POLICY IDENTIFIER: **Administration**	**MANUAL TITLE:** **Administrative**
TITLE: Guidelines For Scarce Resources Allocations During Pandemic COVID-19	**RESPONSIBLE PARTY: (IES)** **Ethics Committee**
FORMERLY KNOWN AS:	
EFFECTIVE: 04/01/2020	**REVISED: 4/17/2020**
REVIEWED:	
REGULATORY STANDARD: (if applicable)	

I. Purpose:

To provide guidelines for scarce resource allocation during the pandemic COVID-19.

II. Scope: All treating providers at Sturdy Memorial Hospital.

III. Definitions:

SOFA – Sequential organ failure assessment

IV. Policy:

BACKGROUND:

The current pandemic of SARS-CoV-2, an event unprecedented in this country since the Influenza pandemic of 1918, poses a risk of overwhelming hospitals with critically ill patients. There may come a time when the number of patients requiring critical care outstrips resources including (but not limited to) available space, mechanical ventilators, medications, staff, and personal protective equipment. Despite anticipatory planning to increase available resources as much as possible, this scenario may force the regional healthcare community and its patients to engage in difficult decisions about limited resource allocation. Targeted resource allocation may be more simply defined as the selective use of a limited resource which, if in abundance, would be distributed widely and without limitation. This process requires careful thought and consideration to ensure that resources are allocated in accordance with ethical principles and without bias.

This allocation framework is grounded in well-established ethical principles as outlined in the American Medical Association Code of Medical Ethics[1], specifically the duty to care, duty to steward

resources, distributive and procedural justice, and transparency. The primary goal is to provide the maximum benefit to the maximum number of patients, which is a departure from the traditional focus of medical ethics, which prioritizes care for and autonomy of the individual. In a pandemic public health emergency, the ethical duty toward preservation of individual autonomy must be overridden by a duty to prioritize the wellbeing of the entire community. This is not a balance to be taken lightly and it is essential that any action taken to limit individual patient autonomy is proportional to the degree and urgency of the resource limitation. These triage recommendations should be enacted only if there is an impending or existing inability to meet the critical care needs of the hospital, despite all measures being taken to increase our surge capacity. Similarly, a return to standard of care should promptly accompany restoration of resource availability.

In addition to prioritizing the health of the community, this triage document is informed by principles of distributive justice (fairness, absence of bias), proportionality (anticipated benefits of allocation should outweigh harm) and stewardship of resources. The purpose of outlining this framework ahead of time is to develop a process that is consistent, fair and transparent. These guidelines, while they cannot anticipate every possible decision axis, will limit hasty and potentially biased decision-making and will reduce the moral burden placed on individual providers. These guidelines were established with community input and will distribute the burden of decision making.

V. Procedure:

1. How these guidelines were developed

The Sturdy Memorial Hospital (SMH) Ethics Committee, which includes representation from the Attleboro community, meets on an ad hoc basis to provide ethical guidance for decisions that arise in the course of clinical care. This committee was convened to address and discuss proposed allocation guidelines. The literature on the topic was reviewed in detail [2] [3] [4] [5]. Additional guidance on crisis standards of care was put forth by the Massachusetts DPH, and these recommendations were incorporated into these guidelines. Consistent with the ethical and practical framework utilized in other similar documents, the SMH Ethics Committee stressed the importance that allocation of scarce resources follow a process that is: consistent, fair, transparent (to providers and the community), as free as possible from personal, institutional, and scientific bias, and free from discrimination based on age alone, race, gender, and sexual orientation.

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1 https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/principles-of-medical-ethics.pdf
2 https://www.health.state.mn.us/communities/ep/surge/crisis/standards.pdf
3 DePergola P
4 https://www.samw.ch/en/Ethics/Topics-A-to-Z/Intensive-care-medicine.html
5 https://www.health.ny.gov/regulations/task_force/reports_publications/docs/ventilator_guidelines.pdf#page55
6 https://www.mass.gov/doc/april-7-2020-crisis-standards-of-care

Preparation for a potential surge of COVID-19 has already necessitated a broad push to identify ways to adapt Sturdy's capabilities to care for a larger number of potentially critically ill adults. Regular and diligent work has been carried out to maximize availability of resources by obtaining additional equipment, identifying alternative care spaces and identifying/training additional providers. These efforts have been undertaken primarily to provide optimal care but also to decrease the likelihood that targeted allocation needs to occur.

After discussions with relevant stakeholders, it was determined that we would use a prioritarianism-based approach to decision-making, optimizing the short term survival of the largest number of people ("save the most people"). This approach would focus on the likelihood of an individual to benefit from care, as gauged by the sequential organ failure assessment (SOFA) tool, which is a validated measure that predicts mortality on the basis of existing organ failures.

It was determined that if SOFA alone was inadequate to stratify allocation of resources, that a longer-term survival estimate would be considered ("save the most life-years"). This would be estimated based on the presence or absence of major comorbidities, which are anticipated to limit long-term survival.

If after the above tiers of assessment, a consensus cannot be reached, we felt that the Ethics Committee (or a representative core sample of the committee) should convene to make determination.

The committee as a whole reaffirmed the necessity of avoiding bias as much as possible and eschewing any selection criteria that required implicit or explicit judgment of quality of life or instrumental value. Transparency and communication are essential and would necessarily be a central part of the process.

2. SMH TARGATED RESOURCE ALLOCATION PROTOCOL

In the event that the need for critical resources exceeds the availability, the following framework is proposed to guide allocation. Prior to this point all possible measures will be taken to avert critical resource limitation and transfer will be sought to other hospitals for patients requiring resources unavailable at Sturdy Memorial Hospital while transfer is possible. When the exhaustion of resources is imminent and no transfer is possible, the Massachusetts Department of health will be contacted. This protocol will not be activated unless there is statewide limitation on resources and the Massachusetts Department of Health has activated the Crisis Standards of Care.

TRIAGE OFFICERS:
A group of Triage Officers should be physicians with established expertise in the management of critically ill patients, who demonstrate leadership ability and are able to communicate in an effective and empathetic manner. Triage Officers will oversee the triage process, assess all critically ill patients, assign a level of priority for each, communicate with treating physicians, and direct attention to the highest-priority patients. Triage Officers will make decisions according to the allocation framework described below in Step 3. The Triage Officers will have the responsibility and authority to make decisions about which patients will receive the highest priority for receiving critical care. They will also be empowered to make decisions regarding reallocation of critical care resources when

patients experience substantial clinical deterioration after being allocated critical care interventions. In carrying out these responsibilities, the Triage Officers will communicate clearly with bedside nurses, physicians, and other clinicians.

TRIAGE TEAM:
There will be a Triage Team whose role it will be to provide information to the Triage Officer making individual triage decisions, to help facilitate and support their decision-making process, to assist in the identification of patients receiving critical care who need to be reassessed, and to document, review and report out to hospital leadership how triage is conducted.

Composition: The Triage Team should consist of at least one nurse with supervisory experience and one administrative staff member.

Roles: The nurse will aggregate information, review patients who are currently receiving critical care and will require reassessment under the allocation framework, serve as liaisons with the leadership of the intensive care unit, and assist in troubleshooting implementation of the allocation framework.

The administrative staff member will conduct data-gathering activities, documentation, and record-keeping.

Supporting Roles: Additional representatives from case-management, chaplaincy and palliative care may be involved with assisting the Triage Officer and Triage Team in cases where critical care resources cannot be offered or need to be reallocated.

STEP 1: ESTABLISH GOALS OF CARE WITH PATIENT AND PROXY DECISION MAKERS

It is critical to know the goals and values of the patient prior to proceeding through this decision algorithm. If a patient does not wish to receive critical care or mechanical ventilation, this would take precedence over any other tool. Early, empathic and clear communication with patient, family and proxy decision makers will preserve autonomy when possible.

a. Patients with DNR/DNI status, or for whom a DNR/DNI status is deemed appropriate after compassionate and appropriate discussion between family/proxy and provider, will be excluded from consideration of mechanical ventilation. It is important to note that when having goals of care discussions, that the absence of benefit of performing resuscitation without intubation be included in this discussion.
    i. Appropriate care plans for these patients will be immediately enacted such as palliation, hospice, spiritual care and support.
    ii. Once goals of care have been established, these goals and care plan will be clearly documented in the medical record.

STEP 2: IDENTIFY PATIENTS AT RISK OF NEEDING MECHANICAL VENTILATION/CRITICAL CARE

1. Patients must have one of the following:
    a. Requirement for invasive ventilator support
        i. Refractory hypoxemia
        ii. Respiratory acidosis
        iii. Clinical evidence of impending respiratory failure
        iv. Inability to protect or maintain airway
    b. Hypotension (systolic blood pressure < 90) with clinical evidence of shock (altered level of consciousness, decreased urine output or other evidence of end-organ failure) refractory to volume resuscitation requiring vasopressor or inotrope support

STEP 3: IDENTIFY PATIENTS MOST LIKELY TO BENEFIT FROM CRITICAL CARE

1. Calculate Sequential Organ Failure Assessment (SOFA) score

SOFA score	0	1	2	3	4
Respiration (PaO2/FiO2)	>400	301-400	201-300	101-200	<= 100
Coagulation (platelets)	> 150	101 - 150	51 -100	21 - 50	<= 20
Liver (bilirubin)	< 1.2	1.2 -1.9	2.0- 5.9	6.0 -11.9	>= 12.0
Cardiovascular (hypotension)	No hypotension	MAP < 70	Dopamine <= 5 mcg/min or dobutamine any dose	Norepinephrine <0.1mcg/kg/min	Norepinephrine > 0.1 mcg/kg/min
Central Nervous System (GCS)	15	13-14	10-12	6-9	< 6
Renal (creatinine)	< 1.2	1.2 - 1.9	2.0 -3.4	3.5 - 4.9	> 5.0

2. Use SOFA score and assessment of comorbidities to calculate an allocation score

Table 1. Multi-Principle Strategy to Allocate Critical Care/Ventilators During a Public Health Emergency

Purpose	Clinical Assessment	MPS Point Scoring System*			
		1	2	3	4
Prognosis for Hospital Survival	SOFA score	SOFA score **< 6**	SOFA score **6-9**	SOFA score **10-12**	SOFA score **> 12**
Prognosis for Long Term Survival	Assessment of Comorbidities	…	Major comorbid conditions	…	Death likely within 1 year

Assessment

* Patients with the lowest cumulative score are prioritized for receiving scarce critical care resources during crisis conditions.

a. major comorbidities associated with significantly reduced long-term survival, for example:
   i. Moderate Alzheimer's disease or progressive dementing illness
   ii. Malignancy with a < 10 year expected survival
   iii. NYHA class III heart failure
   iv. Moderately severe lung disease (e.g. COPD, IPF)
   v. End-stage renal disease
   vi. Severe multi-vessel CAD
   vii. Cirrhosis with history of decompensation
b. Comorbidities with expected survival < 1 year, for example:
   i. Severe Alzheimer's dementia
   ii. Cancer treated only with palliative interventions
   iii. NYHA class VI heart failure plus evidence of frailty
   iv. Severe chronic lung disease (e.g. on chronic oxygen or steroids) with evidence of frailty
   v. Cirrhosis with MELD score >= 20, ineligible for transplant
   vi. Recurrent severe aspiration pneumonia
   vii. Severe protein-calorie malnutrition.

OTHER SCORING CONSIDERATIONS:

a. Pregnancy: Pregnant patients will be assigned a priority score based on the same framework used for non-pregnant patients. If a pregnant patient is at or beyond the usual standards for fetal viability, the patient will be given a two-point reduction, giving her a higher priority score.

b. Limited data: If laboratory values or other elements needed for the priority score are not available prior to the need for a time sensitive decision by the Triage Officer, the Triage Officer will do his/her best to approximate a priority score.
c. Individuals who perform tasks that are vital to the public health response, including all those whose work directly to support the provision of care to others, should be given heightened priority. This category should be broadly construed to include those individuals who play a critical role in the chain of treating patients and maintaining societal order.

3. Assign patients to color-coded priority group
    a. Once a patient's priority score is calculated using the multi-principle scoring system, each patient will be assigned a color-coded triage priority group, which will be noted clearly in their medical record.
    b. The Triage Team and Triage Officer will determine which color coded priority groups are able to receive critical care resources. During crisis protocol activation, resources will be assessed at least daily by the Triage Team and Triage Officer.

Level of Priority/Code Color	Priority Scores from MPS
RED highest priority	**MPS score 1-3**
ORANGE Intermediate priority (reassess as needed)	**MPS score 4-5**
Yellow Lowest priority (Reassess as needed)	**MPS score 6-8**
Green Do not manage with scarce critical care resources (reassess as needed)	**No significant organ failure or requirement for critical care resources**

4. If allocation is unclear or contested after the above steps, the Ethics Committee will convene an emergency session to determine resource allocation.

Examples:
Because of a severe mismatch between patients needing ventilators and available ventilators, the Triage Team and Triage Officer has assigned a cutoff color of orange based on that day's resource

assessment. If a patient falls into priority levels yellow or green, the triage team and triage officer recommend that the ventilator NOT be allocated to that patient.

- Patient A has a critical need for mechanical ventilation. Her SOFA score is 3 and she has major comorbid conditions, but has a life expectancy greater than one year. Her MPS score is 5. Based on this scoring system, the ventilator would be allocated to her and no review is needed.
- Patient B also requires mechanical ventilation. His SOFA score is 4 and he has life-limiting comorbid conditions with a life expectancy less than one year. His MPS score is 8. Since this is above the threshold, a ventilator would NOT be allocated, but his case would be reviewed promptly by the triage team representative following the steps below.

STEP 4: REVIEW

1. If determination based on above criteria is to NOT allocate critical care resources OR if the determination is discordant with the provider's medical decision making/intuition, a review will be performed by the Triage Officer.
    a. A call schedule will be determined by the committee where the Triage Officer will be available to discuss the case within 1 hour
    b. The Triage Officer may choose to convene an emergency meeting of the Triage Team for cases that are especially complex or require more sensitive decision making.

2. If patient, family or proxy would like to appeal, the case will be reviewed by the Ethics Committee:
    a. The Ethics Committee will convene urgently
    b. The appealing party will describe the basis for the appeal
    c. Three Ethics Committee members are required for a quorum (by teleconference or in person) and a decision will be made by a simple majority
    d. The decision of the Ethics Committee will be final
    e. The decision will be documented with sufficient detail to demonstrate that the outcome represents a well-considered decision.

3. Patients who were not allocated scarce resources will be reassessed if resources again become available.

4. The committee will convene at regular intervals to review the allocation decisions made and will consider adjustments to the allocation procedures or threshold if needed.

STEP 5: COMMUNICATION AND DOCUMENTATION

1. The allocation determination will be communicated clearly and with empathy and sensitivity to the patient, family and/or proxy. The Triage Officer, the treating physician or a combination of the two may be involved in this communication based on the specific situation.
2. The decision-making and allocation determination will be documented clearly in the medical record.

STEP 6: REASSESSMENT

1. Patients who are allocated resources will be reassessed periodically, including re-calculation of SOFA scores and consulting with the clinical team. The interval for reassessment will depend on emerging information about the natural history of this disease, as well as depending on patient-specific factors that would inform predicted course and outcome. Patients showing improvement will continue with critical care/ventilation until the next assessment. If, after an appropriate therapeutic trial, there has been evidence of clinical worsening or absence of improvement, the triage officer may determine that the patient should not receive ongoing critical care/ventilation so that the resource can be reallocated.
    a. If a patient is no longer prioritized for allocation of critical care resources, palliative care, psychosocial support and intensive symptom management will be provided instead.
    b. A decision to deprioritize resource allocation may be appealed and reviewed by the Ethics Committee on a case-by-case basis.
    c. This reassessment will apply to all patients receiving critical care resources, including those already ventilated prior to enacting crisis protocols and those who are critically ill for reasons other than COVID-19 infection.
2. For patients initially triaged to be lower priority and not allocated critical care resources, reassessment will be performed regularly and frequently. If the threshold for allocation has changed, these patients may be reconsidered for resource allocation depending on their updated MPS score.
3. Those patients who receive critical care services (i.e. mechanical ventilation) emergently in order to allow time for initial triage by a Triage Officer, but who are subsequently determined to be unable to receive critical care based on priority assignment, will receive medical care including intensive symptom management and psychosocial support. They will not receive a full trial of critical care as described above.

STEP 7: PALLIATION

1. A determination that a scarce critical care resource is not available does not obviate the duty to care for the patient in whatever manner is appropriate. This may include cure-oriented therapy, comfort-directed therapy or a combination of the two. There will be particular attention to relief of pain and dyspnea, social support and mitigation of isolation through phone and video communication for patients who are on isolation. A palliative care consultation will be obtained for all such patients.
2. If additional oxygen is needed, it should be provided, including through heated high-flow nasal cannula or noninvasive ventilation, with proper precautions taken to prevent transmission of infection. Prone positioning of non-intubated patients may also be considered in appropriate patients.

The Triage Team and Triage Officer will meet frequently (the interval to be determined based on the degree of resource strain, but at least daily if crisis conditions are present) to determine the triage cutoff for resource allocation. This allocation will be clearly communicated to Emergency Medicine, Hospitalist and ICU providers.

ADDITIOINAL CONSIDERATIONS

COVID-19 STATUS:
The above criteria do not distinguish between the need for critical care resources because of COVID-19 infection and need due to the variety of other conditions that generally necessitate critical care. Patients with COVID-19 are given neither preference nor discriminated against when allocating critical resources.

AGE:
We as a committee have elected not to consider chronological age alone in the triage criteria. The likelihood of pertinent comorbidities increases with increasing age, but advanced age without comorbidities will not be considered as a reason not to allocate scarce resources per these guidelines. If a tie breaker is needed, the ethics committee will be meet to offer guidance and may consider age at that point.

DISABILITY/GUARDIANSHIP STATUS:
Neither disability nor guardianship status will be taken into account when determining allocation of scarce resources and there will be no discrimination on this basis. This does not exclude consideration of relevant medical comorbidities that may inform prognosis as outlined in step 3. In the event that the triage guidelines do NOT allow for allocation of critical care resources for a patient with a guardian, the guardian will be informed promptly of the determination.

CPR:
The administration of CPR is a challenging consideration in the context of a respiratory viral pandemic, both because of the allocation of scarce resources, but also because of the risk of exposure to providers performing the resuscitation. In patients who are already critically ill, especially in the context of respiratory failure requiring mechanical ventilation, the likelihood of survival after requiring CPR becomes very low. In settings where a patient is not mechanically ventilated, CPR will carry increased risk for healthcare providers. The need to don PPE and secure an airway may also delay administration of chest compressions and make CPR less effective. In sum, the benefit of CPR for COVID-19 patients may be very low, while the risk to healthcare workers is very high.

PROPOSED RECOMMENDATIONS:
1. Any patient who is evaluated by the Triage Team and Triage Officer and is determined to be unable to receive scarce critical care resources under the allocation framework will not undergo CPR or intubation. If circumstances materially change and the patient subsequently is assigned a priority score that would allow receipt of critical care, the clinical management in life-threatening circumstances should be reconsidered.
2. Under no circumstances should healthcare workers provide emergency care/CPR without first donning appropriate PPE as determined by hospital policy
3. When possible, measures should be taken to limit aerosol-generation and risk of transmission, such as securing an airway before performing chest compressions, use of a LUCAS device when possible, use of a barrier sheet

4. If the attending physician believes that CPR would be medically inappropriate or futile, she/he will first communicate this with the patient/family/proxy. If there is not agreement, a second physician or ethics committee designee will assess the case and determine whether CPR should be performed. If CPR is agreed upon to be futile or medically inappropriate, a DNR order will be placed in the chart.

USE OF OTHER SPECIFIC CRITICAL CARE RESOURCES:
Once the allocation framework is activated, there may be specific critical care resources that become limited (e.g., dialysis, mechanical circulatory support). Once the allocation framework is activated, the Triage Team and Triage Officer, in conjunction with respective clinical care groups (e.g. nephrology in the case of dialysis, cardiology and cardiac surgery in the case of mechanical circulatory support), will make all decisions regarding initiation of such specific resources. The goals will be to reserve these resources for those most likely to benefit from them and to avoid prolonged use in patients who are not showing signs of recovery.

Appendix 1. Guidelines for Communication
(Adapted from Baystate Health Ethical Guidelines for the Treatment of Patients With Suspected or Confirmed Coronavirus Disease).

What they say	What you say, and how
Why can't my 90 year old grandmother go to the ICU?	***This is an extraordinary time. We are trying to use resources in a way that is fair for everyone.*** Your grandmother's situation does not meet the criteria for the ICU today. I wish things were different.
Shouldn't I be in an intensive care unit?	Your situation does not meet criteria for the ICU right now. The hospital is using special rules about the ICU because we are trying to use our resources in a way that is fair for everyone. ***If this were a year ago, we might be making a different decision. This is an extraordinary time.*** I wish I had more resources.
My grandmother needs the ICU! Or she is going to die!	I know this is a scary situation, and I am worried for your grandmother myself. ***This virus is so deadly that even if we could transfer her to the ICU, I am not sure she would make it.*** So we need to be prepared that she could die. We will do everything we can for her.
Are you just discriminating against her because she is old?	No. ***We are using guidelines that were developed by people in this community to prepare for an event like this***—clinicians, policymakers, and regular people—***so that no one is singled out***. These guidelines have been developed over the course of years. I know it is hard to hear this.
You're treating us differently because of the color of our skin.	***I can imagine that you may have had negative experiences in the past with healthcare simply because of who you are.*** That is not fair, and I wish things had been different. The situation today is that our medical resources are stretched so thin that we are using objective guidelines so that we can be fair.
It sounds like you are rationing.	What we are doing is trying to spread out our resources in the best way possible. ***This is a time where I wish we had more for every single person in this hospital.***
You're playing God. You can't do that.	I am sorry. I did not mean to give you that feeling. I am just a clinician doing the best I can. ***Across the city, every hospital is working together to try to use resources in a way that is fair for everyone. I realize that we don't have enough.*** I wish we had more. Please understand that we are all working as hard as possible.

VI. References:

1. https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/principles-of-medical-ethics.pdf
2. 2 https://www.health.state.mn.us/communities/ep/surge/crisis/standards.pdf
3. 3 DePergola P
4. 4 https://www.samw.ch/en/Ethics/Topics-A-to-Z/Intensive-care-medicine.html
5. 5https://www.health.ny.gov/regulations/task_force/reports_publications/docs/ventilator_guidelines.pdf#page55

VII. Records: N/A

VIII. Approval:

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Aida Morse, MD Chair, Critical Care Committee	Date
_____	_____
Joseph FX Casey President & CEO	Date
_____	_____
Brian Kelly, MD President of Medical Staff and Medical Director/Ethics Committee	Date