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SEVERE SURGE RESPONSE: PATIENT LOAD-BALANCING & STAFFING CHALLENGES

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TASK FORCE FOR MASS CRITICAL CARE

• Diverse group of disaster preparedness experts
  • Physicians, nurses, pharmacists, respiratory therapists
  • Expertise in Critical Care, Pulmonary Medicine, Hospital Medicine, Emergency Medicine, Pediatrics, Trauma Surgery, Infectious Disease

• US and International members


STRIVE FOR CONTINGENCY CARE: AVOID CRISIS CARE CONDITIONS

- Current publications show COVID-19 mortality increases under severe surge conditions.\(^1,\,^2\)

- *The most important objective is staying within contingency care conditions* and avoid severe surge conditions leading to crisis standards of care:
  - Contingency care conditions maintain functionally equivalent care despite care often provided under unusual circumstances:
    - Expanded ICU spaces
    - Adjusted ICU staffing models
    - Flexible use of available ICU equipment, supplies, and medications
  - Contingency care conditions extend from routine standard of care up to about 100% above routine ICU capacity


**FOCUS: STAYING WITHIN CONTINGENCY CARE!**

**AVOID CRISIS STANDARDS WITH CONSEQUENT INCREASED MORTALITY**

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### Introduction and Executive Summary

**Care of the Critically Ill and Injured During Pandemics and Disasters: CHEST Consensus Statement.**

Christian, M. et al. CHEST 2014; 146 (4_Suppl): 8S - 34S.

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#### Table: Operating Conditions for Patient Care

<table>
<thead>
<tr>
<th>Condition</th>
<th>Space</th>
<th>Staff</th>
<th>Supplies</th>
<th>Standard of care</th>
<th>ICU expansion goal</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional</td>
<td>Usual patient care spaces maximized</td>
<td>Additional staff called in as needed</td>
<td>Cached/on-hand supplies</td>
<td>Usual care</td>
<td>X 1.2 usual capacity (20%)</td>
<td>Local</td>
</tr>
<tr>
<td>Conventional</td>
<td>Patient care areas re-purposed (PACU, monitored units for ICU-level care)</td>
<td>Staff extension (supervision of larger number of patients, changes in responsibilities, documentation, etc)</td>
<td>Conservation, adaptation and substitution of supplies with selected re-use of supplies when safe</td>
<td>Minimal impact on usual patient care practices</td>
<td>X 2 usual capacity (100%)</td>
<td>Regional/State</td>
</tr>
<tr>
<td>Contingency</td>
<td>Non-traditional areas used for critical care or facility damage does not permit usual critical care</td>
<td>Insufficient ICU trained staff available/unable to care for volume of patients, care team model required &amp; expanded scope</td>
<td>Critical supplies lacking, possible allocation/reallocation or lifesaving resources</td>
<td>Consistent with usual standards of care (Mass Critical Care)</td>
<td>X 3 usual capacity (200%)</td>
<td>National</td>
</tr>
<tr>
<td>Crisis</td>
<td>Increasing</td>
<td>Increasing</td>
<td>Increasing</td>
<td>Increasing</td>
<td>Increasing</td>
<td>Increasing</td>
</tr>
</tbody>
</table>

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**Morbidity and Incident demands**

- Decreasing
- Increasing

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**Operating Conditions**

- **Normal**
- **Conventional**
- **Contingency**
- **Crisis**

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**Critical Illness**

Load Balancing across states and regions

The Transfer Center acts to load level hospitals, provide the right bed for the right patient, reverse triage for less critical patients, and ensures equity over expanded geographic domains and crosses traditional referral pathways and health systems.

LOAD BALANCING STRATEGY: STATEWIDE COMMUNICATION AND COORDINATION CENTERS

• Arizona, Washington, California, Minnesota (there are others)

• **Success factors:**
  
  • Contributions and importance of key stakeholders paramount: Large health systems, State Department of Health; and State Hospital Association
  
  • Clinicians work with administrators - both are essential
  
  • Know where the staffed ICU beds are: technology (e.g. bed boards) may be helpful but personnel coordinating resources and transfers are MOST IMPORTANT!
  
  • Coordination across regions: daily conference calls among most important “players”; develop logistics of patient transfers over significant distance.

  • *This really can be set up and functioning effectively within two (2) weeks!*
SURGE STRATEGIES

• Identify when you are in trouble- nearing the limits of contingency resources
• Strain indicators:
  • *Patients waiting longer than 6 hours for an ICU bed* (mortality rises hourly)
  • Available ICU beds and available staff
  • Amount of equipment (ventilators, dialysis, disposable supplies), oxygen, medications;
• Response: Provide more resources (if available) or load balance (transfer) patients
• *Load Balance Early!!!*
STAFFING STRATEGIES

• Adapt alternative staffing models
  • Non-ICU personnel who can function in ICU with help ("force multipliers")
  • Critical Care professionals embedded in and leading teams
• Focus on Resilience for all ICU staff
  • Accurate communication from organizational leadership and expressions of gratitude
  • Limiting overtime (< 50% above routine schedules)
  • Limit documentation (responsibly)
  • Plan for overnight coverage
STAFFING OUR ICU’S

Nursing Model: 1 ICU trained RN working with 2 non-ICU trained RN’s can provide ICU level care to 4 patients.

Provider model: 1 ICU physician with other physicians and advanced practice providers can provide care for up to 24 patients; capacity further increased with telemedicine support, procedure teams, and greater experience.