

Sustaining Essential Health Services in a Crisis Care Environment:

A Scarce Resource Decision Framework



GA Hospital Region F

Essential Health Services Project

Prepared by:
The Georgia Hospital Association Research and Education Foundation, Inc. (GHAREF) in conjunction with the Medical Center of Central Georgia (MCCG) and Health Districts 4 and 5.2 with CDC funding for the Georgia Division of Emergency Preparedness – Georgia Department of Community Health

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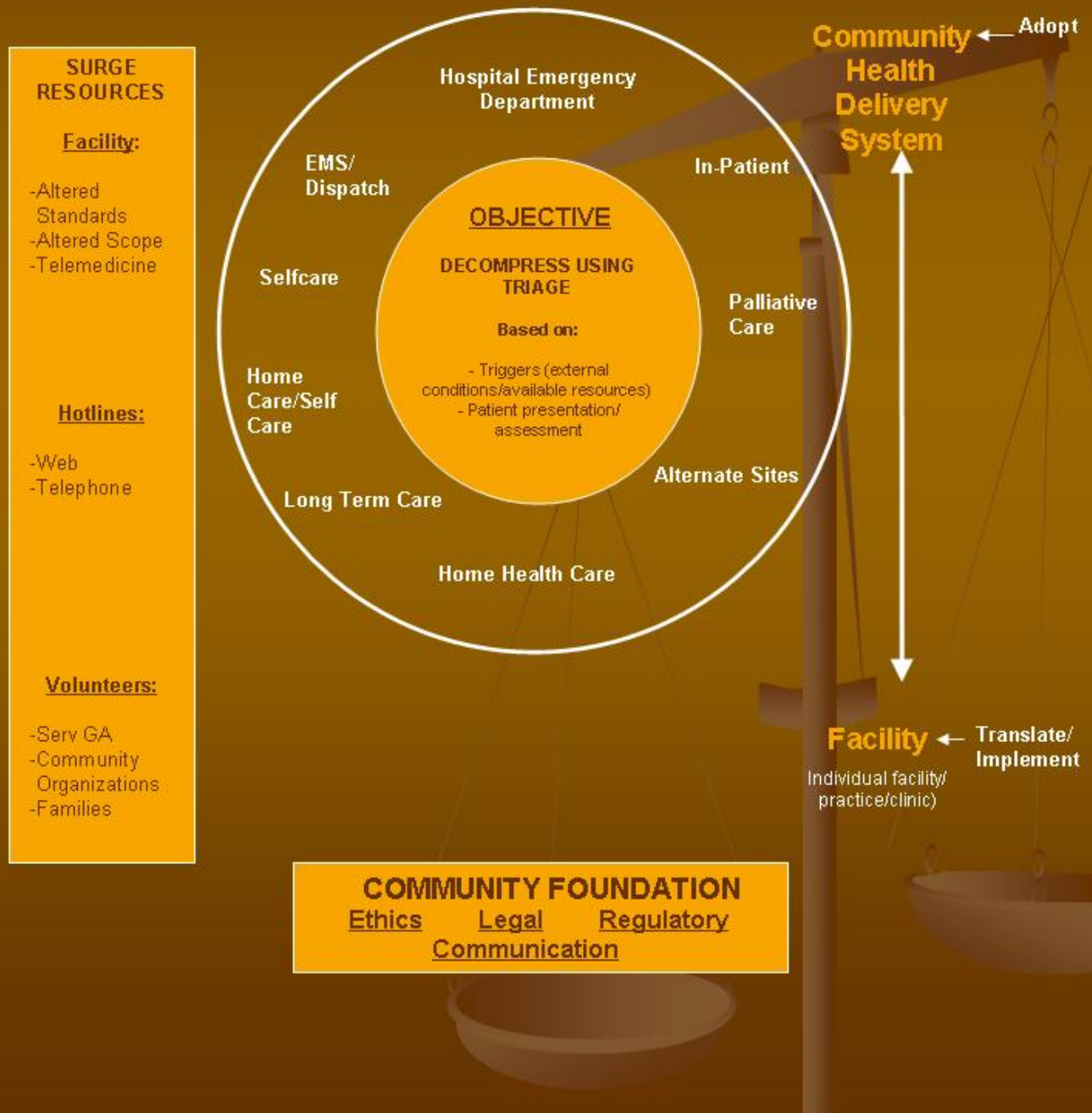
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A CCE Community Approach for Sustaining Scarce Resources

SITES and TYPES of CARE

RIGHT CARE BEST CARE RIGHT LOCATION



INTRODUCTION

The demand for healthcare resources and services will dramatically increase in the event of an influenza pandemic or other catastrophic health event. Out of necessity, scarce resources and patient care will be allocated to “do the greatest good for the greatest number.” In order to achieve this goal, the demand placed on the acute care hospitals and other sites along the continuum will need to be “decompressed” to maintain resources for those who can most benefit. Towards this end, these guidelines have been based on the collective work done to date by others¹ and synthesizes and adapts what has emerged as “best practices” for a crisis care environment. An aim of this work by Georgia Hospital Association Research and Education Foundation (GHAREF) and Regional Coordinating Hospital (RCH) F, in partnership with the Georgia Department of Community Health, Division of Emergency Preparedness and Response, is to provide guidance that can be adapted and implemented by other RCH areas in Georgia to support a consistent, effective, and regionally-driven response to a catastrophic health emergency event.

Healthcare and community leaders from 12 counties in central Georgia constituting GA Hospital Region F have reviewed and support the adoption of this guidance document to assist local public and private medical and healthcare entities in dealing with such events regionally. Under the National Incident Management System (NIMS), the region functions as part of an integrated local, state, and federal planning and response structure, engaging in and coordinating actions by:

- 1) supporting the development of local Pandemic Influenza Response Plans and other health/medical emergency response annexes and coordinating their implementation during an event;
- 2) integrating local surveillance, epidemiology, situational awareness, and investigation activities;
- 3) implementing Governor and Public Health directives including but not limited to executive order(s), emergency declaration, or declaration of public health emergency;
- 4) coordinating resource requests and allocations through Emergency Support Function (ESF) 8 at the public health district emergency operations center (DEOC) and regional coordinating hospital (RCH);
- 5) disseminating recommended actions for healthcare facilities and providers, including strategies for defining essential healthcare services and functions; recommendations for patient triage; guidance regarding the use of scarce resources; and patient care considerations; and
- 6) communicating information to the public, healthcare providers, and relevant agencies regarding appropriate actions.

¹ We acknowledge with gratitude the work of the IOM Committee and its 2009 publication, “Guidance for Establishing Standards of Care for Use in Disaster Situations” and the authors of the 2009 AHRQ publication “Mass Medical Care with Scarce Resources.” We would also like to thank and acknowledge the Florida Department of Health, Utah Department of Health, Utah Hospital and Health Systems Association, Wisconsin Division of Public Health, Wisconsin Hospital Association, Minnesota Department of Health, New York Department of Public Health, Colorado Department of Health, Alaskan health care providers who worked in conjunction with the Medical Emergency Preparedness Pediatrics Project, New Jersey Hospital Association, and the many other local, state, and national disaster planning experts whose efforts have contributed to this Framework.

PURPOSE

The purpose of this document is to provide guidance on community, health provider and healthcare facility actions, including the identification of essential healthcare functions and services, patient triage and care, and resource utilization strategies during a pandemic or other prolonged public health emergency when the demand for resources and/or services dramatically exceeds supply locally and regionally. Under The Joint Commission's current requirements, hospitals must plan to sustain operations for 96 hours. A pandemic of significant severity could challenge a community's healthcare system capacity and capability for a period of three months or more. The Institute of Medicine (IOM) has provided a framework that promotes consistency in establishing the key components required of any effort focused on crisis standards of care in an extended disaster situation. This *Scarce Resource Decision Framework* is based on the report by the IOM Committee on Guidance for Establishing Standards of Care for Use in Disaster Situations, published in September 2009.

GOALS

This framework seeks to: 1) Provide a common ethical framework (greatest good for the greatest number) for patient care and resource allocation; 2) Foster coordinated efforts among the community, facilities and agencies locally, regionally and statewide; 3) Promote the inclusion of a crisis care component within the existing emergency planning infrastructure to support the allocation of resources in a framework of operationally focused clinical and administrative decision-making; 4) Mitigate healthcare worker liability; 5) Promote communication to health providers and the public; and 6) Integrate the coordination of overall community event management with clinical activities.

The foundation for this work rests on an ethical framework, legal and regulatory considerations, and communication across all sectors functioning within the responsibilities set forth in Emergency Support Function (ESF) 8, Public Health and Medical under the Georgia Emergency Operations Plan (GEOP).

HEALTH EMERGENCY EVENT RESPONSE STRUCTURE – ESF 8

Under the GEOP, responsibility for management of public health services and medical care is outlined in ESF 8 and assigned to the Department of Community Health, the state public health agency, as the lead agency. At the regional level, a planning and response structure has been developed in which the district health office assumes a lead role for planning and preparedness, working closely with the Regional Coordinating Hospital(s) in its district to plan and prepare for event response across the healthcare delivery system. The Regional Coordinating Hospital (RCH) works closely with the other acute care hospitals, residential healthcare facilities, and community-based healthcare providers in its area to plan for a coordinated response to health emergency events. This structure and the plans developed form the framework for the management of response activities during a crisis care environment event. (See structure, Appendix 1).

ETHICAL FRAMEWORK

An influenza pandemic or other catastrophic event will impose substantial burdens on society. Given current planning assumptions, medical resources will need to be allocated in a deliberate manner. Resources will be limited and their provision to some individuals will mean not being able to provide that resource to others. Thus, deciding how to allocate them fairly becomes a concern. The ethical goal during a crisis care (scarce resource) environment focuses on treatment most likely to be lifesaving and on those whose functional outcome will most likely improve with treatment.

Any plan to allocate resources should be ethically defensible. Given the ramifications of a high severity pandemic or catastrophic event and its accompanying decisions and stark outcomes, healthcare providers have an ethical mandate to prepare themselves for how they will provide resources in a crisis care environment. A framework that has the consensus of healthcare providers in the RCH F area should be applied consistently and should reflect the current best practices for patient triage. Ethical considerations will help to guide the duties, obligations and parameters for the delivery of healthcare during a pandemic or other catastrophic situation. These considerations include:

- 1) duty to maximize preparedness and preventive strategies to minimize the scarcity of resources
 - 2) duty to work collaboratively with organizations across the community and to work toward consistency in decision-making
 - 3) duty to make the decision-making process transparent and to involve the public in planning and evaluation whenever possible
 - 4) duty to make well-founded decisions based on the best available scientific literature
 - 5) duty to promote the well-being of the community as a whole and to balance these with individuals' interests
 - 6) duty to respect and protect an individual's autonomy or right to self-determination to the extent possible
 - 7) duty to ensure that interventions are proportional so that anticipated benefits outweigh burdens imposed
 - 8) duty to ensure that resources are distributed fairly and that the burdens imposed by rationing are shared fairly and do not fall disproportionately on the vulnerable
 - 9) duty to protect individuals and the community from harm
 - 10) duty for healthcare workers to be professional and to provide the best possible care
- (See framework, Appendices 2-3).

LEGAL AND REGULATORY CONSIDERATIONS

Health pandemics such as a severe influenza outbreak require both the federal and state governments to work in unison in order to provide adequate and timely care. There are numerous threshold concerns that both the state and the healthcare community must consider. The Essential Health Services' legal task force, which consisted of attorneys from Georgia Hospital Association (GHA), the state, and private practice, analyzed and made recommendations on state and hospital community actions. The initial threshold concerns addressed for hospitals included:

- Authority of the Governor and State Agencies under the Georgia Emergency Management Act
- Legal Standards of Care
- Scope of Practice and Immunity
- Hospital Licensing
- Federal 1135 Waivers
- EMTALA and State Emergency Services Requirements
- HIPAA
- Medicare Reimbursement
- Medical Consent
- Privileging and Credentialing
- Employment Law
- Pharmaceuticals

The GHA legal team drafted guidelines specified below and developed a procedural overview for hospitals to use during a pandemic influenza emergency for:

- Section 1135 Waiver
- Informed Consent
- Medical Staff Bylaw
- Reimbursement Documentation
- HIPAA (See legal issues, Appendix 4).

RISK COMMUNICATIONS

Information is central to taking appropriate actions internally for staff involved in managing the response and externally for key agencies, health providers, and the general public. Communication must be timely, accurate, understandable, and useful. Messages should be disseminated through multiple channels – newspaper, TV/radio, web, hotlines, community outreach, social media, signage, etc. based on the usual and preferred ways that each target audience obtains information. During an emergency event, special attention should be given to the information needs of vulnerable populations to ensure that they receive information that is relevant to their particular situation. General messaging should focus on scarcity of resources and the resultant need to modify services based on the specific situation, available resources and patient presentation, and not an extensive identification of individual services to be curtailed, as services will vary by facility and change frequently over time.

Successful risk communications relies on a foundation built prior to the event. Establishing contacts with public information staff in other agencies and the media is important. Learning about the community, the various constituencies in the community, and how they get information is necessary. Determining how information will be coordinated, whether through a joint information center (JIC) or other means, is an important planning priority. The input of leadership to establish communication processes pre event is critical as during an emergency event their time is a scarce and valuable resource. Anticipating emergency events, getting relevant information, and creating templates with messages that can be tailored to the particular event and various audiences allows for more effective mobilization when an event actually occurs. (See crisis communication, Appendix 5).

ESSENTIAL HEALTH SERVICES

A key element of readiness for a crisis care environment is the identification of resources and services that are essential to providing critical healthcare within the complex structure of healthcare delivery systems. Continuation of services is the goal of any continuity of operations plan. However, during an influenza pandemic or other extreme event, certain otherwise important functions may need to be curtailed until the situation allows for them to be resumed. It is imperative that essential services that maximize the number of lives saved be given the highest priority for continuation. It is also important that decisions to discontinue or defer services be made with complete transparency, and that the community is informed in advance of the need for potential changes in services available and care delivery.

In a worst case environment, the large number of persons becoming ill in GA Hospital Region F will overwhelm the local healthcare system. The estimated impact on GA Hospital Region F, using the CDC Flu Surge Model based on the 1918 flu scenario projects that approximately 186,993 people will become ill; 93,497 will seek outpatient care; 20,569 will require hospitalization; over 3,000 will need ICU care; and 1,500 will need mechanical ventilation. As many as 4,000 of the 63,000 deaths across Georgia would occur in GA Hospital Region F. While these estimates are based on extrapolation and do not include the positive impact of interventions not available during the early 20th century, they remain useful in illustrating what a crisis care environment might look like including its potential to have a dramatic effect on essential healthcare resources and services. Also important to consider is the fact that these projections are limited to those who become ill from influenza and do not incorporate all of the additional causes for hospitalization: heart attack, deliveries, trauma, surgery, etc. Hospital Region F currently has 1,733 staffed hospital beds, of which 190 are ICU beds. During a severe pandemic crisis care environment, 3,085 ICU care beds will be required. According to CDC FluSurge, at week 7, 95% of the available ventilators in Region F will be in use by influenza patients.

Essential health services are defined as interventions shown or deemed by healthcare experts' best professional judgment and evidence-based science to reduce severe complications and improve survival. In determining essential services, the healthcare needs of the population served by the GA Hospital Region F healthcare delivery system must be considered. This is unique to each facility, as are its admission patterns, case severity, patient mix, specialty services, claims patterns and revenue sources.

The recent experience of nine projects conducted across the U.S., including Georgia, has found that a predetermined listing of essential health services is not as useful to the planning process as having a decision-making infrastructure in place for real-time decisions based on the crisis environment at hand, using predetermined administrative policies, operational tools, and clinical protocols. (See decision matrix, Appendix 6).

As the healthcare entities that comprise GA Hospital Region F deliberate individually and plan collectively around the provision of essential health services and resources, we offer a starting point for the conversation about what those overarching essential services and resources might be during a crisis care environment. While critical resources are not static, they fall into one of these categories: Systems, Staffing, Space, Supplies, and Security. There is consensus in the literature that at a minimum the following set of core medical care essential components should be prioritized and tracked in conjunction with resource-sparing

strategies during a crisis care environment. (See planning strategies, Appendices 7, 8, and 10).

Crisis Care Environment: Sample Essential Resources:

- Personal protective equipment
- Ventilators
- Oxygen and oxygen delivery devices
- Vascular access devices
- Intensive care unit beds
- Operating room beds
- Code carts
- Defibrillators
- Healthcare providers, particularly critical care, burn, surgical, anesthesia, respiratory, emergency medical, and pre-hospital emergency medical
- Hemodynamic support and IV fluids
- Specialty medications like sedatives, analgesics, selected antibiotics and antivirals
- Vasopressors /inotropes
- Burn care kits
- Suture kits
- Nutrition
- Transportation
- Linens

SCOPE AND ACTIVATION OF GUIDELINES

These guidelines are applicable to all healthcare professionals and healthcare facilities in GA Hospital Region F and should be activated during a pandemic influenza event or other emergency event declared by the Governor of the State of Georgia when crisis care environment triggers have been met. (See crisis capacity indicators, Appendix 9).

HOSPITAL AND MEDICAL STAFF PLANNING

Recently published “best practices” suggest that each hospital establish a Clinical Care Committee to review all hospital admissions, ICU admissions, and termination of care decisions when operating in this extreme environment. This may be an extension of an existing committee such as the critical care committee or bed control group. Once the Crisis Care Environment triggers have been met, this committee will meet daily to examine new guidance, the situation at the hospital, and the regional scenario. The Clinical Care Committee will determine appropriate levels of care to be offered based on available staffing and resources.

Current standards also recommend Patient Triage Teams to review conflicting resource needs at the patient care unit-level when the situation evolves from a Contingency Care to Crisis Care (worst case). Decisions will be made in conjunction with adopted triage methods and guidance tools. Patient Triage Teams should be formed from a pool of qualified and willing healthcare professionals. The teams should include three or more individuals chosen from the following: hospital medical director, infectious disease physician, nursing supervisor, board member, ethicist, pastoral care representative, and one or more

independent physicians. (See team composition and responsibilities, Appendices 11 and 12).

Careful consideration must be given to shift length and the number of consecutive shifts. A support team of facility and/or community members is recommended to provide counseling and palliative care coordination and to work with the families not receiving care or not provided the level of care generally available in a usual situation. Medical staff should establish a method of providing peer support and expert consultation to health professionals making these decisions.

Every hospital should have a protocol for managing exposed employees and patients, and managing visitors to minimize the chances of an ill healthcare worker or visitor infecting patients and others, or of a patient developing influenza and infecting others while hospitalized for another reason. Such a plan would take into account the immune status of the employees (e.g. susceptible, vaccinated, recovered), and would include provisions for screening of workers arriving for their shift and cohorting patients. Hospitals and other healthcare facilities should implement an aggressive vaccination or prophylaxis policy when vaccine or prophylaxis is available as part of the recommended infection control protection practices. This is supported by its ethical obligation to protect its workforce. Facilities should also enforce use of protective personal equipment (PPE) and strict infection control practices to limit disease transmission.

NON-HOSPITAL HEALTHCARE SERVICES AND STAFF PLANNING

It is essential that the region's non-hospital healthcare providers have the ability to expand capacity and capability to mobilize physical space, personnel, and supplies during a high severity pandemic. The objective is to "decompress" area hospitals and emergency departments to preserve resources for delivering hospital medical services to those who meet criteria for emergency department care and inpatient admission.

Each community within the GA Hospital Region F should plan for healthcare services delivered outside of acute care facilities. The planning for both non-hospital based care and hospital care must be congruent, complementary, and consistent with the existing healthcare delivery system of the community. Community-based providers include EMS, home health agencies, hospice, outpatient medical offices (including private primary care practices), long-term care facilities, outpatient surgery centers, behavioral health providers, pharmacies, diagnostic facilities, county health departments, and community health centers. Non-hospital healthcare providers are encouraged to develop or update continuity of operations plans to address issues of staff, space and supply shortages, surge capacity, surveillance, and security within their own settings. Hospital plans should define processes for regular communication with non-hospital healthcare providers regarding hospital admission criteria and hospital bed capacity.

CRISIS CARE ENVIRONMENT SITUATION LEVELS

The chart below uses current IOM Crisis Capacity terminology to identify three capacity and care situations **Conventional – Contingency – Crisis** and what patient surge, resource level, and staff absenteeism will likely be experienced in each of the three stages of a pandemic.

Trigger Met: Prepare to Initiate Contingency Plans	Usual patient care/ Low impact administrative changes	Trigger Met: Implement Contingency Plans	Trigger Met: Implement Crisis Care Standards	Austere patient care/ High impact clinical changes
<u>SITUATION</u>	<u>CONVENTIONAL</u> <u>Capacity and Care</u>	<u>CONTINGENCY</u> <u>Capacity and Care</u>	<u>CRISIS</u> <u>Capacity and Care</u>	
<u>Pandemic Scenario:</u>	Early Pandemic Scenario: Clusters of community cases	Worsening Pandemic Scenario: Widespread community cases	Worst Case Pandemic Scenario: Overwhelming local cases beyond capacity of the community health care system	
<u>WHO Pandemic Phase:</u>	WHO Pandemic Phase 6	WHO Pandemic Phase 6	WHO Pandemic Phase 6	
<u>Federal Gov. Response Stage (FGRS)</u>	FGRS 5	FGRS 5	FGRS 5	
<u>CDC Pandemic Severity Index (PSI):</u>	CDC PSI 3 (<1% case fatality ratio)	CDC PSI 4 (<2% case fatality ratio)	CDC PSI 5 (>2% case fatality ratio)	
<u>Definition</u> Conventional, Contingency, and Crisis Care represent a continuum of patient care delivered during a disaster event. (Adapted from Hicks, et al.) (Devereaux, 2008b)	<ul style="list-style-type: none">Use of space, staff, and supplies is consistent with daily practices within the institution.These spaces and practices are used when an incident triggers activation of the Emergency Operations Plan	<ul style="list-style-type: none">Use of space, staff, and supplies is not consistent with daily practicesCare provided is functionally equivalent to usual patient care practices. Spaces and practices may be used temporarily during a major mass casualty event or on a more sustained basis during an event when the demands of the incident exceed facility and community resourcesDeclared state of emergency possible or in process	<ul style="list-style-type: none">Declared state of emergencyActivation of crisis care strategies constitutes a <i>significant</i> adjustment to the way health care decisions are made, the decisions made, and how care is deliveredUse of adaptive spaces, staff, and supplies are not consistent with usual practicesCare provided is appropriate to the scarce resource environment created by the catastrophic event.	
<u>Overview:</u> <u>Surge Status, Resource Level, and Staff Absenteeism</u>	<ul style="list-style-type: none">Hospitals realize the need to surge bed capacity.Emergency departments are experiencing an increase in patient volume and use of resources.Staff absenteeism is not significant	<ul style="list-style-type: none">Hospitals have surged to maximum bed capacity and emergency departments are overwhelmed.There are not enough beds to accommodate all patients needing hospital admission.There are not enough ventilators for patients with respiratory failureOther critical resources are maximally usedStaff absenteeism is 20%-30%	<ul style="list-style-type: none">Hospitals have implemented crisis care standards of care deliverySpace and staff have expanded to the degree possible and capacity maximizedCommunity health care facilities are requested to surge and alternate care sites are operationalizedResource levels are at a critical stageTriage, along with maximal use of conservation, reallocation, and reuse strategies employedStaff absenteeism is 30%-40%.Regional, state, federal resource allocation insufficient to meet demand	
<u>Space</u>	<ul style="list-style-type: none">Usual patient care space fully utilized	<ul style="list-style-type: none">Patient care areas repurposed (PACU, monitored units for ICU-level care)	<ul style="list-style-type: none">Non-patient care areas (classrooms, etc.) used for patient care	
<u>Staff</u>	<ul style="list-style-type: none">Usual staff called in and utilized	<ul style="list-style-type: none">Staff extension (brief deferrals of non-emergent serviceSupervision of broader group of patientsChange in responsibilities, documentation, etc.	<ul style="list-style-type: none">Trained staff unavailable or unable to adequately care for volume of patients even with extension techniques	
<u>Supplies</u>	<ul style="list-style-type: none">Cached and usual supplies used	<ul style="list-style-type: none">Conservation, adaptation, and substitution of supplies with occasional reuse of select supplies	<ul style="list-style-type: none">Critical supplies lackingPossible reallocation of life-sustaining resources	
<u>Standard of Care</u>	<ul style="list-style-type: none">Usual care	<ul style="list-style-type: none">Functionally equivalent care	<ul style="list-style-type: none">Crisis standards of care	

Resource imbalances increase

Risk of morbidity and mortality to patient increases

RECOMMENDED ACTIONS FOR HEALTHCARE ENTITIES IN A CRISIS CARE ENVIRONMENT

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early → Worsening		Early → Worsening		Worst Case
<p><u>Public Health Agency Responsibilities</u></p> <ul style="list-style-type: none"> ▪ ESF 8 (Public Health and Medical Coordination): Review relevant emergency operation plans. Review and update contact lists. Check and augment inventory of potentially needed supplies. Share information among key partners. ▪ Surveillance: Intensify syndromic surveillance and case finding activities. Disseminate guidelines on case definition and testing. Initiate case investigation on priority cases as relevant. ▪ Community Mitigation: <ul style="list-style-type: none"> ▪ Pharmaceutical-Promote vaccination and prophylaxis as recommended and available. Determine processes and supply related to prophylactic medications. Review dispensing plans. • Non-Pharmaceutical-Review and update plans 		<p><u>Public Health Agency Responsibilities</u></p> <p>Same as early conventional phase with broader partner involvement and expanded efforts.</p> <ul style="list-style-type: none"> ▪ Surveillance: Expand reporting requirements and case ascertainment and investigation as appropriate. 		<p><u>Public Health Agency Responsibilities</u></p> <p>Same as Early Contingency phase.</p> <ul style="list-style-type: none"> ▪ ESF 8 (Public Health and Medical Coordination): Full EOC and ICS activation. Institute incident action plans. Implement and enforce emergency declaration actions. Promulgate guidance on provision of care including alternate standards. Coordinate provision of available staff, equipment, and supplies to healthcare facilities. ▪ Surveillance: Maintain reporting requirements based on guidance and conducting priority case ascertainment and investigations in accordance with guidance. ▪ Community Mitigation: <ul style="list-style-type: none"> ▪ Non-Pharmaceutical-Recommend and
<p><u>Public Health Agency Responsibilities</u></p> <p>Same as early conventional phase with broader partner involvement and expanded efforts.</p> <ul style="list-style-type: none"> ▪ Surveillance: Expand reporting requirements and case ascertainment and investigation as appropriate. 		<p><u>Public Health Agency Responsibilities</u></p> <p>Same as worsening Conventional phase.</p> <ul style="list-style-type: none"> ▪ ESF 8 (Public Health and Medical Coordination): Potential low level EOC activation with space established and regular internal briefings. Establish ICS structure. Implement processes for situational awareness and respond to needs as identified. Activate plans and determine incident objectives. ▪ Community Mitigation: <ul style="list-style-type: none"> ▪ Pharmaceutical-Institute vaccination and prophylaxis dispensing plans based on available supplies and recommendations. ▪ Non-Pharmaceutical-Promulgate social distancing/containment recommendations. Consider closure 		<p><u>Public Health Agency Responsibilities</u></p> <p>Same as Worsening Contingency.</p> <ul style="list-style-type: none"> ▪ ESF 8 (Public Health and Medical) Coordination: Full EOC and ICS activation with modification based on Safety Officer recommendations.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early → Worsening		Early → Worsening		Worst Case
<p>based on potential severity of agent. Distribute personal protection/hygiene messages.</p> <p>Continuity of Operations: Review continuity of operations plan related to public health services. Inform staff regarding situation and expectations.</p>		<p>actions.</p> <ul style="list-style-type: none"> ▪ Continuity of Operations: Institute continuity of operations plans as appropriate. <p>coordinate closure actions in various community sectors.</p>		
<p><u>Ethical Framework</u></p> <ul style="list-style-type: none"> ▪ Participate in collaborative efforts to assess community resources and pathways to promote consistency in decision making across organizations. ▪ Maximize planning for preparedness. ▪ Respect for individual autonomy. ▪ Continue tracking research on established scientific evidence for resource utilization and other response strategies. ▪ Promote best interests of the individual patient 		<p><u>Ethical Framework</u></p> <ul style="list-style-type: none"> ▪ Continue preparations, including early public communication to promote transparency and community understanding. ▪ Engage in resource stewardship discussions ▪ Further discussion with colleagues regarding the “duty to care” and professionalism as well as protection and support of healthcare providers. ▪ Collaboration, solidarity in sharing resources and consistency in guidance 		<p><u>Ethical Framework</u></p> <ul style="list-style-type: none"> ▪ Balance individual patient and community interests; some shift to greater emphasis on community well-being; some limits on usual services. ▪ Proportionality, weighing anticipated benefits against harms/burdens. ▪ Use best available scientific evidence in resource utilization and other decisions. ▪ Fair distribution of limited resources; attention to vulnerable groups.
		<p><u>Ethical Framework</u></p> <p>Same as Early Contingency phase.</p> <ul style="list-style-type: none"> ▪ Maintain plans to support staff and staff family members. 		<p><u>Ethical Framework</u></p> <ul style="list-style-type: none"> ▪ Greater emphasis on community well-being, with protection of individual interests whenever possible. ▪ Fair distribution of increasingly scarce resources; triage procedures in place to support equitable decision making. ▪ Proportionality, weighing benefits/burdens. ▪ Support mechanisms in place for patients, family members and staff when usual treatment is not available.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening		Early Worsening		Worst Case
<ul style="list-style-type: none"> Develop written procedures. Cross train staff. Transparency in communications and involvement of community in decision making. 		<ul style="list-style-type: none"> Initiate plans to support staff and staff family members (duty to care and reciprocity). Continue transparency within institution and in community 		<ul style="list-style-type: none"> Use best available scientific evidence. Continue transparency.
<u>Legal and Regulatory Considerations</u> Pre- event: <ul style="list-style-type: none"> Engage in crisis care event planning that establishes validity of circumstances for actions taken and which can demonstrate adherence to professional norms. Develop continuity of operations plan that addresses issues including authority, chain of command, and compliance to rules and regulations. Develop facility crisis care event plan and participate in development of community plan that identifies roles and responsibilities of facility. Review and amend medical bylaws to address privileging and credentialing. 		<u>Legal and Regulatory Considerations</u> State and/or federal emergency declaration may be issued. Same as Worsening Conventional. <ul style="list-style-type: none"> Continue to prepare and remain knowledgeable regarding external guidance. Gather documentation and prepare materials to implement legal and policy changes identified and obtain needed waivers. 		<u>Legal and Regulatory Considerations</u> State and/or federal emergency declaration may be issued. Same as Early Contingency. <ul style="list-style-type: none"> Ensure that facility Crisis Care Committee has convened and identified potential crisis standards of care and identified other appropriate patient care issues to address. Prepare to activate CCE measures as appropriate to the situation. Obtain CMS Waiver if needed. Initiate medical and staff bylaw changes as needed to address privileging and credentialing issues.
<u>Legal and Regulatory Considerations</u> Same as Early Conventional. State and/or federal emergency declaration may be issued to facilitate changes in rule and regulations and issuances of waivers. <ul style="list-style-type: none"> Obtain information and counsel regarding potential regulatory and policy changes and waivers. Review personnel policies. 		<u>Legal and Regulatory Considerations</u> Formal state and federal Emergency Declaration issued. Same as Worsening Contingency. <ul style="list-style-type: none"> Follow requirements as established by Emergency Declaration. Implement crisis care event plan as appropriate to the situation. Maintain documentation to degree required and possible under circumstances. 		

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening →		Early Worsening →		Worst Case
Early Conventional: <ul style="list-style-type: none"> ▪ Review facility and healthcare provider readiness to address potential legal and regulatory issues. ▪ Ensure that facility Crisis Care Committee is established and role and responsibilities are defined. 		<ul style="list-style-type: none"> ▪ Prepare to implement modified consent guidelines. 		
<u>Risk Communications</u> <ul style="list-style-type: none"> ▪ Use pre-event opportunities including drills/exercises to inform community about plans and introduce messages. ▪ Review risk communications plan. ▪ Review and update contact 		<u>Risk Communications</u> <ul style="list-style-type: none"> ▪ Implement risk communications plan as relevant. ▪ Continue participation in Public Health and EMA PIO calls. ▪ Continue consultation with leadership on 	<u>Risk Communications</u> <p>Same as Early Contingency phase</p> <ul style="list-style-type: none"> ▪ Ensure back-up staffing of PIO function for public health EOC and JIC responsibilities. 	<u>Risk Communications</u> <p>Same as Worsening Contingency phase</p> <ul style="list-style-type: none"> ▪ Modify plan to prioritize PIO activities based on available resources.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early → Worsening		Early → Worsening		Worst Case
<p>lists.</p> <ul style="list-style-type: none"> ▪ Check inventory for potentially needed supplies/materials and order as necessary. ▪ Participate in Public Health and EMA PIO calls. ▪ Consult with leadership on information needs. ▪ Disseminate messages as relevant. ▪ Obtain material/information related to event. ▪ Prepare materials for possible website posting and post as appropriate. 	<p>information needs.</p> <ul style="list-style-type: none"> ▪ Prepare and disseminate relevant press releases and post to website based on PIO discussion and facility leadership direction. ▪ Maintain inventory of supplies and materials. ▪ Maintain up to date material/information/guidance related to event. ▪ Identify special populations needing tailored communication messages and develop messages and dissemination strategies. 	<ul style="list-style-type: none"> ▪ If JIC has been established, participate in accordance to plan and assigned role. ▪ Review/develop just-in-time training for staff supporting PIO role. ▪ Prepare and disseminate relevant press releases, post to website, and use other information channels based PIO discussion and facility leadership direction. ▪ Initiate community outreach strategies including those to special populations. ▪ Maintain inventory of supplies and materials. ▪ Continue consultation with leadership on information needs. ▪ Maintain up to date material/information/guidance related to event. ▪ Monitor media coverage, community feedback, including rumors, and develop strategies to address as appropriate. 		

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening		Early Worsening		Worst Case
Healthcare Entity: Administration/ Planning <ul style="list-style-type: none"> Alert EMC/ICS of emerging environment and their emerging role. Establish and maintain emergency notification list of key personnel. Discuss at facility and regional level, contingencies for scarce resource situations (see AHRQ document at www.ahrq.gov/research/mce/) including involvement of ethics committee members, administration, and medical staff on a facility clinical care committee that will determine which services may be offered during a pandemic. Conduct/update Continuity of Operations Planning (COOP) for pandemic situations – assume schools may be out and staff may need housing and childcare and/or pet care during pandemic. Review pandemic annex to all-hazards emergency response plan. Develop security plans for buildings including augmentation of staff and 	Healthcare Entity: Administration/ Planning <ul style="list-style-type: none"> Cancel or deny employee travel/leave, as appropriate. Conduct education on staff protection and healthcare facility expectations. Appoint a Clinical Care Committee to examine situation and determine when and how to change services provided (e.g., canceling elective surgeries or appointments) based on the severity and expected timing of the pandemic. Determine triggers to move from this level to orange level and further adaptive strategies. Document financial impact (direct and indirect) and staff time carefully for reimbursement. 	Healthcare Entity: Administration /Planning <ul style="list-style-type: none"> Have a Clinical Care Committee determine (on a daily basis) which (if any) modifications in facility services or standards of care are necessary. Conduct appropriate case-finding and reporting. Open staff housing areas, as needed; open auxiliary rest, clinical care, and family areas as needed. Begin limiting non-urgent surgeries and procedures. Implement access controls and institute visitor and family member policies according to institutional procedures. 	Healthcare Entity: Administration /Planning <ul style="list-style-type: none"> Have a Clinical Care Committee determine each day the clinical and administrative changes needed to cope with demand for resources. Establish a Patient Triage Team to decide which patients receive certain resources based on prognosis. Conduct bed management to move beds and patients in accordance with protocols. Participate in and provide input to the GA Hospital Region F Local Coordinating Coalition and Executive Team, public health agencies, other hospitals, EMS, and GHA 911. Determine when to open on-site and/or off-site alternate care sites, as needed and as staffing and resources are available. 	Healthcare Entity: Administration /Planning <ul style="list-style-type: none"> Support Patient Triage Team appointed by the Clinical Care Committee to make medical allocation decisions. Clinical Care Committee continues to make daily decisions about the provision of hospital clinical services. Daily CCE presents administrative and clinical dilemmas with minimal or no previous operational experience for decision-making. Clinical Care Committee makes decisions based on resource availability and patient requirements. Clinical Care Committee revises plans, policies, and procedures to reflect current and anticipated capacity and capability to provide care. The Ethical Framework during a worst case crisis environment offers direction for making unprecedented choices in a dire situation. Maintain documentation of changes to administrative and clinical plans, policies,

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening →		Early Worsening →		Worst Case
ingress/egress control <ul style="list-style-type: none"> Cache personal protective equipment and develop alternatives for when supplies run low. Address staff expectations Plan for surge capacity, including accommodating patients in non-traditional areas both on-site and off-site. Contact local public health agency and area hospitals to review regional plans for capacity, including alternate care sites, as determined by regional planning. Encourage employees to review or develop, or review existing personal emergency plans, including emergency child-care arrangements and family communications. 				and procedures.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early → Worsening		Early → Worsening		Worst Case
Operations <ul style="list-style-type: none"> Stress good infection control practices. 	Operations <ul style="list-style-type: none"> Partially activate the Hospital Command Center and begin daily planning cycle and information updates. Have staff wear PPE when treating suspected cases and place in isolation room, per infection control recommendations. Separate suspected cases in ED and clinics; follow adopted protocols. Provide masks for all suspect cases and post signage for patients regarding respiratory hygiene. Review number of elective appointments and procedures and prepare for surge by canceling electives when necessary. Assess supplies and vendor inventory, place orders as needed; communicate with partner agencies about supply needs. Screen patients, staff and visitors prior to building entry, assigning 	Operations <ul style="list-style-type: none"> Isolate or cohort cases. Determine whether staff wears PPE for all patient encounters. Consider restricting visitors. Screen patients, staff and visitors prior to building entry, assigning infectious or suspect cases to appropriate care areas with appropriate PPE and respiratory hygiene. Screening should be appropriate based on severity of the disease, potential impacts to the patients, and resources available. Activate Clinical Care Committee to examine situation and determine when and how to change services provided (e.g., canceling elective surgeries/appointments) based on the severity and expected arrival time of the surge. Clinical Care Committee establishes pool of Patient Triage Team members, reviews role 	Operations <ul style="list-style-type: none"> Fully activate Hospital Command Center with action-planning cycles for next operational period. Mask all patients and visitors presenting to facility; staff wear PPE continuously to prevent exposure. Triage use of ED, clinic, and in-patient resources as required (e.g. What conditions will be evaluated in the ED? What surgeries will be done). Restricting visitors. Screen patients, staff and visitors prior to building entry, assigning infectious or suspect cases to appropriate care areas with appropriate PPE and respiratory hygiene. Screening should be appropriate based on severity of the disease, potential impacts to the patients, and resources available. Clinical Care Committee further prepares for crisis stage, including readiness communication, plans, 	Operations <ul style="list-style-type: none"> Work with area hospitals, clinics, and public health to open alternate care sites when possible to reduce burden on hospitals, based on clinical situations and ethical standards. Concentrate critical care in hospitals; work with private practitioners, homecare and public health to assure appropriate homecare instructions are given. Restrict visitors. Consider use of family members or others as caregivers for assistance with personal care support. Screen patients, staff and visitors prior to building entry, assigning infectious or suspect cases to appropriate care areas with appropriate PPE and respiratory hygiene. Screening should be appropriate based on severity of the disease, potential impacts to the patients, and resources available. Clinical Care Committee activates Patient Triage Team to make medical

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening →		Early Worsening →		Worst Case
	infectious or suspect cases to appropriate care areas with appropriate PPE and respiratory hygiene. Screening should be appropriate based on severity of the disease, potential impacts to the patients, and resources available.	and responsibilities, and conveys support mechanisms.	and schedules for the Patient Triage Teams.	<p>allocation decisions. Triage team receives ongoing support from Clinical Care Committee.</p> <ul style="list-style-type: none"> ▪ Clinical Care Committee continues to make daily decisions about which hospital services provided. ▪ Clinical Care Committee and Patient Triage Team makes decisions based on resource availability and patient requirements. ▪ When the environment results in the need to alter standards of care, expand scopes of practices, etc., document rationale for decisions when possible prior to sharing with RCH. ▪ During a worst-case crisis environment, the Ethical Framework offers direction for making unprecedented choices in a dire situation.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening →		Early Worsening →		Worst Case
<u>Behavioral Health</u>	<u>Behavioral Health</u>	<u>Behavioral Health</u>	<u>Behavioral Health</u>	<u>Behavioral Health</u>
Behavioral Health services in Georgia typically function with major adaptations reflecting changes that would be taken in a contingency care situation due to existing staffing and bed shortages. Conventional phase activities below represent steps taken based on the status of the broader healthcare delivery environment.				
<ul style="list-style-type: none"> Initiate patient education and encourage patient and family planning. Review continuity of operations (COOP) plan. Review and update staff and other call down and contact lists. Inform staff of potential changes in worsening situation and reinforce personal and family preparedness planning. Check supply inventory, particularly medications, and order as needed. 		<p>Same as Worsening Conventional phase moving from initial to broader implementation.</p> <ul style="list-style-type: none"> Implement continuity of operations plan. Coordinate closely with RCH, acute care emergency departments and in-patient units, Georgia Crisis and Access Line and other behavioral. Implement modified triage criteria as relevant. Consider crisis standards of care and implement as necessary. Consider use of non-health provider staff, families and volunteers to provide other than in-patient health services. Seek support for requisite changes in scope of practice, standards of care, and/or 		<p>Same as Worsening Contingency phase with full implementation of continuity of operations plans and use of modified triage criteria for emergency department diversion.</p> <ul style="list-style-type: none"> Consider steps to meet needs of non-behavioral health patient population experiencing serious mental health impact and implement as feasible. Consider steps to maintain patient, staff and community safety and security and implement in conjunction with other emergency management response agencies.
<p>Same as Early Conventional phase.</p> <ul style="list-style-type: none"> Review patient status and consider discharge or referral as feasible. Review current triage criteria and identify potential modifications. Consider staff extension approaches and implement as necessary. 		<p>Same as Early Contingency phase with full implementation of continuity of operations plans and use of modified triage criteria for emergency department diversion.</p> <ul style="list-style-type: none"> Consider steps to meet needs of non-behavioral health patient population experiencing serious mental health impact and implement as feasible. Consider steps to maintain patient, staff and community safety and security and implement in conjunction with other emergency management response agencies. 		<p>Same as Worsening Contingency phase with full implementation of continuity of operations plans and use of modified triage criteria for emergency department diversion.</p> <ul style="list-style-type: none"> During a worst-case crisis environment, the Ethical Framework offers direction for making unprecedented choices in a dire situation.

YELLOW		ORANGE		RED
CONVENTIONAL		CONTINGENCY		CRISIS
Early Worsening →		Early Worsening →		Worst Case
		<p>policies that have legal and/or regulatory impact.</p>		
<p><u>General Public</u></p> <ul style="list-style-type: none"> ▪ If lacking a personal or family plan for emergency situation, develop one or review and update existing plan based on actual situation. ▪ Ensure adequate supply of basic goods and necessary home treatment items. ▪ Seek up-to-date information on symptoms, treatment, and prevention and ask relevant questions to health providers. ▪ Obtain vaccinations if available. ▪ Consider potential ways to volunteer and support community response if situation intensifies. 	<p><u>General Public</u></p> <p>Same as Early Conventional phase with heightened attention to personal protective measures and symptom awareness.</p> <ul style="list-style-type: none"> • Contact family members, friends, and others to determine their potential needs if situation worsens. 	<p><u>General Public</u></p> <p>Same as Worsening Conventional phase with heightened attention to personal protective measures and symptom awareness.</p> <ul style="list-style-type: none"> • Closely monitor official sources and take recommended steps related to prevention, seeking care and treatment. • Consider initiation of personal and family plans taking steps based on situation. • Maintain contact with family members, friends and others to support their needs as possible. 	<p><u>General Public</u></p> <p>Same as Early Contingency phase.</p> <ul style="list-style-type: none"> • Follow official community recommendations for personal response and conservation of scarce goods. • Volunteer in appropriate ways to support community response needs. • Maintain awareness of changes in psychosocial status and seek support as required. • Be aware of psychosocial impacts on community and be supportive of others. 	<p><u>General Public</u></p> <p>Same as Worsening Contingency phase making modifications to reflect the crisis situation.</p>

STRATEGIES FOR OPTIMIZING ESSENTIAL RESOURCES IN A CRISIS CARE ENVIRONMENT

Planning ahead to establish a general approach to optimizing resource availability is an ethical obligation. A stepwise modification in the use of critical resources ensures that essential products are maintained and not depleted unnecessarily during the stages of a CCE. These modifications include: 1) preparation through planning, i.e., inventory and tracking methods, 2) substitution, 3) adaption, 4) conservation, 5) re-use, and 6) re-allocation. This plan provides CCE resource sparing strategies for the key essential healthcare resources. Refer to the Essential Health Services section for a listing of additional essential resources.

SITUATION LEVELS	CCE Resource Sparing Strategies
CONVENTIONAL	
Preparation	Early event planning actions to minimize resource scarcity
CONTINGENCY	
Substitution	Using an essentially equivalent device, drug, or human resource for one that would usually be available
Adaption	Using a device, drug, or human resource that is not equivalent, but will provide sufficient care in place of the one that would usually be available
Conservation	Using less of a resource by lowering the dosage or changing utilization practices
CRISIS	
Re-Use	Re-using an item that is designed for single use, after appropriate disinfection/ sterilization
Re-Allocation	Taking a resource from one patient and giving it to a patient with a better prognosis or greater need

Re-allocation is a last resort strategy and should be considered only when an adequate life-saving resource is not available in sufficient quantity to meet demand, despite all efforts to obtain

AND No temporizing measures are available;

AND Resource cannot be titrated or substituted;

AND All available resource surrogates have been repurposed, but are inadequate to meet demand.

= Re-Allocate

STRATEGIES FOR OPTIMIZING ESSENTIAL RESOURCES IN A CRISIS CARE ENVIRONMENT

Overview

Resource	Strategy	Tactic
Oxygen	Conservation	Use minimum liter flow to keep O ₂ saturation > target (85-95% depending on situation). Use O ₂ conserving devices. No oxygen driven nebs. Eliminate or reduce equipment with high O ₂ consumption. See more complete oxygen document.
	Re-use	Appropriately disinfect and re-use cannulas, masks, and tubing.
	Re-allocation	May have to base therapy on triage decision tool similar to ventilator allocation.
Medication Administration	Substitution	Use alternative inexpensive medications (morphine, lorazepam, doxycycline) that are easily stockpiled prior to the event.
	Adaptation	Use morphine and benzodiazepines for sedation drips when possible; run drips via gravity rather than IV pumps if needed. Administer more medications via subcutaneous or intramuscular route than intravenous.
	Conservation	Give adjunctive non-steroidal and other analgesics/medications including orally when possible.
	Re-allocation	Last resort-palliative care demands adequate pain control/sedation. Focus should be on stockpiling inexpensive options in advance of an event.
Hemodynamic Support and IV Fluids	Substitution	Use alternative vasopressor agents such as epinephrine (inexpensive)
	Adaptation	May have higher threshold to initiate vasopressors, may use gravity drips (e.g.; 1mg epi in 100cc NS) instead of infusion pumps. Consider nasogastric fluid replacement rather than IV.
	Conservation	Minimize invasive monitoring.
	Re-use	Consider reusing central venous catheters, other tubes and catheters with appropriate sterilization / disinfection.
Mechanical Ventilation	Adaptation	Use of anesthesia machines, BiPAP, short-term manual ventilation and other strategies
	Conservation	Adjust threshold for intubation, decrease elective surgeries to free up ventilators / anesthesia machines.
	Re-use	Re-use of ventilator circuits after appropriate sterilization / disinfection.
	Re-allocation	Last resort, allocating ventilators to patients who can most benefit / will use least resources – must be according to pre-planned process using decision support tool and expert clinical judgment.
Staffing	Substitution	Outside, equally-qualified staff brought into institution via compact agreements or other mechanism (DMAT, Medical Reserve Corps, other local, regional, state, federal sources). Use family or non-professional staff to provide basic patient care (non-clinical).
	Adaptation	Less qualified staff from sources as above or volunteers provide basic patient care with critical care nursing and physician staff monitoring larger number of patients. Just-in-time training and orientation to job duties. Change shift duration. Use family or non-professional staff to provide some clinical care with training / in-service.
	Conservation	Reduce administrative demands (teaching and administration, documentation, etc.)

Oxygen Use Strategies for Scarce Resource Situations

Potential Trigger Events

Strategy

Recommendations

INTERNAL DISRUPTION
OF HOSPITAL MEDICAL
GAS SYSTEMS

INTERNAL SURGE TO
HOSPITAL CAPACITY

EXTERNAL
NOTIFICATION BY GAS
SUPPLIER OF DELAYS
AND SHORTAGES

EXTERNAL
NOTIFICATION BY THE
GEORGIA DEPARTMENT
OF COMMUNITY
HEALTH

Oxygen

Substitute

1. Oxygen Conservation Devices

- Use oxygen conservation type cannulas at 1/2 the flow setting of standard cannulas.
- Replace simple and partial rebreather mask use with oxygen conservation cannulas at flow rates of 6-10 LPM.

2. Inhaled Medications

- Restrict the use of Small Volume Nebulizers when inhaler substitutes are available.
- Restrict continuous nebulization therapy.
- Minimize frequency through medication substitution that result in fewer treatments (6h-12h instead of 4h-6h applications).

Conserve

3. Oxygen Concentrators if Electrical Power Is Present

- Use hospital-based or independent home medical equipment supplier oxygen concentrators, if available; use to supplement low-flow cannula use, and preserve the primary oxygen supply for more critical applications.

4. Monitor Use and Revise Clinical Targets

- Employ oxygen titration protocols to optimize flow or % to match targets for SPO₂ or PaO₂.
- Minimize overall oxygen use by optimization of flow.
- Discontinue oxygen at earliest possible time.

Starting Example

Normal Lung Adults

Initiate O₂

SPO₂ <89%

O₂ Target

SPO₂ 90%

Infants & Peds

SPO₂ <90%

SPO₂ 91-94%

COPD History

SPO₂ <88%

SPO₂ 90%

Note: Targets may be adjusted further downward depending on resources available, the patient's clinical presentation, or measured PaO₂ determination.

5. High-Flow Applications

- Restrict the use of high-flow oxygen devices as these can demand 12 to 40 LPM flows.
- Restrict the use of simple and partial rebreathing masks to 10 LPM maximum.
- Restrict use of Gas Injection Nebulizers as they generally require oxygen flows between 10 LPM and 75 LPM.
- Eliminate the use of oxygen-powered venturi suction systems as they may consume 15 to 50 LPM

6. Air-Oxygen Blenders

- Eliminate the low-flow reference bleed occurring with any low-flow metered oxygen blender use.
This can amount to an additional 12 LPM. Reserve air-oxygen blender use for mechanical ventilators using high-flow non-metered outlets. (These do not utilize reference bleeds).
- Disconnect blenders when not in use.

Re-use

7. Expendable Oxygen Appliances

- Use terminal sterilization or high-level disinfection procedures for oxygen appliances, small & large-bore tubing, and ventilator circuits. Bleach concentrations of 1:10, high-level chemical disinfection, or irradiation may be suitable. Ethylene oxide gas sterilization is optimal, but requires a 12-hour aeration cycle to prevent ethylene chlorhydrin formation with polyvinyl chloride plastics.

Re-allocate

8. Oxygen Re-Allocation Implementation

- Prioritize patients for oxygen administration during severe resource limitations.

Medication Utilization Strategies for Scarce Resource Situations

Potential Trigger Events	Strategy	Recommendations
MASS CASUALTY EVENT INFRASTRUCTURE DAMAGE OR LOSS INTERRUPTION IN SUPPLY CHAIN PANDEMIC INFLUENZA OR OTHER EPIDEMIC	Prepare	1. Cache / Increase Supply Levels for Common Medications <ul style="list-style-type: none"> Examine formulary to determine commonly-used medications and classes that will be in immediate / high demand. Increase supply levels or cache critical medications - particularly for low-cost items and analgesics. <p>Key classes include:</p> <p>Analgesia morphine, other narcotic and non-narcotic (non-steroidals, acetaminophen) class - injectable and oral (narcotic conversion tool at http://www.globalrph.com/narcoticonv.htm)</p> <p>Sedation particularly benzodiazepine (lorazepam, midazolam, diazepam) injectables</p> <p>Anti-infectives narrow and broad spectrum antibiotics for pneumonia, skin infections, open fracture care, sepsis (cephalosporins, fluoroquinolones, doxycycline, gentamicin, clindamycin, metronidazole), select antivirals</p> <p>Pulmonary metered-dose inhalers (albuterol, inhaled steroids), oral steroids (dexamethasone, prednisone)</p> <p>Behavioral Health haloperidol, other injectable and oral anti-psychotics, common anti-depressants, anxiolytics</p> <p>Other sodium bicarbonate, paralytics, induction agents (etomidate, propofol), proparacaine/tetracaine, atropine, pralidoxime, epinephrine, local anesthetics, antiemetics, insulin, common oral anti-hypertensive and diabetes medications</p>
		2. Reduce Use During High Demand <ul style="list-style-type: none"> Restrict use of certain classes if limited stocks likely to run out (restrict use of prophylactic / empiric antibiotics after low risk wounds, etc.). Decrease dose; consider using smaller doses of medications in high demand / likely to run out (reduce doses of medications allowing blood pressure or glucose to run higher to ensure supply of medications adequate for anticipated duration of shortage). Allow use of personal medications (inhalers, oral medications) in hospital. Do without - consider impact if medications not taken during shortage (statins, etc.).
	Substitute	3. Use Equivalent Medications <ul style="list-style-type: none"> Obtain medications from alternate supply sources (pharmaceutical representatives, pharmacy caches). <p>Analgesia/ Sedation</p> <ul style="list-style-type: none"> consider lorazepam for propofol substitution. ICU analgesia/sedation drips morphine 4-10mg IV load then 2mg/h and titrate / re-bolus as needed (usual 3-20mg/h); lorazepam 2-8mg or midazolam 1-5mg IV load then 2-8mg/h drip refractory agitation add haloperidol 5-10mg IV (may repeat q30min) then final dose scheduled q6h (5-20mg/dose usual) <p>Anti-infective</p> <ul style="list-style-type: none"> examples: cefazolin, gentamicin, clindamycin for broad-spectrum antibiotics Target therapy as soon as possible based upon organism identified. <p>Pulmonary</p> <ul style="list-style-type: none"> metered dose inhalers instead of nebulized medications <p>Other</p> <ul style="list-style-type: none"> beta blockers, diuretics, calcium channel blockers, ace inhibitors, anti-depressants, anti-infectives
		4. Modify Medication Administration

Medications	Adapt	<ul style="list-style-type: none"> • Emphasize oral, nasogastric, rectal, subcutaneous routes of medication administration. • Administer medications by gravity drip rather than IV pump if needed: IV drip rate calculation - drops / minute = amount to be infused x drip set / time (minutes) (drip set = qtls / mL - 60, 10, etc.). • Consider use of select medications beyond expiration date. • Consider use of veterinary medications when alternative treatments are not available. <p>NOTE: For further information and examples, see http://www.cityofsomerset.com/ems/IV%20Drug%20Calculations.pdf</p>
	Re-allocate	<p>5. Restrict Allocation of Select Medications</p> <ul style="list-style-type: none"> • Allocate limited stocks of anti-viral medications with consideration of regional/state guidance and available epidemiological information. • Allocate limited stock to support other re-allocation decisions (ventilator use, etc.). • Unit dose or sealed medications from patients.

Hemodynamic Support and IV Fluids Strategies for Scarce Resource Situations		
Potential Trigger Events	Strategy	Recommendations
MASS CASUALTY EVENT INFRASTRUCTURE DAMAGE OR LOSS INTERRUPTION IN SUPPLY CHAIN PANDEMIC INFLUENZA	Prepare	1. Cache Additional Intravenous (IV) Cannulas, Tubing, Fluids, Medications, and Administration Supplies
	Conserve	<p>2. Use scheduled dosing and drip dosing when possible</p> <ul style="list-style-type: none"> • Reserve IV pump use for critical medications such as sedatives and hemodynamic support. <p>3. Minimize invasive monitoring</p> <ul style="list-style-type: none"> • Substitute other assessments of central venous pressure (CVP). • When required, assess CVP intermittently via manual methods using bedside saline manometer or transducer moved between multiple patients as needed, or by height of blood column in CVP line held vertically while patient supine.
	Substitute	<p>4. Emphasize oral hydration instead of IV hydration when possible</p> <p>Utilize appropriate oral rehydration solution</p> <ul style="list-style-type: none"> • Oral rehydration solution: 1 liter water (5 cups) + 1 tsp salt + 8 tsp sugar, add flavor (e.g., 1/2 cup orange juice, other) as needed. • Rehydration for moderate dehydration 50-100mL / kg over 2-4 hours <p>Supplement for each diarrhea or emesis</p> <ul style="list-style-type: none"> • Pediatric maintenance fluids: 4 mL/kg/h for first 10kg of body weight (40 mL/h for 1st 10 kg) 2 mL/kg/h for second 10kg of body weight (20 mL/h for 2nd 10kg = 60 mL/h for 20kg child) 1 mL/kg/h for each kg over 20kg (example - 40 kg child = 60 mL/h plus 20 mL/h = 80 mL/h) <p>NOTE: Clinical (urine output, etc.) and laboratory (BUN, urine specific gravity) assessments and electrolyte correction are key components of fluid therapy and are not specifically addressed by these recommendations.</p> <p>NOTE: For further information and examples, see http://rehydrate.org and</p>

OR OTHER EPIDEMIC Hemodynamic Support and IV Fluids		http://www.bt.cdc.gov/disasters/hurricanes/pdf/dguidelines.pdf 5. Provide nasogastric or subcutaneous hydration Instead of IV hydration when practical <ul style="list-style-type: none"> • Patients with impediments to oral hydration may be successfully hydrated and maintained with nasogastric (NG) tubes. • For fluid support, 8-12F (pediatric: infant 3.5F, < 2yrs 5F) tubes are better tolerated than standard size tubes. 6. Substitute epinephrine for other vasopressor agents <ul style="list-style-type: none"> • For hemodynamically unstable patients who are adequately volume-resuscitated, consider adding 6mg epinephrine (6mL of 1:1000) to 1000mL NS on minidrip tubing and titrate to target blood pressure. • Epinephrine 1:1000 (1mg/mL) multi-dose vials available for drip use.
	Adapt	7. Consider use of veterinary and other alternative sources for intravenous fluids and administration sets
	Re-allocate	8. Re-use CVP, NG, and other supplies after appropriate sterilization / disinfection <ul style="list-style-type: none"> • Cleaning for all devices should precede high-level disinfection or sterilization. • High-level disinfection for at least twenty minutes for devices in contact with body surfaces (including mucous membranes); glutaraldehyde, hydrogen peroxide 6%, or bleach (5.25%) diluted 1:20 (2500 ppm) are acceptable solutions. <p>NOTE: chlorine levels reduced if stored in polyethylene containers - double the bleach concentration to compensate.</p> <ul style="list-style-type: none"> • Sterilize devices in contact with bloodstream (ethylene oxide sterilization for CVP catheters).

Mechanical Ventilation Strategies for Scarce Resource Situations		
Potential Trigger Events	Strategy	Recommendations
PANDEMIC INFLUENZA OTHER EVENT THAT OVERWHELMS VENTILATOR CAPACITY	Prepare	1. Increase hospital stocks of ventilators, ventilator circuits and related supplies, and suction equipment/supplies for both adults and children
	Substitute	2. Access alternative sources for ventilators <ul style="list-style-type: none"> • Obtain ventilators from vendors / healthcare partners / Federal stockpiles via usual emergency management processes.
	Adapt	3. Use alternative respiratory support technologies <ul style="list-style-type: none"> • Use transport ventilators with appropriate alarms - especially for stable patients without complex ventilation requirements. • Use anesthesia machines for mechanical ventilation as appropriate. • Use Bi-level Positive Airway Pressure (Bi-PAP) equipment to provide mechanical ventilation.

		<ul style="list-style-type: none">Consider bag-valve ventilation as temporary measure while awaiting definitive solution (as appropriate to situation).																																									
	Conserve	4. Decrease demand for ventilators <ul style="list-style-type: none">Increase threshold for intubation / ventilation.Decrease elective procedures that require post-operative intubation.Decrease elective procedures that utilize anesthesia machines.Use non-invasive ventilatory support when possible.																																									
	Re-use	5. Sterilize ventilator circuits after cleaning. <ul style="list-style-type: none">If using gas (ethylene oxide) sterilization, allow full 12 hour aeration cycle to avoid toxic byproducts from accumulating on surface.Use chemical sterilization, irradiation, or other techniques as appropriate.																																									
	Re-allocate	6. Assign limited ventilators to patients most likely to benefit if no other options are available Step one: assess patient acuity using SOFA scoring table. <table><tr><td>Organ System</td><td>Score=0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>RESPIRATORY PaO₂ / FI0₂</td><td>>400</td><td>≤400</td><td>≤300</td><td>≤200 w resp. sup</td><td>≤100 w resp. sup</td></tr><tr><td>HEMATOLOGIC Platelets</td><td>>150</td><td>≤150</td><td>≤100</td><td>≤50</td><td>≤20</td></tr><tr><td>HEPATIC Bilirubin (mg/dL)</td><td><1.2</td><td>1.2-1.9</td><td>2.0-5.9</td><td>6-11.9</td><td>≥12</td></tr><tr><td>CARDIOVASCULAR Hypotension</td><td>None</td><td>Mean Arterial Pressure <70mm/Hg</td><td>Dopamine ≤ 5 or any Dobutamine</td><td>Dopamine > 5 or Epi < 0.1 or Nor-Epi ≥ 0.1</td><td>Dopamine > 15 or Epi> 0.1 Nor-Epi > 0.1</td></tr><tr><td>CENTRAL NERVOUS SYSTEM Glasgow Coma</td><td>15</td><td>13-14</td><td>10-12</td><td>6-9</td><td>≤ 6</td></tr><tr><td>RENAL Creatinine</td><td><1.2</td><td>1.2-1.9</td><td>2.0-3.4</td><td>3.5-4.9</td><td>≥ 5.0</td></tr></table>	Organ System	Score=0	1	2	3	4	RESPIRATORY PaO ₂ / FI0 ₂	>400	≤400	≤300	≤200 w resp. sup	≤100 w resp. sup	HEMATOLOGIC Platelets	>150	≤150	≤100	≤50	≤20	HEPATIC Bilirubin (mg/dL)	<1.2	1.2-1.9	2.0-5.9	6-11.9	≥12	CARDIOVASCULAR Hypotension	None	Mean Arterial Pressure <70mm/Hg	Dopamine ≤ 5 or any Dobutamine	Dopamine > 5 or Epi < 0.1 or Nor-Epi ≥ 0.1	Dopamine > 15 or Epi> 0.1 Nor-Epi > 0.1	CENTRAL NERVOUS SYSTEM Glasgow Coma	15	13-14	10-12	6-9	≤ 6	RENAL Creatinine	<1.2	1.2-1.9	2.0-3.4	3.5-4.9
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Mechanical Ventilation

Re-allocate

STEP TWO: Compared to other patient(s) requiring and awaiting mechanical ventilation, does this patient have significant differences in prognosis or resource utilization in one or more categories below that would justify re-allocation of the ventilator? Factors listed are in order of importance / weight.

1. Organ System function+	Ventilator re-directed High Potential for death (SOFA score ≥ 12)	Intermediate potential for death (SOFA score 8-11)	Patient keeps ventilator Low potential for death (SOFA score ≤ 7)
2. Duration of benefit / prognosis	<p>a. Poor prognosis based upon epidemiology of specific disease/injury (e.g. pandemic influenza)</p> <p>b. Severe underlying disease with poor short-term (e.g. <1 year) prognosis++</p>	<p>a. Indeterminate / intermediate prognosis based upon epidemiology of specific disease/injury</p> <p>b. Severe underlying disease with poor long-term prognosis and/or ongoing resource demand (e.g. home oxygen dependent, dialysis dependent) and unlikely to survive more than 1-2 years.</p>	<p>a. Good prognosis based upon epidemiology of specific disease/injury</p> <p>b. No severe underlying disease</p>
3. Duration of need	Long duration – e.g. ARDS, particularly in setting of pre-existing lung disease (estimate >7 days on a ventilator)	Moderate duration – e.g. pneumonia in healthy patient (estimate 3-7 days on ventilator)	Short duration – flash pulmonary edema, chest trauma, other conditions anticipating <3 days on ventilator
4. Response to mechanical ventilation	Worsening ventilator parameters over time+++	Stable ventilator parameters over time	Improving ventilator parameters over time

+ The Sequential Organ Failure Assessment

(SOFA) score is the currently preferred assessment tool but other predictive models may be used depending on the situation / epidemiology. Note: SOFA scores were not designed to forecast mortality, and thus single or a few point difference between patients may not represent a 'substantial difference' in mortality, but larger differences and trends can be extremely helpful in determining resource assignment.

++ Examples of underlying diseases that predict poor short-term survival include (but are not limited to):

1. Congestive heart failure with ejection fraction < 25% (or persistent ischemia unresponsive to therapy or non-reversible ischemia with pulmonary edema)
2. Severe chronic lung disease including pulmonary fibrosis, cystic fibrosis, obstructive or restrictive diseases requiring continuous home oxygen use prior to onset of acute illness
3. Central nervous system, solid organ, or hematopoietic malignancy with poor prognosis for recovery
4. Cirrhosis with ascites, history of variceal bleeding, fixed coagulopathy or encephalopathy
5. Acute hepatic failure with hyperammonemia

+++ Changes in Oxygenation Index over time may provide comparative data, though of uncertain prognostic significance.

OI = MAWP x FiO2 / PaO2 where: OI = oxygenation index MAWP= Mean Airway Pressure FiO2 = inspired oxygen concentration PaO2 = arterial oxygen pressure (May be estimated from oxygen dissociation curve if blood gas unavailable.)

	Re-allocate	STEP THREE: Re-allocate ventilator only if patient presenting with respiratory failure has significantly better chance of survival / benefit as compared to patient currently receiving ventilation. Follow additional regional and state/federal guidance and institutional processes for scarce resource situations.
--	--------------------	---

Staffing Strategies for Scarce Resource Situations		
Potential Trigger Events	Strategy	Recommendations
STAFF UNABLE TO REPORT STAFF ILLNESS AT HOME WITH FAMILY UNABLE TO GET TO FACILITY STAFFING LEVELS INADEQUATE FOR DEMANDS OF DISASTER	Prepare	1. Staff and supply planning <ul style="list-style-type: none"> • Encourage employee preparedness planning (www.codeready.org and other resources). • Cache adequate personal protective equipment (PPE) and support supplies. • Educate staff on institutional disaster response and requirements. • Educate staff on community, regional, state disaster plans and resources. • Develop facility plans addressing staff's family / pets or staff shelter needs. • Just in time training for respiratory care, oral rehydration and basic patient care. • Develop agreements with universities, colleges and technical schools for the use of health and medical students in expanded roles.
	Substitute	2. Use supplemental staff <ul style="list-style-type: none"> • Bring in equally trained staff (burn or critical care nurses, other health system, or Federal sources). • Equally trained staff from administrative positions (nurse managers). • Utilize medical and allied health students in expanded roles.
	Adapt	3. Use alternative personnel to minimize changes to standard of care <ul style="list-style-type: none"> • Use less-trained personnel with appropriate mentoring and just-in-time education (e.g., healthcare trainees or other healthcare workers, Medical Reserve Corps, retirees). • Use less-trained personnel to take over portions of skilled staff workload for which they have been trained. • Adjust personnel work schedules (longer but less frequent shifts, etc.) if this will not result in skill / PPE compliance deterioration. • Use family members/lay volunteers to provide basic patient hygiene and feeding – releasing staff for other duties.
	Conserve	4. Focus staff time on core clinical duties <ul style="list-style-type: none"> • Minimize meetings and relieve administrative responsibilities not related to event. • Use personnel with specific critical skills (ventilator, burn management) to concentrate on those skills; define other job duties that can be safely performed by other medical professionals. • Have specialty staff oversee larger numbers of less-specialized staff and patients (e.g., a critical care nurse oversees the intensive care issues of 9 patients while 3 medical/surgical nurses provide basic nursing care to 3 patients each). • Reduce documentation requirements.

Staffing		<ul style="list-style-type: none"> • Limit use of laboratory, radiographic, and other studies, to allow staff reassignment and resource conservation. • Reduce availability of non-critical laboratory, radiographic, and other studies. • Cohort patients to conserve PPE and reduce staff PPE donning/doffing time and frequency. • Restrict elective appointments and procedures.
	Re-allocate	<p>5. Divert staff to emergency response</p> <ul style="list-style-type: none"> • Cancel most sub-specialty appointments, endoscopies, etc. and divert staff to emergency duties including in-hospital or assisting public health at external clinics/screening/dispensing sites.

APPENDICES

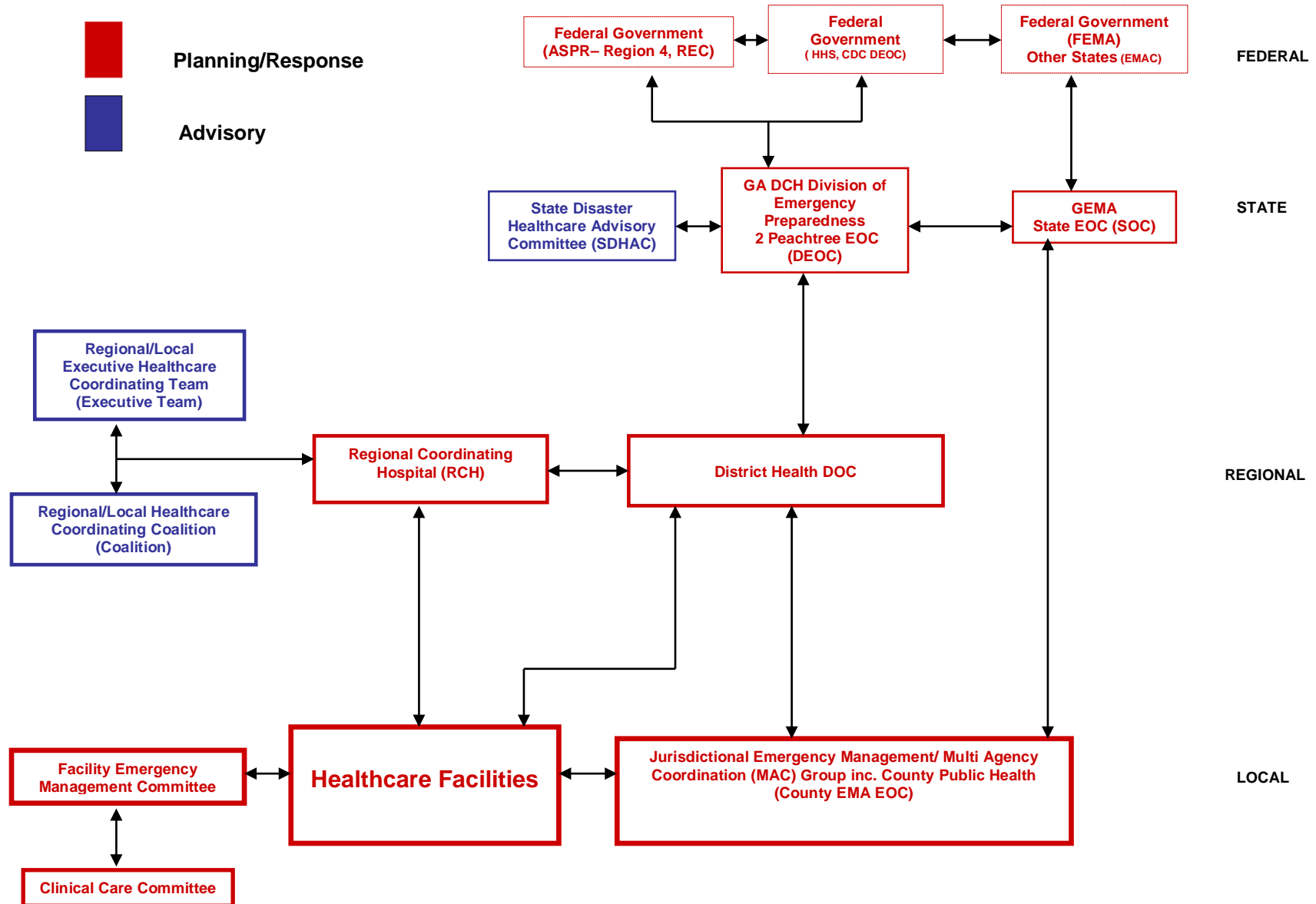
Best Practices-Structure/Administrative/Operations

1. Crisis Care Environment Planning and Response Organization
2. An Ethical Framework
3. Ethical Framework Graphic
4. Legal and Regulatory Considerations
5. Risk Communications
6. Essential Services Decision Matrix
7. Essential Health Services Sustainability - Plan Development
8. Essential Functions for Hospitals, Clinics, and Other Medical Facilities in a Crisis Care Environment
9. Crisis Capacity Indicators
10. Sequencing the Suspension of Hospital Services to Maintain Essential Functions in a Crisis Care Environment
11. Crisis Care Environment Clinical Care Committee
12. Crisis Care Environment Patient Triage Team
13. Patient Care Record Samples

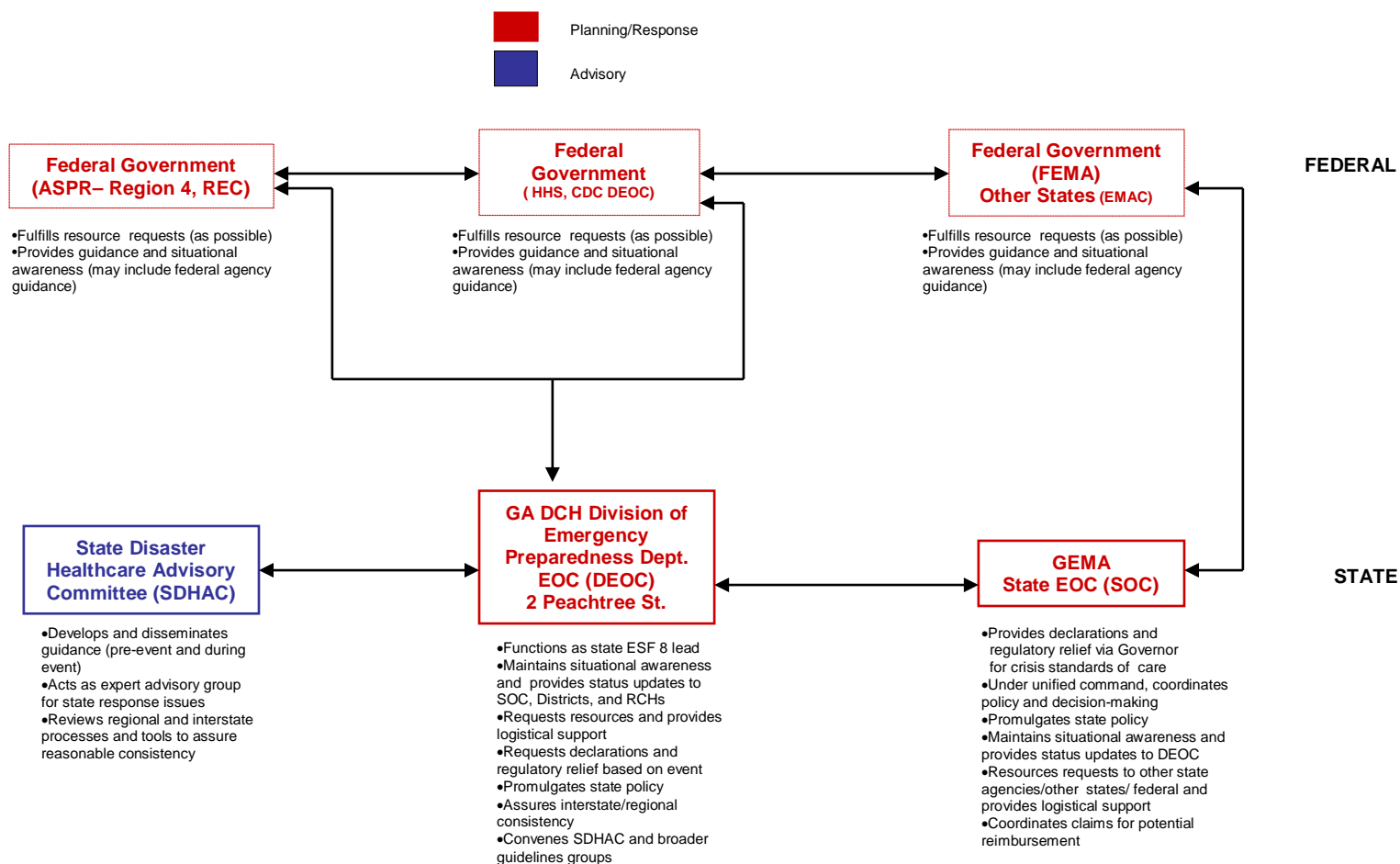
Best Practices-Clinical Assessment and Decision-Making Guidance

14. Pediatric Medical Resource Allocation Guidance
15. Medical Resource Allocation Guidance
16. Modified Sequential Organ Failure Assessment Scoring Guidelines
17. Revised Trauma Score
18. Glasgow Coma Score
19. Triage Decision for Burn Victims
20. Pugh Score
21. New York Heart Association Stages of Heart Failure

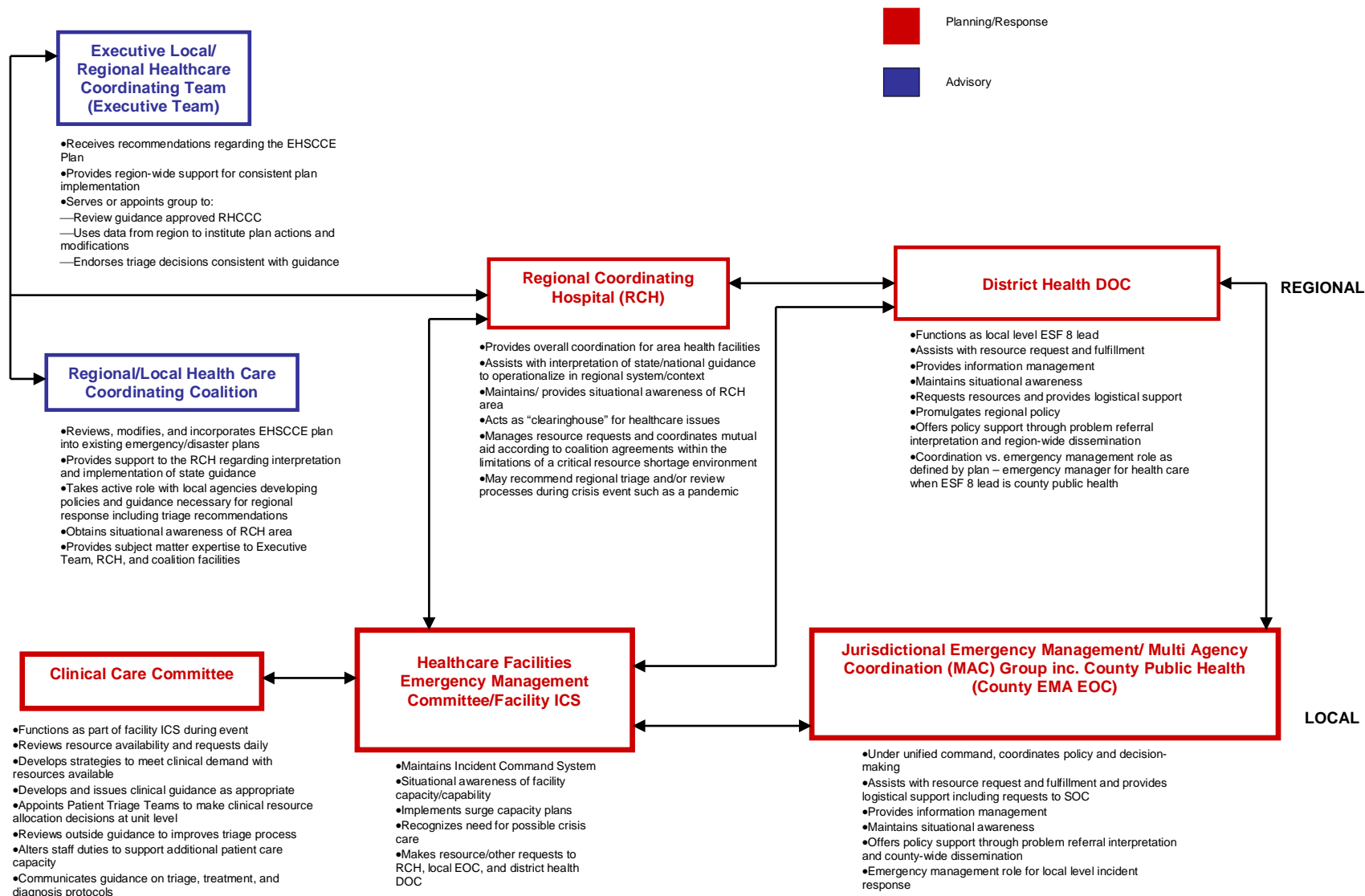
Crisis Care Environment Planning and Response Federal and State Organization and Function



Crisis Care Environment Planning and Response Federal and State Organization and Function (continued)



Crisis Care Environment Planning and Response Local Organization and Functions with Detail









AN ETHICAL FRAMEWORK



Purpose. Implementing a formalized standard for ethical decision-making provides a consistent set of guidelines and directions for healthcare providers and leadership who will be forced to make difficult decisions during a pandemic.

Ethical Principles. A number of principles and values have been proposed in the literature to provide guidance in decision-making about altered standards of care and allocation of scarce resources. Some of these ethical considerations are substantive and some are important to a fair process or procedure for decision making. Ethical considerations to be adopted at the regional level by RCH Region F providers include:

Prevention/ Preparedness - There is a general ethical duty to maximize preparedness efforts and to adopt preventive strategies that will minimize the scarcity of resources and the need to allocate later.

-  What efforts have been made to increase vaccines and antivirals and to encourage healthcare workers to be vaccinated? Has essential equipment been stockpiled to the degree that is possible and fair?
-  Are there areas in which cross-training of staff is possible so that availability of quality health providers in a variety of areas during staff shortages is possible?
-  Has inter-institutional planning occurred?
-  Have goals during a pandemic been reviewed and a consensus on goals developed? Have these goals been clearly communicated within the institution and the community?
-  What educational efforts are in place within institution and in the community?
-  Have written procedures been developed? Have feedback loops been developed and are mechanisms for evaluation in place?

Beneficence – Public health measures should promote the well being of the community as a whole, and to the degree possible, promote the well being of particular individuals in the healthcare system. (see balancing individual and community interests below)

-  If limits are placed on the care that can be provided, how will health care providers meet their obligation to care for their individual patients?
-  For example, if patients with pandemic influenza are utilizing most of the resources at the hospital, what procedures are in place for urgent care of obstetric patients? How will other emergencies be handled? Will certain medications be reserved for treatment of the pandemic disease?

Balancing Individual and Community Interests – Limits on individual freedom may be necessary to protect individuals and the community as a whole. In restricting individual freedom, one should: Adopt the least restrictive practice that will be effective in accomplishing one's goal. For example, altered standards of care that limit the availability of treatment and call for allocation decisions should be implemented for the least amount of time determined necessary. The limitation should be necessary and proportional to the need for protection. Those who are impacted by the restrictions should receive support from the community. It is also important to remain attentive to the history of abuse of individual interests in the name of public good, particularly with vulnerable individuals.

- ❓ What limits will be placed on health care professional's contacts with family and loved ones to protect from exposure to illness?
- ❓ How can this be reasonably restricted and only to the extent needed to be effective?

Solidarity – a collaborative approach will be important in pandemic planning and implementation. Consistency in decision making across health care institutions and regions is supported by planning across communities and organizations within those communities.

- ❓ Has the planning process assessed availability of resources across collaborating institutions? Though a pandemic may stress all organizations simultaneously, are there plans for the sharing of resources where possible?

Transparency – a commitment to clarity and openness is based on a deep respect for individuals involved and the community. The reasoning supporting decisions made should be clearly articulated in language that is understandable. The ethical principles and values justifying decisions should be identified and open for discussion. Involvement of the public at large and other specific stakeholders in the planning and evaluation process is important whenever possible, with particular attention to being inclusive of those who may be vulnerable to being omitted from the conversation. Transparent processes are essential to developing genuine trust among partners throughout the process.

- ❓ What are the implications of using a transparent process? How would you envision a transparent process operating at your institution? Are there specific stakeholders that need to be included? Where should these discussions take place? Do these ethical principles resonate with the public as well as health care providers?
- ❓ For example, populations which have a historical mistrust of the health care system need to be included in developing a plan which may ration care. Who are specific groups in your community who need to be invited to help in the planning process? How will you include these groups in your process? What will you do to ensure that individuals whose first language is not English are included and that culturally appropriate materials and communication is prepared?

Well-Founded – Decisions should be based on the best available, scientific evidence that exists. A sound scientific consensus supporting particular interventions may not currently exist. The current evidence base should serve as a foundation for proposed measures and the nature

of the knowledge in this area (or lack thereof) should be transparent during the implementation phase. The need for further research should be acknowledged and a commitment made to understanding both the scientific and ethical assessment of interventions.

- ❓ Have the rules or methods adopted for allocation of resources been based on the best scientific evidence available? What research exists about the adopted methods and how closely do the conditions at your organization mirror the those in the original research? How will you communicate the basis for your methods to those at the institution and in the community? Do you have plans for tracking the effectiveness of and evaluating your methods?

Respect for Persons/Autonomy – All persons have unconditional worth, which includes the right of self-determination, the right of individuals to determine or fully participate in decisions that affect them. Protection of individual liberty includes respect for the individual's privacy and protection of confidential information.

- ❓ How will you ensure that limitations on care are fair and do not exacerbate disparities in access to care or target the most vulnerable?
- ❓ Will patients and families be allowed to consent for and/or refuse treatment? If patients have clearly expressed their preference for continuation of treatment, how will this preference be acknowledged and responded to even if treatment is not available for all who desire it?
- ❓ What mechanisms are in place to respond to requests for information in the midst of a pandemic? Are special procedures needed to protect health information while also recognizing the need to make sure that pandemic patients can be located and information about complex medical needs is available?
- ❓ How will you respond to requests for medical care unrelated to the pandemic? For example, a patient has symptoms that indicate a need for cardiac diagnostic procedure or intervention (e.g. angiogram or angioplasty) and the patient (and his private physician) clearly request that the procedure be done. What mechanisms are in place to respond to such requests when resources are limited?

Proportionality – In assessing particular interventions one must weigh the anticipated benefits against any burdens or harms. The anticipated benefits should outweigh the burdens. Proposed restrictions on the freedom of individuals in order to protect the public or community at large should be the least restrictive measure that will be effective in achieving its goal.

- ❓ How will you assess particular interventions to determine whether the benefits outweigh the burdens or harms?
- ❓ When should exposed persons be isolated from society? When does the harm to the community exceed the liberty interests of the individual?
- ❓ What are the implications for society when community wide restrictions on are imposed such as school or store closings? How will decisions to close community

organizations impact the health of the community? What is the role of the health care system in preparing for closures? What process is in place to insure that closings are only in place for the time period needed to be effective?

Distributive Justice and Fairness – A just system of allocation must be applied broadly in order to be fair. Ethically sound responses to disaster must not exacerbate disparities in access to care. Planners should be particularly aware of the availability of appropriate resources for the most vulnerable that are most likely to suffer the greatest impact in any disaster. Attention should be given to consistency in decision making across the state in addressing a just allocation of resources.

- ❓ What methods have been put in place to treat similar patients similarly?
- ❓ Have potentially vulnerable individuals in the district been identified and efforts made to ensure they are consulted both about barriers and ideas to aid their access to scarce resources?
- ❓ Is a fair process in place to support equitable decision making when not everyone seeking treatment will be able to receive treatment? Is there a process to provide support for treating physicians when decisions have to be made between patients? Does this process provide impartial, neutral decision makers? Are procedures in place to revise approaches as new information is learned and is there an appeals process available?


Stewardship – Institutions and individuals will be entrusted with governance over scarce resources. They must balance the obligation to save the greatest possible number of lives against the obligation to care for each single patient. Decisions on the use of scarce resources must be heavily weighed against the chances for survival.

Non-Maleficence-This is the obligation not to inflict harm intentionally. This principle applies to the individual and to the public as a whole and generally involves balancing burdens and benefits. To protect the public from serious harm, people may be isolated or other containment strategies used.





Duty to Provide Care – Healthcare professionals accept a professional duty to provide quality care to individual patients. In a crisis environment, demands for care and lack of resources may threaten to overwhelm professionals and healthcare institutions. The planning process should address how to support healthcare workers in 1) weighing their duty to care with competing obligations (to family, own health, etc.) and 2) providing the best available care to patients when resources are limited. Patients should not be abandoned and palliative and supportive care service must be provided to patients when other treatments are not available.

- ❓ Are there clear guidelines about what is expected of health care professionals during a pandemic? Have these guidelines been clearly communicated to all providers? Are there different expectations for different providers? For example, the AMA Code of Ethics indicates that physicians have an obligation to provide urgent care in a disaster, while balancing the current provision of treatment for particular patients with the ability to care for future patients. How is this balance addressed in institutional policy? Will other health care professionals at your

institution be held to a similar standard? What is your reasoning and how will you articulate that reasoning to others?

- 
 Are there circumstances where continuing to care would impose an unreasonable burden on the health care professionals? Are there policies for resolving potential disagreements about when unreasonable burdens justify a health care professional's declining to provide care?

Reciprocity – Communities have a reciprocal obligation to provide support to those healthcare professionals who accept the duty to care and have a disproportionate burden in providing care.

- 
 Have health care professionals been provided with appropriate protective equipment?
- 
 What methods are in place for sharing information about protective measures and making resources like vaccines readily available?
- 
 Are there plans to support the families of health care professionals who are available to provide care during a pandemic? For example, are there resources for provision of vaccines to family members, child care support, transportation assistance, etc.
- 
 Should the health care professional acquire influenza in the course of caring for patients, are there resources for providing medical care for the professional and support for the family?

ETHICAL FRAMEWORK



Legal Issues and Waivers

Regarding Declaration of State of Emergency for Pandemic Influenza (see separate document)

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Prepared by the Georgia Hospital Association Essential Health Services Legal Team
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2010

CRISIS EMERGENCY RISK COMMUNICATION

Be First, Be Right, Be Credible

BUILD TRUST AND CREDIBILITY

- Empathy and caring
- Competence and expertise
- Honesty and openness
- Commitment and dedication

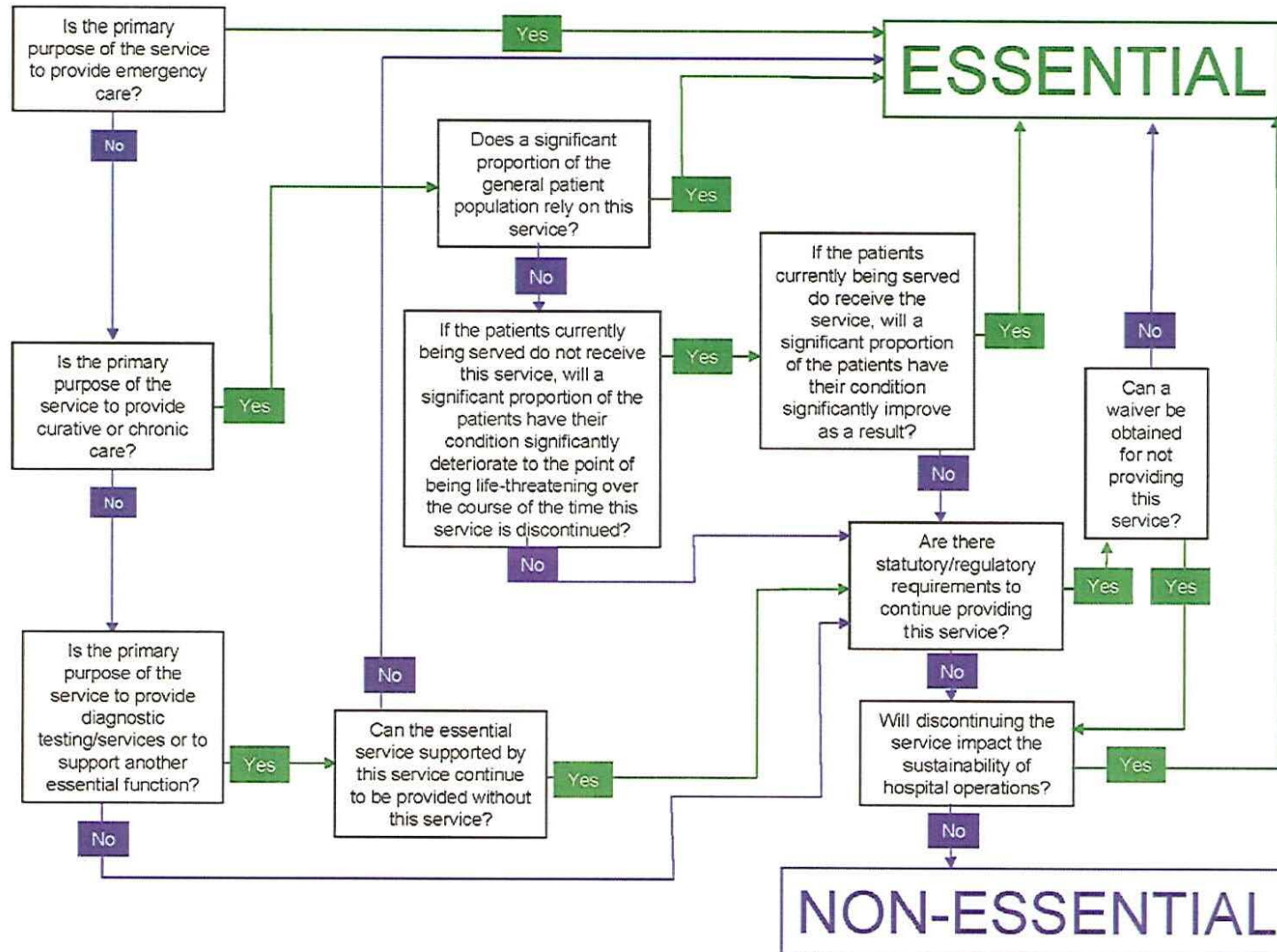
TOP TIPS

- Don't over re-assure
- Acknowledge uncertainty
- Express wishes ("I wish I had the answer...")
- Explain the process in place to find answers
- Acknowledge people's fears
- Give people things to do
- Ask more of people (share risk)

AS A SPOKESPERSON

- Know your organization's policies
- Stay within the scope of responsibilities
- Tell the truth, be transparent
- Embody your agency's identity

“Essential” Services Decision Matrix for Clinical Services



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Instructions for Use

During a large scale public health emergency or disaster, such as an influenza pandemic, health and medical delivery organizations (HMDOs) may be forced to make difficult decisions about the types of services that they will continue to provide to patients. A significant shortage of resources, especially staff, may require that clinical services deemed “non-essential” be discontinued so that the HMDO can redeploy resources to support “essential” services. While there are obvious limits on the ability to redeploy resources, it is widely acknowledged that “non-essential” services will be discontinued if circumstances warrant. But, how does an HMDO decide which services are “essential” and which are “non-essential”?

In an effort to address this question, a one-day workshop was convened as part of Virginia’s CDC Essential Services Grant to have key stakeholders discuss a framework for how one decides which services are “essential.” The *“Essential” Services Decision Matrix for Clinical Services* (“Decision Matrix”) is the framework that these stakeholders developed. The Decision Matrix walks HMDOs through a series of “yes” or “no” questions designed to determine whether a clinical service is “essential” or “non-essential” during a given disaster. Specific use instructions are presented below. However, the following are key principles that underlie the entire Decision Matrix.

- The determination of specific clinical services as “essential” or “non-essential” will vary depending on the severity and duration of the disaster.
- The determination of specific clinical services as “essential” or “non-essential” may vary among HMDOs depending upon the relative impacts of the disaster and the pre-disaster capabilities of the HMDO.
- The *process* for determining whether a particular service is “essential” or “non-essential” should be consistent across HMDOs.
- If the primary purpose of the service is to provide emergency care, it will always be “essential.”

The Decision Matrix provides a scaleable tool that HMDOs can use for a variety of emergencies or disasters and for all clinical services. HMDOs can input any clinical service or function into the Decision Matrix. If the service is not emergency care, the Decision Matrix walks the user through a series of questions that will result in a decision about whether the service is “essential.” The first set of questions in the Decision Matrix seeks information as to whether the clinical service being evaluated provides curative or chronic care, provides diagnostic services, or supports another “essential” function. These “first tier” questions recognize that a service can be “essential” for many different reasons. As more Americans live with chronic conditions, the support of these persons is as important as purely curative services. Kidney dialysis is but one example. Also, the “essential” service may not be the “end product” but rather a component of a larger service but without which the larger service cannot be delivered. Anesthesia is an example of this.

Based on the responses to these first tier questions, the Decision Matrix guides the user through a series of questions relating to the impact of discontinuing the service. These questions include an analysis of how discontinuing a service is likely to effect patients but also asks how discontinuing the service might affect the sustainability of HMDO operations and compliance with pertinent legal requirements. The Decision Matrix recognizes that some services should be considered “essential” even though they are not provided to a large proportion of the population if the service is impactful on the continued health of the patients who do receive it. This is a complex question that the Decision Matrix addresses in two distinct ways: first, will the discontinuation of the service result in a life threatening status for a significant number of the patients, and; second, will the provision of the service significantly improve the medical condition of a significant number of patients. These are not the same question and implicit in the question is the recognition that some patients will suffer if a service is discontinued but that does not mean that the service is “essential.” If that were the standard, then almost every service would be “essential.”

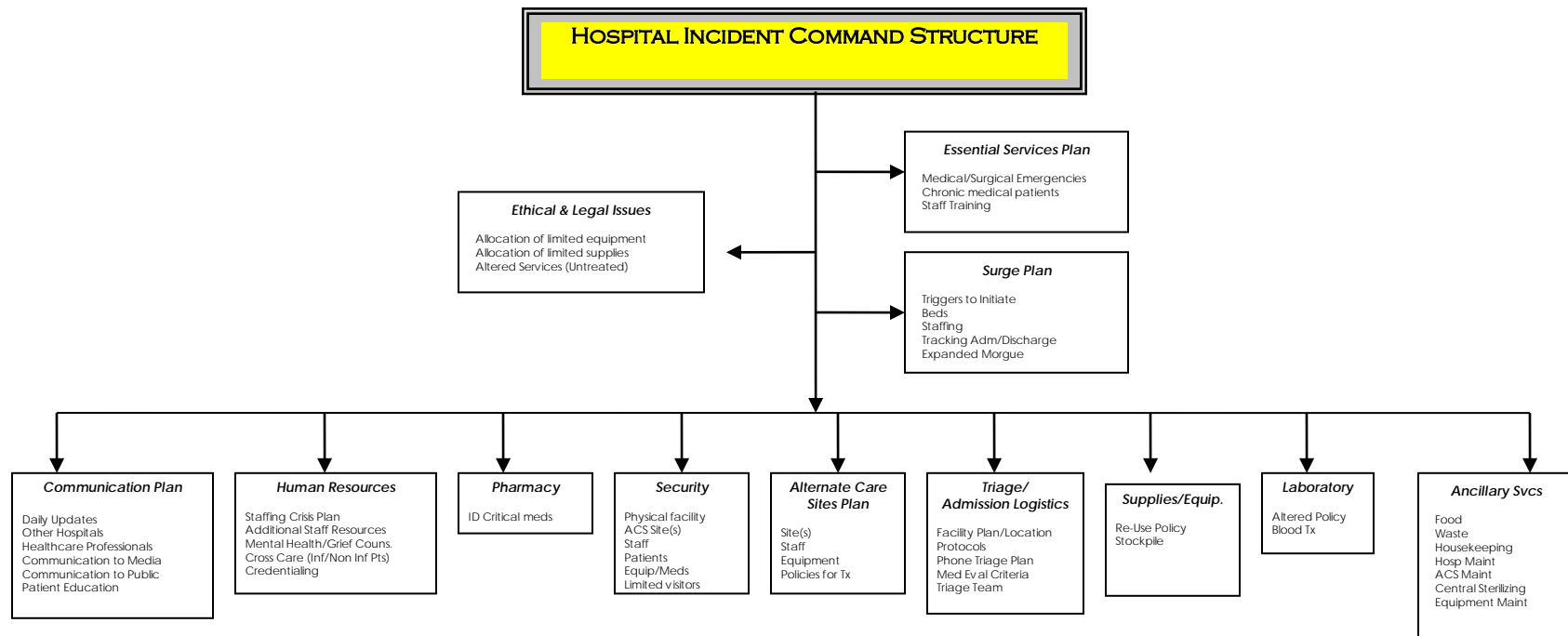
The Decision Matrix also recognizes that sometimes a service is required by law and that without a regulatory waiver, which may not be available, the service cannot simply be discontinued. Examples include specific clinical specialties that must be available 24/7 for designation as a trauma center or burn center.

Finally, the Decision Matrix recognizes that some services can be considered “essential” if they are important to support the ongoing sustainability of the hospital. For example, revenue from surgery is a major component of total revenue for many hospitals and the discontinuation of all “elective” surgeries could have a disastrous impact on the hospital’s financial condition. This should be taken into consideration when deciding whether to automatically discontinue a service.

The Decision Matrix is intended to provide a framework that can be used to identify those “non-essential” services that could be discontinued so that resources can be redeployed to support an “essential” service during a disaster. It is not intended to be used in isolation since the HMDO should confirm that it can actually redeploy the resources that become available by discontinuing a “non-essential” service in a helpful way before they discontinue the service. It is also important to note that even if a service is deemed “essential” this does not mean that it continues to be provided as “normal.” Depending on the event, it is likely that even “essential” services will need to be modified due to critical resource shortages and, in a severe event, “essential” services might need to be allocated among patients. The Decision Matrix, while a useful tool, is but one component of a comprehensive planning and response framework.

Essential Health Services Sustainability Plan Development

PROCESS FOR DEVELOPING A HEALTHCARE SERVICES PLAN DURING A CCE



ESSENTIAL FUNCTIONS FOR HOSPITALS, CLINICS, AND OTHER MEDICAL FACILITIES IN A CRISIS CARE ENVIRONMENT

Each care sector is critical to maintaining a community's healthcare delivery system. The essential functions listed below provide services or products that support vital societal needs and/or critical infrastructure functions within the community. These functions must be supported and sustained throughout a crisis care environment. Each essential function also requires certain key resources for sustainability. As each service or department develops its Continuity of Operations Plan, the key resources that will reduce morbidity and mortality will become evident. For example, oxygen, hemodynamic support, IV fluids, mechanical ventilation and qualified personnel are essential to supporting critical care and strategies should be implemented to protect them.

Acute Care Hospital Essential Functions

Accounting
Administration
Admitting
Behavioral Health
Cardiac Care
Chaplain/Spiritual Care
Command and Control Centers
Communications
Critical Care Services
Dialysis
Electronic Medical Record Systems
Emergency Communications
Emergency Patient Care
Environmental Services
Equipment Maintenance
Food Services
Human Resources
Immunizations
Infectious Disease Prevention and Control
Information Technology
Inpatient Treatment and Care
Labor and Delivery
Laboratory Services
Medication Administration
Outpatient Treatment
Respiratory Services
Security
Surgical Services
Telecommunication Services
Utilities

Clinic/ Health Center Essential Functions

Immunizations
Laboratory Services
Medication Administration
Outpatient Treatment
Patient Examinations and Diagnoses
Radiology Services

Home Care Service Essential Functions

Hospice Services
Infusion Services
Palliative Care Services

Residential Care Facility Essential Functions

Infectious Disease Prevention and Control
Resident Care Service
Resident Meal Services
Resident Transport for Medical Care
Sanitation Services

CRISIS CAPACITY INDICATORS

It is important to anticipate a crisis care environment through situational awareness of selected indicators. Decisions and adjustments in advance of the problem may limit or delay the crisis stage involvement. The following indicators may be used to anticipate and manage an event prior to resources becoming overwhelmed. These capacity indicators may be modified from time to time by the RCH, the local/regional coordinating coalitions and regional/local executive teams.

Possible Indicators for Crisis Capacity

Situational Awareness Indicators	Institution/Agency	Region	State
Overall hospital bed availability	<5% available or no available beds for >12 hours	< 5%	< 5%
Intensive care unit bed availability	None available	< 5% regional beds available	< 5% state beds available
Ventilators	<5% available	< 5% available	< 5% available
Divert Status	On divert > 12 hours	> 50% EDs on divert	> 50% EDs on divert
Emergency Medical Services call volume	2 times usual		
Syndromic predictions	Will exceed capacity	Will exceed capacity	Will exceed capacity
Emergency Dept (ED) wait time	> 12 hours		
Event-specific indicators illness/injury incidence and severity		> 1 area hospital	> 1 area hospital
Disaster declaration			
Contingency care being provided and unable to rapidly address shortfall	Any hospital reporting	Any hospital reporting	Any hospital reporting
Resource – specific shortage (e.g. antibiotic, immunoglobulin, oxygen, vaccine)	Notification by supplier	Notification by hospitals	Notification by hospitals/suppliers
Outpatient care	Marked increase in appointment demand or unable to reach clinic due to call volume		
Staff illness rate	> 10%	> 10%	> 10%
School absenteeism	> Not applicable	> 20%	> 20%
Disruption of facility or community infrastructure and function	Utility or system failure	> 1 hospital affected	> 5 hospitals affected
The indicators in this table should be modified in relation to usual resources in the area and usage patterns. (IOM, 2009)			

SEQUENCING THE SUSPENSION OF HOSPITAL SERVICES TO MAINTAIN ESSENTIAL FUNCTIONS IN A CRISIS CARE ENVIRONMENT

AIM: The purpose of the plan is to reallocate resources to accommodate the expected patient surge on the system during a prolonged public health Crisis Care Environment (CCE) such as a pandemic. The services listed below under Department are examples only and should be adjusted on a facility or regionally determined basis.

CCE Phase	Services Suspended	Department	Trigger	Staff Responsibilities
Conventional Care	First	Education	When Pan Flu Plan is Implemented and Alternate Triage Site Established	ID Staffing for Alternate Triage Site
	Second	Foundation/Development	When Pan Flu Plan is Implemented.	Reassign staff
	Third	Marketing and Public Relations	When Pan Flu Plan is Implemented and the Hospital's Med-Surge and ICU Beds are Occupied (# beds=Pt # Capacity) for 2 days.	Designate Public Information Officer (PIO)
Contingency Care	Fourth	Each Facility Determines Services and Order for Suspension	When Pan Flu Plan is Implemented and Pt # ____ (capacity + 1) is admitted *	Available staff reports to employee staging area for assignment to ED, Triage, ICU, House Supervision
		Specialty Services Example: Cardiopulmonary Rehabilitation		
	Fifth	Example: PT, OT, and ST	When Pan Flu Plan is Implemented and Pt # ____ (capacity + 1) is admitted	Available staff reports to employee staging area for assignment.
	Sixth +	Example: OP and Elective Surgeries	When Pan Flu Plan is Implemented and Pt # ____ (capacity + 1) is admitted	Staff to remain in OPS for patient care duties.
	Seventh	Community-based Outreach Example: Meals on Wheels	When Pan Flu Plan is Implemented and Pt # ____ (capacity + 1) is admitted	Likely to have no extra staff or volunteers available .
Crisis Care	Eighth	Example: Elective Exams and Procedures	When Pan Flu Plan is Implemented and Pt # ____ (capacity + 1) is admitted	Available staff reports to employee staging area for assignment
	Ninth	Example: Radiology and Laboratory	When Pan Flu Plan is Implemented and Patient # ____ (capacity +5) is admitted **	Available staff reports to employee staging area for assignment
	Tenth	Example: OP Surgery and Infusion Services	When Pan Flu Plan is Implemented and Patient # ____ (capacity +30) is admitted ***	Available staff reports to employee staging area for assignment

+ Altered Practice- When OP and Elective Surgeries are discontinued, urgent /emergent surgical patients will be sent to holding area of OR and then to OPS for stay

* Assumes that all ICU and Medical and Surgical beds are occupied and patients are being placed in designated overflow area.

** This Patient # begins the process of cohorting. *** This Patient # assumes that two patients are now placed in all other designated patient care spaces.

CRISIS CARE ENVIRONMENT CLINICAL CARE COMMITTEE

A Clinical Care Committee should be convened when triggers are met that suggest a Crisis Care Environment is imminent.

Responsibilities:

1. Institute daily meetings and submit recommendations to the Emergency Operations Center Planning Chief for incorporation into the Incident Action Plan.
2. Determine resources and alternative methods and sites of care.
3. Alter staff duties to support additional patient care availability.
4. Communicate guidance on triage, treatment, and diagnosis protocols to emergency department, inpatient, outpatient, and any alternate care site areas.
5. Review outside guidance and make changes as needed.
6. Make recommendations for the next operational period for services to be provided and triage criteria to be used.

Composition:

- Hospital administrator
- Medical
- Nursing
- Hospital ethicist
- Hospital attorney
- Infection Control
- Infectious disease
- Critical care
- Emergency medicine
- Pediatrics
- Respiratory care
- Community representative
- May include pharmacy, laboratory, radiology

CRISIS CARE ENVIRONMENT PATIENT TRIAGE TEAM

The Clinical Care Committee appoints a Patient Triage Team when the Crisis Care Environment requires the triaging of critical life- sustaining resources in a proactive, systematic manner consistent with regional and state guidance.

Responsibilities:

1. To act in a local hospital-specific capacity.
2. Provide advice and direction regarding patient transfers.
3. Use regionally adopted decision-tools to make scarce resource allocation decisions.
4. May provide patient care when not functioning as a member of the Patient Triage Team.
5. When functioning as a member of the Patient Triage Team, the patient's bedside physician should not be a triage decision-maker in order to remain in the position of being the patient's advocate.

Composition:

- Physician (critical care and/or infectious disease, if available)
- Nurse
- Ethicist and/or Chaplain

Patient Care Record

Patient Please Complete This Page:

Name	Date of Birth (MM/DD/YYYY)
Address	City / Zip code
Phone number	Medical Insurance Company
If minor: your relationship to patient	Insurance group / policy #
Interpreter needed? <input type="checkbox"/> Yes <input type="checkbox"/> No (if yes, language?)	Other special requirements?

A. I have been sick (check box)

☐ 1 day ☐ 2 days ☐ More than 2 days

B. Symptoms – During this illness have you had: (check YES or NO)

Fever ☐ YES ☐ NO
 Sore throat..... ☐ YES ☐ NO
 Cough..... ☐ YES ☐ NO
 Muscle aches..... ☐ YES ☐ NO
 Vomiting..... ☐ YES ☐ NO
 Diarrhea..... ☐ YES ☐ NO
 Headache..... ☐ YES ☐ NO
 Dizziness..... ☐ YES ☐ NO
 Ear Pain..... ☐ YES ☐ NO

C. In the past 48 hours have you had: (check YES or NO)

Chest pain *not* related to coughing or breathing?
 ☐ YES ☐ NO
 Difficulty breathing (not pain with breathing, but problems
 being hungry for air or short of breath?)
 ☐ YES ☐ NO
 Severe vomiting (4 or more times today?)
 ☐ YES ☐ NO
 Severe headache (one of the worst of your life?)
 ☐ YES ☐ NO

D. Allergies – do you have allergies to: (check YES or NO)

Tamiflu (oseltamivir) ☐ YES ☐ NO
 Relenza (zanamivir) ☐ YES ☐ NO
 Ibuprofen or Tylenol ☐ YES ☐ NO
 Antibiotic..... ☐ YES ☐ NO
 If YES, what is it? (please circle or write in)
 PENICILLIN SULFA OTHER
 Other allergy: _____

E. Your medical conditions – check the boxes for conditions you have (your examiner will ask you more about these):

☐ Asthma or other chronic lung disease?
☐ Heart failure (fluid on the lungs) or major heart problems:
☐ Diabetes or other metabolic disease?
☐ An immune system problem (like HIV/AIDS)?
☐ Current pregnancy?
☐ Liver problems?
☐ Blood problems?
☐ Neurologic or neuromuscular problems (like stroke)?

F. Other medical problems – Please check boxes for other conditions you have and write any additional problems in the rest of the box:

☐ Hypertension _____
☐ Kidney disease _____
☐ Cancer _____
☐ Ulcer problems _____

G. Medications – Please list your medications:

NAME	DOSE	FREQ.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

H. Your home – check the box if you:

☐ Live in a group home or long term care?
☐ Have family members living with you who are younger than 5 or older than 65 years?
☐ Live with a pregnant woman?
☐ Have family at home with long-term health problems? (see list in box E above)

For Office Use Only			
Triage Station			
Time In:	Time Out:	Staff:	
Physical Exam			
<input type="checkbox"/>	O2 Sat_____ HR_____ RR_____	Temperature ° F By:	
<input type="checkbox"/>	General-well nourished, mild distress	Weight lbs/kg By:	
<input type="checkbox"/>	Eyes-sclera clear		
<input type="checkbox"/>	Ears-TM normal		
<input type="checkbox"/>	Throat-normal		
<input type="checkbox"/>	Lymphadenopathy-no cervical nodes		
<input type="checkbox"/>	Pulmonary-Clear chest, no retractions or distress		
<input type="checkbox"/>	Cardiac-no murmur, S3/S4, regular		
<input type="checkbox"/>	Abdomen-soft, NTND		
<input type="checkbox"/>	Skin-no rash, pallor, diaphoresis		
<input type="checkbox"/>	Neuro-alert, oriented, appropriate, ambulatory without assistance, gross motor and coordination normal		
<input type="checkbox"/>	Family requiring prophylaxis? YES/NO-number and indication ref H.		
<input type="checkbox"/>	Patient sent to Education station, did not qualify for antivirals.		
<input type="checkbox"/>	Patient sent to Education station, did qualify for antivirals but insufficient stock to dispense.		
<input type="checkbox"/>	Patient sent to Pharmacy station, for antiviral dispensing.		
<input type="checkbox"/>	Patient sent to Advanced Care & Transportation station.		
Use of Antivirals for the Treatment of Influenza: Adults (age ≥18 years)			
NORMAL KIDNEY FUNCTION DOSING *			
<input type="checkbox"/> Oseltamivir (Tamiflu®) 75 mg by mouth TWICE daily for 5 days			
CHRONIC KIDNEY DISEASE DOSING *			
<input type="checkbox"/> Oseltamivir (Tamiflu®) 75 mg by mouth ONCE daily for 5 days			
DIALYSIS DOSING *			
<input type="checkbox"/> Oseltamivir (Tamiflu®) 75 mg by mouth ONE dose now AND CONTACT HEALTH CARE PROVIDER MANAGING KIDNEY DISEASE WITHIN 48 HOURS			
* See attached Tamiflu® Package Insert for more information. To be updated as required.			

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Use of Antivirals for the Treatment of Influenza: Pediatrics (age <18 years)

NORMAL KIDNEY FUNCTION DOSING

For children <12 months *

- ☐ Age <3mo - oseltamivir (Tamiflu®) 12 mg by mouth twice daily for 5 days
- ☐ Age 3-5mo - oseltamivir (Tamiflu®) 20 mg by mouth twice daily for 5 days
- ☐ Age 6-11mo. - oseltamivir (Tamiflu®) 25 mg by mouth twice daily for 5 days

For children ≥12 months

- ☐ Weight ≤15kg (≤33 pounds) - oseltamivir (Tamiflu®) 30 mg by mouth twice daily for 5 days
- ☐ Weight 16-23kg (34-51 pounds) - oseltamivir (Tamiflu®) 45 mg by mouth twice daily for 5 days
- ☐ Weight 24-40kg (52-88 pounds) - oseltamivir (Tamiflu®) 60 mg by mouth twice daily for 5 days
- ☐ Weight >40kg (>88 pounds) - oseltamivir (Tamiflu®) 75 mg by mouth twice daily for 5 days

* Dosing as per Emergency Use Authorization for children < 12 months. See attached Tamiflu® Package Insert and Emergency Use Authorization of TAMIFLU®: Fact Sheet for Health Care Providers. To be updated as required. This can be also found at: <http://www.cdc.gov/h1n1flu/eua/pdf/tamiflu-hcp.pdf>

Testing and Treatment Orders:

- ☐ Ibuprofen 600mg OR 10mg/kg
- ☐ Acetaminophen 975mg OR 15mg/kg
- ☐ MDI albuterol 4 puffs q5min x2 prn
- ☐ Prednisone 40mg po
- ☐ Ondansetron (Zofran) 4mg ODT
- ☐ CXR (2 view AP/lat) r/o infiltrate (NEG) (INFILTRATE)
- ☐ Throat rapid strep with culture if neg (POS) (NEG)
- ☐ UA (NEG) (UTI) (DEHYDRATION) (KETOSIS)
- ☐ UPT (NEG) (POS)

Other lab results / assessment after treatment:

Documentation:

Time: Meds: Provider:

Diagnosis : (INFLUENZA-LIKE ILLNESS)
(PNEUMONIA) (PHARYNGITIS) (STREP
PHARYNGITIS) (GASTROENTERITIS)

Write alternative / additional:

Discharge Orders:

- ☐ Tamiflu pre-printed treatment (pg. 1 box E conditions or age <5 or >65)
- ☐ Relenza pre-printed treatment Rx
- ☐ Tamiflu pre-printed prophylaxis (# RX 1 / 2 / 3 / 4) - document indications in family (pg. 1) or provider boxes
- ☐ Ibuprofen Rx pre-printed
- ☐ Acetaminophen Rx pre-printed
- ☐ Ondansetron 4 mg ODT pre-printed Rx
- ☐ Imodium 2 mg pre-printed Rx
- ☐ Vomiting instructions
- ☐ Diarrhea instructions
- ☐ Influenza patient instructions

Disposition:

- ☐ Home
- ☐ Hospital
- ☐ Clinic
- ☐ Alternate Care Site
- ☐ Other _____

Provider / Title: _____

Signature: _____

Date and D/C Time: _____

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Pharmacy Station			
Time In:	Time Out:	Staff:	Rx #
<input type="checkbox"/>	Patient received education on medication administration.		Lot #
<input type="checkbox"/>	Patient received medications on site.		Exp. Date
Education Station			
Time In:	Time Out:	Staff:	
<input type="checkbox"/>	Patient received education on home care and hygiene.		
<input type="checkbox"/>	Patient received education on home care.		
<input type="checkbox"/>	Patient received education for nursing mothers.		
<input type="checkbox"/>	Patient received education for mothers with newborns.		
<input type="checkbox"/>	Patient received education on follow up with primary provider.		
Advanced Care & Transportation Station			
Time In:	Time Out:	Staff:	
<input type="checkbox"/>	Patient transported to:		
<input type="checkbox"/>	Home contact requested/needed?		
<input type="checkbox"/>	Transportation Provided by:		

Station Functions

Entry/Egress/Parking

- Mask Everybody Entering
- Hand Sanitize Pts
- Identify Pts in Trouble
- Assist Pts with Limited Mobility
- Assist in Curb Side Drop Off
- Parking Lot to Front Door Assistance
- Assist Field House Exit to Parking Lot
- Exit Interview to Determine Trouble Spots

Registration/Triage

- Gather Medical Data for Dispensing
- Gather Demographic Data for Reporting
- Accommodate Multiple Languages
- Provide Pediatric Expertise
- Provider-specific Data Entry
- Update Patient Form

Med Dispensing and Education

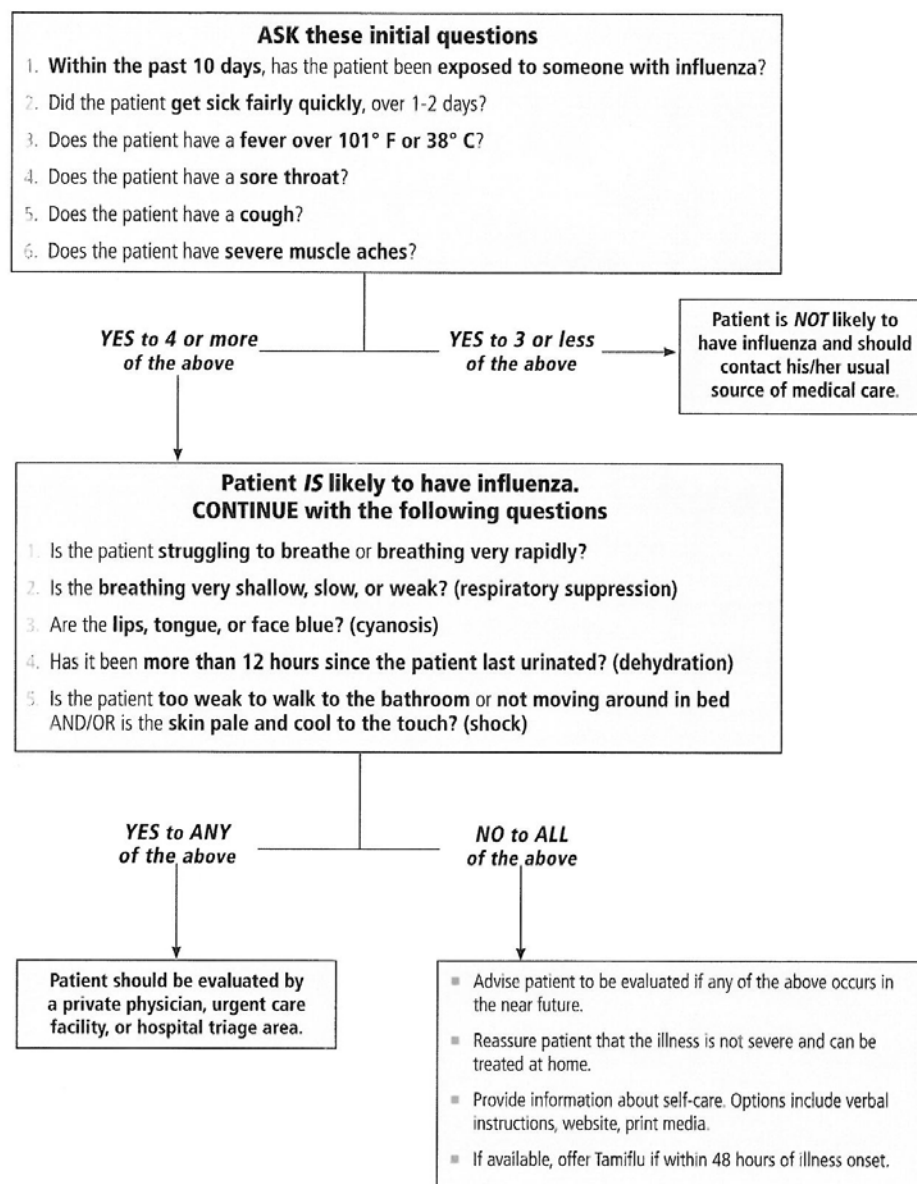
- Dispense Antivirals for Adults and Pediatrics
- Label Dispensed Meds
- Record Treatment Provided on Patient Form
- Specific Relenza Education
- Witness First Dose
- Educate Pts and Family
- Provide Take Home Material (CDC/OMC/OCPh/MCR)
- Retrieve Most Recent Articles/Updates
- Update and Collect Patient Form

Advanced Care and Transport

- Advanced Diagnosis
 - Vitals
- Advance Treatment
 - Pre-Hospitalization Preparation
 - Crash Cart
 - IVs
 - Oxygen
 - Beds
 - Other Equipment/Expertise
- Record Treatment Provided on Patient Form
- Coordinate Transportation with Bed Availability at Receiving Facility
- Update and Collect Patient Form

INITIAL TRIAGE for Pandemic Influenza

Purpose: Initial triage is intended to help patients who are concerned about influenza determine whether or not they should seek medical help.



PATIENT WORKSHEET for Pandemic Influenza Triage

STEP 1: If any of the following are present, DO NOT ADMIT. Transfer to palliative care.

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

- ☐ (1) Known "Do Not Resuscitate" (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, hypoxic ischemic brain injury, and intracranial hemorrhage.
- ☐ (4) Severe acute trauma with a REVISED TRAUMA SCORE <2 (see (d) and (e))
GCS: _____ SBP: _____ RR: _____
Revised trauma score: _____
- ☐ (5) 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 (e.g., burns that might have been transferred to the University of Utah Medical Center Burn Center under normal circumstances). 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, end-stage MS, or SMA) requiring assistance with activities of daily living or requiring chronic ventilatory support.
- ☐ (9) Known chromosomal or untreatable disorders that are uniformly fatal in the first 2 years of life.
- ☐ (10) Incurable metastatic malignant disease.
- ☐ (11) 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 (FEV₁) < 25% predicted baseline, PaO₂ <55 mm Hg, or severe secondary pulmonary hypertension.
 - ☐ Cystic fibrosis with post-bronchodilator FEV₁ <30% or baseline PaO₂ <55 mm Hg.
 - ☐ Pulmonary fibrosis with VC or TLC < 60% predicted, baseline PaO₂ <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: PUGH SCORE >7 (h), when available. Includes bili, albumin, INR, ascites, encephalopathy.
Total score: _____
- ☐ (12) Age:
 - ☐ Triage Level 1: >95 years
 - ☐ Triage Level 2: >90 years
 - ☐ Triage Level 3: >85 years

STEP 2: Modified Sequential Organ Failure Assessment (MSOFA)

The MSOFA requires only one lab value, which can be obtained using bedside point-of-care testing (creatinine obtained through ISTAT).

MSOFA scoring guidelines						
Variable	Score 0	Score 1	Score 2	Score 3	Score 4	Score for each row
SpO ₂ /FIO ₂ ratio*	SpO ₂ /FIO ₂ >400 or nasal cannula or mask O ₂ required to keep 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:						_____

* SpO₂/FIO₂ ratio:

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

† Hypotension:

MABP = mean arterial blood pressure in mm Hg (diastolic + 1/3(systolic - diastolic))

dop = dopamine in micrograms/kg/min

epi = epinephrine in micrograms/kg/min

norepi = norepinephrine in micrograms/kg/min

STEP 3: Determine admission priority based on MSOFA

Score >11: Unlikely to survive. Discharge to palliative care.

Score 8-11: Intermediate priority for hospital admission.

Score 1-8: Highest priority for hospital admission.

Score 0: Lowest priority for hospital admission. Likely to survive without treatment. Discharge to home

STEP 4: Record disposition

Disposition: _____

Signature: _____

Date and time: _____

PEDIATRIC MEDICAL RESOURCE ALLOCATION

A. Purpose, Scope, and Clinical Triage Recommendations

Purpose: The purpose of this appendix is to provide guidelines to healthcare entities to direct pediatric medical resource allocation during a severe pandemic or other crisis care environment situation when demand for services dramatically exceeds supply. Children require different skills and resources to treat their illnesses and injuries as compared with adults. Research in adults has shown that it is possible to predict the likelihood of a person surviving an illness or injury based on how well or poorly their major organs are working. A score is based on specific clinical information (such as blood pressure and level of consciousness) and lab information (such as blood oxygen levels) and is used to predict who is likely to survive. **It is necessary to modify these scores for children because they have different normal numbers (such as blood pressure) when compared to adults, depending on the child's age. Children also show the seriousness of their organ damage differently, so different lab data are being used than those used for adults.**

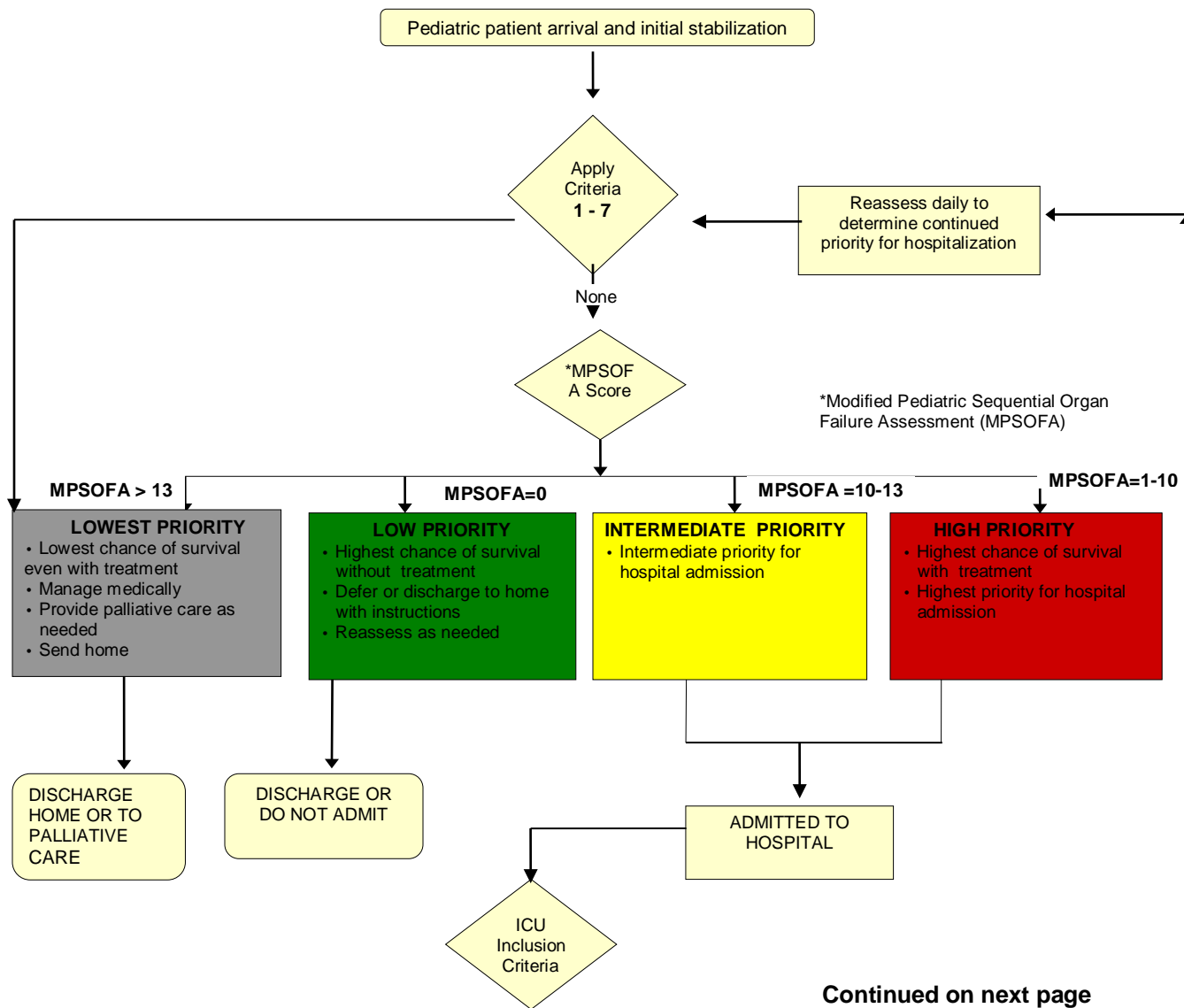
Scope: In the context of this appendix, pediatrics is defined as pediatric patients post-nursery until 18 years of age. The recommendations for triaging newborns are still under discussion and development. The guidance provided in this Pediatric Medical Resource Allocation section of the overall Framework for Scarce Resource Decision-Making includes the following components:

- A. Purpose, Scope, and Clinical Triage Recommendations**
- B. Hospital and PICU/Ventilator Triage Algorithm**
- C. Criteria for Pediatric Hospital Admission/Transport to Appropriate Level of Care**
- D. Modified Pediatric Sequential Organ Failure Assessment (MPSOFA)**
- E. Glasgow Coma Score**
- F. Total Body Surface Area (TBSA) Estimation Tool for Burn Triage**
- G. JumpSTART Pediatric MCI Triage**

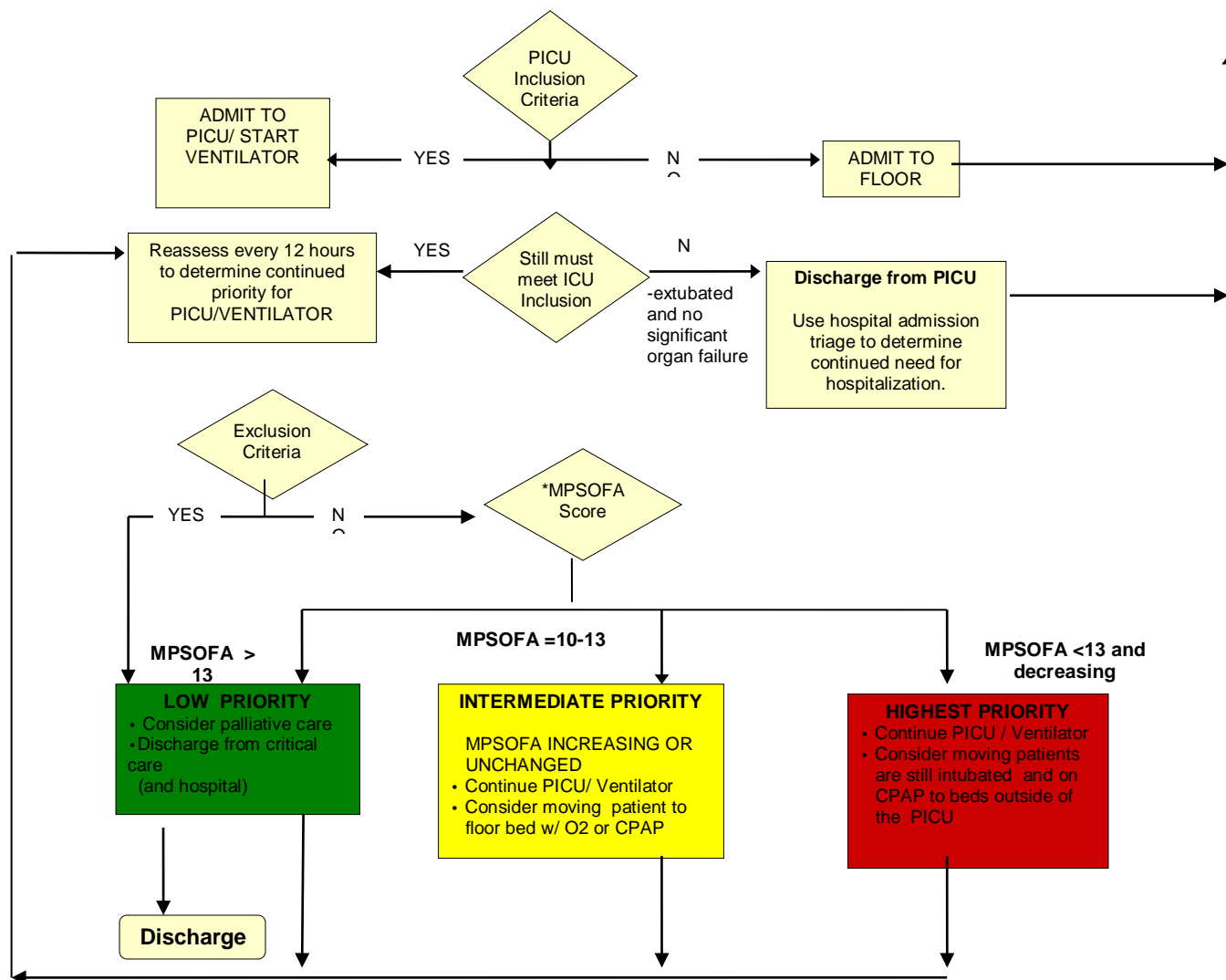
Clinical Triage Recommendations for Emergency Department, ICU and other Departments

- Use **HOSPITAL AND PICU/VENTILATOR ADMISSION TRIAGE ALGORITHM** to determine who to send home for palliative care or medical management and who to admit or keep in hospital or PICU. 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.
- If at all possible, healthcare providers applying the algorithm should **NOT** be responsible for the care of patients to whom it is applied.
- Physician judgment should be used in applying these guidelines. Other factors to consider when to apply triage guidelines include:
 - Whether the patient has access to appropriate care at home
 - Whether the patient is in the 2nd or 3rd trimester of pregnancy
- **Triage Tier 2:**
 - Initiate **HOSPITAL AND PICU/VENTILATOR TRIAGE ALGORITHM** to determine priority for PICU admission, intubation, and/or mechanical ventilation.
 - Reassess need and qualification for PICU/Ventilator treatment every 12 hours
- **Triage Tier 3:**
 - Continue to use **HOSPITAL AND PICU/VENTILATOR TRIAGE ALGORITHM** to determine priority for PICU, intubation, and/or mechanical ventilation.
 - Triage more **YELLOW** (Intermediate Priority) patients to floor on oxygen or CPAP.
 - Triage more **RED** (High Priority) patients who are intubated and on CPAP to floor.

HOSPITAL ADMISSION AND PICU/VENTILATOR TRIAGE ALGORITHM FOR PEDIATRIC PATIENTS



HOSPITAL ADMISSION AND PICU/VENTILATOR TRIAGE ALGORITHM FOR PEDIATRIC PATIENTS (continued)



C. Criteria for Pediatric Hospital Admission/Transport to Appropriate Level of Care

The appropriate level of care is based on the patient's presenting symptoms. To conserve capacity and resources, the patient may be directed to an alternative non-hospital setting if ANY of the following is present:

1. **Known "Do Not Resuscitate" (DNR) status**
2. **Severe and irreversible neurologic event or condition with persistent coma and Glasgow Coma Score (GCS) < 5** (Includes traumatic brain injury, severe hemorrhagic stroke, hypoxic ischemic brain injury, and intracranial hemorrhage).
1. **Severe burns** requiring critical care resources and those who would be transferred to an out-of-state burn center under normal circumstances. If circumstances prohibit out-of-state transfer, patient with >20% Total Body Surface Area (TBSA) full thickness burns will only be provided palliative care. Patients with <20% TBSA burns will be considered for critical care resources based on their MP SOFA score. Severe burns not requiring critical care resources may be cared for at the local facility.
2. **Cardiac arrest** not responsive to 25 minutes of Pediatric Advanced Life Support (PALS) or Basic Life Support (BLS).
3. **Complex disorders** with significant neurological component and prognosis for imminent expected lifelong assistance with most basic activities of daily living (i.e. toileting, dressing, feeding, respiration).
4. **Incurable malignant disease**
5. **Irreversible end-stage organ failure**

Pediatric ICU/Ventilator Allocation Criteria

To qualify for PICU admission or ventilator support, the patient must have none of the presenting symptoms (1-7) **AND** at least **ONE** of the following Allocation Criteria :

6. **Requirement for invasive ventilator support**
 - Refractory hypoxemia ($\text{SPO}_2 < 90\%$ on non-rebreather mask or $\text{FiO}_2 > 0.85$)
 - Respiratory acidosis ($\text{pH} < 7.2$)
 - Clinical evidence of impending respiratory failure
 - Inability to protect or maintain airway
7. **Hypotension[†] with clinical evidence of uncompensated 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, or <70 + (2x age in years) for patients ages 1-10, or relative hypotension;
Clinical evidence of uncompensated shock = altered level of consciousness, decreased urine output, or other evidence of end stage organ failure.

D. Modified Pediatric Sequential Organ Failure Assessment (MPSOFA)

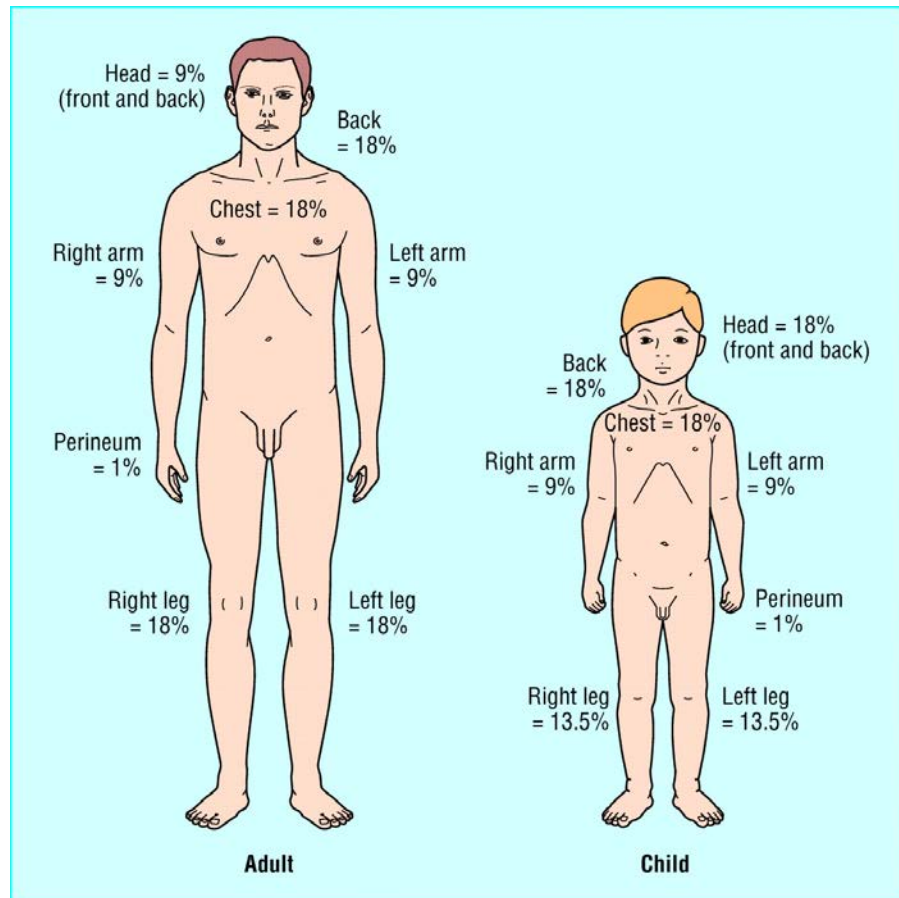
MPSOFA Scoring Guidelines						
Variable	Score 0	Score 1	Score 2	Score 3	Score 4	Row Score
SpO₂/FiO₂ ratio or Nasal cannula or O₂ mask required to keep SpO₂ > 90%	SpO ₂ /FiO ₂ > 400 or Room air SpO ₂ > 90%	SpO ₂ /FiO ₂ 316-400 or SpO ₂ > 90% at 1-3 L/min	SpO ₂ /FiO ₂ 231-315 Or SpO ₂ > 90% at 4-6 L/min	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	
Total Bilirubin (mg/dL)	< 1.2 or no scleral icterus	1.2 - 1.9	2.0 - 5.0 or scleral icterus	6.0 – 11.9 or clinical jaundice	≥ 12	
Hypotension	None	MABP < 2 Std. Deviations for age Reference: Harriet Lane MABP table	DOP < 5	DOP 5-15 or EPI ≤ 0.1 or NOR-EPI ≤ 0.1	DOP > 15 or EPI > 0.1 or NOR-EPI > 0.1	
Glasgow Coma Score	14-15	11-13	9-10	7-8	< 6	
Lactate (mmol/L)	< 2.0	2.0 – 4.0	4.1 – 6.0	6.1 – 8.0	> 8.0	
MPSOFA Score = Total of Row Scores:						

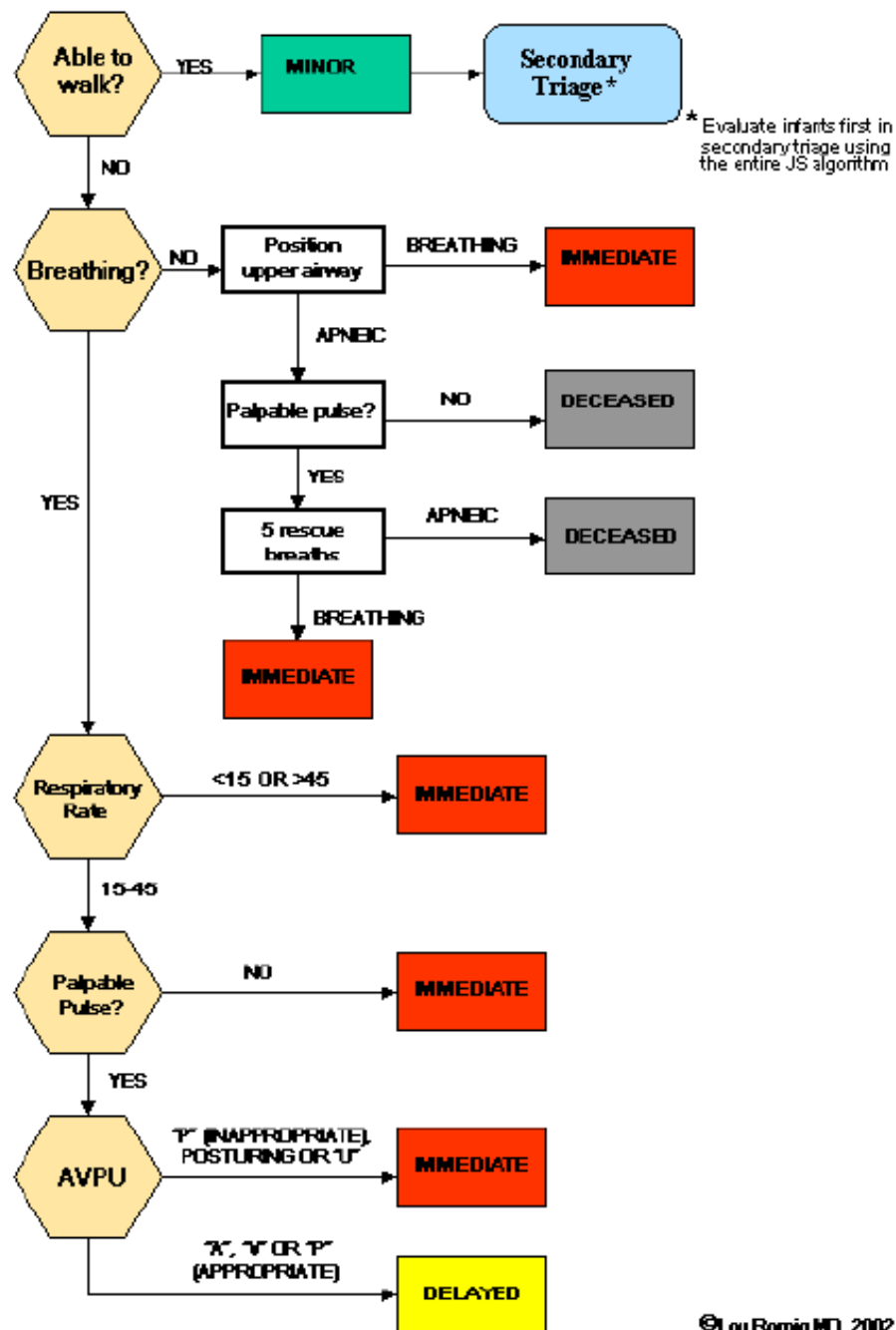
Explanation of Variables

- **SpO₂/FiO₂ ratio** indicates the level of oxygen in the patient's blood. SpO₂ = Percent oxygen saturation of hemoglobin, expressed as %, e.g. 95%; FiO₂ = Fraction of inspired oxygen, e.g. ambient air is 0.21. Example: SpO₂ = 95%, FiO₂ = 0.21; SpO₂/FiO₂ ratio = 95/0.21 = 452
- **Bilirubin** is measured by a blood test and indicates liver function
- **Hypotension** indicates low blood pressure; scores of 2, 3 and 4 indicate that blood pressure must be maintained by the use of powerful medications that require ICU monitoring, including dopamine (DOP), epinephrine (EPI), and norepinephrine (NOR-EPI). MABP = Mean Arterial Blood Pressure in mm Hg (diastolic + 1/3 (systolic – diastolic))
- **The Glasgow Coma Score** is a standardized measure that indicates neurologic function; low score indicates poorer function
- **Lactate** is measured by a blood test (Istate CG4+ Cartridge recommended)

E. Glasgow Coma Scale

Glasgow Coma Scale				
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 verbal command	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	Confused infant is irritable and continually cries	4	
	Oriented	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):				

F. Total Body Surface Area (TBSA) Estimation Tool for Burn



MEDICAL RESOURCE ALLOCATION GUIDANCE

The appropriate level of care is based on the patient's presenting symptoms. To conserve capacity and resources, the patient may be directed to an alternative non-hospital setting and provide an appropriate level of care if ANY of the following is present:

1. **Known "Do Not Resuscitate: (DNR) status**
2. **Severe and irreversible neurologic event or condition with persistent coma and Glasgow Coma Score (GCS) < 5** (Includes traumatic brain injury, severe hemorrhagic stroke, hypoxic ischemic brain injury, and intracranial hemorrhage).
3. **Severe burns** requiring critical care resources and those who would be transferred to an out-of-state burn center under normal circumstances. If circumstances prohibit out-of-state transfer, patient with >20% Total Body Surface Area (TBSA) full thickness burns will only be provided palliative care. Severe burns not requiring critical care resources may be cared for at the local facility.
4. **Cardiac arrest** not responsive to 25 minutes of Basic Life Support (BLS).
5. **Complex disorders** with significant neurological component and prognosis for imminent expected lifelong assistance with most basic activities of daily living (i.e. toileting, dressing, feeding, respiration).
6. **Incurable malignant disease**
7. **Irreversible end-stage organ failure**

ICU/Ventilator INCLUSION CRITERIA

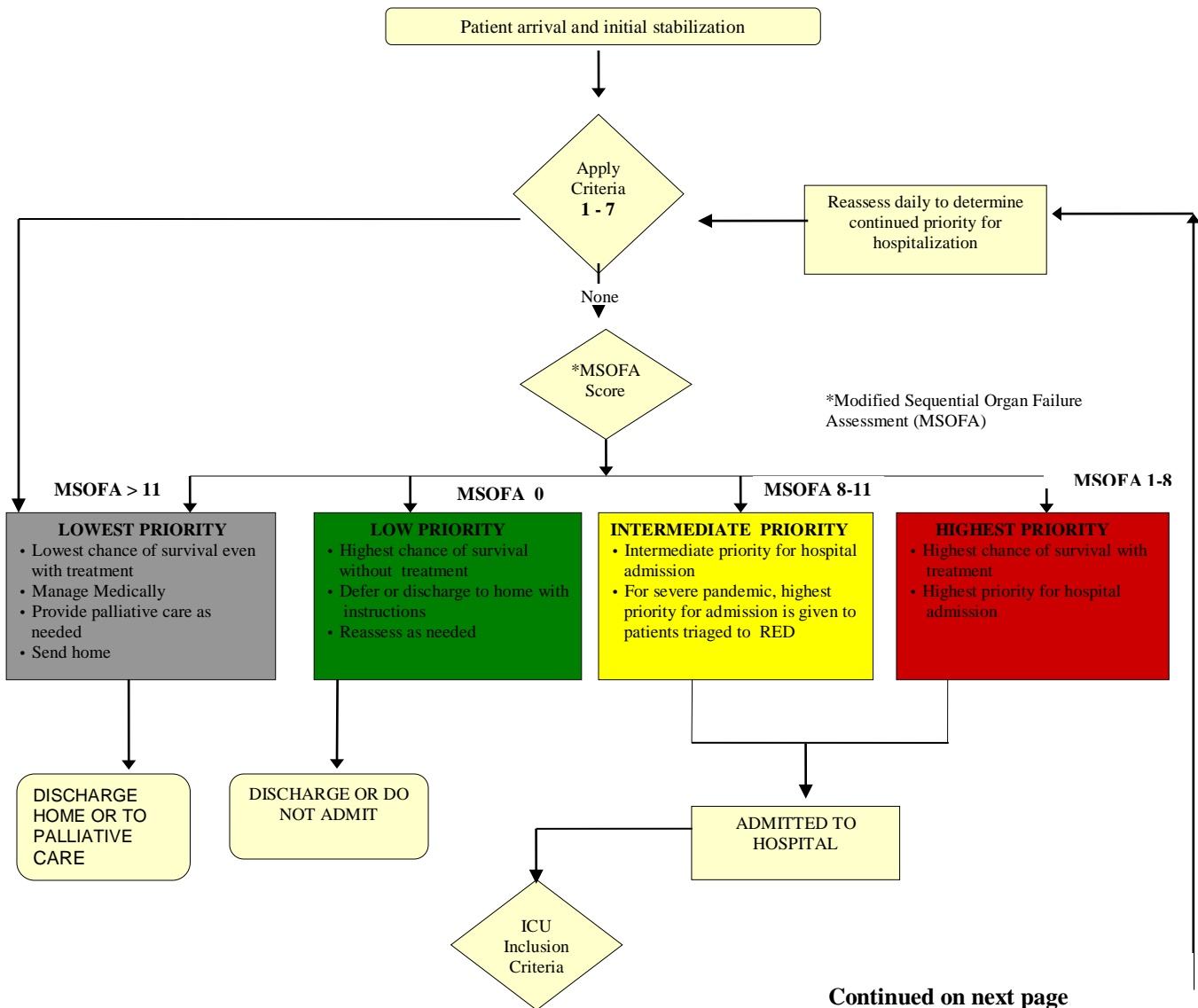
To qualify for ICU admission or ventilator support, the patient must have none of the presenting symptoms **(1-7) AND at least ONE** of the following Allocation Criteria :

8. **Requirement for invasive ventilatory support**
 - Refractory hypoxemia ($\text{SPO}_2 < 90\%$ on non-rebreather mask or $\text{FiO}_2 > 0.85$)
 - Respiratory acidosis ($\text{pH} < 7.2$)
 - Clinical evidence of impending respiratory failure
 - Inability to protect or maintain airway
9. **Hypotension[†] with clinical evidence of uncompensated 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, or <70 + (2x age in years) for patients ages 1-10, or relative hypotension;

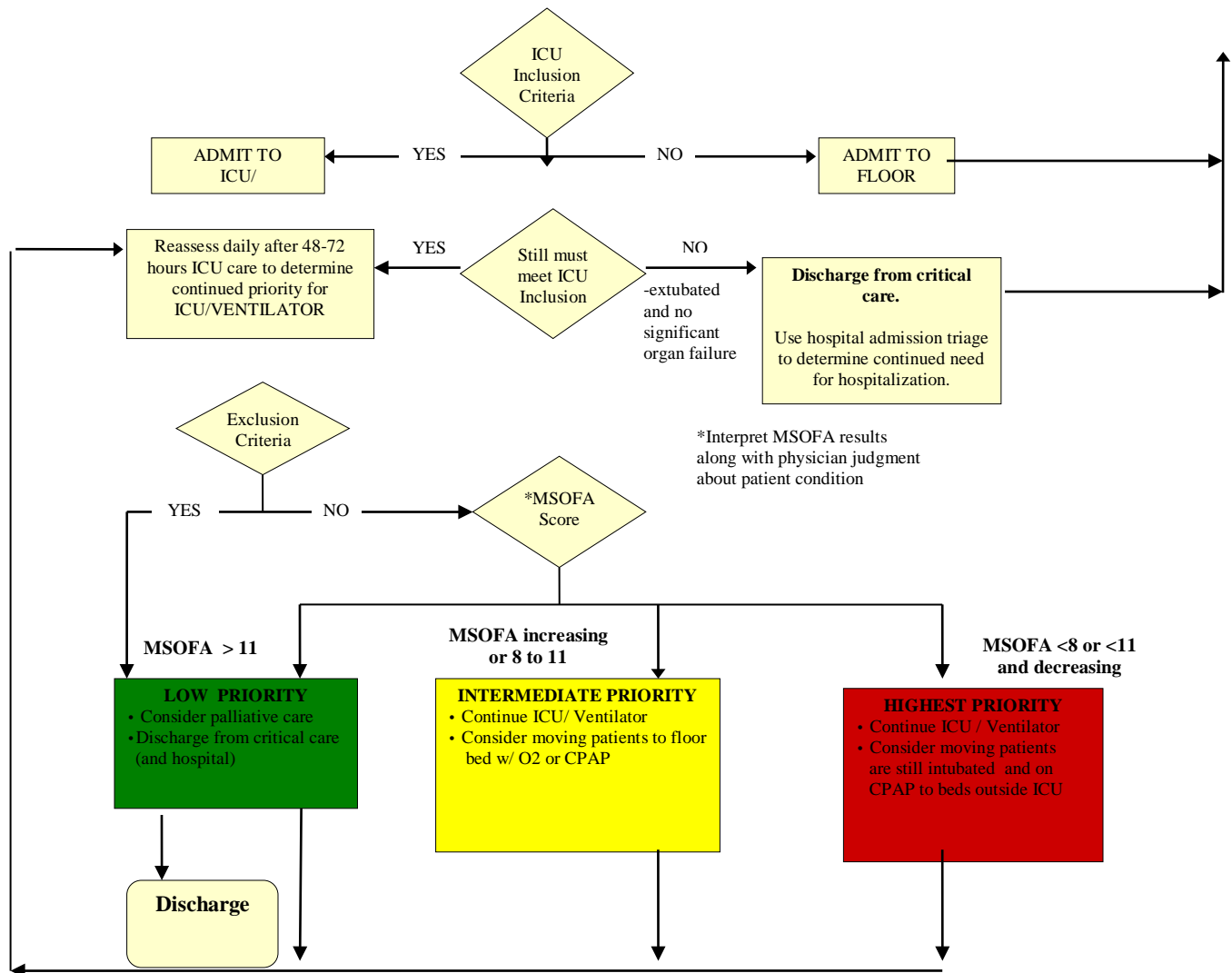
Clinical evidence of uncompensated shock = altered level of consciousness, decreased urine output, or other evidence of end stage organ failure.

HOSPITAL ADMISSION AND ICU / VENTILATOR TRIAGE MODEL



Continued on next page

HOSPITAL ADMISSION AND ICU / VENTILATOR TRIAGE MODEL (cont.)



MODIFIED SEQUENTIAL ORGAN FAILURE ASSESSMENT (MSOFA)

The MSOFA requires only one lab value (creatinine) that can be obtained using bedside point-of-care testing.

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	_____
Bilirubin (mg/dL)	<1.2 or no scleral icterus	1.2 – 1.9	2.0 – 5.0 or scleral icterus	6.0-11.9 or clinical jaundice	≥ 12	_____
Hypotension +	None	MABP <70	DOP <5	DOP 5-15 or EPI ≤ 0.1 or NOR-EPI ≤ 0.1	DOP > 15 or EPI > 0.1 or NOR-EPI > 0.1	_____
Glasgow Coma Score	15	13-14	10-12	6-9	<6	_____
Creatinine Level, mg / dL	< 1.2	1.2 – 1.9	2.0 – 3.4	3.5 – 4.9 or urine output <500 mL in 24 hours	>5 or urine output <200 mL in 24 hours	_____
MSOFA score = total scores from all rows: _____						

***SpO₂ / FIO ratio:**

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

+Hypotension

MABP = mean arterial blood pressure in mm HG (diastolic + 1/3 (systolic-diastolic))

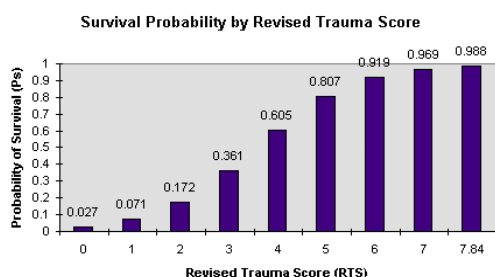
DOP = dopamine in micrograms/kg/min

EPI = epinephrine in micrograms/kg/min

NOR-EPI = norepinephrine in micrograms/kg/min

REVISED TRAUMA SCORE (RTS)

Values for the Revised Trauma Score (RTS) range from 0 to 7.8408. The RTS is heavily weighted towards 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 a criterion for directing patient to an alternative non hospital setting for an appropriate level of care during a crisis care environment.



Revised Trauma Score Calculation

Criteria	Score	Coded value	Weighting	Adjusted Score
Glasgow Coma Score	3	0	x0.9368	_____
	4 to 5	1		
	6 to 8	2		
	9 to 12	3		
	13 to 16	4		
Systolic Blood Pressure (SBP)	0	0	x0.7326	_____
	1 to 49	1		
	50 to 75	2		
	76 to 89	3		
	>89	4		
Respiratory Rate (RR) in breaths per minute (BPM)	0	0	x0.2908	_____
	1 to 5	1		
	6 to 9	2		
	>29	3		
	10 to 29	4		
Revised Trauma Score (add 3 adjusted scores) _____				

GLASGOW COMA SCORE

A Glasgow Coma Score (GCS) of < 6 is a criterion for directing patient to an alternative non-hospital setting for an appropriate level of care during a crisis care environment.

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 sub-scores; range 3 to 15)				_____

TRIAGE DECISION FOR BURN VICTIMS

A burn score of “Low” or Worse on this table is a criterion for directing patient to an alternative non-hospital setting for an appropriate level of care during a crisis care environment.

Age (years)	Burn Size (% TBSA)									
	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/expect
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/expect
60.0 – 69.9	Very high	Very high	Medium	Medium	Low	Low	Low	Low/expectant	Low expectant	Low/expect
70.0 +	Very high	Medium	Medium	Low	Low	Low/Expect.	Expect.	Expectant	Expectant	Expect

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 $\geq 90\%$) and 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 $\leq 10\%$ even with unlimited aggressive treatment.

PUGH SCORE

A Total Pugh Score > 7 is a criterion for directing patient to an alternative non-hospital setting for an appropriate level of care during a crisis care environment.

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 – 6	A		Life expectancy 15 – 20 years Abdominal surgery peri-operative mortality 10%
7 – 9	B		Liver transplant evaluation indicated Abdominal surgery peri-operative mortality 30%
10 - 15	C		Life expectancy 1 – 3 years Abdominal surgery peri-operative mortality 82%

NEW YORK HEART ASSOCIATION (NYHA) STAGES OF HEART FAILURE

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 criteria for directing patient to an alternative non-hospital setting for an appropriate level of care during a crisis care environment.

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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