

Vincent W. Yang, MD, PhD

Simons Chair of Medicine

Professor of Medicine, Biomedical Informatics, and Physiology and Biophysics

Reaching 'Herd Immunity' Is Unlikely in the U.S., Experts Now Believe

Widely circulating coronavirus variants and persistent hesitancy about vaccines will keep the goal out of reach. The virus is here to stay, but vaccinating the most vulnerable may be enough to restore normalcy.



By Apoorva Mandavilli

May 3, 2021, 3:00 a.m. ET

Early in the pandemic, when vaccines for the coronavirus were still just a glimmer on the horizon, the term “herd immunity” came to signify the endgame: the point when enough Americans would be protected from the virus so we could be rid of the pathogen and reclaim our lives.

Now, more than half of adults in the United States have been inoculated with at least one dose of a vaccine. But daily vaccination rates are slipping, and there is widespread consensus among scientists and public health experts that the herd immunity threshold is not attainable — at least not in the foreseeable future, and perhaps not ever.

Instead, they are coming to the conclusion that rather than making a long-promised exit, the virus will most likely become a manageable threat that will continue to circulate in the United States for years to come, still causing hospitalizations and deaths but in much smaller numbers.

How much smaller is uncertain and depends in part on how much of the nation, and the world, becomes vaccinated and how the coronavirus evolves. It is already clear, however, that the virus is changing too quickly, new variants are spreading too easily and vaccination is proceeding too slowly for herd immunity to be within reach anytime soon.

Continued immunizations, especially for people at highest risk because of age, exposure or health status, will be crucial to limiting the severity of outbreaks, if not their frequency, experts believe.

“The virus is unlikely to go away,” said Rustom Antia, an evolutionary biologist at Emory University in Atlanta. “But we want to do all we can to check that it’s likely to become a mild infection.”

The shift in outlook presents a new challenge for public health authorities. The drive for herd immunity — by the summer, some experts once thought possible — captured the imagination of large segments of the public. To say the goal will not be attained adds another “why bother” to the list of reasons that vaccine skeptics use to avoid being inoculated.

Yet vaccinations remain the key to transforming the virus into a controllable threat, experts said.

Dr. Anthony S. Fauci, the Biden administration’s top adviser on Covid-19, acknowledged the shift in experts’ thinking.

“People were getting confused and thinking you’re never going to get the infections down until you reach this mystical level of herd immunity, whatever that number is,” he said.

“That’s why we stopped using herd immunity in the classic sense,” he added. “I’m saying: Forget that for a second. You vaccinate enough people, the infections are going to go down.”

Why reaching the threshold is tough

Once the novel coronavirus began to spread across the globe in early 2020, it became increasingly clear that the only way out of the pandemic would be for so many people to gain immunity — whether through natural infection or vaccination — that the virus would run out of people to infect. The concept of reaching herd immunity became the implicit goal in many countries, including the United States.

Early on, the target herd immunity threshold was estimated to be about 60 to 70 percent of the population. Most experts, including Dr. Fauci, expected that the United States would be able to reach it once vaccines were available.

But as vaccines were developed and distribution ramped up through the winter and into the spring, estimates of the threshold began to rise. That is because the initial calculations were based on the contagiousness of the original version of the virus. The predominant variant now circulating in the United States, called B.1.1.7 and first identified in Britain, is about 60 percent more transmissible.

As a result, experts now calculate the herd immunity threshold to be at least 80 percent. If even more contagious variants develop, or if scientists find that immunized people can still transmit the virus, the calculation will have to be revised upward again.

Polls show that about 30 percent of the U.S. population is still reluctant to be vaccinated. That number is expected to improve but probably not enough. “It is theoretically possible that we could get to about 90 percent vaccination coverage, but not super likely, I would say,” said Marc Lipsitch, an epidemiologist at the Harvard T.H. Chan School of Public Health.

Though resistance to the vaccines is a main reason the United States is unlikely to reach herd immunity, it is not the only one.

Herd immunity is often described as a national target. But that is a hazy concept in a country this large.

“Disease transmission is local,” Dr. Lipsitch noted.

“If the coverage is 95 percent in the United States as a whole, but 70 percent in some small town, the virus doesn’t care,” he explained. “It will make its way around the small.

How insulated a particular region is from the coronavirus depends on a dizzying array of factors.

Herd immunity can fluctuate with “population crowding, human behavior, sanitation and all sorts of other things,” said Dr. David M. Morens, a virologist and senior adviser to Dr. Fauci. “The herd immunity for a wealthy neighborhood might be X, then you go into a crowded neighborhood one block away and it’s 10X.”

Given the degree of movement among regions, a small virus wave in a region with a low vaccination level can easily spill over into an area where a majority of the population is protected.

At the same time, the connectivity between countries, particularly as travel restrictions ease, emphasizes the urgency of protecting not just Americans but everyone in the world, said Natalie E. Dean, a biostatistician at the University of Florida in Gainesville. Any variants that arise in the world will eventually reach the United States, she noted.

Many parts of the world lag far behind the United States on vaccinations. Less than 2 percent of the people in India have been fully vaccinated, for example, and less than 1 percent in South Africa, according to data compiled by The New York Times.

“We will not achieve herd immunity as a country or a state or even as a city until we have enough immunity in the population as a whole,” said Lauren Ancel Meyers, the director of the Covid-19 Modeling Consortium at the University of Texas at Austin.

What the future may hold

If the herd immunity threshold is not attainable, what matters most is the rate of hospitalizations and deaths after pandemic restrictions are relaxed, experts believe.

By focusing on vaccinating the most vulnerable, the United States has already brought those numbers down sharply. If the vaccination levels of that group continue to rise, the expectation is that over time the coronavirus may become seasonal, like the flu, and affect mostly the young and healthy.

“What we want to do at the very least is get to a point where we have just really sporadic little flare-ups,” said Carl Bergstrom, an evolutionary biologist at the University of Washington in Seattle. “That would be a very sensible target in this country where we have an excellent vaccine and the ability to deliver it.”

Over the long term — a generation or two — the goal is to transition the new coronavirus to become more like its cousins that cause common colds. That would mean the first infection is early in childhood, and subsequent infections are mild because of partial protection, even if immunity wanes.

Some unknown proportion of people with mild cases may go on to experience debilitating symptoms for weeks or months — a syndrome called “long Covid” — but they are unlikely to overwhelm the health care system.

“The vast majority of the mortality and of the stress on the health care system comes from people with a few particular conditions, and especially people who are over 60,” Dr. Lipsitch said. “If we can protect those people against severe illness and death, then we will have turned Covid from a society disrupter to a regular infectious disease.”

If communities maintain vigilant testing and tracking, it may be possible to bring the number of new cases so low that health officials can identify any new introduction of the virus and immediately stifle a potential outbreak, said Bary Pradelski, an economist at the National Center for Scientific Research in Grenoble, France. He and his colleagues described this strategy in a paper published on Thursday in the scientific journal *The Lancet*.

“Eradication is, I think, impossible at this stage,” Dr. Pradelski said. “But you want local elimination.”

Vaccination is still the key

The endpoint has changed, but the most pressing challenge remains the same: persuading as many people as possible to get the shot.

Reaching a high level of immunity in the population “is not like winning a race,” Dr. Lipsitch said. “You have to then feed it. You have to keep vaccinating to stay above that threshold.”

Skepticism about the vaccines among many Americans and lack of access in some groups — homeless populations, migrant workers or some communities of color — make it a challenge to achieve that goal. Vaccine mandates would only make that stance worse, some experts believe.

A better approach would be for a trusted figure to address the root cause of the hesitancy — fear, mistrust, misconceptions, ease of access or a desire for more information, said Mary Politi, an expert in health decision making and health communication at Washington University in St. Louis.

People often need to see others in their social circle embracing something before they are willing to try it, Dr. Politi said. Emphasizing the benefits of vaccination to their lives, like seeing a family member or sending their children to school, might be more motivating than the nebulous idea of herd immunity.

“That would resonate with people more than this somewhat elusive concept that experts are still trying to figure out,” she added.

Though children spread the virus less efficiently than adults do, the experts all agreed that vaccinating children would also be important for keeping the number of Covid cases low. In the long term, the public health system will also need to account for babies, and for children and adults who age into a group with higher risk.

Unnerving scenarios remain on the path to this long-term vision.

Over time, if not enough people are protected, highly contagious variants may develop that can break through vaccine protection, land people in the hospital and put them at risk of death.

“That’s the nightmare scenario,” said Jeffrey Shaman, an epidemiologist at Columbia University.

How frequent and how severe those breakthrough infections are have the potential to determine whether the United States can keep hospitalizations and deaths low or if the country will find itself in a “mad scramble” every couple of years, he said.

“I think we’re going to be looking over our shoulders — or at least public health officials and infectious disease epidemiologists are going to be looking over their shoulders going: ‘All right, the variants out there — what are they doing? What are they capable of?’” he said.

“Maybe the general public can go back to not worrying about it so much, but we will have to.”