COVID-19 HEALTHCARE PROVIDER UPDATE

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Deputy Commissioner, Disease Control

April 10, 2020
• Our understanding of the novel coronavirus is evolving rapidly
• This presentation is based on our knowledge as of April 10, 2020, 11:00AM
WHERE WE ARE

• There is still widespread community transmission of COVID-19 in New York City and around the world
• Almost 6 weeks have passed since New York City reported its first confirmed COVID-19 case
• We are continuing to see high numbers of new diagnoses, including those who require hospitalization
• But we may have begun to flatten the curve – syndromic data shows improvement in emergency department visits and admissions
• We cannot let down our guard but rather must reinforce mitigation measures that are working
ILI going down in all age groups

ILI and pneumonia ED admissions leveling off in 75+ and 65-74 year age groups
CUMULATIVE CASES AND DEATHS, WORLDWIDE

>1,612,646 cases
>96,787 deaths

https://www.arcgis.com/apps/opsdashboard/index.html#bda7594740fd40299423467b48e9ecf6
CASES AND DEATHS, US

>460,000 cases
>16,500 deaths

CURRENT STATUS OF OUTBREAK NYC

• Laboratory Confirmed Cases
  93,414 (as of 4/10, 10:15AM)

• Total hospitalized
  21,571 (as of 4/9, 5PM)

• Deaths Among Confirmed Cases
  5,065 (as of 4/10, 10:15AM)
NYC TOTAL CASES BY ZIP CODE COVID-19
NYC PERCENT OF PATIENTS TESTING POSITIVE BY ZIP CODE COVID-19
NYC Case Summary COVID-19

As of April 9, 5PM

<table>
<thead>
<tr>
<th>Total Cases</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>87725</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 17</td>
<td>1726 (2%)</td>
</tr>
<tr>
<td>18 to 44</td>
<td>33906 (39%)</td>
</tr>
<tr>
<td>45 to 64</td>
<td>31472 (36%)</td>
</tr>
<tr>
<td>65 to 74</td>
<td>10990 (13%)</td>
</tr>
<tr>
<td>75 and over</td>
<td>9424 (11%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>207</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age 50 and over</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>44394 (51%)</td>
</tr>
<tr>
<td>No</td>
<td>43124 (49%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>40135 (46%)</td>
</tr>
<tr>
<td>Male</td>
<td>47193 (54%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>397</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Borough</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronx</td>
<td>18736 (21%)</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>23408 (27%)</td>
</tr>
<tr>
<td>Manhattan</td>
<td>11486 (13%)</td>
</tr>
<tr>
<td>Queens</td>
<td>27759 (32%)</td>
</tr>
<tr>
<td>Staten Island</td>
<td>6298 (7%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>38</td>
</tr>
</tbody>
</table>

| Deaths           | 4778        |
NYC CASES COVID-19

These charts show the number of positive cases by diagnosis date, hospitalizations by admission date and deaths by date of death from COVID-19 on a daily basis since March 3

NOTE: Due to delays in reporting, recent data are incomplete
NYC RATES BY BOROUGH COVID-19

This chart shows the number of positive cases per 100,000 people in each borough. It indicates the spread of COVID-19 relative to each borough’s population.

<table>
<thead>
<tr>
<th>Borough</th>
<th>Rate per 100,000 people</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bronx</td>
<td>1,273</td>
<td>18,736</td>
</tr>
<tr>
<td>Staten Island</td>
<td>1,255</td>
<td>6,298</td>
</tr>
<tr>
<td>Queens</td>
<td>1,111</td>
<td>27,759</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>963</td>
<td>23,408</td>
</tr>
<tr>
<td>Manhattan</td>
<td>611</td>
<td>11,486</td>
</tr>
<tr>
<td>Citywide</td>
<td>87,725</td>
<td></td>
</tr>
</tbody>
</table>
NYC RATES
BY SEX
COVID-19

This chart shows the number of positive COVID-19 cases per 100,000 people by sex. Due to the small number of cases among transgender and gender-nonconforming people, data on those cases are not included in this table at this time.
NYC DEATH RATES BY RACE/ETHNICITY COVID-19

Rates of laboratory confirmed COVID-19 deaths per 100,000 people by race and ethnicity

Data on people who identify as American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, or other races are not available. Hispanic/Latino includes people of any race.
ALTERNATE CARE SITES

Javits Center: 191 patients
USS Comfort: 63 patients
WARNING ABOUT SEROLOGIC SARS-COV-2 ASSAYS

- No serology tests at this time approved for use in the point of care (POC) setting
- Serology cannot be used to diagnose active infection with SARS-CoV-2
- No CDC guidelines for the interpretation of serology tests
- Using a test inappropriately in POC or moderate complexity laboratory setting may put your practice out of compliance and may result in regulatory action
SERIOUS SHORTAGE OF SWABS TO DIAGNOSE COVID-19

- Shortage of the swabs used for collecting upper respiratory specimens (e.g., nasopharyngeal, oropharyngeal (throat), and nasal swabs)
- As supply continues to decline, real possibility hospitals will completely run out
- Providers should continue to test only hospitalized patients to preserve resources that are needed to diagnose and appropriately manage patients with more severe illness
RECENT REPORTS OF PRE-SYMPTOMATIC SARS-COV-2 TRANSMISSION

Report from Singapore, describing 7 clusters of 2-5 patients diagnosed with COVID-19

- Pre-symptomatic transmission most likely route of infection for 10 cases; accounted for 6.4% of locally acquired cases during study period
- Pre-symptomatic transmission occurred 1 to 3 days before symptom onset in source patients
- Along with evidence from other studies, findings suggest viral shedding can occur in absence of symptoms 1 to 3 days before symptom onset
- Emphasizes importance of physical distancing and supports adoption of face coverings while in public to reduce spread

RECENT REPORTS OF PRE-SYMPTOMATIC SARS-COV-2 TRANSMISSION

Seattle senior independent and assisted living facility with outbreak of COVID-19

- Following identification of COVID-19 in a health care worker, 76 of 82 residents of the facility were tested for SARS-CoV-2
- 23 (30.3%) had positive test results, approximately half of whom were asymptomatic or pre-symptomatic on day of testing
- Asymptomatic and pre-symptomatic persons might contribute to SARS-CoV-2 transmission

ANOSMIA

AMD

DYSEGEUSIA

• Anecdotal and literature describe anosmia and dysgeusia associated with COVID-19

• Anosmia seen in patients ultimately testing positive for the coronavirus with no other symptoms

• Pathophysiology likely due to direct viral damage of olfactory and gustatory receptors, similar to rhinovirus

Isolated sudden onset anosmia in COVID-19 infection. A novel syndrome?*
https://www.rhinologyjournal.com/Rhinology_issues/manuscript_2449.pdf


Loss of smell and taste in combination with other symptoms is a strong predictor of COVID-19 infection https://www.medrxiv.org/content/10.1101/2020.04.05.20048421v1
ACUTE CARDIAC INJURY (ACI)

- Viral infection one of the most common causes of myocarditis
- Coronary artery disease and risk factors for atherosclerotic cardiovascular disease increase risk of acute coronary syndrome during acute infections (e.g., influenza)
Recent case report in describing an otherwise healthy 53-year-old woman admitted for acute myopericarditis with systolic dysfunction

- Week after onset of fever and dry cough due to COVID-19
- ECG diffuse ST elevation, elevated NT-proBNP and high-sensitivity troponin T, echocardiography changes, diffuse myocardial edema
- Highlights cardiac involvement as complication associated with COVID-19
Recent **Editorial in JAMA Cardiology** highlights two articles from Wuhan, China describing incidence and consequences of myocardial injury associated with SARS-CoV-2

- Shi et al., cohort of 416 COVID-19 hospitalized patients
  - 82 (19.7%) evidence of myocardial injury based on elevated high-sensitivity troponin I (Tnl)
  - Higher mortality rate (42 of 82 [51.2%]) compared with those without myocardial injury (15 of 335 [4.5%]),
  - Greater degrees of Tnl elevation were associated with higher mortality rates

ACUTE CARDIAC INJURY (ACI)

- Guo et al., 187 hospitalized COVID-19 patients
  - 52 (27.8%) with myocardial injury (elevated levels of troponin T (TnT)).
    - Mortality 59.6% (31/52) in those with elevated TnT levels compared with 8.9% (12/135) in those with normal TnT levels
    - Highest mortality in those with elevated TnT levels and underlying cardiovascular disease (CVD) (25 of 36 [69.4%]), however also high in those without prior CVD (6 of 16 [37.5%]).
    - Those with NO elevated TnT but underlying CVD had mortality of 13.3% [4 of 30])

Guo et al 187 hospitalized COVID-19 patients continued.

- Evidence TnT levels significantly associated with levels of C-reactive protein and N-terminal pro-B-type natriuretic peptide (NT-proBNP)
- Links myocardial injury to severity of inflammation and ventricular dysfunction.
- Serial increases in TnT and NT-proBNP levels in patients with deteriorating clinical course toward death; whereas those with more favorable outcome and less severe illness, show stable low levels of these biomarkers.

REINFECTION AND IMMUNITY

• Possibility or risk of reinfection in humans not yet known nor are details around development of immunity

• Recent report describes the isolation and characterization of specific monoclonal antibodies derived from B cells of SARS-CoV-2 infected individuals

• Evidence of strong binding and neutralizing activity against SARS-CoV-2

• No cross reactivity with SARS or MERS coronavirus receptor binding domains

• Potent neutralizing antibodies promising for development of therapeutic options

The Centers for Medicare & Medicaid Services (CMS) allows for more widespread access to Medicare telehealth services.

The NYS Department of Health has comprehensive guidance regarding

- NYS Medicaid coverage and reimbursement policy for services related to COVID-19
- Use of telehealth including telephonic services during the COVID-19 state of emergency

FORWARD PLANNING

MITIGATION/CONTAINMENT

HOW DO WE KNOW WHEN THINGS ARE GETTING BETTER?

EPIDEMIOLOGIC INDICATORS
• Decreasing proportion of COVID-19 positive tests?

HEALTH CARE SYSTEMS INDICATORS
• Absenteeism?
• Number of new ICU admissions?

MITIGATION/CONTAINMENT
• Maintain social distancing, slow return to normalcy
• Testing and contact tracing
Crisis Communication Resources

Center to Advance Palliative Care (CAPC)

- Mount Sinai Icahn School of Medicine
- Publicly available [COVID-19 Response Resources toolkit](#)
- Protocols and guidance on crisis communication and tools to help palliative care teams address high levels of volume and stress during a crisis
Critical Care Planning Resources

April 4, 2020

Crisis Planning Background and Tools

Surge Planning Tools for Scarce Resource Situations

[Table]

- Resource Title
- Organizational Author or Journal Title
- Description

Contacts

Durward Rackliff, RN
Senior Director, Quality and Patient Safety

https://www.gnyha.org/tool/critical-care-planning-resources/

Updated on Wednesdays
To suggest an update, contact mray1@health.nyc.gov
## Crisis Planning Background and Tools
### Surge Planning Tools for Scarce Resource Situations

<table>
<thead>
<tr>
<th>Resource Title</th>
<th>Organizational Author or Journal Title</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Patient Care Strategies for Scarcity Resources Situations</td>
<td>Minnesota Department of Health Emergency and Response</td>
<td>Comprehensive toolkit for patient care management in scarce resource situations in summary cards.</td>
</tr>
</tbody>
</table>

## Crisis Planning Background Information

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<tr>
<th>Resource Title</th>
<th>Organizational Author or Journal Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>Surge Capacity Logistics: Care of the Critical Ill and Injured During Pandemics and Disaster</td>
<td>CHEST: American College of Chest Physicians</td>
<td>Discusses surge logistics with specific suggestions pertaining to requirements for equipment, supplies, pharmaceuticals, staff preparation, organization and mitigation as means to build capacity to deliver mass critical care.</td>
</tr>
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</table>

## Surge Strategy Protocols and Examples

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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 Protocols</td>
<td>Brigham and Women’s Hospital</td>
<td>Comprehensive resource tool for clinicians caring for critically-ill COVID-19 patients.</td>
</tr>
<tr>
<td>UW Medicine COVID-19</td>
<td>University of Washington Medicine</td>
<td>Protocol and policy examples for clinicians, healthcare administrators and emergency manager preparing for and responding to various issues on all levels presented during COVID pandemic.</td>
</tr>
</tbody>
</table>

## Space Surge Strategies
### Sustained Mechanical Ventilation Outside of the ICU

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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustained Mechanical Ventilation Outside Traditional Intensive Care Units</td>
<td>Society for Critical Care Medicine</td>
<td>Comprehensive training on implementing ICU surge into alternative spaces, focusing on the needs of mechanically ventilated patients.</td>
</tr>
<tr>
<td>COVID-19 Town Hall Webinar: SlideDeck</td>
<td>American Society of Anesthesiologists</td>
<td>The first presentation is a technical and implementation guide for use of anesthesia ventilators for the provision of critical care, including brief explanations of physiology. For</td>
</tr>
</tbody>
</table>
QUESTIONS?