Title:	Mass Critical Care Guidelines (Adult/Pediatric)				
Department/Service Line:	Clinical				
Approver(s):	Clinical Leadership Council; Critical Care Council; Environment of Care; Emergency Management; Legal/Risk Management.				
Location/Region/Division:	BSWH				
Document Number:	BSWH.CLN.007.P				
Effective Date:	09/01/2018	**Last Review/ Revision Date:**	06/27/2018	**Origination Date:**	06/27/2018

SCOPE

These Mass Critical Care Guidelines ("Guidelines") applies to Baylor Scott & White Health including Controlled Affiliates ("BSWH").

Further, these Guidelines apply to all patients who are being considered for admission to critical care areas during a pandemic respiratory illness or other circumstance in which the Guidelines have been activated, since there is only a single pool of critical care resources that must be shared by both those with and without the illness that has triggered the activation of the Guidelines.

DEFINITIONS

When used in this document with initial capital letter(s), the following word(s)/phrase(s) have the meaning(s) set forth below unless a different meaning is required by context. Additional defined terms may be found in the BSWH P&P Definitions document.

Adult Patients - Generally, all patients 18 years or older. For these Guidelines, during a certain pandemic respiratory crisis or other public health emergency Adult Patients may include patients 14 years or older.

Emergency Patients - Those patients whose clinical conditions indicate that they require admission to the hospital and/or surgery within 24 hours.

Elective Surgery -

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

Long-term Care Facility - A residential program providing 24-hour care, to include: Nursing Homes, Skilled Nursing Facilities, Assisted Living 1 and 2, Residential Care Facilities, and Intermediate Care for the Mentally Retarded ("ICFMR") facilities.

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

Pediatric Patients - Generally, all patients 17 years or younger. For these Guidelines, during a certain pandemic respiratory crisis or other public health emergency Adult Patients may include patients 14 years or older.

POLICY

BSWH seeks to provide transparent objective clinical criteria and an ethical framework for medical decision-making in overwhelming emergency circumstances, such as during pandemic respiratory crisis when the demand for intensive care services may overwhelm the supply of services.

These Guidelines are intended to help allocate scarce healthcare resources (intensive care services, including ventilators) to those who are most likely to benefit medically during a pandemic respiratory crisis or other emergency situation that has the potential to overwhelm available intensive care resources. Application of these Guidelines will require physician judgment at the point of patient care.

Each patient will receive respect, care, and compassion without regard to basis of race, ethnicity, color, national origin, religion, sex, disability, veteran status, age, genetic information, sexual orientation, gender identity, or any other protected characteristic under applicable law. However, this does not mean that all patients should or will receive critical care services in the time of resource scarcity.

These Guidelines should not be viewed as a first step toward any type of resource rationing under normal circumstances. It should be used only in genuinely extraordinary situations in which the demand for intensive care services overwhelms the available services, such as in pandemic respiratory crisis.

Activation

These Guidelines may be activated in the event the governor or other appropriate government official declares a pandemic respiratory crisis or other public health emergency that has the potential to overwhelm available intensive care resources.

As the threat of the activation of these guidelines increases, each BSWH facility/hospital should cancel outpatient procedures, including elective surgeries that require a back-up option of hospital admission and ventilator support if complications arise. Additionally, BSWH facilities/hospitals may explore all local, regional and state resources prior to activation/implementation of these Guidelines.

At any time that the Guidelines response plan has been implemented and the resources for critical care services/ventilator use exceeds capacity, the incident commander can activate these Guidelines at a specific BSWH facility/hospital. In collaboration with the BSWH facility/hospital incident commanders, BSWH Senior Leadership, the BSWH facility/hospital presidents, the BSWH Chief Medical Officers, the BSWH Chief Nursing Officers, the BSWH Medical Director of Emergency Management, and/or the BSWH Vice President of Environment of Care and Emergency Management may request that these Guidelines be activated throughout BSWH or at a specific BSWH facility/hospital.

Responsibilities

Facility/Hospital

- Establish a Triage Committee for the review and support compliance with these Guidelines when implemented. Consider a team of at least three (3) individuals, including an intensivist and two (2) or more of the following: the hospital medical director, a nursing supervisor, a board member, a member of the hospital ethics committee, a pastoral care representative, a social worker, and one (1) or more independent physician.
- 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.
- Inform patients and families as soon as feasible that in the circumstance of pandemic respiratory illness or other overwhelming emergency crisis, ventilator support and other critical care interventions may not be available at all and when available will be provided based upon a protocol equally applied to all patients. They may be further informed that the ventilator and other critical care type services represent a time-limited trial of

therapy that may not improve the patient's condition sufficiently, in which case the ventilator will be removed and a transfer from the critical care area will occur.

Medical Staff

- Medical staff will evaluate all patients based upon the objective guidelines provided and will offer time-limited trials of ventilator support if clinically indicated based upon these Guidelines.
- We recognize that these Guidelines address a situation of extraordinary medical and ethical challenge and that it may not adequately address every conceivable circumstance. Accordingly, if a physician responsible for the treatment and care of patients feels the guidance is inadequate for a particular case confronting them, they may act according to their medical/ethical judgment and then appeal to the Triage Committee for further guidance.
- Medical staff should establish a method of providing peer support and expert consultation to physicians making these decisions

Triage Committee

- A multidisciplinary Triage Committee will serve as a resource to the clinicians at the bedside and will have oversight responsibility for supporting compliance with these Guidelines when implemented.
- The chairperson or clinical ethics consultant of each BSWH facility ethics committee and the senior ICU Medical Director or their designee shall co-chair the Triage Committee and jointly determine the frequency of oversight rounds.
- Membership should include as available at least one representative from clinical ethics, critical care medicine, nursing, social work, and pastoral care. Note: One person may meet more than one of these criteria.
- Clinicians in the Emergency Department or ICU who feel that a particular case requires variation from these Guidelines should consult with the Triage Committee for guidance.

PROCEDURE

Overview of Pandemic Triage Levels

Triage Level 1
Early in the pandemic

- As the threat of the activation of the triage protocol increases, each hospital will cancel outpatient procedures, including elective surgeries that require a back-up option of hospital admission and ventilator support if complications arise.
- Note: In the event of a severe and rapidly progressing pandemic, start with Triage Level 2.

Triage Level 2
Worsening pandemic

- Hospitals have surged to maximum bed capacity, and emergency departments are overwhelmed.
- There are not enough beds to accommodate all patients needing hospital admission and not enough ventilators to accommodate all patients with respiratory failure.
- Hospital staff absenteeism is 20% to 30%.

Triage Level 3
Worst-case scenario

- Hospitals have implemented altered standards of care regarding nurse/patient ratios and have expanded capacity by adding patients to occupied hospital rooms.
- Hospital staff absenteeism is 30% to 40%.

Pre-Hospital Settings

Initial Triage

Applies to: Patients who appear for care in physician offices or clinics, or in pre-evaluation spaces for emergency departments

Implemented by: Physicians, clinic staff, pre-screening staff

Other uses: Publish in newspapers, place on Web sites for self-use by public

ALL Triage Levels: Use **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools** to provide initial triage screening, as well as instructions and directions for patients who need additional care or medical screening.

EMS, Physician Offices and Clinics

Applies to: Patients who present for care or call for guidance for where to go or how to care for ill family members

Implemented by: Primary care staff, hospital help lines, community help lines, and health department help lines

Triage Level 1:

1. Use **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools** to evaluate patients before sending to hospital ED or treating in an outpatient facility.

Triage Level 2 and Triage Level 3:

1. Continue to use **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools**
2. Initiate **EXCLUSION CRITERIA for Hospital Admission** to evaluate patients. Do not send patients meeting **EXCLUSION CRITERIA** to the hospital for treatment. Send home with care instructions.

Home Care, Long-term Care Facilities, and Other Institutional Facilities (e.g., mental health, correctional, handicapped)

Applies to: Patients in institutional facilities

Implemented by: Institutional facility staff

ALL Triage Levels:

1. Ensure that all liquid oxygen tanks are full.
2. Limit visitation to control infection.

Triage Level 2 and Triage Level 3:

1. Use **EXCLUSION CRITERIA for Hospital Admission** to evaluate patients. Do not transfer patients meeting exclusion criteria to the hospital for treatment.
2. Give palliative and supportive care in place.

Hospital Settings

Hospital Administrative Roles – General

Triage Level 1:

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

Triage Level 2:

1. **Preserve bed capacity** by:
   a. Canceling all elective surgeries unless necessary to facilitate hospital discharge.
   b. Evaluating hospitalized Category 1 elective surgery patients for discharge using same criteria as medical patients.

2. **Improve patient care capacity** by implementing altered standards of care regarding nurse/patient ratios and expanding capacity by adding patients to occupied hospital rooms.
3. **Institute a supportive and/or palliative care team** to provide symptom management, counseling and care coordination for patients, and support for families of patients who do not receive intensive care unit services.

Triage Level 3:

1. **Preserve bed capacity** by limiting surgeries to patients whose clinical conditions are a serious threat to life or limb, or to patients for whom surgery may be needed to facilitate discharge from the hospital.

Emergency Department, Hospital, and ICU – Clinical Triage

Use **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools** to determine which patients to send home for palliative care or medical management and which patients to admit or keep in hospital or ICU. Note that the lowest priority for admission is given to patients with the lowest chance of survival with or without treatment, and to patients with the highest chance of survival without treatment.

Physician judgment should be used in applying these Guidelines.

Triage Level 2:

1. Initiate **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools** to determine priority for ICU admission, intubation and/or mechanical ventilation.
2. Reassess need for ICU/ventilator treatment daily after 48–72 hours of ICU care

Triage Level 3:

1. Continue to use **Adult or Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools** to determine priority for ICU, intubation and/or mechanical ventilation.
2. ADULT PATIENTS:
   a. Triage more yellow patients to floor on oxygen or CPAP.
   b. Triage more red patients who are intubated and on CPAP to floor.

ATTACHMENTS

Adult Hospital and ICU/Ventilator Admission Triage Algorithms and Tools (BSWH.CLN.007.A1)
Pediatric Hospital and ICU/Ventilator Admission Triage Algorithms and Tools (BSWH.CLN.007.A2)

RELATED DOCUMENTS

Hospitals And Health Systems Association North Texas Mass Critical Care Guidelines Document Hospital and ICU Triage Guidelines for Adults, North Texas Mass Critical Care Task Force (January 2014)
Hospitals And Health Systems Association North Texas Mass Critical Care Guidelines Document Hospital and ICU Triage Guidelines for Pediatrics, North Texas Mass Critical Care Task Force (January 2014)

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- Commentary: Melnychuk RM, Kenny NP. Pandemic triage: the ethical challenge. CMAJ. 2006;175(11):1393.

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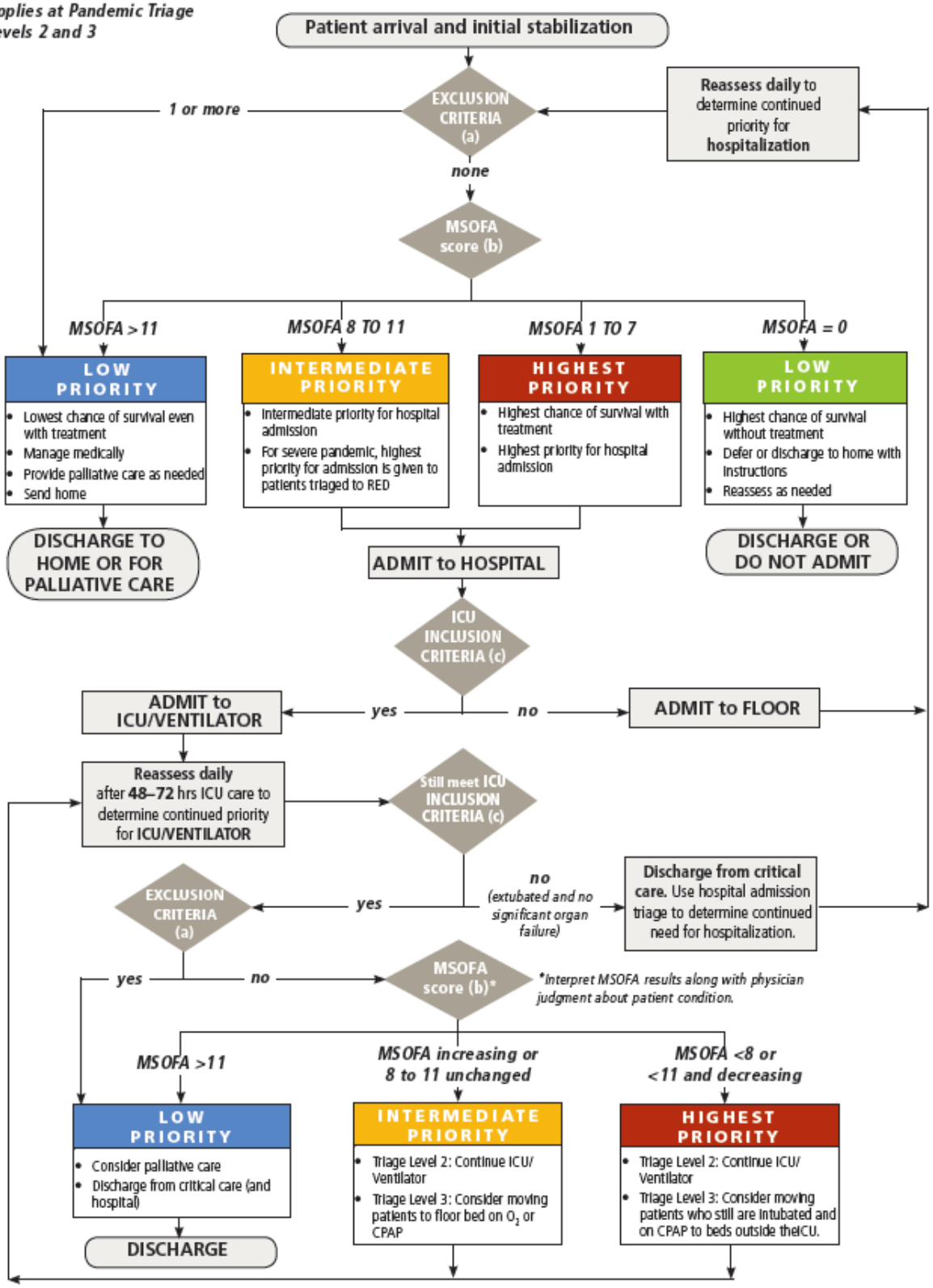
The information contained in this document should not be considered standards of professional practice or rules of conduct or for the benefit of any third party. This document is intended to provide guidance and, generally, allows for professional discretion and/or deviation when the individual health care provider or, if applicable, the "Approver" deems appropriate under the circumstances.

Attachment Name:	***Adult*** Hospital and ICU/Ventilator Admission Triage Algorithms and Tools		
Attachment Number:	BSWH.CLN.007.A1	Last Review/Revision Date:	06/27/2018

ALGORITHM: HOSPITAL AND ICU/VENTILATOR ADMISSION TRIAGE

Applies at Pandemic Triage Levels 2 and 3



TRIAGE TOOLS AND TABLES

(a) EXCLUSION CRITERIA for Hospital Admission:

The patient is excluded from hospital admission or transfer to critical care if ANY of the following is present:

☐ (1) **Known Do Not Attempt Resuscitation (DNAR) or Out of Hospital-DNR (OOH-DNR) status.**

☐ (2) **Severe and irreversible chronic neurologic condition** with persistent coma or vegetative state.

☐ (3) **Acute severe neurologic event with minimal chance of functional neurologic recovery (physician judgment).** Includes traumatic brain injury, severe hemorrhagic stroke and intracranial hemorrhage.

☐ (4) **Traumatic injury:** Severe traumatic brain injury, hemodynamically unstable traumatic injuries requiring more than 10 units of blood transfusion, or more than one pressor, ARDS requiring high peep >15 or HFOV; Revised Trauma Score <2 [see (e)]. Revised Trauma Score:_____

☐ (5) **Severe burns with anticipated survival "Low," "Low/Expectant" or "Expectant"** as indicated by age and burn size on the Triage Decision Table For Burn Victims (f). Burns not requiring critical care resources may be cared for at the local facility. Score ___

☐ (6) **Cardiac arrest not responsive to ACLS interventions within 20–30 minutes.**

☐ (7) **Known severe dementia** medically treated and requiring assistance with activities of daily living.

☐ (8) **Advanced untreatable neuromuscular disease** (such as ALS or end-stage MS) requiring assistance with activities of daily living or chronic ventilatory support.

☐ (9) **Incurable metastatic malignant disease.**

☐ (10) **End-stage organ failure** meeting the following criteria:

- ☐ **Heart: NEW YORK HEART ASSOCIATION (NYHA) FUNCTIONAL CLASSIFICATION SYSTEM Class III or IV (g).** Class: ____
- ☐ **Lung** (any of the following):
  - ☐ Chronic Obstructive Pulmonary Disease (COPD) with Forced Expiratory Volume in one second (FEV_1) <25% predicted baseline, PaO_2 <55 mm Hg, or severe secondary pulmonary hypertension.
  - ☐ Cystic fibrosis with post-bronchodilator FEV_1 <30% or baseline PaO_2 <55 mm Hg.
  - ☐ Pulmonary fibrosis with VC or TLC <60% predicted, baseline PaO_2 <55 mm Hg, or severe secondary pulmonary hypertension.
  - ☐ Primary pulmonary hypertension with NYHA class III or IV heart failure **(g)**, right atrial pressure >10 mm Hg, or mean pulmonary arterial pressure >50 mm Hg.
- ☐ **Liver: MELD SCORE >20 or Pugh Score > 7 (h)**, when available. Includes bili, albumin, INR, ascites, encephalopathy. MELD score calculators available online. PUGH Score table on page 7. MELD: ____ PUGH: ____

(b) Modified Sequential Organ Failure Assessment (MSOFA) Score

MSOFA scoring guidelines						
Variable	Score 0	Score 1	Score 2	Score 3	Score 4	Score for each row
SpO_2/FIO_2 ratio* or nasal cannula or mask O_2 required to keep SpO_2 >90%	SpO_2/FIO_2 >400 or room air SpO_2 >90%	SpO_2/FIO_2 316-400 or SpO_2 >90% at 1–3 L/min	SpO_2/FIO_2 231-315 or SpO_2 >90% at 4–6 L/min	SpO_2/FIO_2 151-230 or SpO_2 >90% at 7–10 L/min	SpO_2/FIO_2 ≤150 or SpO_2 >90% at >10 L/min	
Jaundice	no scleral icterus			clinical jaundice/ scleral icterus		
Hypotension†	None	MABP <70	dop <5	dop 5–15 or epi ≤0.1 or norepi ≤0.1	dop >15 or epi >0.1 or norepi >0.1	
Glasgow Coma Score	15	13–14	10–12	6-9	<6	
Creatinine level, mg/dL (use ISTAT)	<1.2	1.2–1.9	2.0–3.4	3.5-4.9 or urine output <500 mL in 24 hours	>5 or urine output <200 mL in 24 hours	
					MSOFA score = total scores from all rows:	

** SpO_2/FIO_2 ratio:*
SpO_2 = Percent saturation of hemoglobin with oxygen as measured by a pulse oximeter and expressed as % (e.g., 95%); FIO_2 = Fraction of inspired oxygen; e.g., ambient air is 0.21
Example: *If SpO_2 = 95% and FIO_2 = 0.21, the SpO_2/FIO_2 ratio is calculated as 95/0.21 = 452*

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

(c) ICU/Ventilator INCLUSION CRITERIA

Patient must have **NO EXCLUSION CRITERIA (a)** *and* **at least one of the following INCLUSION CRITERIA:**

☐ (1) **Requirement for invasive ventilatory support**
- ☐ Refractory hypoxemia (SpO_2 <90% on non-rebreather mask or FIO_2 >0.85)
- ☐ Respiratory acidosis (pH <7.2)
- ☐ Clinical evidence of impending respiratory failure
- ☐ Inability to protect or maintain airway

☐ (2) **Hypotension* with clinical evidence of shock** refractory to volume resuscitation, and requiring vasopressor or inotrope support that cannot be managed in a ward setting.**

***Hypotension** = Systolic BP <90 mm Hg or relative hypotension

****Clinical evidence of shock** = altered level of consciousness, decreased urine output or other evidence of end-stage organ failure

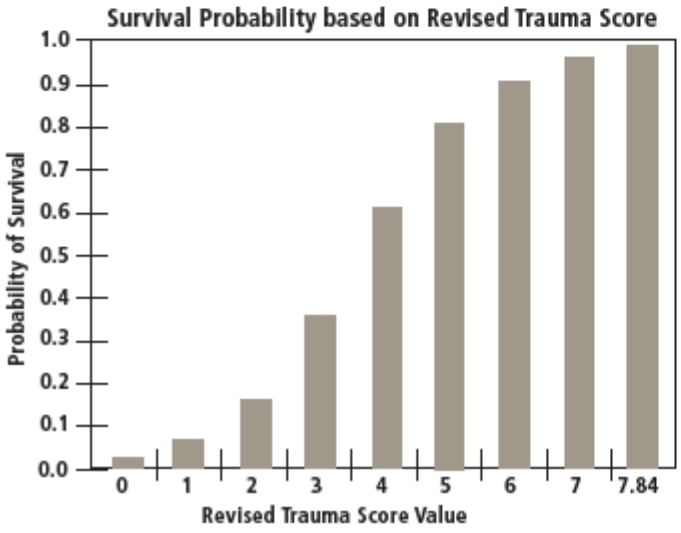
(d) GLASGOW COMA SCORE (GCS)

The GCS is used as part of the REVISED TRAUMA SCORE (RTS) in determining exclusion criteria for hospital admission in the case of pandemic flu at triage levels 2 and 3.

Glasgow Coma Scoring Criteria			
Criteria		Score	Criteria Score
Best Eye Response (4 possible points)	No eye opening	1	
	Eye opens to pain	2	
	Eye opens to verbal command	3	
	Eyes open spontaneously	4	_____
Best Verbal Response (5 possible points)	No verbal response	1	
	Incomprehensible sounds	2	
	Inappropriate words	3	
	Confused	4	
	Oriented	5	_____
Best Motor Response (6 possible points)	No motor response	1	
	Extension to pain	2	
	Flexion to pain	3	
	Withdraws from pain	4	
	Localizes to pain	5	
	Obeys commands	6	_____
Total Score (add 3 subscores; range 3 to 15):			_____

(e) REVISED TRAUMA SCORE (RTS)

Values for the REVISED TRAUMA SCORE (RTS) range from 0 to 7.8408. The RTS is heavily weighted toward the GLASGOW COMA SCORE (GCS) to compensate for major head injury without multisystem injury or major physiological changes. The RTS correlates well with the probability of survival. A Revised Trauma Score of <2 is an exclusion criterion for hospital admission during a pandemic flu at triage levels 2 and 3.



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

(f) TRIAGE DECISION TABLE FOR BURN VICTIMS

A burn score of "Low" or worse on this table is an exclusion criterion for hospital admission in the case of pandemic flu at triage levels 2 and 3.

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

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

(g) NEW YORK HEART ASSOCIATION (NYHA) FUNCTIONAL CLASSIFICATION SYSTEM

The NYHA functional classification system relates symptoms to everyday activities and the patient's quality of life. NYHA Class III or IV heart failure are exclusion criteria for hospital admission in the case of pandemic flu at triage levels 2 and 3.

NYHA Classes	
Class	**Patient Symptoms**
Class I (Mild)	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitations or dyspnea.
Class II (Mild)	Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitations or dyspnea.
Class III (Moderate)	Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes fatigue, palpitations or dyspnea.
Class IV (Severe)	Unable to carry out physical activity without discomfort. Symptoms of cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.

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(h) PUGH SCORE

A total PUGH SCORE ≥7 is an exclusion criterion for hospital admission in the case of pandemic flu at triage levels 2 and 3.

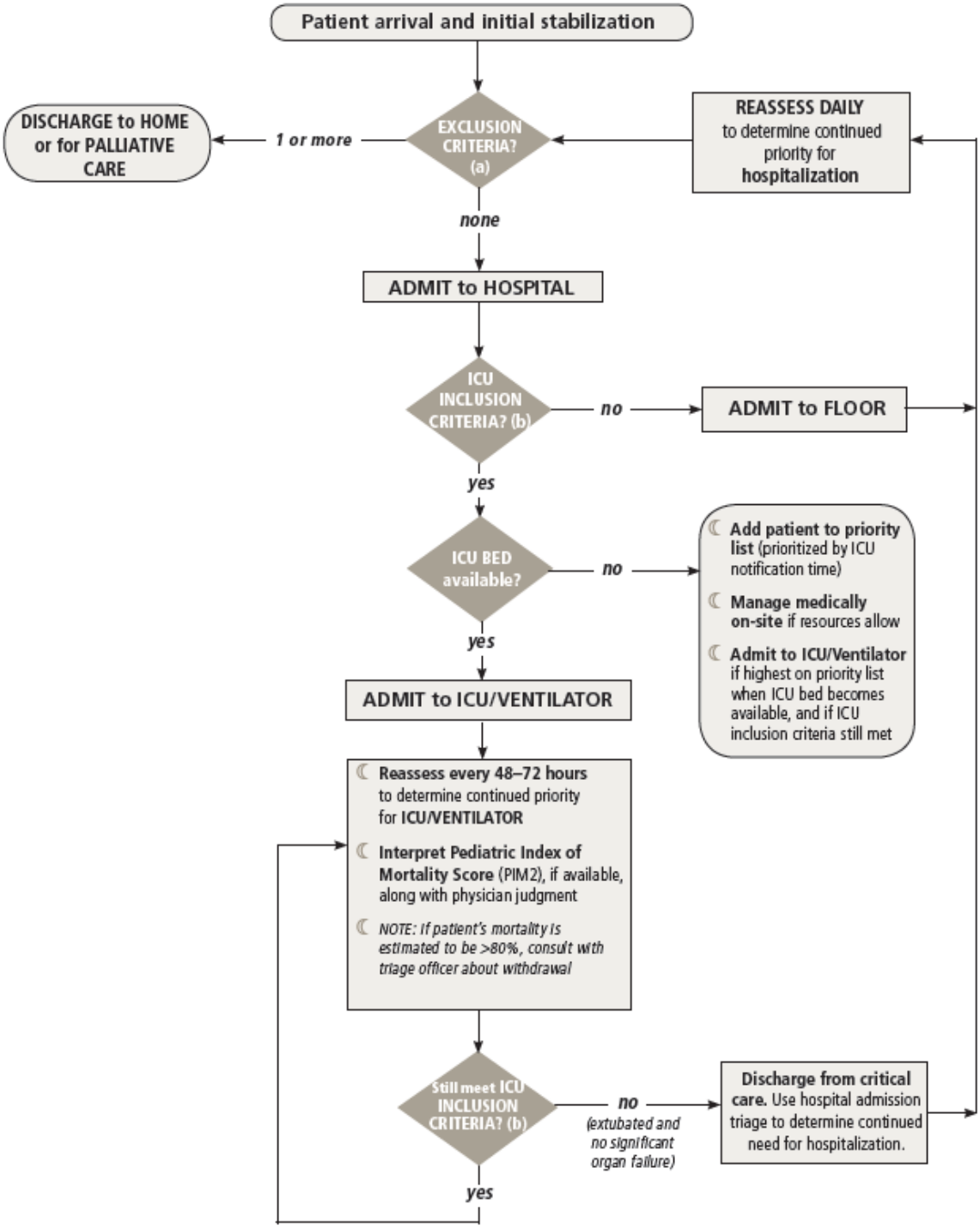
Scoring Criteria			
Criteria	**Value**	**Points**	**Total for criteria**
Total Serum Bilirubin	<2 mg/dL	1	_____
	2–3 mg/dL	2	
	>3 mg/dL	3	
Serum Albumin	>3.5 g/dL	1	_____
	2.8–3.5 g/dL	2	
	<2.8 g/dL	3	
INR	<1.70	1	_____
	1.71–2.20	2	
	>2.20	3	
Ascites	None	1	_____
	Controlled medically	2	
	Poorly controlled	3	
Encephalopathy	None	1	_____
	Controlled medically	2	
	Poorly controlled	3	
		Total Pugh Score	_____

Score Interpretation		
Total PUGH SCORE	**Class**	
5 to 6	A	Life expectancy 15–20 years Abdominal surgery perioperative mortality 10%
7 to 9	B	Liver transplant evaluation indicated Abdominal surgery perioperative mortality 30%
10 to 15	C	Life expectancy 1–3 years Abdominal surgery perioperative mortality 82%

Attachment Name:	***Pediatric*** Hospital and ICU/Ventilator Admission Triage Algorithms and Tools		
Attachment Number:	BSWH.CLN.007.A2	Last Review/Revision Date:	06/27/2018

ALGORITHM: HOSPITAL AND ICU/VENTILATOR ADMISSION TRIAGE

Applies at Pandemic Triage Levels 2 and 3



TRIAGE TOOLS AND TABLES

(a) EXCLUSION CRITERIA for Hospital Admission:

The patient is excluded from hospital admission or transfer to critical care if ANY of the following is present:

☐ **(1) Persistent coma or vegetative state.**

☐ **(2) Severe acute trauma with a REVISED TRAUMA SCORE <2 [see (d) and (e) on following pages].**

GCS: ____ SBP:____ RR:_____

Revised trauma score: _____

☐ **(3) Severe burns with <50% anticipated survival** [patients identified as "Low" or worse on the TRIAGE DECISION TABLE FOR BURN VICTIMS (f)]. Burns not requiring critical care resources may be cared for at the local facility.

☐ **(4) Cardiac arrest not responsive to PALS interventions within 20–30 minutes.**

☐ **(5) Short anticipated duration of benefit,** e.g., underlying condition with >80% mortality rate at 18–24 months:

- ☐ a) Known chromosomal abnormalities such as Trisomy 13 or 18
- ☐ b) Known metabolic diseases such as Zellweger syndrome
- ☐ c) Spinal muscular atrophy (SMA) type 1
- ☐ d) Progressive neuromuscular disorder, e.g., muscular dystrophy and myopathy, with inability to sit unaided or ambulate when such abilities would be developmentally appropriate based on age
- ☐ e) Cystic fibrosis with post-bronchodilator FEV_1 <30% or baseline PaO_2 <55 mm Hg
- ☐ f) Severe end-stage pulmonary hypertension

OTHER CONSIDERATIONS:

- Resuscitation of extremely premature infants with anticipated mortality rates greater than 80% should not be offered. See http://www.nichd.nih.gov/about/org/cdbpm/pp/prog_epbo/
- The use of ECMO will be decided on an individual basis by the Chief Medical Officer (with input from attending physician, nursing supervisor and ECMO representative) based on prognosis, suspected duration of ECMO run, and availability of personnel and other resources. Patients should have an estimated survival of >70% with an estimated ECMO run of <7–10 days.

(b) ICU/Ventilator INCLUSION CRITERIA

- Applies to all patients except those infants not yet discharged from the NICU
- Patients must have NO EXCLUSION CRITERIA (a) and at least one of the following INCLUSION CRITERIA:

☐ **(1) Requirement for invasive ventilatory support:**

- Refractory hypoxemia (SpO2 < 90% on non-rebreather mask or FIO_2 > 0.85)
- Respiratory acidosis (pH < 7.2)
- Clinical evidence of impending respiratory failure
- Inability to protect or maintain airway

☐ **(2) Hypotension* with clinical evidence of shock** refractory to volume resuscitation, and requiring vasopressor or inotrope support that cannot be managed in a ward setting.**

* **Hypotension** = Systolic BP < 90 mm Hg for patients age > 10 years old, < 70 + (2 x age in years) for patients ages 1 to 10, < 60 for infants < 1 year old, or relative hypotension

** **Clinical evidence of shock** = altered level of consciousness, decreased urine output or other evidence of end-stage organ failure

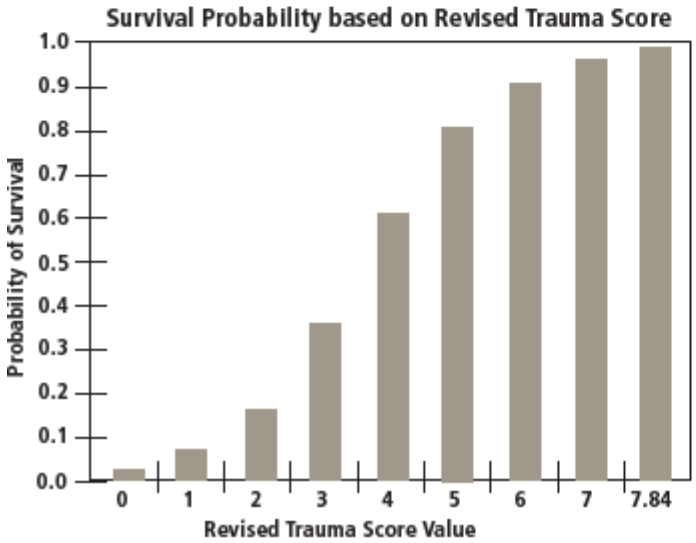
(c) GLASGOW COMA SCORE (GCS)

The GCS is used as part of the REVISED TRAUMA SCORE (RTS) in determining exclusion criteria for hospital admission in the case of pandemic flu at triage levels 2 and 3.

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

(d) REVISED TRAUMA SCORE (RTS)

Values for the REVISED TRAUMA SCORE (RTS) range from 0 to 7.8408. The RTS is heavily weighted toward the GLASGOW COMA SCORE (GCS) to compensate for major head injury without multisystem injury or major physiological changes. The RTS correlates well with the probability of survival. A Revised Trauma Score of <2 is an exclusion criterion for hospital admission during a pandemic flu at triage levels 2 and 3.



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

(e) TRIAGE DECISION TABLE FOR BURN VICTIMS

A burn score of "Low" or worse on this table is an exclusion criterion for hospital admission in the case of pandemic flu at triage levels 2 and 3.

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

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