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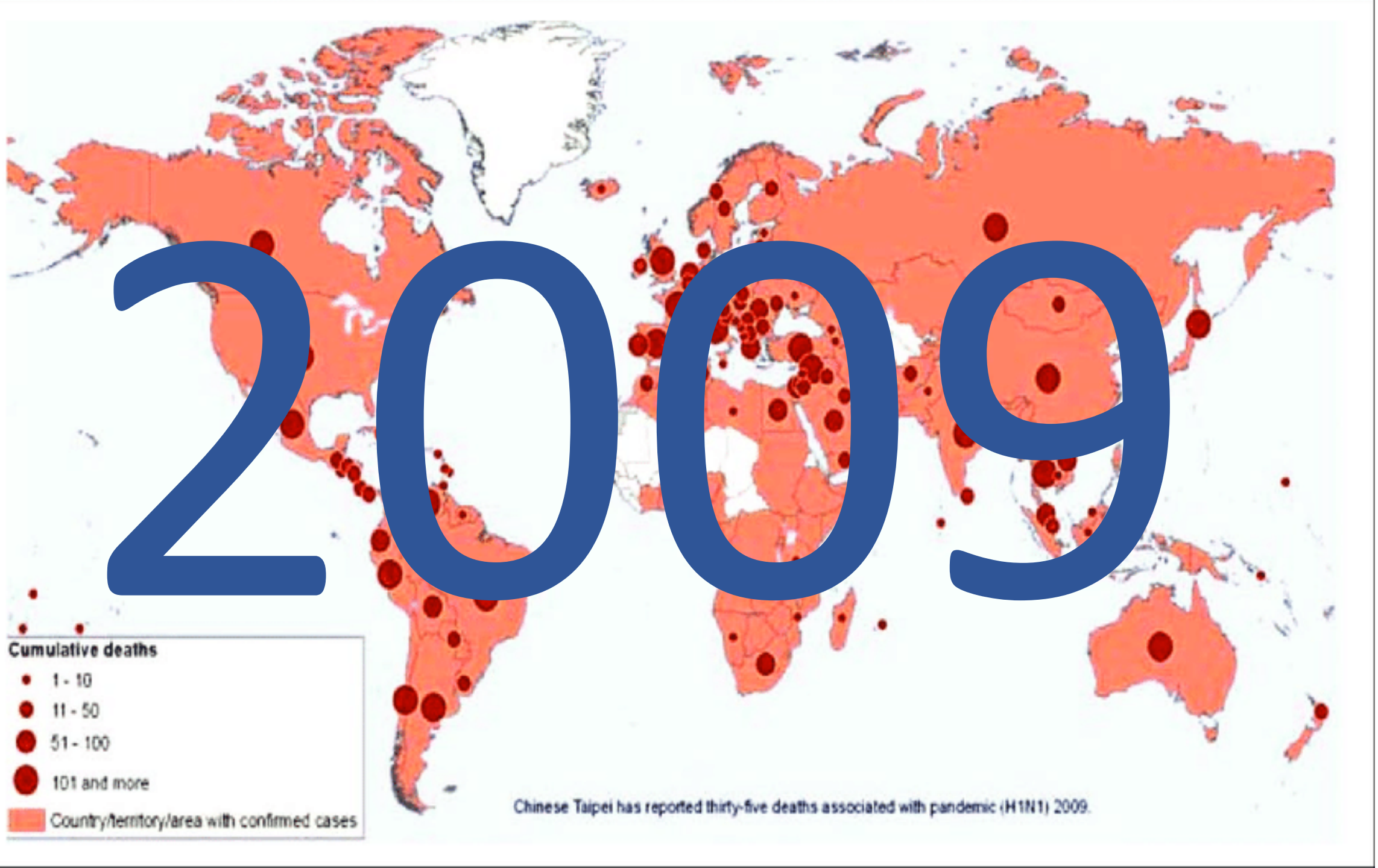
2009
Cumulative deaths
1 - 10
11 - 50
51 - 100
101 and more
Country/territory/area with confirmed cases
Chinese Taipei has reported thirty-five deaths associated with pandemic (H1N1) 2009.

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.

INSTITUTE OF MEDICINE
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www.nap.edu/catalog/12749.html

“Standard of Care”

- Legal *and* ethical obligation is to perform to highest standard a reasonable practitioner can achieve *under given circumstances*
  - Disaster circumstances ≠ 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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Major Disasters Since 2009

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

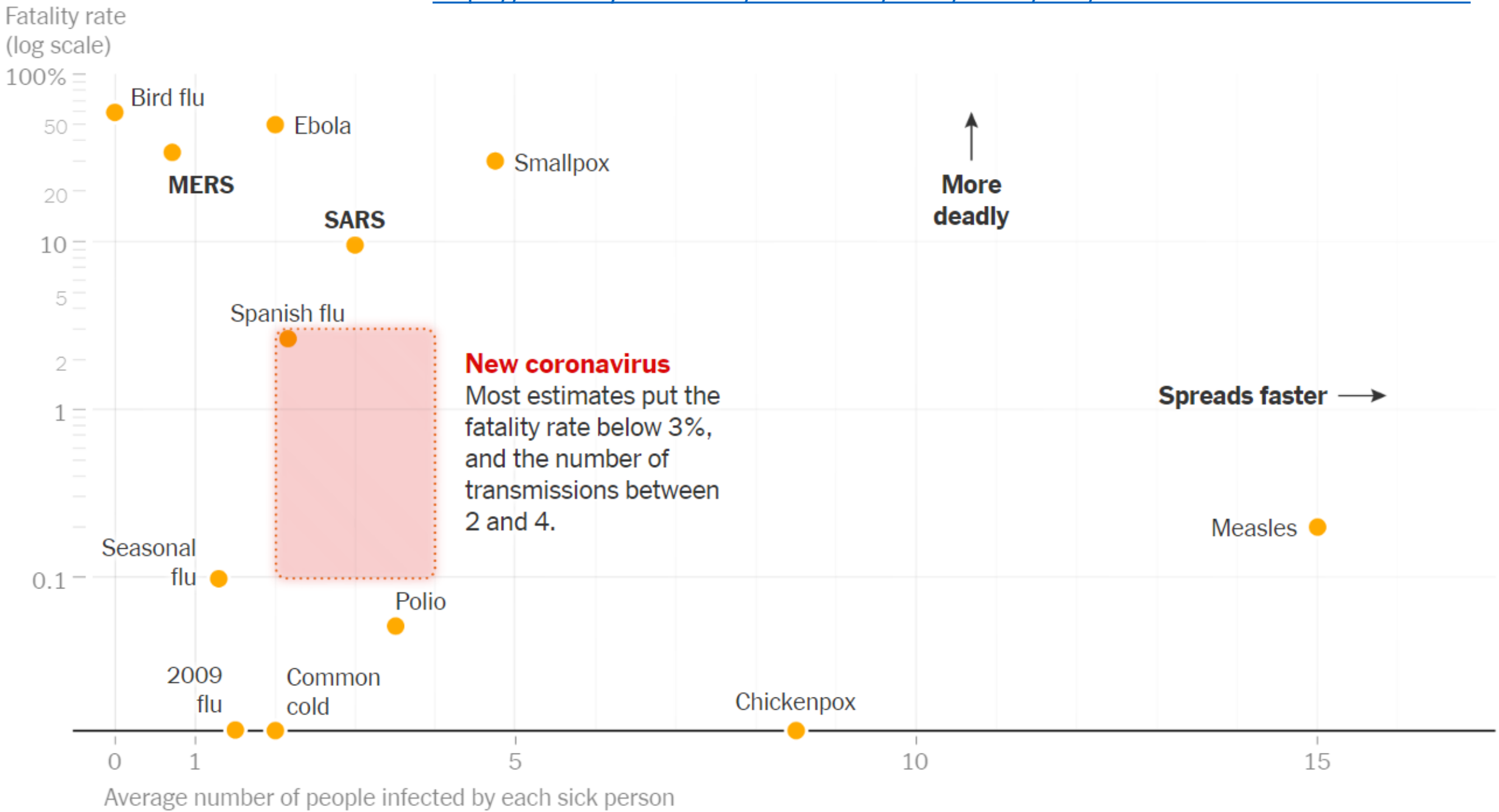
Puerto Rico
Hurricane Maria
September 2017

California
Wildfires
2018

?

Slide from Dan Hanfling, MD
NASEM CSC Workshop, November 2019

https://www.nytimes.com/interactive/2020/world/asia/china-coronavirus-contain.html



COVID-19 Specific Triage Guidance

VIEWPOINT

A Framework for Rationing Ventilators and Critical Car
During the COVID-19 Pandemic

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

Bernard Lo, MD
The Greenwall Foundation, New York, New York; and University of California, San Francisco.

Supplementa content

The NEW ENGLAND JOURNAL of MEDICINE

PERSPECTIVE
Hospital Mergers and Conscience-Based Objections — Growing Threats to Access and...

Notable Articles of 2019
1 exclusive collection

The NEW ENGLAND JOURNA

SOUNDING B

Fair Allocation of Scarce M
in the Time of Cc

Ezekiel J. Emanuel, M.D., Ph.D., Govind Persad, J.D., [illegible]

Perspective

The Toughest Triage — Allocating Vent

Robert D. Truog, M.D., Christine Mitchell, R.N., and George Q. Daley, M.D.

Article

5 References 2 Citing Articles

THE COVID-19 PANDEMIC HAS LED TO S
essential goods and services, from hand s
beds and ventilators. Although rationing i

[illegible]ckman, B.A.,
[illegible]. 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

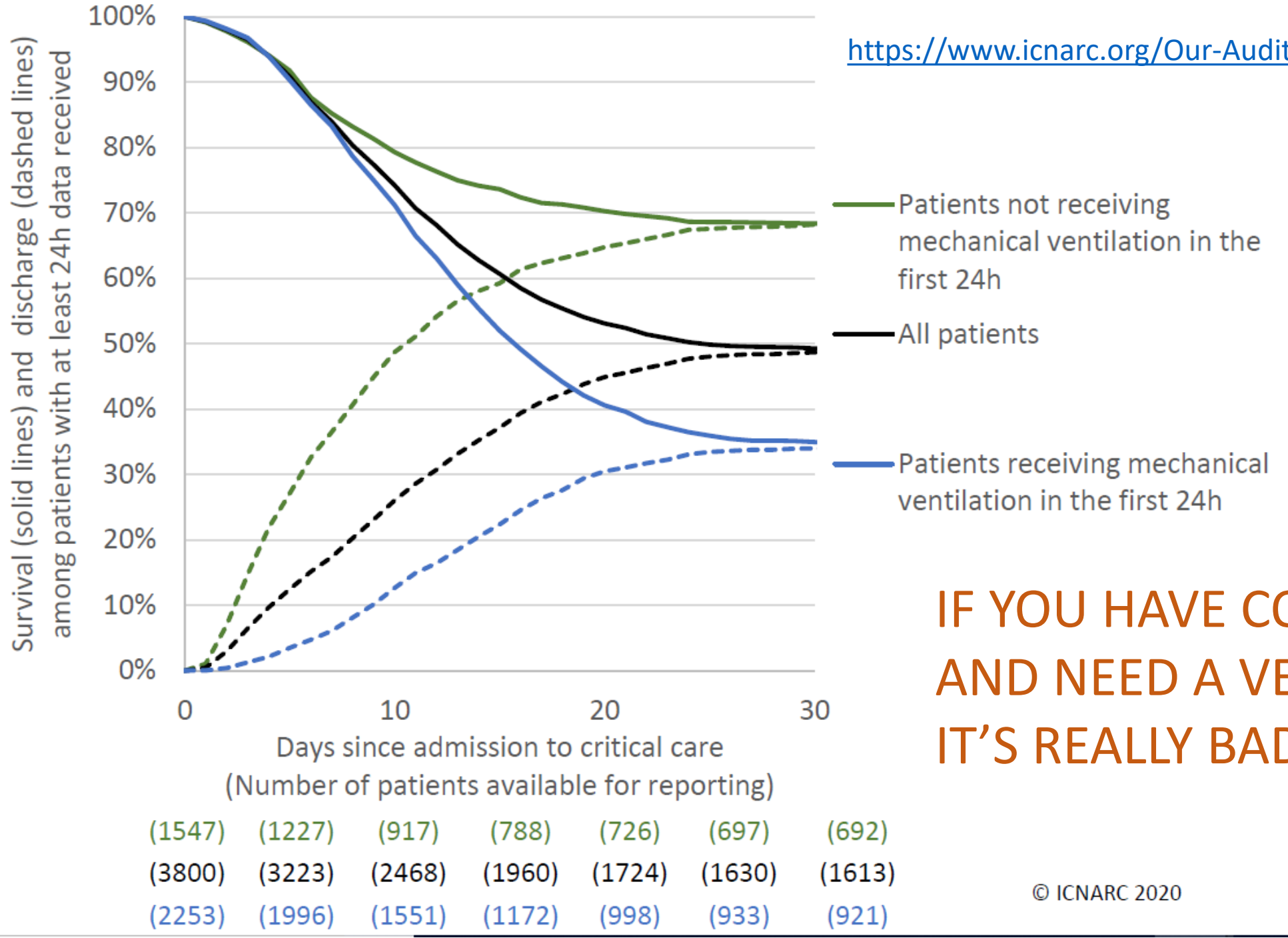
March 5, 2020

[illegible]he potential health
[illegible]d severe influenza
[illegible]dated after the 2009
[illegible]ecently in 2017.[1] It
[illegible]andemic will infect
with about 800,000
[illegible]cation and 160,000

Subject Matter Experts Advisor Panel for the Governors 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
Table of Contents

https://www.icnarc.org/Our-Audit/Audits/Cmp/Reports



IF YOU HAVE COVID-19 AND NEED A VENTILATOR, IT'S REALLY BAD.

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
- Maintain social order
- Minimize economic impact

Aim is “to provide the best care for the most patients, and to do so in ways that sustain social cohesion, trust in our health care system, and our ability as a community to come together and heal in the wake of the crisis.”

The Duty to Plan

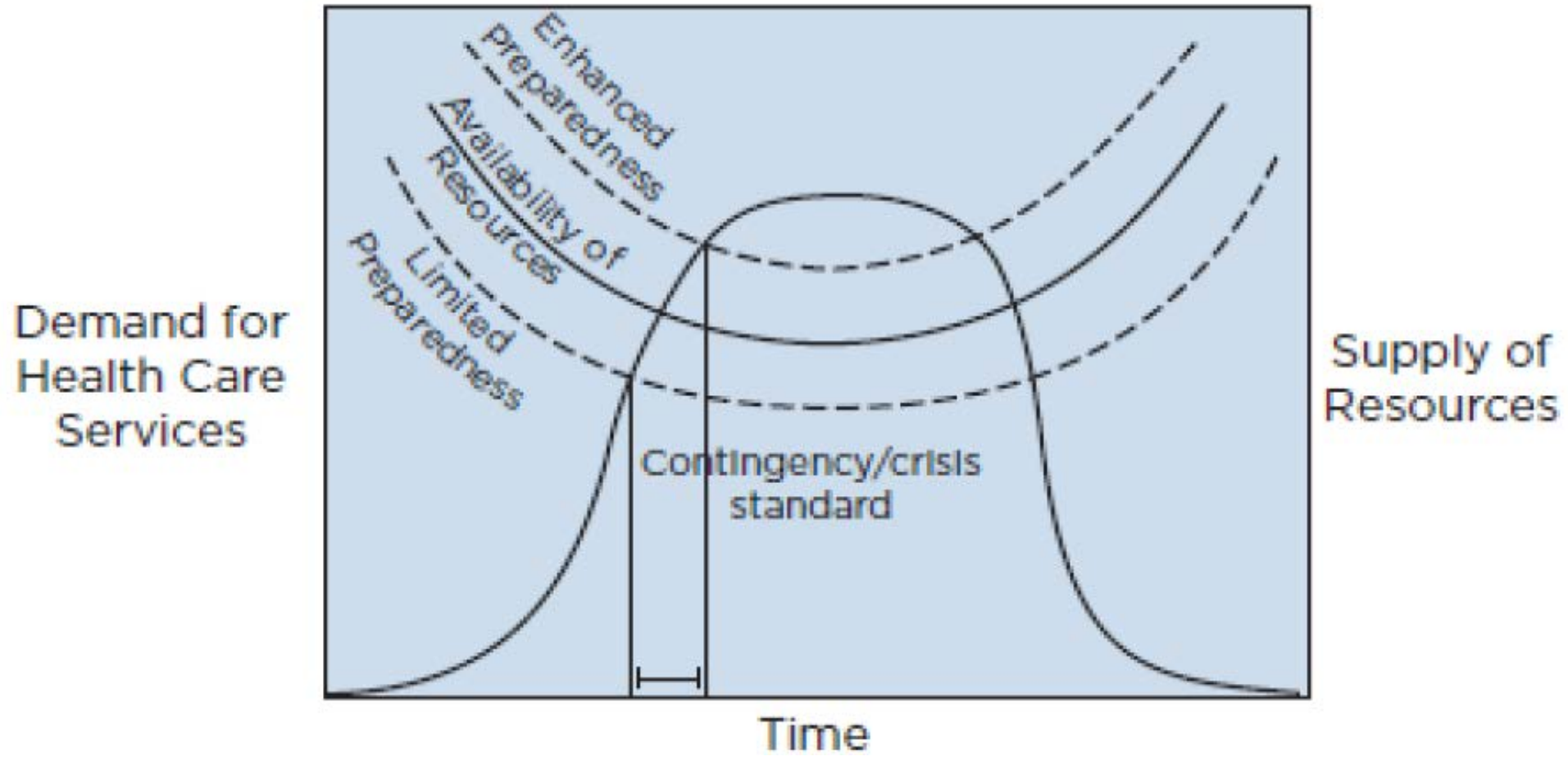


Figure 1: Demand for healthcare services and supply of resources as a function of time after disaster onset, taking into account care capacity as a function of time (Hanfling, Aletevogt, Viswanathan, & Gostin, 2012, pp. 42)

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

If you try to improvise a plan…

- Cognitive stress reduces problem-solving ability 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
- Delays in mobilizing resources vs. rapid mutual aid
- Liability – there is a *duty to plan* for recognized hazards

Slide adapted from John Hick, MD

“Triggers” - Drawing Lines in a Granular World

Capacity (operational quality)

Resources

Supplies	Conservation/ use of alt. meds	Emergency stockpiles accessed	Reuse of critical supplies authorized	Triage protocols activated	*No supplies available*
Space	All usual beds full/ Elective discharges	All in-place/ reserve beds activated and filled	All facility areas (hallways, etc) in use and filled	Generally unsafe to be on site	*Infrastructure destroyed*
Staffing	Reserve staff needed	External staff needed	Staff must perform atypical tasks	Lay volunteers must perform key aspects of care	*No staff available*

Usual Ops
Usual Quality

“Conventional Ops”
Minimal/transient degraded quality

“Contingency Ops”
Modest/brief degraded quality

“Crisis Ops”
Significant/ongoing degraded quality

Catastrophic failure
No care possible

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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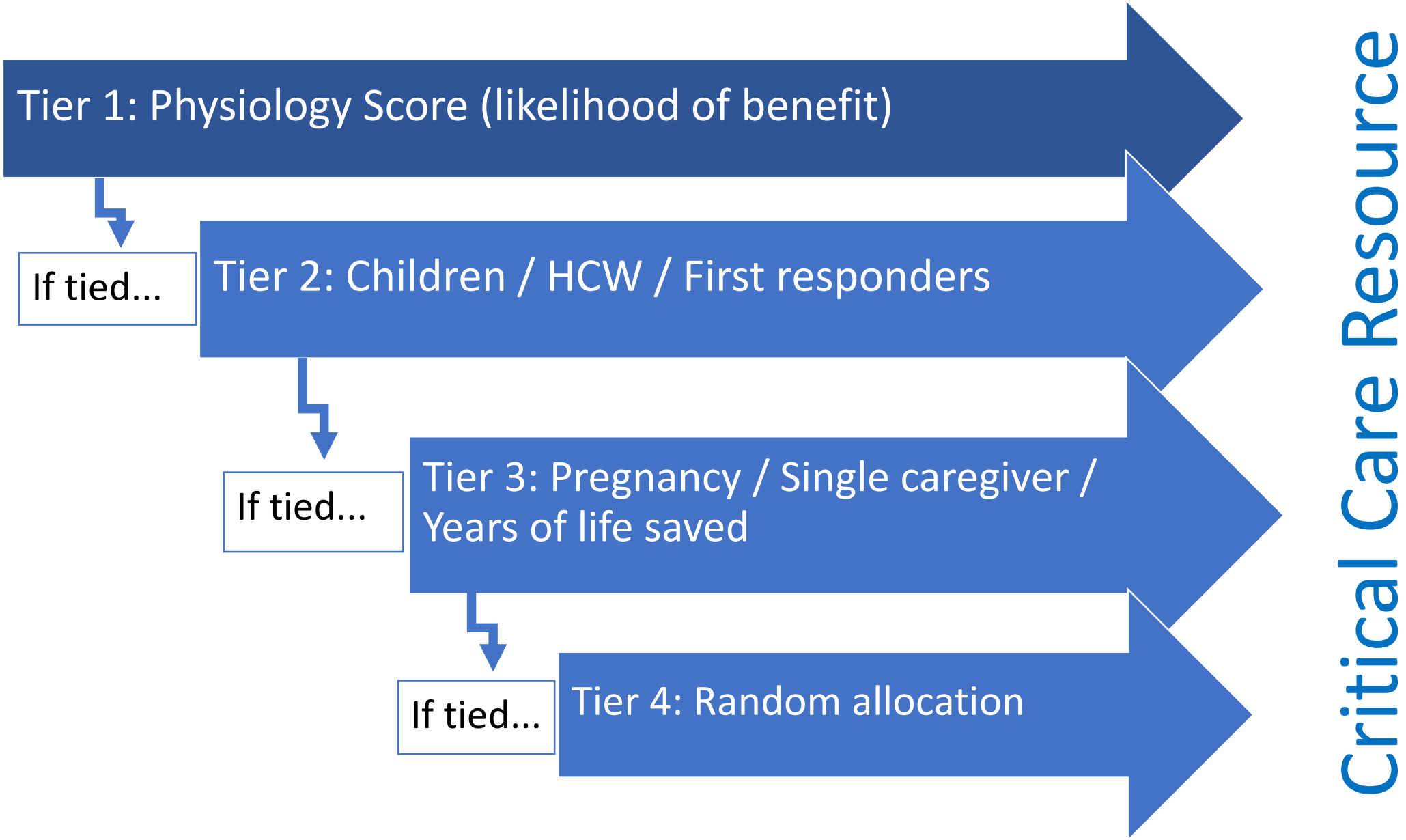
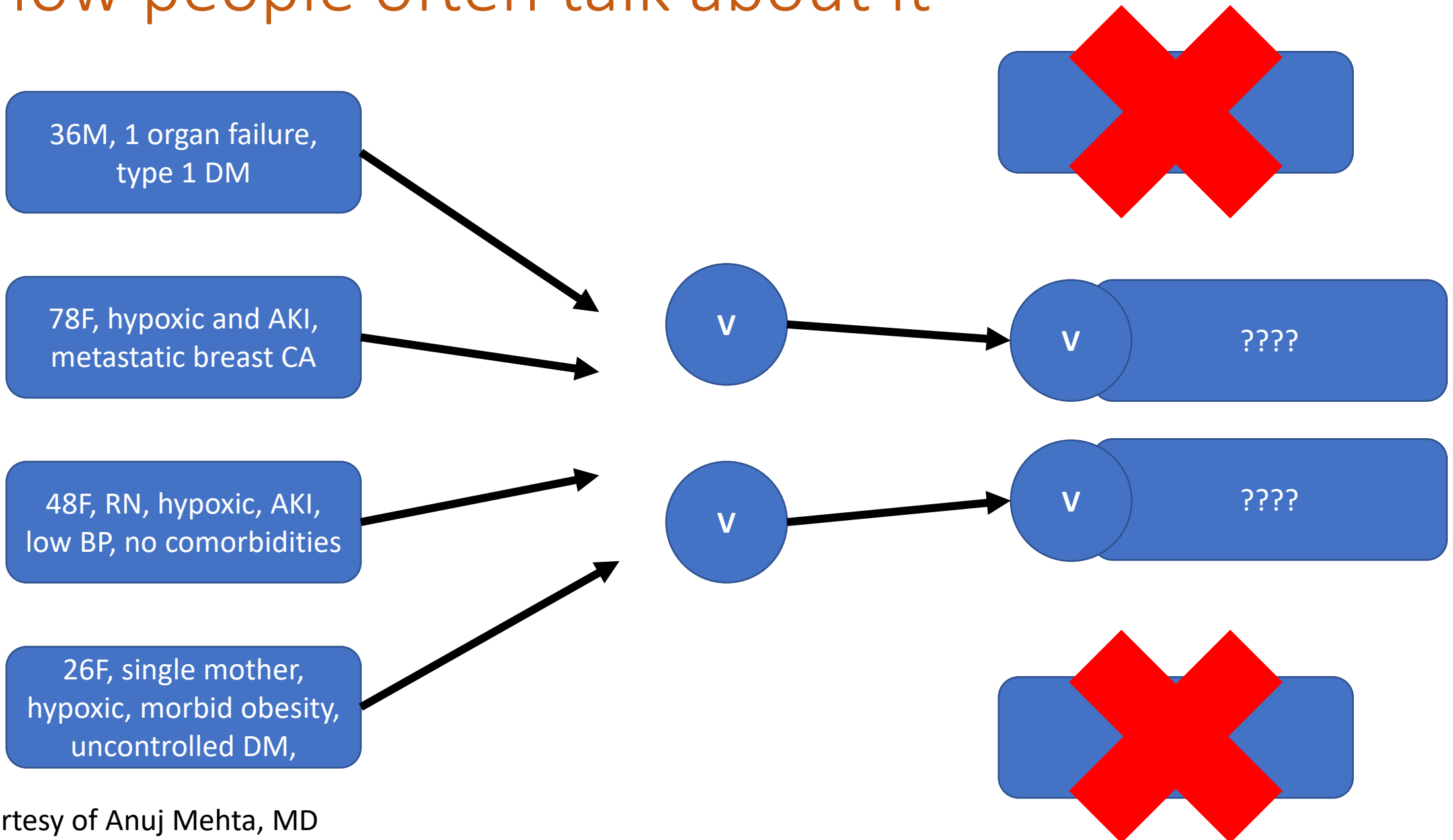
Hurricane Katrina

Colorado Crisis Standards of Care Triage Framework for Scarce Resources

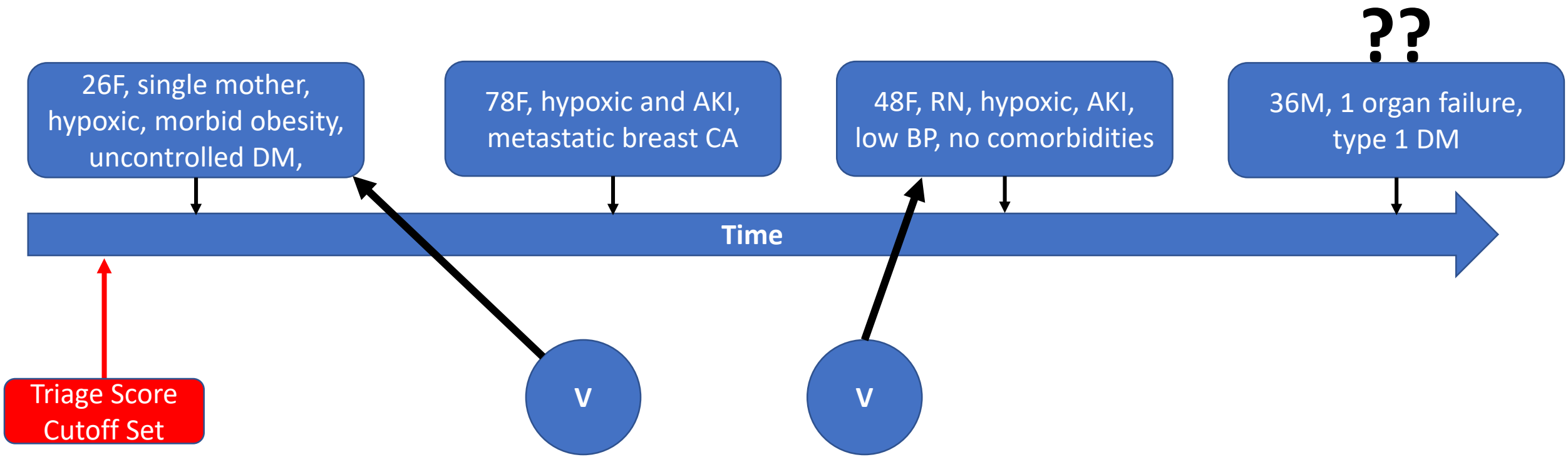


How people often talk about it



Slide courtesy of Anuj Mehta, MD

Operationally, what really happens...

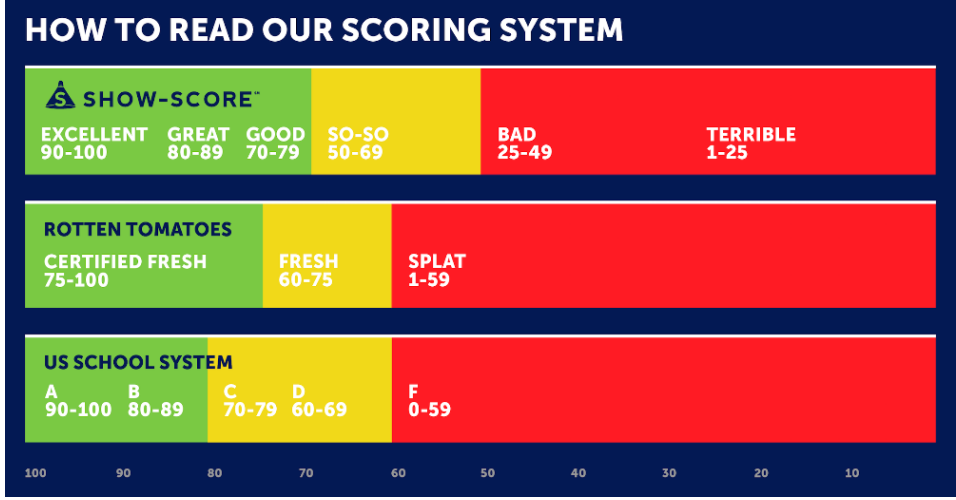


Slide courtesy of Anuj Mehta, MD

Why Triage Teams?

- Bedside teams have ethical and legal obligation to serve as advocates for their patients
- Bedside teams will not have the necessary broad and deep situational awareness
- Need to avoid unintentionally biasing information in the decision – blinded review by an independent team
- Bottom line: triage teams ensure integrity in the decision process

Scoring System Issues



- SOFA widely-used, but also wide agreement it is imperfect
  - E.g., “non-testable” GCS, use of dobutamine and nor-epi, not great performance with 2009 pandemic flu...
  - Still probably better, on average, than individual judgment
- Charlson Comorbidity Index also imperfect
- Palliative Performance Score also imperfect
- None include D-dimer, LDH other known risks for death
- Need a score with better predictive accuracy, tailored to disease processes, including COVID-19

People with Disabilities, Minorities, Elderly...

- A *perfectly accurate* predictive score could disproportionately remove some groups from ventilators because they are less likely to survive...
  - E.g., due to higher frequency and severity of comorbidities
  - When these are a result of underlying and historic, economic, education, housing and other deficits and stressors... this is a *structural* disparity
- What can we do?
  - Transparency and inclusion in process
  - Clear statements about our values:
    - Every life is of equal worth,
    - No person on chronic stable vent support will have it removed
    - No categorical (e.g., age or disease-based) exclusions
  - Avoid implicit bias through blinded review
  - Track outcomes and be ready to adjust methods

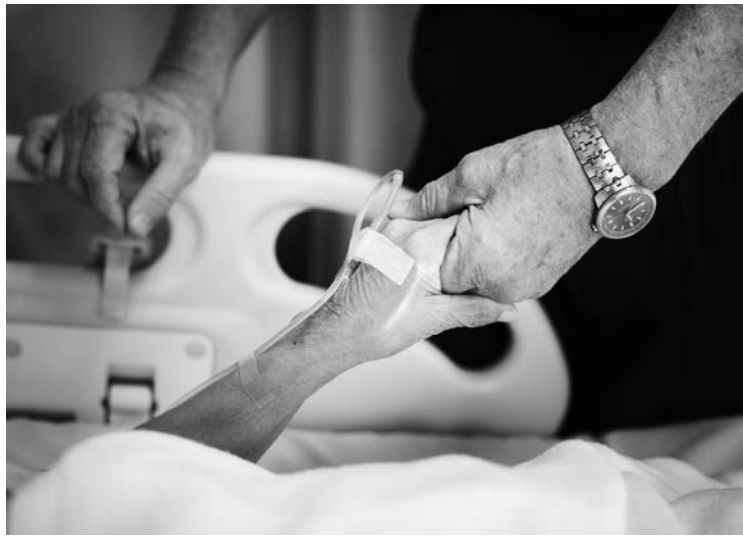
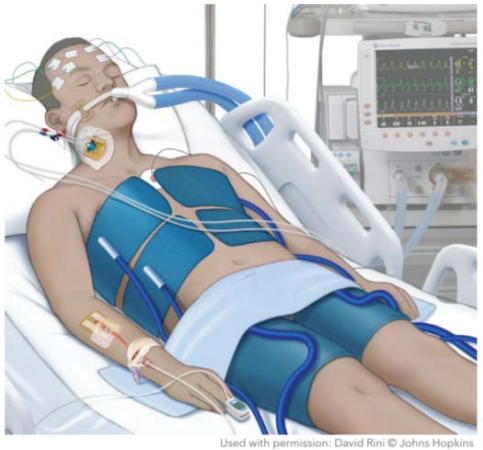


Image: rawpixel.com

Re-allocation Issues



- What comprises a “fair therapeutic trial”?
  - Should a person with COVID-19 be given the same time prior to re-assessment as someone with acute pulmonary edema?
  - Risk of ‘churning’ vents, leading to more deaths because no one gets to keep it long enough to make a difference...
  - Trial duration attuned to diagnosis
- Ensuring NO patient ever loses access to a resource that then goes to someone with a lower possibility of benefit.
  - Always set triage cut-point at a score worse than that of the person on a vent with the highest predicted mortality.

Key Points

- CSC is part of surge plans, for *extreme* surge/scarcity
- Don’t improvise! – ethical, practical and liability issues
- Dynamic situation – flux between contingency/crisis
- Proportionality – commensurate with need/benefit/harms
- Operational issues (teams, scores, re-allocation, accountability)
- All lives worthy: elderly, disabled, minorities must not be left behind
- Crisis care will happen regardless of official action/inaction

Slide adapted from John Hick, MD