



## Crisis Standards of Care

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## Crisis Standards of Care Planning at University of California Davis Medical Center



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- Never let the future disturb you. You will meet it if you have to with the same weapons of reason which today arm you against the present.

- Marcus Aurelius. *Meditations*. AD 200

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## Disclosures: I Work Here



- CTICU 10 beds
- NSICU 10 beds
- Burn Unit 20 beds
- SICU 16 beds
- MICU 16 beds
- MSICU 8 beds
- CCU 10 beds
- PICU 20 beds
- ER 68 beds
- PACU 50+ beds

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## Allocation of Scarce Critical Resources under Crisis Standards of Care

University of California Critical Care  
Bioethics Working Group

### Member

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### Title

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### Campus

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Nathan Fairman, MD, MPH

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Behavioral Health

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## Order of Business

- Brief Review UCOP Crisis Standards of Care Guideline
- Operational Plan at UCDCM
- Equity controversies
- Crisis Standards of Care Triage Project

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## Triage Scoring System

- SOFA Severity of illness score
- Accepted in many triage rubrics
- Vision is to apply triage to ALL patients
- Worst value in last 24hr
- No value? score "0"
- Epic derived ESOFA
- Continuously recalculating
- 84% accurate (manual SOFA 65%)

Organ System	0	1	2	3	4
P <sub>a</sub> O <sub>2</sub> /FIO <sub>2</sub> on arterial blood gas (or SpO <sub>2</sub> /FIO <sub>2</sub> when ABG not available) <sup>1</sup>	≥400 (≥512)	300-399 (357-511)	200-299 (214-356)	100-199 (89-213)	<100 (<89)
Platelet count (10 <sup>3</sup> /μL)	≥150	100-149	50-99	20-49	<20
Bilirubin (mg/dL)	<1.2	1.2-1.9	2.0-5.9	6.0-11.9	≥12
Hypotension (vasopressor doses in mcg/kg/min)	None	MAP < 70 mmHg	Dopamine < 5	Dopamine 6-15 or Epinephrine < 0.1 or Norepinephrine < 0.1	Dopamine > 15 or Epinephrine ≥ 0.1 or Norepinephrine > 0.1
Glasgow Coma Scale Score	15	13-14	10-12	6-9	<6
Creatinine (mg/dL) or (Urine output (mL/24h))	<1.2	1.2-1.9	2.0-3.4	3.5-4.9 (<500)	>5 (<200)

<sup>1</sup> For patients on low-flow oxygen systems, use estimated FIO<sub>2</sub> from Table 13 below.

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# Triage Scoring System (cont.)

- Comorbidity adjustment
- Age not considered
- May be challenged
- Exempt for lack of expertise or access

Major comorbidities that are associated with increased risk of short-term mortality from critical illness	Severely life-limiting comorbidities associated with high mortality even in absence of critical illness (survival typically $\leq 1$ year), and which are correlated with significantly increased risk of short-term mortality from critical illness
<ul style="list-style-type: none"> <li>• Pre-existing neurological condition (dementia, stroke, other neurodegenerative disease) with baseline modified Rankin Score <math>\geq 4</math></li> <li>• ACC/AHA Stage C heart failure, NYHA Class II-IV</li> <li>• Severe, inoperable multi-vessel coronary artery disease or valvular disease</li> <li>• WHO Class 3 pulmonary hypertension (symptomatic with minimal exertion, asymptomatic only at rest)</li> <li>• Moderately severe chronic lung disease (e.g., COPD, IPF) but not requiring chronic oxygen or ventilation</li> <li>• End stage renal disease on dialysis</li> <li>• Cirrhosis with MELD <math>&lt;20</math> and history of prior decompensation</li> </ul>	<ul style="list-style-type: none"> <li>• Minimally conscious or unresponsive wakeful state from prior neurological injury</li> <li>• ACC/AHA Stage D heart failure</li> <li>• WHO Class 4 pulmonary hypertension</li> <li>• Severe chronic lung disease with FEV<sub>1</sub> <math>&lt; 20\%</math> predicted, FVC <math>&lt; 35\%</math> predicted, or in absence of PFTs, chronic home O<sub>2</sub> at rest or mechanical ventilation</li> <li>• Cirrhosis with MELD score <math>\geq 20</math></li> <li>• Metastatic cancer with expected survival <math>\leq 1</math> year despite treatment</li> <li>• Refractory hematologic malignancy (resistant or progressive despite conventional initial therapy)</li> <li>• Terminal illness with Clinical Frailty Scale Score <math>\geq 8</math></li> </ul>

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# Allocation Score

Principle	Specification	Allocation Point System			
		1	2	3	4
<b>Current Overall Clinical Status</b>	<i>Prognosis for acute survival (SOFA or MSOFA<sup>28</sup> score)</i>	SOFA score $< 6$ or MSOFA $< 6$	SOFA score 6-9 or MSOFA 6-8	SOFA score 10-12 or MSOFA 9-11	SOFA score $> 12$ or MSOFA $> 11$
<b>Co-occurring conditions that moderate mortality</b>	<i>Co-occurring conditions that influence acute survival</i>	...	Major comorbid condition(s)	...	Severely life-limiting condition(s)

*Deductions see Table 5 below.*

- Pregnant with viable 24 WO fetus deduct 4 points from allocation score
- Health care workers deduct 4 points at 72 hrs and 2 points at all other evaluations

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## Triage Tiers Overview

Stabilize as needed until triage officer available; Triage on Admission then every 48 -72 hrs.

Triage Categories	Assessment of Mortality Risk/Organ Failure
<b>Red</b> Highest priority for critical care services, higher likelihood of survival. Use life-saving resources as available.	Allocation Score 1-3
<b>Orange</b> Intermediate priority for critical care services, intermediate likelihood of survival. Use life-saving resources as available.	Allocation Score 4-6
<b>Yellow</b> Lower priority for critical care services, higher risk of death. Use life-saving resources as available.	Allocation Score 7-8
<b>Green</b> Critical care not currently needed due to clinical stability. Use alternative forms of medical intervention or defer or discharge. Reassess as needed.	No significant organ failure AND/OR No requirement for life-saving interventions
<b>Blue</b> Lowest priority for critical care services due to extremely high risk of death. Use alternative forms of medical intervention and/or palliative care or discharge. Reassess as resources become available.	Acute catastrophic condition (Criteria from Table 2)
<b>Violet</b> Temporary exemption from triage allocation scoring. Continue to use critical care resources until exemption lapses.	See criteria in Table 5



- Arrest no ROSC, or ROSC with nonshockable rhythm
- Severe Burns IN Appendix UCOP DOC
- Severe Trauma IN APPENDIX UCOP DOC
- Severe Neurological Injury



- Health Care / Critical Care Worker 1st assessment
- Complex acute surgery 120 hrs
- Pretrans awaiting offer eval

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## 2nd 72 hrs: IC Officer

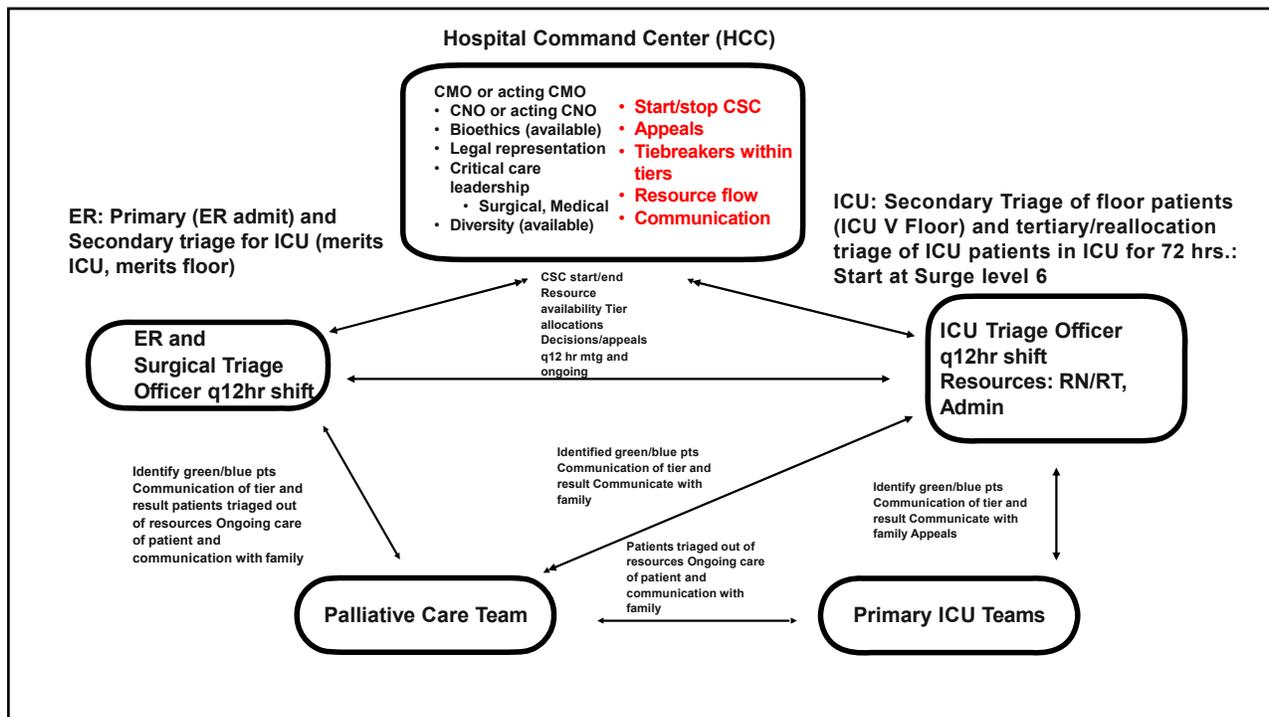
Triage Categories	Assessment of Mortality Risk/Organ Failure
<b>Red</b> Highest priority for critical care services, higher likelihood of survival. Use life-saving resources as available.	Allocation Score 1-3
<b>Orange</b> Intermediate priority for critical care services, intermediate likelihood of survival. Use life-saving resources as available.	Allocation Score 4-6
<b>Yellow</b> Lower priority for critical care services, higher risk of death. Use life-saving resources as available.	Allocation Score 7-8 OR Increase in allocation score of $\geq 3$ points from increase in SOFA from any initial score*
<b>Green</b> Critical care not currently needed due to clinical stability. Use alternative forms of medical intervention or defer or discharge. Reassess as needed.	No longer ventilator dependent or actively weaning from ventilator AND/OR No longer in need of circulatory support/drips
<b>Blue</b> Lowest priority for critical care services due to extremely high risk of death. Use alternative forms of medical intervention and/or palliative care or discharge. Reassess when resources become available.	Acute catastrophic condition (Table 2)*
<b>Violet</b> Temporary exemption from triage allocation scoring. Continue to use critical care resources until exemption lapses.	See criteria in Table 5

- Pregnant with viable 24 WO fetus deduct 4 points
- Health care workers violet deduct 4 points

- Complex acute surgery 120 hrs
- Pretrans awaiting offer eval

\* If a patient develops a catastrophic condition (Table 2) before first reassessment, re-triage to blue

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### Hospital Command Center (HCC) CSC Triage Team

**Team Functions**

**Begin and end CSC**

- Adjudication of any appeals of the initial triage decisions
- Review of any allocation assessment that triggers the reallocation of a potentially life sustaining treatment
- Review of any allocation assessment concerning an unrepresented patient
- Ongoing oversight and review of triage processes, crisis conditions, and need for modification
- Oversee flow of resources from pts no longer requiring them to pts who do
- Tiebreaker lottery

**Team Tasks**

- Schedule and facilitate daily meetings/huddle for all CSC activities (ER and ICU officers)
- Maintain Triage Officer assignments, schedule, and contact information
- Appeals. Done by CC officer. Re-assessment of eSOFA at minimum and manual SOFA calculation, reassessment of comorbidity score, double checking allocation score and tier placement
- Evaluate all resource withdrawal
- Resource for officer scoring questions
- Documentation for all metrics and scoring
- Develop triage specific quality spreadsheet
- Develop vision of comprehensive quality analysis of triage process
- Develop public-facing After Action Report

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## ED Triage Officer

### Role Functions

- Initial/Primary Triage of all patients in the ED
- Secondary Triage of all patients, ICU v Med surg
- Work with Surgical and ICU Triage Officers

### Role Tasks

- Triage all potential admits
- Low priority catastrophic injury
- DNR/I screen
- Allocation score and tier
- Triage note
- Order code status in EMR
- Communications to patients and families

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## ICU / Critical Care Triage Officer Activated Surge level 6

### Role Functions

- ICU Admission/secondary Triage of all identified patients ON THE FLOOR
- Re-triage of all patients in the ICU who have not been triaged in last 72 hrs.
- Work with Surgical and ED Triage Officers
- Role Tasks
- Identification of reallocation targets in ICUs
- Communication with all current ICU primary faculty:
- Identify patients for potential withdrawal of LSTs
- Recovery, catastrophic injury, GOC change
- Communicate triage results to primary team
- Communicate to patients and families concerning triage results
- Triage notes on all triaged patients
- Communicate appeals to Triage Team
- DNR order on appropriate patients
- Communicate resource availability to Triage Committee, ER

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# ICU Triage officers

- **Who has appeals pending?**
  - Central committee
- **Who needs communication of status/fam discussion?**
  - Prim team MDs, palliative care
- **Who no longer needs ICU (green)?**
  - Primary team MDs, palliative care
- **Who is has non survivable injury (blue)?**
  - Evaluate Primary team designated candidates
- **Who is yellow tier (allocation score 7-8, also includes change in sofa + 3 from initial score for 72 hr candidates)?**
  - Go to ICU census list and find patients SOFA > 10
  - Assess when last triaged via notes. If > 72 hr proceed
  - Assess comorbidity and assign allocation score and TT
  - Communicate with central command
- **Who is orange tier (allocation score 5-6)?**
  - Go to ICU census list and find patients SOFA > 6
  - Same as steps yellow tier candidates

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## ICU Triage Tool

**Patient Lists**

My Lists: All ICU 97 Patients

Unit	Bed	Patie Nam MRN	Problem, Primary	Vent Start?	Vent Device	Vent Stop?	Vent Stop Time	Vasoac Meds?	SOF Scor Colu	Code	Isolation	Service	Atter Des
T5...	566...	D 7...	Neutropenic fever (HCC)	Yes	—	—	—	Nor... (LE... 16...	22	FULL	MRSA	(A) MICU	H... R... W...
T5...	565...	A... 7... 9...	Seizure (HCC) (Principal Prob)	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	20	DNR	—	(A) MICU	H... R... W...
T5...	565...	R... F 7...	Neutropenic sepsis (HCC) (Principal...)	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	18	FULL	—	(A) MICU	A... M... V...
T2SI	266...	T... 9... 7...	Cardiac arrest (HCC) (Principal...)	Yes	—	—	—	Nor... (LE... 8 m...	15	LIM...	—	(A) MICU	H... R... W...
T2SI	267...	R... 9... 7... J...	Gunshot wound of head with...	Yes	Vent Ham... G5...	—	—	NIC... (CA... IV)...	14	DNR	—	(A) Tra... Sur...	S... D... V...
T5...	567...	G... V 7...	Pneumonia due to COVID-19...	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	13	FULL	COV...	(A) MICU	H... R... W...
T5...	566...	H... C 7...	ANCA-asso... vasculitis (HCC)...	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	13	FULL	—	(A) MICU	A... M... V...
P3CI	344...	M 7... (...)	(None Found)	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	12	Not on file	—	(A) MICU	S... B... C...
T7...	767...	R... S 7... (...)	Acute respiratory failure with...	—	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	12	FULL	—	(A) MICU	H... R... W...
T7...	766...	M... B 0... (...)	COVID-19 (Principal Prob)	Yes	Vent Ham... G5...	—	—	Nor... (LE... 8 m...	11	FULL	COV...	(A) MICU	H... R... W...

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## Appeals

### Process for appeal:

- Any patient, patient representative, or member of the provider team (MDs, RNs, RTs, LCSW, etc.) may make an appeal
- There is an automatic appeal for every unbefriended or underrepresented patient (lacks decisional capacity AND surrogate)
- The attending physician notifies the Triage Officer of the request for an appeal
- Triage Committee – Evaluate for catastrophic conditions and recalculate score.
- CC Leader on HCC Triage team will review appeals by reviewing at minimum eSOFA (esp sat/fio2 ratio and vasopressors), recalculating a manual sofa as needed, and reviewing the comorbidity score and allocation score calculation and tier placement for accuracy.

### What may be appealed:

- Accuracy of the triage calculation
- There is no appeal of the allocation framework itself

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## Lottery: Tiebreakers Within Tiers

- [www.random.org](http://www.random.org)
- Find True Random Number Generator
- Assign each pt a range of numbers
- Generate the number and allocate to appropriate patient
- Can “weight”
  - Not recommended by UCOP



The image shows a web interface for a True Random Number Generator. It has a purple header with the text "True Random Number Generator". Below the header, there are two input fields: "Min:" with the value "1" and "Max:" with the value "100". Below these fields is a button labeled "Generate". Underneath the button is a label "Result:" followed by a horizontal line. At the bottom of the interface, it says "Powered by [RANDOM.ORG](http://RANDOM.ORG)".

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# Rationing, racism and justice: advancing the debate around 'colourblind' COVID-19 ventilator allocation

Harald Schmidt ,<sup>1</sup> Dorothy E Roberts,<sup>2</sup> Nwamaka D Eneanya<sup>3</sup>

Schmidt H, et al. J Med Ethics 2021;0:1–5. doi:10.1136/medethics-2020-106856

<sup>1</sup>Medical Ethics and Health Policy, University of Pennsylvania Perelman School of Medicine, Philadelphia, Pennsylvania, USA  
<sup>2</sup>Penn Law, Departments of Africana Studies and Sociology, School of Arts and Sciences, University of Pennsylvania, Philadelphia, Pennsylvania, USA  
<sup>3</sup>Renal-Electrolyte and Hypertension Division, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, USA

- Renal Score of SOFA
- May penalize for CKD and not AKI
- Inc in HTN and DM
- Health inequity is a driver
- Fixes:
  - Adjust for average (cr) for race
  - Drop Cr from Score
  - Add weights for Equity
  - Drop SOFA score altogether

Organ System	0	1	2	3	4
P <sub>a</sub> O <sub>2</sub> /FIO <sub>2</sub> on arterial blood gas (or SpO <sub>2</sub> /FIO <sub>2</sub> when ABG not available) <sup>1</sup>	≥400 (≥512)	300-399 (357-511)	200-299 (214-356)	100-199 (89-213)	<100 (<89)
Platelet count (10 <sup>3</sup> /μL)-	≥150	100-149	50-99	20-49	<20
Bilirubin (mg/dL)	<1.2	1.2-1.9	2.0-5.9	6.0-11.9	≥12
Hypotension (vasopressor doses in mcg/kg/min)	None	MAP < 70 mmHg	Dopamine < 5	Dopamine 6-15 or Epinephrine <0.1 or Norepinephrine < 0.1	Dopamine > 15 or Epinephrine ≥ 0.1 or Norepinephrine > 0.1
Glasgow Coma Scale Score	15	13-14	10-12	6-9	<6
Creatinine (mg/dL) or (Urine output (mL/24h))	<1.2	1.2-1.9	2.0-3.4	3.5-4.9 (<500)	>5 (<200)

<sup>1</sup> For patients on low-flow oxygen systems, use estimated FIO<sub>2</sub> from Table 13 below.

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# Allocation Score

Table 3. Triage Framework to Promote Population Health Outcomes and Justice

Principle	Criterion	Point System*			
		+1	+2	+3	+4
<b>Promote population health outcomes</b>	1. Prognosis for hospital survival (assessed using a validated severity-of-illness score) <sup>†</sup>	Quartile 1: lowest risk of death (i.e., risk of death <25%)	Quartile 2 (i.e., risk of death 25–49%)	Quartile 3 (i.e., risk of death 50–75%)	Quartile 4: highest risk of death (i.e., risk of death >75%)
	2. Presence of end-stage medical condition (medical assessment of near-term prognosis)	—	—	—	Death expected within 1 yr from end-stage condition
<b>Promote justice/equity</b>	1. Correction for structural inequities using ADI	Subtract one point from the Triage Priority Score if the patient's ADI score is 8, 9, or 10 (on a 1–10 scale)			
	2. Priority to frontline essential workers	Subtract one point from the Triage Priority Score if the patient is an essential worker in a high-risk occupation			
	3. Priority to those who've had the least chance to live through life's stages	Tiebreaker: In the event that two patients have identical Triage Priority Scores, give priority to the younger patient when a significant age difference exists			
	4. Equal chances	Second tiebreaker: In the event that two patients have identical Triage Priority Scores and are of similar ages, use random selection to determine who receives the resource			



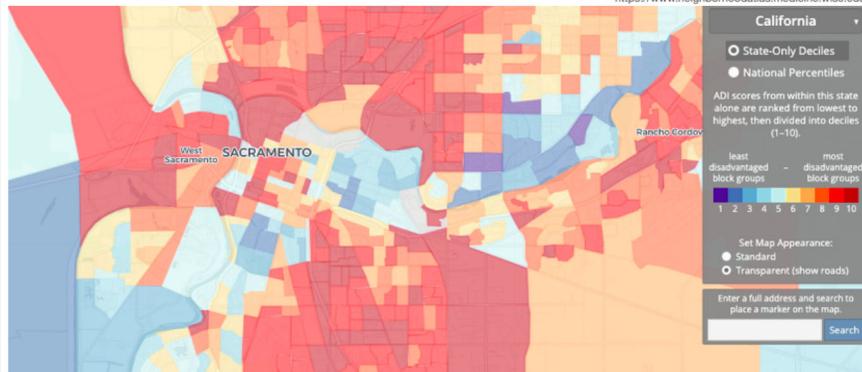
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# Area Deprivation Index (ADI)

## Area Deprivation Index (ADI)

The Area Deprivation Index (ADI) is based on a measure created by the Health Resources & Services Administration (HRSA) over two decades ago for primarily county-level use, but refined, adapted, and validated to the Census block group/neighborhood level by Amy Kind, MD, PhD and her research team at the University of Wisconsin-Madison. It allows for rankings of neighborhoods by socioeconomic status disadvantage in a region of interest (e.g. at the state or national level). It includes factors for the theoretical domains of income, education, employment, and housing quality. It can be used to inform health delivery and policy, especially for the most disadvantaged neighborhood groups.

<https://www.neighborhoodatlas.medicine.wisc.edu/>



<https://www.neighborhoodatlas.medicine.wisc.edu/mapping>

- 2003 Singh - 21 indicators
- Community SE disadvantage
- 1990 census
- Theoretical relevance and empiric research
- Factor/cluster analysis
- 17 variables clustered
- Composite area deprivation index
- Linked to infant and age adj mortality
- Census block - smallest geographic unit
- 2014 Kind
- Singh method
- Updated ADI

### Census Variable

- Population aged  $\geq 25$  y with  $< 9$  y of education, %<sup>4</sup>
- Population aged  $\geq 25$  y with at least a high school diploma, %
- Employed persons aged  $\geq 16$  y in white-collar occupations, %
- Median family income, \$
- Income disparity<sup>5</sup>
- Median home value, \$
- Median gross rent, \$
- Median monthly mortgage, \$
- Owner-occupied housing units, % (home ownership rate)
- Civilian labor force population aged  $\geq 16$  y unemployed, % (unemployment rate)
- Families below poverty level, %
- Population below 150% of the poverty threshold, %
- Single-parent households with children aged  $< 18$  y, %
- Households without a motor vehicle, %
- Households without a telephone, %
- Occupied housing units without complete plumbing, % (log)
- Households with more than 1 person per room, % (crowding)

NEJM. 2018; 378: 26. 2456-2458  
 Ann Int Med. 2014; 161:11. 765-775  
 Am J Pub Health. 2003; 93:7. 1137-1143

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# CSC Triage Project

- Assessing the outcomes and disparity implications of triage policies allocating scarce resources
- 125 MICU patients from UCD Critical care registry
  - 7/1/20-8/31/20
- Triage according to UCOP rubric at T0 and T72h
  - eSOFA 24 h and Morbidity score based upon info in MICU H and P (HB and FJ)
  - Development of allocation score
- Triage according to UCOP rubric with “Justice adjustments” at T0 and T72hr
  - Subtract 1 point from allocation score for ADI 8-10
- Measured Ethnicity, Age, Elix Hauser, Mortality (hospital, 3 and 6 mos), ADI, HPI, SVI

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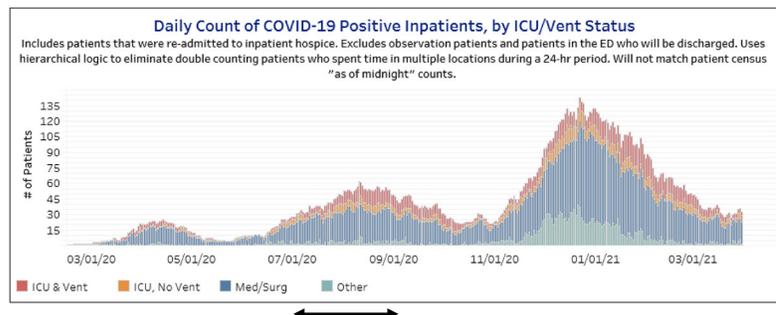
# Questions of Project

- Does Triage Tier predict mortality?
- Does Age or Elix Hauser predict mortality?
- **Does UCOP Triage Rubric exacerbate inequity?**
  - Disproportionate number of pts from deprived/vulnerable communities are in lower priority triage tiers
- **Does Adjustment to the UCOP Triage Rubric improve inequity?**
- What is the cost to mortality?
- Perform a retrospective triage run on data.

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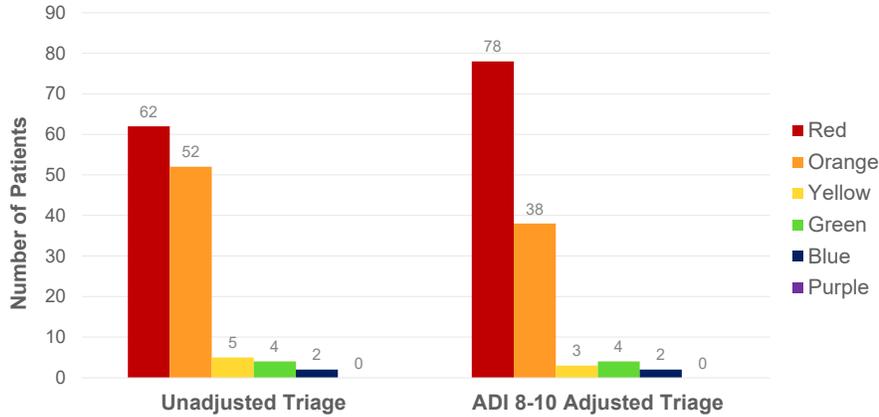
# Cohort characteristics

Category	Mean or %
Age	61 +/- 17
Sex	M57%/F43%
Covid +	20%
SOFA 0hr (mort range)	7 (15-20%)
SOFA 72hr	5
Major comorbidity	23%
Minor comorbidity	30%
Elixhauser score (pred mort)	23 (20%)
<b>Prim Dx Category</b>	
Respiratory	64%
Cardiac	27%
ID	24%
Neurologic	13%
Metabolic	16%
GI	9%
Hematologic	6%
Renal	6%
<b>Mortality: Hosp</b>	19%
<b>Mortality: 3 mo</b>	31% (18%unk)



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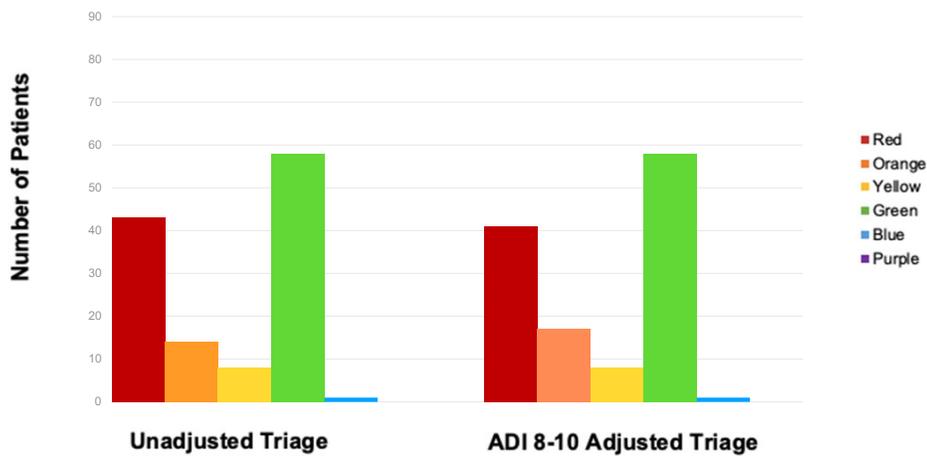
Figure 1: Distribution of patients in critical care resource allocation tier using UCOP guidelines (unadjusted) and with allocation score adjustment for area deprivation index (adjusted).



Footnote: **Red** (Score 1-3) = Highest Priority for ICU; **Orange** (Score 4-6) = Intermediate Priority for ICU; **Yellow** (Score 7-8) = Lower Priority for ICU; **Blue** = Acute catastrophic condition (lowest priority for critical care due to extremely high risk of death); **Green** = No significant organ failure AND/OR no requirement for life-saving interventions (critical care NOT currently needed due to clinical stability); **Purple** = **XX**.

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Distribution of patients in critical care resource allocation tier using UCOP guidelines (unadjusted) and with allocation score adjustment for area deprivation index (adjusted) at T72h.



Footnote: **Red** (Score 1-3) = Highest Priority for ICU; **Orange** (Score 4-6) = Intermediate Priority for ICU; **Yellow** (Score 7-8) = Lower Priority for ICU; **Blue** = Acute catastrophic condition (lowest priority for critical care due to extremely high risk of death); **Green** = No significant organ failure AND/OR no requirement for life-saving interventions (critical care NOT currently needed due to clinical stability); **Purple** = **XX**.

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## TT Assignment at T0 is Associated with Mortality

Triage Tier	Mortality Unadjusted for ADI	Mortality Adjusted for ADI
Red	11.3%	12.8 %
Orange	21.2 %	23.7 %
Yellow	60 %	66.7 %
	P < 0.05	P < 0.05

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## Hospital Mortality and Other Covariates

Table 5. Age and Elix Hauser score summaries by Discharge Status (Lived vs. Died).

	Died (N=24)	Lived (N=101)	Overall (N=125)
<b>age</b>			
Mean (SD)	69.0 (16.7)	59.6 (16.5)	61.4 (16.9)
Median [Min, Max]	71.0 [41.0, 96.0]	60.0 [20.0, 92.0]	63.0 [20.0, 96.0]
<b>elix_score</b>			
Mean (SD)	25.4 (9.86)	22.3 (11.3)	22.9 (11.1)
Median [Min, Max]	25.0 [7.00, 43.0]	22.0 [1.00, 51.0]	22.0 [1.00, 51.0]

Patients who died were significantly older than those discharged alive ( $p = 0.018$ ) but mean Elix Hauser scores did not differ significantly by in-hospital mortality ( $p = 0.187$ )

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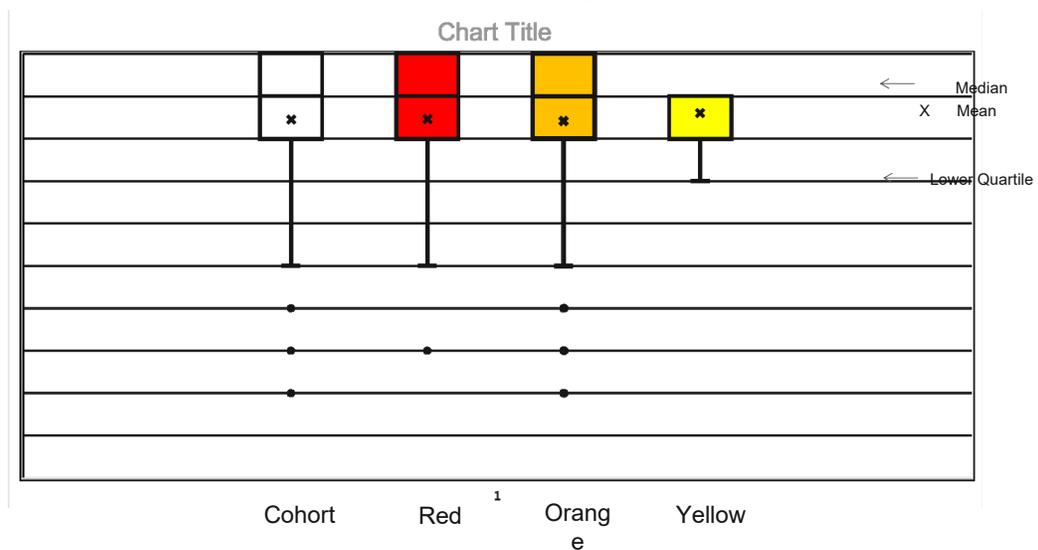
# Hospital mortality and at-risk communities

Table 16. Distribution of disadvantaged score by in-hospital mortality

	Died (N=24)	Lived (N=101)	Overall (N=125)
<b>Depriv</b>			
Depriv	21.0 (87.5%)	73.0 (72.3%)	94.0 (75.2%)
NotDepr	3.0 (12.5%)	27.0 (26.7%)	30.0 (24.0%)
Missing	0 (0%)	1.0 (1.0%)	1.0 (0.8%)
<b>hpi</b>			
0-25	14.0 (58.3%)	52.0 (51.5%)	66.0 (52.8%)
25-50	6.0 (25.0%)	22.0 (21.8%)	28.0 (22.4%)
50-75	3.0 (12.5%)	13.0 (12.9%)	16.0 (12.8%)
75-100	1.0 (4.2%)	9.0 (8.9%)	10.0 (8.0%)
Missing	0 (0%)	5.0 (5.0%)	5.0 (4.0%)
<b>svi</b>			
0-0.25	1.0 (4.2%)	4.0 (4.0%)	5.0 (4.0%)
0.2501-0.5	2.0 (8.3%)	14.0 (13.9%)	16.0 (12.8%)
0.5001-0.75	5.0 (20.8%)	22.0 (21.8%)	27.0 (21.6%)
0.7501-1	16.0 (66.7%)	59.0 (58.4%)	75.0 (60.0%)
Missing	0 (0%)	2.0 (2.0%)	2.0 (1.6%)

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Figure 2: Distribution Of Area Deprivation Index (ADI) Scores In Cohort And Triage Tiers Time 0



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## Conclusions

- Variance in percentage of at risk patients between risk mapping tools
- A majority of the population served by MICU at UCD are at risk
- Both adjusted and unadjusted UCOP triage tiers predicted hospital mortality
- Age was associated with hospital mortality
- Elix hauser was not associated with hospital mortality
- Socially at risk populations were evenly distributed across all tiers
- Allocation adjustment appears to effect TT population distribution

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## LIMITATIONS

- Retrospective triage
- Limited approximation of CSC population and conditions
- MICU only
- Institution specific
- TOs were not blinded to patient outcome or ADI/SVI/HPI status
- Different TOs, different comorbidity calculation
- eSOFA 24 hr data time stamp

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# Thank You

- UC Davis Medical Center Planning
- ER: Drs. Colby and Turnipseed
- Pulm/CCM: Drs. Sebat, Sandrock, Adams
- Bioethics: Drs. Yarborough and Fedyk
- Disaster planning: Kristina Spurgeon
- Palliative Care: Drs. Fairman and MacMillan
- Surgery: Drs. Gallante and Coconaur
- PICU: Drs. Mateev and Natale
- Nursing: Christine Williams, Emma Blackmon, Kevin Floyd
- Diversity/Inclusion: Dr. Ton
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- Dr. Yarborough
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- Dr. Wenger
- Dr. Jespersen
- Dr. Fazio
- Dr. Adams
- Dr. Taylor
- UCOP Bioethics Consortium

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# Questions?

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