

# COVID-19 PANDEMIC CRISIS STANDARDS OF CARE

COLORADO HOSPITAL ASSOCIATION  
APRIL 9, 2020

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## Today

- Colorado Crisis Standards of Care  
Dr. Matthew Wynia
  - COVID-19 Pandemic CSC  
Dr. Anuj Mehta
- Facilitated Q&A session

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## Virtual Experience Etiquette

Please mute your mics when you are not speaking.

Questions can be asked through the chat function throughout the session or by “raising your hand” during the Q&A section.

- Direct your question to the speaker
- Let us know who is asking (name, organization)

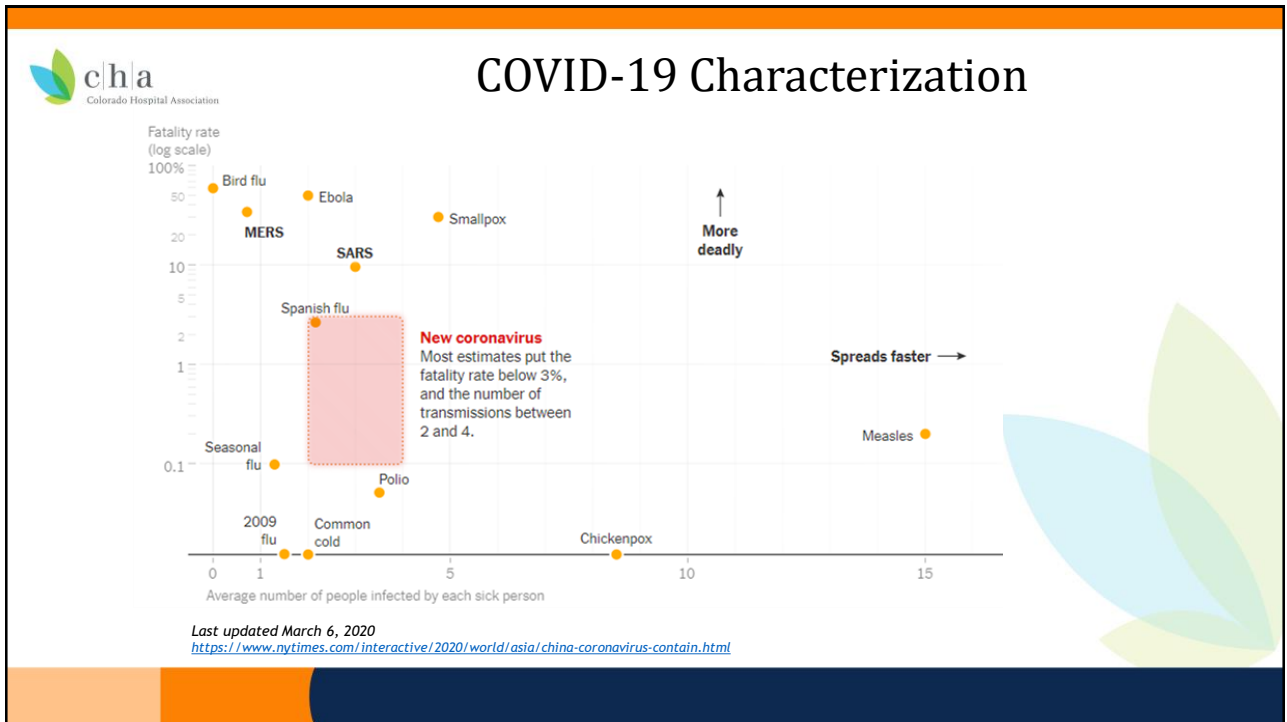


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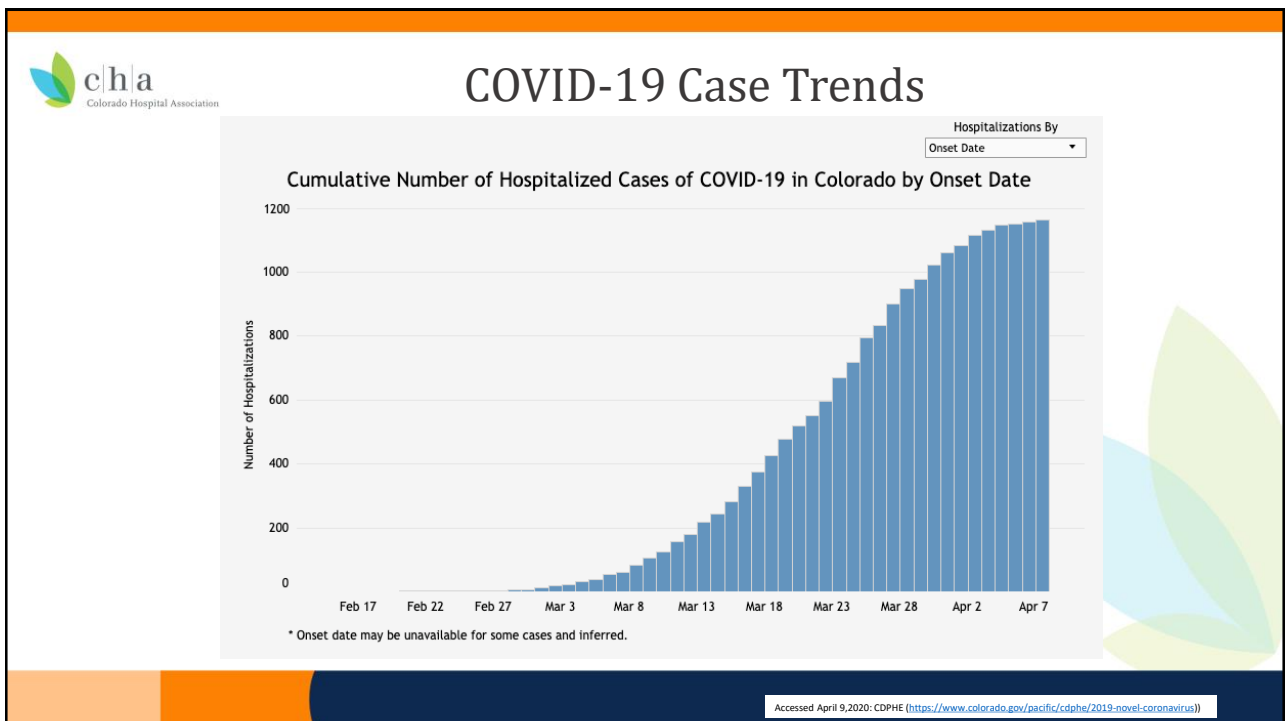
## COVID-19: State of Colorado



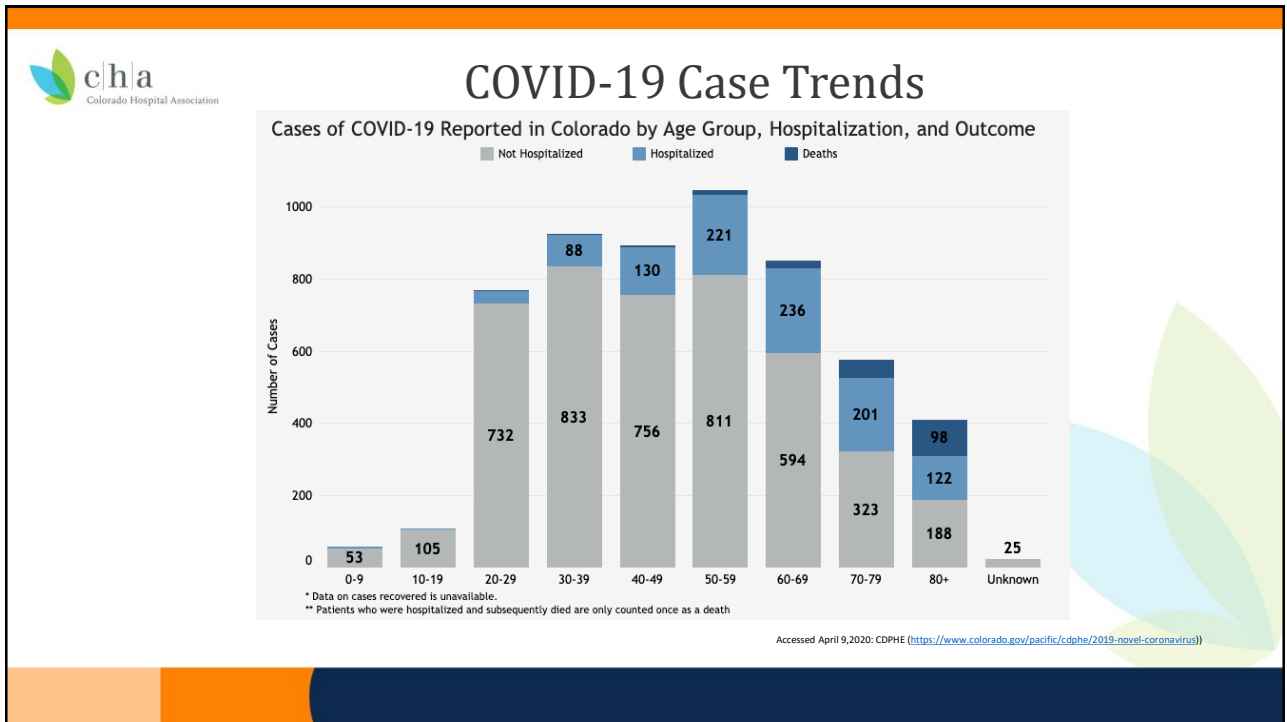
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# Crisis Standards of Care: Origins and Ethics

## Dr. Matthew Wynia

Professor of Medicine, University of Colorado School of Medicine  
 Director, Center for Bioethics and Humanities

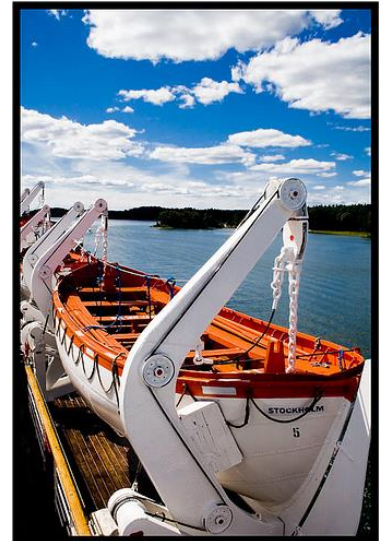


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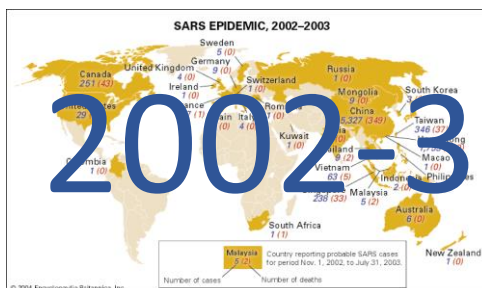
# Rules for rationing in crises

Yes, greatest good for the greatest number, but...

- Save the most lives
- Save the most *life years*
- Save the most *productive/quality* life years
- Women and children first
- First come, first served
- Market-based
- Protect the most vulnerable
- Promote social justice
- Maintain social order
- Minimize economic impact
- Ensure continuation of a good society
- Respect the dying
- Etc...



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Bioterrorism and Other Public Health Emergencies

Altered Standards of Care in Mass Casualty Events

Prepared for:  
Agency for Healthcare Research and Quality  
U.S. Department of Health and Human Services  
1600 Clifton Road, NE  
Atlanta, GA 30333  
www.aahrq.gov

Contract No. 290-04-0010

Prepared by:  
Health Systems Research, Inc.

AHRQ Publication No. 05-0043  
April 2005

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### Who should get flu shots?

The Centers for Disease Control has the following guidelines for who should get a flu vaccination. The CDC is considering revising these guidelines due to the shortage of supply announced Tuesday. Check with your physician for more information on how they apply to you or your family.

- \* People 50 and older
- \* Children 6 to 23 months old
- \* Women who are pregnant
- \* Health-care providers who have contact with flu patients
- \* People with chronic heart or lung conditions, including asthma
- \* People with weakened immune systems
- \* People hospitalized during the previous year with diabetes or chronic kidney disease
- \* Children 2 to 18 years old on long-term aspirin therapy

Source: CDC



New York seniors waiting for flu vaccine  
Photograph by Mario Tama/Getty Images

NATIONAL GEOGRAPHIC

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A18

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THE NEW YORK TIMES NATIONAL THURSDAY, JULY 20, 2006

## Accused Doctor Said to Have Faced Chaos at New Orleans Hospital

By CHRISTOPHER DREW and SHAILA DEWAN

NEW ORLEANS, July 19 — She arrived at Memorial Medical Center to treat several patients as Hurricane Katrina's winds were gathering and did not leave until days later, when the water and the temperature and the body count had risen beyond endurance.

By the time she was taken home, friends and family were looking for M. Pou was one of the few who left in a hospital that had become a nightmare.

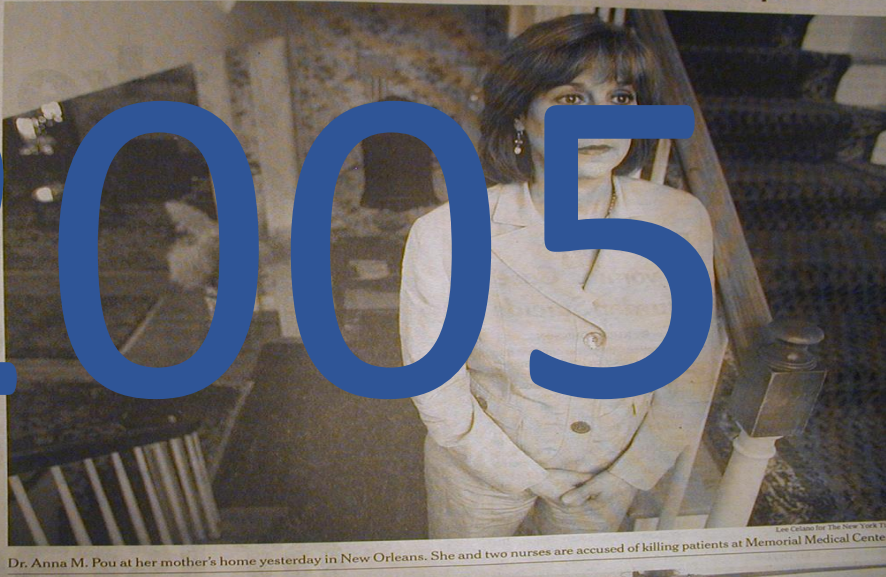
Overheated patients were dying around her, and only a few could be taken away by helicopter, the means of escape for the most frayed patients until the water receded. Medicines were running low, and with no electricity, patients' heart machines were running out of battery power. In the chaos, Dr. Pou was left to care for many patients she did not know.

But did she cross the line during those harrowing days, giving lethal injections to kill some patients who were in extreme distress? The attorney general of Louisiana says Dr. Pou did, and a jury on Tuesday recommended the death penalty.

Her supporters say that may not be another explanation: she was using drugs to try to calm and comfort patients who had nearly reached their limit.

Eugene Myers, a professor at the University of Pittsburgh who helped train Dr. Pou, said that what she had told him shortly after the hurricane sounded heroic.

He said Dr. Pou had told him that she and Lori Budo and Cheri Landry, two nurses who have also been arrested in the case, either helped evacuate the last patients or tried to make them comfortable with pain medications.



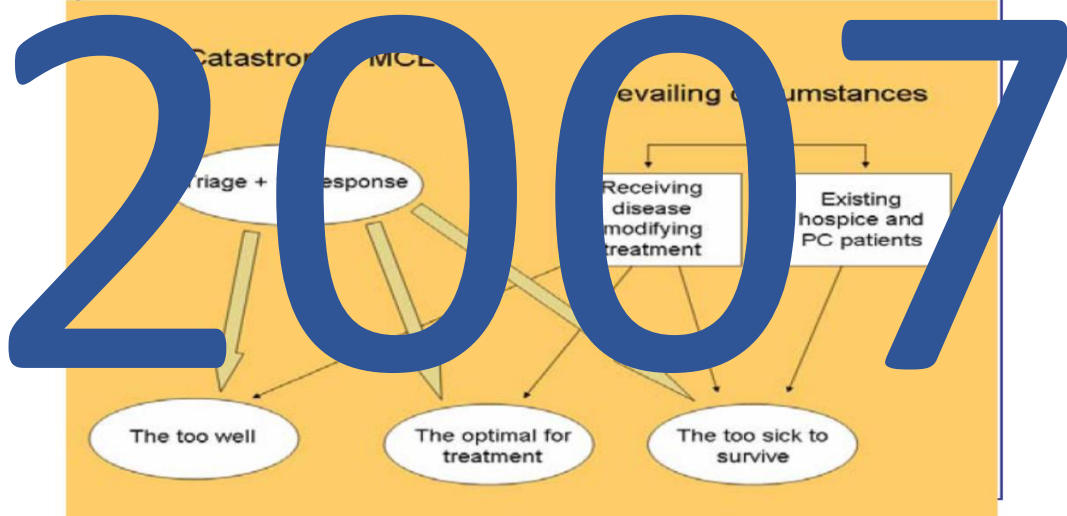
Dr. Anna M. Pou at her mother's home yesterday in New Orleans. She and two nurses are accused of killing patients at Memorial Medical Center.

Slide from Dan Hanfling, MD

Christopher Drew, Shaila Dewan, NYT, July 20, 2006, p.A18

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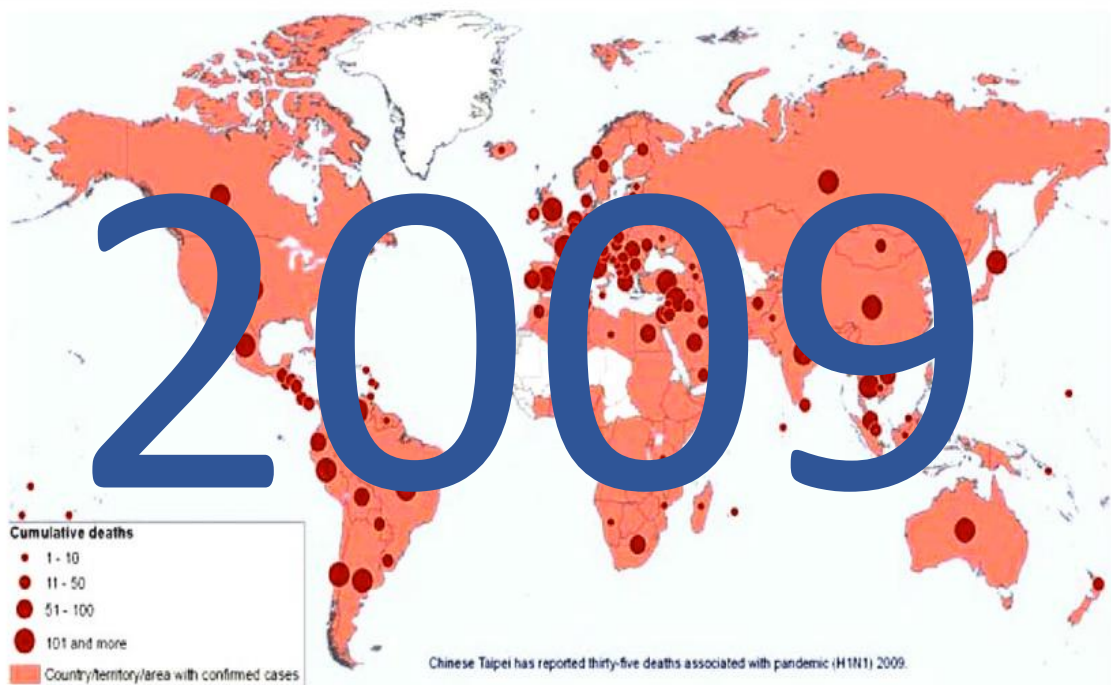
**Figure 1.  
Catastrophic MCE: Triage and Response**



Slide from Dan Hanfling, MD

<http://www.ahrq.gov/research/altstand>, 2007

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## Crisis Standards of Care

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.



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[www.nap.edu/catalog/12749.html](http://www.nap.edu/catalog/12749.html)



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## A Decade of Disasters

H1N1 Fall 2009	Haiti Earthquake Jan 2010	Joplin, MO Tornado May 2011	NY/NJ Superstorm Sandy Sept 2012	West Africa Ebola 2014/15	Houston, TX Hurricane Harvey August 2017	Puerto Rico Hurricane Maria September 2017	California Wildfires 2018
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Slide from Dan Hanfling, MD  
NASME CSC Workshop, November 2019

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## “Standard of Care”

- Legal *and* ethical obligation is to perform to highest standard a reasonable practitioner can achieve *under given circumstances*
- Disaster context  $\neq$  normal routine
- It can be impossible to attain usual levels of quality/operations when resources unavailable
  - Joint Commission: aim is “graceful degradation”

“Ethical norms in medical care do not change during disasters – health care professionals are always obligated to provide the best care they reasonably can under given circumstances”

- IOM CSC Report 2009



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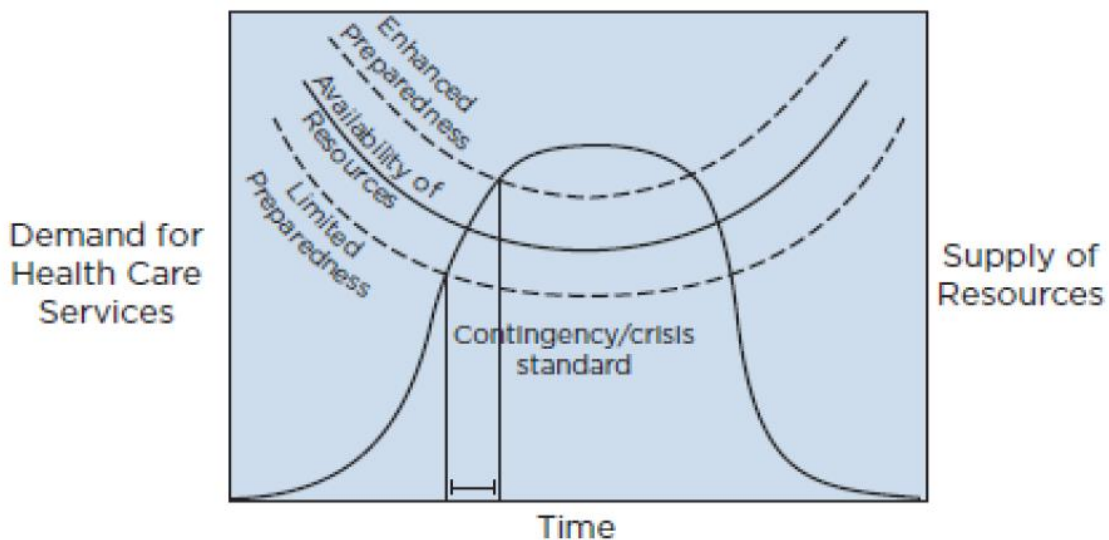
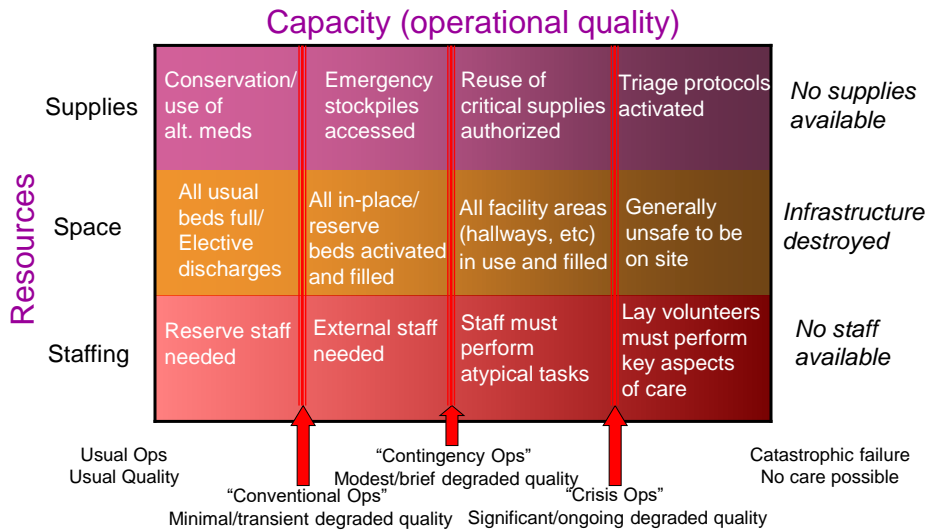


Figure 1: Demand for healthcare services and supply of resources as a function of time after disaster onset, taking into account care capacity as a function of time (Hanfling, Aletevovt, Viswanathan, & Gostin, 2012, pp. 42)

CDPHE All Hazards Internal Emergency Response and Recovery Plan.  
Annex B. Colorado Crisis Standards of Care Plan, December 20, 2017

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## “Triggers” - Drawing lines in a granular world



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# Substantive Principles and Procedural Principles

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### Substantive Principles: Ethical norms to guide decisions

<b>Fairness</b>	<ul style="list-style-type: none"> <li>• Seek fair allocation of resources, fair distribution of benefits and burdens</li> <li>• Give special attention to vulnerable communities more likely to suffer excess harm in disasters</li> <li>• Ensure fairness of decision making processes (below); some unequal outcomes inevitable</li> </ul>
<b>Duty</b>	<ul style="list-style-type: none"> <li>• Accept the professional duty to treat, even at some risk to oneself</li> <li>• Promote respect for the dying, treat them as you would wish to be treated</li> <li>• Deliver best care possible given available resources</li> </ul>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>• Recognize the role of leader involves stewardship of shared resources, which may be very limited</li> <li>• Make decisions with input from others, don't make difficult ethical decisions alone</li> <li>• Promote respect for responders and other professionals, who are working under extreme stress</li> </ul>
<b>Proportionality</b>	<ul style="list-style-type: none"> <li>• Ensure good situational awareness before making triage or other rationing decisions</li> <li>• Restrictions of liberty should be commensurate with expected benefits</li> <li>• Use best-available data to assess benefits and harms</li> </ul>
<b>Protection</b>	<ul style="list-style-type: none"> <li>• Strive to maintain social order during the disaster, role model civility and mutual respect</li> <li>• Seek continuation of good society after the disaster, recovery starts with preparation and</li> </ul>

Matthew Wylie, MD, MPH

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Hurricane Katrina

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# The Principle of Proportionality

People charged with performing triage should not restrict access to care for any given individual more than is absolutely required by the situation.

Individuals needs and available supply of resources are constantly evolving – which means that **doing triage ethically requires:**

- repeated assessments
- excellent situational awareness



  
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and Humanities  
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## Procedural Principles: Ethical processes to follow when making decisions

<b>Inclusion</b>	<ul style="list-style-type: none"> <li>Engage affected stakeholders in both planning and response to the extent possible given the circumstances</li> <li>Update and share knowledge with relevant stakeholders as the situation evolves</li> </ul>
<b>Transparency</b>	<ul style="list-style-type: none"> <li>Develop and share principles for guiding difficult decisions with all stakeholders, both before and during disaster</li> <li>Openly acknowledge that autonomy, ownership of resources, and fidelity in the patient-professional relationship are often less dominant (but still not ignored) values during catastrophic disasters</li> </ul>
<b>Consistency</b>	<ul style="list-style-type: none"> <li>Use the same decision process over time when possible; the information used in decision making will evolve</li> <li>Like circumstances should be treated alike, while differences are respected and integrated in decisions only when relevant</li> </ul>
<b>Accountability</b>	<ul style="list-style-type: none"> <li>Optimize due process, use formal notice of decisions and provide opportunities to voice objections to a neutral arbiter</li> <li>Be clear about who is responsible for making specific decisions</li> <li>Balance accountability with compassion for those forced to make heart-wrenching decisions</li> </ul>

Matthew Wynia, MD, MPH

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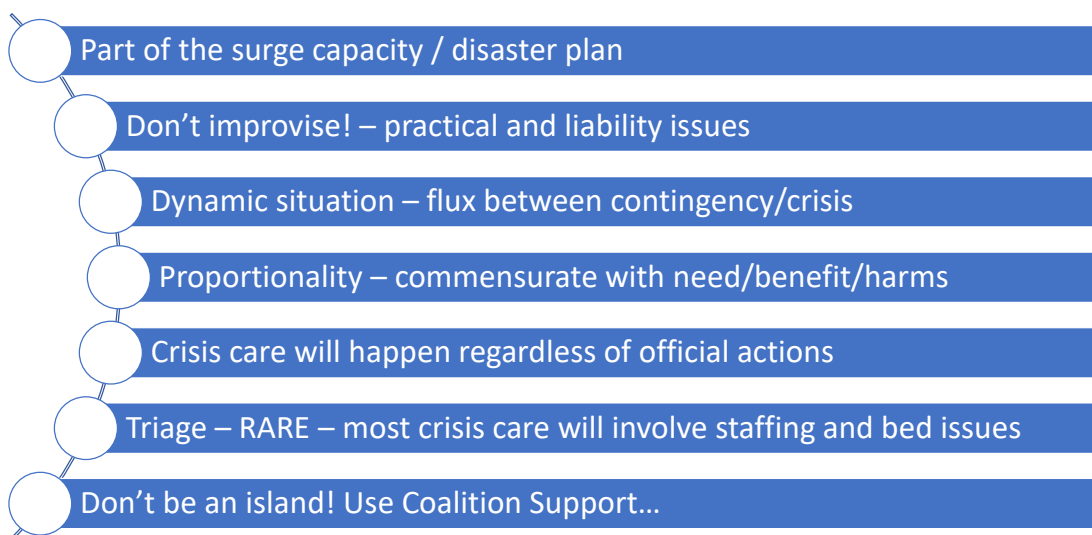
## If you try to improvise a plan...

- Cognitive stress reduces problem-solving capacity by up to 80%
  - Task lock – default to familiar rather than adaptive strategies
  - Panic – jumping to extreme triage when not warranted
  - Paralysis – delay reporting or making decisions, particularly if authority unclear
- Large delays in mobilizing resources vs. automatic mutual aid
- Liability – there is a *duty to plan* for recognized hazards

Slide adapted from John Hick, MD

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## Key Points

- 
- Part of the surge capacity / disaster plan
  - Don't improvise! – practical and liability issues
  - Dynamic situation – flux between contingency/crisis
  - Proportionality – commensurate with need/benefit/harms
  - Crisis care will happen regardless of official actions
  - Triage – RARE – most crisis care will involve staffing and bed issues
  - Don't be an island! Use Coalition Support...

Slide adapted from John Hick, MD

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# COVID-Specific Recent Guidance

**VIEWPOINT**

**A Framework for Rationing Ventilators and Critical Care Beds During the COVID-19 Pandemic**

**Douglas B. White, MD, MAS**  
Program on Ethics and Decision Making in Critical Illness, The CHSMA Center, Department of Critical Care Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania.

**Bernard Lee, MD**  
The Grumet Foundation, New York, New York, and University of California, San Francisco.

**Supplement content**

**As the coronavirus disease 2019 (COVID-19) pandemic intensifies, additional allocation criteria to some**

*The NEW ENGLAND JOURNAL of MEDICINE*

**SOUNDING BOARD**

## Fair Allocation of Scarce Medical Resources in the Time of Covid-19

Ezekiel J. Emanuel, M.D., Ph.D., Govind Persad, J.D., Ph.D., Ross Upshur, M.D., Daniel J. Glickman, B.A., and Peter P. Phillips, M.D.

DISCUSSION PAPER

**Duty to Plan: Health Care, Crisis Standards of Care, and Novel Coronavirus SARS-CoV-2**

**John L. Hick, MD**, Hennepin Healthcare and University of Minnesota; **Dan Hanfling, MD**, In-Q-Tel; **Matthew K. Wynia, MD**, University of Colorado; and **Andrew T. Pavia, MD**, University of Utah

March 5, 2020

Disclaimer: The views expressed in this paper are those of the authors and not necessarily of the authors' organizations, the National Academy of Medicine (NAM), or the National Academies of Sciences, Engineering, and Medicine (the National Academies). This paper is intended for informational purposes only and does not constitute an official position of the National Academies.

Subject Matter Experts' Advisory Panel for the Governor's Expert Emergency Epidemic Response Committee on Crisis Standards of Care Guidelines for Hospitals for the COVID-19 Pandemic

Draft Version 0.9  
Date: April 4, 2020  
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- II. Key Principles Prior to Implementation of Crisis Standards of Care
- III. Crisis Standards of Care Triage Team Structure
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- V. Triage Process
  - a. Types of Triage
  - b. Mechanical Ventilation
  - c. Hospital Transfers
  - d. ICU Admissions
  - e. Re-allocation of Ventilators
- VI. Personal Protective Equipment
- VII. Cardiopulmonary Resuscitation (CPR) Guidance
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# Crisis Standards of Care: Making Triage Decisions

## Dr. Anuj Mehta

Assistant Professor, Pulmonary and Critical Care  
National Jewish Health, Denver Health & Hospital Authority,  
University of Colorado School of Medicine



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## Crisis Standards of Care: Making Triage Decisions

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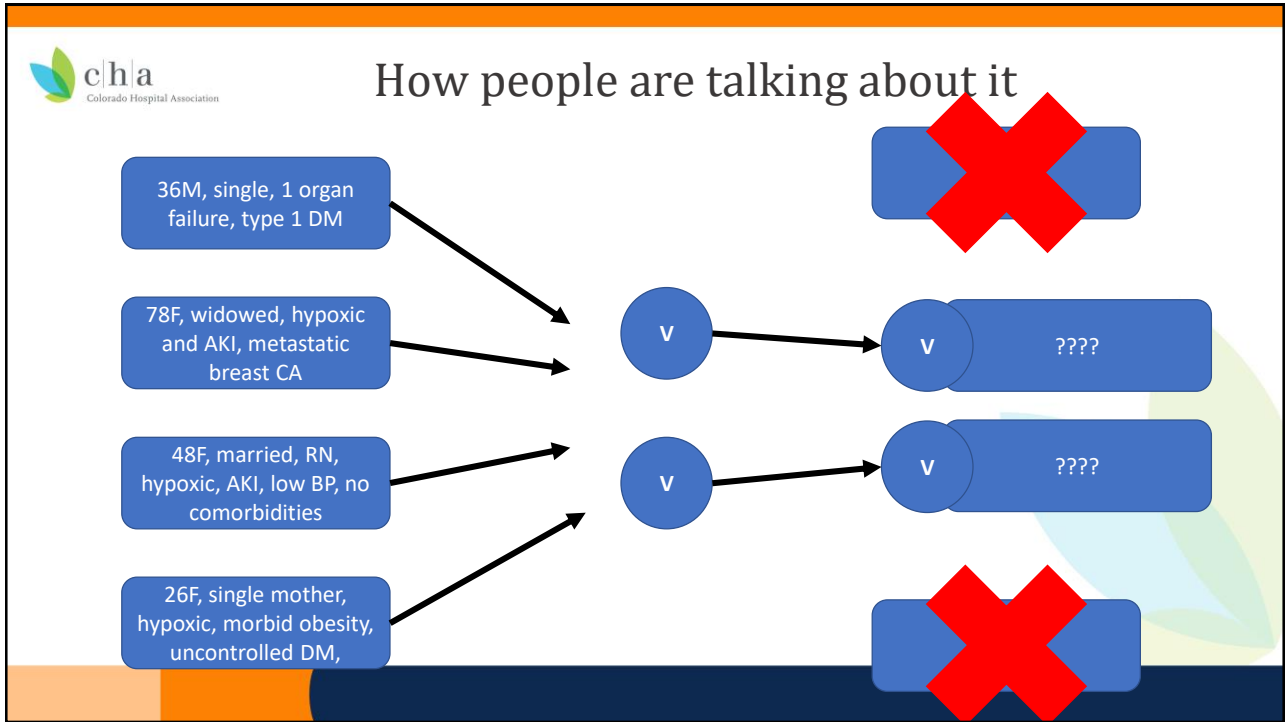
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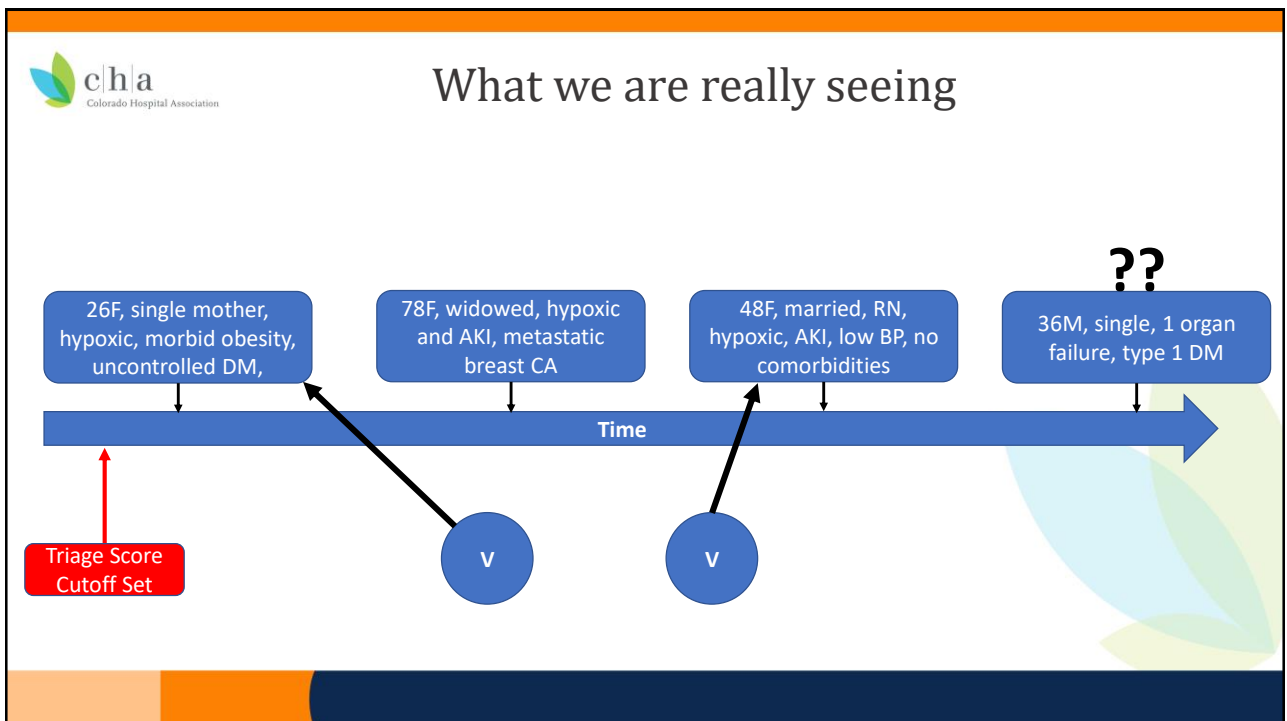
- Hopefully we never get there
- Scoring systems do not provide important information on making hard decisions
- Dynamics of the epidemic
- Extending the Ventilator Supply through Re-Allocation
- Operationalization



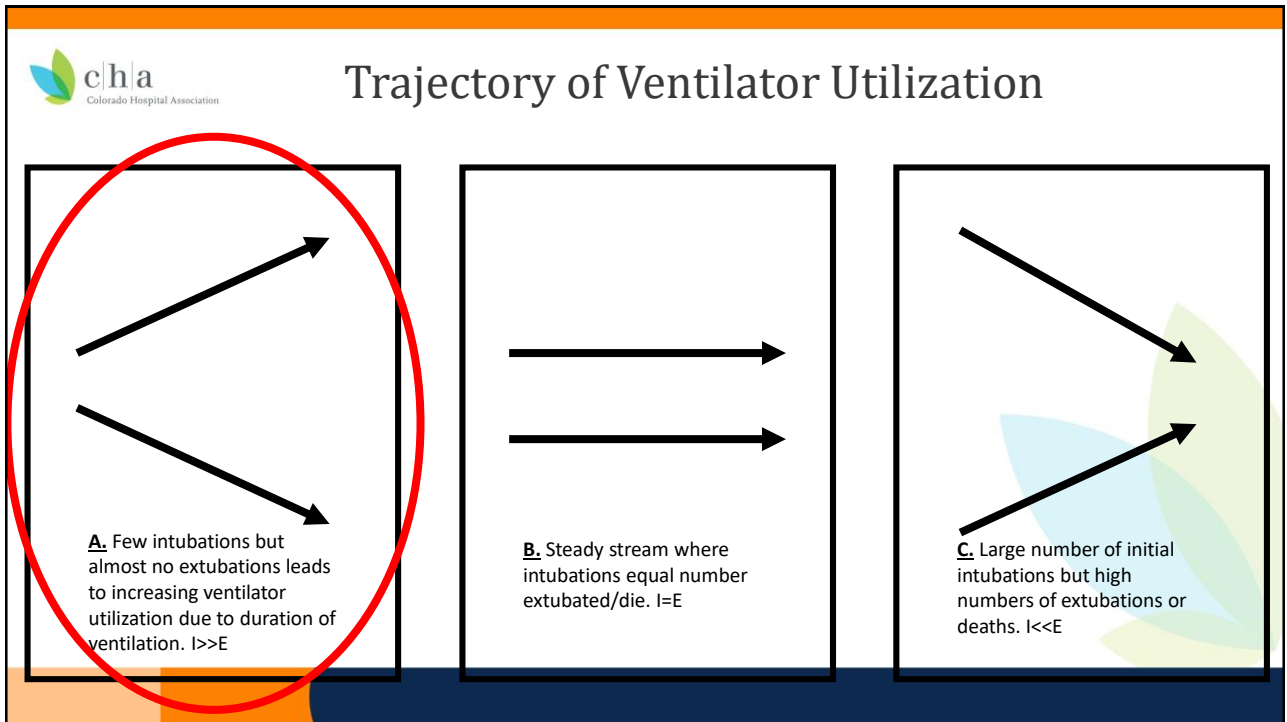
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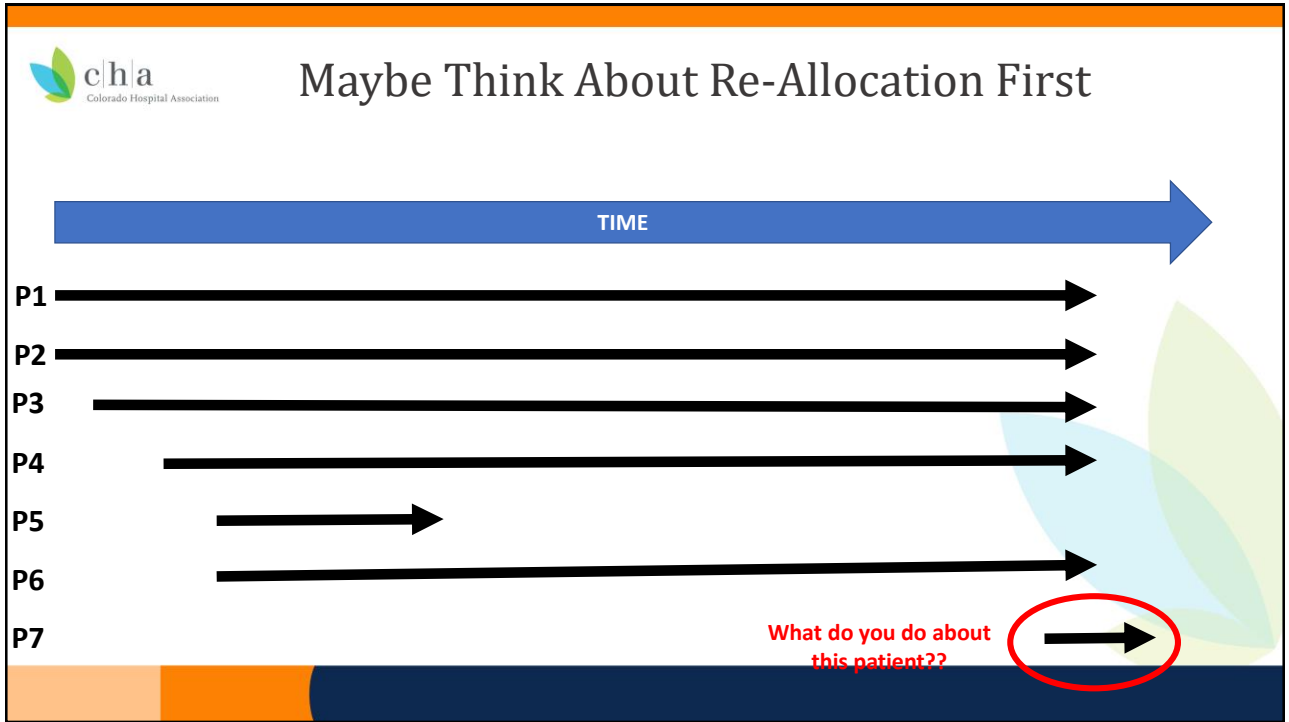
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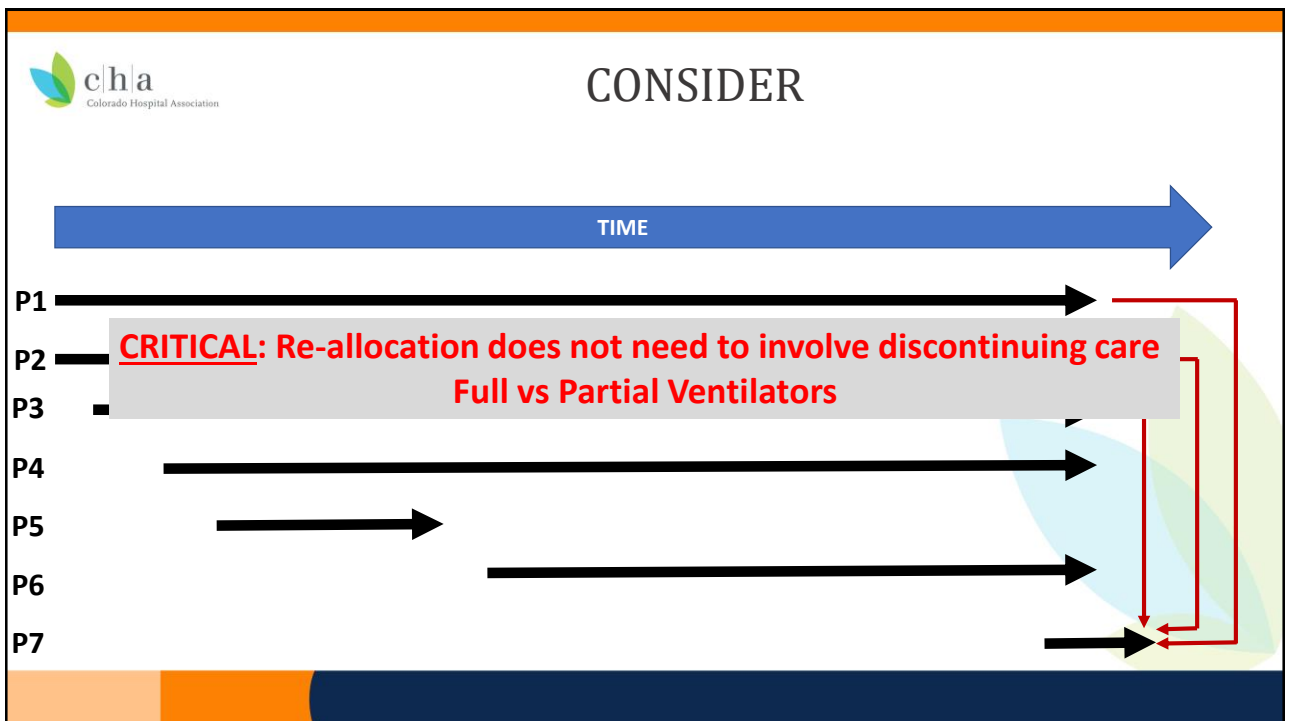
## Re-Allocation: Extending the Supply

- Full Ventilators
  - PB 840
  - PB 980
  - Hamilton G5
  - Draeger V500
- Partial Ventilators
  - Philips V60
  - Trilogy 202
  - Anesthesia Machines
  - Transport Ventilators
  - Disposable Resuscitator e.g. Vortran GO2VENT

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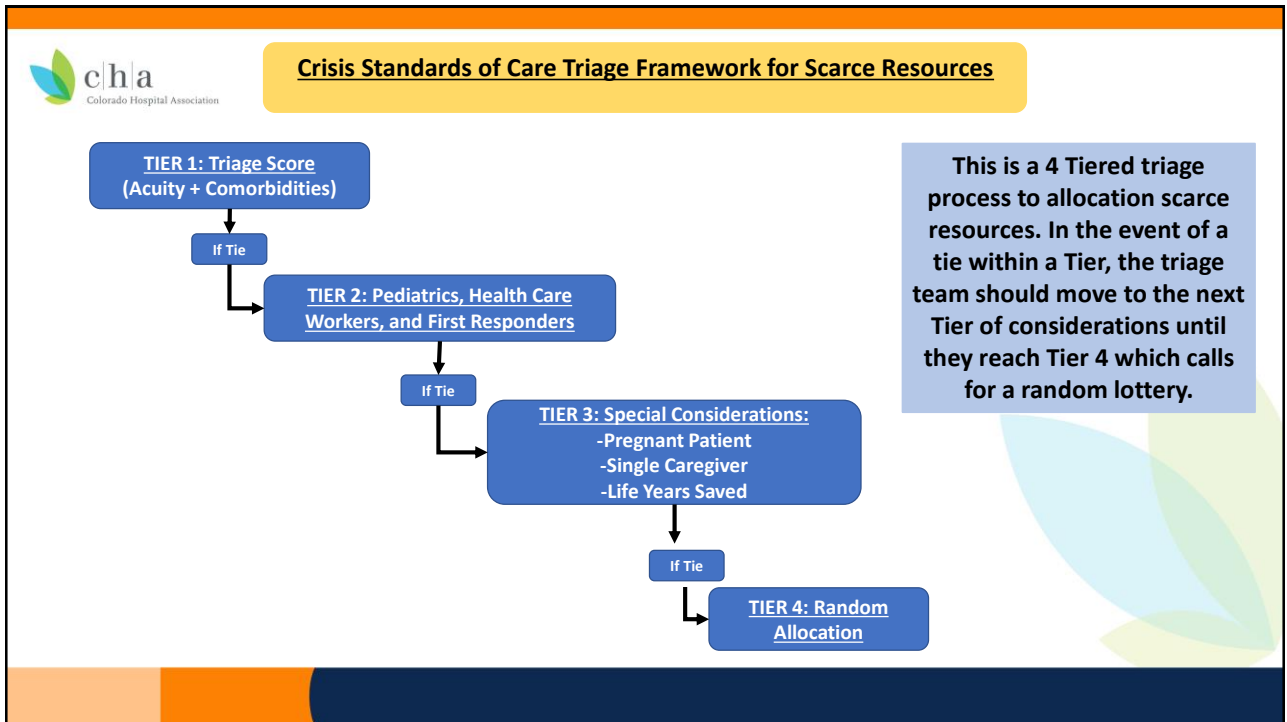


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**Example 1**

Principle	Specification	Point System <sup>A</sup>				
		0	1	2	3	4
Save the most lives	Prognosis for short-term survival (SOFA score <sup>B</sup> )	X	SOFA score < 6	SOFA score 6-9	SOFA score 10-12	SOFA score > 12
Save the most life-years	Prognosis for near-term survival (Modified Charlson Comorbidity Index Score <sup>C,D</sup> )	0	1-2	3-5	6-7	≥8

**Example 2**

Principle	Specification	Point System <sup>A</sup>			
		1	2	3	4
Save the most lives	Prognosis for short-term survival (SOFA score <sup>B</sup> )	SOFA score < 6	SOFA score 6-9	SOFA score 10-12	SOFA score > 12
Save the most life-years	Prognosis for near and long-term survival (medical assessment of comorbid conditions)	...	Major comorbid conditions with substantial impact on long-term survival	...	Severely life-limiting comorbid conditions; death likely within 1 year

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## Adult SOFA Score (Adults $\geq 18$ years)

Variables	POINTS				
	0	1	2	3	4
<b>Respiratory</b> P <sub>a</sub> O <sub>2</sub> /FiO <sub>2</sub> , mmHg	>400	$\leq 400$	$\leq 300$	$\leq 200^A$	$\leq 100^A$
<b>Coagulation</b> Platelets $\times 10^3/\mu\text{L}$	>150	$\leq 150$	$\leq 100$	$\leq 50$	$\leq 20$
<b>Liver</b> Bilirubin, mg/dL	<1.2	1.2-1.9	2.0-5.9	6.0-11.9	>12.0
<b>Cardiovascular Hypotension<sup>B</sup></b>	No Hypotension	MAP < 70 mm Hg	Norepinephrine $\leq 0.03$ Dopamine $\leq 5$ OR dobutamine any dose	Dopamine > 5 OR Epinephrine $\leq 0.1$ OR Norepinephrine $\leq 0.1$	Dopamine $\geq 15$ OR Epinephrine > 0.1 OR Norepinephrine > 0.1
<b>Central Nervous System</b> Glasgow Coma Scale	15	13-14	10-12	6-9	<6
<b>Renal</b> Creatinine, mg/dL OR UOP (mL/day)	<1.2	1.2-1.9	2.0-3.4	3.5-4.9 OR UOP < 500	> 5 OR UOP < 200

Abbreviations: P<sub>a</sub>O<sub>2</sub>, partial pressure of oxygen in the arterioles, FiO<sub>2</sub> – fraction of inspired oxygen, MAP – mean arterial pressure, UOP – urine output

<sup>A</sup>With mechanical ventilation or other form of artificial ventilation

<sup>B</sup>On vasopressor for at least 1 hour. Doses are given as  $\mu\text{g/kg/min}$

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## Modified Charlson Comorbidity Index

Variable	Score
<b>Age</b>	
<50	+0
50-59	+1
60-69	+2
70-79	+3
$\geq 80$	+4
Chronic Heart Failure	+2
Dementia	+2
Chronic Pulmonary Disease	+1
Connective Tissue Disease	+1
<b>Liver Disease<sup>A</sup></b>	
Mild	+2
Moderate or Severe	+4
Diabetes Mellitus with Chronic Complications	+1
Hemiplegia	+2
Renal Disease	+1
Metastatic Solid Tumor	+6
Any active malignancy including leukemia/lymphoma	+2
AIDS <sup>B</sup>	+4

<sup>A</sup>Severe=cirrhosis, portal hypertension, history of variceal bleeding. Moderate=cirrhosis, portal hypertension. Mild=chronic hepatitis or cirrhosis without portal hypertension

<sup>B</sup>AIDS defined as: Current CD4 count < 200. Opportunistic infection in the last 1 month, active AIDS defining illness such as lymphoma or Kaposi's Sarcoma

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## Determining Cutoff Scores

### Example 1

Number of Critical Care Ventilators Available	3
Number of Critical Care Ventilators Expected to Become Available	2
Average CSC Triage Score of Patients at Time of Intubation in last 3 Days	4
Average Number of Patients Intubated Per Day in Last 3 days	4

In this scenario there are expected to be 5 ventilators for the day but 2 may not be available until later in the day. If the rates for intubation are stable or slightly increasing, a CSC Triage Score cutoff could be set at 5. Patients with a score of 5 and above (much sicker than those presenting in the prior 3 days) would either be triaged to a less standard ventilator or would receive a ventilator but would be rapidly re-triaged if less sick patients presented.

### Example 2

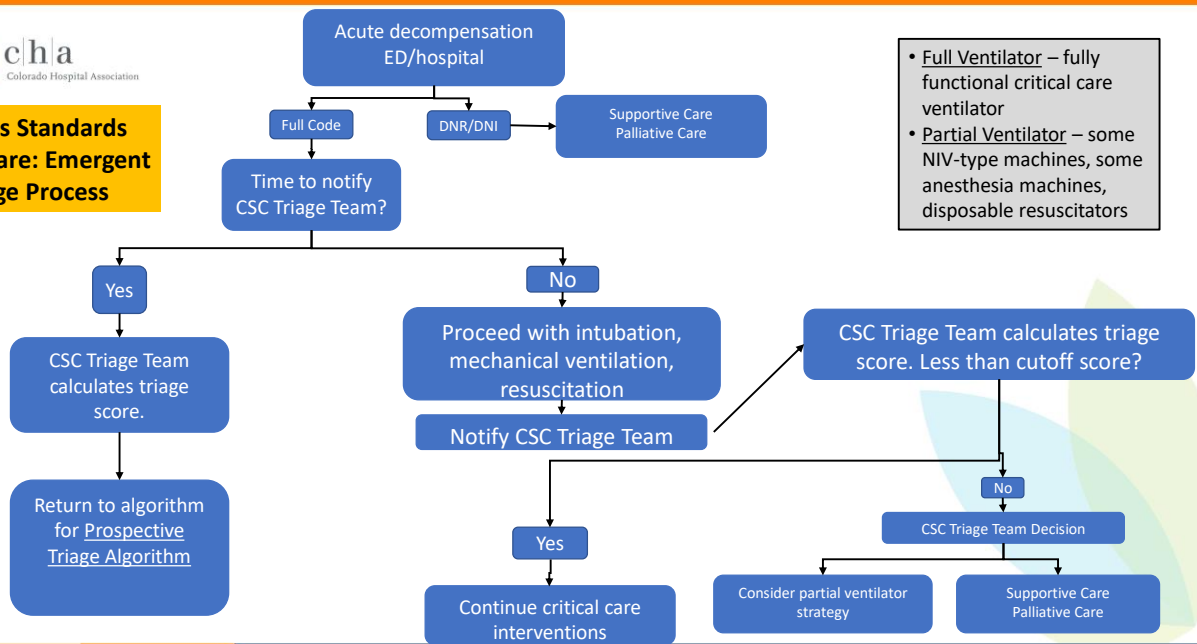
Number of Critical Care Ventilators Available	1
Number Of Critical Care Ventilators Expected to Become Available	1
Average CSC Triage Score of Patients at Time of Intubation in last 3 Days	4
Average Number of Patients Intubated Per Day in Last 3 days	4

In this scenario, only 2 ventilators are expected to become available for the day with an expected need of 4. In this scenario a CSC Triage Score cutoff of 3 or 4 could be used. Given that patients with a score of 3 are not very sick, it could prompt a discussion of re-allocation of a ventilator from a patient that has failed a therapeutic trial or consideration for transfer to an institution with more resources. It would also indicate that patients with high triage scores (e.g.  $\geq 6$ ) would not receive a ventilator.

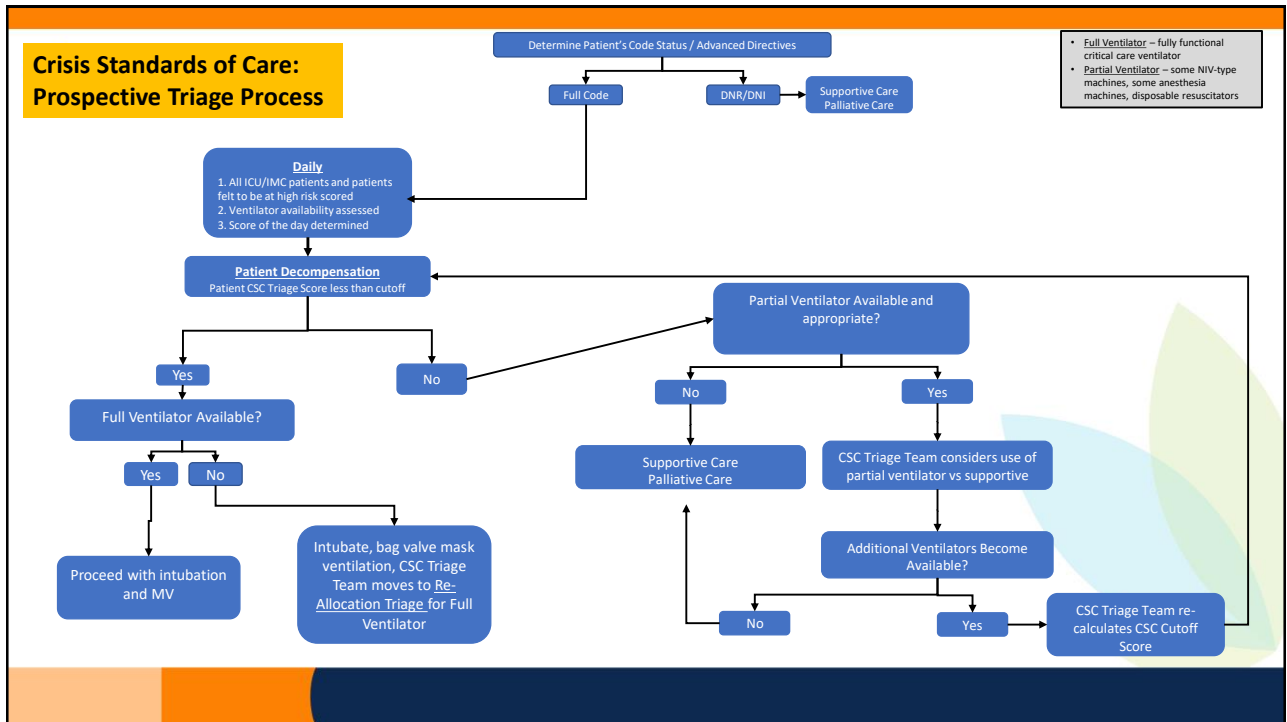
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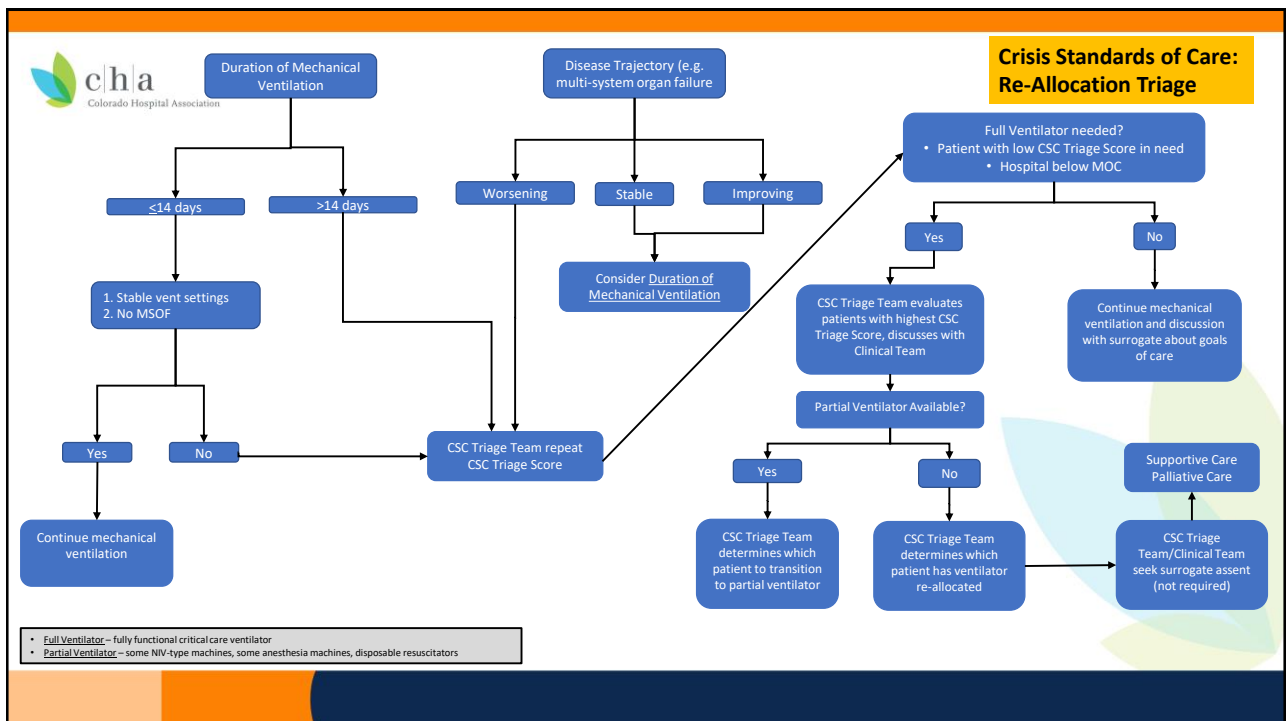
### Crisis Standards of Care: Emergent Triage Process



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# Questions?



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# Thank you!

