COVID-19 Resource

Expert Recommendations for Staffing and Surge Preparation During Pandemics, Disasters and Crises

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There is a body of evidence about staffing ratios and patient acuity. Researchers have studied the impact of staffing models on patient, clinician and organizational outcomes under typical (usual intensive care unit) conditions.

This is what we know:

- A single widespread solution to nurse staffing in intensive care units (ICUs) does not exist due to: a) the wide range of patient acuity, b) patient needs that change frequently and c) varied availability of interdisciplinary staff.

- Some professional organizations recommend mandated ratios that correspond with state-mandated ICU nurse staffing ratios.

- Most mandated ratios are 1:1 or 1:2, meaning one nurse caring for one patient or one nurse caring for two patients.

- Several ICU staffing models exist and vary depending on the availability of interdisciplinary staff (intensivist, anesthesiologist, resident, nurse practitioner, physician’s assistant, registered nurse, respiratory therapist, etc.).

- These models work well under usual ICU conditions.
SUMMARY: INTENSIVE CARE UNIT (ICU) STAFFING IN PANDEMIC, DISASTER AND CRISIS CONDITIONS

- There is no evidence-based model for ICU staffing during pandemic conditions.
- Evidence-based staffing models for typical ICU conditions may not be applicable or feasible during a pandemic, disaster or crisis.
- There is no time to conduct research about staffing during a pandemic, disaster or crisis.
- We must rely on the evidence that already exists related to pandemics, disasters and crises to guide best practice decisions during a pandemic.
- The current evidence related to pandemics, disasters and crises are expert opinion.

RECOMMENDATIONS FOR INTENSIVE CARE UNIT (ICU) STAFFING IN PANDEMIC, DISASTER AND CRISIS CONDITIONS

Based on the evidence (Table 1), we recommend:

1. Implement a care team model*
2. Expand clinician expertise
3. Use a tiered staffing strategy
4. Limit routine service
5. Curtail administrative and teaching responsibilities
6. Cancel staff vacation and leaves
7. Reassign staff

*When implementing a Team Nurse Model be aware that many new clinicians are not familiar with this model and there will be a learning curve. (Mack et al., 2020)
## Synthesis of Evidence: ICU Staffing During Pandemic, Disaster and Crisis Conditions

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care team model</td>
<td>Society for Critical Care Medicine, 2020</td>
<td>Department of Defense, 2020</td>
<td>CHEST Consensus Statement Hick et al., 2014</td>
<td>CHEST Consensus Statement Einay et al., 2014</td>
<td>Sandrock, et al., 2010</td>
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<tr>
<td>Expand clinician expertise (Expand the scope of practice pharmacist role, train non-ICU staff to provide ventilator care)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Tiered staffing strategy (see Figure 1)</td>
<td>X</td>
<td>X</td>
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<td>Limit routine services (elective surgery, clinic visits)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Curtail administrative and teaching responsibilities</td>
<td>X</td>
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<td>Cancel staff vacation and leaves</td>
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<td>New divisions of labor (reassign staff) based on the skill sets needed rather than traditional roles or functions of providers</td>
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<td>Assess resource commitments based on Treatier, Time, Treatment and Threat (see Table 2)</td>
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<td>X</td>
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**Legend**

X = Recommended Practice
Table 1: Key Components to Consider When Assessing Resource Commitments

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Treater</td>
<td>The amount of staff expertise required to provide critical care</td>
</tr>
<tr>
<td>Time</td>
<td>The amount of staff time required to manage the patients</td>
</tr>
<tr>
<td>Treatment</td>
<td>The amount of resources required to manage the patients</td>
</tr>
<tr>
<td>Threat</td>
<td>Any risks to the provider or patient generated by the situation due to infrastructure damage, imminent dangers to providers and patients, or a high risk of disease transmission without appropriate personal protective equipment (PPE) available</td>
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</tbody>
</table>

Hicks et al., 2014
RECOMMENDATIONS/STRATEGIES FOR INTENSIVE CARE UNIT (ICU) STAFF SUPPORT DURING PANDEMIC, DISASTER AND CRISIS CONDITIONS

Based on the evidence (Table 2), we recommend:

1. Provide childcare support for staff
2. Provide on-site respite for staff (food, quiet spaces)
3. Provide on-site housing
4. Vary the length of shifts
5. Drive staff to and from the hospital
6. Consider innovative approaches

Synthesis of Evidence: Strategies to Support Staff During Pandemic, Disaster and Crisis Conditions

|                                            | 1                                                           | 2                                                           | 3                                                           | 4                                                           | 5
|--------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
|                                            | Society for Critical Care Medicine, 2020                    | Department of Defense, 2020                                  | CHEST Consensus Statement Hick et al., 2014                  | CHEST Consensus Statement Einay et al., 2014                 | Sandrock, et al., 2010
| Provide childcare support for staff        | X                                                           | X                                                           |                                                             | X                                                           |                                                             |
| Provide on-site respite (food, quiet spaces) |                                                             |                                                             |                                                             |                                                             |                                                             |
| Provide on-site housing                    |                                                             |                                                             |                                                             |                                                             |                                                             |
| Vary the length of shifts                  |                                                             |                                                             |                                                             | X                                                           | X                                                           |
| Drive staff to and from the hospital       |                                                             |                                                             |                                                             |                                                             | X                                                           | X                                                           |

Legend
X = Recommended Practice
INNOVATION

Consider innovative solutions generated by ICU nurses in the field who are currently managing COVID-19 patients to achieve the following:

- Reduce unnecessary use of personal protective equipment (PPE)
- Promote staff safety and readiness
- Reduce foot traffic

Specific strategies that can address these components include:

- Improve staffing ratios (isolation patients are 1:1)
- Utilize a runner (a nurse who is not assigned a patient but is designated to help 2-3 other nurses)
- Clumping of activities (reduce the number of times nurse has to enter the room, the patient gets to rest)
- Video monitoring (a camera in the room allows the team to assess the patient while outside the room)
- Use a team approach to consolidate care (1 person inside the room, one helper outside)

(Newby et al., 2020)

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**Mission**
We dream, discover and deliver a healthier world through transdisciplinary education, research and policy focused on evidence-based decision making.

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**References**


