

From the Frontlines of the War on COVID-19

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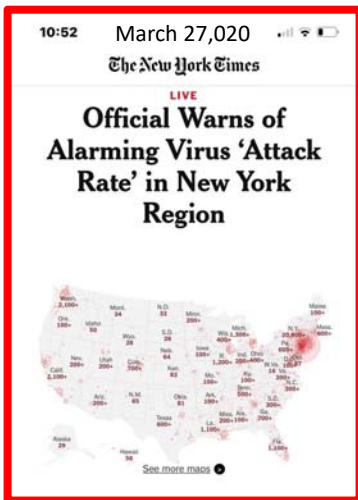
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ProHEALTH New York

- Started as sports medicine and became a large multispecialty 1000 provider group serving 1.5M people across 300 locations, 32 urgent cares.
- Palliative Care
 - Outpatient services
 - Telepalliative care x 5 years



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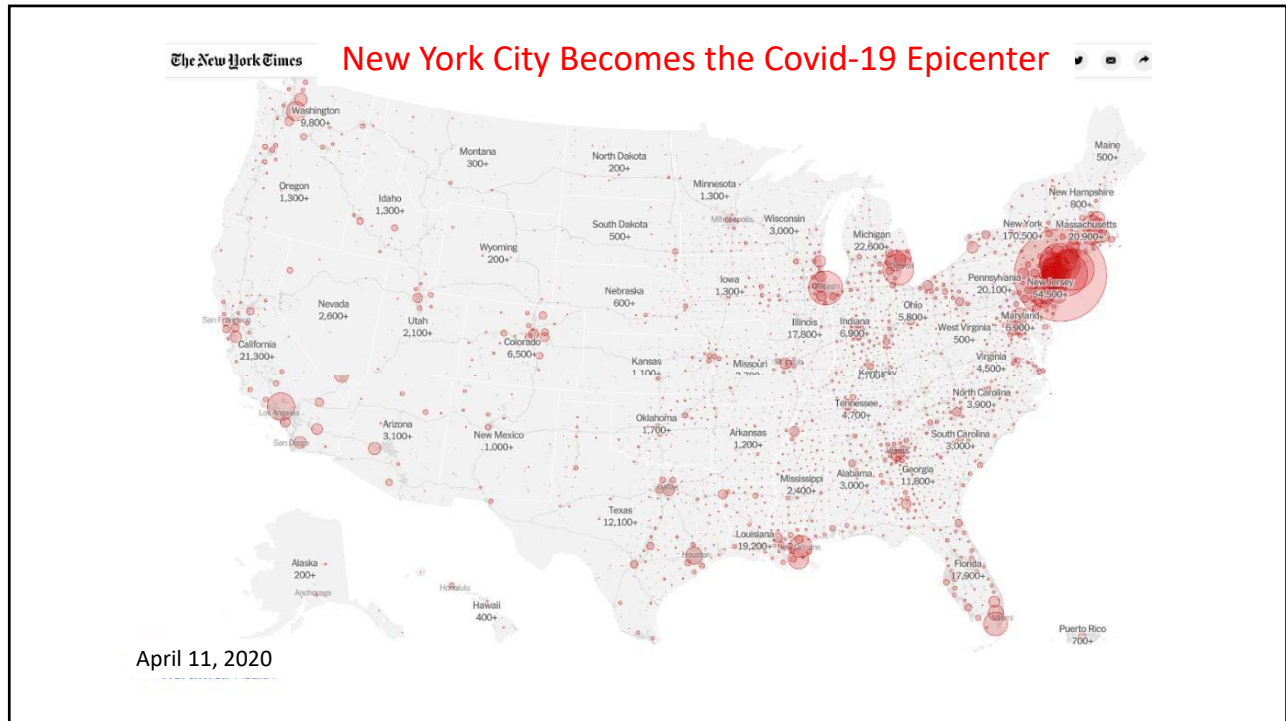
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Overview

1. Covid-19
2. Workforce
3. Systems Issues
4. Palliative Care
5. Lessons Learned




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New York City



- Population 8,398,748
- 5 boroughs (Bronx, Queens, Brooklyn, Staten Island and Manhattan)
- Queens – 48% non US born
 - Highest Covid-19 mortality rate (one in every 230)
 - 164 languages, Spanish is #1, Russian is #2
 - Corona = Hispanic, Jamaica = African American, Flushing = Asian
- Perfect Storm - Tight living quarters, multigenerational households, high use of public transportation, service workers, low income.
- NY Times – “I don’t have the support I need or the equipment and PPE to care for my patients. People are dying.” – *Elmhurst Physician*

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Covid-19 Complications

- Respiratory Failure
- Acute Kidney Injury
- Myocardial Dysfunction
- Thrombotic Events
- Cutaneous Manifestations
- Prolonged Complications



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Mortality Scores Failed for Covid-19

SOFA Sequential Organ Failure Assessment (0-24)

- P/F, platelet, bilirubin, Cr, GCS, BP

APACHE Score (0-72)

- P/F, Age, BP, T, HR, RR, HR, Na, K, Cr, pH, GCS

Predictors for Covid-19

1. Inflammatory markers: D-dimer, CRP, LDH, IL-6
2. Lung function
3. Renal failure
4. Clotting
5. Shock
6. Age



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“Practicing Witchcraft” — NY Times Aug 4, 2020

- IL-1 Blocker Anakinra
- IL-6 Blockers
 - Tocilizumab (Actemra) - had risk of anaphylactic shock/perforation
 - Sarilumab (Kevzara) Regeneron phase 3 clinical trial, halted in July for no benefit
- HCQ+Azithro+Toci+Lovenox+steroids
- Clinical trials vs physician autonomy



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“Happy Hypoxemic”

- Hypoxemia, but no dyspnea
- Usual practice is to intubate when saturations fall below 90%
- Covid-19 – tolerate 80% or lower
- High flow/BiPaP – risk to HCW
- To intubate or not?
- Proning



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Thrombosis in Hospitalized Patients with Covid-19 in New York City (Bilaloglu S. JAMA 2020)

- PCR+ patients admitted to NYU in March, n = 3334
- Thrombotic events – 16% (compared to 6% for other ID)
 - Venous – PE, DVT
 - Arterial – MI, ischemic stroke, thromboembolism
- ICU patients w/ thrombotic events – 29%
- Higher in those w/ thrombotic event
 - D-dimer max (ng/ml) 3952 vs 657
 - Mortality → 43% vs 21%
- Due to cytokine storm, hypoxic injury, endothelial dysfunction, hypercoagulability, increased platelet activity

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Steroids have anti-inflammatory, antifibrotic, vasoconstrictive effects

- 1967 Steroids may work for ARDS
- 12/2019 China, JAMA retrospect n=201, steroids lower mort (46% vs 62%)
- 3/2020 Surviving Sepsis weak rec for steroids Covid-19 ARDS + ventilator
- 4/2020 ID Society of Am weak rec against steroids, only clinical trials
- 6/2020 UK RECOVERY NEJM – Large open label randomized steroid trial
 - Dexamethasone 6mg/day x 10 days (n=2104) vs usual care (n=4321)
 - Mortality reduction 1/3 for patients on mechanical ventilation (29% vs 41%) and 1/5 for supplemental oxygen (23% vs 26%). Pts w/ no respiratory support, no benefit.

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Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area

Safiya Richardson, MD, MPH; Jamie S. Hirsch, MD, MA, MSB; Mangala Narasimhan, DO; James M. Crawford, MD, PhD; Thomas McGinn, MD, MPH; Karina W. Davidson, PhD, MASc; and the Northwell COVID-19 Research Consortium

- 5,700 Covid-19 patients admitted to Northwell hospitals March 1 - April 4
- Comorbidities (94%):
 - HTN (53%); DM (32%)
 - Obesity BMI>30 (42%)
- **88% mortality** for ventilated patients (282/320)



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Clarification: Beware of Denominator!

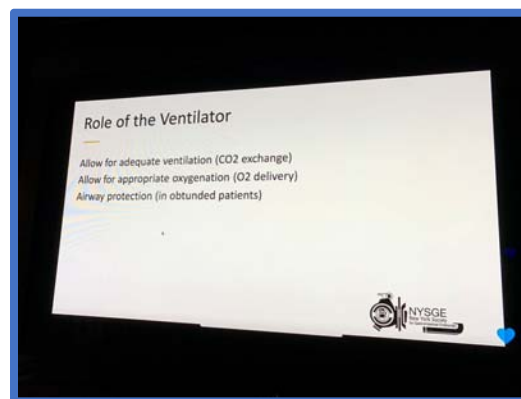
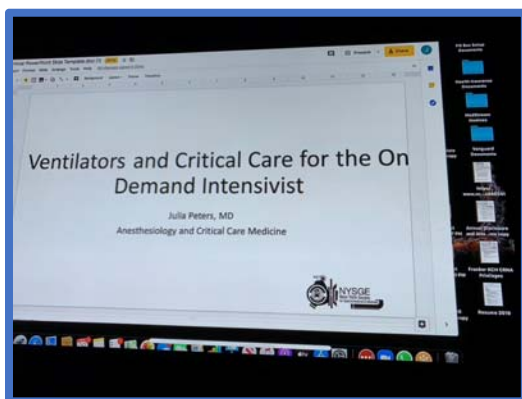
- Mechanic Ventilation n= 1151
- Outcomes (death/discharge) known for n=320 by April 4 (median 4.5d)
 - Died 282 (25%)
 - Discharged 38 (3%)
 - Still Hospitalized 831 (72%)

Workforce Challenges

- Discussed ventilator shortages but not the lack of trained ICU staff required to manage the complicated ventilated Covid-19 patients.
- ICU staff not critical care trained, came from medical school or other specialties like labor & delivery, pediatrics, podiatry to help out.
- “I know when I intubate her, my eyes are the last ones she’ll see.”
- Medical mishaps when serving on the frontlines of “war.”
- PTSD, depression, anxiety

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New York State Gastrointestinal Endoscopy Become an Intensivist in Three Hours “The Role of the Ventilator”



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Personal Protective Equipment (PPE)



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Celebrate the Wins! – Here Comes the Sun



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Systems Issues

- Load Balancing – Transport patients out of overwhelmed facilities
- Large Private New York Health Systems: NYU Langone, New York Presbyterian-Columbia, Mount Sinai, Montefiore and Northwell mandated to add 50% capacity, 35K new beds
- Javits Convention Center 1000 bed hospital, 10 patients in first week
- U.S. Navy Ship Comfort arrives March 30 in New York Harbor
 - Prohibited from taking patients with Covid-19
 - Took 10 ICU patients from Jamaica Hospital when oxygen system failed

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1000 Bed USNS Comfort Cares for Only 182 Patients



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- Safety net health system
- 11 hospitals
- Went from ADC n=3000 no Covid, to n=4000 all Covid
- 25% on ventilators
- Triple ICU size, RN:patient ratio went from usual 1:1 to 1:6



- Large integrated health system
- 23 hospitals
- Went from ADC n=3000 no Covid, to n=5000 all Covid
- 25% on ventilators
- Patient tents in parking lots
- Treated 76K Coids, 22% of all Covid in NYS (50 Coids today)

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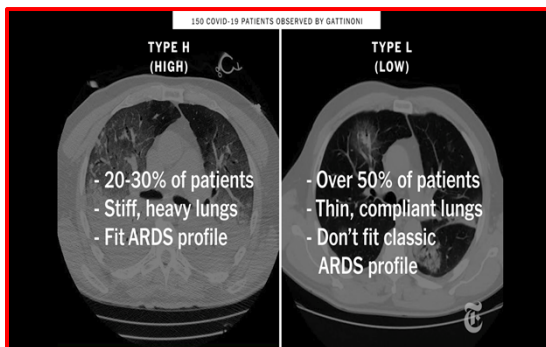
Declaration of Emergency in New York State

- Governor has broad powers to suspend laws and regulations
- Waived NY licensure requirement
- Legal protection from malpractice and civil litigation. Podiatrist is protected while working in ICU.
- State regulates where patients can be placed in hospitals. Waived so patients could go in conference rooms, auditoriums, parking lots.



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Instant Covid-19 Information Sharing

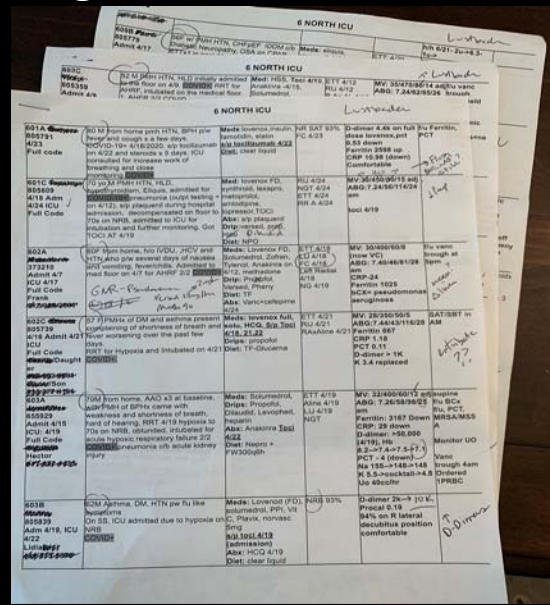
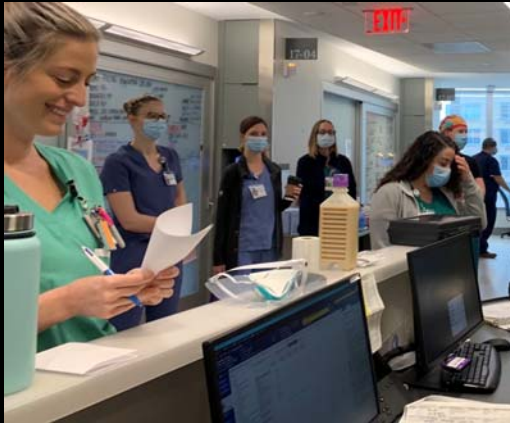


- Facebook Covid Crit Care Group
- EMCrit podcast
- WhatsApp
- Searchable Log of All Conversation and Knowledge



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Failure of EMRs Prompts Writing in Excel and on Walls



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Ethical Challenges: Resource Allocation

- Ventilators
 - NYS Task Force 2015 – (1) exclusion criteria; (2) SOFA score and (3) time limited trials w/ assessments q 48 hrs
- Dialysis - fluid, time, staff
- Medications – ran out
- ICU bed vs medical floor
- Workforce in ICU
 - Superior care (critical care doc)
 - Inferior care (dermatology resident)



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Palliative Care



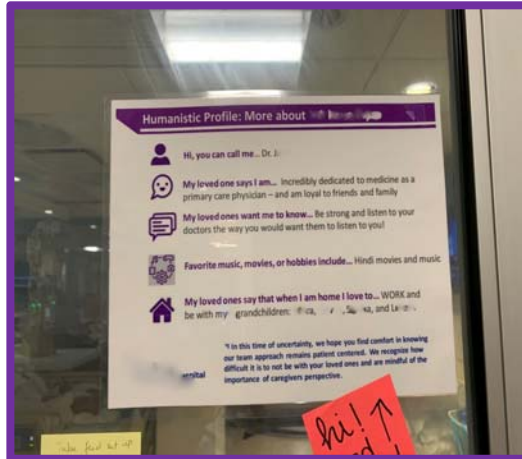
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Serious Illness Communication

- Unique challenges with no visitors and very sick patients
- NYC H&H request palliative care MD volunteers – 400 reply in 1 day.
- Standardized telemedicine script
 1. This is not an emergency. I'm Dr. Dana, is this a good time to talk?
 2. How has corona virus impacted you or your family?
 3. What have the doctors told you so far about your dad?
 4. May I share an update with you now?
 5. Would you like to do a virtual visit and see your dad with me now?

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My loved ones say I am...



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Medical Decision Making

- Medical decisions were made by telephone or FaceTime, rarely in person. Important someone knows your values.
- Health Care Proxy or Surrogate – Relied heavily on the patient's designated medical decision maker.
- Living Wills / Five Wishes - Useless. Not available, not actionable and rarely relate to the situation at hand. Not stored in the EMR and not an order. I never even saw one.

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“Doc, all I really want is a Snickers”



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Palliative Care in ERs and ICUs

- No visitors
- Patients alone, scared and gasping
- Goals of care conversations
 - Don't offer treatments that won't work
 - Establish patient values
 - Recommend treatments that match
 - Intubation
 - DNR



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Dying from Covid-19



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Research Questions

1. Would we save more lives if we triage viable patients to superior care and terminally ill to inferior care?
2. What is the most efficient way to share critical and rapidly changing medical information worldwide?
3. A disproportionate burden of Covid-19 is being borne by Latinos, Indigenous and African Americans. How can we better address these health disparities?

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Resources

- Center to Advance Palliative Care - CAPC.org
- Surviving Sepsis Campaign: Covid-19 Guidelines
<https://www.sccm.org/getattachment/Disaster/SSC-COVID19-Critical-Care-Guidelines.pdf>
- Berlin et al. Severe Covid-19. NEJM 2020
- “Leading Through a Pandemic” -Michael Dowling
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