Centers for Disease Control and Prevention
Center for Preparedness and Response

COVID-19 in the United States: Insights from Healthcare Systems

Clinician Outreach and Communication Activity (COCA) Webinar

Friday, April 17, 2020

Continuing Education

Continuing Education is not offered for this COCA Call.

To Ask a Question

- Using the Webinar System
  - Click the Q&A button.
  - Type your question in the Q&A box.
  - Submit your question.
- If we are unable to get to your question during the call, you may also email your question to coca@cdc.gov.
- For media questions, please contact CDC Media Relations at 404-639-3286, or send an email to media@cdc.gov.

We want to hear from you!
What best practices do you have to share?

- Using the Webinar System
  - Click the Q&A button.
  - Type your question in the Q&A box.
  - Submit your best practice.
- Or submit to coca@cdc.gov.
- Facebook Live viewers, please leave your comment on Facebook or email coca@cdc.gov.
- Thank you!

For More Clinical Care Information on COVID-19

- **Call** COVID-19 Clinical Call Center at 770-488-7100 (24 hours/day).
- **Refer** patients to state and local health departments for COVID-19 testing and test results.
  - Clinicians should NOT refer patients to CDC to find out where or how to get tested for COVID-19, OR to get COVID-19 test results.
- **Visit** CDC's Coronavirus (COVID-19) website: https://www.cdc.gov/coronavirus
- **Visit** emergency.cdc.gov/coca over the next several days to learn about future COCA Calls.

Today's Presenters

- **Aaron Harris, MD, MPH** (no slides)
  Team Lead, Healthcare Systems Coordination Team
  COVID-19 Response
  Centers for Disease Control and Prevention

- **Nancy Foster** (no slides)
  Vice President, Quality & Patient Safety Policy
  American Hospital Association

- **David Reich, MD**
  President, Chief Operating Officer
  The Mount Sinai Hospital, NY

- **Amy Compton-Phillips, MD**
  Executive Vice President, Chief Clinical Officer
  Providence St. Joseph Health, WA

COVID-19 Response: Challenges and Successes

David L. Reich, MD
President and COO, The Mount Sinai Hospital

Mount Sinai Hospital

The views expressed in this presentation are those of the author and do not necessarily represent the opinion of the Centers for Disease Control and Prevention.

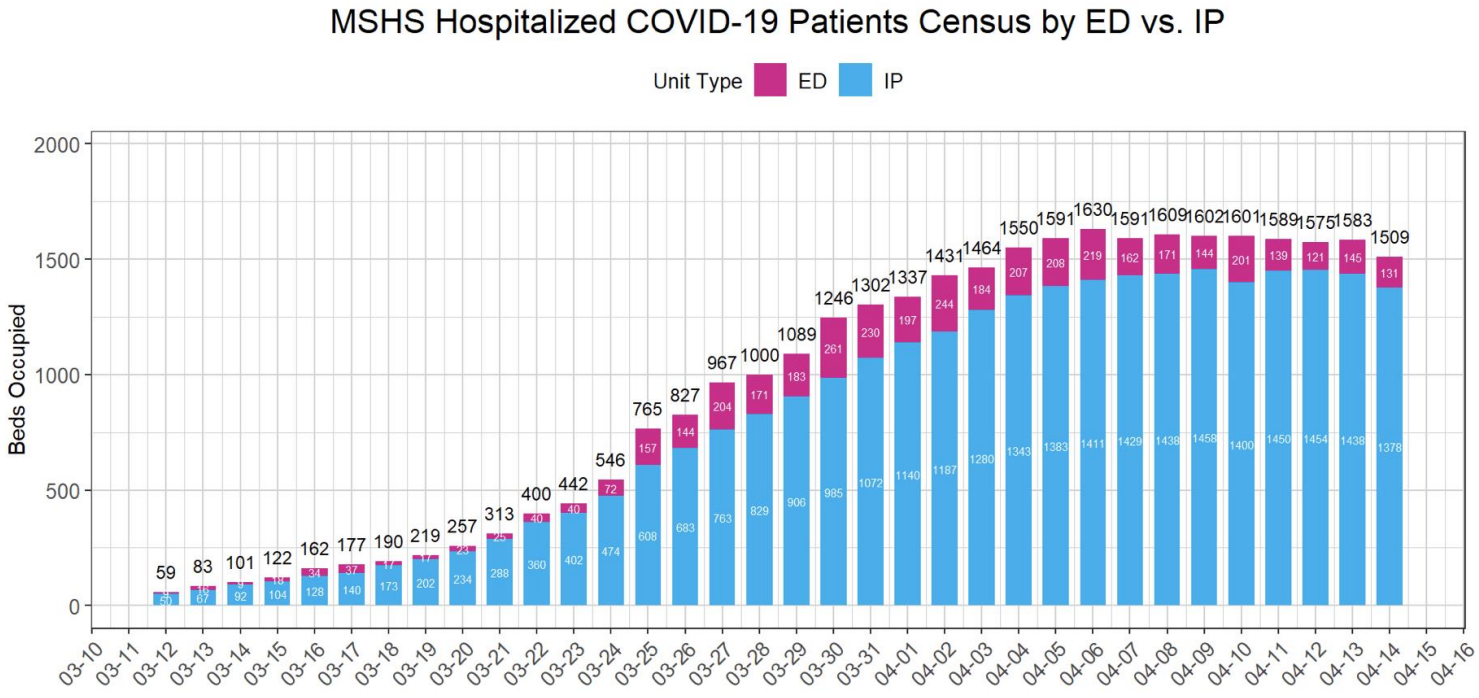
About The Mount Sinai Health System

- 8 hospitals located throughout NYC and Long Island
- > 4.1 million annual patient visits
- > 410 ambulatory practices
- > 42,000 employees
- Affiliated with the Icahn School of Medicine at Mount Sinai

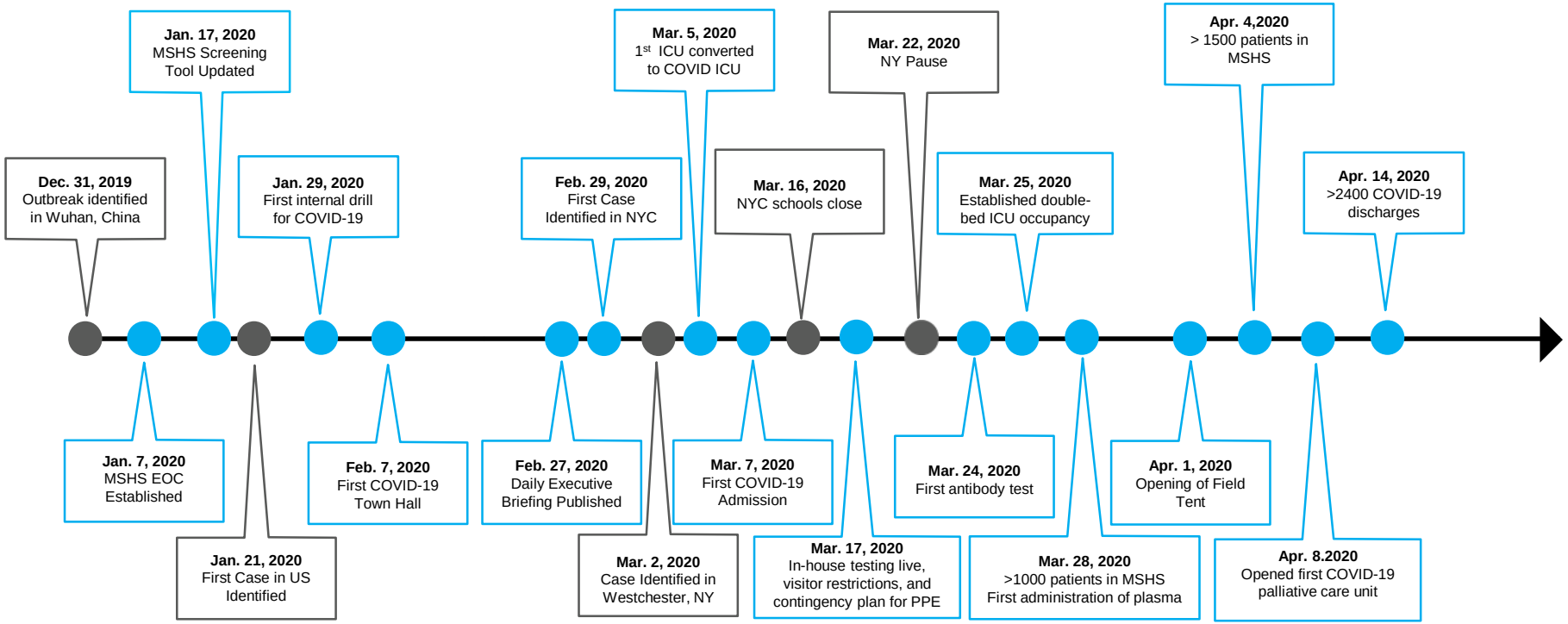
COVID-19 Response: Major Challenges

Personal Protective Equipment	Workforce Management	Physical Plant and Increase Capacity	Testing and Therapeutics
• Supply chain • Staff training • Contingency planning • Extended use and limited reuse of PPE	• Communication • Employee engagement • Leadership redeployment • Increasing the workforce • Team-based care model	• Expansion of Critical Care capacity • Increase number of negative pressure rooms • Non-traditional patient care spaces • Telemedicine	• In-house testing • Ventilator acquisition and management • Convalescent plasma program • Clinical Trials • Anticoagulation Protocol

MSHS Hospitalizations COVID-19



MSHS COVID-19 Timeline



Personal Protective Equipment

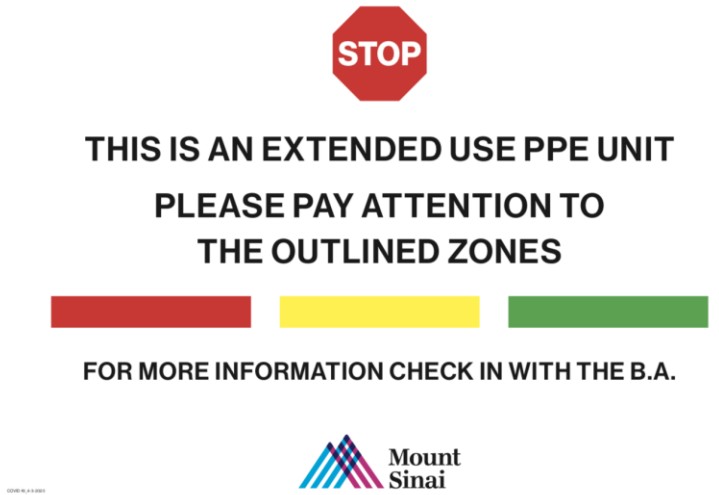
Shift to Droplet Precautions

- NYC DOHMH updated their guidance to support droplet and contact precautions
- Surgical Mask + Eye Protection
  - N95-respirators reserved for aerosol-generating procedures

NYC DOHMH Alert # 6 - COVID-19 Updates for New York City published 15Mar20

Contingency Standards for PPE

- Limited reuse and extended use of N95-respirators
- Several units are “extended use PPE” units
  - Extended use of isolation gowns
    - The patient is not on contact precautions for another pathogen
    - The gown is not ripped, torn or soiled
    - Gloves are removed and hand hygiene is performed



NYC DOHMH Alert # 8 - COVID-19 Updates for New York City published 20Mar20. published 20Mar20
https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/contingency-capacity-strategies.html published 29Feb20

Workforce Management

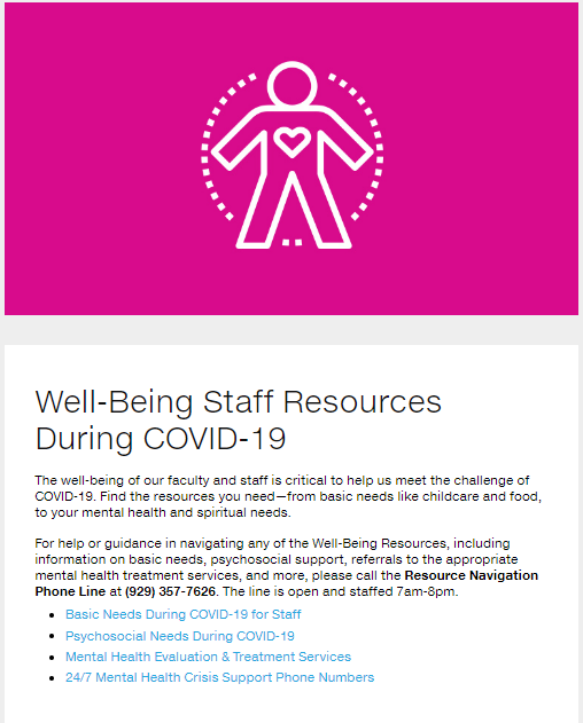
Communication

- Daily briefings with senior level leadership
- Twice daily huddles with local leadership
- Crisis communication broadcast messages
- Twice daily calls with bargaining units
- Weekly virtual town halls
- “Elbow bump” rounds

Charlene Henry, RN

Ensuring Stable Workforce

- Redeployment of staff and leadership
- Team-based care model
- Volunteers and external staff
- Crisis pay negotiations
- Employee engagement
  - Food donations
  - Sleeping arrangements
  - Respite stations
- Wellness initiatives
  - Crisis hotlines



Well-Being Staff Resources During COVID-19

The well-being of our faculty and staff is critical to help us meet the challenge of COVID-19. Find the resources you need—from basic needs like childcare and food, to your mental health and spiritual needs.

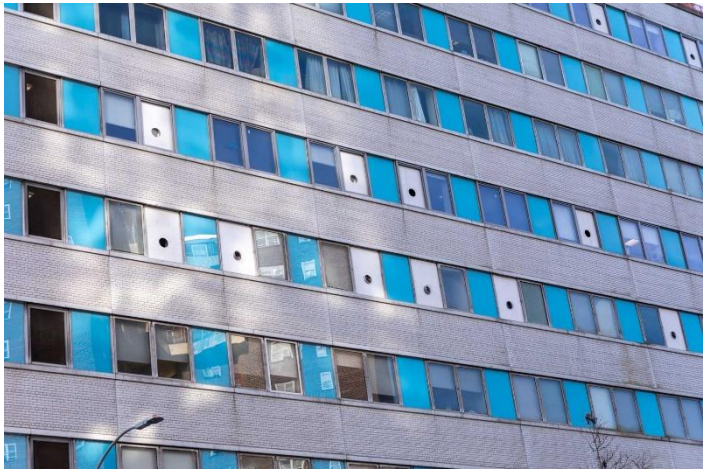
For help or guidance in navigating any of the Well-Being Resources, including information on basic needs, psychosocial support, referrals to the appropriate mental health treatment services, and more, please call the **Resource Navigation Phone Line** at **(929) 357-7626**. The line is open and staffed 7am-8pm.

- Basic Needs During COVID-19 for Staff
- Psychosocial Needs During COVID-19
- Mental Health Evaluation & Treatment Services
- 24/7 Mental Health Crisis Support Phone Numbers

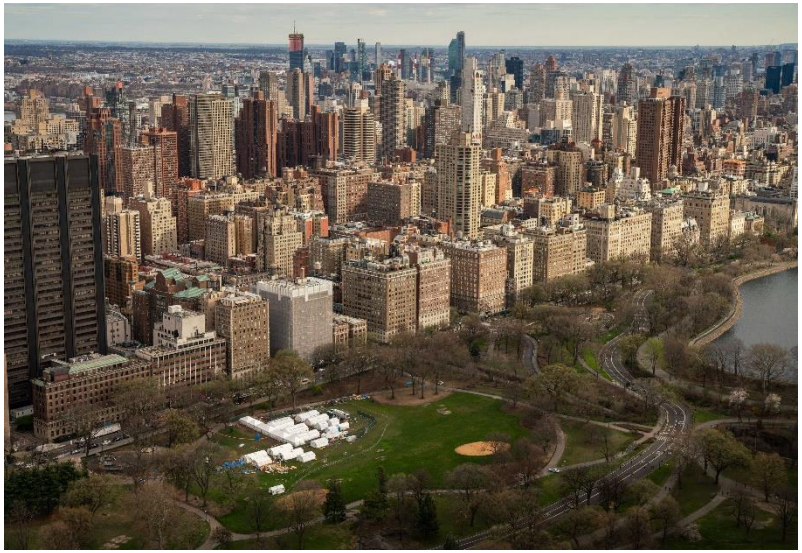
Physical Plant and Increased Capacity

Critical Care and Negative Pressure Capacity (MSH)

- Transitioned 10 adult units to COVID-19 ICUs
  - 94 licensed beds to 240 adult ICU beds
  - Doubled occupancy in ICUs by placing two patients in a single occupancy room
- Converted 260 patient rooms to negative pressure using HEPA exhaust fans
- Incorporated remote patient monitoring and point of care monitoring
- Expanded inpatient telehealth and consultation



Non-traditional Care Spaces



Aerial view of Central Park

Mount Sinai Morningside

Testing and Therapeutics

Rapid Expansion of Testing Capacity

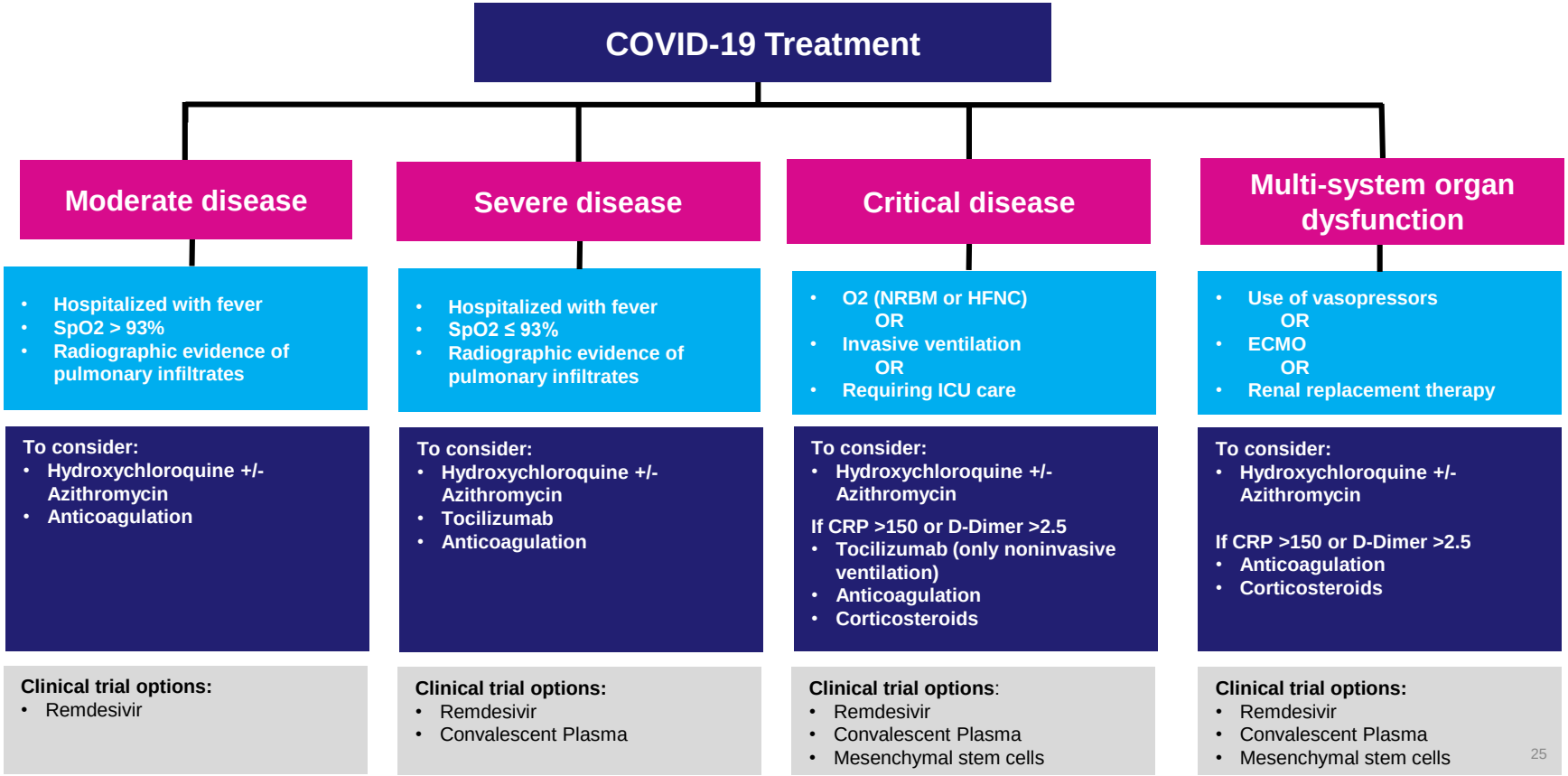
- Coordinated with public health laboratories for testing of both inpatients and symptomatic healthcare workers February 29
- Initially partnered with a commercial laboratory to offer testing in our Emergency Departments and Ambulatory settings on March 10
- Established limited in-house testing on March 14 and expanded to high-volume testing for MSHS on March 17

COVID-19 Antibody Testing

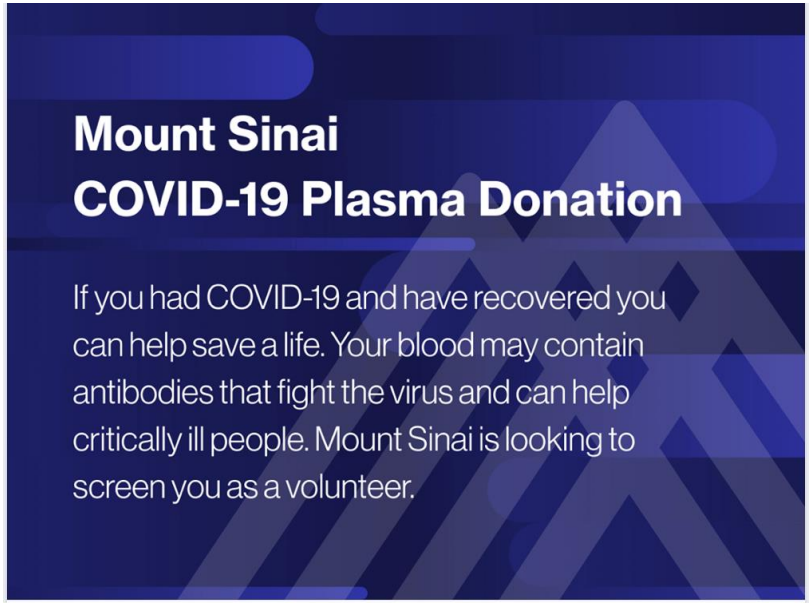
- Adapted a research laboratory-based serum antibody assay to the CLIA-certified clinical microbiology laboratory
- Began screening high-risk healthcare workers and MSHS COVID-19 PCR positive patients on March 24, 2020
- Offered plasma donation to individuals with antibody titers > 1:320
- Adjusted timing to better define optimal eligibility for donation
  - Over 21 days since symptom onset and full resolution of symptoms for over 14 days
  - Prioritized known positive COVID-19 recovered patients interested in plasma donation in partnership with New York Blood Center

Amanat F *et al.* A serological assay to detect SARS-CoV2 seroconversion in humans. Published March 16, 2020 https://doi.org/10.1101/2020.03.17.20037713.

COVID-19 Therapeutics and Trials



Convalescent Plasma Program



http://www.mountsinai.org/covidplasmadonation

MSHS Convalescent Plasma Program

Mount Sinai

Plasma Donation	Patient Selection	Consent & Enrollment	Transfusion	Monitoring
• NY Blood Center • Recovered patients with COVID+ test • Symptom-free for 14 days • High levels of COVID-19 antibodies	• Infectious disease physicians screening • Inclusion Criteria: - >18 years old - Lab-confirmed - Hospitalized for severe or life-threatening illness	• Mount Sinai Hospital • eIND and EAP protocols with the FDA • Blood type matching • Phone consent with patients • Expansion to other MSHS sites with EAP	• Inpatient • Coordination of research team and primary clinical team • Streamlined order set and transfusion process • Nursing education	• Continued clinical monitoring • EHR reports of oxygen requirements, lab values, clinical status • Medical student chart review • Artificial intelligence automation and modeling

Convalescent Plasma Program

- Started March 24, 2020 under FDA eIND (3/24 – 4/11/20)
- Transitioned to Mayo Clinic EAP (4/10 –)

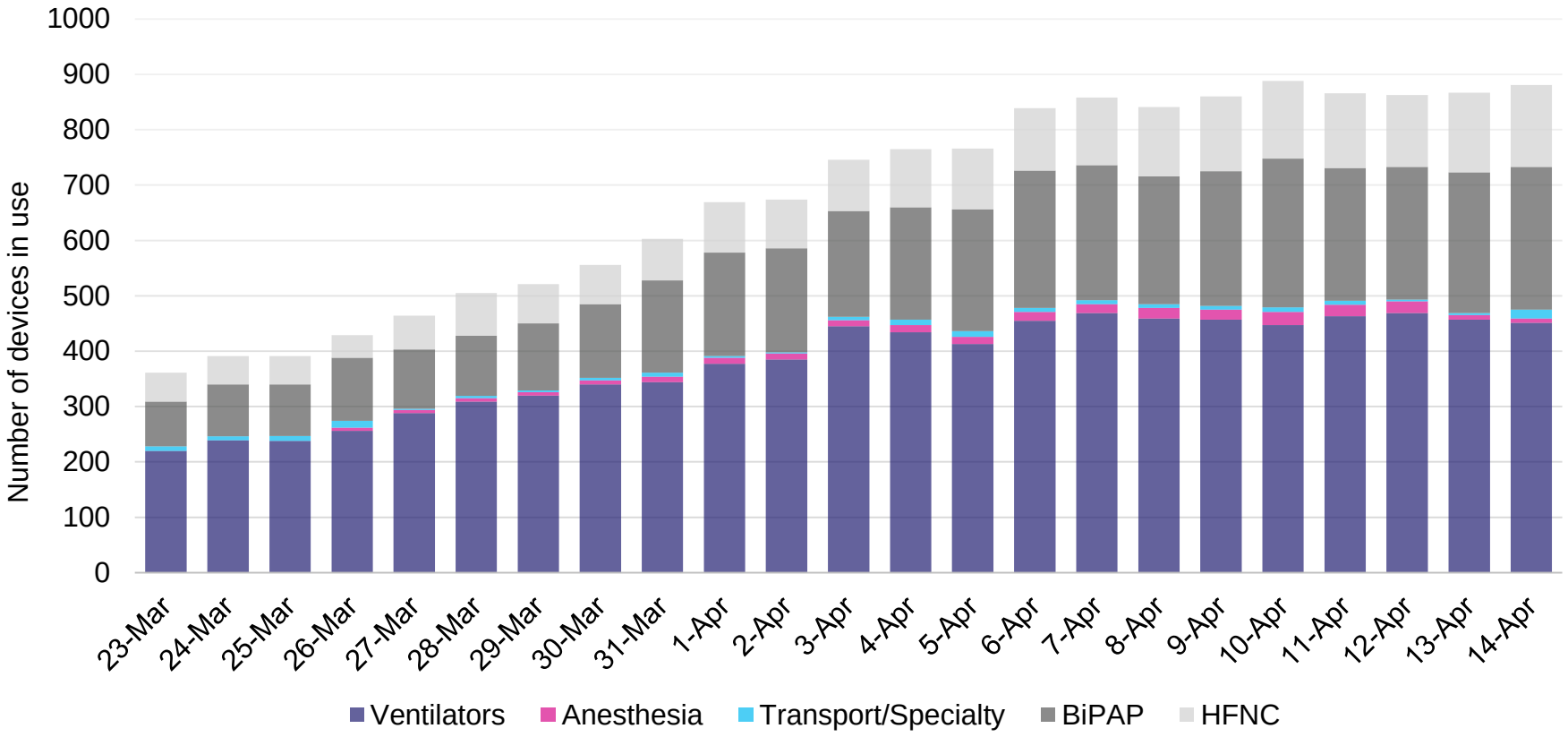
Week	Dates	Patients transfused eIND	Patients transfused EAP	Total
Week 1	3/24 – 3/30/20	**3**	**N/A**	**3**
Week 2	3/31 – 4/6/20	**16**	**N/A**	**16**
Week 3	4/7 – 4/13/20	**20**	**20**	**40**
	Total	**39**	**20**	**59**

Amanat F *et al.* A serological assay to detect SARS-CoV2 seroconversion in humans. Published March 16, 2020 https://doi.org/10.1101/2020.03.17.20037713.
https://www.uscovidplasma.org

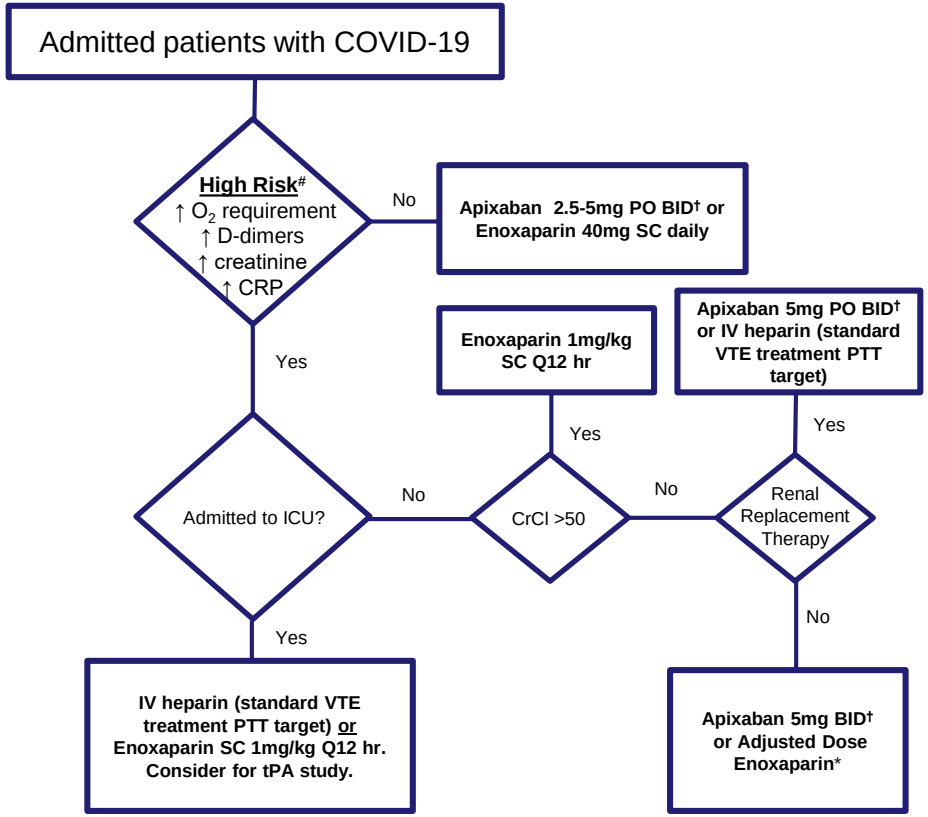
Increasing Ventilator Capacity and Innovation

- Incorporated use of non-traditional ventilators to maximize capacity
  - Anesthesia Machines
  - Transport Ventilators
  - Specialty Ventilators
- Centralized assembly, testing, and distribution of devices for the health system
  - Utilized medical students and simulation laboratory
- Leveraged simulation lab to facilitate several ventilator innovations
  - Upgrade of home ventilators to critical care capable ventilators
  - Ventilator splitting protocol including 3D printed valve

MSHS Respiratory Device Usage



Mount Sinai COVID-19 Anticoagulation Algorithm

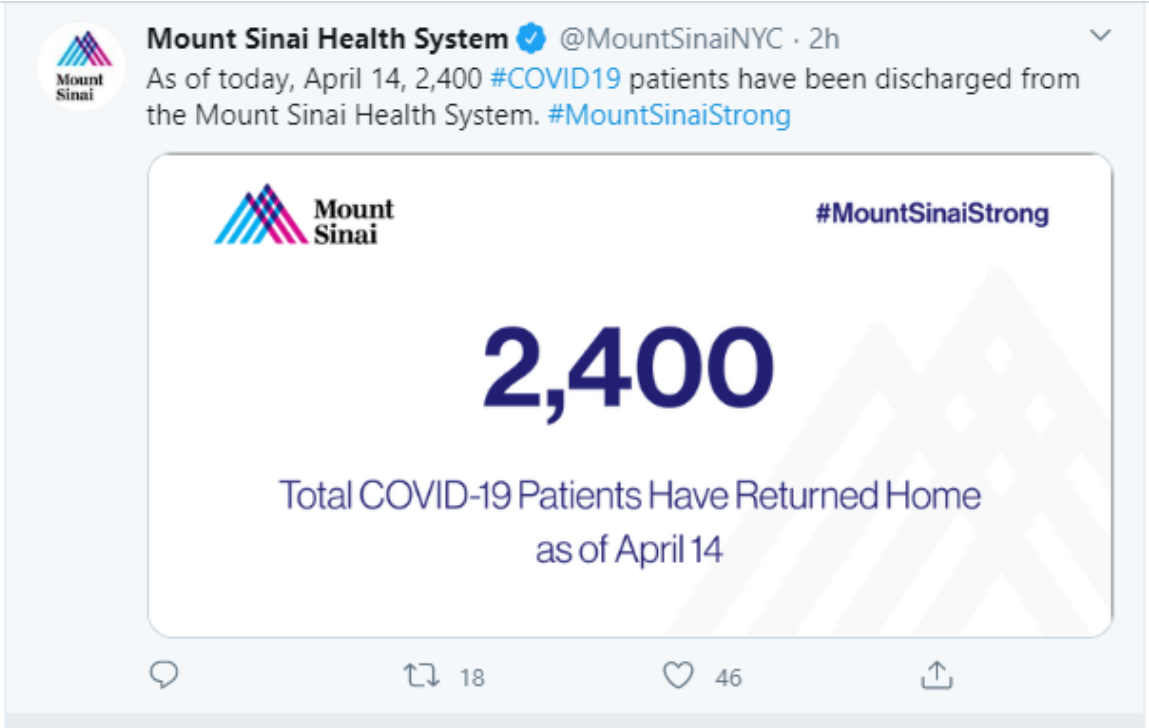


- **Inclusion**: All admitted patients with COVID-19
- **Exclusion:** High risk of bleeding as judged by treating physician
- **Obtain:** Baseline CBC, PT/PTT, D-dimer and daily CBC, D-dimer
- **Anticoagulant:** Rivaroxaban may be used in place of Apixaban if CrCl >50.
- **Consider treatment-dose** AC (Apixaban 5mg PO BID)† for 2 weeks post-discharge for patients on therapeutic anticoagulation while hospitalized
- **High-risk for bleeding, consider:**
  - Platelet count <50,000
  - INR >1.5
  - Current or recent bleeding

High Risk: No precise metrics exist. Consider exam (eg, O_2 sat<90%, RR >24), ↑O_2 requirement (eg, ≥4L NC), labs (eg, ↑d-dimers, C-reactive protein)
^ Efficacy and dose not established; prophylactic or treatment dose acceptable

† If 2 of 3 reduce apixaban to 2.5 mg BID: ≥80 years, wt ≤60 kg, creatinine >1.5.
* If CrCl <50: 1 mg/kg daily or 0.5mg/kg BID, anti-Xa level after 3rd dose

Plateau Week?



TO THE HEALTH CARE WORKERS FIGHTING FOR OUR LIVES, THANK YOU.

mountsinai.org/waystohelp

Thank you

david.reich@mountsinai.org

Faster, Better Together: Health System Lessons Learned in Tackling COVID-19

Amy Compton-Phillips, MD
Executive Vice President and Chief Clinical Officer

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Providence

About Providence

- 51 HOSPITALS
- 1,085 CLINICS
- 119k CAREGIVERS
- 38k NURSES
- 1.2m HOME HEALTH VISITS
- HIGH SCHOOL NURSING SCHOOLS & UNIVERSITY
- 5m UNIQUE PATIENTS SERVED
- 16 SUPPORTIVE HOUSING FACILITIES
- 25k PHYSICIANS
- 2.1m COVERED LIVES

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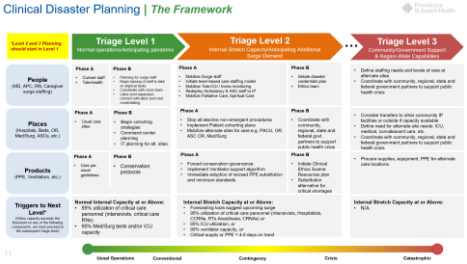
Providence COVID Response Journey

CRISIS PLANNING
- Learning from others
- Communications

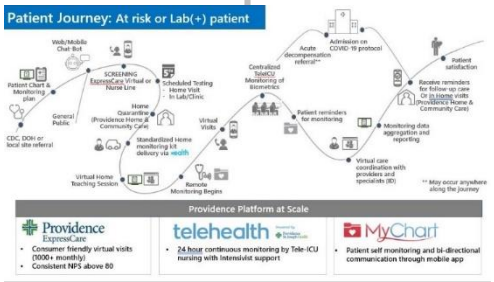
EMERGENCY COMMAND CENTER:
- Established communications rhythms



PANDEMIC PLAYBOOK
- Protocols for People, Places, Products for Triage Levels 1-3

FUTURE OF CLINICAL CARE DELIVERY
- Keeping patients safe in the age of COVID
- Local and regional partnerships

PATIENT #1
- January 20, 2020 – Providence Everett



TECH-ENABLED SEAMLESS EXPERIENCE
- Ideal patient journey

MOBILIZE COMMUNITY RESOURCES
- Resource Staffing Tool
- Local and regional partnerships

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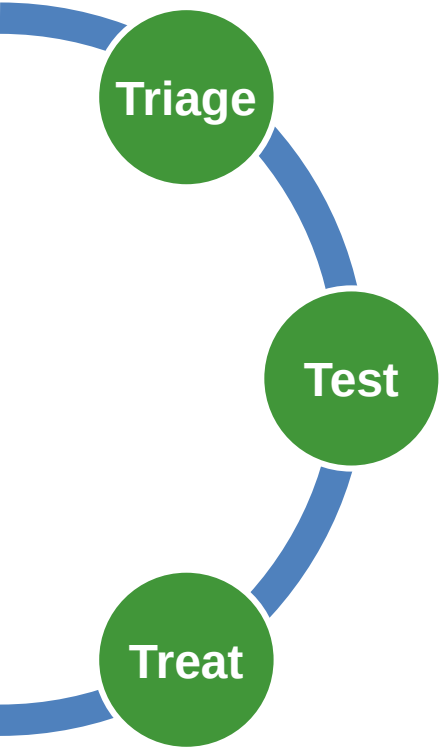
Planning is the *antidote* to Panic

39

Clinical Components: T-T-T Framework



- Create simplicity out of complexity
- Leverage 21st century technology
- Clarify ways to manage patient and caregiver safety
- Anticipate how to meet community needs

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Providence Telehealth COVID-19 Solution

Learn more at: providence.org/telehealth

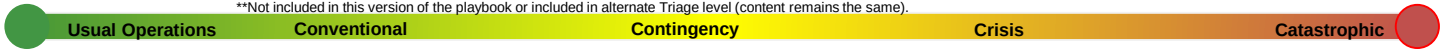
E-mail: telehealth@providence.org

Clinical Disaster Planning Framework

Level 2 and 3 Planning should start in Level 1

	Triage Level 1 Normal operations/Anticipating pandemic		**Triage Level 2** Internal Stretch Capacity/Anticipating Additional Surge Demand		**Triage Level 3** Community/Government Support & Region-Wide Capabilities
People (MD/DO, APC, RN, Caregiver surge staffing)	**Phase A** • Current staff • Tele-health	**Phase B** • Planning for surge staff • Begin training of staff to take on atypical tasks • Coordinate with coms team. • Labor pool expansion; connect with contracted provider groups and credentialing • Ethics support (planning)	**Phase A** • Mobilize Surge staff* • Initiate team-based care staffing model • Mobilize Tele-ICU / home monitoring - • Redeploy Ambulatory & ASC staff to IP* • Mobilize Palliative Care, Spiritual Care	**Phase B** • Initiate disaster credentials plan** • Triage process activation: care team considerations • Ethics support (contingency)	• Define staffing needs and levels of care at alternate sites • Ethics support (crisis) • Coordinate with community, regional, state and federal government partners to support public health crisis
Places (Hospitals, Beds, OR, Med/Surg, ASCs, etc.)	**Phase A** • Usual care sites	**Phase B** • Begin cohorting strategies • Command center planning • IT planning for alternative. Sites	**Phase A** • Stop all elective non-emergent procedures • Implement Patient cohorting plans • Mobilize alternate sites for care e.g. PACU, OR, ASC OR, Med/Surg	**Phase B** • Coordinate with community, regional, state and federal govt. partners to support public health crisis	• Consider transfers to other community IP facilities or outside if capacity available • Define need for alternate site needs: ICU, medical, convalescent care, etc. • Coordinate with community, regional, state and federal government partners to support public health crisis
Products (PPE, Ventilators, etc.)	**Phase A** • Care per usual guidelines	**Phase B** • Conservation protocols	**Phase A** • Forced conservation governance • Implement Ventilator support algorithm • Immediate adoption of revised PPE substitution and minimum standards	**Phase B** • Initiate Clinical Ethics Surge plan • Substitution alternative for critical shortages	• Procure supplies, equipment, PPE for alternate care locations
Triggers to Next Level (When capacity exceeds the threshold on any of the following components, we must proceed to the subsequent triage level)	**Normal Internal Capacity at or Above:** • 95% utilization of critical care personnel (intensivists, critical care RNs) • 95% Med/Surg beds and/or ICU capacity		**Internal Stretch Capacity at or Above:** • Forecasting tools suggest upcoming surge • 95% utilization of critical care personnel (Intensivists, Hospitalists, CCRNs, RTs Anesthesia, CRNAs) *or* • 95% ICU utilization, *or* • 90% ventilator capacity, *or* • Critical supply or PPE < 4-5 days on hand		**Internal Stretch Capacity at or Above:** • N/A

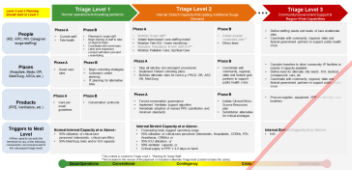
*This content is covered in Triage Level 1, 'Planning for Surge Staff'
**Not included in this version of the playbook or included in alternate Triage level (content remains the same).



Clinical Care in a COVID-19 World

COVID Planning

Pandemic Planning



Manage COVID Crisis

- ❑ What are the capacity triggers to bring non-COVID patient back?
  - PPE
  - ICU Beds
  - Patient Flow and
- ❑ Testing Protocols
- ❑ Staff and Patient Health from COVID-19
- ❑ Continue treatment for COVID-19 cases
- ❑ Reverse cohorting

Post Crisis

- ❑ How do we avoid Caregiver and Staff burn-out while scaling non-COVID patients?
- ❑ How do we address and prioritize non-COVID Patients?
  - Triage
  - Test
  - Treat
- ❑ Continuing the use of Telehealth for patient care
- ❑ Routine Preventative and Interventional treatment options

Clinical Care Recovery Process

Day-1

Day-100ish

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Turn data into information into insight into action

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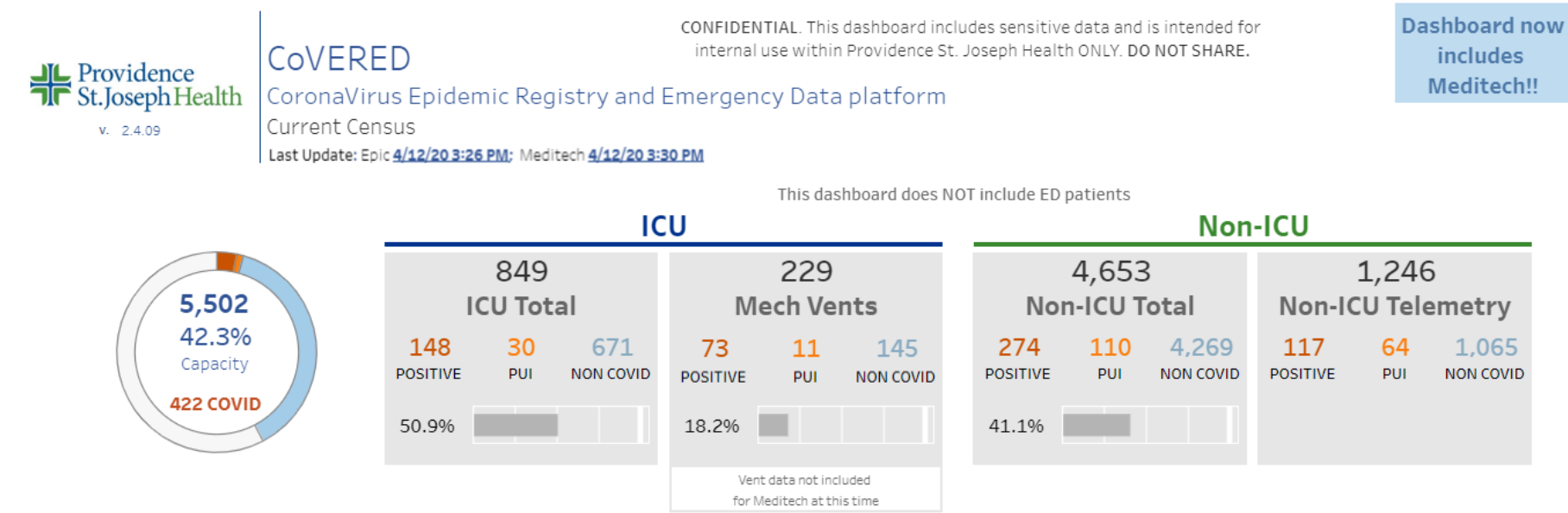
Providence Clinical Analytics: CoVERED Tool



- Practical information accessible across our organization for decision making.

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Providence St. Joseph Health

CoVERED

CoronaVirus Epidemic Registry and Emergency Data platform

Inpatient Characteristics and Outcomes

Available Dates: 2-5-2020 to 4-13-2020

CONFIDENTIAL. This dashboard includes sensitive data and is intended for internal use within Providence St. Joseph Health ONLY. DO NOT SHARE.

Data Dictionary | SharePoint | Yammer

HOSPITALIZATIONS	UNIQUE PATIENTS	DISCHARGES	ADMITTED TO ICU	EXPIRED
681	672	681	195 (29% of encounters)	170 (25% of patients)

Default Time Period or Manual Date Select: Default (Last 60 Days)

Last 60 Days: 2-13-2020 to 4-13-2020

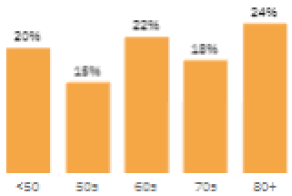
Region: (All) | Service Area: (All)

Facility: (All) | Admission Status: Discharged

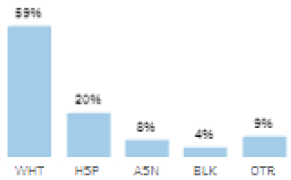
Went to ICU: (All) | Patient Died: (All)

SEX

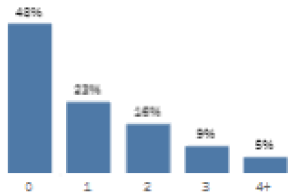
AGE GROUP



RACE / ETHNICITY

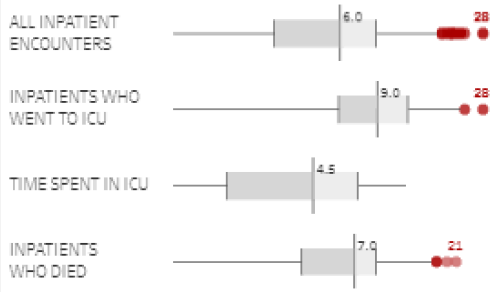


COMORBIDITIES



HOME ZIP CODE OF PATIENT

LENGTH OF STAY (IN DAYS)



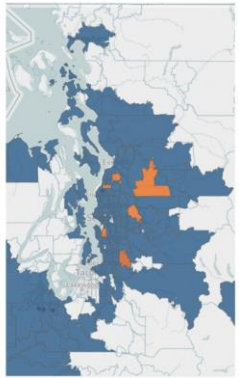
	N	25th	Avg	75th	SD
ALL INPATIENT ENCOUNTERS	681	3.0	7.0	9.0	4.80
INPATIENTS WHO WENT TO ICU	195	6.0	9.5	12.5	5.22
TIME SPENT IN ICU	195	2.0	5.8	8.4	4.60
INPATIENTS WHO DIED	170	4.0	7.0	9.0	4.39

CoVERED Tool EMR-based syndromic surveillance: Key Markets

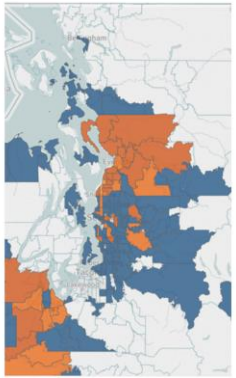
% of patients living in a ZIP who present with fever + cough + shortness of breath and are flu-negative

Seattle

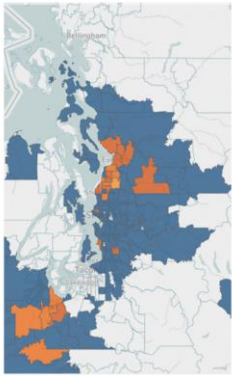
Week of 2.9.20



Week of 3.22.20

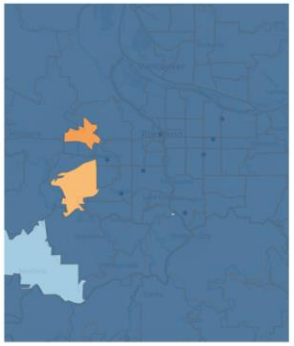


Week of 3.29.20

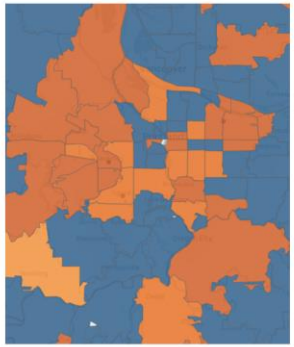


Portland

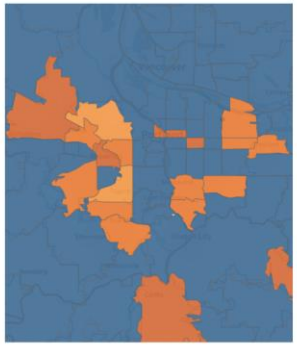
Week of 2.9.20



Week of 3.22.20

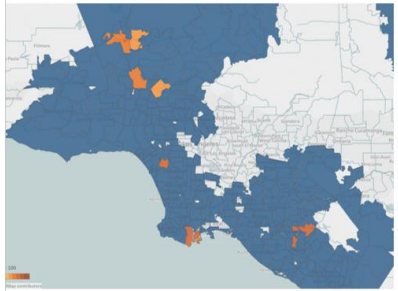


Week of 4.5.20

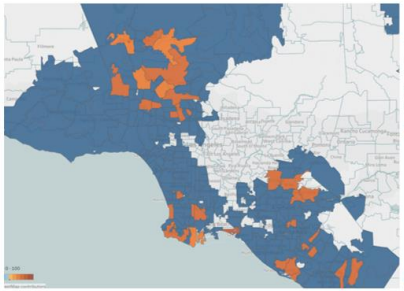


Los Angeles

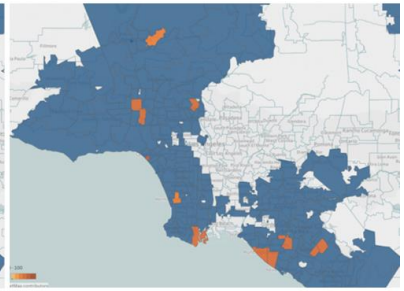
Week of 2.9.20



Week of 3.22.20

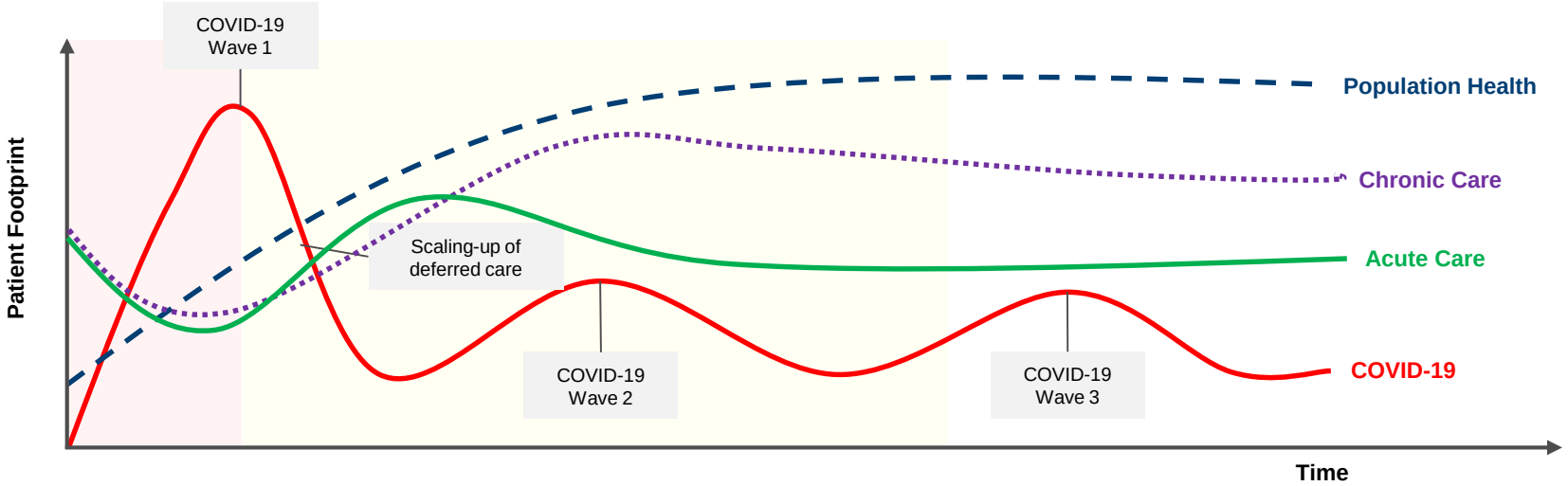


Week of 4.5.20



Future of Clinical Care

As an effect of the COVID-19 pandemic, many patients deferred care. In the upcoming months, we expect the return of these patients, as well as anticipate new patient groups, to need care:



Care & Planning for all in age of COVID-19	Deferred Care		Community Needs
	Acute	Chronic	Population Health

	• During COVID-19 outbreak, hospitals experienced a reduction in standard acute care patients.
	• Hospitals must develop and implement plans to address patients' concerns of infection to encourage patients to return.
		• Chronic conditions of patients may worsen during infection waves, which may result in increased need of care once waves subside.
		• Potential for increase in elective surgeries due to mandatory deferments during infection waves.
			• Anticipated increase of new patients resulting from the unintended consequences of the pandemic, like:
			  • Increased behavior-induced consequences, such as drug problems and alcoholism; and
			  • Deterioration of mental health, such as increased levels of depression, anxiety, etc.

Biggest Learnings

- **Hope for the best, but plan for worst:** Expect more epidemics
- **Learn from the past:** But transition to what could be
- **Advocate together:** Act on collective intelligence for the benefit of all
- **Change the future of medicine:** Reimagine the role 21st century tech tools
- **The environment is chaotic:** Rely on science, not fear
- **Establish a consistent voice:** Listen to all, then align, communicate and repeat.

Providence is sharing its process and tools—please reach out at COVIDresponse@providence.org to be connected to our services division

Providence

To Ask a Question

- **Using the Webinar System**
  - Click on the **Q&A** button in the Zoom webinar system.
  - Type your question in the **Q&A** box.
  - Submit your question.
  - You may also email your question to coca@cdc.gov.
- For media questions, please contact CDC Media Relations at 404-639-3286 or email media@cdc.gov.
- **For more Clinical Care information on COVID-19**
  - **Call** COVID-19 Clinical Call Center at 770-488-7100 (24 hours/day).
  - **Refer** patients to state and local health departments for COVID-19 COVID19 testing and test results.
    - Clinicians should NOT refer patients to CDC to find out where or how to get tested for COVID-19 OR to get COVID-19 test results.
  - **Visit** CDC's Coronavirus (COVID-19) website: https://www.cdc.gov/coronavirus.

Today's COCA Call Will Be Available On-Demand

When: A few hours after the live call

What: Video recording

Where: On the COCA Call webpage at
https://emergency.cdc.gov/coca/calls/2020/callinfo_041720.asp

On COCA's Facebook Page **immediately** after the live call at
https://www.facebook.com/CDCClinicianOutreachAndCommunicationActivity/

COCA Products & Services

COCA Call Announcements contain all information subscribers need to participate in COCA Calls. COCA Calls are held as needed.

Monthly newsletter that provides information on CDC training opportunities, conference and training resources, the COCA Partner Spotlight, and the Clinician Corner.

As-needed messages that provide specific, immediate action clinicians should take. Contains comprehensive CDC guidance so clinicians can easily follow recommended actions.

COCA Products & Services

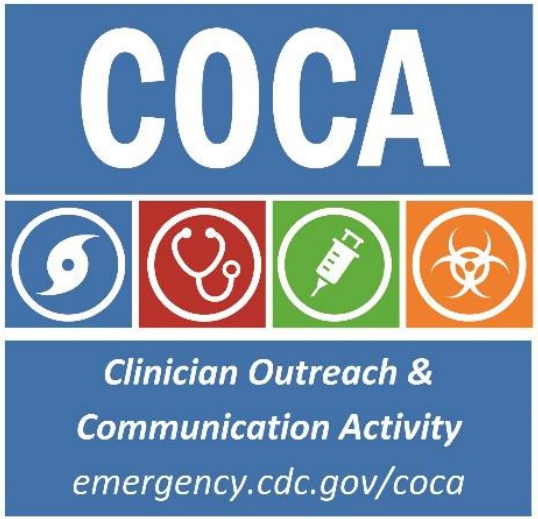
Monthly newsletter providing updates on emergency preparedness and response topics, emerging public health threat literature, resources for health professionals, and additional information important during public health emergencies and disasters.

Informs clinicians of new CDC resources and guidance related to emergency preparedness and response. This email is sent as soon as possible after CDC publishes new content.

CDC's primary method of sharing information about urgent public health incidents with public information officers; federal, state, territorial, and local public health practitioners; clinicians; and public health laboratories.

Join COCA's Mailing List

- **Receive information about:**
  - Upcoming COCA Calls
  - Health Alert Network (HAN) messages
  - CDC emergency response activations
  - Emerging public health threats
  - Emergency preparedness and response conferences and training opportunities



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