COVID-19:
What do we think and what do we know?

Updated – June 3, 2020
for

Virtual Reunion Latina

Presenter: David Holtgrave, PhD
Dean, SUNY Empire Innovation Professor, and SUNY Distinguished Professor
University at Albany School of Public Health

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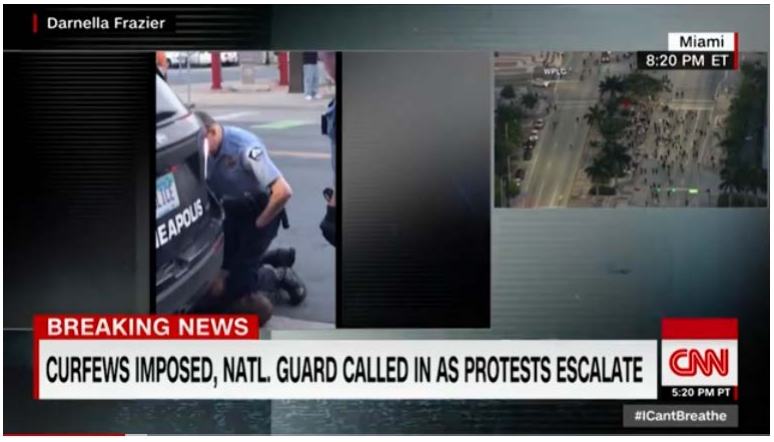
Dedicate this session to the memory of Mr George Floyd and the struggle against racism in all its forms.



Novel Coronavirus – Technical name, SARS-CoV-2 (disease it causes is COVID-19)

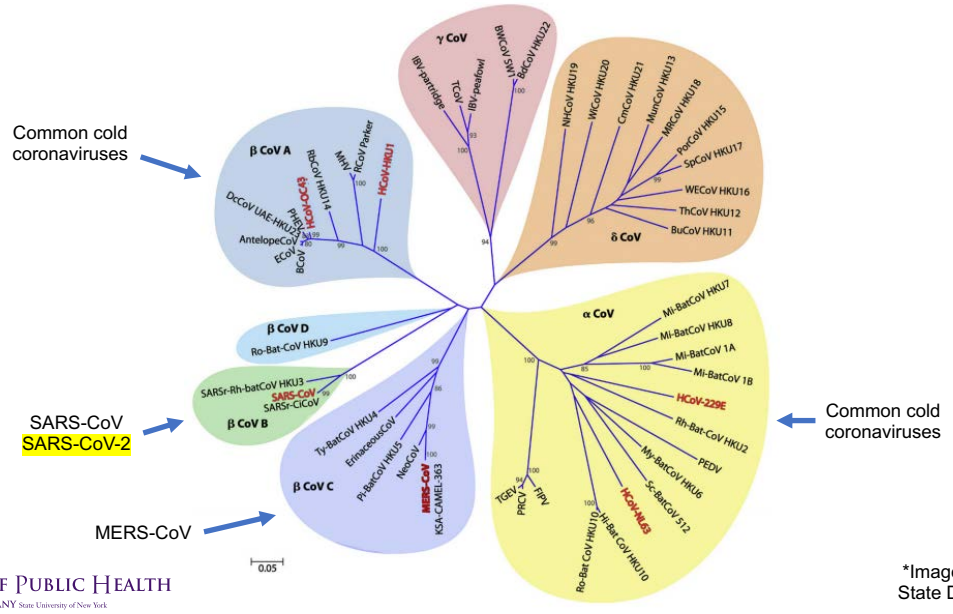


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*Image from the New York State Department of Health

Overview of COVID-19

- **COVID-19 Disease:** mainly fever, cough, difficulty breathing, lower respiratory distress (but also at least two of fever, chills, shaking with chills, muscle pain, headache, sore throat, new loss of taste or smell)
- **Incubation period from infection to becoming ill:** 2-14 days
- **Disease severity:** roughly 80% cases mild; roughly 15-20% more serious and need care (often including hospitalization); infection mortality rate maybe 0.5% to 1% (vs. the case fatality rate which is several times higher)
  - Very disproportionately impacts communities of color, and older persons and persons with underlying medical conditions but young persons can become infected, can become ill, and if infected can transmit the virus
- **Mode of transmission:** virus in droplets spread by coughing, touching surfaces
  - Virus maybe present in fecal matter, but no reported cases of transmission via that pathway yet;
  - Recent studies also looked at virus surviving on variety of surfaces and in laboratory aerosol environments

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Ever Changing Numbers

As of June 2, 2020 (but changing by the hour)…

- **Global Cases:** Over 6,300,000
- **Global deaths:** Over 376,000
- **Countries/territories with cases**: over 180 (in order of no. cases: US, Brazil, Russia, United Kingdom, Spain, Italy, India, France, Germany, Peru, Turkey, Iran, Chile, Mexico, Canada)
- **# of cases in the U.S.:** over 1,800,000 (in all states)
- **# of deaths in the U.S.:** over 105,000
- **# of cases in New York**: 371,700 cases out of 2,100,000 tests for 17.6% positivity rate (203,700 in NYC out of 979,200 tests for a 20.8% positivity rate)
- **# of deaths in New York:** 24,000
- **New York community transmission:** Yes (also, NY has declared a "State of Emergency")
- **New York number in quarantine/isolation**: several thousand (very hard number to pinpoint)

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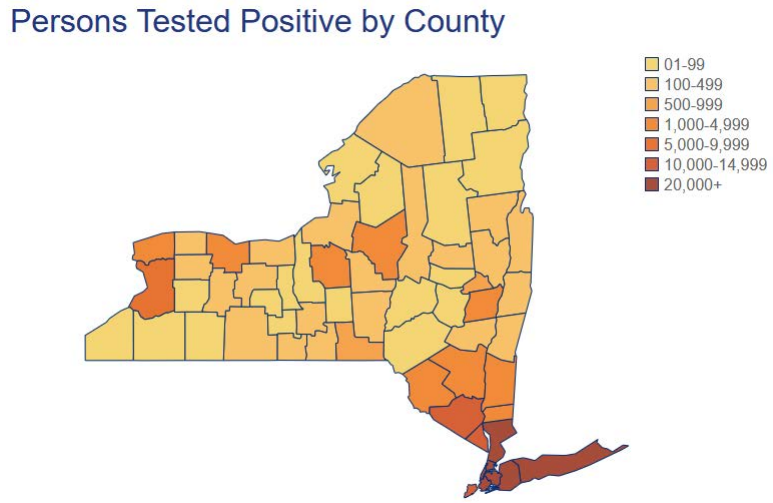
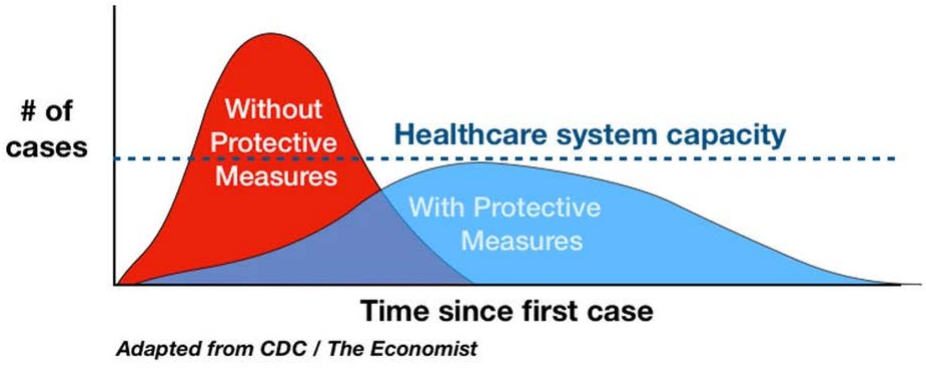
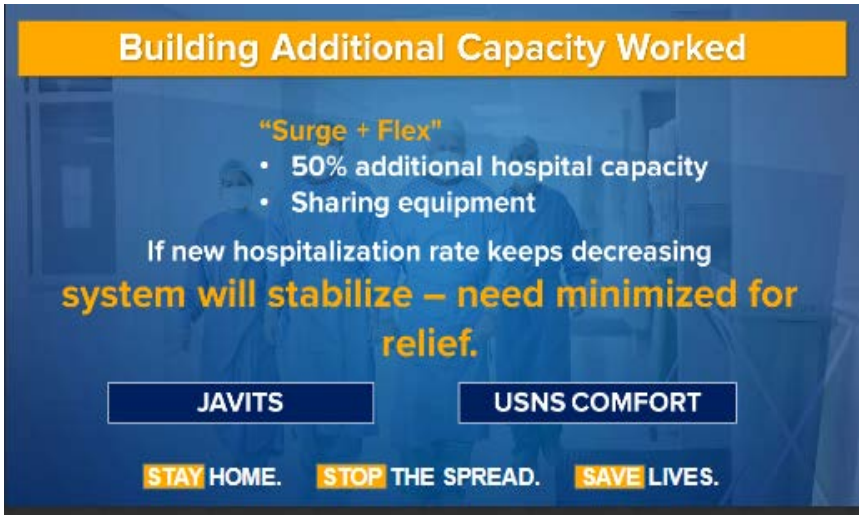
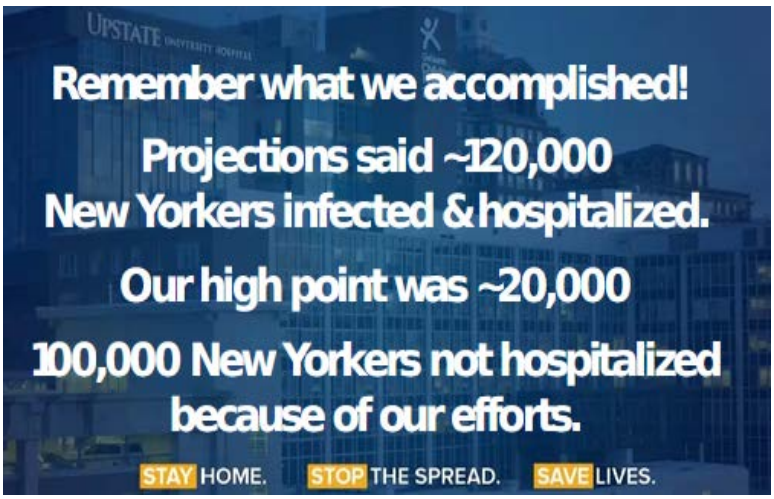
From Diagnostic Tests --

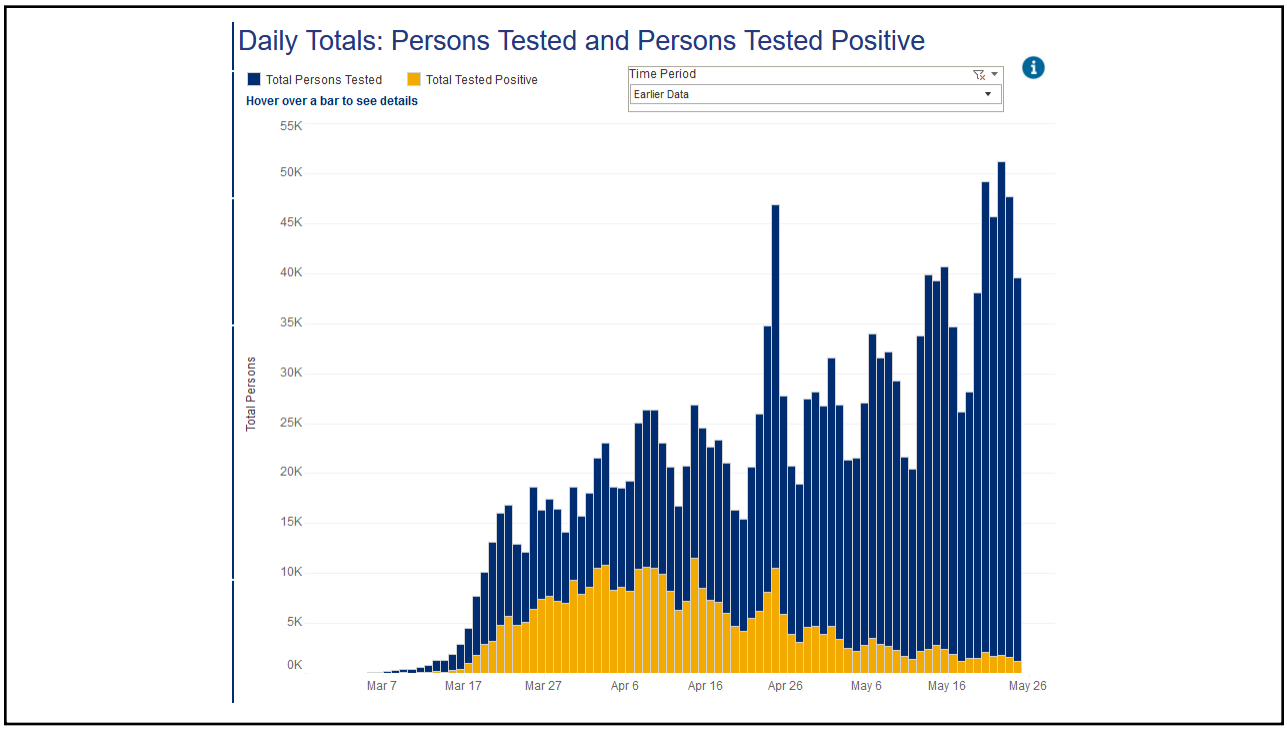


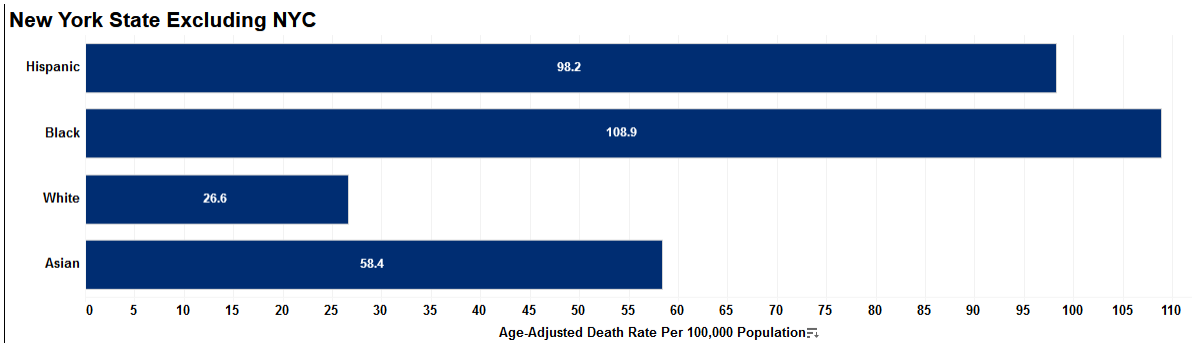


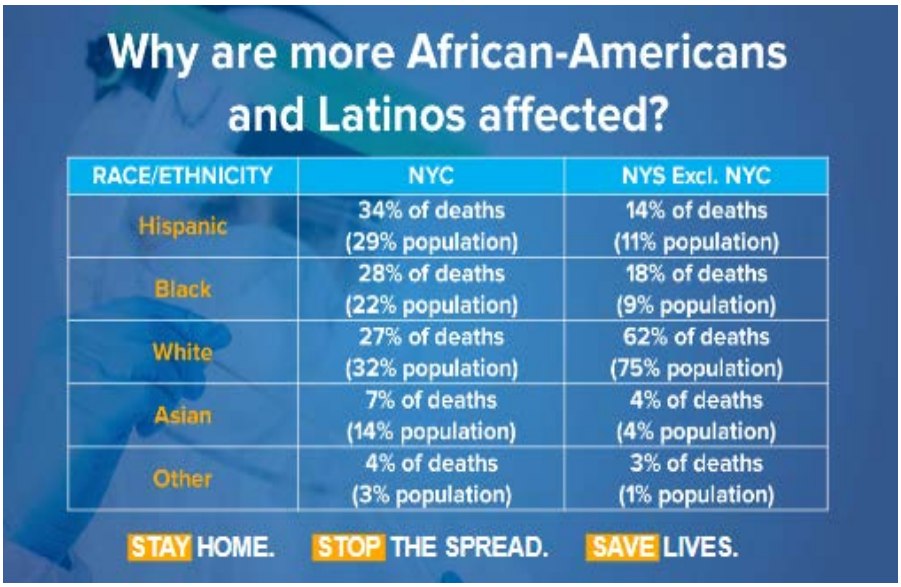
From NY Times, March 11, 2020 (updated March 17, 2020)


Building Additional Capacity Worked
"Surge + Flex"
• 50% additional hospital capacity
• Sharing equipment
If new hospitalization rate keeps decreasing
system will stabilize – need minimized for relief.
JAVITS
USNS COMFORT
STAY HOME. STOP THE SPREAD. SAVE LIVES.


UPSTATE
Remember what we accomplished!
Projections said ~120,000
New Yorkers infected & hospitalized.
Our high point was ~20,000
100,000 New Yorkers not hospitalized
because of our efforts.
STAY HOME. STOP THE SPREAD. SAVE LIVES.


Daily Totals: Persons Tested and Persons Tested Positive
Total Persons Tested
Total Tested Positive
Hover over a bar to see details
Time Period
Earlier Data
Total Persons
55K
50K
45K
40K
35K
30K
25K
20K
15K
10K
5K
0K
Mar 7
Mar 17
Mar 27
Apr 6
Apr 16
Apr 26
May 6
May 16
May 26


New York State Excluding NYC
Hispanic
98.2
Black
108.9
White
26.6
Asian
58.4
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105
110
Age-Adjusted Death Rate Per 100,000 Population


Why are more African-Americans and Latinos affected?
RACE/ETHNICITY
NYC
NYS Excl. NYC
Hispanic
34% of deaths (29% population)
14% of deaths (11% population)
Black
28% of deaths (22% population)
18% of deaths (9% population)
White
27% of deaths (32% population)
62% of deaths (75% population)
Asian
7% of deaths (14% population)
4% of deaths (4% population)
Other
4% of deaths (3% population)
3% of deaths (1% population)
STAY HOME. STOP THE SPREAD. SAVE LIVES.


We Must Learn and Be Better
• Learn the lessons now!
• Test / Research / Grow
SUNY Albany
Dr. Havidan Rodriguez
AND
NYS Dept. of Health / Northwell Health
More Testing + Research
STAY HOME. STOP THE SPREAD. SAVE LIVES.

New antibody serosurvey paper in MedRXiv…

Cumulative incidence and diagnosis of SARS-CoV-2 infection in New York

Eli S. Rosenberg PhD[1], James M. Tesoriero PhD[2], Elizabeth M. Rosenthal MPH[1], Rakkoo Chung PhD[2], Meredith A. Barranco MPH[1], Linda M. Styer PhD[3], Monica M. Parker PhD[3], Shu-Yin John Leung MA[2], Johanne E. Morne MS[2], Danielle Greene DrPH[2], David R. Holtgrave PhD[1], Dina Hoefer PhD[2], Jessica Kumar DO[2], Tomoko Udo PhD[1], Brad Hutton MPH[2], Howard A. Zucker, MD[2]

1. University at Albany School of Public Health, State University of New York, Rensselaer NY
2. New York State Department of Health, Albany NY
3. Wadsworth Center, New York State Department of Health, Albany NY

Table 1. Reactivity and test-characteristic adjusted cumulative incidence of COVID-19, overall and by demographic factors and region

	Reactivity		Test-characteristic adjusted estimated cumulative incidence				
	Unweighted # Reactive / Total Sample	Weighted percent	%	(95% CI)	Infection-experienced adults [a]	(95% CI)	% of Infection-experienced adults	p-value
Overall	1,887/15,101	12.5	14.0	(13.3-14.7)	2,139,300	(2,035,800-2,242,800)	100.0	
Sex								0.03
Male	918/6,635	13.2	14.8	(13.8-15.8)	1,076,500	(1,001,900-1,151,100)	50.3	
Female	969/8,466	11.9	13.3	(12.4-14.2)	1,062,200	(990,500-1,133,800)	49.7	
Race and Ethnicity								<.0001
Hispanic or Latino	757/2,735	25.8	29.2	(27.2-31.2)	775,800	(722,700-829,000)	36.6	
NH-White	623/9,545	7.3	8.1	(7.4-8.7)	715,400	(657,100-773,700)	33.7	
NH-Black/African American	388/1,913	18.0	20.2	(18.1-22.3)	428,000	(382,700-473,400)	20.2	
NH-Asian	75/629	11.1	12.4	(9.4-15.4)	161,700	(122,600-200,800)	7.6	
Multiracial/Other	44/279	10.7	11.9	(6.4-17.5)	38,800	(20,800-56,800)	1.8	
Age group								0.0002
18-34	377/3,151	13.0	14.6	(13.1-16.1)	682,600	(612,000-753,200)	31.8	
35-44	334/2,628	13.7	15.3	(13.7-17.0)	371,800	(331,700-411,900)	17.3	
45-54	479/3,345	14.3	16.0	(14.6-17.5)	424,700	(386,400-463,100)	19.8	
55+	697/5,977	10.9	12.1	(11.2-13.1)	667,800	(615,600-719,900)	31.1	
Region								<.0001
New York City [b]	1,319/5,946	20.2	22.7	(21.5-24.0)	1,504,400	(1,421,300-1,587,500)	70.1	
Westchester/ Rockland Counties	134/980	14.4	16.1	(13.2-19.0)	156,500	(128,400-184,600)	7.3	
Long Island [c]	241/2,074	11.9	13.2	(11.4-15.1)	291,800	(250,600-332,900)	13.6	
Rest of NYS [d]	193/6,101	3.4	3.6	(3.0-4.1)	194,600	(162,600-226,600)	9.1	

Source: Rosenberg et al. paper in MedRXiv May 2020 (full reference on prior slide)

Tools to Combat COVID-19

- **Test available?:** Yes (but very slow rollout in U.S. this spring)
- **Treatment available?:** No (*but studies are underway; rapid work at UAlbany in partnership with NYS DOH on hydroxychloroquine and azithromycin published in April 2020 in Journal of the American Medical Association*)
- **Vaccine available?:** No (we are 1 to 1.5 years away)

Therefore, the only pathway to contain the disease is to disrupt the transmission using behavioral and social measures, and environmental cleaning.

These measures include the following…..

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*Image from cdc.gov

Individual behavior change

Proper handwashing and sanitizing, coughing into sleeve, avoiding touching of face, staying home if sick, CALLING doctor if you feel unwell.

- These are straightforward and should be done now (and always)
- Masks generally used for (a) health care providers, and (b) persons who have COVID-19 to avoid transmission to others. *Now advice is emerging to encourage all to wear face coverings in particular to avoid asymptomatic (undiagnosed) transmission*

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*Image from cdc.gov

Physical Distancing (sometimes called “Social Distancing”)

Goal: trying to keep everyone six feet or more apart, and avoiding interactions that could lead to the acquisition of novel coronavirus from mutually touched environmental surfaces

- These strategies can be more difficult than individual behavior change because we are social beings - highly interrelated to each other for education, business, social connection, etc
- In fact, while we need to maximize physical distance, we actually also should find creative ways to maximize social interaction (via videoconferencing and other methods)

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Physical distancing examples

1. ***NY State Actions*** (just a few highlights) (https://coronavirus.health.ny.gov/home)
    1. Decrease in-office personnel by 100%; non-essential employees must work at home
    2. School districts engaged in teleschooling
    3. Closed shopping malls, amusement parks, bowling alleys, bars and restaurants (take out or delivery of food is allowed), and many other establishments
    4. Broadway closed
    5. Waiving all state, local and county park fees (but discouraging congregating in parks such as in pick-up basketball games…and closing playgrounds where this is not observed)

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Proposed State or Regional Gating Criteria

Satisfy Before Proceeding to Phased Comeback

SYMPTOMS

Downward trajectory of influenza-like illnesses (ILI) reported within a 14-day period

AND

Downward trajectory of covid-like syndromic cases reported within a 14-day period

CASES

Downward trajectory of documented cases within a 14-day period

OR

Downward trajectory of positive tests as a percent of total tests within a 14-day period (flat or increasing volume of tests)

HOSPITALS

Treat all patients without crisis care

AND

Robust testing program in place for at-risk healthcare workers, including emerging antibody testing

Core State Preparedness Responsibilities

TESTING & CONTACT TRACING

- ✓ Ability to quickly set up safe and efficient screening and testing sites for symptomatic individuals and trace contacts of COVID+ results
- ✓ Ability to test Syndromic/ILI-indicated persons for COVID and trace contacts of COVID+ results
- ✓ Ensure sentinel surveillance sites are screening for asymptomatic cases and contacts for COVID+ results are traced (sites operate at locations that serve older individuals, lower-income Americans, racial minorities, and Native Americans)

HEALTHCARE SYSTEM CAPACITY

- ✓ Ability to quickly and independently supply sufficient Personal Protective Equipment and critical medical equipment to handle dramatic surge in need
- ✓ Ability to surge ICU capacity

PLANS

- ✓ Protect the health and safety of workers in critical industries
- ✓ Protect the health and safety of those living and working in high-risk facilities (e.g., senior care facilities)
- ✓ Protect employees and users of mass transit
- ✓ Advise citizens regarding protocols for social distancing and face coverings
- ✓ Monitor conditions and immediately take steps to limit and mitigate any rebounds or outbreaks by restarting a phase or returning to an earlier phase, depending on severity

GUIDELINES FOR ALL PHASES

Individuals

Continue to adhere to State and local guidance as well as complementary CDC guidance, particularly with respect to face coverings.

CONTINUE TO PRACTICE GOOD HYGIENE

- ✓ Wash your hands with soap and water or use hand sanitizer, especially after touching frequently used items or surfaces.
- ✓ Avoid touching your face.
- ✓ Sneeze or cough into a tissue, or the inside of your elbow.
- ✓ Disinfect frequently used items and surfaces as much as possible.
- ✓ Strongly consider using face coverings while in public, and particularly when using mass transit.

PEOPLE WHO FEEL SICK SHOULD STAY HOME

- ✓ Do not go to work or school.
- ✓ Contact and follow the advice of your medical provider.

GUIDELINES FOR ALL PHASES

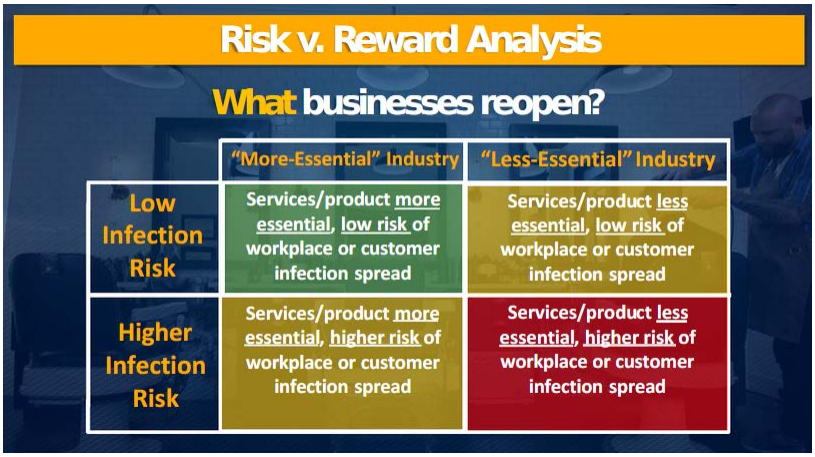
Employers

Develop and implement appropriate policies, in accordance with Federal, State, and local regulations and guidance, and informed by industry best practices, regarding:

- ✓ Social distancing and protective equipment
- ✓ Temperature checks
- ✓ Sanitation
- ✓ Use and disinfection of common and high-traffic areas
- ✓ Business travel

Monitor workforce for indicative symptoms. Do not allow symptomatic people to physically return to work until cleared by a medical provider.

Develop and implement policies and procedures for workforce contact tracing following employee COVID+ test.



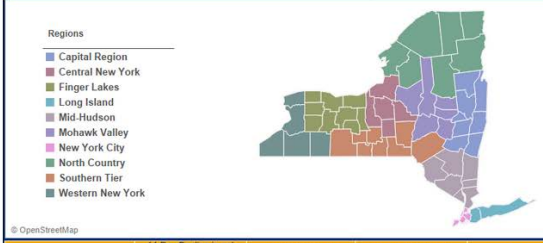
REGION BY REGION STATUS

For detailed information, view the regional UnPause Dashboard and the Early Warning Metric Dashboard.

EARLY WARNING MONITORING DASHBOARD | REGIONAL DASHBOARDS

Regional COVID-19 Metrics: Where Regions Currently Stand

Report as of May 31, 2020



Metrics Met	
Capital Region	7/7
Central New York	7/7
Finger Lakes	7/7
Long Island	7/7
Mid-Hudson	7/7
Mohawk Valley	7/7
New York City	5/7
North Country	7/7
Southern Tier	7/7
Western New York	7/7

	14-Day Decline in net Hospitalizations OR Under 15 new Hospitalizations (3-day avg)	14-Day Decline in Hospital Deaths OR Fewer than 5 deaths (3-day avg)	New Hospitalizations (Under 2 per 100K residents - 3 day rolling avg)	Share of total beds available (threshold of 30%)	Share of ICU beds available (threshold of 30%)	30 per 1k residents tested monthly (7-day avg of new tests per day)	Contact tracers 30 per 100K residents or based on infection rate	Metrics Met
Capital Region	✓	✓	0.40 ✓	38% ✓	45% ✓	2,194 / 1,085 ✓	Yes ✓	7/7 ✓
Central New York	✓	✓	0.47 ✓	41% ✓	47% ✓	2,164 / 775 ✓	Yes ✓	7/7 ✓
Finger Lakes	✓	✓	1.00 ✓	38% ✓	51% ✓	2,699 / 1,203 ✓	Yes ✓	7/7 ✓
Long Island	✓	✓	0.94 ✓	34% ✓	42% ✓	7,916 / 2,839 ✓	Yes ✓	7/7 ✓
Mid-Hudson	✓	✓	0.95 ✓	36% ✓	55% ✓	6,249 / 2,322 ✓	Yes ✓	7/7 ✓
Mohawk Valley	✓	✓	1.79 ✓	47% ✓	57% ✓	1,549 / 485 ✓	Yes ✓	7/7 ✓
New York City	✓	✓	1.33 ✓	29% ✗	31% ✓	24,996 / 8,399 ✓	Expected ★	5/7 ✗
North Country	✓	✓	0.00 ✓	48% ✓	68% ✓	1,008 / 419 ✓	Yes ✓	7/7 ✓
Southern Tier	✓	✓	0.32 ✓	48% ✓	41% ✓	1,694 / 633 ✓	Yes ✓	7/7 ✓
Western New York	✓	✓	0.87 ✓	40% ✓	57% ✓	3,007 / 1,381 ✓	Yes ✓	7/7 ✓

All the regions have satisfied the Metric #1 - Decline in Total Hospitalizations and Metric #2 - Decline in Deaths.

MOVING NEW YORK FORWARD

Region by Region Status

For detailed information, view the regional early warning sign metric dashboard.

REGIONAL DASHBOARDS

COVID-19 Early Warning Monitoring System Dashboard

Report as of: May 31, 2020

	Testing/Tracing Targets		New Infections		Severity of Infection	Hospital Capacity	
Region	Maintain 30 per 1,000 Diagnostic Tests	Maintain Required Case and Contact Tracing Capacity	% Positive Tests per Day (7-Day Rolling Avg)	New Cases per 100K (7-Day Rolling Avg)	Gross New Hospitalizations per 100k (7-Day Rolling Avg)	Share of Total Hospital Beds % Available (7-Day Rolling Avg)	Share of ICU Beds % Available (7-Day Rolling Avg)
Capital Region	2,194 / 1,085	278	1.4%	2.78	0.40	35%	45%
Central New York	2,164 / 775	458	1.7%	4.64	0.63	41%	48%
Finger Lakes	2,699 / 1,203	468	1.7%	3.75	1.07	38%	52%
Long Island	7,916 / 2,839	1,308	2.1%	5.97	1.04	32%	41%
Mid-Hudson	6,249 / 2,322	1,456	2.6%	6.99	1.18	34%	53%
Mohawk Valley	1,549 / 485	139	1.5%	4.92	1.30	48%	61%
New York City	24,996 / 8,399	4,648	2.9%	8.56	1.35	28%	31%
North Country	1,008 / 419	12	0.2%	0.55	0.00	50%	60%
Southern Tier	1,694 / 633	114	0.8%	2.10	0.36	47%	44%
Western New York	3,007 / 1,381	747	2.5%	5.54	0.93	38%	56%

MAY 15th – Un-PAUSE Regional Analysis

BE SMART

1. CDC guidelines – 14-day decline
2. Industries – Phase 1: Construction/Manufacturing – Phase 2 – identify businesses- which ones? No regional "attractive nuisances"
3. What business precautions will be in place – social distancing? PPE, monitoring?
4. Healthcare capacity up to 70%- ICU up to 70%- flu season – stockpile equipment, PPE?
5. Testing regimen? – How many tests (Dr. Birx: 30/1k people/month) sites, turnaround, advertising?
6. Tracing system? Mayor Bloomberg – At least 30 tracers per 100k people
7. Isolation facilities?
8. Regional coordination?
   - Schools, transportation, testing, tracing
9. Reimagine tele-medicine
10. Reimagine tele-education
11. Regional "Control Room"
12. Protect and respect essential workers – testing, equipment, public transportation disinfecting

STAY HOME. STOP THE SPREAD. SAVE LIVES.

UAlbany School of Public Health Response

- Faculty and students are embedded in the state Department of Health as part of the 35-year partnership with the University at Albany
- School tapped by NYS DOH to partner on studies examining potential drug treatments for COVID-19
- Dr. Eli Rosenberg is providing support for data monitoring at the Division of Epidemiology (NYSDOH)
- School's Center for Health Workforce Studies developed a resource sharing data and information on efforts to develop, deploy, and replenish the health workforce
- Students are volunteering and interning on COVID-19 response:
  - conducting wellness calls to COVID-19 positive individuals
  - tracking new case intakes
  - assisting with contact tracing
  - helping with database management
  - assisting with clinical testing
  - drafting guidelines

UAlbany School of Public Health Response

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Social Issues and COVID-19

- Saying “self-quarantine” at home implies you have a home
- Saying “stock up on supplies for two weeks” implies you have the resources to do so
- Saying “stay at home if you are ill” implies you have paid sick leave (or can afford to miss the pay)
- Saying “don’t come to school” implies you have somewhere else to go and food to eat

- For reasons of justice, and because anyone of us is only as well as are the rest of us, we must find ways to ensure that all can take these key preventive measures in our community

- Further, we must fight stigma wherever we find it

In closing:

- At the end of February, I spoke of this in terms of a hurricane watch vs. a hurricane warning…and said at that time I thought we were in “watch” phase; the hurricane is now on shore….questions now are how close are we to the eye of the hurricane, which way will it drift, and when can evacuees go back?
- The time to act is right now (Dr. Tony Fauci of NIH is now quoted as saying it has become time for “all hands on deck”; many mathematical modellers say that now literally everyday counts)
- On March 31, 2020, Dr. Tony Fauci said that while we have to be prepared for 100,000 or more COVID-19 deaths in the US we should not be prepared to accept it. I agree, *every moment matters and we have to save every single life that we possibly can, reduce morbidity to the maximum extent possible, and address social inequities evident in this pandemic.*

Resources

Coronavirus information from the **New York State Department of Health** (NYSDOH):
https://www.health.ny.gov/diseases/communicable/coronavirus/

Coronavirus information from the **Centers for Disease Control and Prevention** (CDC):
https://www.cdc.gov/coronavirus/2019-ncov/index.html

Coronavirus information from the **Albany County Department of Health (ACDOH)**:
https://www.albanycounty.com/departments/health/2019-novel-coronavirus

For Immediate Assistance

New York State Coronavirus health hotline:

1-888-364-3065

Call with questions or concerns about travel and symptoms

Note: The NY State Coronavirus health hotline can be used for any questions about COVID-19, including what to do if you or a team member becomes ill and you need to find local clinical resources

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