PALMDALE REGIONAL MEDICAL CENTER
CRITICAL RESOURCE ALLOCATION PLAN

COVID-19
Response

OVERVIEW

The COVID-19 pandemic has placed and will continue to place a great stress on the day to day operations of Palmdale Regional Medical Center. In the event that critical healthcare needs exceed resource capacity, both the way in which care is delivered and the way care is allocated will require modification. In addition, infection control considerations will mandate changes in personal behavior, families' access to patients, and many "customary" procedures. We recognize this will place a strain on personnel, patients, and families and will raise challenging ethical issues.

In addition to the Palmdale Regional Medical Center's current policies and procedures regarding bed utilization, emergency staffing plans, general disaster plans and other operational procedures and policies that address the delivery of patient care in times of increased demand for resources and services, this Critical Resource Allocation Plan ("Plan") is intended to provide additional guidance regarding the allocation of specific resources based on the Palmdale Regional Medical Center's COVID-19 pandemic response.

Implementation of this Critical Resource Allocation Plan:

- Palmdale Regional Medical Center will designate a Command Team to: i) optimize the supply of personal protective equipment (PPE) to protect its healthcare professionals and care team members; ii) address infection control procedures to protect its staff and patients (including modification of resuscitation protocols); iii) determine if any modification is needed to the facility's staffing plans and emergency response plans; and iv) determine the allocation process for use of ventilators in the event that patient needs exceed resource capacity. The Command Team will be comprised of senior administrators, senior physician leadership, and representatives from the Palmdale Regional Medical Center's ethics committee.
- With regard to the optimization of PPE supplies, Palmdale Regional Medical Center will determine if any modification is needed to the facility's policy for optimizing the supply of PPE.
- With regard to infection control measures, Palmdale Regional Medical Center will review its current infection control policies and procedures and amend as needed commensurate with the most recent guidance from state and local departments of health and the Centers for Disease Control and Prevention (CDC) including restrictions on visitors, implementation of telehealth services where feasible to reduce patient/provider contacts, and modification of patient care routines to reduce staff/patient contacts to a minimum.
- With regard to cardio-pulmonary resuscitation and ventilator allocation, preferential order for resource allocation should be as follows: i) individual patient ventilators; ii) shared patient ventilators; and iii) utilization of this Plan to determine patient eligibility to receive invasive ventilation support.
- Healthcare decisions, including allocation of critical resources, will not be based on race, age, ethnicity (including national origin and language spoken), nationality, gender, socioeconomic status or ability to pay, social status, insurance status, occupation, religion, citizenship, disability (including weight-related disabilities), sexual orientation or identification, perceived self-worth,

perceived quality of life, immigration status, incarceration status, homelessness, or past or future use of resources.

- This Plan supersedes any existing conflicting or contradictory policies and procedures until such time as the Chief Executive Officer or Chief Medical Officer declares use of the Plan to be concluded.

ASSUMPTIONS

- Health care professionals will continue to provide the best possible care to all patients under the circumstances.
- Health care professionals will continue to respect patients' and families wishes within the constraints of the circumstances and insofar as institutional policy, sound medical judgment and ethical considerations will allow.
- Heath care professionals, by virtue of their service to patients, assume certain personal risk, and Palmdale Regional Medical Center will use good faith efforts to protect its health care professionals.
- Patients and families will adhere to requests by health care professionals to protect those caring for them and other patients by complying with infection control measures (masks, etc.).
- Prior to implementation of ventilator triage/reallocation, Palmdale Regional Medical Center will work collaboratively with other hospitals and facilities in the region and state to develop a plan to redistribute ventilators from one hospital to another, and/or to transport patients to facilities where ventilator resources are available if feasible.
- This Plan provides a framework for decision-making, but should be viewed as flexible and adapted to local circumstances and changes in scientific understanding about the clinical characteristics of COVID-19.

SPECIAL ETHICAL CONCERNS

Issues in Resource Allocation

- Resource scarcity affects both the safety of health care professionals and access to care for patients. Palmdale Regional Medical Center hereby adopts the Ventilator Allocation Protocol attached as Appendix B. This Ventilator Allocation Protocol will be implemented when Palmdale Regional Medical Center must initiate the use of noninvasive ventilators for invasive ventilation and the number of noninvasive ventilators reaches five (5) units.

- Health care professionals play a critical role in the delivery of care to our patients. As such, health care professionals are expected to use personal protective equipment (PPE) in accordance with stated UHS Guidelines for PPE Conservation to optimize access to as many health care professionals as possible under the circumstances.

- A resource allocation/triage team should be formed at Palmdale Regional Medical Center, consisting of two senior clinicians, one of whom is preferably an intensivist or a senior physician with experience managing ventilators and critically ill patients (but neither of whom are providing direct patient care in Palmdale Regional Medical Center's ICU or to affected patients), and a member of Palmdale Regional Medical Center's Medical Ethics Committee (the "Triage Committee").

- Upon request by the attending physician, the Triage Committee will review individual cases to provide objective guidance to clinicians when crisis management is needed (acting as a resource to attending staff physicians).

- The Triage Committee will also manage the allocation of ventilator resources when patient demands exceed capacity. To the extent possible, the Triage Committee will apply a consistent decision-making strategy, to include Sequential Organ Failure Assessment (SOFA) scoring.

Modifications in Care

Modifications in care practices may be required to ensure the safety of health care professionals, to provide for adequate staffing, and to respond to reduced availability of specific health care personnel.

Modifications may include such interventions as:

1. Reducing bedside exposure to infection by reorganizing team functions/minimizing the number of caregivers at the bedside.

2. Utilizing telehealth services (video or audio only) to complete patient assessments and interviews to reduce patient exposure.

3. Invoking "Good Samaritan" rules to extend the capacity of individuals to work outside of their usual areas of expertise so that they may provide responsible and reasonable assistance (under appropriate supervision) in situations where available personnel are inadequate to meet the needs of patients.

Issues of Autonomy and Risk of Infection for Staff and Patients

The primary obligation of health care professionals is to provide care. In doing so, they assume certain risk. Patients have an obligation to minimize risk to health care professionals and the community in general.

1. No specialty or specific profession is exempted from this fundamental responsibility.

2. The facility should minimize risk to its health care professionals and patients as much as possible under the circumstances through appropriate infection control methods.

3. Patients are obligated to abide by infection control measures. In cases of pandemics stemming from highly contagious disease with significant morbidity and mortality, the health of the community takes precedence over individual preference. Patients may not make a choice which increases the risk of contagion to either health care staff or the community. Quarantine, wearing of masks, and restricted movement are all justified in such circumstances. If a patient refuses to comply and wishes to leave Against Medical Advice (AMA), they will be required to sign the AMA form that acknowledges that they understand the risks of doing so and this will be documented in the medical record. The local department of health will be notified of any COVID-19 positive patient who leaves AMA or who elopes from the facility.

Cardio-Pulmonary Resuscitation (CPR or No-CPR):

Decisions to limit certain interventions like CPR, which is an aerosol generating procedure, should be based on individual patient factors and the best available scientific evidence, including weighing the potential benefit of CPR to the patient with the risk that the treatment poses to the health care providers performing it. Treatment should only be limited when the risks to health care providers, staff and other patients is significant compared to the potential benefits that the treatment is expected to offer the patient.

1. Attending physicians will continue to work with their patients (and surrogate decision makers) regarding the patient's plan of care, condition, treatment options and wishes related to resuscitation efforts, and will document and implement "do not resuscitate orders" using usual facility protocols when appropriate.

2. During the current pandemic, given the high risk of infection and harm to health care providers and the broader community, staff should always don the most appropriate available personal protective equipment (PPE) before responding to a "code" even if it means delaying the resuscitation. "Code" procedures should be modified to ensure that a minimum number of health care personnel are in the room during a code.

3. With regard to COVID-19 crisis management, during any "code" the physician responsible for running the code can determine whether the risks outweigh any negligible benefits and cease the code, including before resuscitative interventions are initiated.

Medically Inappropriate Care: Medically Ineffective Treatment

There are circumstances in which medical care may be medically futile. During these situations, transparent and respectful communication between the clinician and the patient/family or surrogate is critical. In cases where the patient/surrogate does not agree with the plan for termination or withdrawal of medically futile/ineffective treatment, the case should be escalated to the Triage Committee for a "second opinion" when patient condition allows.

All cases in which clinicians deem care futile and which are reviewed by the Triage Committee where a recommendation is made to withdraw, stop or not initiate care over the objection of the patient/surrogate, should be logged and reviewed regularly to provide for appropriate oversight, to maintain protections against systemic bias, and to provide for continuous learning and improvement of the process. This review should be conducted by the Ethics Committee + Unassigned Provider +

designated Patient Advocate if applicable. However, this review will be conducted insofar as resources and personnel will allow during a crisis. Given the scarcity of resources and personnel during pandemic conditions, routine retrospective review and meticulous documentation may become difficult or impossible. It is ethically important to prioritize patient care and saving lives over record-keeping and review. When the pandemic emergency declaration is lifted, the Palmdale Regional Medical Center will initiate a retrospective review of any data available.

The review should take into account:

a. Whether the cessation of or decision not to initiate more intensive care was concordant with the goals of the patient, and if the goals were unknown or were overridden, whether the decision was based on best interests standard.

b. Whether the process was respectful of the clinicians, the patient and the family/decision makers.

c. Whether the resource allocation decision accurately reflected the options available at the time, and whether alternative, less resource-intensive options could have been considered.

Transparency

Respect for patients and for the community as a whole requires that Palmdale Regional Medical Center be able to be transparent and honest with the public that contingency plans are in place to address plans for reallocation of resources in conditions of extreme scarcity.

Appendix A

General Considerations for Prioritization of Ventilator Support

A pandemic that is especially severe with respect to the number of patients affected and the acuity of illness will create shortages of many health care resources, including personnel and equipment. Specifically, it is possible that many more patients will require the use of ventilators than can be accommodated with current supplies. If the most severe forecast becomes a reality, Palmdale Regional Medical Center will implement this Plan and use defined clinical criteria and triage techniques to appropriately allocate scarce ventilator resources.

Because research and data on this topic are constantly evolving, this Plan will need to be updated and revised in line with advances in clinical knowledge and societal norms. This Plan incorporates an ethical framework and evidence-based clinical data to support the goal of saving the most lives in a global pandemic where there are a limited number of available ventilators.

To ensure that patients receive equitable care in a pandemic a triage committee makes the decision. While the attending physician interacts with and conducts the clinical evaluation of a patient, the triage committee does not have any direct contact with the patient. Instead, the triage committee examines the data provided by the attending physicians and clinicians and makes the determination about a patient's prioritization for ventilator support. This role sequestration allows the ventilator allocation protocol to operate smoothly.

Before ventilator allocation protocols/triage protocols are implemented, Palmdale Regional Medical Center will take reasonable steps to anticipate surge capacity and increase the supply of available ventilators by limiting elective procedures and transferring patients to other methods of respiratory support when feasible.

The ventilator allocation protocol involves three steps: (1) application of exclusionary criteria, (2) assessment of mortality risk, and (3) periodic clinical assessments ("time trials"). A patient's attending physician conducts the patient's clinical assessments. In Step 1, patients who do not have a medical condition that will result in immediate or near-immediate mortality even with aggressive therapy are eligible for ventilator therapy. In Step 2, patients who have a moderate risk of mortality and for whom ventilator therapy would most likely be lifesaving are prioritized for treatment. In Step 3, official clinical assessments at least 24 hours after ventilator therapy has begun are conducted to determine whether a patient continues to meet criteria for this treatment. Triage decisions are made based on ongoing clinical measures and data trends of a patient's health condition, consisting of: (1) the overall prognosis and mortality risk estimated by the patient's clinical indicators (i.e. SOFA score or modified SOFA score); (2) the magnitude of improvement or deterioration of overall health, which provides additional information about the likelihood of survival with ventilator therapy; and (3) individualized assessment based on the best available, relevant, and objective medical evidence to support triaging decisions and does not exclude patients from access to resources based on any particular medical condition . Thus, the guiding principle for the triage decision is that the patient's continuation of ventilator therapy depends on the severity of the patient's health condition and the extent of the patient's medical deterioration. In order for a patient

to continue with ventilator therapy, s/he must demonstrate an improvement in overall health status at each official clinical assessment.

A patient's attending physician provides all clinical data to the triage committee. At Steps 2 and 3, the triage committee examines a patient's clinical data and uses this information to assign a color code to the patient. The color (blue, red, yellow, or green) determines the level of access to a ventilator.

- **Red** category patients (highest access) are those who have the highest priority for ventilator therapy because they are most likely to recover with treatment (and likely to not recover without it) and have a moderate risk of mortality;
- **Yellow** category patients (intermediate access) are those who are very sick, and their likelihood of survival is intermediate and/or uncertain. These patients may or may not benefit (i.e., survive) with ventilator therapy. They receive such treatment if ventilators are available after all patients in the red category receive them;
- **Blue** category patients (lowest access/palliate/discharge from critical care) are those who have a medical condition on the exclusion criteria list and/or those who have a high risk of mortality. These patients do not receive ventilator therapy when resources are scarce. Instead, alternative forms of medical intervention and/or palliative care are provided. However, if more resources become available, patients in the blue color category, or those with exclusionary criteria, are reassessed and may be eligible for ventilator therapy; and
- **Green** category patients (defer/discharge) are those who do not need ventilator therapy.

See Appendix B – *Ventilator Allocation Protocol*

Once the allocation protocol is implemented, there must be real-time data collection and analysis to modify these guidelines based on new information. Data collection and analysis on the pandemic viral strain, such as symptoms, disease course, treatments, and survival, are necessary so that the clinical ventilator allocation protocols may be adjusted accordingly to ensure that patients receive the most optimal care possible. In addition, data collection must include real-time availability of ventilators so that triage decisions are made to allocate resources most effectively. Knowing the exact availability of ventilators assists the triage committee in providing the most appropriate treatment options for patients.

Decisions regarding treatment should be made on an individual (patient) basis, and all relevant clinical factors should be considered. A triage decision is not performed in a vacuum; instead, it is an adaptive process, based on fluctuating resources and the overall health of a patient. Examining each patient within the context of his/her health status and of available resources provides a more flexible decision-making process, which results in a fair, equitable plan that supports the goal of saving the most lives where there are limited resources.

Use of ECMO for patients will follow a similar protocol to ensure that this highly invasive and scarce resource is utilized with high regard for appropriate use.

Consideration for ECMO should include:

a) Exclusionary criteria:

- Patients with normal cardiac function should not receive ECMO

- Patients whose medical condition is such that immediate or near immediate mortality is expected despite aggressive therapy (e.g. multiple chronic or end stage comorbidities) should not receive ECMO

b) Prioritization based on mortality risk:

-Patients at moderate risk of mortality and with greatest likelihood of benefit

-Patients with intermediate likelihood of benefit (i.e. patients who may or may not survive regardless of ECMO support)

-Patients with highest chance of mortality despite ECMO support should not receive ECMO

In determining available resources for ventilator support, use of a single ventilator for two patients may be considered based on equipment availability, medically appropriate candidates for such treatment, availability of qualified proficient staff to manage the patients and equipment, and available scientific evidence as to efficacy of treatment.

The pregnant patient poses a special concern as decisions affect both the mother and the fetus. Full involvement of the mother's OB/GYN and a neonatologist is required to assess these patients. Assessment of the mother's status would follow the guidelines in the Ventilator Allocation Protocol. A mother's priority may be upgraded to permit a favorable outcome for the fetus.

Communication of Triage Decisions to Patient / Surrogate

Comprehensive intensive care includes high quality critical care, supportive care, and care decisions that are guided by patient prognosis and patient centered goals of care. During a pandemic when ventilators need to be triaged, decisions are made unilaterally by the triage committee. This means that in active triage conditions, patient centered goals of care and preferences do not play a role in the decision to forgo ventilator support. This is obviously quite distressing to patient surrogates, and also can be quite distressing for the treating team, including the attending and all consultants. Supportive care for the treating team should be provided if available.

Appeal Process for Individual Triage Decisions

It is possible that patients, families, or clinicians may wish to challenge individual triage decisions. Because initial triage decisions for patients awaiting the critical care resource will likely be made in highly time-pressured circumstances, any appeal would need to be adjudicated in real time to be operationally feasible and there may be situations in which such an appeal would not be operationally feasible.

With the above limitations in mind, for the initial triage decision, the only permissible appeals are those based on a claim that an error was made by the triage committee in the calculation of the priority score or use/non-use of a tiebreaker (as detailed in Appendix B). The process of evaluating the appeal should include the Triage Committee verifying the accuracy of the priority score calculation by recalculating it. If the calculation of the Triage Committee was incorrect, the triage decision may be reevaluated by the triage committee. Otherwise, the decision of Triage Committee will stand.

With the above limitations in mind, the elements of the appeals process for decisions to withdraw a scarce resource such as mechanical ventilation from a patient are as follows:

- The individuals appealing the triage decision should explain to the Triage Committee the grounds for their appeal. Appeals based in an objection to the overall allocation framework will not be granted.

- The Triage Committee should explain the grounds for the triage decision that was made.

- Appeals based in considerations other than disagreement with the allocation framework should immediately be brought to a Triage Review Committee that is independent of the triage officer/team and of the patient's care team. Any triage decision based on the factors identified in this Plan should be reversed and redetermined using only the relevant, individualized clinical assessment.

- The appeals process must occur quickly enough that it does not harm patients who are in the queue for scarce critical care resources currently being used by the patient who is the subject of the appeal.

- The decision of the Triage Review Committee or subcommittee shall be final.

The Triage Review Committee should be made up of at least three individuals, recruited from the following groups or offices: Chief Medical Officer or designee, Chief Nursing Officer or designee, Legal Counsel, hospital Ethics Committee or Consult Service. If time allows, the Triage Review Committee should have representation consistent with the patient population being served – such as a lay community member of the facility's Ethics Committee or a lay community member that is not a member of the facility staff. Three committee members are needed for a quorum to render a decision, using a simple majority vote. The process can happen by telephone or in person, and the outcome should be promptly communicated to whomever brought the appeal.

Review of Decisions

It is crucial that review of the outcomes of allocation decisions be undertaken insofar as resources and personnel will allow during a crisis. Given the scarcity of resources and personnel during pandemic conditions, routine retrospective review and meticulous documentation may become difficult or impossible. It is ethically important to prioritize patient care and saving lives over record-keep and review. When the pandemic emergency declaration is lifted, Palmdale Regional Medical Center should initiate a retrospective review of the data available. A multidisciplinary committee should be constituted to conduct this review process to assess whether the triage process was transparent, fair, timely and effective. This committee should consist of such members as a representative from Infectious Diseases, Palliative Care, Social Work, Chaplaincy as well as a clinical representative.

Appendix B

Ventilator Allocation Protocol

***** This protocol should be implemented when Palmdale Regional Medical Center must initiate the use of noninvasive ventilators for invasive ventilation and the number of noninvasive ventilators reaches five (5) units.*****

In the event crisis level is reached in terms of demands on critical resources, a systematic and transparent mechanism for adjudication of allocation of scare resources will help ease the burden on those providing care and will ensure fair and equitable distribution.

Ventilator Allocation Protocol - Procedure

1) An operational command center will be formed to constantly monitor resource availability, patient census, staff health, coordinate communications, etc. A Scarce Resource Allocation Liaison may be designated for this purpose. This individual should work in close concert with the operational command center. The Scarce Resource Allocation Liaison will communicate at least daily with the Triage Committee (described below) to provide relevant data pertaining to resource status and COVID-19 census.

2) **Phase 1** of the Ventilator Allocation Protocol will be triggered when Palmdale Regional Medical Center's supply of reserve ventilators reaches five (5) units.

3) In **Phase 1**, Modified Sequential Organ Failure Assessment Scores (MSOFA) will be calculated daily on all patients in a critical care setting, on a ventilator, under investigation for COVID, with a critically ill status, or with a disease which could put them in critically ill status. The attending physician or designated clinician will document the MSOFA score, applicable exclusion criteria, and other relevant clinical information upon initial assessment, at 48 hours and at 120 hours for all applicable patients when Phase 1 of the Ventilator Protocol is triggered. (See Appendix C – *Ventilator Allocation Patient Flowsheet*). Patients without means for MSOFA parameter testing (e.g. arterial blood gas) will not be required to undergo testing if the attending physician does not believe it is indicated or would be burdensome.

   - Patients not currently intubated: When the supply of reserve ventilators reaches five (5) units or less, the Triage Committee will inform the attending physician of each inpatient NOT currently intubated who is to be excluded from receiving mechanical ventilation based on exclusion criteria or MSOFA score >11 (see exclusion criteria and MSOFA scoring systems below).

     - The attending physician will enter an order for "Do not resuscitate/Do not intubate", if not already entered. Other supportive care and medical treatment will be continued, as consistent with patient's goals of care and as medically appropriate and available based on resources. Palliative care team should be consulted.

     - The attending physician will notify the patient and/or surrogate decision-maker about the exclusion decision. Family physicians, social workers and/or pastoral care may be enlisted to assist in these discussions with the patient/surrogate.

- During Phase 1, all new severely ill inpatients will be subject to evaluation and potential exclusion, if exclusion criteria are met.

- Intubated patients: When the supply of reserve ventilators reaches five (5) units, the Triage Committee will inform the attending physician of each intubated patient who may be excluded from receiving mechanical ventilation based on underlying disease severity, exclusion criteria or MSOFA score >11 (see exclusion criteria and MSOFA scoring systems below).

    - The attending physician will inform the patient/surrogate of each potentially excluded patient that ventilator withdrawal may need to be considered in the event that a patient who does not meet exclusion criteria develops respiratory failure.

    - A goals of care discussion will occur to determine whether ongoing mechanical ventilation is consistent with the patient's goals and values. If mechanical ventilation is no longer desired by the patient or surrogate based upon shared decision-making, it will be discontinued, as per routine practice.

4) **Phase 2** of the Ventilator Allocation Protocol will be triggered when Palmdale Regional Medical Center's supply of reserve ventilators reaches Zero.

5) In **Phase 2**, the Triage Committee will make a facility-wide assessment of ventilator needs. Patients who meet non-MSOFA exclusion criteria will be extubated on a 1:1 ratio based on the number of non-excluded patients who have imminent ventilator needs.

    - Patients will be extubated in the following order of priority:

        - In the event that multiple patients meet non-MSOFA exclusion criteria, the Triage Committee may use MSOFA score, comorbidities, and likely survival to assist in determining ventilator allocation.

        - If there are no patients who meet non-MSOFA exclusion criteria, then triage will be based on MSOFA color/scoring scheme (see below).

        - Informing families: the attending physician will inform the patient/surrogate of the decision to extubate. In the event that the attending physician is not available, a consulting physician on the treating team may disclose the decision. Family physicians, social workers and pastoral care may be enlisted to help support families during these conversations.

    - Ongoing facility-wide assessment of non-ventilated patients will be continued as described in Phase 1.

    - If ventilator supplies are limited, patients with new respiratory failure may compete for ventilator resources with those patients already intubated. In this event, exclusion criteria and MSOFA scores will drive decision-making.

Triage Committee

The Triage Committee will consist of two senior clinicians, one of whom is preferably an intensivist or a senior physician with experience managing ventilators and critically ill patients (but neither of whom are providing direct patient care in Palmdale Regional Medical Center's ICU or to affected patients), and a member of Palmdale Regional Medical Center's Medical Ethics Committee. Bedside clinicians treating patients are not responsible for allocating ventilators to individual patients. Clinicians directly caring for the patient assess the patient's condition and note the emergence of any exclusion criteria. Alternate members of the Triage Committee will be appointed to ensure 24/7 availability.

Upon request by the attending physician, the Triage Committee will review individual cases to provide objective guidance to clinicians when crisis management is needed (acting as a resource to attending staff physicians).

The Triage Committee will make all decisions regarding allocations of ventilators when Phase 1 or Phase 2 of the Ventilator Allocation Protocol is triggered. Each committee member's decision is weighed equally. In situations where there is disagreement or uncertainty, the committee votes and the majority decision is accepted.

The Triage Committee will maintain a daily spreadsheet of patient information, including patient name, identification number, attending physician, indication of daily, 48 hour, or 120 hour assessment results (e.g., SOFA scores, exclusion criteria, etc.), patient color code, and patient priority. The spreadsheet will be utilized by the Triage Committee for ventilator allocation decisions. The Triage Committee will also have access to each individual "Ventilator Allocation Patient Flowsheet" for further information, as needed.

Ventilator Allocation Patient Flowsheets and Triage Committee worksheets and records will be maintained by Palmdale Regional Medical Center risk management in accordance with Palmdale Regional Medical Center's document retention policies, but such records shall not be maintained as part of the patient's electronic medical record.

Non-SOFA Exclusion Criteria

Patients with the following clinical conditions will be considered for exclusion for ventilator support if ventilator resources are unavailable under Phase 1 or Phase 2 allocation protocols:

- Cardiac Arrest:
    - Unwitnessed arrest
    - Recurrent arrest
    - Arrest unresponsive to standard measures
    - Trauma related arrest
    - (Note: The above criteria specifically avoid excluding a patient with a single cardiac arrest with rapid attainment of return of spontaneous circulation. Thereafter, patients should be reevaluated for neurologic criteria mentioned below.)
- Terminal condition: A condition caused by injury, disease, or illness from which a reasonable degree of medical certainty, death will occur within six months. (For example, patients with metastatic cancer who are no longer receiving treatment or only receiving palliative cancer

therapies, especially if there is not an indication of significant radiologic response to these therapies)

- Severe burn: Body Surface area greater than 40%, severe inhalation injury
- End stage organ failure
- Any other conditions likely to result in near-immediate mortality even with aggressive therapy

Exclusion Based on Modified Sequential Organ Failure Assessment (MSOFA) Score

Patients with the following MSOFA scores will be excluded from consideration for ventilator support:

- Initial assessment: MSOFA >11
- 48 hour assessment: MSOFA >11 or those who were MSOFA 8-11 during initial assessment with no improvement
- 120 hour (five day) assessment: MSOFA >11 or those who had MSOFA less than 8 during initial assessment with no improvement

Modified Sequential Organ Failure Assessment (MSOFA) Score

Organ System	0	1	2	3	4
Respiratory SpO2/FiO2	>400	≤400	≤315	≤235	≤150
Liver	No scleral icterus or jaundice			Scleral icterus or jaundice	
Cardiovascular, hypotension	No hypo-tension	MAP <70 mm Hg	dopamine≤5 or dobutamine any dose	dopamine>5 epinephrine≤0.1 norepinephrine≤0.1	dopamine>15 epinephrine>0.1 norepinephrine>0.1
CNS, Glasgow Coma Score	15	13-14	10-12	6-9	<6
Renal, Creatinine mg/dL	<1.2	1.2-1.9	2.0-3.4	3.5-4.9	>5.0

MAP=mean arterial pressure

dopamine, dobutamine, epinephrine, and norepinephrine doses in micrograms per kilogram per minute

CNS=central nervous system

Implementing Modified MSOFA scores

1. A MSOFA score is calculated every day for all patients requiring access to inpatient resources with each patient classified into red (high priority), yellow (intermediate priority), green (low priority), or blue (excluded from mechanical ventilation, other treatment as indicated and available) for remaining in the ICU. Clearly document the time of every MSOFA calculation.

2. If a patient's status is green (low priority), the patient is transferred out of the ICU. They do not require critical care.
3. If a patient's status is blue (excluded from mechanical ventilation, other treatment as indicated and available) based on exclusion criteria or MSOFA score at the time of initial triage, they are not admitted to the ICU.
4. If a patient's status becomes blue (excluded from mechanical ventilation, other treatment as indicated and available) based on the presence of "exclusion criteria" at any time during the facility stay, the patient is transferred out of the ICU.
5. If a patient's status becomes blue (excluded from mechanical ventilation, other treatment as indicated and available) based on the MSOFA score at 48 hours, 120 hours, or anytime thereafter, they are transferred out of the ICU.
6. If and whenever a patient's status is blue (excluded from mechanical ventilation, other treatment as indicated and available), a Do Not Resuscitate order (DNR) is written and supportive care provided.
7. In the absence of "exclusion criteria," decisions to institute or continue resource-limited ventilator support are made at initial triage, then at 48 hours, 120 hours, and daily thereafter. This allows patients the opportunity to receive a trial of ICU therapy and potentially continue to receive ventilator support during the first 5 days.
8. The daily MSOFA assessment after 5 days (120 hours) uses the 120-hour criteria.
9. If decisions must be made to remove patients from ventilators to provide resources for new patients, the following guidelines are suggested:
    a. A patient classified as yellow (intermediate priority) who needs admission cannot have priority over a patient classified as yellow or red (high priority) who is already in the ICU.
    b. A patient classified as red (high priority) who needs admission cannot have priority over a patient classified as red who is already in the ICU.
    c. A patient classified as red (high priority) who needs admission cannot have priority over a patient classified as yellow (intermediate priority) during the first 5 days (120 hours) of the patient classified as yellow's stay in the ICU.
    d. A patient classified as red (high priority) who needs admission can have priority over a patient classified as yellow (intermediate priority) who is not showing clinical improvement after the patient classified as yellow has been in the ICU for 5 days (120 hours).

ASSESSMENT CHART

	Initial Assessment		48-hour Assessment		120-hour Assessment & Daily Thereafter	
Color Code	Criteria	Priority	Criteria	Priority	Criteria	Priority
Blue	Exclusion criteria* or SOFA greater than 11	Do not admit to ICU, other treatment as indicated, if available	Exclusion criteria* or SOFA greater than 11 or SOFA 8-11 no change	Discharge from critical care and continue other treatment as indicated, if available	Exclusion criteria* or SOFA greater than 11 or SOFA less than 8 no change	Discharge from critical care and continue other treatment as indicated, if available
Red	SOFA 8-11	High	SOFA less than 11 and decreasing	High	SOFA score less than 11 and decreasing progressively	High

Yellow	SOFA equal to or less than 7 or Single Organ Failure	Intermediate	SOFA less than 8 no change	Intermediate	SOFA less than 8 minimal decrease (less than 3-point decrease in past 72 hours)	Intermediate
Green	No significant organ failure	Low	No longer ventilator dependent	Discharge from critical care	No longer ventilator dependent	Discharge from critical care

* If at any time a patient's status becomes blue, based upon exclusion criteria, discontinue ventilator. Other indicated care will be continued based on patient preference and availability of other healthcare resources. Glasgow Coma Scores are not calculated at 48 and 120 hours if the patient must be awakened to do so unless the score could move the patient into another category. Decisions based on triage MSOFA scores are made only at initial triage, 48 and 120 hours, and daily thereafter.

Method for Resolving Identical Scores

In the event of multiple patients in the same triage category (red or yellow) needing mechanical ventilation in the setting of resource limitation, the Triage Committee may consider severe medical co-morbidities and advanced chronic conditions that limit near-term duration of benefit and likelihood of survival to determine ventilator allocation. Patients who do not have a severely limited near-term prognosis for survival are given priority over those who are likely to die in the near-term, even if they survive the acute critical illness. Age, disability, or any other characteristics listed in the Overview section do NOT define individuals likely to die in the near-term. Co-morbid medical conditions occur in a spectrum of severity, and should only be used in allocation decisions based on the clinical decision that they will impact near-term survival. As a last resort, random allocation should be used to resolve identical scores.

The following are examples of severely life-limiting comorbidities which may correlate with a significantly increased risk of short-term mortality from critical illness.

- Minimally conscious or unresponsive wakeful state from prior neurologic injury
- American College of Cardiology/American Heart Association Stage D heart failure
- World Health Organization Class 4 pulmonary hypertension
- Severe chronic lung disease with FEV1<20% predicted, FVC<35% predicted
- Cirrhosis with a model for end-stage liver disease score >20
- Metastatic Cancer with expected survival < 6 months despite treatment
- Refractory hematologic malignancy (resistant or progressive despite conventional initial therapy)

Method for time-sensitive surge triage and/or priority dilemmas

As the COVID-19 pandemic crisis evolves, there is growing recognition that during surge capacity, Palmdale Regional Medical Center may experience significant shortages of physicians, nurses, and other staff who would be required to implement the MSOFA score as part of triage. It is also possible that during times of very high acuity and volume, MSOFA scoring may not be available in a timeline that allows for triage of all patients. Additionally, Palmdale Regional Medical Center may

not be equipped with staff and electronic medical record resources to rapidly implement system-wide MSOFA scoring.

In these circumstances, the Triage Committee may incorporate comorbidities, and likelihood of survival in the triage decision. The Triage Committee may consider mortality predictors and other factors outside the MSOFA score that inform prognosis.

Appendix C
Ventilator Allocation Patient Flowsheet

Patient Name/ ID:	
Date:	
Attending Physician:	

Non-SOFA Exclusion Criteria:	YES	NO
Has the patient suffered a cardiac arrest which was: -Unwitnessed -Recurrent -Unresponsive to standard measures -Trauma related (note: the above criteria specifically avoid excluding a patient with a single cardiac arrest with rapid attainment of ROSC)		
Does the patient have a terminal condition? A condition caused by injury, disease, or illness from which a reasonable degree of medical certainty, death will occur within six months. (For example, patients with metastatic cancer who are no longer receiving treatment or only receiving palliative cancer therapies, especially if there is not an indication of significant radiologic response to these therapies)		
Severe burn: Body Surface area greater than 40%, severe inhalation injury		
End stage organ failure -		

MODIFIED SOFA SCORE CALCULATION:

Organ System	0	1	2	3	4	Patient Score:
Respiratory/SpO2	>400	</= 400	</= 315	</= 235	</= 150	
Liver	No scleral icterus or jaundice			Scleral icterus or jaundice		
Cardiovascular, hypotension	No hypotension	MAP <70 mm Hg	dopamine </= 5 or dobutamine any dose	dopamine > 5 epi </= 0.1 norepi </= 0.1	dopamine > 15 epi > 0.1 norepi > 0.1	
CNS, Glasgow Coma Score	15	13-14	10 to 12	6 to 9	<6	
Renal, Creatininine mg/dL	<1.2	1.2-1.9	2.0-3.4	3.5-4.9	>5.0	
					Total Score:	

DOCUMENTATION OF PRIORITY BASED ON EXCLUSION AND mSOFA CRITERIA:

	Initial Assessment	48 Hour Assessment	120 Hour Assessment and Daily thereafter
Date:			
Time:			
Color Code:			
Criteria:			
Priority:			

	Initial Assessment		48-hour Assessment		120-hour Assessment & Daily Thereafter	
Color Code	Criteria	Priority	Criteria	Priority	Criteria	Priority
Blue	Exclusion criteria* or SOFA greater than 11	Do not admit to ICU, other treatment as indicated, if available	Exclusion criteria* or SOFA greater than 11 or SOFA 8-11 no change	Discharge from critical care and continue other treatment as indicated, if available	Exclusion criteria* or SOFA greater than 11 or SOFA less than 8 no change	Discharge from critical care and continue other treatment as indicated, if available
Red	SOFA 8-11	High	SOFA less than 11 and decreasing	High	SOFA score less than 11 and decreasing progressively	High
Yellow	SOFA equal to or less than 7 or Single Organ Failure	Intermediate	SOFA less than 8 no change	Intermediate	SOFA less than 8 minimal decrease (less than 3-point decrease in past 72 hours)	Intermediate
Green	No significant organ failure	Low	No longer ventilator dependent	Discharge from critical care	No longer ventilator dependent	Discharge from critical care

* If at any time a patient's status becomes blue, based upon exclusion criteria, discontinue ventilator. Other indicated care will be continued based on patient preference and availability of other healthcare resources. Glasgow Coma Scores are not calculated at 48 and 120 hours if the patient must be awakened to do so unless the score could move the patient into another category. Decisions based on triage SOFA scores are made only at initial triage, 48 and 120 hours, and daily thereafter.

RESOURCES

Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response, Institute of Medicine, 2012.

Crisis Standards of Patient Care Guidance with an Emphasis on Pandemic Influenza: Triage and Ventilator Allocation Guidelines, Indiana State Department of Health, 2014.

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