

COVID-19 HEALTHCARE PROVIDER UPDATE

MAY 29, 2020

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Our understanding of COVID-19 is evolving rapidly. This presentation is based on our knowledge as of May 28, 2020, 5 PM.

OUTLINE



WHERE WE ARE NOW



SURVEILLANCE AND CLINICAL UPDATES



SEQUELAE OF COVID-19 AND CONSIDERATIONS FOR POST-HOSPITAL CARE



RESOURCES FOR AMBULATORY CARE PROVIDERS



QUESTIONS AND DISCUSSION

WHERE WE ARE NOW

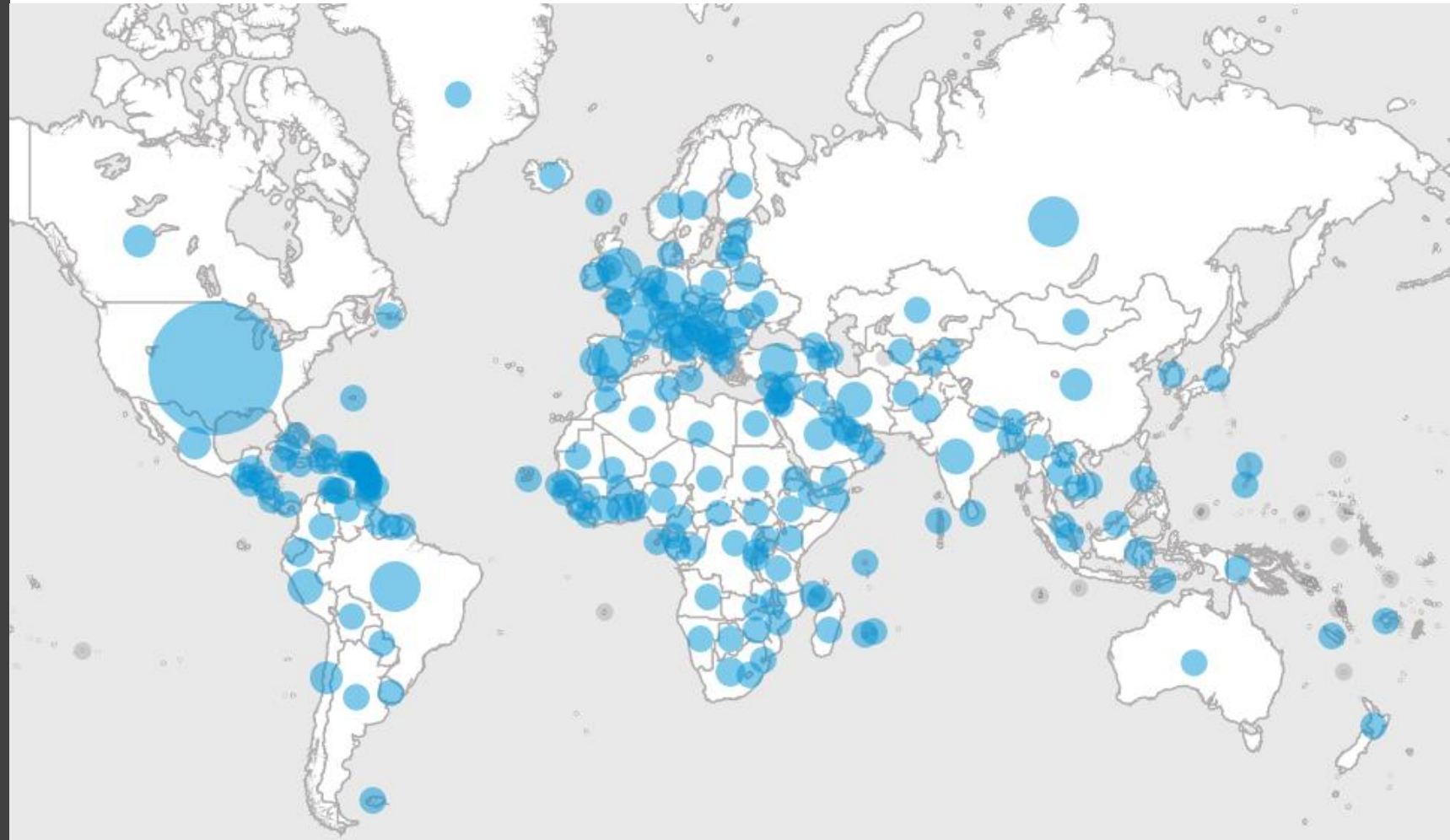
- More than 5.5 million cases and 350,000 deaths due to COVID-19 confirmed worldwide
- Outbreaks continue to accelerate in many parts of the world, including in South America, and in parts of the United States
- In NYC, there has been a sustained decline in case counts, hospitalizations, and deaths
- Prevention measures must be maintained as we transition to a new stage in the pandemic response: suppression

CUMULATIVE CASES AND DEATHS REPORTED TO WORLD HEALTH ORGANIZATION

5/28/20

>5,500,000 cases

>353,000 deaths



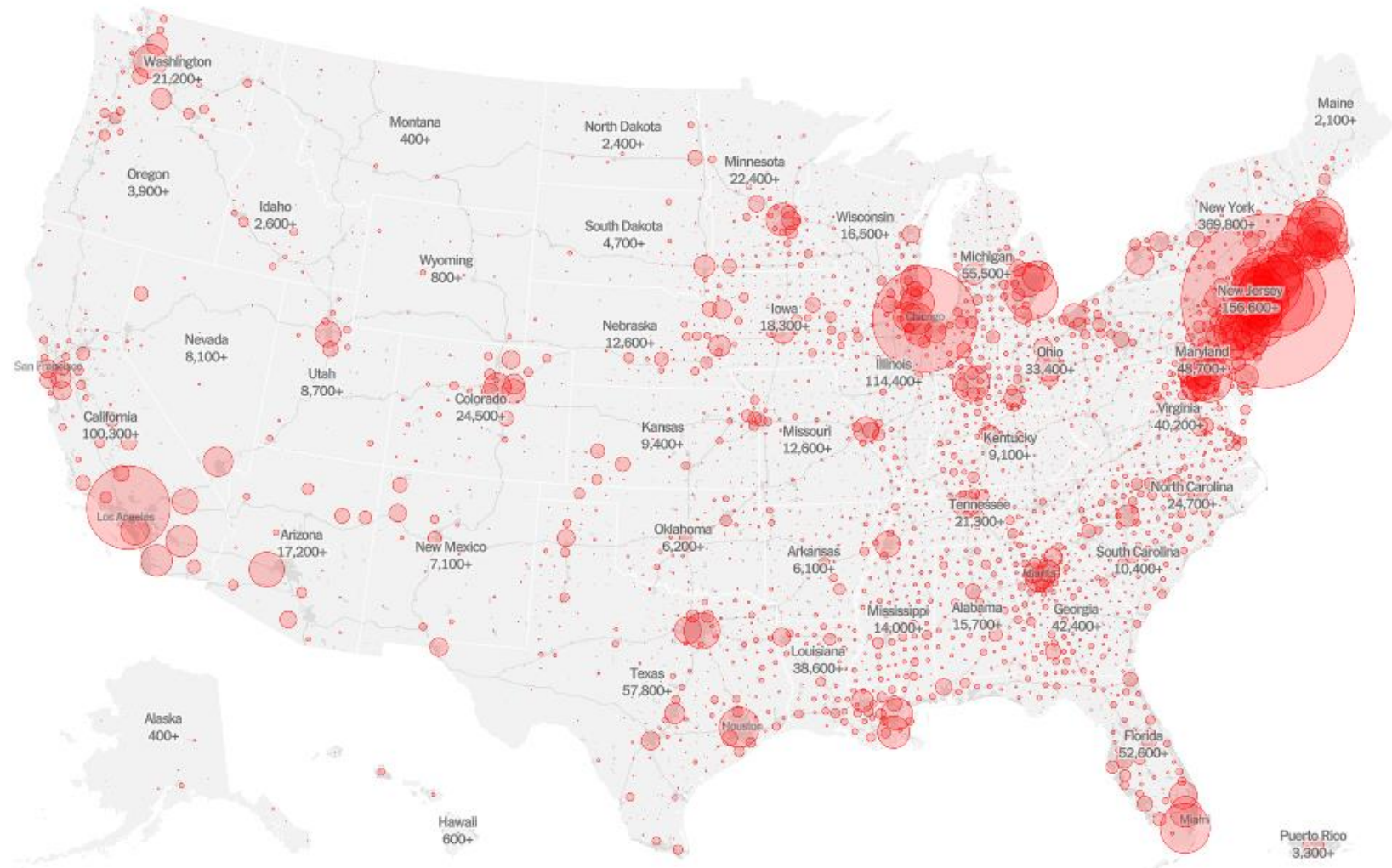
World Health Organization COVID-19 dashboard: cumulative confirmed cases. <https://covid19.who.int/>

CUMULATIVE CASES AND DEATHS, U.S.

5/28/20

>1,700,000 cases
(~30% of confirmed global cases)

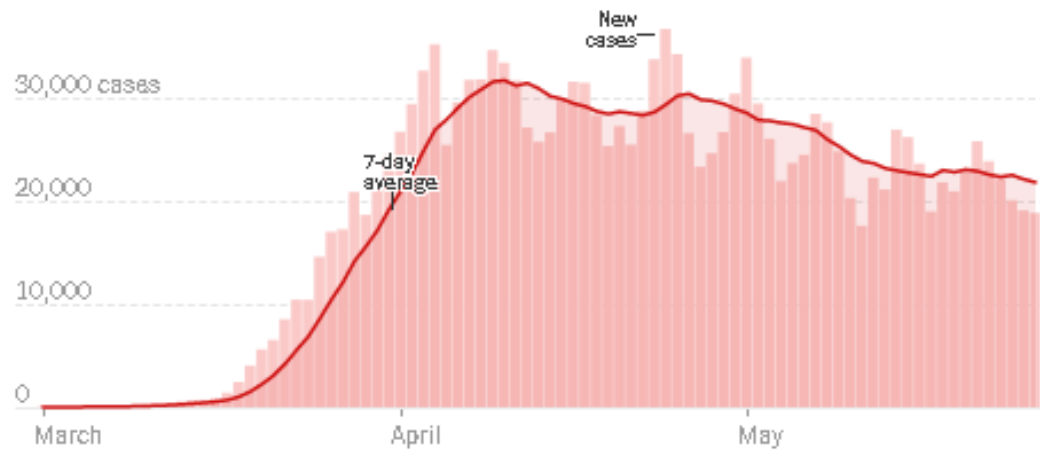
>101,000 deaths
(~30% of reported global deaths)



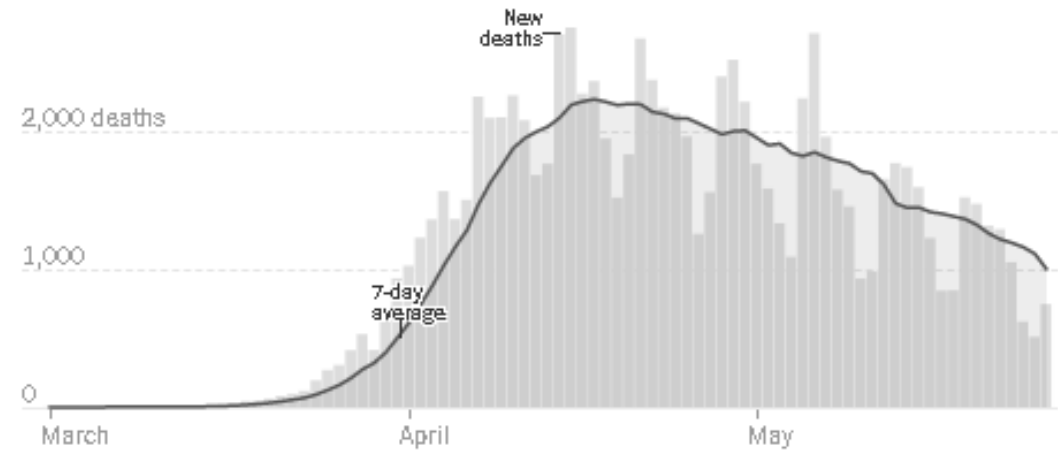
New York Times. Coronavirus in the U.S.: latest map and case count.

<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>

CASES AND DEATHS PER DAY, UNITED STATES



CASES



DEATHS

CURRENT
STATUS OF
OUTBREAK,
NYC
5/28/20

Laboratory-confirmed cases	198,255
Hospitalizations	51,449
Deaths	
Confirmed	16,673
Probable	4,742

NYC Health Department. COVID-19: data. Updated daily.
<https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

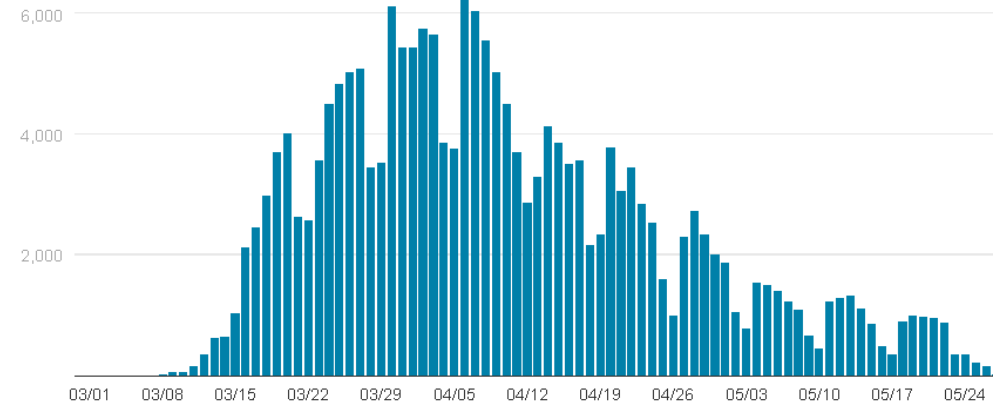
COVID-19 CASES, NYC

3/3/20 – 5/28/20

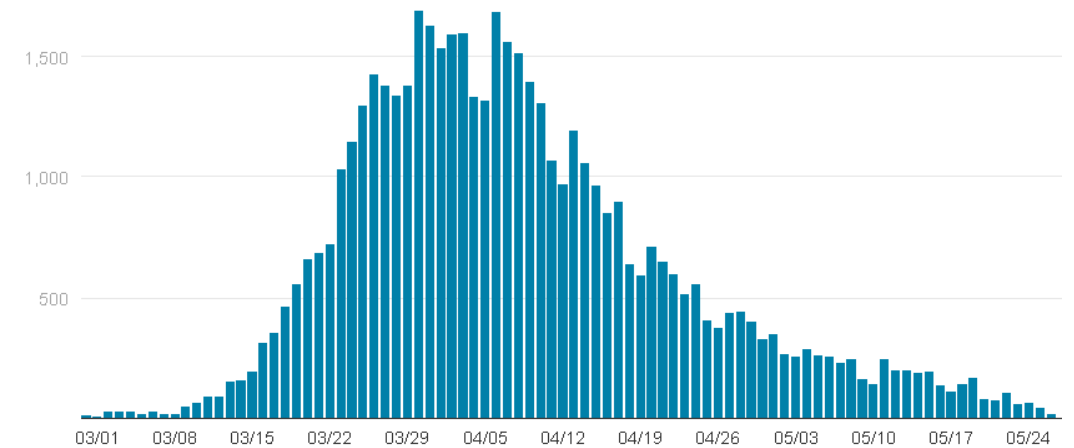
Shows number of daily COVID-19 cases, hospitalizations, and deaths since March 3

Deaths lag 1-2 weeks after hospitalizations

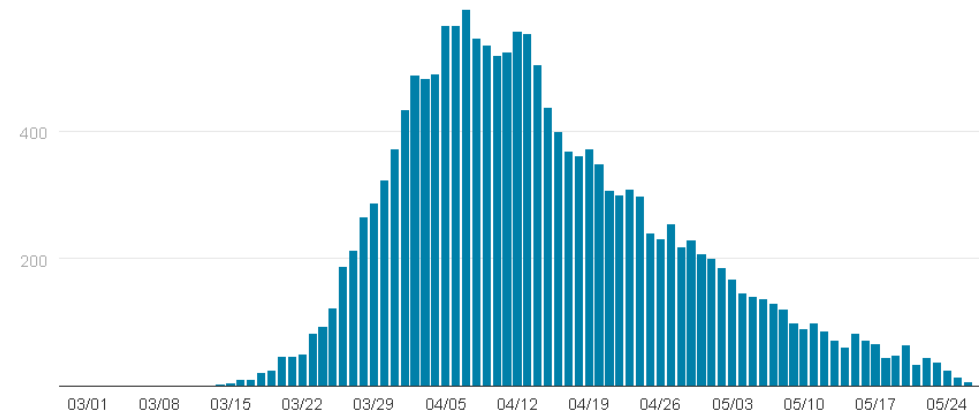
CASES



HOSPITALIZATIONS



DEATHS



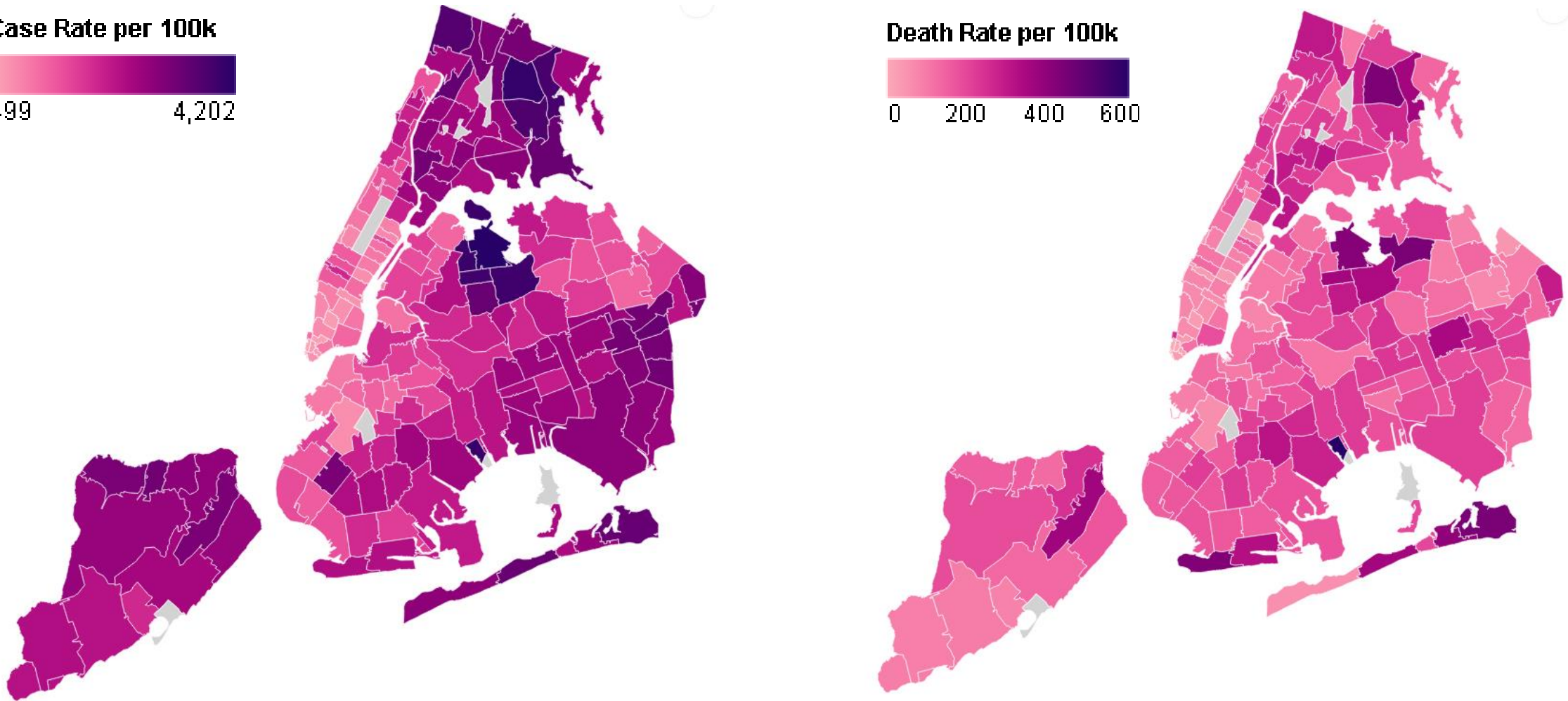
DATE

COVID-19 DATA BY ZIP CODE OF RESIDENCE

Case Rate per 100k



Death Rate per 100k



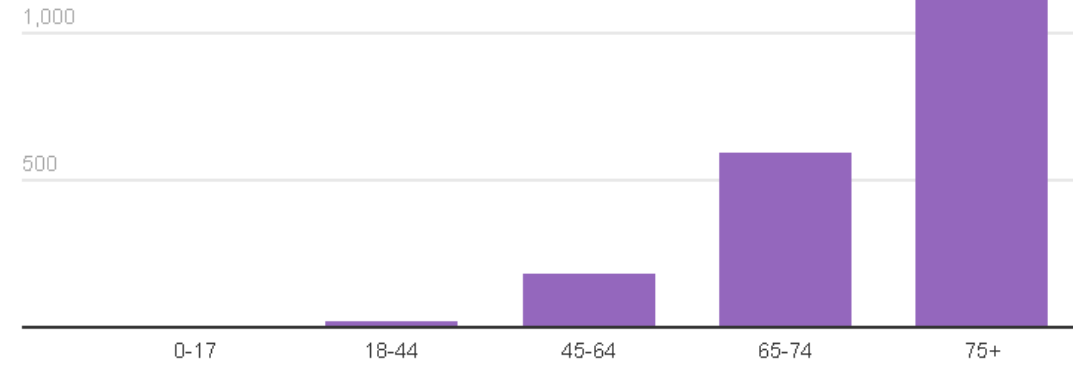
COVID-19 DEATHS

5/28/20

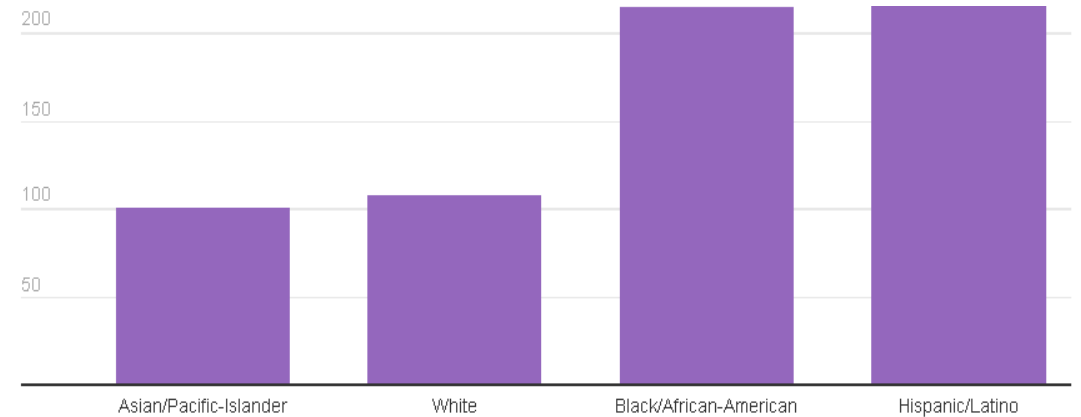
Shows rate of COVID-19-related deaths per 100,000 people according to age group, race-ethnicity,* and neighborhood poverty level.*

*Age-adjusted
NYC Health Department. COVID-19: data.
<https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

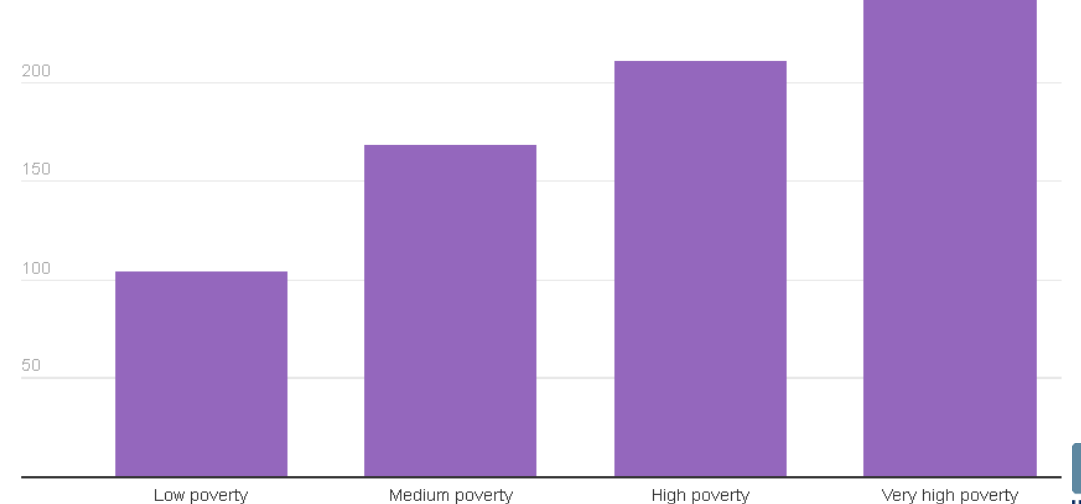
AGE GROUP



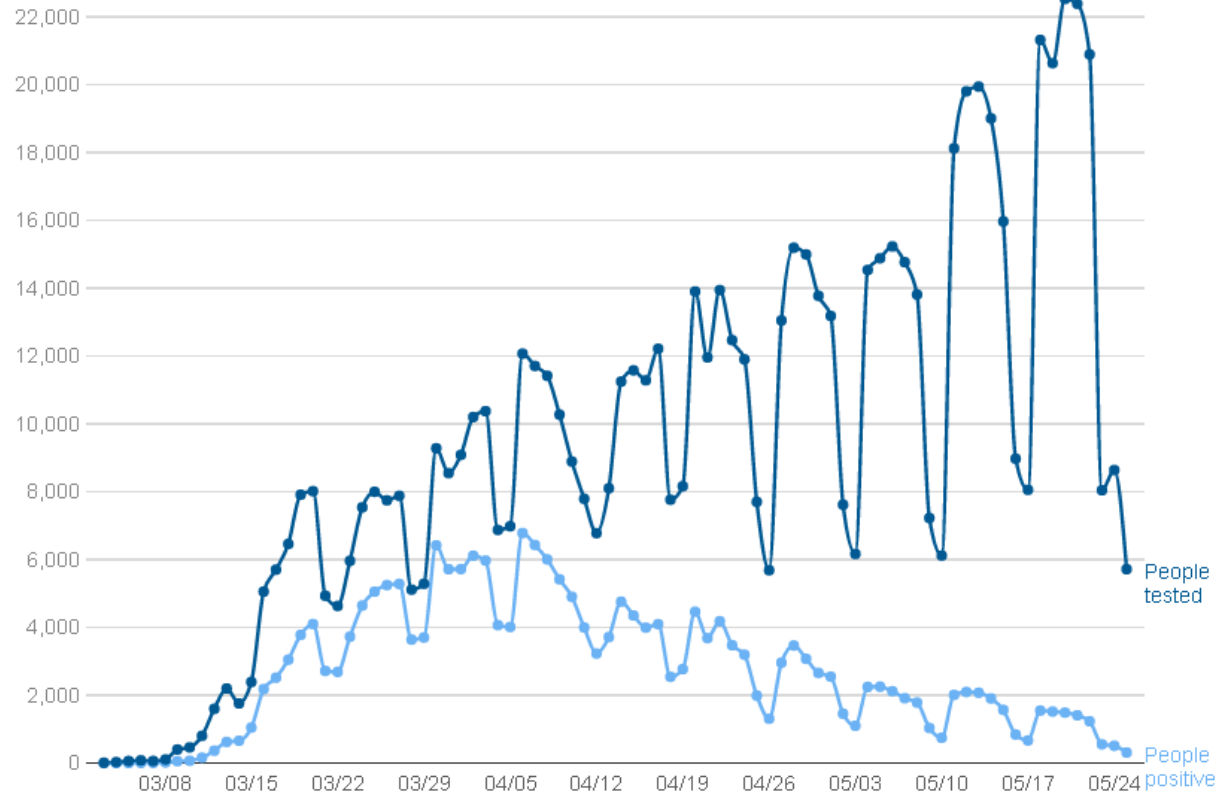
RACE/ETHNICITY



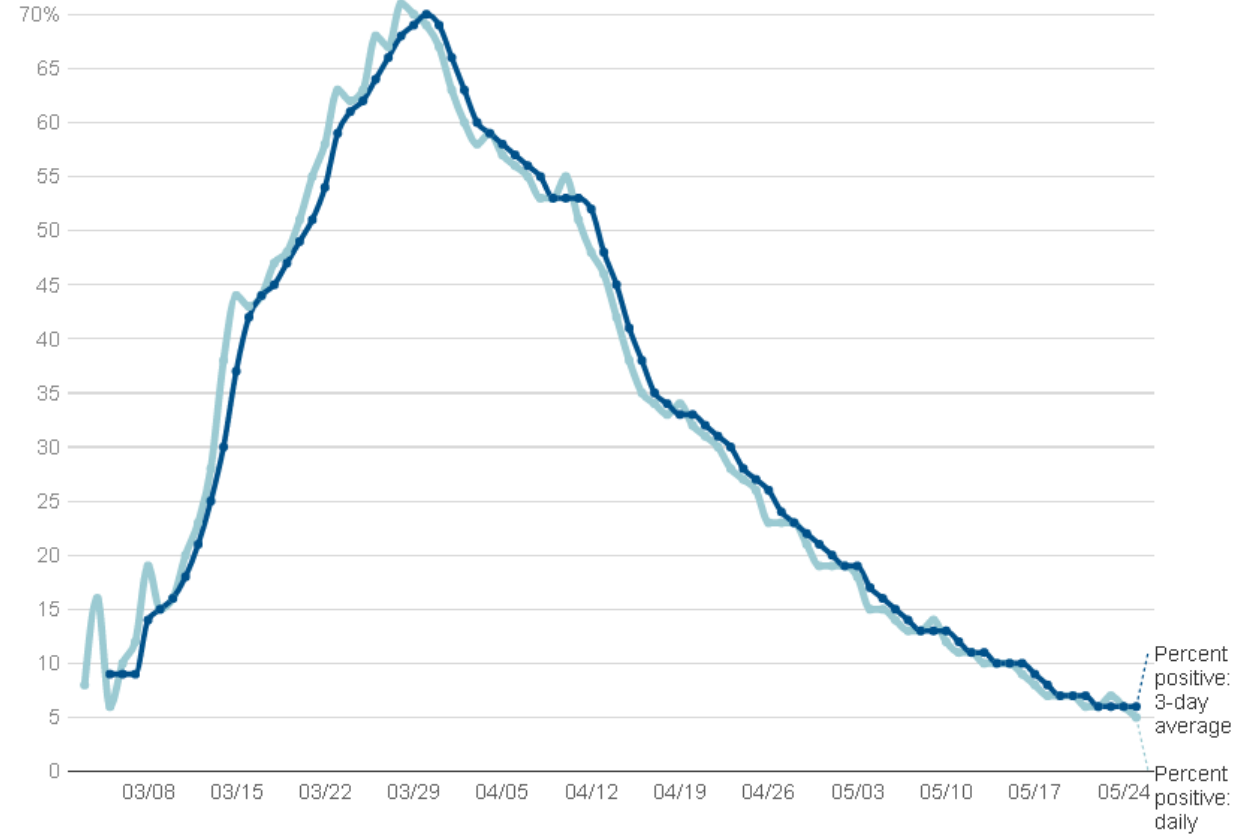
NEIGHBORHOOD POVERTY



DAILY TESTING FOR COVID-19



NUMBER OF PEOPLE TESTED BY DATE



PERCENT OF PEOPLE WITH POSITIVE RESULTS BY DATE

MULTISYSTEM
INFLAMMATORY
SYNDROME IN
CHILDREN
(MIS-C)

Julia Schillinger, MD, MSc

Senior Director of STI Surveillance, Epidemiology,
and Special Projects
NYC Department of Health and Mental Hygiene

MIS-C: BACKGROUND AND COMMON SYMPTOMS

- Serious illness with some clinical features of Kawasaki disease and toxic shock syndrome
- Fever lasting several days, along with other symptoms, including:
 - Gastrointestinal: abdominal pain, diarrhea, vomiting
 - Conjunctivitis
 - Rash
 - Irritability or sluggishness
 - Lymphadenopathy
- Breadth of symptoms, spectrum of illness still being defined
- Elevated inflammatory markers
- Majority positive for SARS-CoV-2 antibody, some for virus (rRT-PCR)
 - Hypothesized illness mediated by immune response rather than direct viral injury

NYC HEALTH DEPARTMENT MIS-C REPORTING REQUIREMENTS¹

(ALIGNED WITH
NY STATE
REQUIREMENTS²)

ANY INDIVIDUAL AGED <21 YEARS WHO MEETS CLINICAL + GENERAL LABORATORY CRITERIA AND DOES NOT HAVE AN ALTERNATE DIAGNOSIS

CLINICAL CRITERIA (ALL 3 REQUIRED):

1. ≥ 1 day of subjective or measured fever ($\geq 100.4^{\circ}$ F/ 38° C)
2. Hospitalization
3. Either ≥ 1 of the following:
 - Hypotension or shock
 - Features of severe cardiac illness
 - Other severe end-organ involvement (excluding severe respiratory disease alone)

OR ≥ 2 of the following:

- Maculopapular rash
- Bilateral non-purulent conjunctivitis
- Mucocutaneous inflammatory signs (mouth, hands, or feet)
- Acute GI symptoms (diarrhea, vomiting, or abdominal pain)

GENERAL LABORATORY CRITERIA:

≥ 2 markers of inflammation (e.g. neutrophilia, lymphopenia, elevated CRP)

1. NYC Health Alert #16. 5/18/2020. <https://www1.nyc.gov/assets/doh/downloads/pdf/han/advisory/2020/covid-19-providers-mis-c.pdf>
2. NYS Health Advisory. 5/13/2020. https://health.ny.gov/press/releases/2020/docs/2020-05-13_health_advisory.pdf

MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (MIS-C)

- Report all possible cases to the NYC Health Department by calling the Provider Access Line: **(866) 692-3641**
 - Report regardless of laboratory evidence of SARS-CoV-2 infection
 - Consider MIS-C in any pediatric death with evidence of SARS-CoV-2 infection
- NYC Health Department investigates all reports
- As of May 28, 203 reports were received by NYC Health Department
 - 124 met CDC case definition¹ for MIS-C
 - 39 did not meet case definition
 - 40 still under investigation
 - 1 death reported

CDC Health Alert. 5/14/2020. <https://emergency.cdc.gov/han/2020/han00432.asp>

SEQUELAE OF
COVID-19 AND
CONSIDERATIONS
FOR POST-
HOSPITAL CARE

Betty Kolod, MD, AAHIVS

Acute Care Planning and Strategies

NYC Department of Health and Mental Hygiene

OUTLINE

- Complications of severe COVID-19 illness
- Challenges to post-acute care access
- Considerations for COVID-19 post-discharge care

LONG ROAD FROM ICU TO RECOVERY

- Months to years
- Late mortality
- Cognitive deficits
- Mental illness
- Debility
- Decreased quality of life

Angus 2003; Needham 2012; Pandharipande 2013

POST INTENSIVE CARE SYNDROME (PICS)

Cognitive	Psychological	Physical Weakness
<ul style="list-style-type: none">• Memory• Attention• Visuo-spatial• Psychomotor• Impulsivity	<ul style="list-style-type: none">• Anxiety• Depression• Post-traumatic stress disorder	<ul style="list-style-type: none">• Dyspnea• Pain• Sexual dysfunction• Muscle weakness• Fatigue• Impaired exercise tolerance

PICS RISK: SURVIVORS OF SEVERE COVID-19 ILLNESS

Severe COVID-19 Illness	Risk Factors for PICS
<ul style="list-style-type: none">• Hypoxia and hypotension• Sepsis• Diabetic ketoacidosis• 75+• Long duration of mechanical ventilation• Multiple comorbidities• Delirium<ul style="list-style-type: none">• Isolation; no family at the bedside• Heavy, long-duration sedation	<ul style="list-style-type: none">• Hypoxia and hypotension• Sepsis• Glucose dysregulation• Age• Duration of mechanical ventilation• Premorbid mental and physical morbidity• Delirium• Duration of sedation

Stam 2020; NYC Health Department. COVID-19: data. <https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

MECHANICAL VENTILATION AND TRACHEOSTOMY

- In a study of 1,150 patients hospitalized in NYC with COVID-19:
 - 18% required mechanical ventilation
 - Median 18 days on mechanical ventilation
- Difficult weaning and early tracheostomy
- Few decannulated by discharge

Cummings 2020; Postelnicu 2020

KIDNEY INJURY AND DIALYSIS

In a study of 5,449 patients hospitalized in NYC with COVID-19:

- 36.6% developed acute kidney injury (AKI)
 - 14.3% required renal replacement therapy (RRT)
 - 35% expired
- AKI among 89.7% of mechanically ventilated patients
 - 96.8% of patients requiring RRT were on a ventilator
- Hemodialysis and peritoneal dialysis capacity to meet need?

Chugh 2020; Cummings 2020; Hirsch 2020; Kliger 2020

ROADBLOCKS TO DISCHARGE

- Tracheostomy at 14 to 21 days or later
- Delayed PEG placement
- Medical acuity
 - Anticoagulation
 - Hypercoagulable
 - Pneumothoraces
- Discontinuation of transmission-based precaution

POST-ACUTE CARE

Rehabilitation or palliative services following a stay in an acute care hospital, including:

- Skilled nursing facility
- Inpatient rehabilitation facility
- Long-term care hospital
- Home care from home health agency

Long-term Acute Care Facility (LTAC)	Skilled Nursing Facility (SNF)
<ul style="list-style-type: none">• Telemetry• IV medication• RRT• Nasogastric feeding• Respiratory therapy (RT)• Higher nursing ratio• Greater than 50% successful weaning• Challenge: NYS DOH certificate of need required (H + H Henry J. Carter LTAC)	<ul style="list-style-type: none">• For stable patients with predictable course• Staffed by RT and nursing• Mental health, aggressive rehabilitation not available• Must be medically stable• Cohort vs. patients with conversion to negative tests in general unit• Few SNF spots for both RRT and mechanical ventilation

CHALLENGES TO POST-ACUTE CARE CAPACITY

- Pre-pandemic, New York State SNF bed occupancy 90%, higher than national average
 - Kings County SNF bed availability 40/10,000 person (vs. 53/10,000 persons hospitalized for COVID-19)
 - Bronx County SNF bed availability 81 beds/10,000 person (vs. 80/10,000 persons hospitalized for COVID-19)
- Understaffing
- Potential policy solutions, particularly for those who remain infectious:
 - Exclusive COVID-19 post-acute care with robust infection control
 - Convert rural, low-occupancy hospitals, hotels, dorms
 - Recruit from industries with extensive layoffs to meet staffing needs
 - Invest in hospital-at-home programs

Grabowski 2020; Kaiser Family Foundation 2019; NYC Health Department. COVID-19: data.
<https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

LATE CONSIDERATIONS OF MODERATE COVID-19

- Isolation status
- Anticoagulation
- Mental health
- Rehabilitation

HOME ISOLATION

- Requires:
 - Caregiver
 - Separate bedroom
 - Food
 - Face covering
 - Precautions to protect vulnerable members of household
- Patients who have been symptomatic with COVID-19 should remain in home isolation until:

Symptom-Based Strategy	Test-Based Strategy
<ul style="list-style-type: none">• At least 10 days after symptom onset; AND• Absence of fever for at least 3 days without antipyretics; AND• Overall illness has improved	<ul style="list-style-type: none">• Improvement in respiratory symptoms; AND• Resolution of fever; AND• At least two consecutive respiratory specimens collected ≥ 24 hours apart negative for SARS-CoV-2 RNA

POST-DISCHARGE ANTI- COAGULATION

Venous thromboembolism (VTE) incidence:

- 5.8 % of 123 non-critical hospitalized patients by hospital day 7
- 58% of 75 ICU patients by hospital day 21

Prophylactic Anticoagulation	Empiric Anticoagulation	Therapeutic Anticoagulation
Reduced mobility, cancer, or D-dimer > x 2 normal	No VTE but high D-dimer (>1,500 ng/mL)	Confirmed VTE
≤ 45 days	Consider prophylactic, intermediate or empiric therapeutic regime	Minimum of 3 months

Bikdeli 2020; Middeldorp 2020; Tang 2020

PSYCHIATRIC MORBIDITY

- Severe Acute Respiratory Syndrome (SARS), 2003 outbreak: anxiety, depression, PTSD and substance use disorders
- Anxiety: among those self-isolated for COVID-19, mean anxiety mild to moderate
- PTSD: 96.2% among stable COVID-19 survivors held in temporary isolation hospitals

Bo 2020; Galea 2020; Holmes 2020; Xiao 2020

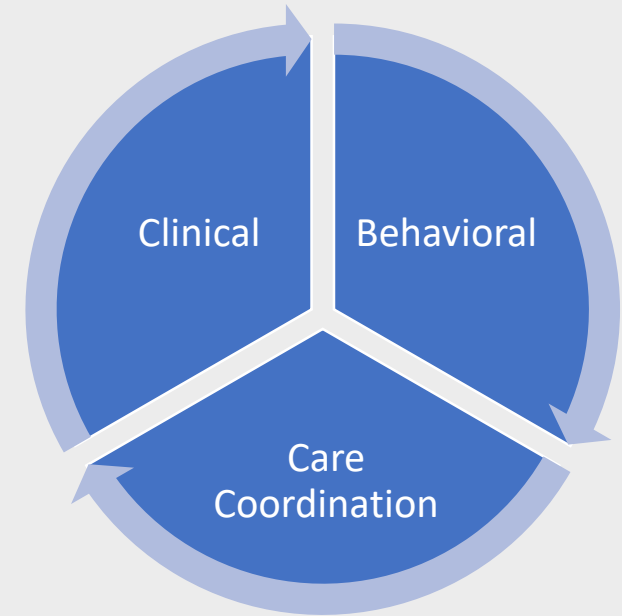
REHABILITATION

Pulmonary function assessment techniques:

Assessment Items	Assessment Results		Suggested Issue
Breath-Hold Test	<10 seconds (30 seconds is normal)		Impaired lung function
1-Minute Step Test	Heart rate before and after	102–124 beats/min	Severely impaired endurance
	Oxygen saturation change	97%–94%	
	Borg Dyspnea Scale score	0–2	
Squat	Cannot complete independently		Lower limb muscle atrophy

COVID-19 POST-DISCHARGE CLINIC MODEL

- Communication
 - Patient
 - Hospital
 - Primary care
 - Specialists
 - Caregivers
- Proactive care of COVID-19 complications and exacerbated comorbidities
- Telemedicine
- Equipment
- Outcomes research and quality improvement



Bryson 2020; Sommer 2020

COVID-19 POST- HOSPITAL CLINIC BEST PRACTICES

- Reliable, regular contact
- Caregiver engagement
- Simple functional assessments
- Stress management
- Group visits via video conference
- Same-day/next-day appointments with specialists

Sommer 2020

TAKEAWAYS

- Prevent, diagnose and treat functional impairment, including cognitive dysfunction, physical debility and psychiatric morbidity
- Policy must address great need for post-acute care beds
- Care coordination and telehealth will be instrumental in the recovery of COVID-19 survivors

RESOURCES FOR
AMBULATORY
CARE PROVIDERS

Matthew Gannon

Bureau of Equitable Health Systems

Center for Health Equity and Community Wellness

ABOUT NYC REACH

- NYC REACH is operated by the Bureau of Equitable Health Systems within the NYC Health Department
- Free membership organization for NYC private practices, community health centers, health systems, and pharmacies
- Members eligible for support with health information technology, primary care workflows, medication therapy management, chronic disease self-management, the referral process, and other quality improvement projects
- Providing free resources and training for members and non-members in response to COVID-19 public health emergency

NYC REACH

TELEHEALTH

- CMS and NYS expanded telehealth reimbursement and relaxed restrictions
- NYC REACH Primary Care Survey shows increase in uptake
 - March 2020: 81% (73/95)
 - April 2020: 89% (183/206)
 - May 2020: 91% (201/220)
- Next steps for practices: ensure telehealth implemented sustainably, develop protocols, integrate into forward planning

TELEHEALTH AND RE-OPENING

- Practices should consider
 - Finalizing protocols for telehealth: triage, monitoring of COVID+ patients, hybrid telehealth/in-person visits, etc.
 - Conducting comprehensive risk stratification to prioritize patient outreach and evaluate appropriateness of telehealth vs. in-person visits
 - Integrating telehealth strategically into schedule
 - Tailoring messaging and education for patients
 - Implementing permanent, HIPAA-compliant video platforms, and remote patient monitoring tools
- NYC REACH can support with training and resources

RISK STRATIFICATION

EHR data can be used for risk stratification, which supports prioritizing patients for outreach, developing protocols for in-person vs. telehealth visits, identifying opportunities for care and case management, and more

Name	Patient Account Number	Age	High Risk Age?	Condition Count	Any High Risk Condition	Asthma	BMI 40+	Cancer	COPD
		53	Yes	5	Yes	Yes	No	No	Yes
		61	Yes	4	Yes	Yes	No	No	Yes
		81	Yes	4	Yes	Yes	No	No	Yes
		61	Yes	4	Yes	Yes	No	No	Yes
		65	Yes	5	Yes	No	No	No	Yes
		72	Yes	5	Yes	No	No	No	Yes
		55	Yes	4	Yes	No	No	No	Yes

NYC MEDICAL RESERVE CORPS

- Licensed clinicians volunteer their time during periods of public health emergency; ambulatory care settings encourage to post requests for support, e.g.:
 - *Physician, NP, PA*: Remote telehealth monitoring of practice's COVID+ patients currently in isolation
 - *Nurse*: Remote pre-screening of patients scheduled to come into the practice, remote post-visit patient follow-up with patients at high risk, in-person support of catch-up vaccination clinic
 - *Social Worker*: Remote telehealth visits with patients experiencing COVID-related mental health concerns
- Register for NYC REACH's informational webinar next Friday:
<https://nycreservecorp.eventbrite.com>

HEALTH INFORMATION EXCHANGE

- NYC has two Regional Health Information Organizations (RHIOs):
 - [Healthix](#)
 - [Bronx RHIO](#)
- Both provide NYS-required health information exchange tools, including:
 - Patient Record Lookup
 - COVID-19 Testing Alerts
 - Hospital Event Notifications (ED visit, Admit, Discharge)
- Participation in a RHIO supports transitional care management

ACCESSING NYC REACH RESOURCES

- Resources and trainings open to all NYC members and non-members in response to COVID-19 public health emergency
 - Telehealth trainings, resources, updates
 - Identification of high-risk patients
 - Patient outreach support
 - Medical Reserve Corps connections
 - Updates on policy changes and financial resources
- Connect with us via email: nycreach@health.nyc.gov
- Visit our website and search “COVID-19 Support”
<http://www.nycreach.org>

COVID-19: Community and Business

Coronavirus Disease 2019 (COVID-19)

Symptoms and What to Do When Sick

Prevention and Groups at Higher Risk

Coping and Emotional Well-being

Data

Information for Providers

[Community and Business](#)

Posters and Flyers



Learn about available resources in your area that can help you get basic needs while you are social (physical) distancing. You can also get the most up-to-date guidance for businesses and other commercial and residential facilities in NYC.

- [City Government Service Suspensions and Reductions](#)

COVID-19 Resources by Neighborhood

The below documents list the resources currently available in your community. Some resources are available for in-person services, while others offer remote and delivery options.

- [Comprehensive Resource Guide](#) (PDF)
Other Languages: [Español](#) | [繁體中文](#) | [简体中文](#) | [Kreyòl ayisyen](#) | [Français](#)

Expand All

Collapse All

▶ Bronx

▶ Brooklyn

▶ Manhattan

▶ Queens

▶ Staten Island

▼ [Bronx](#)

- [Belmont and East Tremont \(ZIP codes: 10457, 10458, 10460\)](#) (PDF, May 12)
- [Fordham and University Heights \(ZIP codes: 10453, 10458, 10468\)](#) (PDF, May 12)
- [Highbridge and Concourse \(ZIP codes: 10451, 10452\)](#) (PDF, May 12)
- [Kingsbridge Heights and Bedford \(ZIP codes: 10458, 10463, 10468\)](#) (PDF, May 12)
- [Morrisania and Crotona \(ZIP codes: 10456, 10460\)](#) (PDF, May 12)
- [Morris Park and Bronxdale \(ZIP code: 10462\)](#) (PDF, May 12)
- [Mott Haven and Melrose \(ZIP codes: 10451, 10456\)](#) (PDF, May 12)
- [Parkchester and Soundview \(ZIP codes: 10462, 10472, 10473\)](#) (PDF, May 12)
- [Riverdale and Fieldston \(ZIP codes: 10463, 10471\)](#) (PDF, May 12)
- [Williamsbridge and Baychester \(ZIP codes: 10466, 10467, 10469\)](#) (PDF, May 12)

- [Bronx Sexual and Reproductive Health Provider Directory](#) (PDF)

<https://www1.nyc.gov/site/doh/covid/covid-19-businesses-and-facilities.page>

RESOURCES ON COVID-19

NYC Health Department:

- Provider page: on.nyc.gov/covid19provider
- Data page: on.nyc.gov/covid19data
- Weekly webinars: Fridays, 2 PM (sign up on provider page)
- Dear Colleague COVID-19 newsletters (sign up for *City Health Information* subscription at: nyc.gov/health/register)
- NYC Health Alert Network (sign up at <https://www1.nyc.gov/site/doh/providers/resources/health-alert-network.page>)
- Provider Access Line: **866-692-3641**

Other sources:

- CDC: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>

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SEQUELAE OF COVID-19 AND CONSIDERATIONS FOR POST- HOSPITAL CARE

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QUESTIONS?
