

South Dakota Crisis Standards of Care

for Pediatric Hospital Triage

2023



SOUTH DAKOTA

PEDIATRIC

CRISIS STANDARDS OF CARE PLAN

DRAFT 10.20.23

I. INTRODUCTION

Crisis Standards of Care (Standards) refer to substantial changes in usual health care operations due to a pervasive or catastrophic disaster that necessitate rational utilization of scarce resources like space, personnel, and equipment to provide the best possible delivery of health care to the greatest number of patients. Standards may arise within regional or specific hospital or other health care settings based often on formally declared emergencies or corresponding executive orders that change the legal and ethical landscapes to facilitate shifts in prevailing health care delivery. When resource scarcity reaches crisis levels, providers may need to make medical decisions based on individualized assessments that identify which resources will be used to sustain life to the greatest extent possible for the greatest number possible.

Under the Standards, the focus of medical care is based on the wishes and needs of the individual patient. The Standards will also focus on promoting the thoughtful use of limited resources for the best possible health outcome and likelihood of survival at discharge of the population as a whole.

These Standards apply to (the hospital) and all healthcare professionals and staff working at the hospital. The Pediatric Standards apply to all patients under the age of 14.

II. PURPOSE

To provide medically and ethically sound, clinically objective, practical, non-discriminatory, and transparent assessment and triage standards for allocation of limited medical resources in the event of a mass critical care situation during which the demand for hospital and critical care services exceeds capacity.

III. PLAN

A. Basic Premises:

1. **Goal:** The overall goal is to save lives (or help as many people survive as possible), treat pediatric patients with additional sensitivity as possible due to their added vulnerability, and to treat all patients with dignity. When a patient is so ill due to any cause that survival to hospital discharge is unlikely, as per the criteria set forth herein, it may not be reasonable to allocate scarce life sustaining resources to that patient. Such patients will be triaged to supportive palliative care or hospice care.
2. **Non-discrimination:** Each patient will receive medical treatment delivered with respect, care, and compassion and without regard to basis of race, ethnicity, color, national origin, religion, sex, disability, veteran status, age, genetic information, sexual orientation, gender identity, or any other protected characteristic under applicable law. Further, medical treatment should not be allocated under these Standards based on the patient's ability to pay, insurance status, socioeconomic status, immigration status, incarceration status, homelessness, past or future use of resources, perceived self-worth, perceived or assessed quality of life, age or weight/size. Parents/Guardians may not dismiss or waive a patient's right to receive care under these Standards if that patient is otherwise qualified hereunder to receive such care.
3. **Reasonable Accommodation:** Healthcare providers shall take appropriate steps to reasonably accommodate and provide individuals with disabilities meaningful access and an equal opportunity to participate in, or receive the services and benefits under these Standards, and in accordance with the Department of Health and Human Services Office of Civil Rights. In addition to accommodating patient disability, healthcare providers shall take appropriate steps to accommodate for the vulnerability of young patients in such areas as communication, special space and equipment needs, mental health, parental rights and duties, etc.

Reasonable accommodation may include, but is not limited to the following:

- Providing effective communication with individuals who are deaf, hard of hearing, blind, have low vision, or have speech disabilities through the use of qualified interpreters, picture boards, and other means;
- Providing meaningful access to programs and information to individuals with limited English proficiency through the use of qualified interpreters and through other means;
- Making emergency messaging available in plain language and in languages prevalent in the affected area(s) and in multiple formats, such as audio, large print, and captioning, and ensuring that websites providing emergency-related information are accessible;
- Addressing the needs of individuals with disabilities, including individuals with mobility impairments, individuals who use assistive devices, auxiliary aids, or durable medical

equipment, individuals with impaired sensory, manual, and speaking skills, and individuals with immunosuppressed conditions including HIV/AIDS in emergency planning;

- Respecting patient's and Parents or Guardian's requests for religious accommodations in treatment and access to clergy or faith practices as practicable.

4. **Patient Ventilator/Equipment**: Hospitals may not re-allocate a personal ventilator (or a ventilator brought by the patient to the facility at admission to continue the patient's personal use). Hospitals shall make every reasonable effort possible to provide equipment of adequate size for pediatric patients.
5. **Hospital Policies**: These Standards should be read in concert with current hospital policies, procedures, and/or guidelines. Implementing facilities may consider adding direct references to relevant policies.
6. **Standards Prerequisites**: These Standards should be used only in genuinely extraordinary situations in which the demand for services overwhelms capacity and when activated by appropriate governmental and/or institutional authorities.
7. **Standards Application**: Whether applied by individual treating clinicians, clinical triage committees, or clinical triage officers, these Standards require assessment of each patient's treatment preferences and likelihood of survival, giving priority to likelihood of survival to hospital discharge with treatment.
8. **Physician Judgment**: Application of these Standards is primarily a physician responsibility and must include, based on an individualized assessment of each patient and his/her treatment preferences: 1) a physician's reasonable medical judgment of the patient's likelihood of survival based on best available, relevant, and objective evidence as further clarified below; and 2) a physician's reasonable medical judgment to modify and accommodate these Standards.
9. **Patient Treatment Preferences**: Values and preferences related to life sustaining treatment should be assessed with the patient and his/her parents or guardian. Parental/Guardian consent remains necessary to withdraw life sustaining treatment or to issue medical orders for scope of treatment at end of life, such as SD MOST, Comfort One, or DNR. When applicable and medically prudent, physicians and healthcare providers should encourage conversation regarding end-of-life decisions but must be careful not to exert pressure on or influence parents, guardians or patients to decline life sustaining treatments in the process of discussing such planning decisions. In addition, providers shall not encourage decisions based on judgments regarding quality of life or relative worth. Providers must provide information on treatment options,

including both “comfort only” and continued life sustaining treatment, as long as the treatment option is medically appropriate based upon reasonable medical judgment and current medical evidence. Physicians may not require patients’ decision makers to complete advance directives or medical orders and providers may not issue blanket Do Not Attempt Resuscitation (“DNAR”) orders.

- a. **Likelihood of Survival**: For purposes of these Standards, likelihood of survival primarily means the physician’s reasonable medical judgment about survival to hospital discharge. This relies on clinician judgment of the patient’s risk of dying even with disease modifying treatment during the current acute care hospitalization. This clinician judgment should be informed as much as medically reasonable by objective clinical parameters and should not consider perceived quality of life or age. A physician’s reasonable medical judgment about likelihood of survival may be further informed by the PELOD-2 objective assessment tool, as well as various proprietary artificial intelligence-based tools a clinician might have access to when approved for use in the facility where the patient is being treated, eligibility for additional treatments if indicated for other conditions such as bone marrow or solid organ transplants, LVAD as bridge or destination therapy, dialysis, and more.
- b. **Use of Assessment/Prognostication Tools**: The decision to utilize any specific clinical assessment/prognostication tool is solely at the discretion of the responsible treating physician(s) and may change over time as patient characteristics and/or clinical science changes. No matter the clinical criteria utilized, clinical trajectory over time is often more important than any single point in time criteria. If one patient’s likelihood of survival is declining more rapidly than the other patient needing the same limited resource, the limited resource should be assigned to the patient with the less rapid rate of decline. Additional survival beyond hospital discharge may only be considered after all clinical factors related to achieving hospital discharge have been considered, and the likelihood of survival to hospital discharge is, in reasonable medical judgment, the same for two (2) patients but treatment is available only for one. This is hopefully a rare situation, but if it occurs, consideration may only be given to the short term post-hospitalization survivability of the patient, provided neither disability, race, age, or other protected class category, nor perceived quality of life are part of that consideration. In all cases, clinical judgment about survival should be based upon an individual patient assessment including reasonable modification of any clinical assessment/prognostic tool(s) utilized as necessary to accommodate for patients with a disability, and in line with the principles of non-discrimination outlined above.

10. **No Categorical Exclusions**: Neither these Standards nor the tools referenced are intended to create any categorical exclusions from life sustaining treatment. However, a patient, through their parent's or guardian's consent may have indicated a preference for "comfort only" treatment if the patient is, in reasonable medical judgment, terminally ill. A time of crisis in which these Standards are activated does not necessarily activate such a directive on behalf of patient.
11. **No Consideration of Resource Intensity**: Neither these Standards nor the tools referenced are intended to allow for consideration of a patient's use of resources or duration of need. These Standards favor helping as many patients survive as possible thus, resource intensity and duration are likely to be increased. Responsible parties should plan for the need of increased resource intensity not only during hospitalization but in the post hospitalization time frame.
12. **No Consideration of Perceived Quality of Life**: Quality of life may not be used as a consideration in resource allocation decisions except as consistent with patient treatment preferences and in accordance with state law. Many clinical prognostic assessment tools are better validated for some conditions than others. For example, SOFA or MSOFA are best validated in the adult setting of sepsis with multi-organ system failure and may have less utility as a supplement to physician judgment in isolated single organ lung failure from an infectious disease like COVID-9. The Pediatric Organ Logistic Dysfunction (PELOD)-2 can be used to assess organ dysfunction and has been highly predictive of mortality in children with suspected infection.
13. **Triage priority**: Optimally, intensive treatment should be provided to every patient who meets treatment inclusion criteria, but if demand exceeds capacity, triage first according to the clinician, triage committee, or triage officer's reasonable medical judgment based upon objective clinical criteria as outlined above about survival to hospital discharge. Consultation across specialties, including but not limited to critical care, infectious disease, hospital medicine, surgical, palliative medicine, and other subspecialties relevant to serious illness care is useful in refining clinical judgment and sharing the burden of decision making. If the hopefully rare circumstance arises in which likelihood of survival to hospital discharge is, in reasonable medical judgment, the same for two (2) patients, but treatment is only available for one, a secondary triage decision may be made. If one patient's clinical trajectory is declining more rapidly than the other patient needing the same limited resource, the limited resource should be assigned to the patient with the less rapid rate of clinical decline, and thus the greatest prospect of survival.

If the rare circumstance arises in which the physician's reasonable medical judgment is that both the likelihood of survival to hospital discharge and the rate of clinical decline

are the same for two (2) patients, but treatment is only available for one, the first patient to present will be given priority. If both patients presented at the same time, a decision may be made favoring the patient with the more favorable short-term post-hospital survivability, as long as this is not based on any of the factors listed in the non-discrimination premises of these Standards.

14. **Standards Application and Appeals:** Individual hospitals may select different methods for applying these Standards in a manner they believe best allows Standards compliance to save lives, promote transparency, and prevent discrimination. This includes application of these Standards by 1) treating clinicians at the bedside (may include emergency medicine, critical care, infectious disease, and/or hospitalist physicians); 2) clinical triage committees; and/or 3) clinical triage officers. Whichever method is used, application monitoring, support for those engaged in application, and an appeals process should be provided. Appeals process means that a member of the clinical treatment team, the patient's parents or guardians, or the patient if of an age that assent is required may appeal.

15. **Application by Bedside Clinicians:** If a hospital chooses application initially by bedside clinicians, those clinicians will complete the basic assessment of patient preferences, likelihood of survival, including if necessary clinical trajectory and then make the triage decision supported by the best available objective clinical evidence as outlined above. Bedside clinicians may seek consultation from a clinical triage committee or clinical triage officer for assistance in applying these Standards. If a member of the clinical team or triage committee learns that a patient, parent or Guardian or another member of the clinical team disagrees with a decision made pursuant to these Standards, an appeal process should be available to a clinical triage committee or clinical triage officer who will have the authority to make the final decision unless further appeal is requested to a hospital or health care system clinical ethics committee or triage review committee, established specifically for the task of triage review.

16. **Application by a Clinical Triage Committee or Clinical Triage Officer:** If a hospital chooses application initially by a clinical triage committee or officer, the clinical triage committee or clinical triage officer may obtain information from the bedside clinicians and/or medical record, including information relating to patient preferences and the likelihood of survival, and, if necessary, clinical trajectory. The clinical triage committee or clinical triage officer will then make the triage decision(s) supported by the best available objective clinical evidence, as outlined above. If a member of the clinical treatment team, a patient, or parent or Guardian informs another member of the clinical treatment team, a member of the clinical triage committee or clinical triage officer, or the Chief Medical Officer, they disagree with the triage decision made pursuant to these Standards, an appeal process should be available to a hospital or

healthcare system triage review committee or clinical ethics committee, established specifically for the task of triage review, who has the authority to make the final decision.

17. **Governor's Authority**: Under a declared state of emergency, the governor maintains the authority to supersede healthcare regulations or statutes that may come into conflict with these Standards.
18. **New Clinical Information**: New clinical information may emerge over the course of a pandemic or other mass critical care situation, and these Standards may be modified accordingly. To the extent the federal, state or local government issues laws, regulations or guidelines regarding triage of patients or assignments of ICU beds, ventilators, or other medically necessary limited resources, these Standards may be modified to comply with those federal, state or local laws, regulations or Standards. If an objective, validated pandemic or other mass critical care specific assessment tool which more accurately predicts survival than current tools become available, this may be used in place of PELOD-2 and/or other tools referenced in these Standards, provided that the new assessment system aligns with the basic non-discrimination premises of these Standards.

B. Activation

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

OVERVIEW OF CRISIS OF CARE CONTINUUM

Conventional Standard of Care Level 1	Contingency Standard of Care Level 2	Crisis Standard of Care Level 3
<ul style="list-style-type: none"> 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 cancellation of elective surgeries/procedures that require a back-up option of hospital admission and/or ventilator support.³ Note: In the event of a severe and rapidly progressing public health emergency, start with Level 2 Contingency Standard of Care. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 may be so severe as to become a rate limiting factor leading to Level 3 Crisis Standard of Care.

CONTINGENT INTERVENTIONS BY LEVEL OF CARE

Conventional Standard of Care Level 1:	Contingency Standard of Care Level 2:	Crisis Standard of Care Level 3:
<ol style="list-style-type: none"> Preserve bed capacity by: <ul style="list-style-type: none"> Consider delaying/cancelling any elective surgery that would require postoperative hospitalization.⁴ Note: Use standard operation and triage decision for admission to ICU because resources are adequate to accommodate the most critically ill patients. Preserve oxygen capacity by: <ul style="list-style-type: none"> Phasing out all non-acute hyperbaric medicine treatments. Ensuring that all liquid oxygen tanks are full. Improve patient care capacity by transitioning space in ICUs to accommodate more patients <ul style="list-style-type: none"> Control infection by limiting visitation (follow hospital infection control plan), consistent with any federal, state, or local government laws, regulations, or rules.⁵ 	<ol style="list-style-type: none"> Preserve bed capacity by: <ul style="list-style-type: none"> Delaying/cancelling category 2 and 3 elective surgeries unless necessary to facilitate hospital discharge. Improve patient care capacity by implementing altered standards of care regarding nurse/patient ratios and expanding capacity by adding patients to occupied hospital rooms. 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. 	<ol style="list-style-type: none"> Alternative Standard of Care is implemented by hospital and community to allocate scarce resources. The clinical triage committee/clinical triage officer may be activated. Preserve bed capacity by limiting surgeries to patients whose clinical condition is a serious threat to life or limb, or to patients for whom surgery may be needed to facilitate discharge from the hospital.

IV. HOSPITAL PLANNING

Individual hospitals have variable characteristics and thus may select different methods for applying these Standards in a manner that best allows compliance to save lives,

promote transparency, and prevent discrimination. Each hospital should (or within the context of a broader healthcare system):

A. Establish Care parameters based on the Pediatric Special Needs section (listed below in section V.A.) including:

1. COMMUNICATION: Messaging and communication will need to be modified for pediatric patients, especially those who are non-verbal.
2. PERSONAL PROTECTIVE EQUIPMENT (PPE): Masks, gloves, gowns, and other PPE may frighten pediatric patients. Pediatric sizes of masks and other types of PPE should also be available.
3. DECONTAMINATION: Children may need to be decontaminated with or by adult family members/caregivers. Tepid (98.6 °F) water will be needed because children are more prone to hypothermia.
4. MENTAL HEALTH: Children have unique psychological needs and may be prone to fear and panic.
5. EVACUATION/TRANSFER: Out-of-state transfer will be a last resort.
6. REUNIFICATION: Hospital reception sites will be set up at hospitals to assist families seeking information about missing loved ones.
7. PEDIATRIC SPACE, STAFF, AND SUPPLIES: When possible, pediatric patients should be brought to pediatric acute healthcare facilities. If evacuation or transfer is not possible, healthcare professionals will have to use available resources until transfer is possible.

B. Establish a clinical triage committee and/or clinical triage officer. A clinical triage officer should have expertise in emergency medicine, critical care, or hospital medicine and may have experience in clinical ethics. For a committee, consider a team of at least 3 individuals, at least 2 of whom should be physicians, including an intensivist and 1 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 additional physicians. If a hospital has decided to vest primary or initial application of these Standards to the clinical treatment team, then a clinical triage committee may provide either consultation to treating physicians at the bedside or make treatment decisions in the setting of an appeal of a triage decision made by the clinical treatment team. Alternatively, a hospital may decide to vest primary or initial application of these Standards to the clinical triage committee and/or clinical triage officer.

C. Establish a triage review or clinical ethics committee or officer to monitor and review 1) clinical treatment team decisions or 2) clinical triage committee or clinical triage officer decisions, and to serve as appeal process when requested by the patient, parent or Guardian, or the clinical treatment team.

D. Establish an appeal process to review appeals to the decisions made under these Standards by a member of the clinical treatment team, patients, and parents or Guardian.

E. Communication of triage decisions may be completed by 1) a member of the clinical treatment team, 2) a member of the clinical treatment team in conjunction with a member of the clinical triage committee, the clinical triage officer, a member of the clinical triage review or clinical ethics committee, or 3) the hospital Chief Medical Officer or designee. Supportive palliative care consultation is strongly encouraged as early as possible, especially when the likelihood of survival to hospital discharge is deemed low and/or when possible, withdrawal of non-comfort treatment is being considered.

F. 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.

G. Establish a method of providing peer support and expert consultation to clinicians making these decisions.

V. CLINICAL RESPONSIBILITIES AND UTILIZATION OF THE ALGORITHM AND ASSESSMENT TOOLS

Given the charge to do the best for the most, saving as many lives as possible with a marked scarcity of resources (including, but not limited to, general hospital and ICU services, personnel, equipment, and/or drugs) there are certain situations where maximally aggressive treatment cannot be provided to every individual. At that point, the following process should be activated:

Physician clinical judgment regarding differential likelihood of survival among patients should begin, following the Basic Premises outlined above. This should include: 1) an individualized assessment of each patient's treatment preferences and survival likelihood based on best available, relevant, and objective evidence; and 2) as-needed modification of these Standards and any tools utilized as needed to accommodate for the individual patient's clinical circumstances, including disabilities.

A. Pediatric Special Needs

Children have special vulnerabilities. Children are more physically and psychologically vulnerable than adults to trauma, biological agents, chemical agents, and other assaults on their bodies.

All staff responsible for their care must be aware of these differences. For example:

- Children are more susceptible to dehydration and shock, more vulnerable to radiation, and suffer greater effects from skin/inhaled agents. They must be treated with medications using weight-based dosing and appropriately sized equipment.

- Depending on the development level some pediatric victims cannot respond to disaster triage protocols (e.g. “If you can hear my voice, walk to the white tent.”)
- Many pediatric patients are non-verbal and non-ambulatory. Available personnel or family members are essential in providing companionship and direction.
- Children require special considerations to ensure their safety.
- Children are often frightened, crying or exhibit uncooperative behavior when arriving. Volunteers, child life or mental health staff must provide support for these children. This is particularly a problem when separated from their family.
- The Personal Protective Equipment safeguarding healthcare workers may frighten many small children.
- Pediatric patient decontamination is challenging as children chill easily. They may become hypothermic, requiring warm water during the washing component of decontamination. Many small children cannot follow directions, self-decontaminate, wash thoroughly or manipulate equipment.
- Pediatric disaster victims have unique psychological needs. Rapid psychological assessment is important to allay fear and panic.

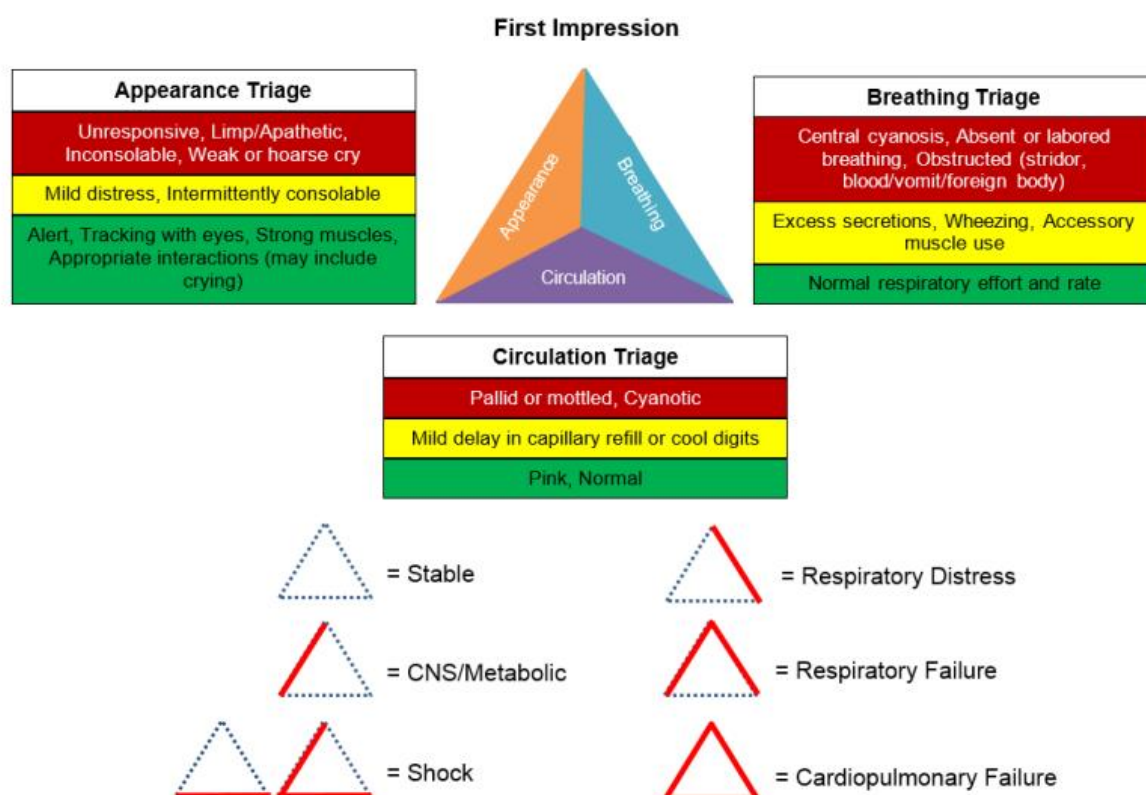
B. Algorithm: Hospital and ICU/Ventilator Admission Triage

The use of standardized triage algorithms will provide guidance for triage personnel making potential life and death decisions that otherwise might be influenced by emotional issues.

In the event of very large numbers of patients arriving at an ED simultaneously, the Pediatric Assessment Triangle (PAT) suggests the urgency with which treatment should be initiated. This assessment tool relies on the appearance of the patient to determine the severity of illness, the need for treatment, and the response to therapy. By using only visual and auditory assessments to develop an initial impression of a pediatric victim, PAT allows clinicians to rapidly identify patients with physiological instability without using sophisticated monitoring techniques. The components include appearance, peripheral perfusion, and respiratory effort.

Step 1:

PEDIATRIC ASSESSMENT TRIANGLE (PAT) - Initial Assessment (First Impression)



Step 2: ALLOCATION CRITERIA FOR ICU ADMISSION/VENTILATION

Consistent with accepted standards during public health emergencies, the primary goal of the allocation framework is to maximize benefit to populations of patients, often expressed as “doing the greatest good for the greatest number”. First responders and bedside clinicians should perform the immediate stabilization of any patient in need of critical care, as they would under normal circumstances. Along with stabilization, temporary ventilatory support may be offered to allow the triage officer to assess the patient for critical resource allocation. Every effort should be made to complete the initial triage assessment within 90 minutes of the recognition of the need for critical care resources. **The most reliable pediatric assessment to assist with this process is the PELOD-2.** (See table a. below)

Allocation framework is based on saving lives (or helping as many people survive as possible). The Critical Care Triage Team will use the PELOD-2 assessment tool as the initial criteria to evaluate the status of patients in need of the resource in question and characterize the patients’ prognosis for the likelihood of survival at discharge. If PELOD-2 is indeterminate, physicians can use other assessment tools to aid in judgment based on the goals of care and will be based on the attending physician’s expertise of disease process & triage officer/team collaboration.

Table a. PELOD-2 Severity Levels

Organ Dysfunctions and Variables ^a	Points by Severity Levels						
	0	1	2	3	4	5	6
Neurologic^b							
Glasgow Coma Score	≥ 11	5–10			3–4		
Pupillary reaction	Both reactive					Both fixed	
Cardiovascular^c							
Lactatemia (mmol/L)	< 5.0	5.0–10.9			≥ 11.0		
Mean arterial pressure (mm Hg)							
0 to < 1 mo	≥ 46		31–45	17–30			≤ 16
1–11 mo	≥ 55		39–54	25–38			≤ 24
12–23 mo	≥ 60		44–59	31–43			≤ 30
24–59 mo	≥ 62		46–61	32–44			≤ 31
60–143 mo	≥ 65		49–64	36–48			≤ 35
≥ 144 mo	≥ 67		52–66	38–51			≤ 37
Renal							
Creatinine (μmol/L)							
0 to < 1 mo	≤ 69		≥ 70				
1–11 mo	≤ 22		≥ 23				
12–23 mo	≤ 34		≥ 35				
24–59 mo	≤ 50		≥ 51				
60–143 mo	≤ 58		≥ 59				
≥ 144 mo	≤ 92		≥ 93				
Respiratory^d							
Pao ₂ (mm Hg)/Fio ₂	≥ 61		≤ 60				
Paco ₂ (mm Hg)	≤ 58	59–94		≥ 95			
Invasive ventilation	No			Yes			
Hematologic							
WBC count (× 10 ⁹ /L)	> 2		≤ 2				
Platelets (× 10 ⁹ /L)	≥ 142	77–141	≤ 76				
<p>All variables must be collected, but measurements can be done only if justified by the patient's clinical status. If a variable is not measured, it should be considered normal. If a variable is measured more than once in 24 hr, the worst value is used in calculating the score. Fio₂: fraction of inspired oxygen.</p> <p>Neurologic dysfunction: Glasgow Coma Score: use the lowest value. If the patient is sedated, record the estimated Glasgow Coma Score before sedation. Assess only patients with known or suspected acute central nervous system disease. Pupillary reactions: nonreactive pupils must be > 3 mm. Do not assess after iatrogenic pupillary dilatation.</p> <p>Cardiovascular dysfunction: Heart rate and mean arterial pressure: do not assess during crying or iatrogenic agitation.</p> <p>Respiratory dysfunction: Pao₂: use arterial measurement only. Pao₂/Fio₂ ratio is considered normal in children with cyanotic heart disease. Paco₂ can be measured from arterial, capillary, or venous samples. Invasive ventilation: the use of mask ventilation is not considered invasive ventilation.</p> <p>.logit (mortality) = -6.61 + 0.47 × PELOD-2 score.</p> <p>Probability of death = 1/(1 + exp [-logit(mortality)]).</p>							

CRITICAL CARE MEDICINE

Step 3: Reassessment for ongoing provision of critical care/ventilation and hospitalization

- 1) 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.
- 2) Decisions about trial duration will be made as early in the pandemic as possible when data becomes available about the natural history of the disease. The trial duration should be modified as appropriate if subsequent data emerges which suggests the trial duration should be longer or shorter.

3) The Triage Team will conduct periodic patient reassessments re: critical care/ventilation, which involves re-calculating the PELOD-2 assessment and consulting with treating clinical teams about patients' clinical trajectory.

4) Patients showing improvement or stability will continue with critical care/ventilation until the next assessment. Improvement should be observed within 7 days, otherwise stability will have the same standing as worsening.

5) If there are patients in the queue for critical care services, then patients who upon reassessment show substantial clinical deterioration as evidenced by worsening PELOD-2 assessment or overall clinical judgment could be transitioned to palliative care after consent from the decision maker(s) is received.

6) Although patients should generally be given the full duration of a trial, if patients experience a precipitous decline (e.g., refractory shock and DIC) or a highly morbid complication (e.g., massive stroke) which portends a very poor prognosis, the Triage Team may have a conversation with the patient's decision maker(s) to make a decision (with informed consent) before the completion of the specified trial length that the patient should no longer receive critical care treatment.

7) Patients who are no longer eligible for critical care treatment will receive medical/comfort care including intensive symptom management and psychosocial support. The Palliative Care services should be consulted.

V. CONCLUSION

It is important for hospitals to consider the needs of children in all aspects of emergency preparedness and all-hazards plans. This will include, but is not limited to, appropriate types and numbers of pediatric-trained staff, equipment, medications, and decontamination equipment, including the ability to handle non-ambulatory children. In addition, hospitals must be prepared to handle situations in which patients will be cared for as a family unit and children will not be able to be separated from adults, such as in a quarantine situation. This will require all hospitals to have the capability to handle children, and all children's hospitals must possess the ability to care for adult patients who will be staying with their children. When providing medical services during a disaster or terrorism event, it is important that health care professionals are part of an organized program. Lack of an oversight organization providing the service may result in services that are not in concert with the organized response. (American Academy of Pediatrics, 2007)

South Dakota has several resources for hospital and emergency preparedness.

- SD DOH Hospital Preparedness: <https://doh.sd.gov/providers/preparedness/hospital-preparedness/>
- SD Healthcare Coalition: <https://www.southdakotahcc.org/home>

- SD Emergency Management: <https://dps.sd.gov/emergency-services/emergency-management>
- SD EMS for Children: <https://www.sdemsc.org/ped-resources-and-templates-1/disaster-preparedness>

VI. RESOURCES

A. Additional Resource for Table a.

REFERENCE INFORMATION			
Normal Vital Signs			
Age (years)		Respiration Rate	Heart Rate
Infant	Birth to 1 year	30 – 60	100 – 160
Toddler	1 to 3 years	24 – 40	90 – 150
Preschooler	3 to 6 years	22 – 34	80 – 140
School Age	6 to 12 years	18 – 30	70 – 120
Equipment Size Estimation Formulas			
ET Cuffed	(Age ÷ 4) + 3.5	Foley/Suction Catheter	2x ET size
ET Uncuffed	(Age ÷ 4) + 4	Naso/Orogastric Tube	3x ET size
ET Depth (cm)	3x ET size	Chest Tube	4x ET size
Weight Estimate Formulas			
Estimate weight ONLY if actual weight/length-based calculation unavailable!			
Infant: (Months ÷ 2) + 4 = kg		Child (≥ 1 yr): (Years x 2) + 10 = kg	
Fluid Management			
Goals of Fluid Resuscitation: Normal vital signs, Improved signs of perfusion, Urine output 0.5-1 mL/kg/hr			
Type	Fluid	Rates and Notes	
Resuscitation Fluids	NS	Initial bolus 20 mL/kg, over 30-60 min, repeat as needed	
	PRBCs	<ul style="list-style-type: none">• Hemorrhagic shock• 10 mL/kg if not responding to initial 20 mL/kg of crystalloid• May use O Neg (or O Pos for males) until type-specific or cross matched available	
Maintenance Fluids Maximum of 2400 mL/day	D ₁₀ W	Newborn (first 48 hrs): 3 mL/kg/hr	
	D ₁₀ ½NS	Neonate (28 days or less): 4 mL/kg/hr	
	D ₅ NS	<i>Pediatric patient without renal compromise:</i> <ul style="list-style-type: none">• 4 mL/kg/hr first 10 kg• 2 mL/kg/hr next 10 kg• 1 additional mL/kg/hr for each kg over 20 kg	
Hypo-glycemic Treatment	D ₃₀ W	Neonate with BG < 45 give 3 mL/kg IV or IO over 15-30 min	
	D ₂₅ W	< 4 years with BG < 60 give 2 mL/kg IV or IO over 15-30 min	
	D ₅₀ W	≥ 4 years with BG < 60 give 1 mL/kg IV or IO over 15-30 min	

VII. REFERENCES

- (1) <https://www.calhospitalprepare.org/sites/main/files/file-attachments/pediatricsurgeplanningrchsdtttmaterials.pdf>
- (2) Minnesota Pediatric Priorities
<https://www.health.state.mn.us/communities/ep/surge/pediatric/priorities.pdf>

- (3) Nebraska Peds CSC July 2021 Version 1.0
- (4) ASPR TRACIE Technical Assistance <https://files.asprtracie.hhs.gov/documents/aspr-tracie-ta---pediatric-csc-plan-resources---3-11-2021.pdf>
- (5) American Academy of Pediatrics. Markenson, D.S., & Reynolds, S.L. (2006). The Pediatrician and Disaster Preparedness. Pediatrics, 117, e340 - e362.
- (6) <https://www.azdhs.gov/documents/preparedness/emergency-preparedness/response-plans/azcsc-plan.pdf> page 52
- (7) Disability Rights Pennsylvania, April 3, 2020 letter regarding Complaint of Disability Rights Pennsylvania Concerning Pennsylvania's Interim Crisis Standards of Care for Pandemic Guidelines: <https://www.centerforpublicrep.org/wp-content/uploads/2020/04/04.03.2020-DRP-OCR-Complaint-with-Exhibit-A-1.pdf>

VIII. CONTRIBUTORS

This project was led by SDAHO and LifeCircle South Dakota. A medical and legal workgroup was formed to complete this project. Members included: Drs. Gokhan & Gulsah Olgun, Dr. Nicholas Torbert, Dr. Mir Ali, Dr. Joe Segeleon, Dr. Dan Mark, Dr. David Mueller, Dr. Mike Person, Dr. Amanda Sedlacek, Dr Jody Huber, Dr. Kara Bruning, Dr. Mary Jo Olson, Jami Robbins RN, Angela Riley CNP, Sarah Christie RN, Pam Koepsell CNP, Tanya Truckenmiller PA-C, Amanda Horsley RN, Justin Ohleen, Kim Malsam-Rysdon, Mitch Rave, Mike Diedrich, Kaitlin Thomas, Melanie Wilmer, Kamela Johnson, Mary Hill, Marcia Taylor, Mari Perrenoud, Kevin Schlosser, Corolla Lauck, Greg SantaMaria, Marty Link, Brian Hambek, Allison Blake, Dr. Andrea Baier, Blayne Hagen, Cameo Anders, Cate Davis, Dan Rafferty, Jamie Miller, Mari Perrenoud, Paula McInerney-Hall, Rochelle Holloway, Michele Snyders, and Tammy Hatting.

IX. RECORD OF CHANGES

Change Made	Date of Change	Posted By
Draft Completed & Approved	10/20/23	Sheena Thomas

*Original copies of this plan are saved: <https://sdaho.org/sd-crisis-standards-of-care/>