Making Practical Decisions for Crisis Standards of Care at the Bedside During the COVID-19 Pandemic

Clinician Outreach and Communication Activity (COCA) Webinar

Thursday, December 17, 2020

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Objectives

- Describe the impact of the COVID-19 pandemic surge on healthcare systems across all aspects of capacity, including space, staff, and supplies.
- Describe strategies to help plan for and manage patient surge and allocate scarce resource allocation.
- Promote discussions to help guide healthcare systems adopt crisis practices, which normally would be considered a compromise to standards of care.

To Ask a Question

- All participants joining us today are in listen-only mode.
- Using the Webinar System
  - Click the “Q&A” button.
  - Type your question in the “Q&A” box.
  - Submit your question.
- The video recording of this COCA Call will be posted at https://emergency.cdc.gov/coca/calls/2020/callinfo_121720.asp and available to view on-demand a few hours after the call ends.
- If you are a patient, please refer your questions to your healthcare provider.
- For media questions, please contact CDC Media Relations at 404-639-3286, or send an email to media@cdc.gov.

COCA Call Tomorrow, Friday, December 18

- **When: TOMORROW**, Friday, December 18 at 2 PM EST
- **Topic:** What Clinicians Need to Know About the Pfizer-BioNTech and Moderna COVID-19 Vaccines
- **For more information**: emergency.cdc.gov/coca/calls/2020/callinfo_121820.asp

this information will be displayed again at the end of today's presentations

Today's Presenters

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COVID-19 Response
Centers for Disease Control and Prevention

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Director, Bellevue Medical Intensive Care Unit
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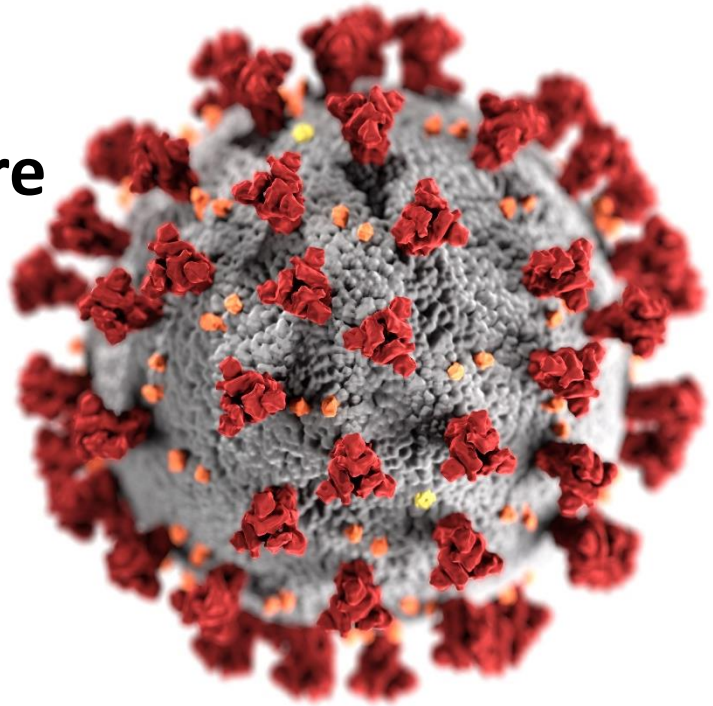
University of Minnesota/Hennepin Healthcare

CDC COVID-19 Response:
Overview of Crisis Standards of Care and Scarce Resource Allocation



Paige Armstrong MD, MHS
December 17, 2020
Clinician Outreach and Communication Activity
COCA Call

cdc.gov/coronavirus

Crisis Standards of Care

"Crisis standards of care" is defined as a substantial change in usual healthcare operations and the level of care it is possible to deliver, which is made necessary by a pervasive (e.g., pandemic influenza) or catastrophic (e.g., earthquake, hurricane) disaster.

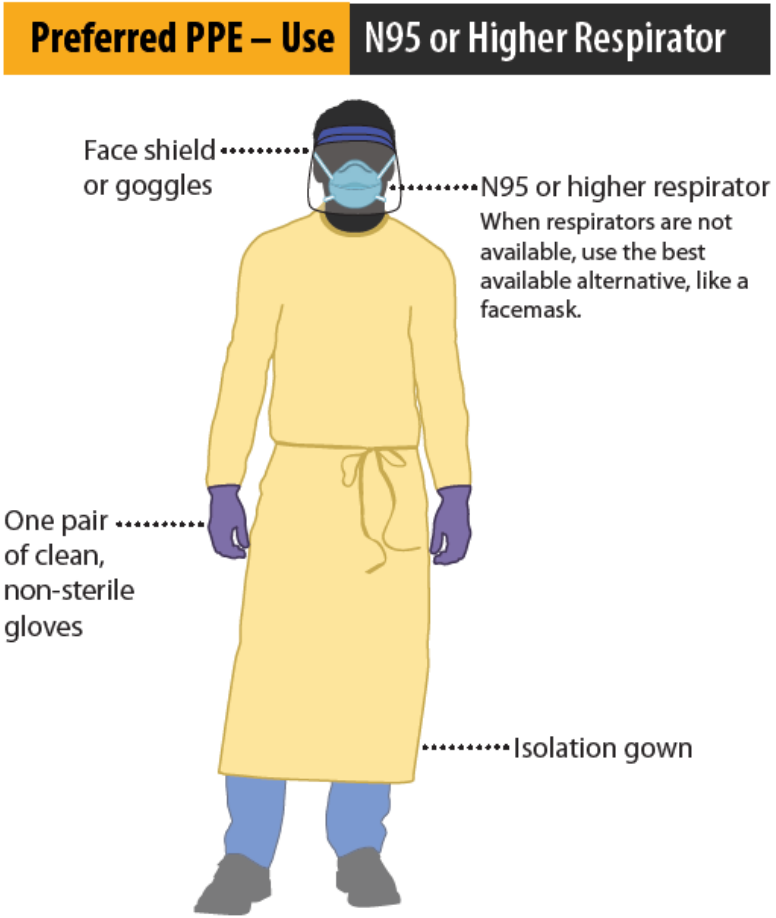
IOM. 2012. Crisis Standards of Care.

Scarce Resource Allocation

- **Space**
  - Mitigating Hospital Bed shortages
  - Alternate Care Settings
  - Using Telehealth Services

Scarce Resource Allocation

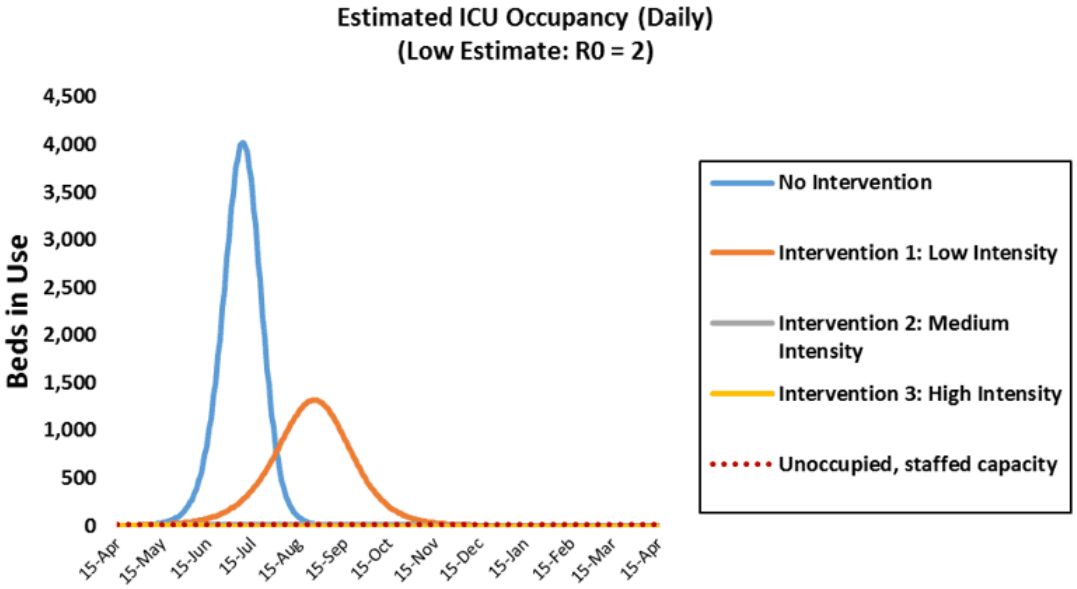
- **Supplies**
  - Optimizing Personal Protective Equipment (PPE) Supplies
  - Personal Protective Equipment (PPE) Burn Rate Calculator
- **Staff**
  - Mitigating Staff Shortages
  - Healthcare Worker Stress and Coping



https://www.cdc.gov/coronavirus/2019-ncov/downloads/COVID-19_PPE_illustrations-p.pdf

Other Resources

- [COVID-19Surge Tool]



References

- Key Considerations for Transferring Patients to Relief Healthcare Facilities when Responding to Community Transmission of COVID-19 in the United States. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/relief-healthcare-facilities.html.
- Considerations for Alternate Care Sites. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/alternative-care-sites.html.
- Using Telehealth to Expand Access to Essential Health Services during the COVID-19 Pandemic. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html.
- Summary for Healthcare Facilities: Strategies for Optimizing the Supply of PPE during Shortages. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/strategies-optimize-ppe-shortages.html.
- Personal Protective Equipment (PPE) Burn Rate Calculator. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/burn-calculator.html.
- COVID-19 Surge. CDC. https://www.cdc.gov/coronavirus/2019-ncov/hcp/covidsurge.html.

Thank you

CDC COVID-19 Healthcare Systems and Worker Safety Task Force
Healthcare Systems Coordination Unit
eocmcctfhome@cdc.gov

Disclaimer

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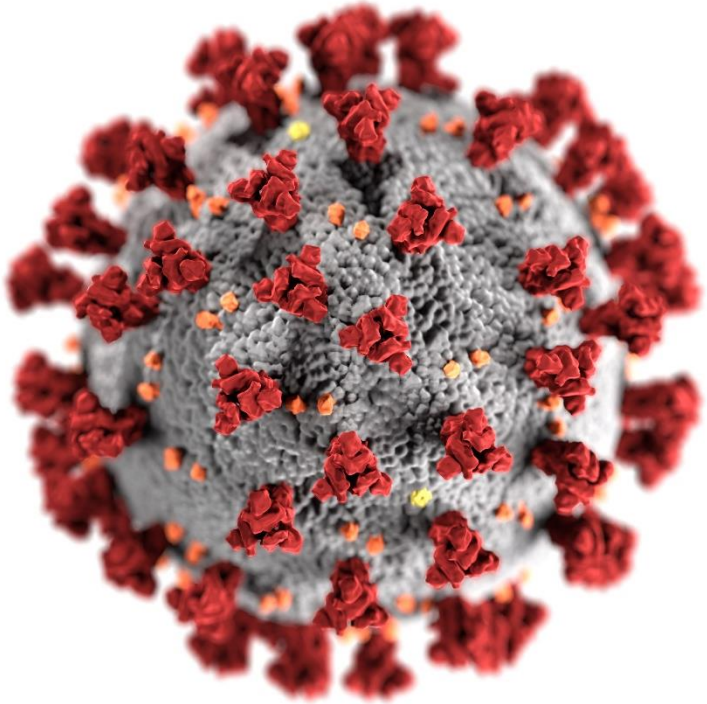

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Crisis Standards of Care: Insight from the NYC Public Hospital System's ICU Experience

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No relevant financial disclosures

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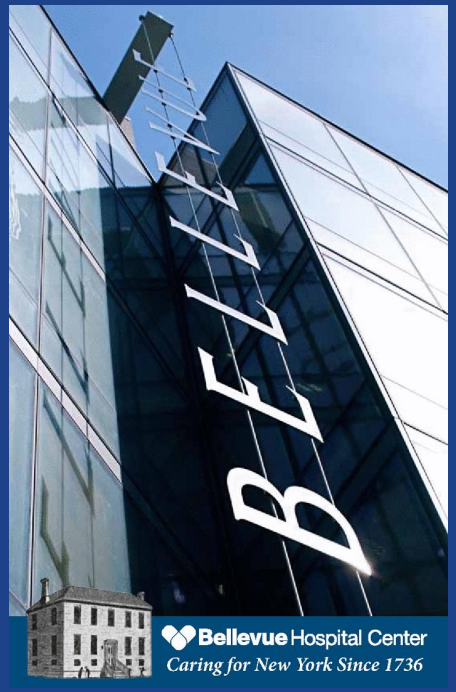

A View from the Frontlines: NYC Health + Hospitals / Bellevue

- America's oldest hospital, est. 1736
- Level 1 Trauma Center
- Region II Designated Ebola and Special Pathogen Treatment Center (ESPTC), and National Emerging Special Pathogen Training and Education Center (NETEC) partner
- Affiliated with NYU School of Medicine
- Tertiary referral center for the city's public hospital network

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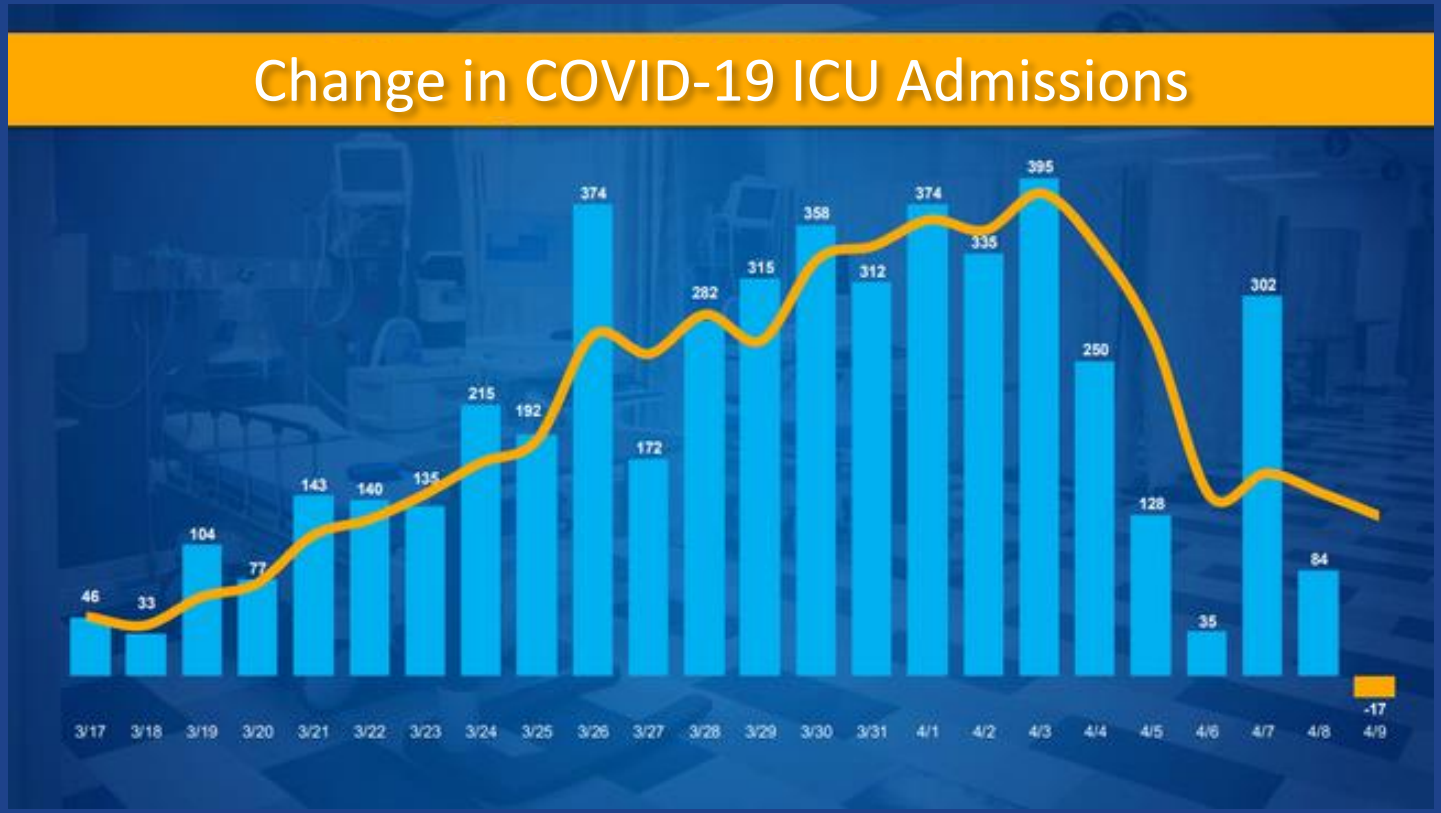
Change in COVID-19 ICU Admissions



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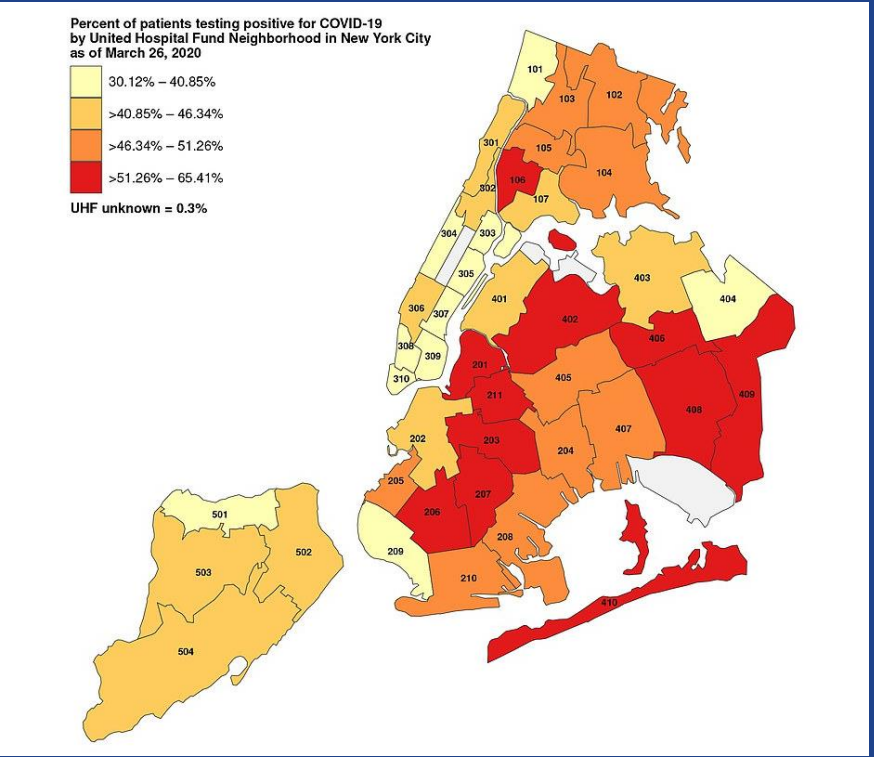

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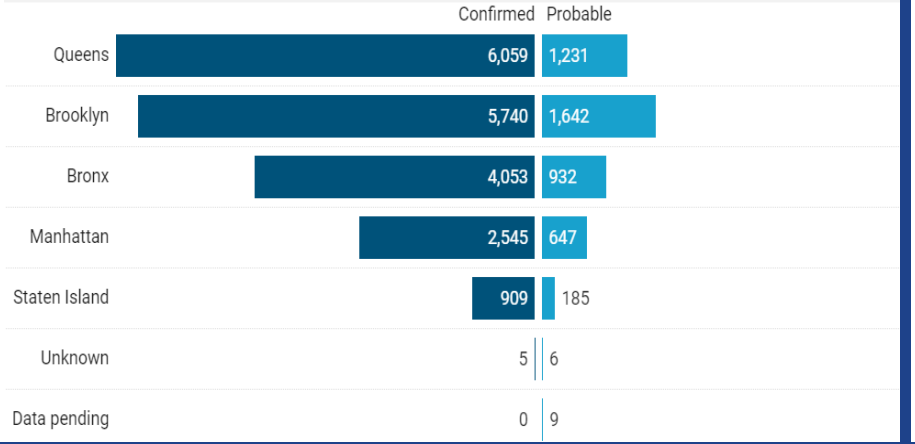
Confirmed and Probable Death Totals

Data on probable deaths that are missing demographic information are classified as "Data Pending".

Show by:

○ Age ○ Sex ○ Race/ethnicity ○ Location of Death ◉ Borough



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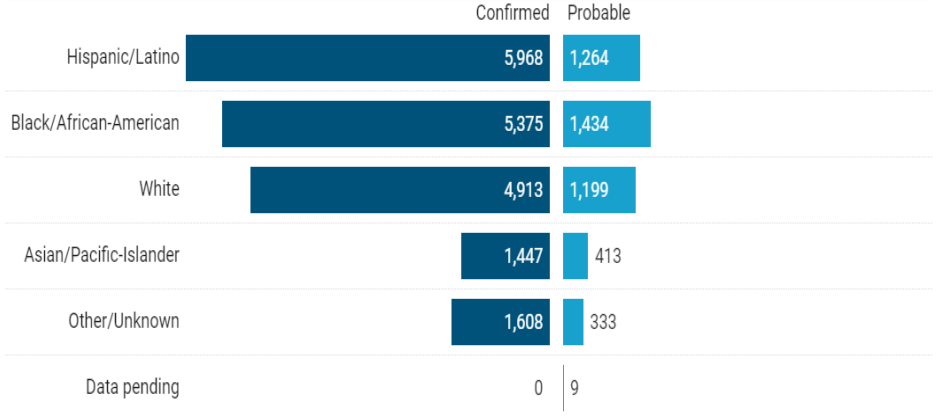

Data as of 12/4/2020

COVID-19: Data Totals - NYC Health

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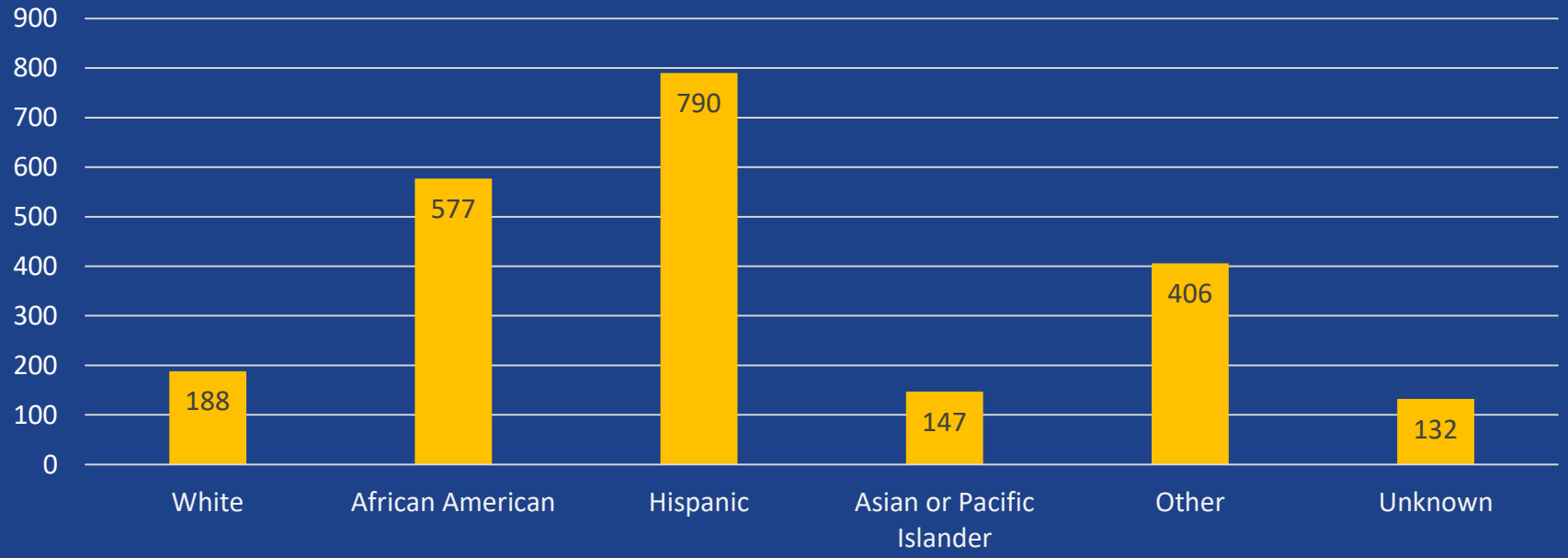
Number of NYC Health + Hospitals ICU Patients:
Demographics – Race/Ethnicity

n=2240



March 10, 2020 - - June 12, 2020

In press, system wide ICU data

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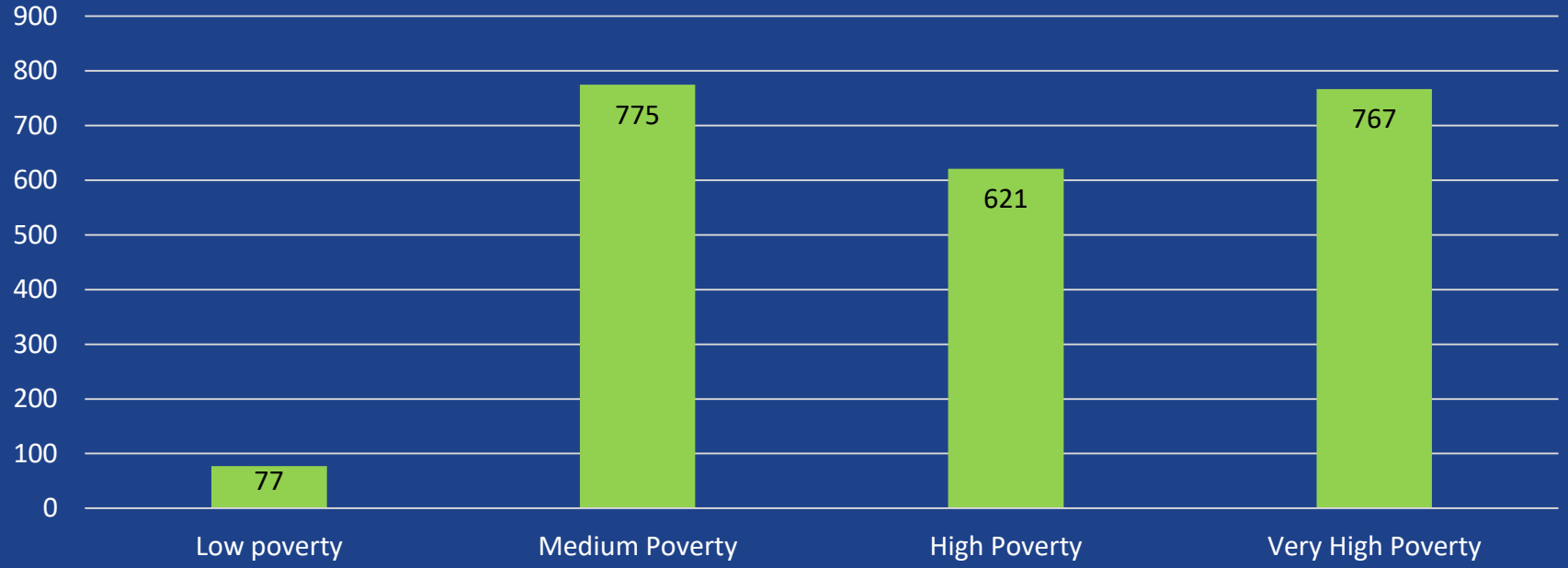
Number of NYC Health + Hospitals ICU Patients:
Demographics – Poverty Level

n=2240



March 10, 2020 - - June 12, 2020

In press, system wide ICU data

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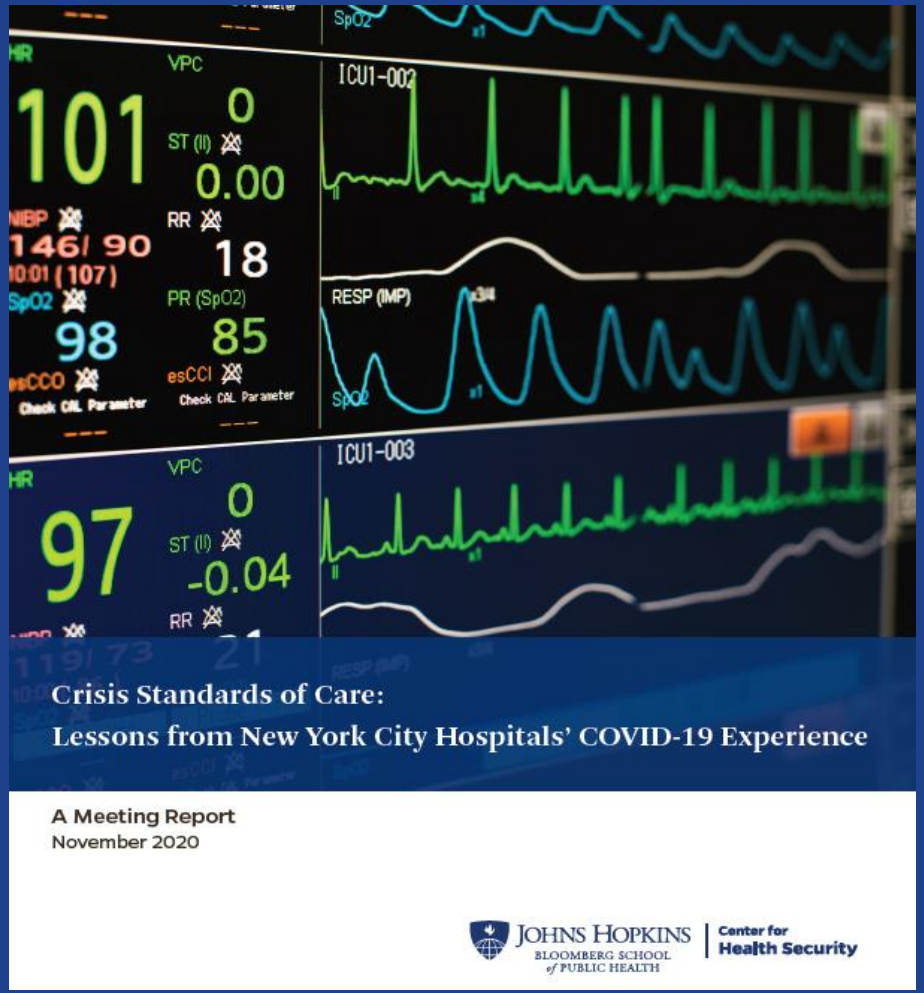
Crisis Standards of Care



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https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2020/20201124-NYC-csc.pdf

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Crisis Standards of Care: A View from the Frontlines

- Pre-pandemic planning vs. clinical needs of an actual event
- Supply-demand mismatch
    - Almost ubiquitous
    - Involving the 3 pillars of surge planning: staff, space, supplies
    - Often not a simple yes/no situation
- Not a choice, but a scenario that health care systems are forced to enter

Coordination: Level Loading

- Daily Surge Level:

• No Surge: still within capacity normally utilized for sick medical pts with appropriate staffing
• Level 1: utilizing other ICUs that we usually don't (CCU/SICUs/NeuroICU- or stepdown), due to space or staffing OR have no ventilator shortage anticipated in the next week
• Level 2: utilizing atypical spaces such as PACU/PICU/Other OR anticipate ventilator shortage within days
• Level 3: utilizing extraordinary spaces (OR/general wards/parking lot) OR running out of ventilators imminently
• Level 4: utilizing ALL extraordinary space to maximum capacity (each operating room has multiple ICU patients, ambulatory peri-op spaces are used as ICU space, etc) OR there are <3 ventilators remaining in the hospital OR patients are doubled/tripled up in typical ICU spaces designed for one patient
• Level 5: No space available for ICU patients OR no ventilators available in hospital

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Daily surge levels across network hospitals

Critical Care Council: SURGE STATUS Daily Report

FACILITY	3/23/2020	3/24/2020	3/25/2020	3/26/2020	3/27/2020	3/28/2020	3/29/2020	3/30/2020	3/31/2020	4/1/2020	4/2/2020	4/3/2020	4/4/2020	4/5/2020	4/6/2020	4/7/2020	4/8/2020	4/9/2020	4/10/2020	4/11/2020	4/12/2020	4/13/2020	4/14/2020	4/15/2020	4/16/2020	4/17/2020	4/18/2020	4/19/2020	4/20/2020	4/21/2020	4/22/2020	4/23/2020
	level 2	level 2	level 2	level 3	level 2	level 2/3	level 2	level 2/3	level 2/3	level 2/3	level 3	level 3	level 3	level 3	level 3	level 3	level 3/4	level 3/4	level 3/4	level 3/4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
	level 1	level 1	level 1	level 1/2	level 2	level 2	level 2	level 2	level 1/2	level 2/3	level 2/3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	Level 4	Level 4	level 3/4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
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	level 1	level 2	level 2	level 2/3	level 3	level 3	level 3	level 3	level 3	Level 4	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3/4	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 2
	level 1	level 1	level 1	level 1	level 2	level 2	level 3	level 2/3	level 2/3	level 2/3	level 2/3	level 3/4	level 3	level 3	level 3	level 3/4	level 3/4	level 3/4	level 3/4	level 3/4	level 3/4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4
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		level 1	level 1	level 1/2	level 2	level 2	level 2	level 2	level 2	level 2	level 2	level 2	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3	level 3
	level 1	No Surge	No Surge	No Surge	level 2	level 2	level 2	level 2	level 2	level 2	level 2	level 3	level 3	level 2	level 2/3	level 2/3	level 3	level 3	level 3	level 2	level 2	level 2/3	Level 4	Level 4	level 2	level 2	level 2	level 3	level 3	level 2	level 2	level 2
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	level 2	level 2	level 2	level 3	level 3	level 3	level 3	level 3	level 3	level 3/4	level 3	Level 4	level 3/4	level 3	level 3	level 3	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4/5	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	Level 4	level 3	level 3

- >800 patients transferred across the system, including ~600 to Bellevue
- >70 ICU patients transferred across the system, including ~60 to Bellevue

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Critical Care Staff

- Existing Critical Care Staff
- Liberated Critical Care Staff
- Liberated non-critical Care staff
- New Staff

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Existing Critical Care Staff

- All hands on deck
- Need for clinical leadership/administration
- Role of Trainees

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Liberated Critical Care Staff

- Trauma/critical care
- Anesthesia/critical care
- Nurse educators, leadership

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Liberated Non-Critical Care Staff

- Ambulatory Care
- Operating Room/Surgery

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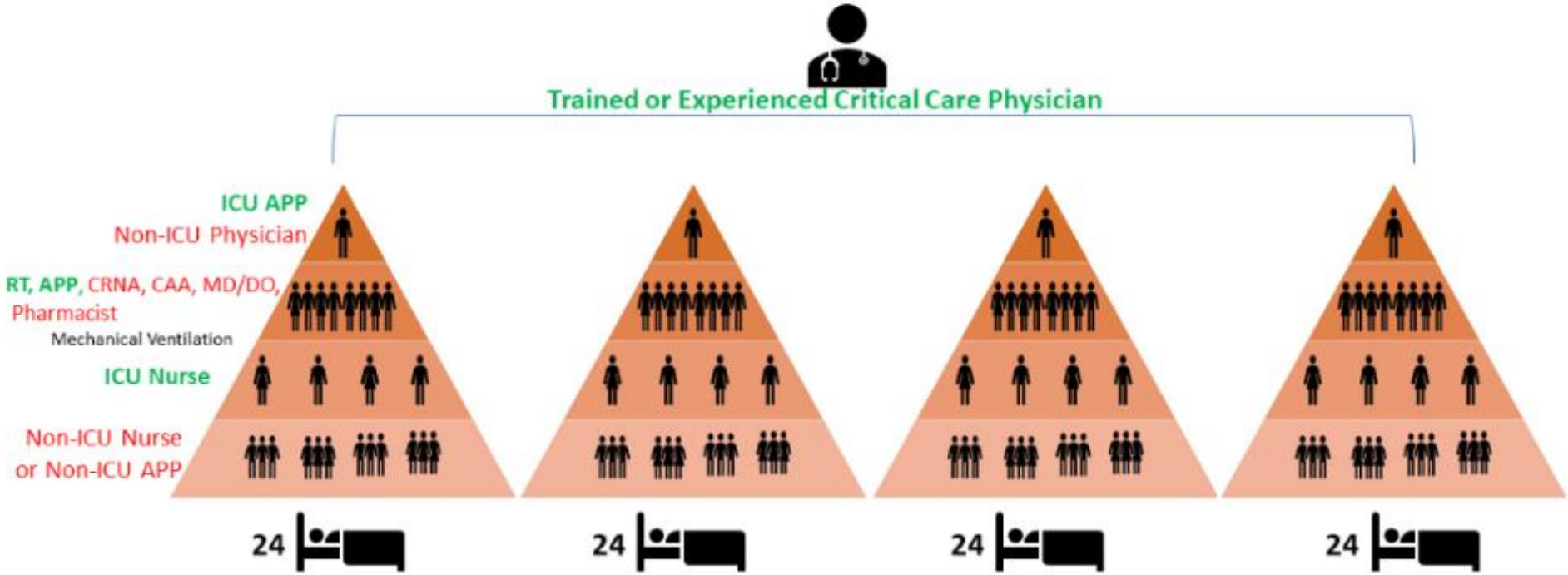
New Staff

- Breath of fresh air, good will
- Challenges:
  - Team structure & assignments
  - Uniform approach, practice
  - PPE

Society of Critical Care Medicine
The Intensive Care Professionals

Tiered Staffing Strategy for Pandemic

Requiring Significant Mechanical Ventilation



SCCM | United States Resource Availability for COVID-19

Modified from the Ontario Health Plan for an Influenza Pandemic Workgroup. *Critical Care During a Pandemic.*

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Delegate and build teams

- ECMO Team
- Tracheostomy Team
- Proning Team
- Palliative Care Team
- Procedure Team
- Renal Replacement Therapy Team
- Site Manager Team

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DON'T SAY NO TO ANYONE!

- Orthopedic Surgeons= Proning Teams
- Outpatient Nurse Practitioners= CVVH support
- Anesthesia= Procedure Team (Airway, CVL, A-line, HD line, OG tube)
- Trauma Team= Tracheostomy Team
- Psych/Palliative Care= Family Contact Team
- Students= "Write up papers" Team

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Critical Care Supplies

- Expected Shortages
- Unexpected Shortages

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Critical Care Supplies

Support	Anticipated	Unanticipated
Respiratory Support	Conventional Ventilators	Humidifiers, circuits, ABG syringes
Need for deep sedation	-	IV pumps, fentanyl, paralytics
Renal Replacement Therapy	CVVH machines	Circuit, filters, staff
Others		Cooling blankets, tracheostomy kits

Bellevue Hospital Center ICU Disaster Plan

Purpose:
To provide a structured plan for situations that may strain our ability to deliver critical care services and to ensure that any allocation of limited resources occurs in a way that is just and maximizes the benefit of those resources.

Scope:
Adult ICU patients at Bellevue Hospital

Introduction:
Delivery of critical care services is very resource intensive as it requires a complex coordination of trained personnel, equipment, supplies, and capable space. It is conceivable, and perhaps inevitable, that situations will arise in which the number of patients requiring any one of these critical care services will overwhelm our local ability to deliver it. This document is intended to guide our management of that situation to ensure that resources are allocated in a way that maximizes their benefit while respecting patient autonomy and providing compassionate, patient-centered care.

Step 3: Threshold for Triage of Resource Allocation
The trigger to begin triaging ICU resources will be when any of the above efforts have failed to increase capacity to meet the demand for critical care resources.

Step 4: Process of Resource Allocation:
Resources will be allocated to patients most likely to benefit from them. These steps are adapted from the NYS Life and Law Guidelines on Ventilator Allocation During a Pandemic Influenza Outbreak

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Conclusions & Future Directions

- Implementing Crisis Standards of Care on the fly was challenging
  - Guidance that could be operationalized
  - Knowledge/Familiarity
  - Coordination
  - Communication
- Toll on health care workers
- Steps forward

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Thank you!

John Hick, MD
Hennepin Healthcare

Framework for Resource Optimization Strategies

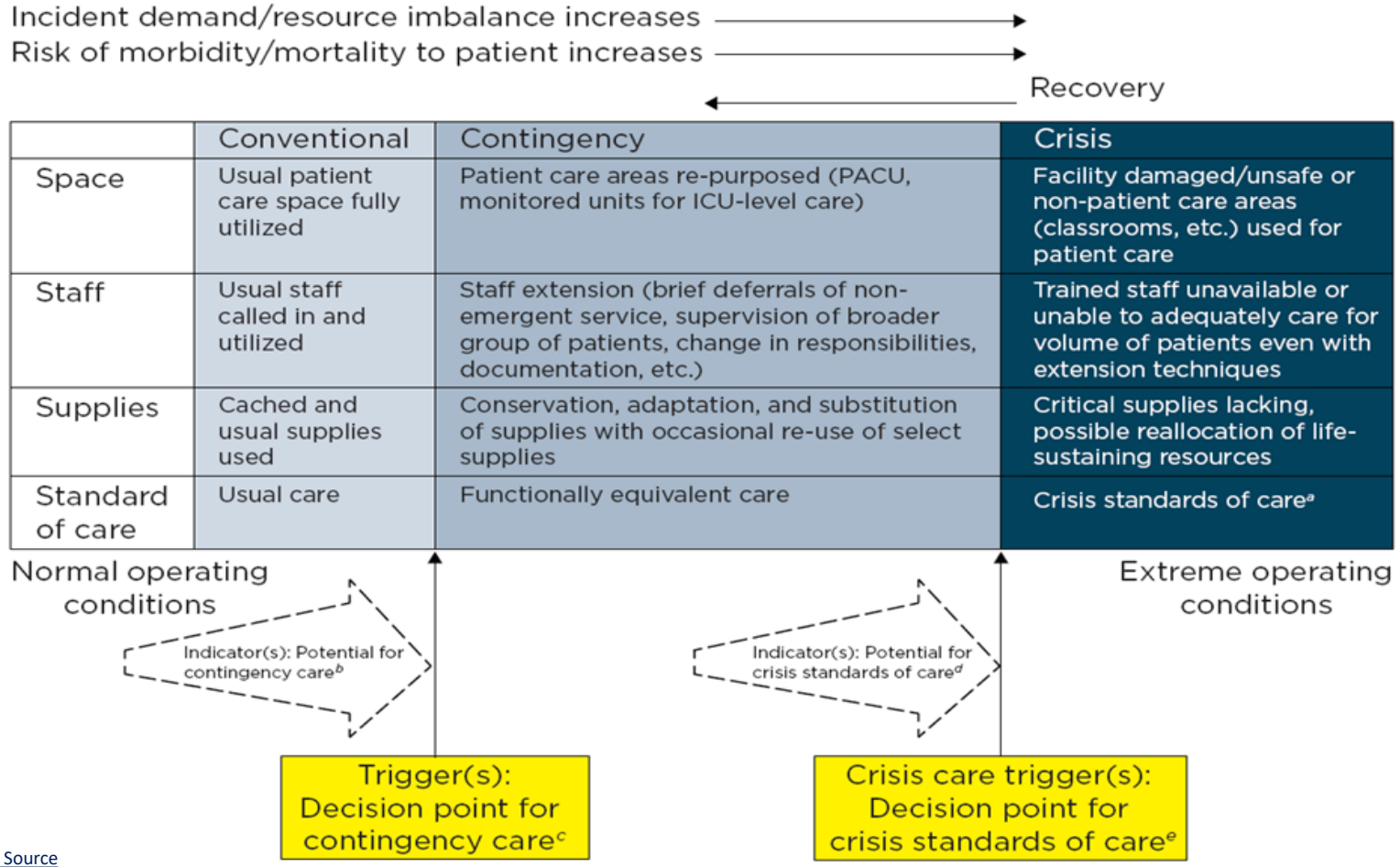
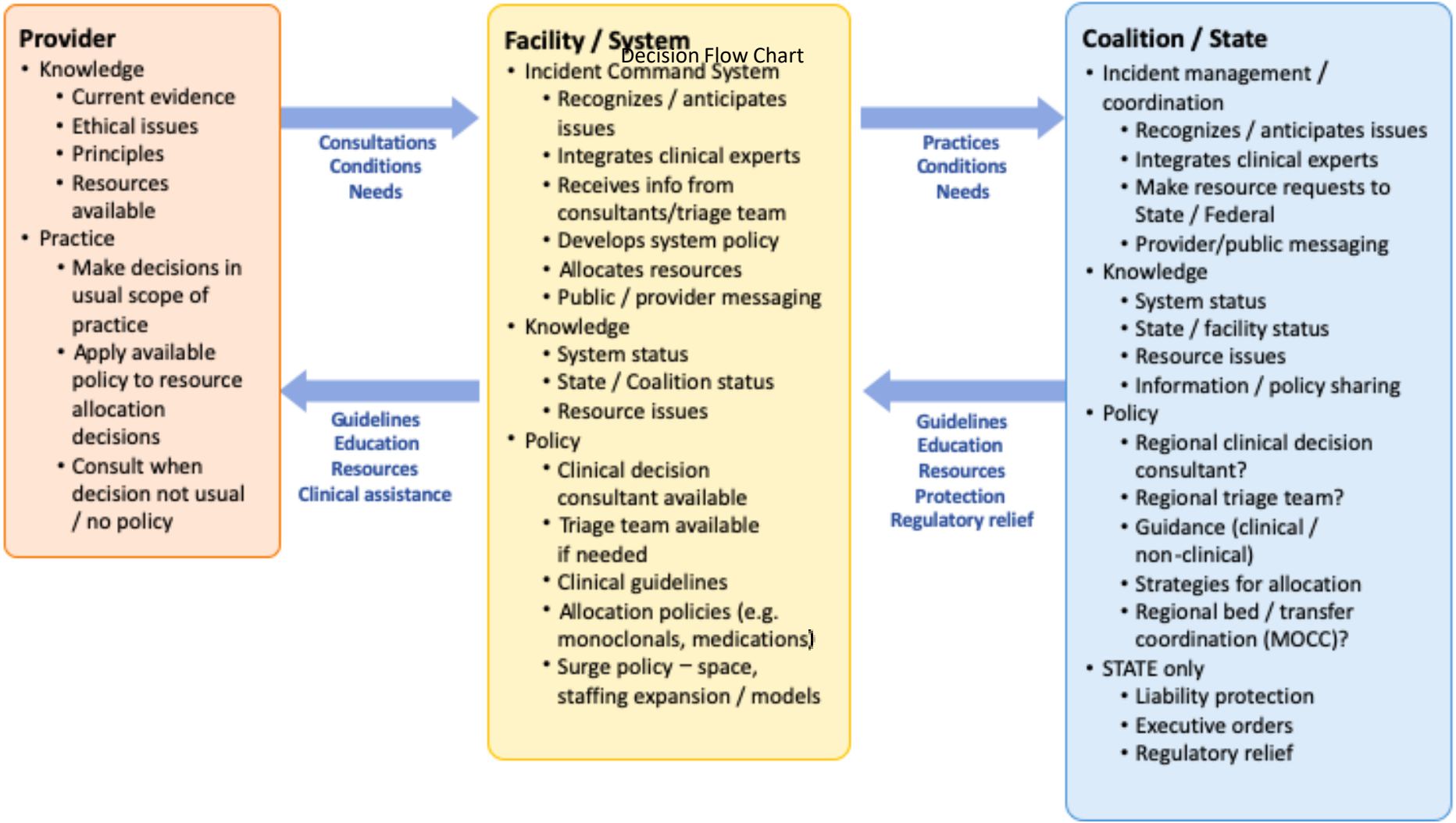


Figure Source

Key Points

- Too much emphasis on definitive triage (e.g., ventilators and “triage team”)
- “Bright lines” do not exist between contingency and crisis
- CSC exists at the bedside – decisions need to be made
- Avoid ad hoc decisions whenever possible
  - Elevate the issue
  - Reactive transition to proactive at facility/ coalition/ state level


Decision Flow Chart
Provider
• Knowledge
• Current evidence
• Ethical issues
• Principles
• Resources available
• Practice
• Make decisions in usual scope of practice
• Apply available policy to resource allocation decisions
• Consult when decision not usual / no policy
Consultations
Conditions
Needs
Guidelines
Education
Resources
Clinical assistance
Facility / System
• Incident Command System
• Recognizes / anticipates issues
• Integrates clinical experts
• Receives info from consultants/triage team
• Develops system policy
• Allocates resources
• Public / provider messaging
• Knowledge
• System status
• State / Coalition status
• Resource issues
• Policy
• Clinical decision consultant available
• Triage team available if needed
• Clinical guidelines
• Allocation policies (e.g. monoclonals, medications)
• Surge policy – space, staffing expansion / models
Practices
Conditions
Needs
Guidelines
Education
Resources
Protection
Regulatory relief
Coalition / State
• Incident management / coordination
• Recognizes / anticipates issues
• Integrates clinical experts
• Make resource requests to State / Federal
• Provider/public messaging
• Knowledge
• System status
• State / facility status
• Resource issues
• Information / policy sharing
• Policy
• Regional clinical decision consultant?
• Regional triage team?
• Guidance (clinical / non-clinical)
• Strategies for allocation
• Regional bed / transfer coordination (MOCC)?
• STATE only
• Liability protection
• Executive orders
• Regulatory relief

Planning

- Incremental plan for staffing
  - Who, when, how
- Changes to unit policies, flexibility of practices
- Clinical decision support for bedside providers
  - Whenever decisions put patient at significant risk and/or are outside usual clinical practice scope
- Expectation management – staff and public
- Systems response – resources, structures, response
- Understand state protections and process/ “declarations”
- Advise against ad hoc/ implicit triage decisions

Rationing

Category	Conventional	Contingency	Crisis
Staff used	Usual staff on units	'Step over' staff with consistent training from other units (e.g. PACU to ICU)	'Step up' staff that do not usually care for patients of current acuity / requirements (e.g. intermediate or telemetry nursing to ICU)
Staffing ratios	Usual ratio nurse : patient	Ratio increase ≤ 150% of usual (e.g. from 1:6 up to 1:9)	Ratio increase > 150%
Tiered staffing	No	No	Yes – less experienced staff supervised by normal unit staff in 'pyramid' model (e.g. medical/surgical nurses in ICU 1:2 with ICU nurse supervising three RN : 6 patients)
COVID-19 status	Quarantine / positives off work	Quarantined staff used for direct patient care	COVID + staff used for direct patient care
Volunteer / government providers utilized for direct patient care	No	No	Yes

Resources

- ASPR TRACIE COVID-19 Page
  - COVID-19 Crisis Standards of Care Resources
  - COVID-19 Patient Surge and Scarce Resource Allocation
- ASPR TRACIE Crisis Standards of Care Topic Collection
- ASPR COVID-19 Page
- CDC COVID-19 Page
- Coronavirus.gov

To Ask a Question

- Using the Zoom Webinar System
  - Click on the “Q&A” button.
  - Type your question in the “Q&A” box.
  - Submit your question.
- For media questions, please contact CDC Media Relations at 404-639-3286 or email media@cdc.gov.

Continuing Education

All continuing education for COCA Calls is issued online through the CDC Training & Continuing Education Online system at https://tceols.cdc.gov/

Those who participate in today's COCA Call and wish to receive continuing education please complete the online evaluation by **January 18, 2021,** with the course code **WC2922-121720**. The access code is **COCA121720.** Those who will participate in the on-demand activity and wish to receive continuing education should complete the online evaluation between **January 19, 2021** and **January 19, 2023** and use course code **WD2922-121720**. The access code is **COCA121720.**

Continuing education certificates can be printed immediately upon completion of your online evaluation. A cumulative transcript of all CDC/ATSDR CEs obtained through the CDC Training & Continuing Education Online System will be maintained for each user.

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_121720.asp

Upcoming COCA Calls

- **When: TOMORROW**, Friday, December 18 at 2 PM EST
- **Topic:** What Clinicians Need to Know About the Pfizer-BioNTech and Moderna COVID-19 Vaccines
- **For more information**: emergency.cdc.gov/coca/calls/2020/callinfo_121820.asp
- Subscribe to receive notifications about upcoming COCA calls or other COCA products and services at emergency.cdc.gov/coca/subscribe.asp
- Share call announcements with colleagues

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.

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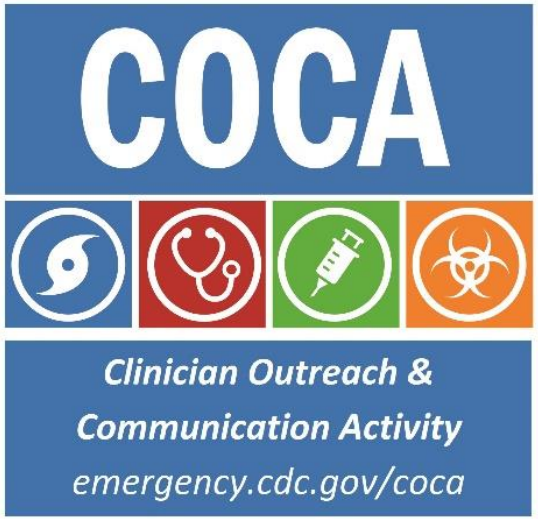
- **Receive information about:**
  - Upcoming COCA Calls
  - Health Alert Network (HAN) messages
  - CDC emergency response activations
  - Emerging public health threats
  - Emergency preparedness and response conferences
  - Training opportunities



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