A REGIONAL APPROACH TO ALLOCATION OF SCARCE RESOURCES FOR CRISIS CARE

This document addresses crisis standards of care for use in the COVID-19 pandemic. Crisis capacity is defined as adaptive spaces, staff and supplies not consistent with usual standards of care but providing sufficiency of care. CONTINGENT and CRISIS capacity activation may constitute a significant adjustment to conventional standards of care. Relevant ethical principles including respect, fairness, duty to care, duty to steward resources, transparency, consistency, proportionality, and accountability are outlined by the NAM/IOM and OR and WA state crisis care guidance materials referenced below.

Before moving from usual standards of care to crisis capacity activation, a CONTINGENT stage initiates measures to prepare for surge capacity. Many of our systems, while not yet overwhelmed, may be operating at this inflection point marked by bed census at or near capacity and critical care resources approaching capacity with an imminent surge expected. Surge capacity measures may include expanding telehealth, discharging patients not requiring acute inpatient care, preparing staff to serve in alternate duties, and deferring non-urgent surgeries. Collaboration between hospitals is essential in order to ensure that patients are transferred before triaged while available resources may still exist elsewhere in the community.

CRISIS stage is a state where systems are overwhelmed despite surge capacity measures. Instead of facilities operating in isolation, a shared decision in collaboration with the CMOs of community hospitals, county and state public health, and the Governor's Office as to when the community will enter CRISIS triage stage as one unified health system is recommended. Then, teams* separate from the primary clinical care teams (to mitigate influences of implicit and explicit bias) could address scarce resource allocation (SRA) for critical care in collaboration with the incident command structure. Those operating within the SRA structure should be guided by values of consistency, transparency, & compassion.

* Scarce Resource Allocation (SRA) team (facility-specific) – considers a cross-institutional framework, guides transition into and implements CRISIS triage protocol, oversees operations and tertiary triage, considers appeals, mitigates moral distress

- Membership could include team leader, logistics/operations, critical care, nursing, emergency department, ethics, infectious disease, palliative care, social work, and/or chaplain.

Triage team (person-specific) – functions under a SRA team to implement triage protocol by gathering clinical data, completing scoring, making triage decisions with de-identified data and scores, directing clinical teams

- Membership could include team leader, critical care, nursing, logistics/operations, and others.

[*The size and resources of a given facility will inform personnel decisions on these teams including practical considerations such as ensuring continuity across shift changes. Consideration should be applied to reassigning those who are particularly vulnerable to COVID-19 from direct patient care to SRA and triage team roles. Ideally members of these teams would be trained in implicit bias and be reflective of the community being served.]

Each institution would develop its own triage team protocol based on (1) survivability (prognosis for short- and long- term survival), and (2) random allocation as tie-breaker. Importantly, it would NOT be based on age, social worth, race/ethnicity, gender or sexual orientation, ability to pay, immigration status, nor disability. The scoring system is detailed further in the "Pilot Crisis Triage Tool," which is intended to guide triage teams in using clinical data to inform a clinical decision on the basis of survivability. An objective assessment that a given patient has a very low likelihood of survival even with critical care would ultimately result in both a DNR order and appropriate palliative care while the opposite may result in the initiation and continuation of critical care where resources permit.

Goals of care conversations should start immediately, carefully outlining likely ICU scenarios with all patients with significant comorbidities such as diabetes, heart disease, and chronic kidney disease discussing likely long-term ventilator requirements and isolation.

REFERENCES

1. NAM/IOM. 2012. Crisis standards of care: A systems framework for catastrophic disaster response.
2. Oregon Crisis Care Guidance. 2018. www.theoma.org/crisiscare.
3. WA State Dept of Health / NW Healthcare Response Network. 2020. Scarce Resource Mgmt & Crisis Standards of Care.
4. VITALtalk. 2020. COVID-Ready Communication Skills, www.vitaltalk.org/guides/covid-19-communication-skills/.
5. While the primary source documents for this approach are the Oregon Crisis Care Guidance and the NW Health Care Response Network / Washington State Dept. of Health materials, additional insight was found in D. White and B. Lo, "A Framework for Rationing Ventilators and Critical Care Beds During the COVID-19 Pandemic," *JAMA*, March 27, 2020.

COVID-19 Pandemic: Pilot Crisis Triage Tool

Adapted with Oregon Crisis Care Guidance

For use by local triage teams only during a surge when crisis standards of care apply. Intended to inform community crisis standards of care for triage decision-making.

STEP 1: Screen all patients with same criteria

All patients are eligible to receive critical care and a priority assignment based on potential to benefit from critical care. No one will be excluded due to any underlying condition or demographics.

A) Determine whether **advance care planning** documents (reliable patient preferences) indicate wish to maximize quality vs. quantity of life; persons on hospice or who decline to receive intensive care

B) Clarify whether patient has any clinical criteria associated with very low likelihood of survival with or without intensive care:

- **Cardiac arrest** if recurrent, due to blunt trauma, initial asystole, or no ROSC after initial interventions
- **Severe acute trauma** (e.g., non-survivable head injury)
- **Severe burns** with Low Survival burn scores

Does the patient meet screening criteria justifying admission?

YES → Move to Step 2

NO → Consider transition to comfort care / hospice, if clinically appropriate

STEP 2: Candidacy for Critical Care in Crisis

Assess all patients with the same clinical ICU admission criteria

A) Patients must have at least ONE of the following inclusion criteria:

- **Requires ventilatory support** (invasive or non-invasive)
  - > Clinical evidence of impending respiratory failure
    - Refractory hypoxemia (Sp02 < 90% on FiO2 > 0.85)
    - Respiratory acidosis (pH < 7.2)
  - > Inability to protect or maintain airway
- **Hypotension** (SBP <90) secondary to either an acute medical or trauma condition, with **clinical evidence of shock** refractory to volume resuscitation that cannot be managed outside of a critical care setting
- **High risk of preventable death** from other causes: patient expected to benefit substantially from timely critical care services. E.g.:
  - > Hemodynamically unstable, reversible arrhythmia
  - > Diabetic ketoacidosis
  - > Status epilepticus
  - > Life-threatening illness from toxins or sepsis
  - > Hypoglycemia
  - > Illness of similar severity

B) Will the patient benefit from critical care?

- **Prognosis for short-term survival**: degree of organ dysfunction ideally as measured by, for example, the mSOFA
- **Prognosis for long-term survival**: consideration to both current epidemiology and underlying ilness(es) / comorbidities
- Response to current treatment

C) Determine a triage score (to be considered for prioritization in Step 3). See table to right.

SOME MEDICAL CONDITIONS THAT ADVERSELY AFFECT LONG-TERM PROGNOSIS

Major Comorbidities	Severely Life-Limiting Comorbidities
NYHA Class III heart failure End-stage renal disease Severe, inoperable multi-vessel CAD	Metastatic cancer or hospcie-eligible malignancy NYHA Class IV heart failure Severe chronic lung disease (e.g., FEV1 < 25% predicted, TLC < 60% predicted, or baseline PaO2 < 55 mmHg) Cirrhosis with MELD score ≥ 20

TRIAGE FOR CRITICAL CARE SCORING GUIDE

Scoring is based on a synthesis of the best available evidence relevant for prognostication for all patients. Triage Teams should assess need using sound clinical judgment.

Prognosis for Short-Term Survival	Prognosis for Long-term Survival
mSOFA < 6 (0 pts)	... (0 pts)
mSOFA 6-9 (1 pts)	Major comorbidities (1 pts)
mSOFA 10-12 (2 pt)	... (2 pt)
mSOFA > 12 (3 pts)	Severely Life-limiting comorbidities (3 pts)

-***Lowest*** combined scores receive highest priority.

-Triage scoring and decisions are not permanent; re-evaluation may change score

Is the patient a candidate for critical care? What is the triage score?

YES → Patient meets ICU admission criteria, move to Step 3

NO → Admit to floor → Consider transition to comfort care if clinically appropriate

STEP 3: Capacity & Allocation of Critical Care Resources

A) Are critical care resources available for the patient(s)?

- Review existing resource availability from the command center.

B) Allocation & reallocation of critical care: Pathway depends on whether 2 (or more) patients are candidates for critical at presentation or re-evaluation.

1) Evaluate or re-evaluate all patients relative to items in Step 2 above.
   - > **Prioritization**: Patients with a significantly ***lower*** score will get priority.
2) Consider the **scope and magnitude of resources needed** (excluding cost) to care for the patient compared to the scarcity of those resources (including particularly high resource treatments like ECMO, etc.).
3) In case of a priority tie (equipoise):
   - > **Randomization**: if necessary randomization may be used as a tie-breaker.

A. Are critical care resources available for the patient?
B. Determine which pathway is appropriate for which patient.

For purposes of this triage tool, there are 3 general pathways: (i) immediate ICU pathway; (ii) reallocation pathway; and (iii) pending ICU pathway.

(i) ***Immediate ICU Pathway***: If there are available critical care resources, **transfer to ICU** as soon as possible.
If there are no critical care resources available, then determine whether there is a compelling reason to re-allocate critical care resources based on re-evaluation of other patients.

(ii) ***Reallocation ICU Pathway***: If there is a compelling reason, **transfer to ICU and de-escalate** treatment for the other patient who was in ICU. De-escalation may mean: (1) admit to the floor and initiate temporizing measures, place patient on ICU waitlist; or (2) admit to the floor and consider transition to comfort care / hospice if clinically appropriate.

(iii) ***Pending ICU Pathway***: If there is NOT a compelling reason to reallocate, or if one patient has higher priority than another but both are candidates for critical care, **admit the lower priority patient to the floor and initiate temporizing measures**, place patient on ICU waitlist.

STEP 4: Continuous Monitoring & Re-evaluation

Triage decision-making occurs only during a surge when need outstrips capacity and there is no option for transfer. The following steps should be taken by a Triage Team on a predetermined schedule and in coordination with local public health officials.

1. Monitor patients in ICU and on ICU waitlist(s) daily for any relevant changes (e.g., improving, unchanged, or worsening). Adjust treatment pathways as needed commensurate with needs of the community.
2. Assess any new epidemiological and prognostic data for COVID-19.
3. Escalate process issues to the command center or appropriate body.
4. Facilitate an appeals process for cases when a triage decision is in dispute.
5. Track triage decision-making for continuous quality improvement efforts.