

# 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

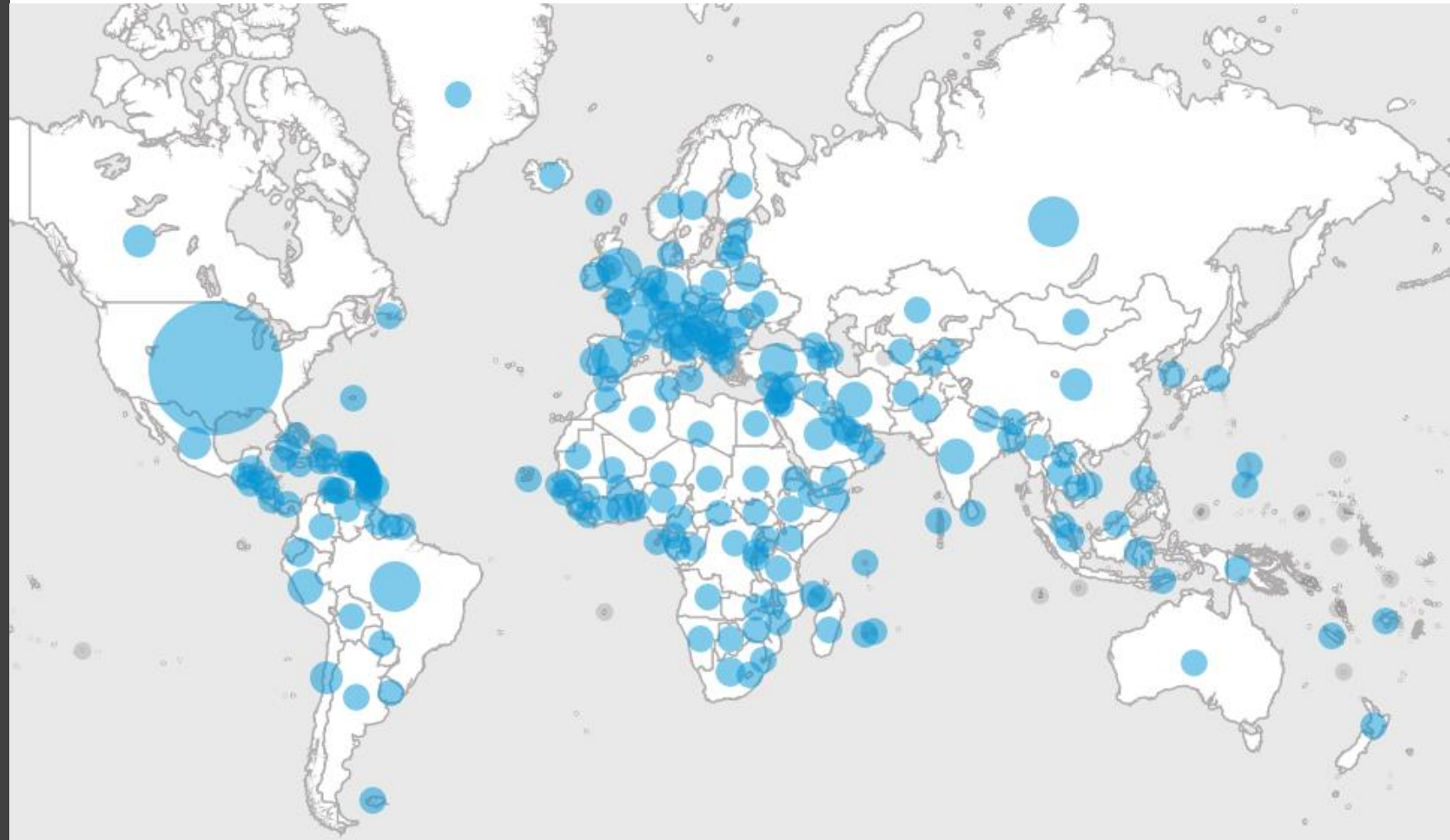
- More than 5.5 million cases and 350,000 deaths due to COVID-19 confirmed worldwide
- Outbreaks continue to accelerate in many parts of the world, including in South America, and in parts of the United States
- In NYC, there has been a sustained decline in case counts, hospitalizations, and deaths
- 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



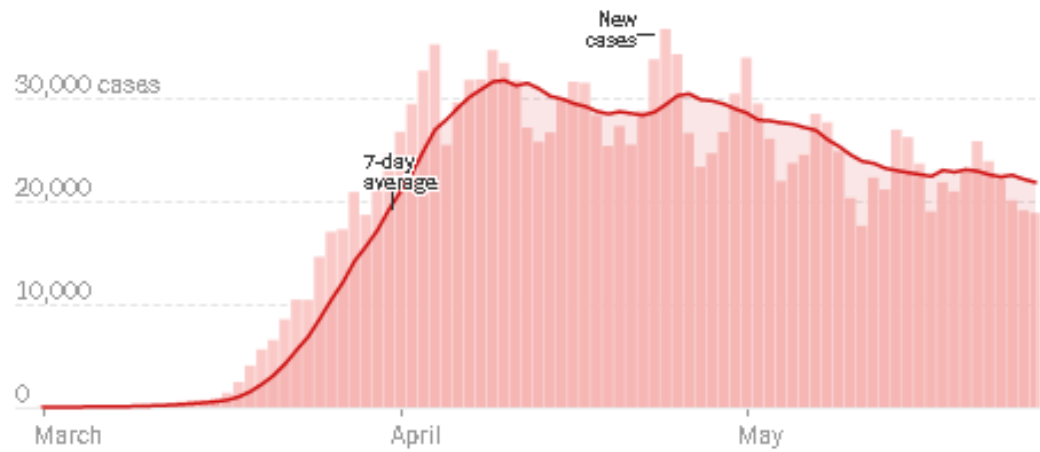
World Health Organization COVID-19 dashboard: cumulative confirmed cases. <https://covid19.who.int/>

5/28/20

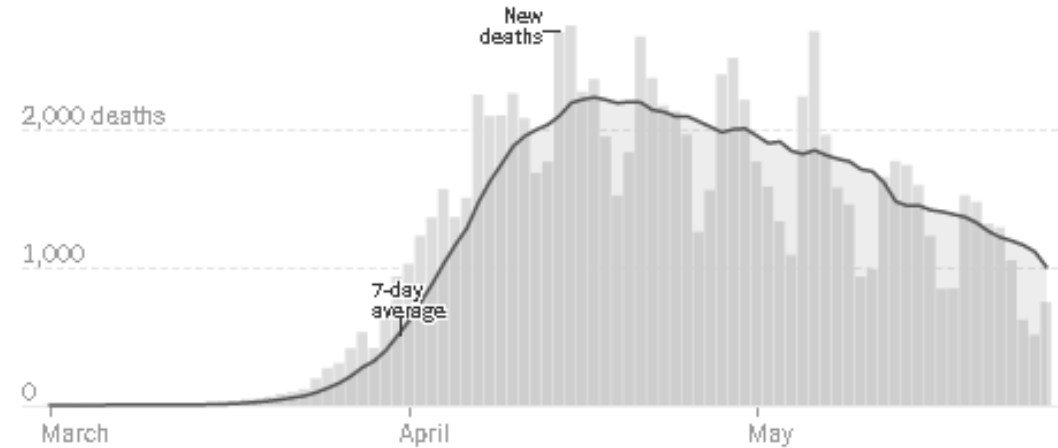
>101,000 deaths  
(~30% of reported global deaths)



# 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>

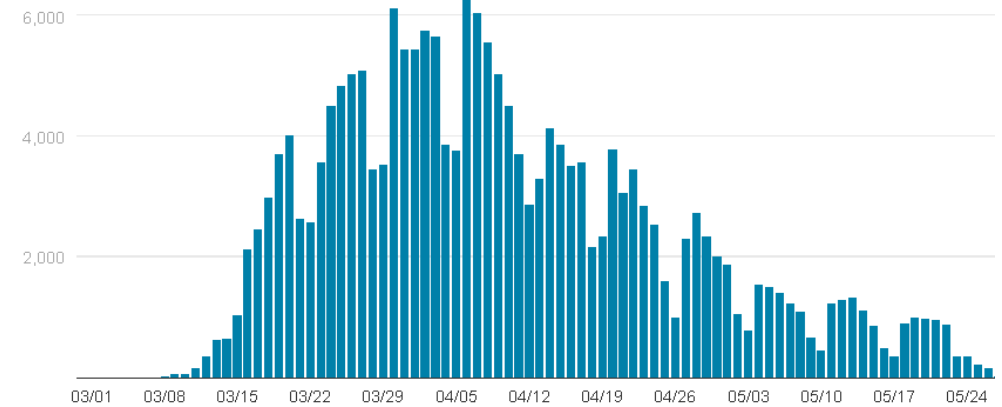
# COVID-19 CASES, NYC

3/3/20 – 5/28/20

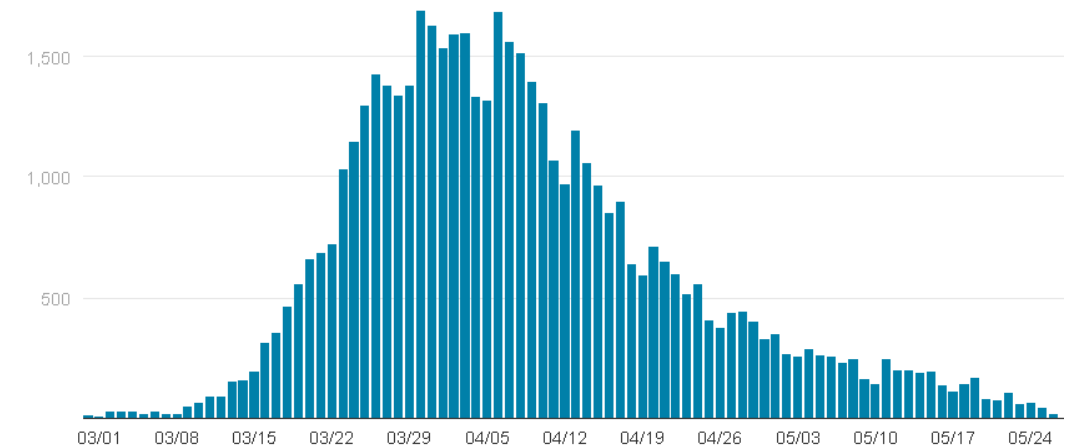
Shows number of daily COVID-19 cases, hospitalizations, and deaths since March 3

Deaths lag 1-2 weeks after hospitalizations

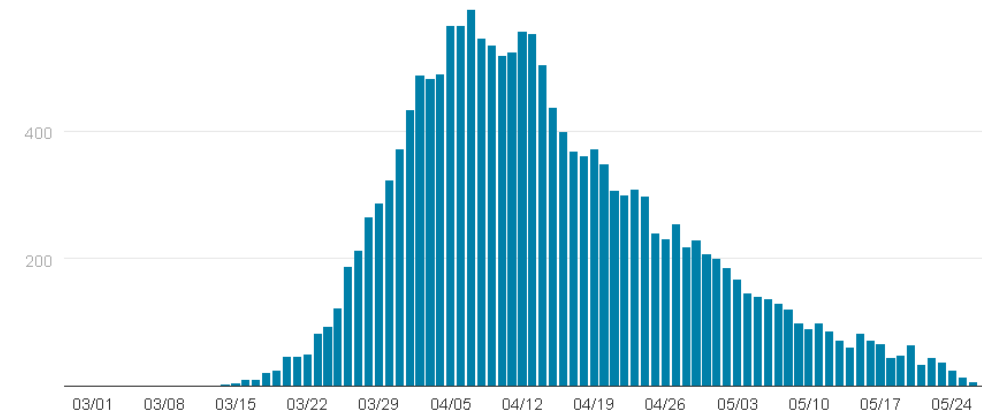
CASES



HOSPITALIZATIONS



DEATHS



DATE

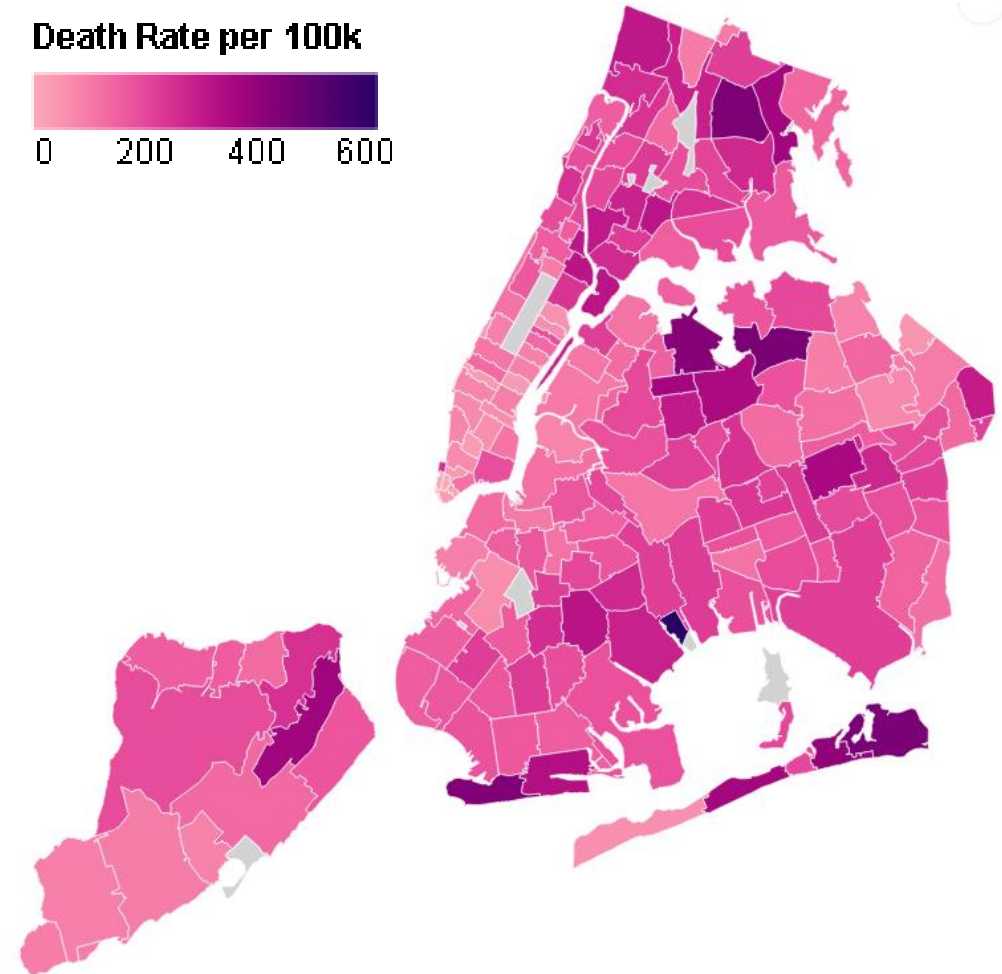
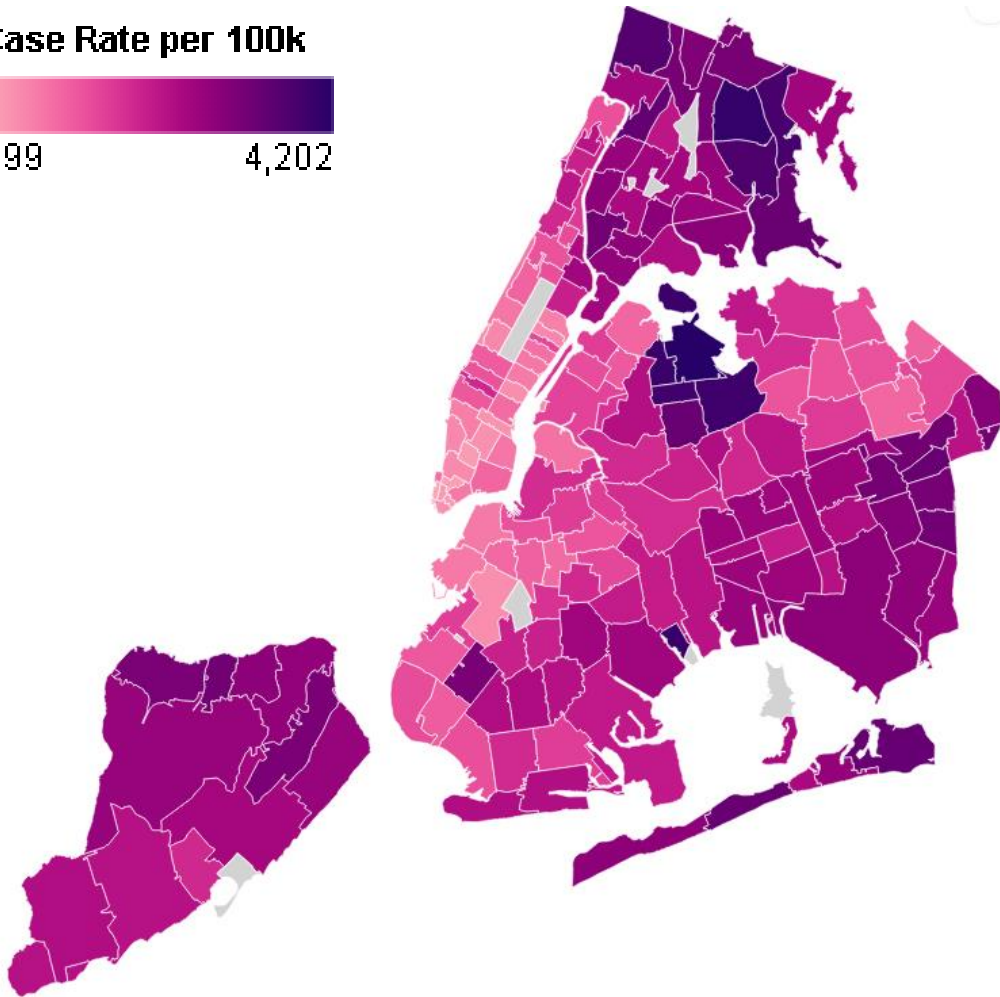


# COVID-19 DATA BY ZIP CODE OF RESIDENCE

Case Rate per 100k



Death Rate per 100k



# COVID-19 DEATHS

5/28/20

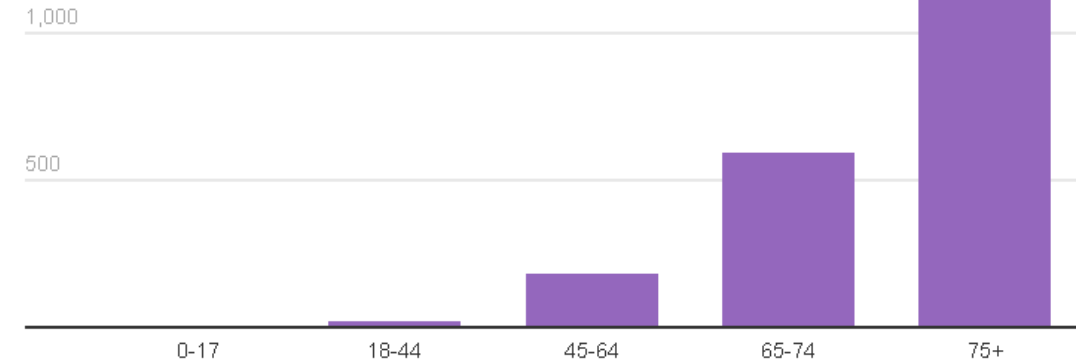
Shows rate of COVID-19-related deaths per 100,000 people according to age group, race-ethnicity,\* and neighborhood poverty level.\*

\*Age-adjusted

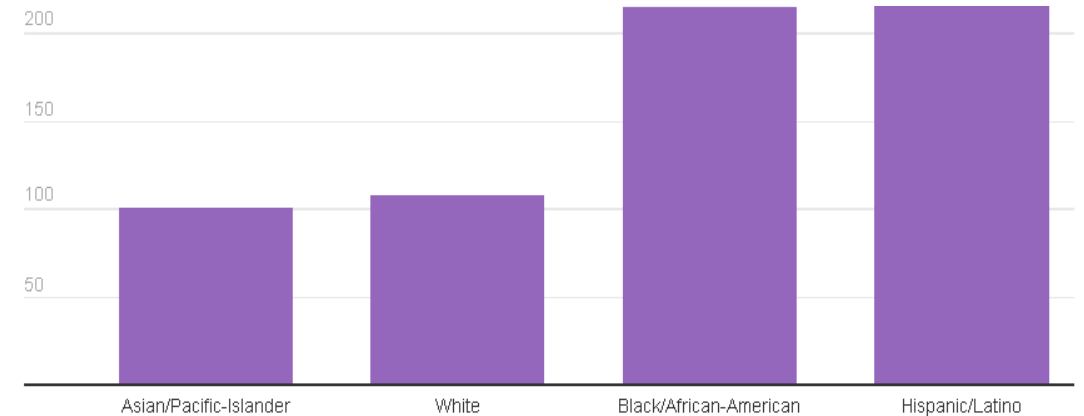
NYC Health Department. COVID-19: data.

<https://www1.nyc.gov/site/doh/covid/covid-19-data.page>

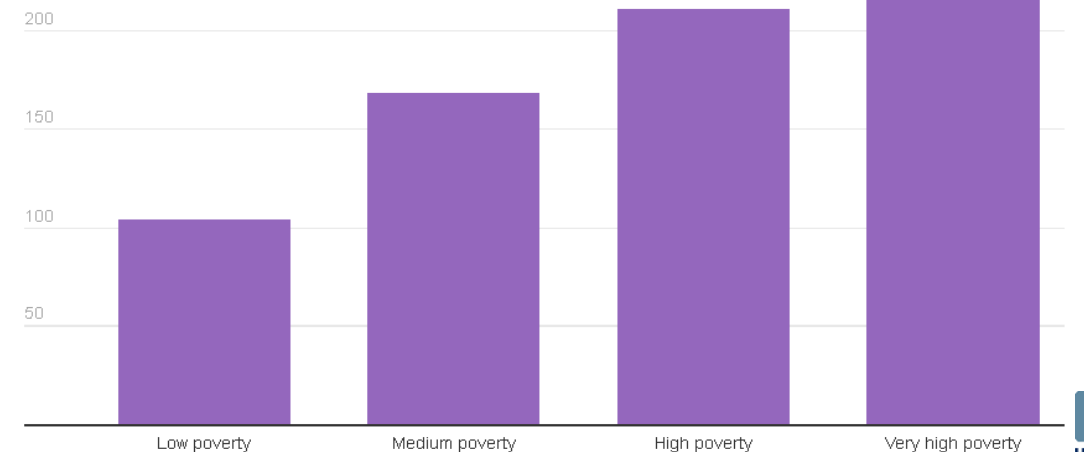
## AGE GROUP



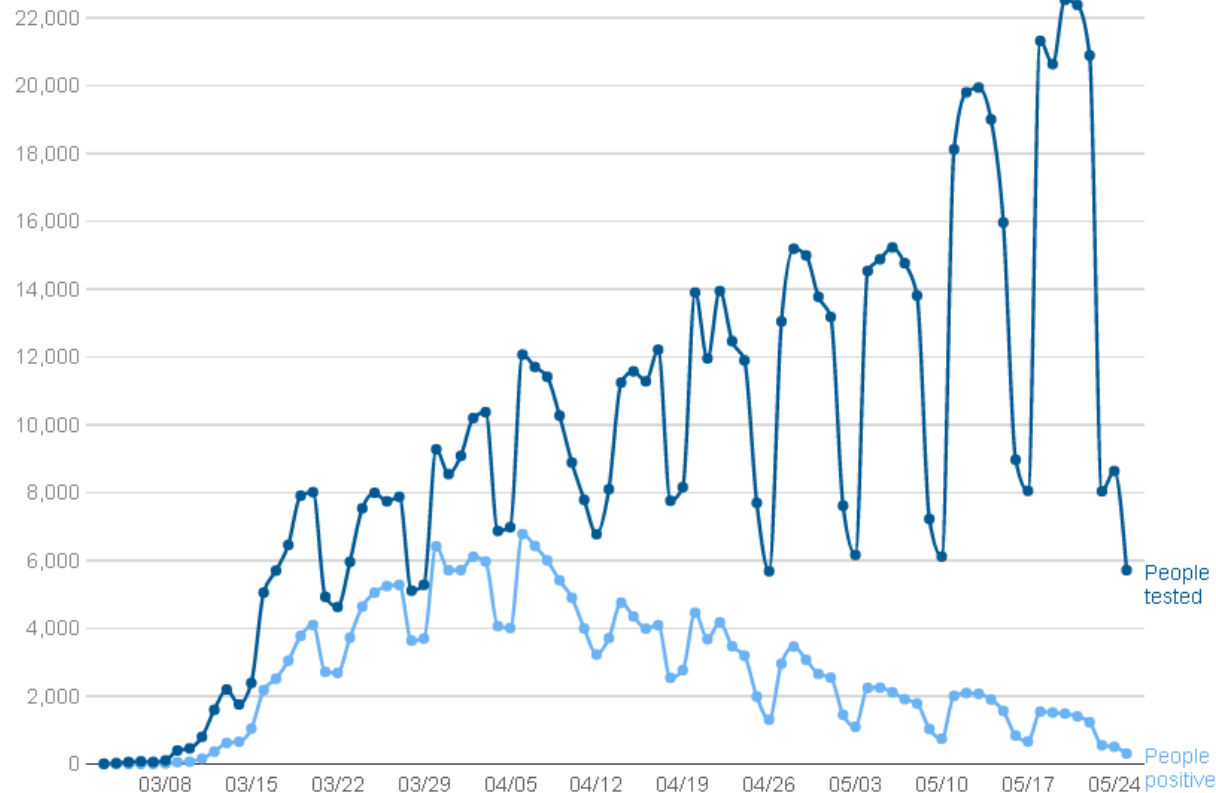
## RACE/ETHNICITY



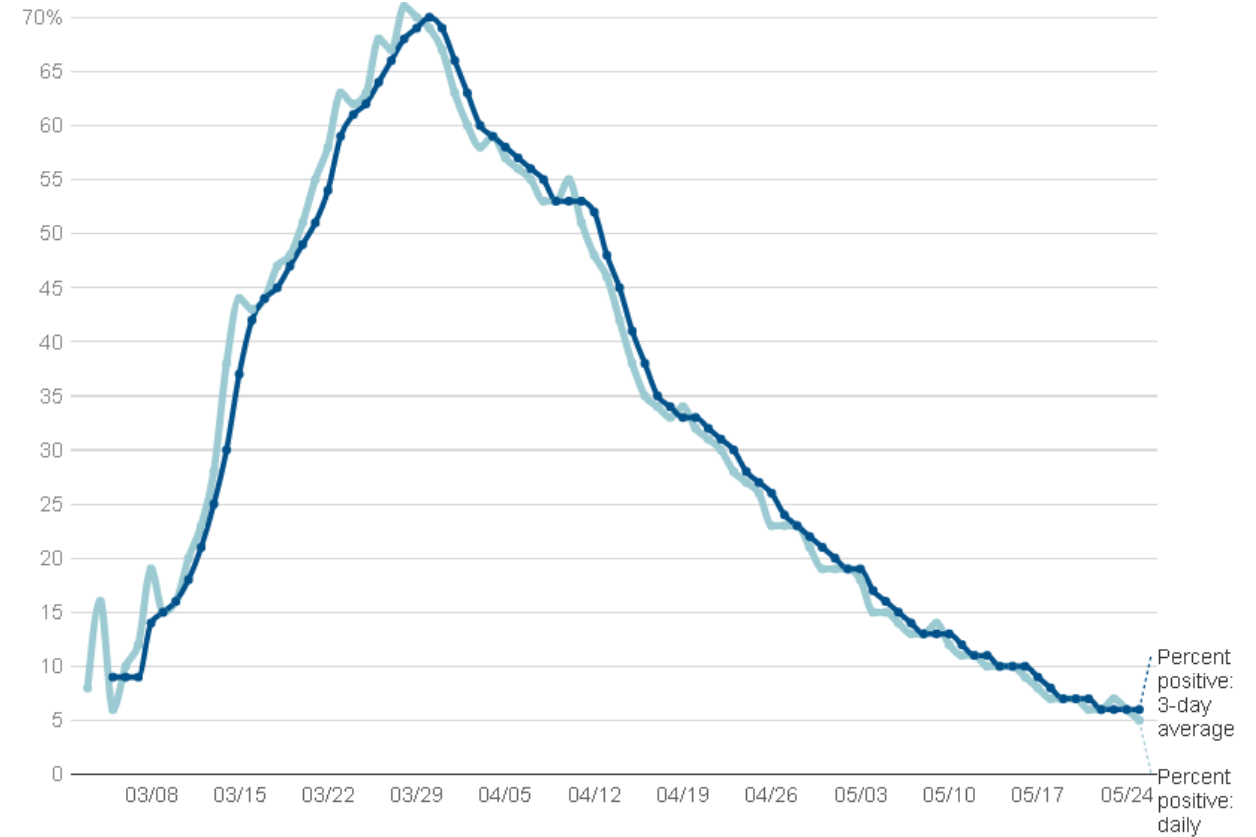
## NEIGHBORHOOD POVERTY



# 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 REQUIREMENTS<sup>1</sup>

(ALIGNED WITH  
NY STATE  
REQUIREMENTS<sup>2</sup>)

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

## **CLINICAL CRITERIA (ALL 3 REQUIRED):**

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

## **OR $\geq 2$ 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:**

$\geq 2$  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](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 definition<sup>1</sup> 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"><li>• Memory</li><li>• Attention</li><li>• Visuo-spatial</li><li>• Psychomotor</li><li>• Impulsivity</li></ul>	<ul style="list-style-type: none"><li>• Anxiety</li><li>• Depression</li><li>• Post-traumatic stress disorder</li></ul>	<ul style="list-style-type: none"><li>• Dyspnea</li><li>• Pain</li><li>• Sexual dysfunction</li><li>• Muscle weakness</li><li>• Fatigue</li><li>• Impaired exercise tolerance</li></ul>

## PICS RISK: SURVIVORS OF SEVERE COVID-19 ILLNESS

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

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



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

## 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

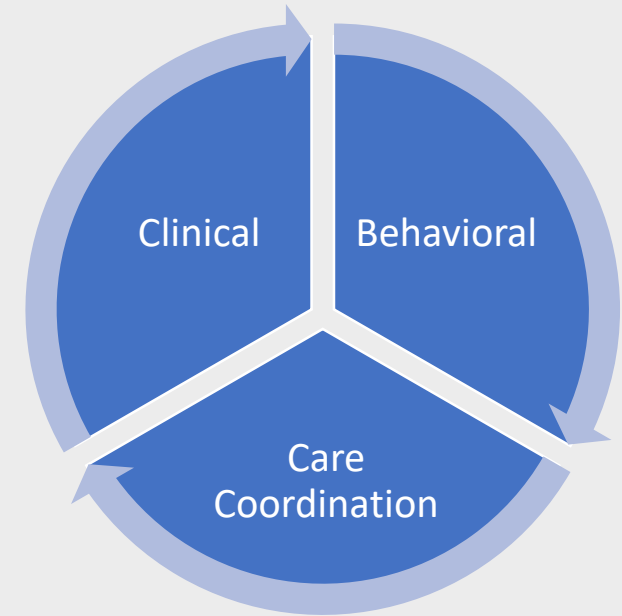
# REHABILITATION

## 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](mailto: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](https://on.nyc.gov/covid19provider)
- Data page: [on.nyc.gov/covid19data](https://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](https://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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QUESTIONS?

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