Mass Critical Guidelines Document for Hospital and ICU Triage Guidelines for **ADULTS**

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PURPOSE:

To provide a triage protocol based upon transparent objective clinical criteria and an ethical frame work for medical decision making, including allocating scarce healthcare resources (medications, intensive care services, ventilators, ECMO, etc.) to those who are most likely to benefit medically during a **pandemic respiratory crisis or other emergency situation** that has the potential to overwhelm available intensive care resources. Application of these guidelines will require physician judgment at the point of patient care with individualized assessments based on the best available, relevant and objective medical evidence.

Basic premises:

- The overall goal is to **save as many lives as possible.**
- **Non-discrimination:** Each patient will receive respect, care, and compassion without regard to basis of race, ethnicity, color, national origin, religion, sex, disability, veteran status, age, genetic information, sexual orientation, gender identity, exercise of conscience or any other protected characteristic under applicable law. Medical treatment, including scarce resources will not be allocated based on the patient's ability to pay. However, this does not mean that all patients should or will receive critical care services in the time of resource scarcity.
- These Guidelines should not be viewed as a first step toward any type of resource rationing under normal circumstances. It should be used only in genuinely extraordinary situations in which the demand for intensive care services overwhelms the available services, such as in pandemic respiratory crisis.
- **Graded guidelines** should be used to control resources more tightly as the severity of a pandemic increases.
- **Priority should be given to patients for whom treatment most likely would be lifesaving** and who have the best chance of returning to their prior functional status whatever that may be with treatment. Such patients should be given priority over those who would likely die even with treatment and those who would likely survive without treatment.
- Physician judgment should be used in applying these Guidelines including: 1) with individualized assessments of each patient based on best available, relevant, and objective medical evidence; and 2) modification of this Guidelines and tools based on the individual patient, when necessary.
- Under a declared state of emergency, the governor maintains the authority to supersede healthcare regulations or statutes that may come into conflict with these guidelines.
- These evidence-based care guidelines rely on SOFA or MSOFA scoring to help physicians make decisions as objectively as possible by applying the same physiologic criteria to every patient. This scoring system is widely used by physicians across the country and in advanced medical systems across the planet. New clinical information may emerge over the course of the pandemic, and these guidelines may be modified accordingly, if feasible. To the extent the federal, state or local government issues laws, regulations or guidelines regarding triage of patients or assignments of ICU beds and ventilators, these guidelines may be modified to comply with those federal, state or local laws, regulations or guidelines.

Scope:

- **These triage guidelines apply to _____ (insert name of hospital) and all healthcare professionals and staff working at the hospital.**
- **These adult guidelines apply to all patients 14 years and older.** Please see Hospital and ICU Triage Guidelines for Pediatrics for patients 13 years and younger.

When activated:

- These guidelines should be activated in the event the governor declares a pandemic respiratory crisis or other public health emergency that has the potential to overwhelm available intensive care resources and implemented when the hospital and surrounding healthcare community reaches Level 3 Crisis Standard of Care.
- During a Crisis Standard of Care, the hospital in conjunction with its medical staff will use these guidelines to allocate scarce resources in a manner that respects the human dignity of each patient and saves as many lives as possible.

Hospital and medical staff planning:
Each hospital should:

- **Establish a triage committee** for the review and support of compliance with this policy when implemented. Consider a team of at least 3 individuals, at least 2 of whom should be physicians, including an intensivist and 2 or more of the following: the hospital medical director, a nursing supervisor, a board member, a member of the hospital ethics committee, a pastoral care representative, a social worker, and 1 or more physicians.
- **Establish a triage review or clinical ethics committee** to review triage committee decisions, when appealed by the patient, family or any physician treating the patient.
- **The responsible treating physician, Chief Medical Officer or designee** should compassionately communicate and explain the triage committee and triage review committee's decisions to the patient and/or family, emphasizing that the patient will continue to be supported, even if being denied access to a limited resource.
- **Institute a supportive and/or palliative care team** to provide symptom management, counseling, and care coordination for patients, and support for families of patients who do not receive intensive care unit services.

Medical staff should establish a method of providing peer support and expert consultation to physicians making these decisions.

OVERVIEW OF CRISIS OF CARE CONTINUUM

Conventional Standard of Care Level 1

- The conventional standards of care are followed. The hospital may need to call in additional staff, but has sufficient supplies and equipment, either at hand or available to it.
- As the threat of activation of the triage protocol increases, the federal, state or local government may consider cancelling elective surgeries/ procedures. If not, the hospital may consider cancelation of elective surgeries/procedures that require a back-up option of hospital admission and/or ventilator support.
- Note: In the event of a severe and rapidly progressing pandemic, start with Triage Level 2.

Conventional Standard of Care Level 2

- Conventional standards of care may be minimally impacted. The scarce resources at the hospital can expand to accommodate the surge above its baseline capacity through internal and external resources. The hospital may need to repurpose physical space to accommodate patients.

Conventional Standard of Care Level 3

- The hospital has implemented altered standards of care as demand for scarce resources (for example, ICU beds, ICU ventilators and staff) exceeds internal and readily available external resources. The hospital may need to activate its triage committee.
- Hospital staff absenteeism is maybe 20% to 40%.

HOSPITAL SETTINGS

Hospital Administrative Roles --- General

(Refer to page 12 for definitions of elective surgery categories.)

Crisis Care Continuum

Conventional Standard of Care Level 1:

1. Preserve bed capacity by:
   - Consider delaying/canceling any elective surgery that would require postoperative hospitalization.
   - Note: Use standard operation and triage decision for admission to ICU because resources are adequate to accommodate the most critically ill patients.
2. Preserve oxygen capacity by:
   - Phasing out all non-acute hyperbaric medicine treatments.
   - Ensuring that all liquid oxygen tanks are full.
3. Improve patient care capacity by transitioning space in ICUs to accommodate more patients with respiratory failure.
4. Control infection by limiting visitation (follow hospital infection control plan).

Contingency Standard of Care Level 2:

1. Preserve bed capacity by:
   - Delaying/canceling category 2 and 3 elective surgeries unless necessary to facilitate hospital discharge.
2. Improve patient care capacity by implementing altered standards of care regarding nurse/patient ratios and expanding capacity by adding patients to occupied hospital rooms.
3. Institute a supportive and/or palliative care team to provide symptom management, counseling and care coordination for patients, and support for families of patients who do not receive intensive care unit services.

Crisis Standard of Care Level 3:

1. Alternative Standard of Care is implemented by hospital and community to allocate scarce resources. The triage committee may be activated.
2. Preserve bed capacity by limiting surgeries to patients whose clinical conditions are a serious threat to life or limb, or to patients for whom surgery may be needed to facilitate discharge from the hospital.

Emergency Department, Hospital and ICU --- Clinical Triage

Use **HOSPITAL AND ICU/VENTILATOR ADMISSION TRIAGE ALGORITHM AND TOOLS** *(pages 6-11)* to determine which patients should be medically managed and/or receive palliative care at home or in the hospital and which patients to admit to hospital and/or will receive priority for interventions including but not limited to medications, ICU beds, ventilators, ECMO or other scarce resources. Note that the lowest priority for admission is given to patients with the lowest chance of survival with or without treatment, and to patients with the highest chance of survival without treatment.

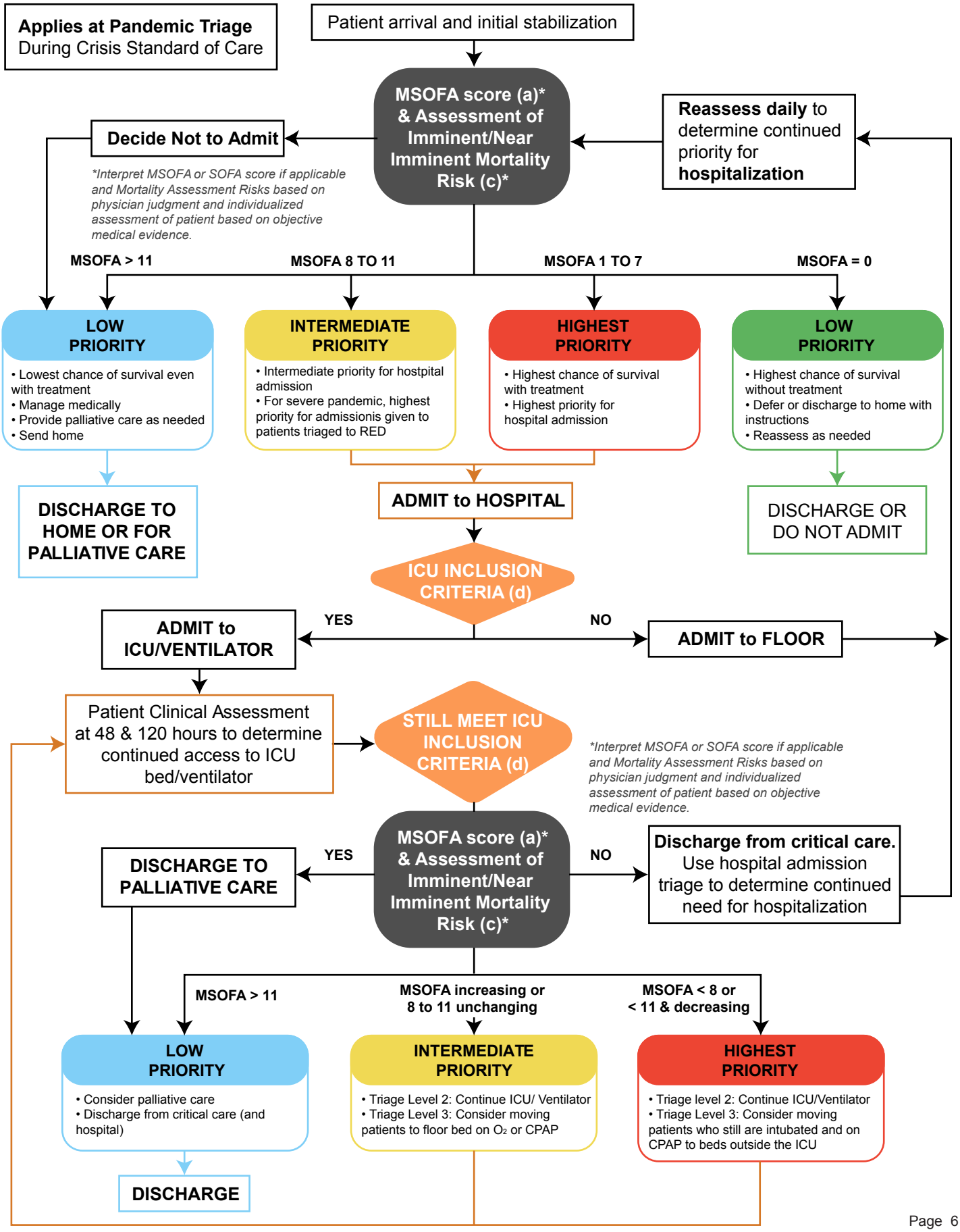
Physician judgment should be used in applying these guidelines, with individualized assessments of patients based on best available, relevant, and objective medical evidence.

Crisis Standard of Care Level 3:

- Initiate HOSPITAL AND ICU/ VENTILATOR ADMISSION TRIAGE algorithm (pages 6-11) to determine priority for ICU admission, intubation and/or mechanical ventilation.
- Reassess need for ICU/ventilator treatment daily.
- Continue to use HOSPITAL AND ICU/ VENTILATOR ADMISSION TRIAGE algorithm (page 6) to determine priority for ICU, intubation and/or mechanical ventilation.
- Triage more YELLOW patients to floor on oxygen or CPAP.
- Triage more RED patients who are intubated and on CPAP to floor.

See pages 6-11 for triage algorithm and supporting tools.

ALGORITHM: HOSPITAL AND ICU/VENTILATOR ADMISSION TRIAGE



TRIAGE TOOLS AND TABLES

These Tools and Tables will be used in conjunction with physician/judgment and individualized assessments based on best available, relevant and objective medical evidence.

Given our charge to do the best for the most saving as many lives as possible with a marked scarcity of resources (including, but not limit ed to, ICU, beds, personnel, equipment, and/or drugs) there are certain situations where maximally aggressive treatment cannot be provided to every individual. These individuals include:

- Those who are too ill to likely survive the acute illness (as eviden ced by clinical judgement further informed by the Modified Sequential Organ Failure Assessment MSOFA or Sequential Organ Failure Assessment SOFA score). A reasonable modification of MSOFA or SOFA may be a necessary accommodation for patients with a disability (especially cognitive or mobility limitations).

- Those whose underlying medical issues make their imminence of mortality so high that it is not reasonable to allocate critical care resources to them in a crisis situation, based on survival probability and an individualized assessment rather than a categorical exclusion.

(a) Modified Sequential Organ Failure Assessment (MSOFA) Score:

MSOFA Scoring Guidelines						
Variable	**Score 0**	**Score 1**	**Score 2**	**Score 3**	**Score 4**	**Score for each row**
SpO2/FIO2 ratio* or nasal cannula or mask 02 required to keep Sp02 >90%	SpO2/FIO2 >400 or room air SpO2 >90%	SpO2/FIO2 316-400 or SpO2 >90% at 1–3 L/ min	SpO2/FIO2 231-315 or SpO2 >90% at 4–6 L/ min	SpO2/FIO2 151-230 or SpO2 >90% at 7–10 L/ min	SpO2/FIO2 <150 or SpO2 >90% at >10 L/ min	
Jaundice	no scleral icterus			clinical jaundice/ scleral icterus		
Hypnotension†	None	MABP <70	dop <5	dop 5-15 or epi <0.1 or norepi <0.1	dop >15 or epi >0.1 or norepi >0.1	
Glasgow Coma Score	15	13-14	10-12	6-9	<6	
Creatinine level, mg/dL (use ISTAT)	1.2	1.2-1.9	2.0-3.4	3.5-4.9 or urine output <500 mL in 24 hours	>5 or urine out-put <200 mL in 24 hours	
					MSOFA score = total scores from all rows:	

(b) Sequential Organ Failure Chart (SOFA)

SOFA Scoring Guidelines						
Variable	**Score 0**	**Score 1**	**Score 2**	**Score 3**	**Score 4**	**Score for each row**
PaO_2/FiO_2	>400	≤ 400	≤300	≤200	≤100	
Platelets, $x10^3/\mu L$	<150	101-150	51-100	21-50	≤20	
Bilirubin, mg/dL	<1.2	1.2-1.9	2.0-5.9	6.0-11.9	>12	
Hypotension[1]	None	MAP<70	Dop≤5, or any dobutamine	Dop 5-15, or Epi≤0.1, or Norepi≤0.1	Dop>15, or Epi>0.1 or Norepi>0.1	
Glasgow Coma Score[2]	15	13-14	10-12	6-9	<6	
Creatinine, mg/dL	1.2	1.2-1.9	2.0-3.4	3.5-4.9 or urine output <500 mL in 24 hours	>5 or urine output <200 mL in 24 hours	
SOFA score = total scores from all rows:						

1. Dopamine (Dop), Epinephrine (Epi), and Norepinephrine (Norepi) does in µg/kg/min
2. If patient is chemically sedated, use last known or estimated GCS prior to sedation. Adapted from Up to Date and Ferreira FL, Bota DP, Bross A, Melot C, Vincent JL. Serial evaluation of the SOFA score to predict outcome in critically ill patients. JAMA 2001; 286(14): 1754-1758.

A reasonable modification of MSOFA or SOFA may be a necessary accommodation for patients with a disability (e.g. deafness, cognitive or mobility limitations).

*SpO2/FIO2 ratio:
SpO2 = Percent saturation of hemoglobin with oxygen as measured by a pulse oximeter and expressed as % (e.g., 95%); FIO 2 = Fraction of inspired oxygen; e.g., ambient air is 0.21 Example: if SpO2 = 95% and FIO2 = 0.21, the SpO2/FIO2 ratio is calculated as 95/0.21 = 452 †

Hypotension:
MABP = mean arterial blood pressure in mm Hg [diastolic + 1/3(systolic - diastolic)]
dop= dopamine in micrograms/kg/min
epi = epinephrine in micrograms/kg/min norepi = norepinephrine in micrograms/kg/min

(c) Assessment of Imminent or Near Imminent Mortality:
Examples of underlying issues that would result in imminent or near imminent mortality and could be considered in an individualized assessment of a patient are:

1. Cardiac Arrest: unwitnessed arrest, recurrent arrest without hemodynamic stability, arrest unresponsive to standard interventions and measures; trauma-related arrest.
2. Irreversible age-specific hypotension unresponsive to fluid resuscitation and vasopressor therapy.
3. Traumatic brain injury with no motor response to painful stimulus (i.e., best motor response =1) (see chart).
4. Severe burns: where predicted survival ≤ 10% even with unlimited aggressive therapy (see chart).
5. Any other conditions resulting in imminent or near-imminent mortality even with aggressive therapy.*

*This phrase encompasses other possibilities because the list above is merely a guide and does not list every medical condition that would result in imminent or near-imminent mortality.

(d) ICU/Ventilator INCLUSION CRITERIA:

Patient have at least one of the following **INCLUSION CRITERIA:**

1. Requirement for invasive ventilatory support
   - ☐ Refractory hypoxemia (Sp02 <90% on non-rebreather mask or FIO2 >0.85)
   - ☐ Respiratory acidosis (pH <7.2)
   - ☐ Clinical evidence of impending respiratory failure
   - ☐ Inability to protect or maintain airway
2. Hypotension* with clinical evidence of shock** refractory to volume resuscitation, and requiring vasopressor or inotrope support that cannot be managed in a ward setting.
   - *Hypotension = Systolic BP <90 mm Hg or relative hypotension.
   - **Clinical evidence of shock = altered level of consciousness, decreased urine output or other evidence of end-stage organ failure.

(e) Tiebreakers:

In the event there are more patients in the Red “Highest Priority” group than available ICU beds/ventilators, the Triage Committee working with the treatment team will make individualized allocation decisions that may take into account such features as dependents (a patient with young children should be given priority over a patient without young children) or the clinicians’ clinical gestalt.

(f) Continuous Clinical Assessment:

All patients who are allocated critical care services will be allowed a therapeutic trial of a duration to be determined by the clinical characteristics of the disease. Patients should generally be given an initial 48 to 72-hour trial. Although patients should generally be given the full duration of the initial 48 to 72-hour trial, if patients experience a precipitous decline, the Triage Committee may make a decision before the completion of the specified trial length that the patient is no longer eligible for critical care treatment. Patients showing improvement will continue receiving the scarce resources they have been allocated until the next assessment. If there are patients in the queue for critical care services, then patients who upon reassessment show substantial clinical deterioration as evidenced by worsening MSOFA or SOFA scores (or overall clinical judgment if MSOFA or SOFA score not available) will be eligible to have critical care interventions withdrawn. Clinical assessments will be conducted based on the criteria outlined above, including the calculation of the MSOFA or SOFA score, appraisal of new complications, and an individualized assessment of the patient based on physician judgment.

(g) Glasgow Coma Score (GCS):

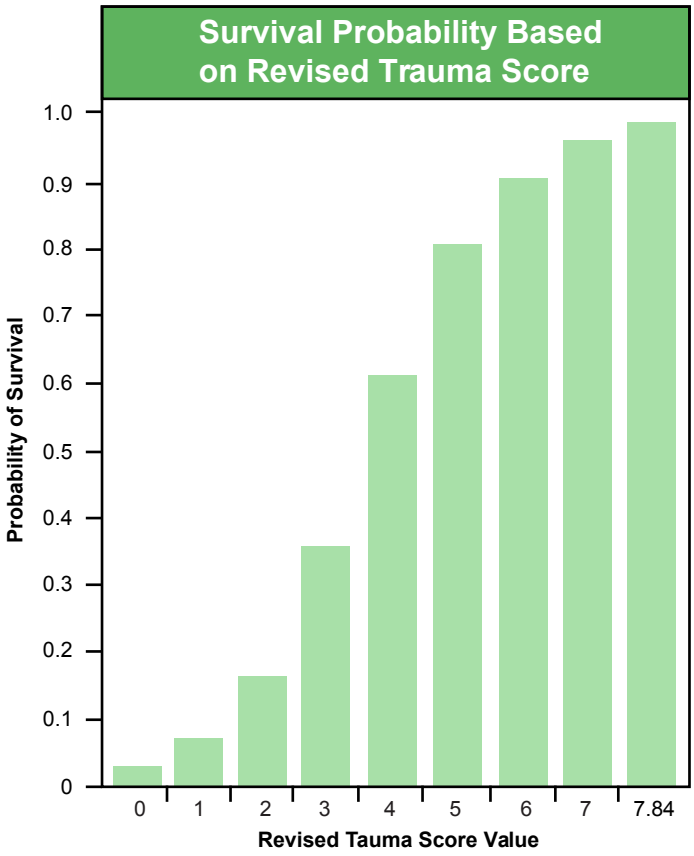
The GCS is used as part of the MSOFA and SOFA scores.

Glasgow Coma Scoring Criteria				
Criteria	**Adults and Children**	**Infants and Young Toddlers**	**Score**	**Criteria Score**
Best Eye Response (4 possible points)	No eye opening	No eye opening	1	
	Eye opens to pain	Eye opens to pain	2	
	Eye opens to verbal command	Eye opens to speech	3	
	Eyes open spontaneously	Eyes open spontaneously	4	
Best Verbal Response (5 possible points)	No verbal response	No verbal response	1	
	Incomprehensible sounds	Infant moans to pain	2	
	Inappropriate words	Infant cries to pain	3	
	Confused	Infant is irritable and continually cries	4	
	Oriented	Infant coos or babbles (normal activity)	5	
Best Motor Response (6 possible points)	No motor response	No motor response	1	
	Extension to pain	Extension to pain	2	
	Flexion to pain	Abnormal flexion to pain	3	
	Withdraws from pain	Withdraws from pain	4	
	Localizes to pain	Withdraws from touch	5	
	Obeys commands	Moves spontaneously or purposefully	6	
Total Score (add 3 subscores; range 3 to 15):				

(h) Revised Trauma Score (RTS):

Values for the REVISED TRAUMA SCORE (RTS) range from 0 to 7.8408. The RTS is heavily weighted toward the GLASGOW COMA SCORE (GCS) to compensate for major head injury without multisystem injury or major physiological changes. The RTS correlates well with the probability of survival.

Revised Trauma Score Calculation				
Criteria	**Score**	**Coded value**	**Weighting**	**Adjusted Score**
Glasgow Coma Score	3	0	x 0.9368	
	4 to 5	1		
	6 to 8	2		
	9 to 12	3		
	13 to 15	4		
Best Verbal Systolic Blood Pressure (SBP)	0	0	x 0.7326	
	1 to 49	1		
	50 to 75	2		
	76-89	3		
	>89	4		
Respiratory Rate (RR) in breaths per minute (BPM)	0	0	x 0.2908	
	1 to 5	1		
	6 to 9	2		
	>29	3		
	10 to 29	4		
Revised Trauma Score (add 3 adjusted scores):				



(i) Triage Decision Table for Burn Victims

Age (yrs)	Burn Size (% total body surface area)									
	0–10%	**11–20%**	**21–30%**	**31–40%**	**41–50%**	**51–60%**	**61–70%**	**71–80%**	**81–90%**	**91%+**
0 – 1.9	Very high	Very high	Very high	High	Medium	Medium	Medium	Low	Low	Low/ expectant
2.0 – 4.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Low	Low
5.0 – 19.9	Outpatient	Very high	Very high	High	High	High	Medium	Medium	Medium	Low
20.0 – 29.9	Outpatient	Very high	Very high	High	High	Medium	Medium	Medium	Low	Low
30.0 – 39.9	Outpatient	Very high	Very high	High	Medium	Medium	Medium	Medium	Low	Low
40.0 – 49.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Medium	Low	Low	Low
50.0 – 59.9	Outpatient	Very high	Very high	Medium	Medium	Medium	Low	Low	Low/ expectant	Low/ expectant
60.0 – 69.9	Very high	Very high	Medium	Medium	Low	Low	Low	Low/ expectant	Low/ expectant	Low/ expectant
70.0+	Very high	Medium	Medium	Low	Low	Low/ expectant	Expectant	Expectant	Expectant	Expectant

Outpatient: Survival and good outcome expected, without requiring initial admission; **Very high:** Survival and good outcome expected with limited/ short-term initial admission and resource allocation (straightforward resuscitation, LOS <14–21 days, 1-2 surgical procedures); **High:** Survival and good outcome expected (survival >90%) with aggressive and compre-hensive resource allocation, including aggressive fluid resuscitation, admission >14–21 days, multiple surgeries, prolonged rehabilitation; **Medium:** Survival 50–90% and/or aggressive care and comprehensive resource allocation required, including aggressive resuscitation, initial admission >14–21 days, multiple surgeries and prolonged rehabilitation; **Low:** Survival <50% even with long-term aggressive treatment and resource allocation; **Expectant:** Predicted survival <10% even with unlimited aggressive treatment.

DEFINITIONS USED IN THIS DOCUMENT

- **Emergency patients:** Those patients whose clinical conditions indicate that they require admission to the hospital and/or surgery within 24 hours.
- The federal, state or local government or a government agency may determine when and the type of elective surgeries that can be scheduled while an emergency declaration is in place.

If a government or governmental agency has not made this determination, **elective surgery means:**

  - **Category 1:** Urgent patients who require surgery within 30 days.
  - **Category 2:** Semi-urgent patients who require surgery within 90 days.
  - **Category 3:** Non-urgent patients who need surgery at some time in the future.

- **Palliative care:** In the setting of an overwhelming medical crisis, palliative care helps improve patient symptoms such as shortness of breath, pain and anxiety. Palliative care teams also support patient and family spiritual and/or emotional pain.

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