COVID-19 Update

Cornell University
January 26, 2021

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Chief Medical Officer
Care Compass Network
What percentage of health outcomes are due to clinical care?

a) 40%
b) 90%
c) 70%
d) 20%
Health Outcome Influencers

Social Determinants of Health

Population Health

- Physical Environment: 10%
  - Environmental quality
  - Built environment
- Socio-Economic Factors: 40%
  - Education
  - Employment
  - Income
  - Family/social support
  - Community safety
- Health Behaviors: 30%
  - Tobacco use
  - Diet & exercise
  - Alcohol use
  - Unsafe sex
- Health Care: 20%
  - Access to care
  - Quality of care

Source: Authors’ analysis and adaption from the University of Wisconsin Population Health Institute’s County Health Rankings model ©2010, http://www.countyhealthrankings.org/about-project/background
Rishi Manchanda, MD, MPH

https://www.ted.com/speakers/rishi_manchanda
“There comes a point where we need to stop just pulling people out of the river. We need to go upstream and find out why they’re falling in.”

― Archbishop Desmond Tutu
Siloed care – not financially or logistically sustainable!
Where we want to be!!
Redefining the Health Care Team

- System Wide Collaboration & Integration of Clinical Care:
  - Primary Care
  - Community agencies
  - Specialty Physician Practices
  - Acute Care Facilities, Nursing Home, Rehab Centers, Home Care/ Hospice

Care Team includes:
- Person
- Community
- Employers/ Businesses
- Government Agencies
- Education Sector
- Media
The Care Compass Network represents 1/8th of the geography of New York State, divided into four operating regions called Regional Performing Units (RPUs) which allow for execution of DSRIP related projects and efforts at a localized level. The region includes approximately 700K lives, including 200K Medicaid members.

Regional Counties
- **North RPU** – Cortland, Tompkins, & Schuyler Counties
- **South RPU** – Broome & Tioga Counties
- **East RPU** – Chenango & Delaware Counties
- **West RPU** – Steuben & Chemung Counties

Note: % Above Indicates Medicaid Member attribution by Region

Over 160 partner organizations
• 11 initial projects – system transformation, clinical improvement, population health – speed and scale
• Cultural Competency & Health Literacy
• Workforce Initiatives and partner trainings
• Innovation Funds
• Metric Improvement Pilot Program
• Population Health Management and Analytics
• IT Infrastructure – EMR, RHIO, Care Management, Population Health, Telehealth
• Primary Care Involvement/Burnout Prevention

**Capstone: The Cohort Management Program**
The mission of CCN is to improve the health and well-being of the community members in the CCN service area by supporting the development of enduring partnerships of clinical and community providers, empowering those partnerships to flourish in a value-based payment environment.
By 2025

CCN envisions a care delivery environment that is more collaborative and better structured to deliver services that are integrated and coordinated around a person’s needs. CCN will advance the transformation to supportive systems of care as a:

- Convener of stakeholders
- Provider of services for network formation and operation
- Catalyst for innovation

Together the CCN stakeholders are committed to service delivery that improves the health and well being of our communities
We have a PANDEMIC and INFODEMIC
**Nomenclature**

**SARS-CoV-2**: Severe acute respiratory syndrome coronavirus 2 ("coronavirus")

**COVID-19**: Is the disease caused by this virus
What is SARS-CoV-2?

Gene Machine

A SARS-CoV-2 virus particle waiting in a person’s nose or mouth is about 100 nanometers in diameter—visible only with an electron microscope. It is a near sphere of protein (cross section shown) inside a fatty membrane that protects a twisting strand of RNA—a molecule that holds the virus’s genetic code. Proteins called “S” form spikes that extend from the surface and grab onto a human cell, hundreds of times larger, so the particle, or virion, can slip inside; the crown, or corona, appearance gives the virus its name. Structural proteins—N, M and E—move inside the cell, where they help new virions form.

DEADLY INVADER

Research suggests the SARS-CoV-2 virus has an array of adaptations that help it break into human cells—the first step in causing COVID-19 disease. Scientists are still debating many of the details.

1. The spike proteins that stud the exterior of the virus have receptor-binding domains that are extremely efficient at sticking onto ACE2 receptors on human cells.

2. A protease or another enzyme, such as TMPRSS2, on the exterior of the host cell is thought to break the spike protein at one or more cleavage sites.

3. That exposes fusion peptides—a small chain of amino acids—that fuse the viral membranes with the membrane of the host cell.

4. Fusion allows the virus’s RNA to enter the host cell, where it gets translated into proteins.

5. The foreign RNA hijacks the host’s cellular machinery to produce RNA and proteins that get assembled into new virus particles.

6. As the viral particles exit the cell, fusion might not be on the spike protein to prime it. The new particles can attack other cells or leave the body and infect other people.
**Flu vs. COVID-19 vs. cold vs. allergies**

**COVID-19 SYMPTOMS vs. Flu, Cold & Allergies**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>COVID-19</th>
<th>Flu</th>
<th>Cold</th>
<th>Allergies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Yellow</td>
</tr>
<tr>
<td>Fever</td>
<td>Red</td>
<td>Red</td>
<td>Yellow</td>
<td>Yellow</td>
</tr>
<tr>
<td>Breathlessness</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Body Aches</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Headache</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Orange</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Sore Throat</td>
<td>Orange</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Orange</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Runny Nose</td>
<td>Yellow</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Sneezing</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Watery Eyes</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
<td>Red</td>
</tr>
</tbody>
</table>

**NOTE:** Loss of taste and smell in 40 – 60% of COVID-19 cases

*Sources: WHO, CDC*
Why are people still getting colds?

- The common cold is caused by many different viruses:
  - Rhinoviruses 30 to 50%
  - Coronavirus 10 to 15%
  - RSV 5%
  - Adenoviruses, enteroviruses, parainfluenza virus
  - Unknown 20 to 30%

- Cold viruses last much longer on surfaces than SARS-CoV-2, much more infectious, touch spreads about 80% of colds unlike COVID-19

- Some cold viruses last a very long time on surfaces, sometimes up to 3 months, and surfaces can be highly contaminated especially where children congregate
COVID-19 vs. Influenza

MUCH DEADLIER: Since December 2019, COVID-19 has killed more people in the US than influenza has in at least the last 10 years combined!

IMMUNITY: There is minimal preexisting immunity to COVID-19, it is a novel virus

TREATMENTS: We are still learning about COVID-19 and working to validate therapies – we have much more experience with the flu.

LONG-TERM EFFECTS: There are a significant number of patients with long-term multisystem effects from COVID-19 ("long haulers")
COVID-19 is “not just flu or a cold”

Infection Fatality Rate: 10X the flu!

COVID-19: About 1%

Influenza: Less than 0.1%
Healthy People 2030 Objective for Influenza: Increase the proportion of persons who are vaccinated annually against seasonal influenza

Target: 70.0 percent

Health and Human Services: Healthy People 2030 sets data-driven national objectives to improve health and well-being over the next decade.
2018-2019 Pediatric Influenza Vaccination Coverage

- 62.6% of all children 6 months - 17 years of age vaccinated
- 73.4% of children 6 months to 4 years vaccinated
- 63.6% of children 5 to 12 years vaccinated
- 52.2% of children 13 to 17 years vaccinated
2018-2019 Adult Influenza Vaccination Coverage

- Only 45.3% of all adults over 18 years of age vaccinated
- Only 68.1% of those over 65 years of age vaccinated
- Only 47.3% of adults 50-64 years of age vaccinated
- Only 39.0% of adults 18-64 years of age vaccinated
  - Only 47.9% of adults 18-64 years of age with at least one high-risk medical condition vaccinated
2018-2019 Influenza Vaccination Coverage – Healthcare Personnel

<table>
<thead>
<tr>
<th>Setting</th>
<th>Percent Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>95.2</td>
</tr>
<tr>
<td>Ambulatory care</td>
<td>79.8</td>
</tr>
<tr>
<td>Long-term care setting†</td>
<td>67.9</td>
</tr>
<tr>
<td>Other settings‡</td>
<td>77.9</td>
</tr>
</tbody>
</table>
2018-2019 Influenza Vaccination Coverage – Healthcare Personnel

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>96.7</td>
</tr>
<tr>
<td>Nurse practitioner/Physician assistant</td>
<td>91.0</td>
</tr>
<tr>
<td>Nurse</td>
<td>91.8</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>91.5</td>
</tr>
<tr>
<td>Other clinical personnel</td>
<td>85.8</td>
</tr>
<tr>
<td>Non-clinical personnel</td>
<td>75.5</td>
</tr>
<tr>
<td>Assistant/aide</td>
<td>72.3</td>
</tr>
</tbody>
</table>
# Flu Shot Misinformation

## Dispelling Myths & Handling Objections About Flu Shots

<table>
<thead>
<tr>
<th>OBJECTION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The flu shot will give me the flu.</td>
<td>It’s impossible to get the flu from the flu vaccine. It is made with viruses that are not infectious or with no viruses at all. You can get the flu from someone else.</td>
</tr>
<tr>
<td>I’m healthy. I don’t need a shot.</td>
<td>Every year, healthy people get sick from the flu, and some even die. Many people have underlying conditions that they are not aware of. Even with a mild case, you can still pass the virus along to the people you love and care about.</td>
</tr>
<tr>
<td>I’ve never had the flu.</td>
<td>Every year, up to 20% of Americans get the flu—that’s up to 60 million people—many of whom have not had the flu before.</td>
</tr>
<tr>
<td>The flu shot doesn’t work.</td>
<td>Effectiveness varies from season to season and between flu strains. Vaccine effectiveness is not just measured by the percentage of disease prevented but more importantly, by the myriad of negative outcomes that vaccination prevents even if you catch the flu, such as hospitalization and quality of life (disability).</td>
</tr>
</tbody>
</table>
Why is flu shot so important?

- You can catch flu and COVID-19 at the same time
- Flu + COVID-19 could overwhelm the healthcare system
- Testing capacity could be overwhelmed
- Flu hits children hard and spreads readily in schools
- Any reduction in disease severity and prevalence helps
‘She was just spreading joy:’ Kaiser ER nurse reveals details of suspected Christmas-tree-costume COVID superspreader

- 77 staff and 15 patients infected
- 1 staff dead
- Many had received first dose of vaccine within the previous week
- One nurse who wore a mask and face shield had a brief interaction over 6 feet away, still contracted COVID-19
- Others who worked later in the day got sick

WHY??

Asymptomatic Carrier

Aerosol spread
Aerosol transmission and ventilation
HEALTH

We Need to Talk About Ventilation

How is it that six months into a respiratory pandemic, we are still doing so little to mitigate airborne transmission?

ZEYNEP TUFEEKCI  JULY 30, 2020

Yes, the Coronavirus Is in the Air
Transmission through aerosols matters — and probably a lot more than we’ve been able to prove yet.
By Linsey C. Marr
Dr. Marr is a professor of engineering.
• July 30, 2020

https://www.nytimes.com/2020/07/30/opinion/coronavirus-aerosols.html?smid=tw-share&fbclid=IwAR0_5n6RcHChDc2ij-gEsYb4MZJomSQkitpv-jR5V_FdUulQupinxmrYXc8
HEPA Filter: Removes at least 99.97% of airborne particles down to size of 0.3 microns.
COVID-19 Testing

CATCHING COVID-19
Different types of COVID-19 test can detect the presence of the SARS-CoV-2 virus or the body’s response to infection. The probability of a positive result varies with each test before and after symptoms appear.

- **PCR-based tests** can detect small amounts of viral genetic material, so a test can be positive long after a person stops being infectious.
- **Rapid antigen tests** detect the presence of viral proteins and can return positive results when a person is most infectious.
- **Antibody tests** detect the body’s immune response to the virus and are not effective at the earliest phase of infection.

![Graph showing the probability of detection over time from symptom onset for IgG and IgM antibodies.](image)
COVID-19 Timeline / Quarantine

<table>
<thead>
<tr>
<th>Timeline of COVID-19 Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incubation Period</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Infectious Period</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Quarantine Period:</strong> if you have been exposed, isolate yourself for 14 days and watch for symptoms.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Exposure**

- **Infectious Period Begins:** 1 - 12 days after exposure (usually 3 days)
- **Symptoms Begin:** 3 to 14 days after exposure (usually 5 days)

**Symptoms Resolve:** Varies widely. Most people recover within 2 weeks, but some have symptoms for much longer.

**Infectious Period Ends**

At least 10 days after symptoms begin

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1 - Contagious period ends After 3 days with no fever AND respiratory symptoms have improved AND at least 10 days since symptoms first appears. If you tested positive but had no symptoms, then 10 days since the positive test date.

**Sources:**
Here is an example of how the incubation and exposure timeline works:

COVID-19 INCUBATION TIMELINE
COVID-19 has up to a 14 day incubation period.

BOB WAS EXPOSED TO COVID-19.

DAY 0
Bob was exposed to COVID-19.

DAY 5
Bob got tested for COVID-19 and the results came back negative.

DAY 8
Thinking he did not have COVID-19, Bob went to work and a family gathering. He was contagious days 8 & 9 (48 hrs before symptoms) and now exposed 22 people.

DAY 10
Bob became symptomatic and tested positive.
“Someone who was within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to test specimen collection) until the time the patient is isolated.”

Factors to consider – increased risk:
- Closer distance
- Duration of exposure
- Does infected person have symptoms
- Respiratory aerosol generation (singing, shouting, coughing)
- Indoors, especially with poor ventilation
- Crowding
• Quarantine: 14 days is optimal

• Options to reduce quarantine:
  - After day 10 without testing
  - After day 7 with a neg. test result on day 5 or later

• Watch for symptoms until 14 days after exposure

• If symptoms develop immediately self-isolate and contact healthcare provider

• Continue all public health measures – mask, social distancing, handwashing, avoid crowds, etc.

In Tompkins County, on Jan. 25, in a gathering of 25 people there is a 20% chance at least 1 person has COVID-19.

In Broome County, on Jan. 25, in a gathering of 25 people there is a 45% chance at least 1 person has COVID-19.

https://covid19risk.biosci.gatech.edu/
Stay SMART – prevent superspreader events

Run it through the “SMART” Protocol:

• **Space** – Keep your distance

• **Mask** – Keep it on (Eating and drinking are common in superspreader events!)

• **Air** – Stay outside or in well ventilated environment

• **Restrict** – Keep the group small

• **Time** – Keep it short
Masks work!

- the schnoz
- the sideways
- the feedbag
- the neckwarmer
- the chinstrap
- the plague-talker
- the hanger
- the hostage
- the ‘wadded up in their pocket’
Tight weave, 2-to-3-layer cotton masks are effective in both blocking exhalation of droplets AND in reducing inhalation.

Can even filter nearly 50% of fine particles less than 1 micron.

Avoid bandanas, gaiters, and masks with exhalation valves.

Full face coverage, including nose, is vital.

Multiple “real world” observational studies confirm effectiveness.

Covid-19 Vaccine Watch
VACCINE HUMAN TRIAL PHASES

Phase I
Usually less than 100 people, and monitors for safety at multiple doses.

Phase II
Slightly larger and looks for safety and early effectiveness.

Phase III
Large scale, normally 30,000 patients, and is the test of effectiveness and long term safety in multiple populations.

SAFE AND EFFECTIVE VACCINE IN 12-18 MONTHS:
Reasons for rapid distribution of a safe and effective vaccine without cutting corners include: 1) Previous experience with coronaviruses like MERS and SARS, 2) Running trial phases simultaneously, 3) Government financing allowing development, trials, manufacturing and distribution without a financial risk to the companies. Any vaccine will require FDA authorization before being made available to the US population.

SOURCE: WHO
Three types of coronavirus vaccines in development

1. Protein-based
2. Viral vector
3. mRNA

- Spike protein is purified and injected
- Adenoviral vector is injected
- Body produces spike protein
- Body produces antibody
- mRNA that codes for spike protein is purified and injected

Source: National Institutes of Health presentation at Senate hearing on September 9, 2020


Pfizer
Modern

Johnson & Johnson (one shot)
Astra Zeneca

Novavax
Comparing COVID-19 Vaccines: 
Pfizer/BioNTech vs. Moderna

Both are mRNA vaccines, meaning they provide "instructions" for our cells to make a piece of protein that is found on the surface of the virus that causes COVID-19. Our body recognizes this protein as "foreign" and will build an immune response that protects us from COVID-19.

Additional resources:
- Your Local Epidemiologist (Facebook, Instagram)
- www.texaspandemic.org
- www.CDC.gov
- https://dshs.texas.gov/coronavirus/

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Pfizer/BioNTech

16 years and older
2 shots
21 days between shots
95% effective in preventing COVID-19 starting 7 days after the 2nd dose

Eligibility
Doses
Does it work?

Side Effects

- Chills
- Fever
- Joint pain
- Muscle aches
- Fatigue
- Injection site pain
- Headache

---

Moderna

18 years and older
2 shots
28 days between shots
94.1% effective in preventing COVID-19 starting 14 days after the 2nd dose

Side Effects

- Chills
- Fever
- Joint pain
- Muscle aches
- Fatigue
- Injection site pain
- Headache

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To gain maximum protection and ensure "memory" immunity, you must get the second dose.

Side effects are more common after the second dose.

Vaccine side effects are a sign that the immune system is responding as it should and do not mean the vaccine is unsafe.

Continue to social distance, wear masks, and wash hands after vaccination. It takes a minimum of 10 days for your immune system to start working. Additionally, we do not know yet whether you are able to still harbor the virus and infect others.
Correlation ≠ Causation

- Norway: 23 deaths within a week among 42,000 people given the Pfizer vaccine in nursing home residents - all over 75, most older, many terminally ill and extremely frail
  - Question: What is the BASELINE?
  - Chance of dying in an average week in those over 80 is 1 in 500, or 0.2%
  - Therefore you would expect about 80 deaths in that group “just by coincidence”
  - In “normal” times Norway typically sees 45 deaths among nursing home residents weekly.

- Arrhythmia reported in 72 year old patient 28 days after Moderna vaccination
  - This patient was actually struck by lightning, causing the arrhythmia!
• The % reduction in disease among the vaccinated compared to placebo group in a clinical trial.

• Example: Out of 30,000 participants, 90 in the placebo group and 5 in the vaccine group contracted COVID-19

• If the vaccine had zero efficacy, would expect 90 cases in both groups

• The % reduction in the vaccine group compared to the placebo group was 85/90 = 94.45%
mRNA Vaccine Clinical Considerations

- CDC – Interim Clinical Considerations for Use of mRNA COVID-19 Vaccines Currently Authorized in the United States
  https://www.cdc.gov/vaccines/covid-19/info-by-product/clinical-considerations.html

- Age groups: Pfizer-BioNTech 16 and over, Moderna 18 and over
- Administration: Pfizer-BioNTech 21 days apart, Moderna 28 days apart
- Products are NOT interchangeable
- Minimum 14-day interval before or after any other vaccine
- Should be offered to anyone with prior SARS-CoV-2 (suggest wait while supply low)
- Defer for 90 days if previous antibody or convalescent plasma treatment
- Immunocompromised persons / cancer patients: data not available, if no contraindications may receive vaccination in consultation with physician
- Autoimmune disorders: data not available, if no contraindications may receive vaccination in consultation with physician
- Vaccine will not cause antigen or PCR tests to become positive
**Do vaccines prevent spread?**

- Vaccines prevent **symptomatic** COVID-19. This is not the same as preventing infection (“neutralizing immunity”).

- Do vaccines prevent asymptomatic spread? We don’t know yet.

- **People who have been immunized still need to wear a mask!**

- Why? There may still be virus in the nasal mucosa that can be shed.
Herd immunity

- Need 70 to 90% of the population to be vaccinated to reach herd immunity

- What about those who already had COVID-19? We don’t know about immunity long term, and they are still encouraged to be vaccinated.
After the vaccine

- How long does it protect us? – Unknown at this time
- Will we need boosters? – Unknown at this time
- Will the vaccine make you test positive – No
- Can you still transmit COVID-19 after the vaccine – Unknown at this time
- Long-term effects – Unknown at this time, however most adverse effects of vaccines are mild and occur early

Vaccine in the United States

• 22.7 million doses of vaccine have been administered, there has been no unusual amount of adverse reactions.

• 25.3 million cases of COVID-19 have been diagnosed, hospitals are overwhelmed, 421,000 have died from COVID-19.

• The vaccines do NOT: Reduce fertility, insert microchips into your body, change your DNA, contain “real virus”, or turn you into a 5G antenna.

• It is vital to get as many immunized as possible, as soon as possible, to prevent further spread of the new variant virus.
**Vaccine hesitancy**

- Systematic review on vaccine hesitancy – pooled data from 126 articles
- Countries with the highest rates of vaccine acceptance: China (91.3%), Brazil (85.36%), South Africa (81.58%), Denmark (80%), South Korea (79.8%), UK (79%).
- U.S. rates: Around 60% as of Nov./Dec. 2020
- Outside of U.S. lowest vaccine acceptance: Russia (54.9%), France (58.9%)
- Less likely to get vaccinated: People with lower income, no insurance, rural areas, larger households
- Most common reasons for hesitation: Fear of side effects, safety, effectiveness
- Lower acceptance of vaccines due to: Belief that vaccinees are unnecessary, inadequate information, unknown / short duration of immunity, general anti-vaccine bias.
- Confidence was boosted from doctor recommendations or positive opinions from family and friends

https://www.mdpi.com/2076-393X/9/1/16?fbclid=IwAR0dklUcA0mP6Wx3tdGLgkxk17al2HANVNL7FY_WfuMYA8mnLMegj8qijS
https://debeaumont.org/covid-vaccine-poll/?fbclid=IwAR2jim71M-ztKOOXcvCN8NoO1-w07peXwgLYU-we5uXyRQefNjuk09sZctg
Coronavirus Variants

- U.K Variant and South African Variant
- Hot off the press: one case of Brazilian variant in Minnesota yesterday - travel
- U.S does not do enough sequencing, ranks 43rd worldwide
  - 50 to 70% more efficient in spreading
  - Theories: Ability to bind to ACE2 receptor, higher viral loads in those infected
  - Current evidence suggests existing vaccines will be effective
  - Moderna is working on a booster shot targeting the South African variant
  - If necessary mRNA vaccines could be adapted to new variants
  - South African variant may be more resistant to antibodies triggered by previous COVID-19 infection, but the protection appears to be adequate

Stay “SMART”

- New UK viral variant “Rt” value is 1.4 to 1.7, or about 70% more transmissible (the “Rt” value is how many others will be infected by a person with the infection).
- To “flatten the curve” we need to lower the “Rt” value. If above 1.0 will spread quickly, if less than 1.0 will stop spreading.
- How do we do that?? Reinforce the “SMART” protocol and get people vaccinated.
Layered Approach to Risk Mitigation - **TAKEAWAY**

The Swiss Cheese Respiratory Virus Pandemic Defence

Recognising that no single intervention is perfect at preventing spread

Personal Responsibilities

Shared Responsibilities

Each intervention (layer) has imperfections (holes).

Multiple layers improve success.
COVID-19 is affecting Black, Indigenous, Latinx, and other people of color the most.

The COVID Racial Data Tracker is a collaboration between the COVID Tracking Project and the Boston University Center for Antiracist Research. Together, we’re gathering the most complete and up-to-date race and ethnicity data on COVID-19 in the United States.

https://covidtracking.com/race
Nationwide, Black people have died at 1.5 times the rate of white people.

Deaths per 100,000 people by race or ethnicity:
- Black or African American: 144
- American Indian or Alaska Native: 134
- Hispanic or Latino: 116
- White: 94
- Native Hawaiian and Pacific Islander: 93
- Other: 79
- Asian: 70
- Two or more races: 13

Notes:
- These calculations are based on data from The Covid Racial Data Tracker and the U.S. Census Bureau. Race categories may overlap with Hispanic/Latinx ethnicity. Rates are not age-adjusted and some rates are underestimated due to lack of reporting of race and ethnicity categories for COVID-19 deaths.

We’ve lost at least 59,477 Black lives to COVID-19 to date. Black people account for 16% of COVID-19 deaths where race is known.

https://covidtracking.com/race
Inequities in social determinants of health that put racial and ethnic minority groups at increased risk of getting sick and dying of COVID-19:

- **Discrimination** – Health care, housing, education, criminal justice, finance
- **Healthcare access and utilization** – Some racial and minority groups more likely to be uninsured.
  - Other factors: Lack of transportation, child care, etc.
  - May hesitate to seek care due to distrust of government and healthcare systems
- **Occupation** – Some racial and ethnic minority groups disproportionately represented in essential work settings such as healthcare, factories, grocery stores, public transportation, etc.
- **Educational, income and wealth gaps**
- **Housing** – Crowded conditions, greater risk of eviction and homelessness
Clinicians and scientists have offered data and policy solutions to address the high burden COVID-19 infections, hospitalizations, and deaths that are disproportionately impacting minority communities.

Some of these include:

1. Improve the systematic collection and quality of data on race and ethnicity.
2. Offer free and equitable access to COVID-19 testing without restrictions.
3. Increase health insurance access and coverage.
4. Direct funding towards community-based organizations responding to the pandemic in Black and Latinx neighborhoods.
5. Offer timely public health communication in multiple languages and in a manner that’s culturally appropriate. COVID-19 misinformation is as big of an issue in underserved communities, and is perhaps even more harmful, because of the high risk of infection and death they face.

https://jamanetwork.com/journals/jama/fullarticle/2767029
Health disparities and solutions

COVID-19 Health Disparities

- Access to care
- Socio-economics
- Disproportionate burden of co-morbidities
- Discrimination
- Unemployment
- Biological mechanisms
- Cultural

Solutions

- Expand housing
- Provide food
- Expand healthcare coverage
- Support education
- Improve computer and internet access
- Protect workers
- Partner with community members
- Policy initiatives to address disparities (local and federal)
- Expanded and easily accessible testing
- Safe and viable transportation options

Haynes B, Cooper L, Albert MA on behalf of the Association of Black Cardiologists
<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
</tr>
</thead>
</table>
| **Phase 1a “Jumpstart Phase”**  
- High-risk health workers  
- First responders  
**Phase 1b**  
- People of all ages with comorbid and underlying conditions that put them at significantly higher risk  
- Older adults living in congregate or overcrowded settings  | **Phase 2**  
- K–12 teachers and school staff and child care workers  
- Critical workers in high-risk settings—workers who are in industries essential to the functioning of society and at substantially higher risk of exposure  
- People of all ages with comorbid and underlying conditions that put them at moderately higher risk  
- People in homeless shelters or group homes for individuals with disabilities, including serious mental illness, developmental and intellectual disabilities, and physical disabilities or in recovery, and staff who work in such settings  
- People in prisons, jails, detention centers, and similar facilities, and staff who work in such settings  
- All older adults not included in Phase 1  | **Phase 3**  
- Young adults  
- Children  
- Workers in industries and occupations important to the functioning of society and at increased risk of exposure not included in Phase 1 or 2  | **Phase 4**  
- Everyone residing in the United States who did not have access to the vaccine in previous phases |

**Equity is a crosscutting consideration:** In each population group, vaccine access should be prioritized for geographic areas identified through CDC’s Social Vulnerability Index or another more specific index.
Proposed Phases of COVID-19 Vaccination

- **Phase 1a**
  - 16-64 years with high-risk medical conditions (>110M)
  - 65-74 years (32M)
  - 75+ years (21M)

- **Phase 1b**
  - Essential Workers
  - Frontline
  - HCP

- **Phase 1c**
  - 16-64 years without high-risk medical conditions (<86M)
  - LTCF

- **Phase 2**
Eligible New Yorkers in Phase 1a and 1b are:

- High-risk hospital workers (emergency room workers, ICU staff and Pulmonary Department staff)
- Residents and staff at nursing homes and other congregate care facilities
- Federally Qualified Health Center employees
- EMS workers
- Coroners, medical examiners and certain funeral workers
- Staff and residents at OPWDD, OMH and OASAS facilities
- Urgent Care providers
- Individuals administering COVID-19 vaccines, including local health department staff
- All Outpatient/Ambulatory front-line, high-risk health care workers of any age who provide direct in-person patient care
- All staff who are in direct contact with patients (i.e., intake staff)
- All front-line, high-risk public health workers who have direct contact with patients, including those conducting COVID-19 tests, handling COVID-19 specimens and COVID-19 vaccinations
- This includes, but is not limited to,
  - Doctors who work in private medical practices and their staff
  - Doctors who work in hospital-affiliated medical practices and their staff
  - Doctors who work in public health clinics and their staff
  - Registered Nurses
  - Specialty medical practices of all types
  - Dentists and Orthodontists and their staff
  - Psychiatrists and Psychologists and their staff
  - Physical Therapists and their staff
  - Optometrists and their staff
  - Pharmacists and Pharmacy Aides
  - Home care workers
  - Hospice workers
- Staff of nursing homes/skilled nursing facilities who did not receive COVID vaccination through the Pharmacy Partnership for Long-Term Care Program
**NY Phase 1a and 1b - expanded**

**Beginning January 11, 2021:**

- Individuals Age 65 and older
- First Responders and Support Staff for First Responder Agencies
  - Fire Service
    - State Fire Service, including firefighters and investigators (professional and volunteer)
    - Local Fire Services, including firefighters and investigators (professional and volunteer)
  - Police and Investigators
    - State Police, including Troopers
    - State Park Police, DEC Police, Forest Rangers
    - SUNY Police
    - Sheriffs' Offices
    - County Police Departments and Police Districts
    - City, Town, and Village Police Departments
    - Transit or other Public Authority Police Departments
  - State Field Investigators, including Department of Motor Vehicles, State Commission of Correction, Justice Center, Department of Financial Services, Inspector General, Department of Tax and Finance, Office of Children and Family Services and State Liquor Authority
    - Public Safety Communications
      - Emergency Communication and Public Safety Answering Point Personnel, including dispatchers and technicians
    - Other Sworn and Civilian Personnel
      - Court Officers
      - Other Police or Peace Officers
      - Support of Civilian Staff for Any of the above services, agencies, or facilities
  - Corrections
    - State Department of Corrections and Community Supervision Personnel, including correction and parole officers
    - Local Correctional Facilities, including correctional officers
    - Local Probation Departments, including probation officers
    - State Juvenile Detention and Rehabilitation Facilities
    - Local Juvenile Detention and Rehabilitation Facilities
  - P-12 Schools
    - P-12 school or school district faculty or staff (includes all teachers, substitute teachers, student teachers, school administrators, paraprofessional staff and support staff including bus drivers)
  - Contractors working in a P-12 school or school district (including contracted bus drivers)
  - Licensed, registered, approved or legally exempt group Childcare Providers
    - Employees or Support Staff of Licensed or Registered Childcare Setting
  - Public Transit
    - Airline and airport employees
    - Passenger railroad employees
    - Subway and mass transit employees (i.e., MTA, LIRR, Metro North, NYC Transit, Upstate transit)
    - Ferry employees
    - Port Authority employees
    - Public bus employees
  - Individuals living in a homeless shelter where sleeping, bathing or eating accommodations must be shared with individuals and families who are not part of the same household
  - Individual working (paid or unpaid) in a homeless shelter where sleeping, bathing or eating accommodations must be shared by individuals and families who are not part of the same household, in a position where there is potential for interaction with shelter residents

**In-person college instructors**
Vaccine Prescreener

[Image of a vaccination prescreener form]

https://am-i-eligible.covid19vaccine.health.ny.gov/Public/prescreener
### NYS Mass Vaccination Sites

**See if you may be Eligible to Receive the COVID-19 Vaccine**

The Federal Government determines how much vaccine New York State receives and has given New York approximately 250,000 vaccines/week for over 7 million people who are eligible – as a result supply is very limited. Vaccines are available at pharmacies, hospitals and through local health departments - please contact the provider of your choice to schedule a vaccine appointment.

You can use this tool to determine eligibility and to schedule an appointment at a New York State-run vaccination site. **If eligible, you will see all available appointments at New York State-run vaccination sites. An Appointment is Required. If you visit a location without an appointment you will not receive a vaccine.** To find out if you may be eligible, click Get Started below.

List of New York State-operated vaccination locations and availability through April 18th:

<table>
<thead>
<tr>
<th>Location Name</th>
<th>Location Address</th>
<th>Appointments Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacobs Center</td>
<td>New York, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>Jones Beach - Field 3</td>
<td>Wantagh, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>State Fair Expo Center - NYS Fairgrounds</td>
<td>Syracuse, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>SUNY Albany</td>
<td>Albany, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>Westchester County Center</td>
<td>White Plains, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>SUNY Stony Brook University Innovation and Discovery Center</td>
<td>Stony Brook, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>SUNY Potsdam Field House</td>
<td>Potsdam, NY</td>
<td>Appointments Available</td>
</tr>
<tr>
<td>Aqueduct Racetrack - Racing Hall</td>
<td>South Ozone Park, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>Plattsburgh International Airport - Connecticut Building</td>
<td>Plattsburgh, NY</td>
<td>Appointments Available</td>
</tr>
<tr>
<td>SUNY Binghamton</td>
<td>Johnson City, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>SUNY Polytechnic Institute - Wildcat Field House</td>
<td>Utica, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>University at Buffalo South Campus - Haroldim Hall</td>
<td>Buffalo, NY</td>
<td>No Appointments Available Currently</td>
</tr>
<tr>
<td>Rochester Dome Arena</td>
<td>Henrietta, NY</td>
<td>No Appointments Available Currently</td>
</tr>
</tbody>
</table>

* Last updated on 1/20/2021, 12:41:46 PM

[https://am-i-eligible.covid19vaccine.health.ny.gov/](https://am-i-eligible.covid19vaccine.health.ny.gov/)
Where can I get vaccinated?

- **NYS Mass Vaccination Sites**: [https://am-i-eligible.covid19vaccine.health.ny.gov/](https://am-i-eligible.covid19vaccine.health.ny.gov/)
  - Focus on 65+

- **County Vaccination Sites** (check county DOH websites): Tompkins County / Cayuga Health System primary site at Shops of Ithaca Mall (old Sears spot).
  - Broome site at SUNY-Broome ice arena
  - Focus on essential workers

- **Pharmacies / grocery chains**: Rite Aid, Kinney, Weis, Tops, Wegmans, etc.
  - Focus on 65+

- **Hospitals / FQHC’s**: Focus on healthcare workers
Currently 7 million people eligible for vaccine in NY State

State is receiving an average of 250,000 doses per week, meaning it would take 28 weeks just to immunize the current group at this rate – we are on week 6

Adding the 16 to 64 year-old group with high risk medical conditions at this time would add another 6 million people
National Strategy for the COVID-19 Response and Pandemic Preparedness
January 2021

https://www.whitehouse.gov/priorities/covid-19/
Percentage distribution by subgroup

**Distribution by subgroup:**

- **Healthcare workers:** 1.3m to be vaccinated, 21%
- **Essential workers:** 1.7m to be vaccinated, 27%
- **65+:** 3.2m to be vaccinated, 52%

WEAR A MASK. GET TESTED. SAVE LIVES.
Vaccine Prioritization – fair distribution

Provider for each subgroup must follow prioritization:

- Essential workers: City/County Departments of Health
- Healthcare workers: Hospitals, FQHCs
- 65+: Pharmacies, Mass Sites

WEAR A MASK. GET TESTED. SAVE LIVES.
Southern Tier Regional Hub

Regional Vaccine Network
Southern Tier Hub

Regional Advisory Taskforce
December 31, 2020
Mission:
Advise the Southern Tier VxN HUB Lead in the development of a phased Regional Vaccination Plan ensuring community needs are met.

- High population density of seniors 65+.
- Populations with underlying co-morbidities.
- Households with low health status.
- Households with low socioeconomic status.
Trusted sources of information

• Up to date virus information
  • NYS COVID-19 Updates: https://coronavirus.health.ny.gov/home
  • NY Forward: https://forward.ny.gov/
  • Tompkins County Health Department: https://tompkinscountyny.gov/health
  • Tompkins County 2-1-1: https://tompkinscountyny.gov/health/2019-novel-coronavirus-update-2020-03-12
  • Tompkins County COVID-19 Town Hall 1/6/2021: https://www.youtube.com/watch?v=z0rG0-TobSo&feature=youtu.be
  • Cornell University COVID-19 Webpage and Town Halls: https://covid.cornell.edu/
  • CCN COVID-19 Portal: https://app.smartsheet.com/b/publish?EQBCT=928476bebc274b288b2660959b78de91
Don’t give in to “COVID fatigue”!!
Thank you!

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