

PHYSICAL REGATHERING, THE COVID-19 VACCINE, AND PROTECTING THE HEALTH OF YOUR CONGREGATION IN 2021

Werner Bischoff, MD PhD

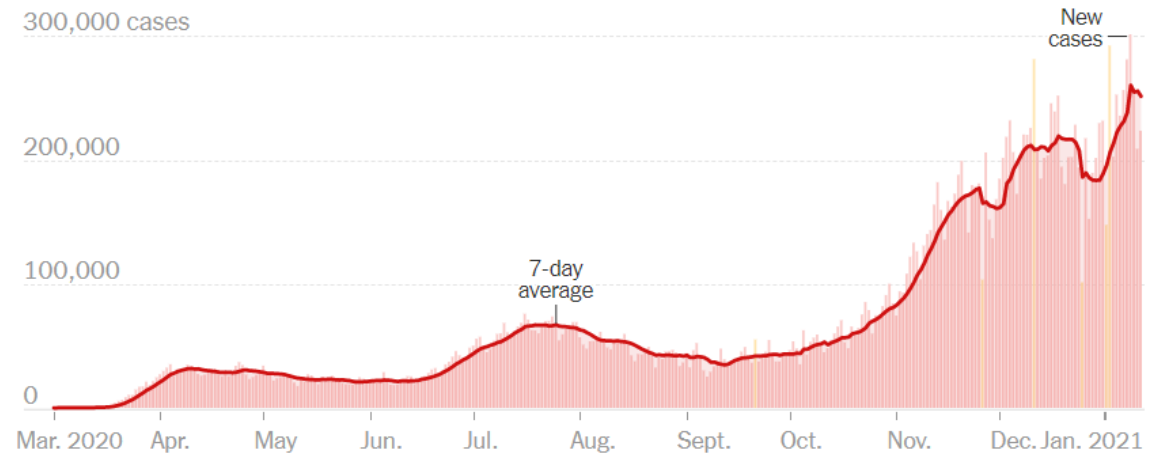
Medical Director Infection Prevention, Health System Epidemiologist

Current Status of the COVID-19 Pandemic.

Outbreak Status – Global and U.S.

- As of 01/13/2020 (6:43 am)
 - 91,691,962 confirmed cases
 - 1,964,764 deaths
 - Countries affected: 191
- US: 22,848,707 confirmed cases
- US: 380,821 deaths

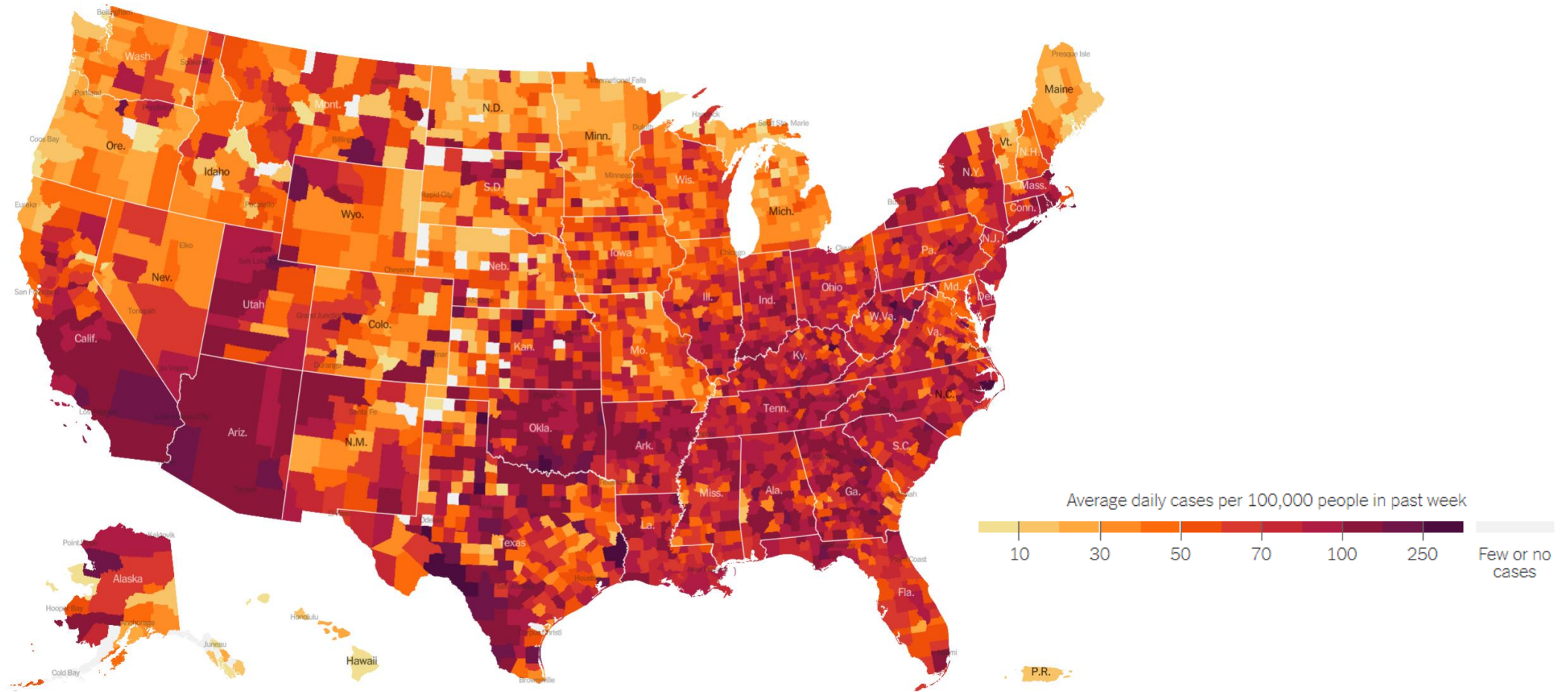
New Cases United States



	TOTAL REPORTED	ON JAN. 11	14-DAY CHANGE
Cases	22.6 million+	222,902	+37% ↗
Deaths	376,476	2,048	+48% ↗
Hospitalized		129,748	+10% →

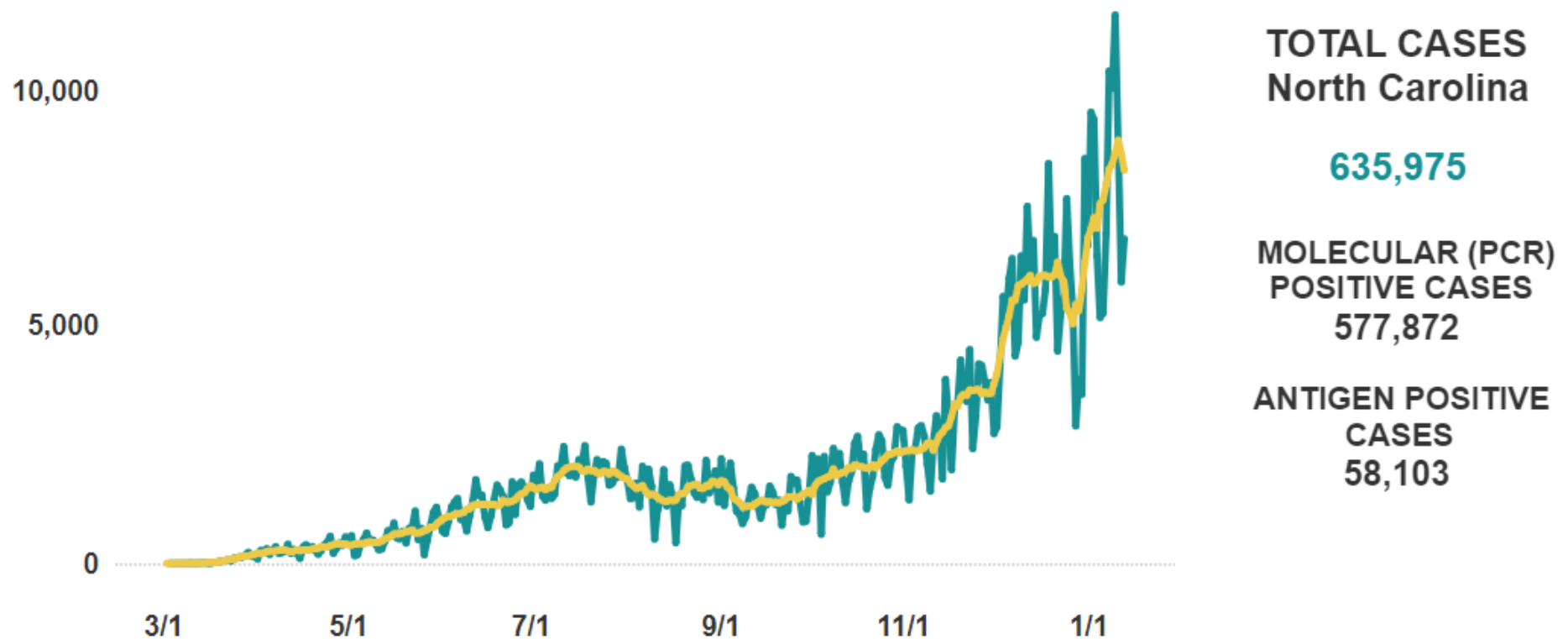
- <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>
- <https://www.bbc.com/news/world-51235105>

Average Daily Cases per 100,000 People in Past Week



- <https://www.nytimes.com/>

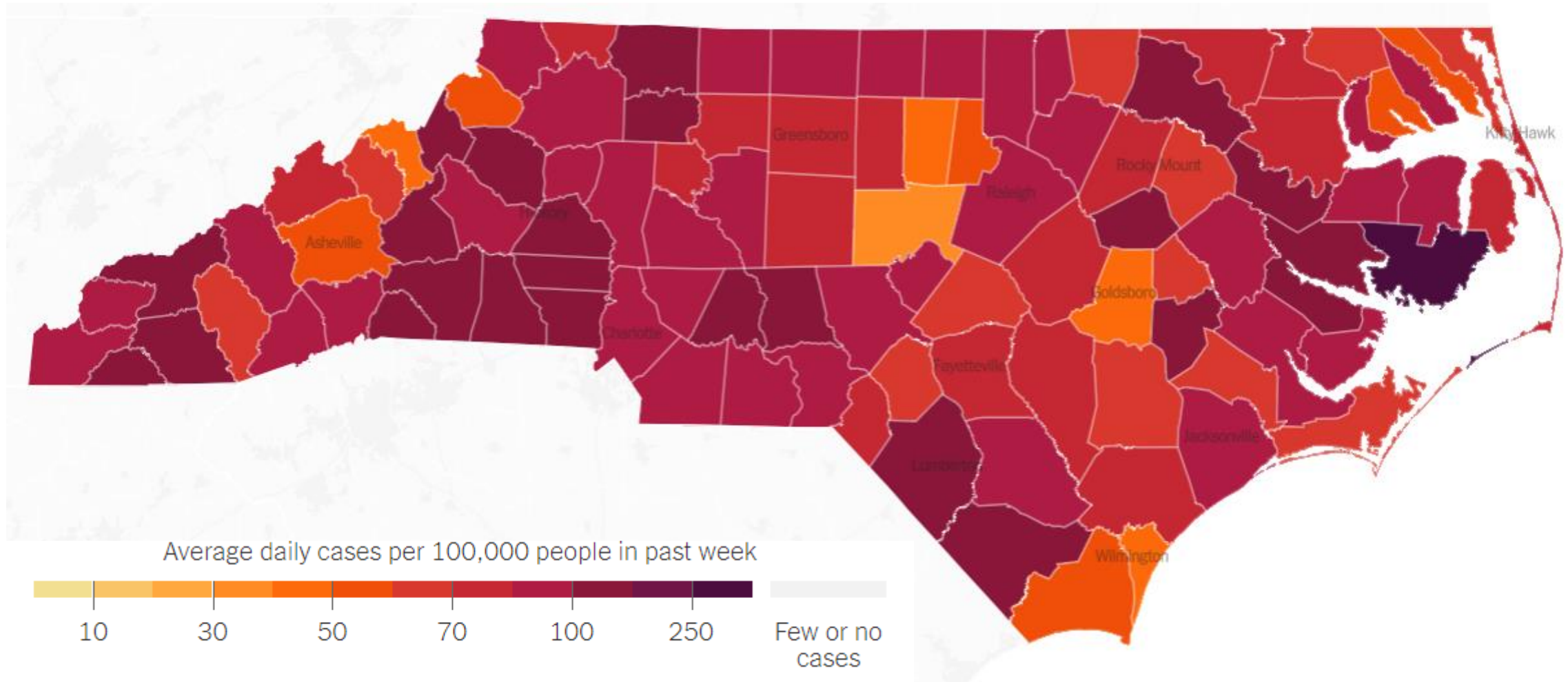
Outbreak Status – North Carolina



As of 01/12/2021, 12:00 pm: Hospitalized: 3,940; Deaths: 7,638

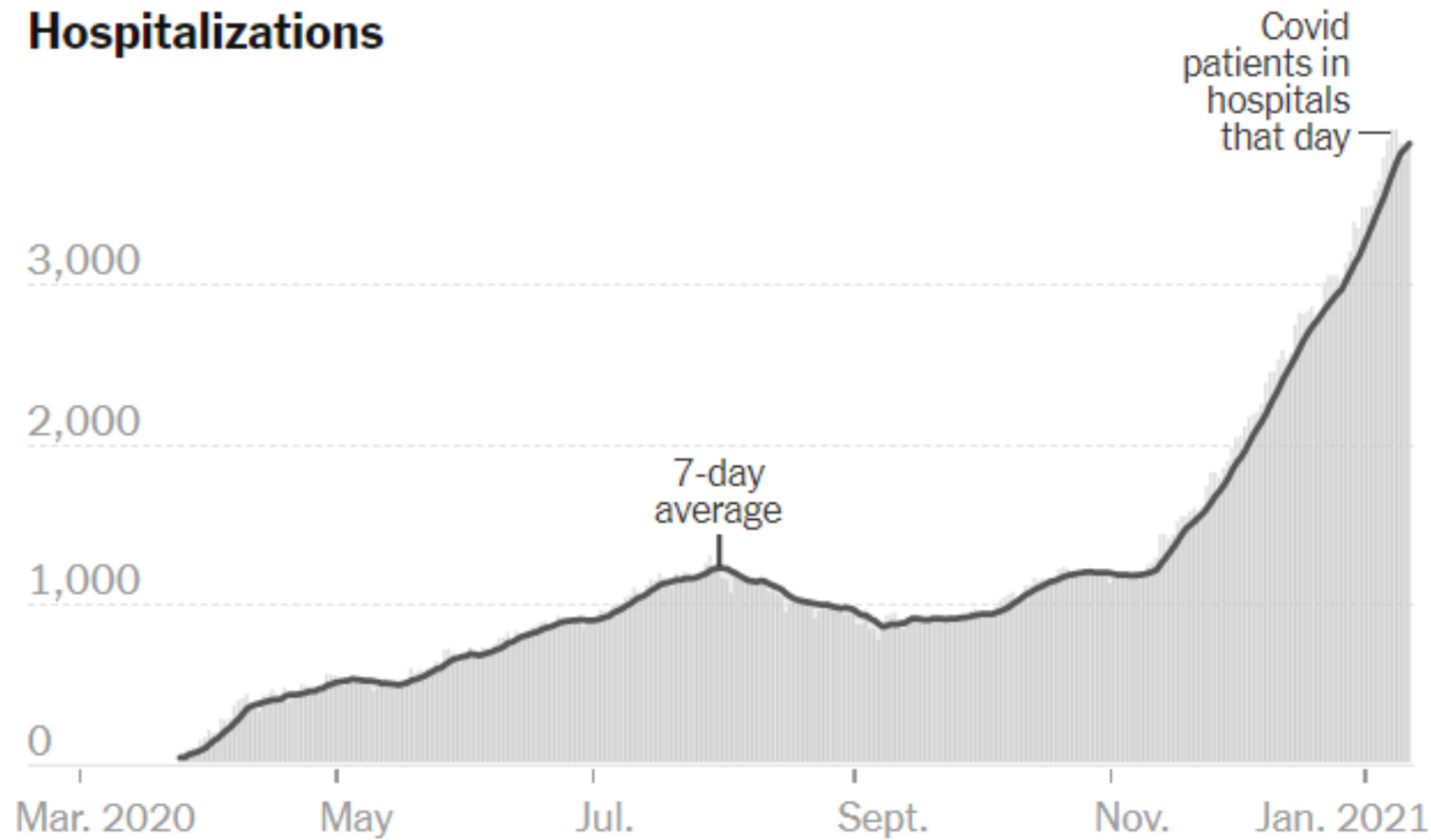
<https://covid19.ncdhhs.gov/dashboard/cases>

Outbreak Status – North Carolina



Hospitalizations in NC

Hospitalizations



HOSPITAL	COVID PATIENTS	AVAILABLE I.C.U. BEDS	▼ I.C.U. OCCUPANCY
Average of 6 hospitals on map	162	6	90%
N.C. state average			84%
National average			79%
Kindred Hospital Greensboro Greensboro, N.C.	-	0	100%
High Point Regional Hospital High Point, N.C.	53	0.6	98%
Novant Health Forsyth Medical Center Winston-Salem, N.C.	208	6	95%
North Carolina Baptist Hospital Winston-Salem, N.C.	89	12	90%
The Moses H. Cone Memorial Hospital Greensboro, N.C.	299	18	86%

<https://www.nytimes.com/interactive/2020/us/covid-hospitals-near-you.html>

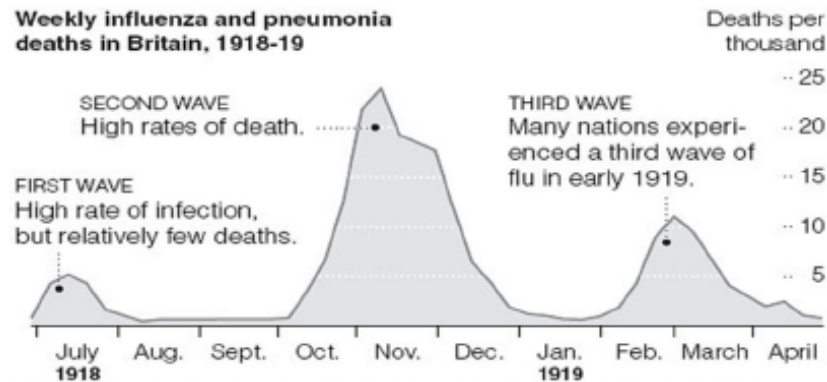
COVID-19, Influenza, and other Respiratory Viruses

- Co-infections reported¹
- Differential diagnosis difficult
- Reliance on test combos

The 1918 Pandemic

The influenza pandemic of 1918 spread across Europe, Asia and North America in three distinct but uneven waves, and was fatal for about 2 percent of those who caught it. Global data is incomplete, but death rates in Britain hint at the severity of the three waves.

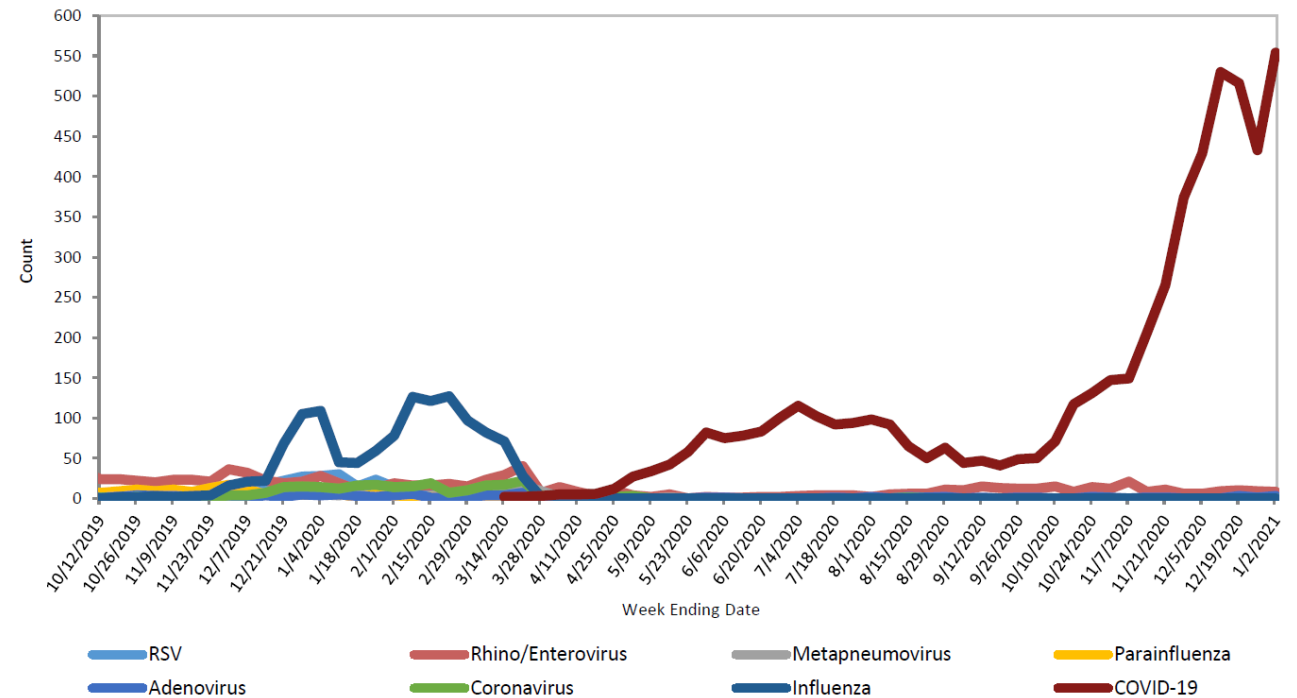
Weekly influenza and pneumonia deaths in Britain, 1918-19



Sources: *Emerging Infectious Diseases*; Jeffery K. Taubenberger and David M. Morens
THE NEW YORK TIMES

WFBMC Respiratory Viral Pathogen Counts

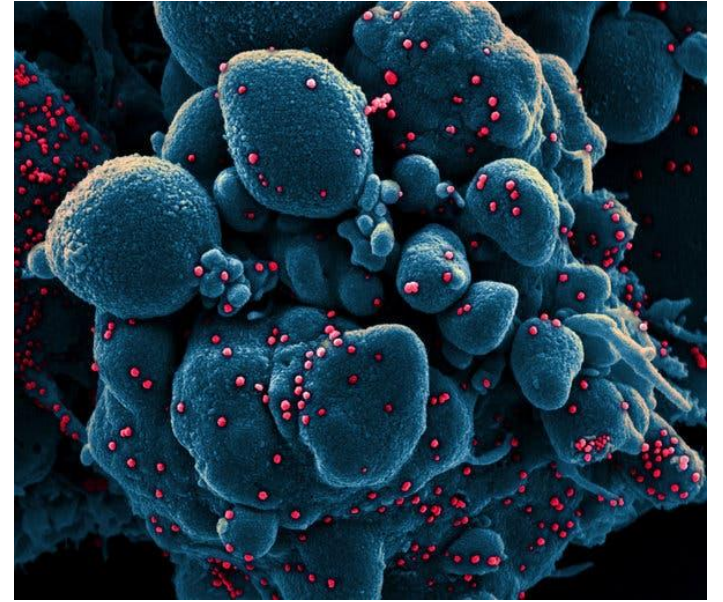
10/5/19 - 1/2/21



1. Konala VM, et al. A Case Series of Patients Coinfected With Influenza and COVID-19. *J Investig Med High Impact Case Rep.* 2020c;8

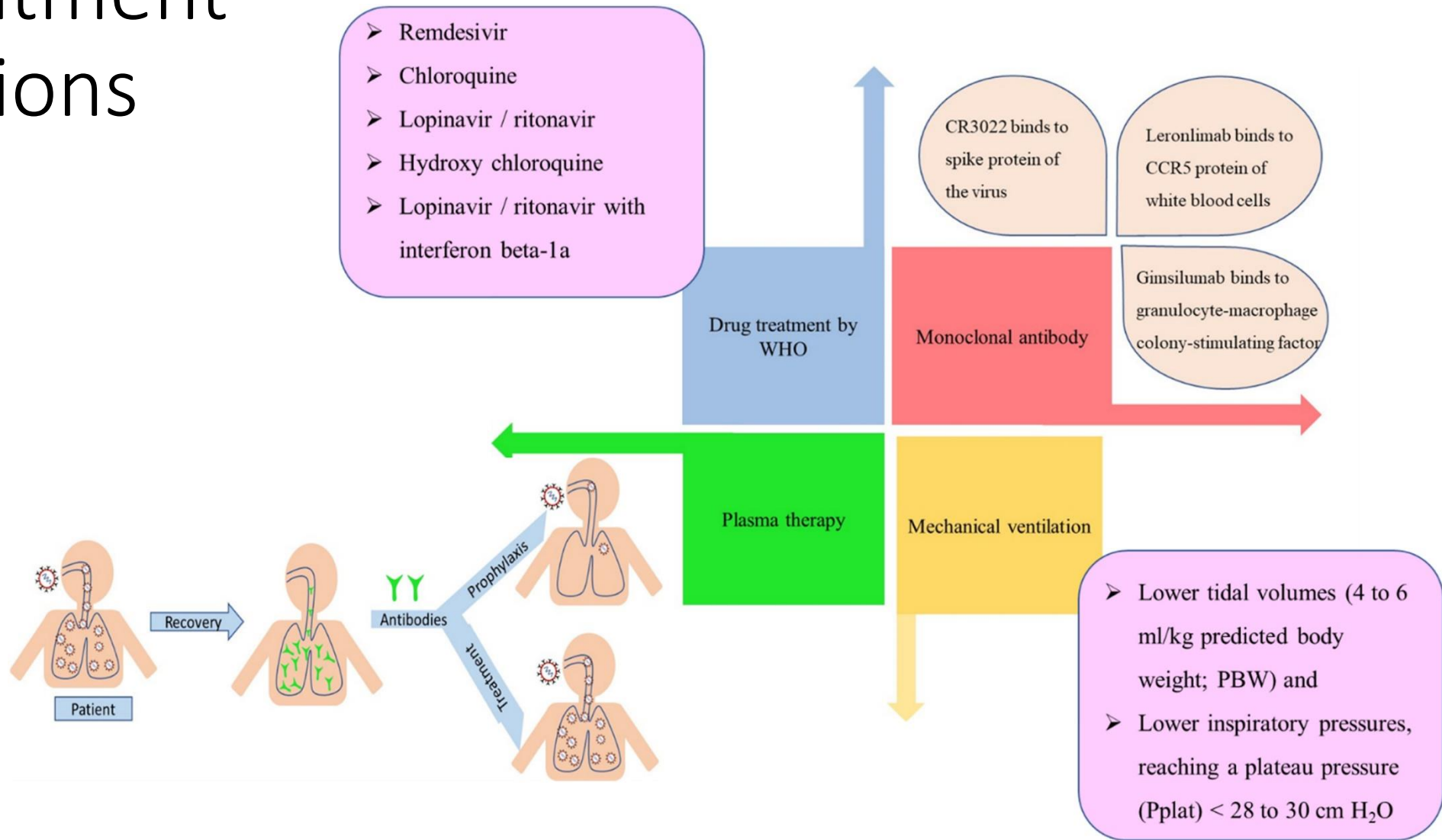
Coronavirus Mutations

- All viruses mutate over time
- Two new variants recently detected (B.1.1.7 [Britain] and 501.V2 [South Africa])
- Changes to the spike protein
- Current vaccines create a polyclonal response, generating numerous antibodies that hone in on different parts of the virus
- Both variants appear to have mutations that do not change the vaccine efficacy or cause more severe illness
- Concern: variants may be more easily spread



Treatments and Vaccines

Treatment Options



Coronavirus Drug and Treatment Tracker -01/08

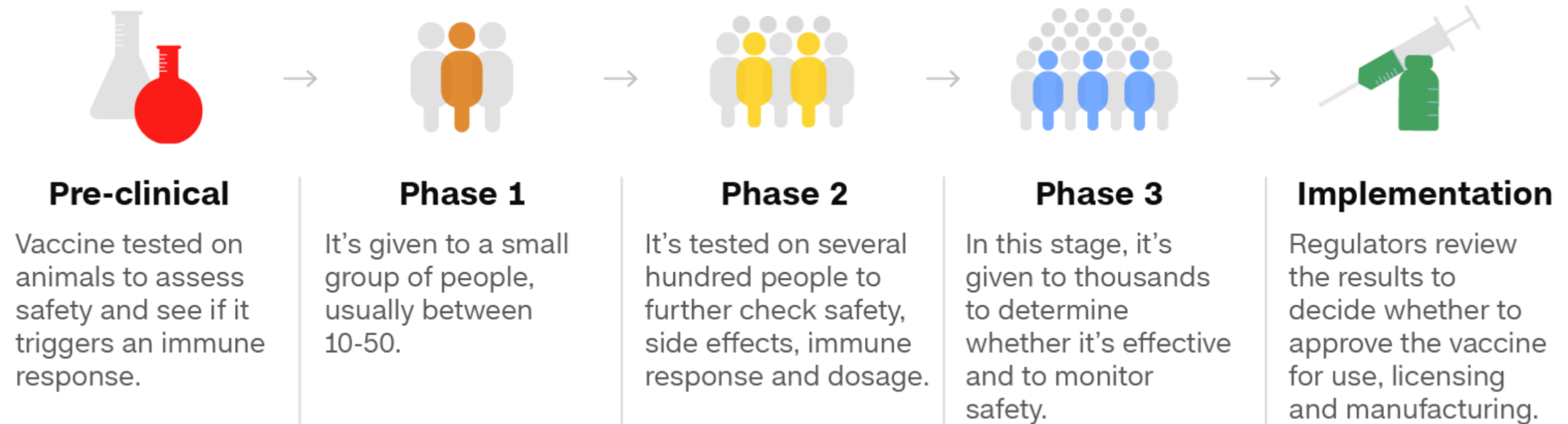
- FDA approved: Remdesivir (antiviral)
- Widely used:
 - Prone position of patient
 - Ventilators and other respiratory support devices



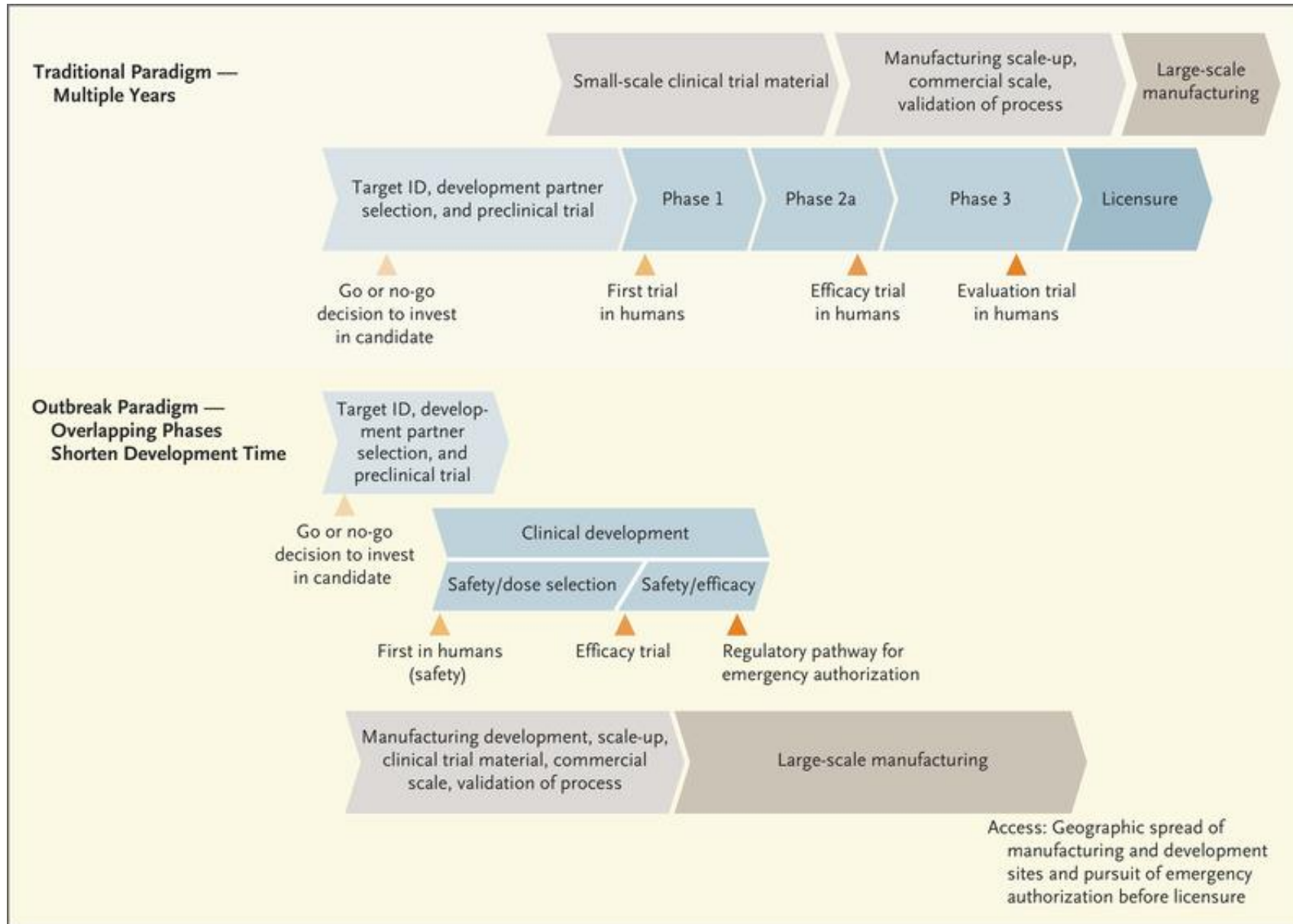
- Pseudoscience and Fraud:
 - Drinking or injecting bleach and disinfectants
 - UV light
 - Silver

<https://www.nytimes.com/interactive/2020/science/coronavirus-drugs-treatments.html>

Phases of Vaccine Development



Source: US Centers for Disease Control and Prevention, CNN reporting
Graphic: Eliza Mackintosh and Henrik Pettersson, CNN

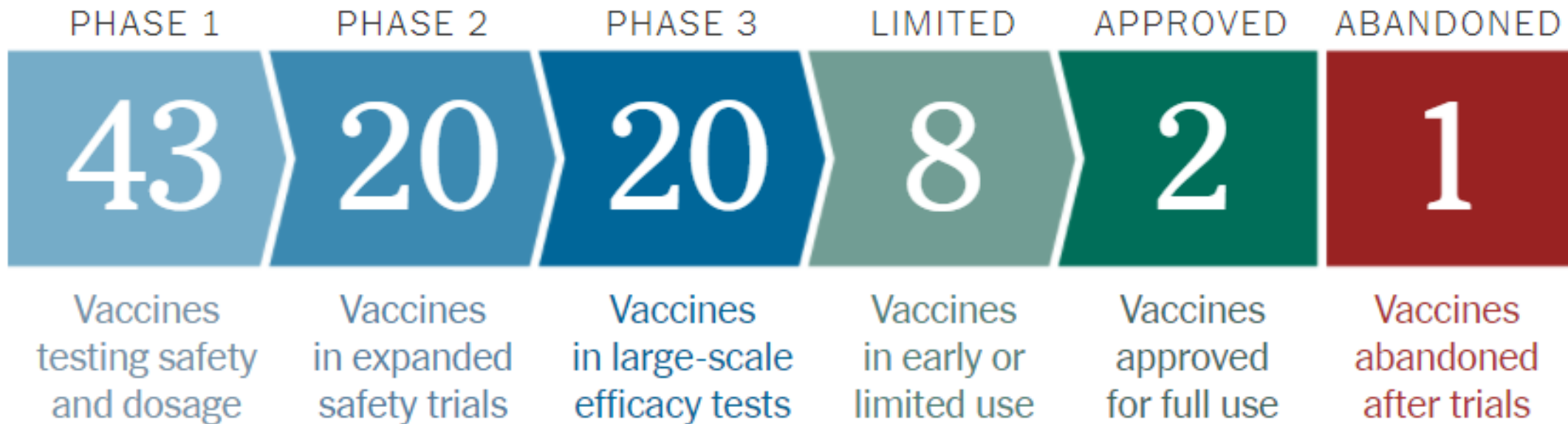


15 to 20 years

10 to 18 months

Coronavirus Vaccine Tracker – 01/11

- 64 vaccines in clinical trial on humans
- At least 85 preclinical vaccines under investigation in animals



<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>

COVID-19 Vaccine Key Points

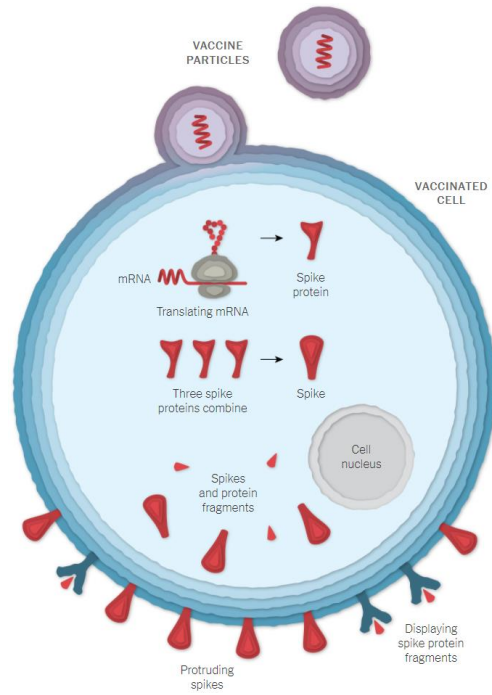


- High efficacy - 90%+
- No serious adverse events reported
- Two doses required
- 2nd dose > 21 days after initial dose
- Ultra-cold storage: -80oC
- Viability
- Frozen (ultra-cold): 6 months
- Shippers + dry ice: 15 days
- Refrigerated: 5 days
- Initial production: 2020
- 50M by EOY (25M capable of being vaccinated)
- 2021: 1.3B (650M capable of being vaccinated)

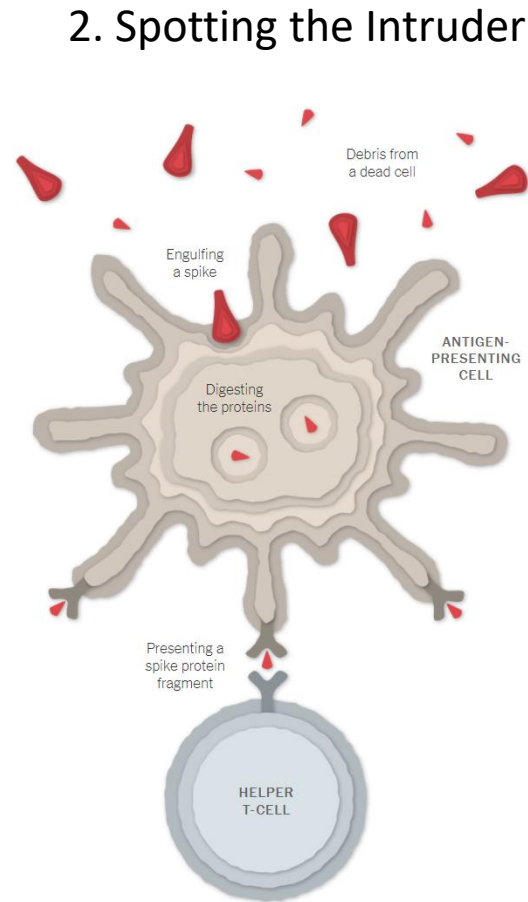


- High efficacy - 90%+
- No serious adverse events reported
- Two doses required
- 2nd dose > 28 days after initial dose
- Cold (non-ultra-cold) storage: -20oC
- Viability
- Frozen: 6 months
- Refrigerated: 30 days
- Initial production: 2020
- 20M by EOY (10M capable of being vaccinated)
- 2021: 500M-1B (250M-500M capable of being vaccinated)

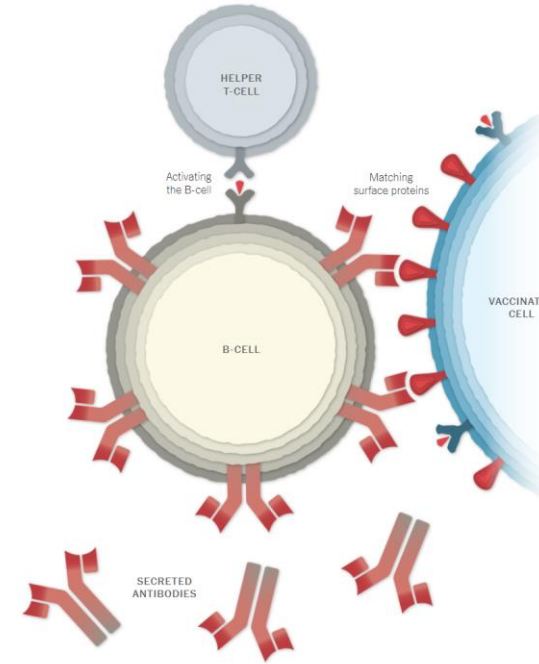
How Does a mRNA Vaccine Work?



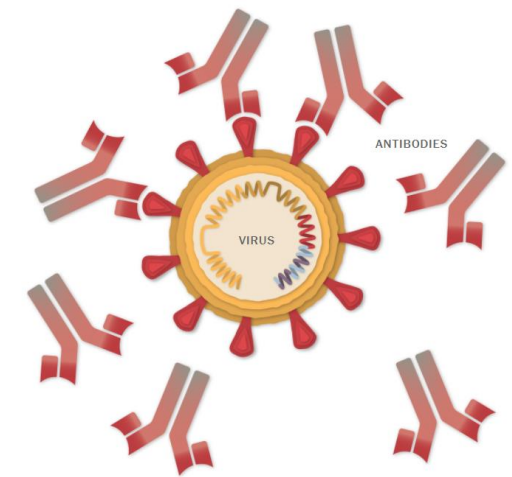
1. Entering a Cell



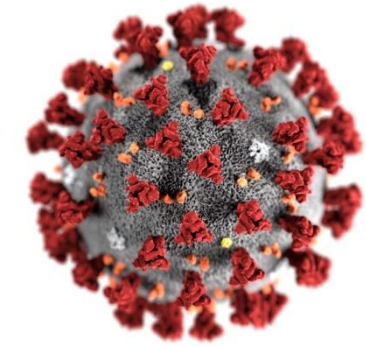
2. Spotting the Intruder



3. Making Antibodies

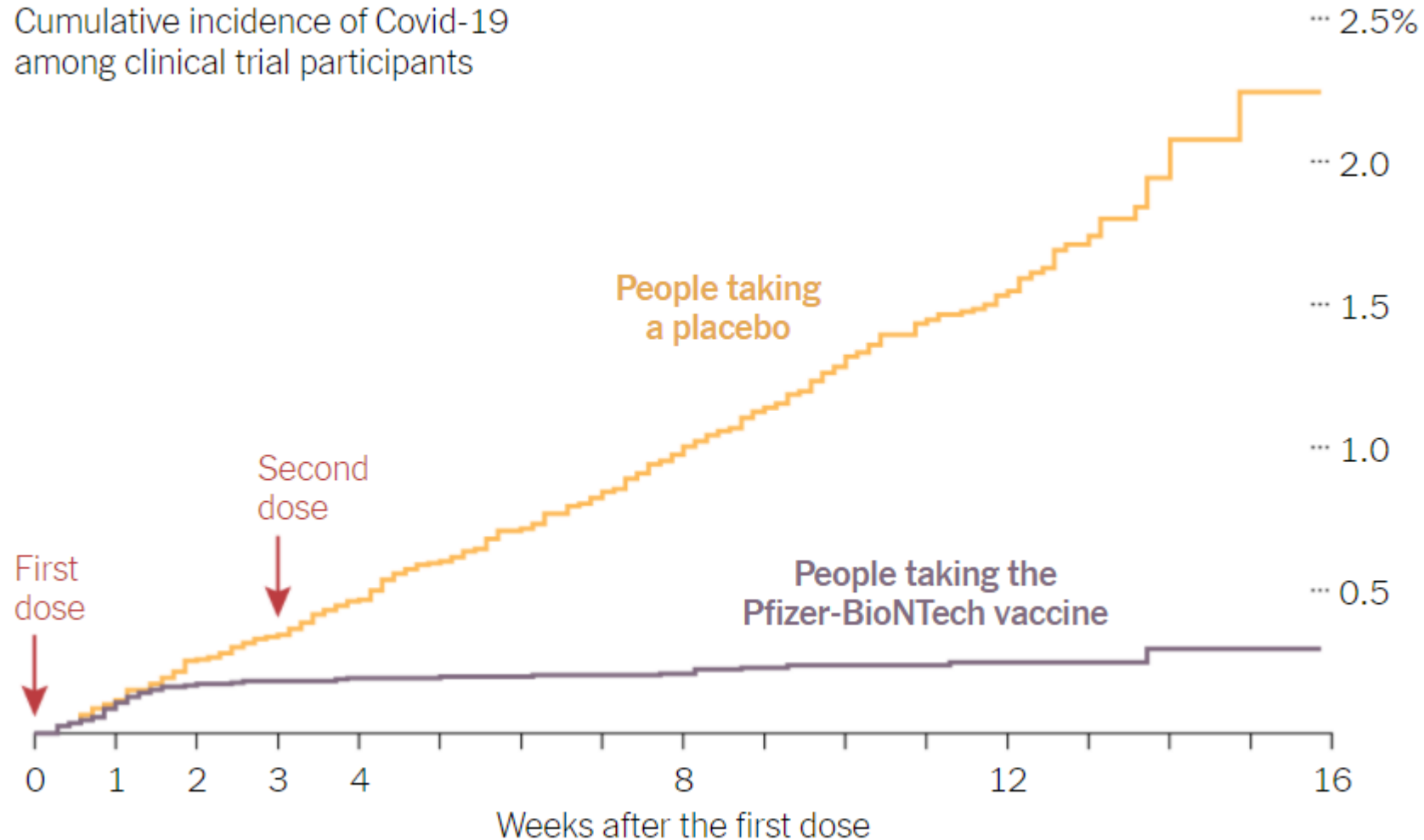


4. Stopping the Virus



How Effective is the Pfizer Vaccine

Cumulative incidence of Covid-19
among clinical trial participants



COVID-19 Vaccine – Side Effects

Vaccines are safe and save lives

Common Side Effects (within three days):

- Injection side: pain, redness, swelling
- General: headache, tiredness, chills, fever, achiness

Very Rare Side Effects:

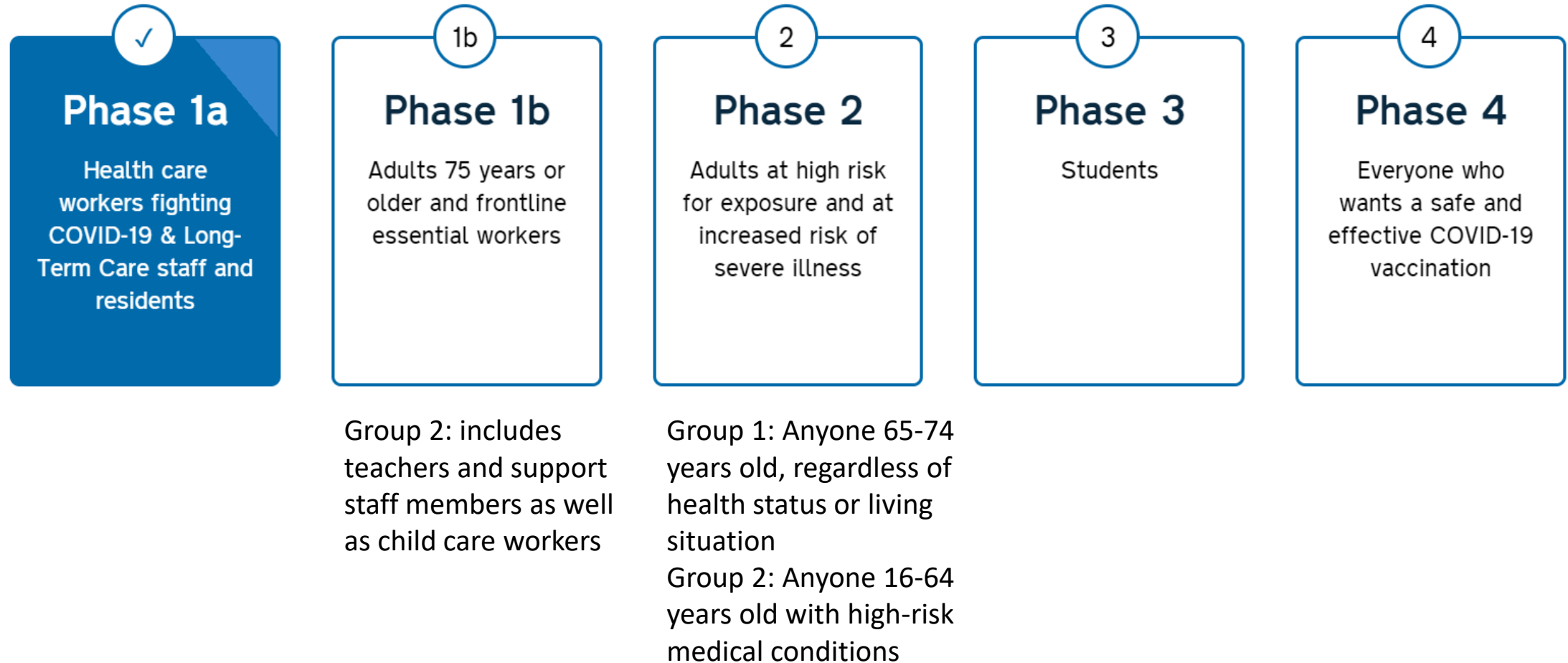
- Allergic reactions (within minutes of receiving the vaccine) – **Tell the staff that you have allergies or had an allergic reaction in the past!**
- Facial nerve paralysis (link to vaccination under investigation)

Precautions: 15 minute observation time after receiving the vaccine (30 minutes for individuals with a history of allergies)

Vaccine Safety

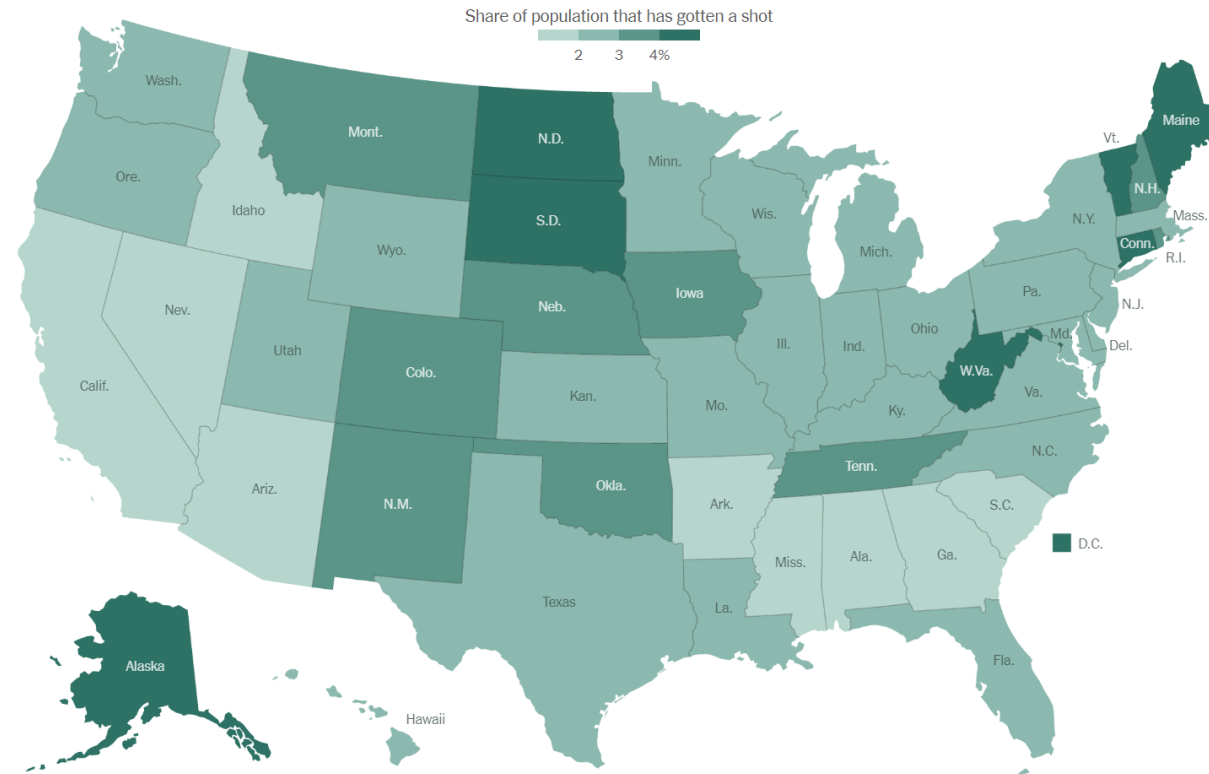
- All Vaccine Development Phases successfully completed
- >44,000 participants each in individual vaccine trials
- CDC Vaccine safety assessment for essential workers (V-SAFE) – 20+ million people receiving the vaccine
- Additional tracking program in long-term care facilities (35k+ participants)
- Transparency: publication of all adverse events reports (Vaccine Adverse Event Reporting System [VAERS]):
<https://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html>

Distribution Plan – NC DHHS – Vaccination Plan



<https://covid19.ncdhhs.gov/vaccines>

Vaccine Distribution



Name	Pct. of people given a shot ▾	Doses distributed	Shots given	Doses used
Total	—	25,480,725	8,987,322	35%
North Carolina	2.0%	820,825	211,572	26%

Practical Interventions to Stop the Spread

Transmission Characteristics

- Droplet (<6 feet) and direct contact are predominant modes of transmission
- Airborne (long distances) – no strong evidence
- Indirect (via the contaminated environment) likely (unknown impact)
- Pre-symptomatic – transmission well documented
- Asymptomatic - infection demonstrated
- Aerosolization of stool (viable virus occasionally demonstrated in stool) – no evidence for transmission
- Transplacental/vertical – possible rare cases
- Companion animals – may develop mild-severe symptoms (cats, dogs, tigers, minks) – probable mink-to-human transmission
- Travel – Ship, Bus, Aircraft – documented
- Blood, urine – no evidence for transmission



VALUE OF MASK WEARING, PHYSICAL DISTANCING, AND HAND HYGIENE

Doung-Ngern P, et al. EID 2020 Nov:

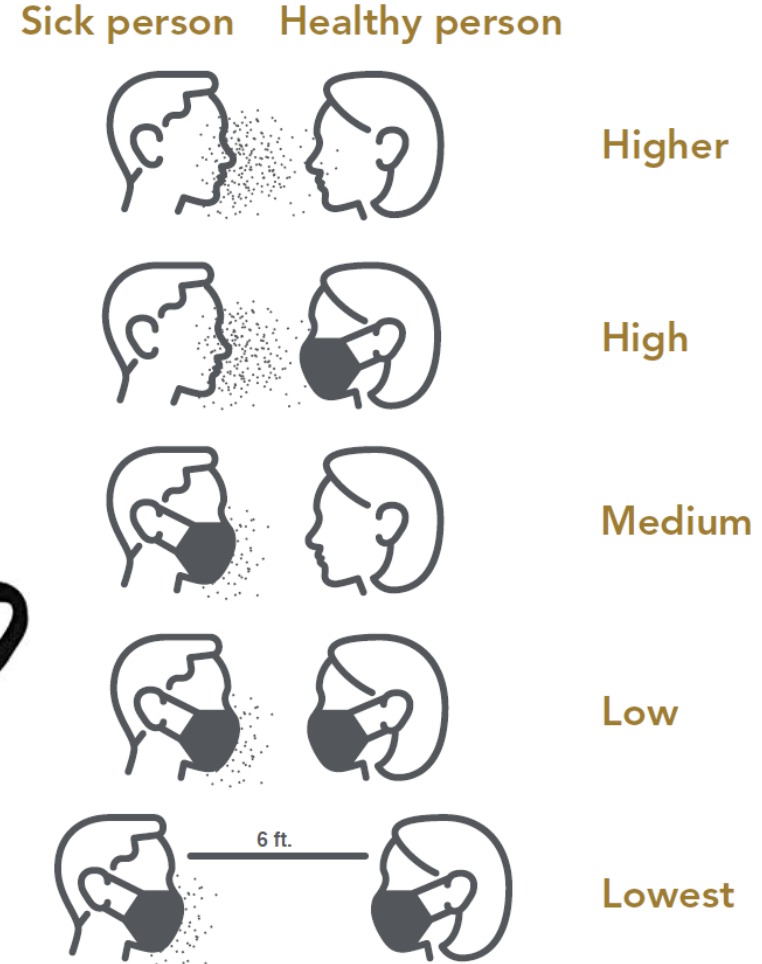
- Goal: To assess effectiveness of PPE to prevent acquisition of SARS-CoV-2 infection
- Methods: Case control study, 211 cases and 839 controls, Thailand
- Results:
 - Wearing a mask at all times during contact was independently associated with lower risk for SARS-CoV-2 (RR, 0.23)
 - Gender, age group (<15, 16-40, 41-65, >65), contact place (night club, boxing stadium, workplace, household, others), sharing dishes or cups – NOT significant
 - Shortest distance of contact (physical contact, <1m, >1 m), duration of contact within 1m (>60min, 16-60min, <15min), sharing cigarettes (N, Y), handwashing (none, sometimes, often), type of mask (none, nonmedical only, nonmedical and medical, medical only), and compliance with mask wearing (never, sometimes, always) – SIGNIFICANT REDUCTION IN RISK OF ACQUIRING COVID-19
 - Maintaining >1m distance from a person with COVID-19 (RR, 0.14), having close contact for <15 minutes (RR, 0.24), and frequent handwashing (RR, 0.19) were independently associated with lower risk for infection.

Personal Preventive Practices

- Handwashing
- Maintaining 6 ft distance
- Wearing face masks
- Frequent cleaning of high touch areas



Probability of Getting Sick



When can we gather again?



NC Executive Orders

- Executive Order 181 - effective Dec. 11 – Jan. 29:
 - Implements a modified stay at home order from 10 p.m. and 5 a.m.
 - Requires nighttime closure from 10 p.m. to 5 a.m. for certain businesses and activities
 - Prohibits the sale and service of alcohol for onsite consumption from 9 p.m. to 7 a.m.
- Executive Order 180:
 - Requires face coverings in all public indoor settings

Open

- ✓ Retail Retail stores
- ✓ Food and drink Restaurant dining; bars for outdoor service
- ✓ Personal care Salons, barbershops, tattoo parlors
- ✓ Houses of worship
- ✓ Entertainment Museums and aquariums; bowling alleys and skating rinks; large outdoor venues; auditoriums, amphitheaters, arenas and other venues for live performances; movie theaters; amusement parks for outdoor attractions
- ✓ Outdoor and recreation Pools; playgrounds; gyms

CDC - Considerations for Communities of Faith

- Safety Actions:
 - Promote healthy hygiene practices
 - Masks
 - Intensify cleaning, disinfection, and ventilation – most disinfectants are active (EPA N list: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-coronavirus-covid-19>)
 - Promote social distancing
 - Minimize community sharing of worship materials and other items
 - Follow nursery/childcare guidance (<https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/guidance-for-childcare.html>)
 - Train/educate all clergy and staff in above safety actions
- Monitoring and Preparing
 - Raise awareness of signs and symptoms and encourage to stay home.
 - Establish a response plan if one or more members become sick or test positive
- Closing
 - Monitor state and local health department notices daily about transmission in the community and adjust operations

<https://www.cdc.gov/coronavirus/2019-ncov/community/faith-based.html>

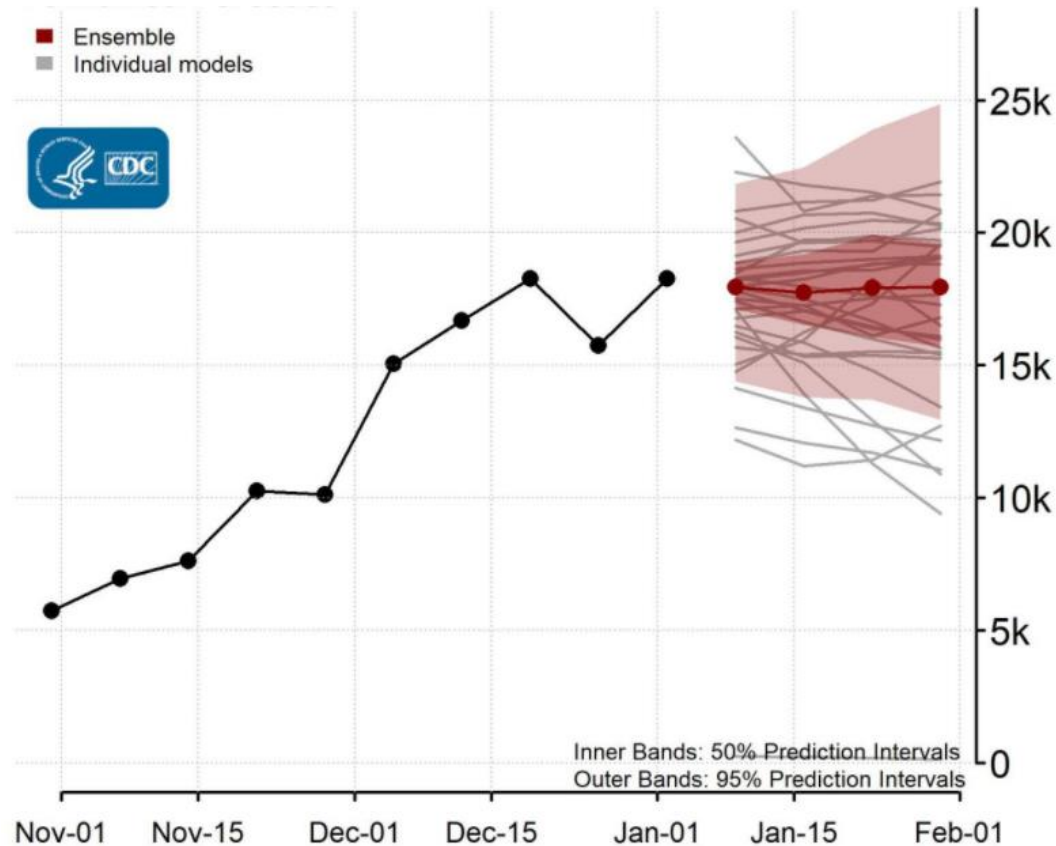
A few Notes

- Singing – linked to spread of the virus. Keeping distance (10ft) and wearing a special singing mask
- Wind instruments (bell covers, 8x8 square, empty moisture in diaper pad)
- Exposure key factors:
 - Distance (≥ 6 ft),
 - Masking,
 - Duration (<15 minutes within 6ft)
- Shared items/food:
 - Individually wrapped
 - Disposable utensils/ware only
 - Take home
 - NO buffet
- Precautions after receiving the vaccine:
 - Continue following all precautions (mask, social distancing etc.) due to risk of being a silent spreaders – Sorry!
- Timing between services:
 - Safe are two hours between services but can be reduce if well ventilated and cleaned.

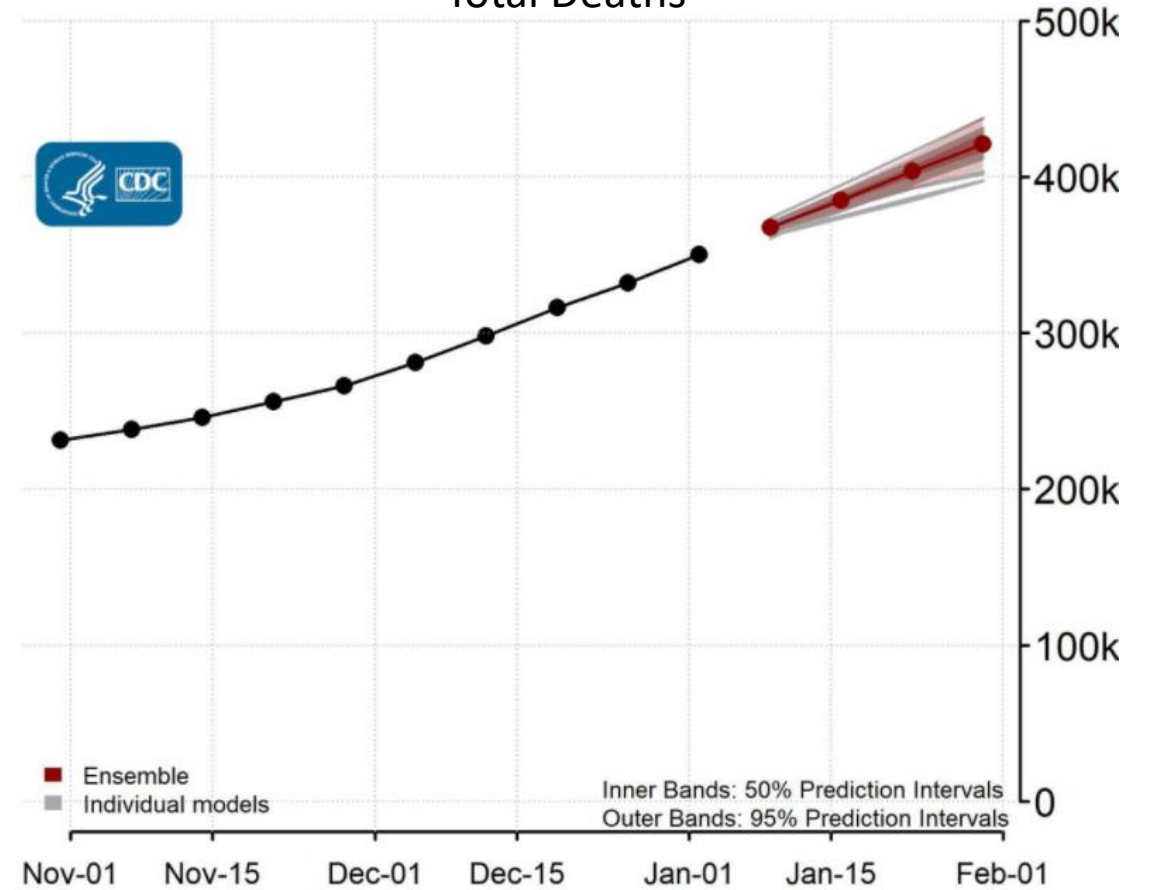


CDC – Combined Forecast Models, US

New Weekly Deaths



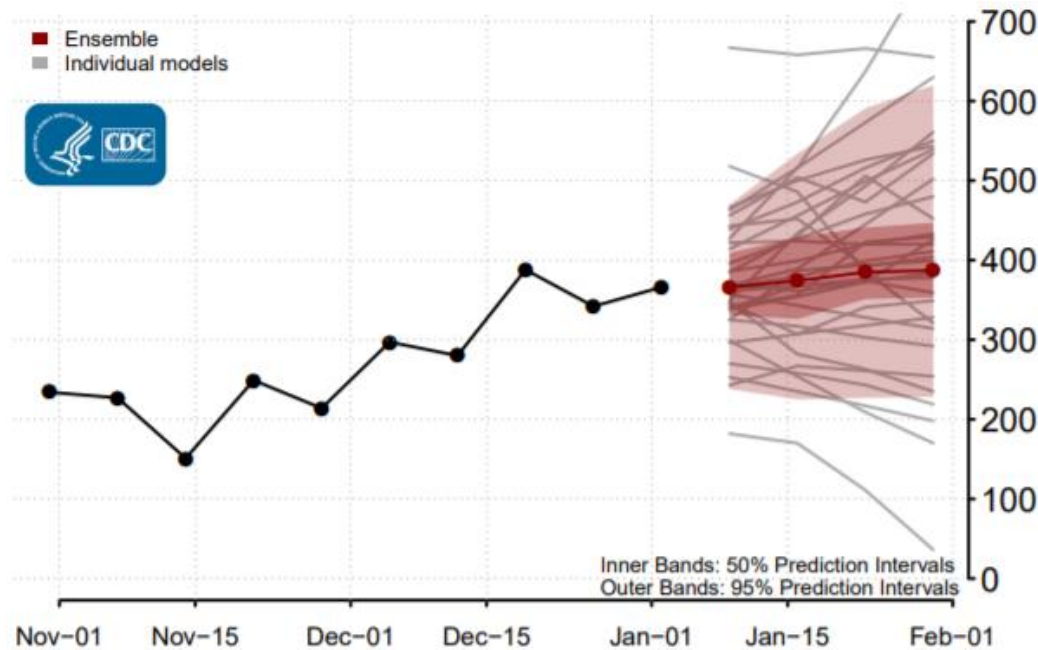
Total Deaths



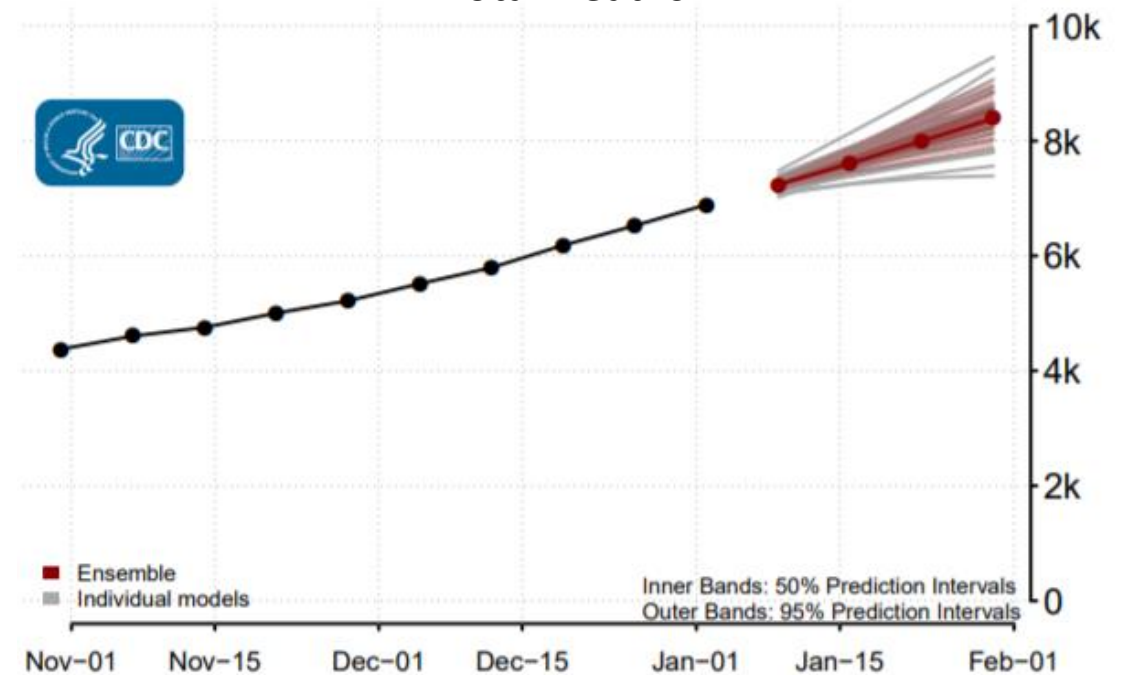
<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/forecasting-us.html>

CDC – Combined Forecast Models, NC

New Weekly Deaths



Total Deaths



<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/forecasting-us.html>

Resources

- WFBH COVID-19 FAQ:
<http://intranet.wakehealth.edu/departments/infection-control/coronavirus/faqs/vaccine.htm>
- NC DHHS COVID-19: <https://covid19.ncdhhs.gov/>
- CDC COVID-19 Vaccination: <https://www.cdc.gov/vaccines/covid-19/index.html>
- WHO COVID-19 Vaccines:
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines>
- NY Times – Coronavirus Vaccine Tracker:
<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>
- CDC Communities of Faith:
<https://www.cdc.gov/coronavirus/2019-ncov/community/faith-based.html>



PUSSYCAT



**I WON'T
SUFFOCATE**



PIRATE



**ASTONISHMENT
RETARDER**



**LOVER OF
CONSPIRACIES**



**VIRTUAL
REALITY**



**MAXIMAL
PROTECTION**



**INTERNAL
USE**



Questions?