Update on The Department of Medicine Covid-19 Epidemic Efforts  (April 7, 2020)

Yaron Tomer, MD
Thank You!!!
• Two weeks ago, March 26, was supposed to be Baseball Opening Day. By now the New York Yankees should have played 5 games against Baltimore, 3 Games against Tampa Bay, and 3 games against Toronto. But instead of watching our beloved Bronx Bombers scoring home runs, OR instead of going to the movies or just meeting with friends, our Montefiore community is working day and night to save lives during these unprecedented pandemic. Our community came together as one and is making heroic efforts to help our patients and our community through this terrible crisis.

• And therefore, I would like to start my presentation by thanking all members of our department and the entire Montefiore family for the incredible work you are doing. When I visit our providers at the frontlines I am impressed and inspired to see the dedicated compassionate and brave health care professionals of Montefiore rising up to the occasion and working selflessly to help our patients. I want to expresses my deepest gratitude and admiration to each and every one of you at the front lines for the incredible and heroic work you are doing every day.
### Covid-19 Latest Numbers (4.6.2020)

<table>
<thead>
<tr>
<th></th>
<th>April 6, 2020</th>
<th>March 23, 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>1,289,380</td>
<td>354,677</td>
</tr>
<tr>
<td>US Cases</td>
<td>337,971</td>
<td>35,530</td>
</tr>
<tr>
<td>New York State:</td>
<td>123,160</td>
<td>20,875</td>
</tr>
<tr>
<td>NYC Cases</td>
<td>67,551</td>
<td>~12,000</td>
</tr>
<tr>
<td>Montefiore:</td>
<td>1,703</td>
<td>325</td>
</tr>
</tbody>
</table>

**Montefiore Health System COVID-19 + Daily Census**

Positive Cases Currently Admitted

<table>
<thead>
<tr>
<th>Date</th>
<th>Positive Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/11</td>
<td>3</td>
</tr>
<tr>
<td>2/13</td>
<td>71</td>
</tr>
<tr>
<td>2/16</td>
<td>18</td>
</tr>
<tr>
<td>2/18</td>
<td>22</td>
</tr>
<tr>
<td>2/20</td>
<td>57</td>
</tr>
<tr>
<td>2/21</td>
<td>71</td>
</tr>
<tr>
<td>2/23</td>
<td>93</td>
</tr>
<tr>
<td>2/24</td>
<td>98</td>
</tr>
<tr>
<td>2/25</td>
<td>230</td>
</tr>
<tr>
<td>2/27</td>
<td>247</td>
</tr>
<tr>
<td>2/28</td>
<td>576</td>
</tr>
<tr>
<td>3/29</td>
<td>675</td>
</tr>
<tr>
<td>3/30</td>
<td>795</td>
</tr>
<tr>
<td>3/31</td>
<td>934</td>
</tr>
<tr>
<td>4/01</td>
<td>1,044</td>
</tr>
<tr>
<td>4/02</td>
<td>1,521</td>
</tr>
<tr>
<td>4/03</td>
<td>1,579</td>
</tr>
<tr>
<td>4/04</td>
<td>1,658</td>
</tr>
<tr>
<td>4/05</td>
<td>1,703</td>
</tr>
</tbody>
</table>

From: NPG
Covid-19 Patients Admitted to MMC (3.11 – 3.31)

Gender

- Female: 54.5%
- Male: 45.5%

N=1,509

From: Eran Bellin, MD
Covid-19 Patients Admitted to MMC (3.11 – 3.31)

Mean Age = 61.1 + 17.2

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Cumulative Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>1%</td>
</tr>
<tr>
<td>0-29</td>
<td>5%</td>
</tr>
<tr>
<td>0-38</td>
<td>10%</td>
</tr>
<tr>
<td>0-50</td>
<td>25%</td>
</tr>
<tr>
<td>0-63</td>
<td>50%</td>
</tr>
<tr>
<td>0-73</td>
<td>75%</td>
</tr>
<tr>
<td>0-82</td>
<td>90%</td>
</tr>
<tr>
<td>0-86</td>
<td>95%</td>
</tr>
<tr>
<td>0-93</td>
<td>99%</td>
</tr>
</tbody>
</table>

N=1,509

From: Eran Bellin, MD
Covid-19 Patients Admitted to MMC (3.11 – 3.31)

Race

N=1,509

- Asian
- African American
- Caucasian
- Unavailable

Ethnicity

- Latinx
- Not Latinx
- Unavailable

From: Eran Bellin, MD
<table>
<thead>
<tr>
<th>Clinical Parameter</th>
<th>Mean</th>
<th>STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>99.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>20.8</td>
<td>5.6</td>
</tr>
<tr>
<td>O₂ Saturation</td>
<td>93.8</td>
<td>7.7</td>
</tr>
<tr>
<td>BP</td>
<td>133/75</td>
<td>24/14</td>
</tr>
<tr>
<td>WBC</td>
<td>7.6 x10³</td>
<td>4.3 x10³</td>
</tr>
<tr>
<td>Neutrophils</td>
<td>5.8 x10³</td>
<td>3.7 x10³</td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>1.1 x10³</td>
<td>0.7 x10³</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>12.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Platelets</td>
<td>209 x10³</td>
<td>85 x10³</td>
</tr>
<tr>
<td>INR</td>
<td>1.17</td>
<td>0.78</td>
</tr>
<tr>
<td>PTT</td>
<td>34.5</td>
<td>11.9</td>
</tr>
<tr>
<td>D-Dimer</td>
<td>2.9 (&lt;0.5)</td>
<td>4.6</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>649 (187-502)</td>
<td>148</td>
</tr>
<tr>
<td>Creatinine</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>eGFR</td>
<td>65</td>
<td>33</td>
</tr>
</tbody>
</table>

N=1,509

From: Eran Bellin, MD
Admitted & Discharged From ED

From: NPG
Success Stories

- Pregnant women admitted with Covid - both mother and baby were saved
- Multi-disciplinary effort: Critical Care, Labor & Delivery, Ob/Gyn, Anesthesia, OR staff, RT, NICU, Nursing, Pediatrics, and many more
- More than 20 patients extubated in our ICU’s only last week
- ~580 patients discharged home as of the end of March
- Clinical lab: Hundreds of Covid tests / day (amongst the first in the US)
- Covid testing sites: across the Bronx and Westchester
- Radiology: numerous CxR’s, from driveway to the ED to the floors and ICU’s
- Pharmacy: medications, experimental medications
- Ophthalmology & Radiology 3D printing of new face shields
Success Stories

• Housing for people that prefer not to be at home while on Covid floors.
• Received thousands of donations directly to DOM
  • Scrub sets - 491; Surgical Masks – 3,513; Gowns – 810
  • Gloves – 161 boxes; Goggles - 88; Snacks - 309
• Our community is rallying behind us (NYPD, FDNY, Community organizations, businesses, people from far and near)
- Communication
- Inpatient Deployment
- Outpatient operations
- Covid-19 Testing
- New initiatives
- Research
- Outreach to our community
- Questions answered
- Communication
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COVID-19:  
DOM Daily Update  
Tuesday, March 31, 2020

UPDATE ON COVID-19:  
TREATMENT GUIDELINES, RESPIRATORY MANAGEMENT,  
COVID-19 DONOR PROGRAM

COVID-19 Update: Webinar by Montefiore Hospital Epidemiologist Theresa Madaline, MD. [Link to Video]

Universal Masking for Healthcare Workers
All persons who are working in our hospitals taking care of patients should observe universal droplet precautions. This means that a surgical mask should be worn at all times when in the hospital or other healthcare settings.

NEW MEDICAL AND SCIENTIFIC INFORMATION ABOUT COVID-19

Treatment Guidelines
Daily Updates

- Special announcement
- Treatment Guidelines and protocols
- Educational Videos
- Helpful tips for tele-medicine
- Stories & photos from the frontlines
- Clinical trials information
- General resources
First newsletter sent on March 11, 2020
Have sent out 22 to date
Average 42% open rate per list
Distribution list has grown from 4,200 to 6,600
Added:
  • Pathology, DFSM
  • Allied House staff: Orthopedics, Pediatrics, Podiatry, Ophthalmology; Ob/Gyn, Radiology, Radiation Oncology, Psychiatry, Urology, PM&R
  • Einstein and Montefiore Communications
  • Other hospitals in the Montefiore Health System
  • Individual staff/faculty
DOM DAILY UPDATE STATS

Top 10 links:

• MHS Daily Census: ~ 2500 clicks per day
• MHS Verified Tests: same
• MHS Admitted and Released numbers
• COVID-19 Individual Protocols
• Treatment Guideline Portal
• Respiratory Management Video Lecture: ~1,200 Views
• Sedation Video
• Amazon and other Donations
• COVID Plasma Donor Form
• Housing, Parking, Food, Resources

Optimizing the Daily Updates based on the most popular content
• Communication
• **Inpatient Deployment**
• Outpatient operations
• Covid-19 Testing
• New initiatives
• Research
• Outreach to our community
• Questions answered
• Opened **11** new ICU’s
• Created new critical care teams: Medicine (CCM, Pulmonary, Medicine Sub-specialties), Anesthesia, Surgery, ENT, Neurology, Oncology
• Pulmonary / Critical Care protocols for non-ICU patients on ventilators – Dr. Divya Reddy
• **Video lectures:**
  • Ventilator management on floor – Dr. Divya Reddy
  • HFNC & sedation – Dr. Krystal Cleven
  • ARDS management – Dr. Vivek Murthy
Inpatient Deployment: Medicine Units

• There are currently 38 Covid Medicine units and more are being created
  • Moses 18, Weiler 11, Wakefield 8, Hutch 1

• There are currently Covid patients on ventilators not in ICU’s

• 5 new units were established in non clinical spaces:
  • Hutch 60 bed capacity
  • Grand Hall 23 beds
  • TLC 16 beds
  • Weiler Gym (2NE) 20 beds
  • Wakefield Gym (6Egym) 10 beds

Total 129 beds
Inpatient Deployment: Medicine Units

- Created ~ 30 new Covid Unit teams (more being created):
  - Medicine
  - Family and Social Medicine
  - Pediatrics
  - Oncology
  - Neurology
- Established inpatient eConsults: > 1,000 inpatient eConsults performed
- Allied House staff: Orthopedics, Pediatrics, Podiatry, Dermatology, Ophthalmology; Ob/Gyn, Radiology, Radiation Oncology, Psychiatry, Urology, PM&R, Pathology

- “Over the last 2 weeks I have had to contact numerous subspecialists… without exception – everybody has been incredibly helpful, flexible, and truly a pleasure to work with” (Dr. Joe Deluca)
• Communication
• Inpatient Deployment
• **Outpatient operations**
• Covid-19 Testing
• New initiatives
• Research
• Outreach to our community
• Questions answered
Outpatient Tele-Visits
Now the doctor can see you at home.
Announcing doctor video visits from Montefiore FIRST.

We are now offering you the convenience of face-to-face video visits with Montefiore doctors. Doctor video visits are a result of our ongoing commitment to providing access to state-of-the-art healthcare in a way that works best for our patients.

Doctor video visits are convenient and easy to schedule.
• Communication
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Covid-19 Testing For Employees

- Tarrytown
- Castle Hill MMG site
- Bronx Zoo
- Additional sites - FPG

OHS: 914-457-4136

- Testing criteria: exposed and symptomatic
- Return to work criteria: 7 days from onset of symptoms+72 hrs asymptomatic
  - No need repeat testing to return to work
• Communication
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• **New initiatives**
• Research
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New Initiatives

- Covid-19 post discharge clinic (tele-medicine)
- Tele-consults inpatients (CCM Command Center)
- Rapid streamlined pathway to credential & deploy physicians coming to volunteer at Montefiore
- Montefiore Emotional Support Allies (MESA): pairing mental health professionals with providers at the frontlines
- Einstein MD and PhD Students volunteers:
  - Direct Covid patient care
  - OHS
  - Babysitting, pet sitting, running, homework help

“From the OHS Call center perspective, the medical students have been invaluable. From answering calls, to empathetically interacting with scared employees, to completing data entry, they are terrific. We could not be doing this without them and we are grateful for their contributions every day!

--Michael” (Dr. Michael Rinke)
• Communication
• Inpatient Deployment
• Outpatient operations
• Covid-19 Testing
• New initiatives – in progress

• Research
• Outreach to our community
• Questions answered
Marla Keller, MD
Vice Chair for Research
Associate Director of the Block Institute for Clinical and Translational Research
Professor of Medicine (Infectious Diseases)
NIAID Phase 2 Adaptive Remdesivir Trial – (PI, B. Zingman)

- **Format:** Multicenter, randomized, double-blind, placebo controlled trial (target 440 patients, 54 sites)
- **Aim:** Safety and efficacy of antiviral which binds to RNA polymerase to inhibit replication
- **Criteria:** Hospitalized patients with moderate to severe COVID-19 disease,
  - Inclusion: Infiltrates, O₂ sat <94% RA, suppl. O₂, mechanical ventilation
  - Exclusion: Pregnancy, ALT/AST >5x ULN, GFR <50
- **Enrolled:** 38 patients at Moses (2nd highest enrollment in US), Weiler COMING SOON
- **Expanded Access Program (Gilead) SOON** for those not on trial and Wakefield
- **Contact:** Barry Zingman bzingman@Montefiore.org
CytoDyn Phase 2 Leronlimab (PI: H. Seethamraju)

- **Format:** Multicenter, randomized, double-blind, placebo controlled trial (target 75 patients, 10 sites)
- **Aim:** Safety and efficacy of monoclonal antibody for chemokine CCR5 receptor
- **Criteria:** Hospitalized patients with mild to moderate COVID-19 disease
  - Inclusion: mild symptoms, O2 sat >93% RA, RR<20, HR<90, moderate dyspnea
  - Exclusion: ARDS, chronic respiratory, renal, or liver disease, cancer

- **Contact:** Dr. Harish Seethamraju hseethamraju@montefiore.org
Regeneron Adaptive Phase 2/3 Sarilumab (PI: M. Gong)

- **Format**: Multicenter, randomized, double-blind, placebo controlled trial (target 400 patients, 63 sites)
- **Aim**: Safety and efficacy of single dose of monoclonal antibody to IL-6 receptor (Sarilumab)
- **Criteria**: Hospitalized patients with severe to critical COVID-19 disease
  - **Inclusion**: PNA, supplemental O₂, intubated, multiorgan failure, immunocompromised
  - **Exclusion**: ANC<2000, ALT/AST >5x ULN, active TB, use of IL-6 or JAK inhibitor
- **Enrolled**: 53 patients enrolled at Moses and Weiler

- **Contact**: Dr. Michael Aboodi maboodi@montefiore.org
Convalescent Plasma Protocol

- **Format**: National, multicenter trial to evaluate passive antibody therapy
- **Aim**: COVID-19 patients who have recovered can donate plasma to be used in patients hospitalized with severe COVID-19 disease
- **Criteria**: Randomized trial in patients with mild to moderate disease planned
- **Enrolled**: 120 donors enrolled at Montefiore
- **Contact**: Dr. Johanna Daily  
  HelptreatCOVID@Montefiore.org
Ongoing Clinical Trials

- **NHLBI PETAL Network (PI: M. Gong)**
  - Multicenter, randomized, placebo-controlled, trial to evaluate hydroxychloroquine for treatment of hospitalized patients
  - Pending IRB approval

- >30 IRB approved protocols to investigate clinical and epidemiological characteristics of COVID-19 in different cohorts
  - Chronic kidney disease, diabetes, cardiovascular disease, cancer, HIV, critically ill, pediatrics, pregnancy, etc.

- Specimen biorepository being developed by ICTR
We need Science to beat Covid-19
Meng T. Cao H, Zhang H et al. The insert sequence in SARS-CoV-2 enhances spike protein cleavage by TMPRSS. bioRxiv (2020); doi: https://doi.org/10.1101/2020.02.08.926006
Meng T. Cao H, Zhang H et al. The insert sequence in SARS-CoV-2 enhances spike protein cleavage by TMPRSS. bioRxiv (2020); doi: https://doi.org/10.1101/2020.02.08.926006
Meng T. Cao H, Zhang H et al. The insert sequence in SARS-CoV-2 enhances spike protein cleavage by TMPRSS. bioRxiv (2020); doi: https://doi.org/10.1101/2020.02.08.926006
• Communication
• Inpatient Deployment
• Outpatient operations
• Covid-19 Testing
• New initiatives – in progress
• Research

• Outreach to our community
• Questions answered
Community Outreach: Donations

Montefiore Medical COVID Relief

"Montefiore's front line workers are running low on many supplies so I wanted to reach out to our community for help. You can find items on this list that will be distributed directly to our healthcare workers. Thank you so much for your help.

Pack of 10 Medical Disposable Isolation Gowns with Elastic Cuff, Knitted Cuff, Late x - Free, Non-Woven, FluidResistant, Dental, Hospital, Industries, ONE SIZE FITS ALL(10 PCS=1 Bag), BLUE

$111.99
Usually ships within 4 to 5 days. Offered by SONYOR.

100 Pack Disposable Elastic Bouffant Caps-Latex Free- Hair Restraint- Head Cover- Medical, Food Service, Cooking, Labs,

$9.26
Usually ships within 4 to 5 days. Offered by Uomo Trade.
5 Used & New from $3.99
Community Outreach: Donations

- Housing
- Transportation
- Laundry services
- Food
Call to submit drawings, notes of encouragement to share with healthcare workers:
- Created Instagram account @montefiorehealthcareheroes
- Posting submissions on Twitter
- DOM Daily Update
- Hope to post in hospital & patient rooms
- Hospital eScreens

ENCOURAGE AND THANK OUR BRAVE MONTEFIORE HEALTHCARE SUPERHEROES

Send drawings, notes, quotes and videos, and we will share them. Email to healthcareheroes@montefiore.org and post on social media.

#montefioresuperheroes
Artwork
Videos
• Communication
• Inpatient Deployment
• Outpatient operations
• Covid-19 Testing
• New initiatives – in progress
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• Outreach to our community
• Questions answered
• What is the institutional protocol for the use of Zithromax and the combination of Zithromax and Hydroxychloroquine in Covid-19?

• What is the PPE status?

• What is the general organization and deployment scheme for general internists, subspecialty medicine physicians and non-IM trained physicians in anticipation of additional staffing needs?

• What is the evidence for starting steroids for COVID-19 patients who appear to have worsening status?
Q & A

- What is the institutional protocol for the use of Zithromax and the combination of Zithromax and Hydroxychloroquine in Covid-19? Zithromax alone or in combination with HCQ is not part of the protocol. Consult with ID if you want to give Zithromax.

- What is the PPE status? We have sufficient PPE and it is being distributed at the entrances to MMC as well as to all the Covid-19 units.

- What is the general organization and deployment scheme for general internists, subspecialty medicine physicians and non-IM trained physicians in anticipation of additional staffing needs? We have deployed physicians to ICU’s and medicine floors as outline in my presentation. We are ready to deploy more as needed.

- What is the evidence for starting steroids for COVID-19 patients who appear to have worsening status? Currently very weak evidence. However, there is evidence for a cytokine storm syndrome and some experts believe that steroids might be helpful.
“Alone we can do so little; together we can do so much”

Helen Keller
Finally, I would like to finish with again thanking everyone for rising to the occasion during this unprecedented crisis and working together as a team to confront the epidemic and support each other. We will continue support each other, and we will get through this together stronger than ever. With courage, dedication, and camaraderie we will win this fight.

THANK YOU!