**New Findings at a Glance**

This week’s update of the Mullan Institute (MI) State Hospital Workforce Deficit Estimator shows that the supply of intensivists (physicians that work in ICUs) will be strained in eleven states—less than 50% of intensivists will be available after the needs of COVID-19 patients are met—and two additional states will face intensivist shortages, with COVID-19 patients needing the care of more than 100% of the intensivists in the state (Table 1).

**Table 1. States at Risk for Insufficient Health Workforce for COVID-19**

<table>
<thead>
<tr>
<th>State</th>
<th>Predicted Peak Hospital Utilization</th>
<th>Intensivists</th>
<th>State</th>
<th>Predicted Peak Hospital Utilization</th>
<th>Intensivists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>8/6/2020</td>
<td>Strain</td>
<td>Nevada</td>
<td>11/1/2020</td>
<td>Strain</td>
</tr>
<tr>
<td>Arizona</td>
<td>8/1/2020</td>
<td>Shortage</td>
<td>Oklahoma</td>
<td>11/1/2020</td>
<td>Strain</td>
</tr>
<tr>
<td>Arkansas</td>
<td>8/10/2020</td>
<td>Strain</td>
<td>South Carolina</td>
<td>11/1/2020</td>
<td>Strain</td>
</tr>
<tr>
<td>Florida</td>
<td>8/16/2020</td>
<td>Strain</td>
<td>Texas</td>
<td>8/31/2020</td>
<td>Shortage</td>
</tr>
<tr>
<td>Idaho</td>
<td>11/1/2020</td>
<td>Strain</td>
<td>Utah</td>
<td>11/1/2020</td>
<td>Strain</td>
</tr>
<tr>
<td>Louisiana</td>
<td>7/30/2020</td>
<td>Strain</td>
<td>Washington</td>
<td>11/1/2020</td>
<td>Strain</td>
</tr>
<tr>
<td>Mississippi</td>
<td>7/22/2020</td>
<td>Strain</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Why does it Matter?**

The news media has largely focused on hospitalizations and the danger of depleting the ICU bed supply, but staffing these beds may be an even greater problem. New beds can be set up in other hospital units, or even outside the hospital setting, but it takes time to find highly specialized ICU professionals. Moreover, existing staff in these high COVID setting are likely to be working more shifts and with more intensity, leading to burn out and even infections among health personnel.
The MI State Hospital Workforce Deficit Estimator allows states to adjust the attrition rates and anticipate predicted workforce shortages. The site also provides resources on emergency measures that can be used to quickly attract additional professionals, including inactive clinicians in their state and clinicians from other states.

* View Map

* In addition to the limitations inherent in any projection model, and the limitations of the IHME model specifically, the data we used for the health professions supply side also has limitations. First, all data is at the state level, and there are variations in distribution within states that are important. Second, the data on intensivists and physician hospitalists are the only data that considers evidence of practice, i.e., claims data. The other four professions are based on estimates from BLS, AHA and NSSRNs. The advantage of claims data is that, since there is not always an exact match between specialty education and actual practice area, we can see who is providing the set of services that are of interest. Third, hospital work for all these professions is based on shifts, and, over the course of a given period, individuals often alter the number of shifts they work based on other factors in their lives, including the need for income and home responsibilities. Our estimates assume full time work. Lastly, it is worth recalling that the nursing data is based on a national sample survey, making estimates of nursing supply the least reliable of the five professions.

**Background**

The purpose of the MI State Hospital Workforce Deficit Estimator is to help state and federal policy leaders assess the sufficiency of their health workforce to meet COVID-19 cases in hospitals. The Estimator currently provides estimates for:

- **Intensivists** – physicians trained and experienced in providing ICU care
- **Critical Care Nurses (CCRN)** – nurses trained and experience in providing ICU care
- **Hospitalists** – physicians who focus on the medical care of hospitalized patients in non-ICU settings
- **Respiratory Therapists (RTs)** – health professionals trained to assess and treat patients with pulmonary disease, including the management of ventilators
- **Pharmacists** – health professionals with expertise in medication who ensure that medicines are dispensed safely and accurately.

The Estimator allows users to switch between two staffing models – non-surge and surge. In order to meet increasing health workforce needs, one of the first steps health care organizations might take is to transition to surge capacity staffing levels, i.e., requiring providers to care for
more patients than usual. For example, in our models, intensivists at surge staffing would care for a panel of 10 patients rather than 7 patients at non-surge staffing levels (Table 2). However, surge staffing levels pose greater risk of provider burnout if used for an extended period.

Table 2. Non-Surge and Surge Staffing Capacities

<table>
<thead>
<tr>
<th></th>
<th>Acute Care Teams</th>
<th>ICU Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Surge</td>
</tr>
<tr>
<td></td>
<td>Patients Each</td>
<td>Patients Each</td>
</tr>
<tr>
<td>Intensivists</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical Care Nurses (CCRN)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Hospitalists</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Respiratory Therapists (RTs)</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>8</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: Healthforce Center at UCSF. Staffing plans for surge hospitals – public Apr 7 update

The Estimator also allows for adjustment based on different health workforce attrition rates. Attrition might be due to infection, quarantine, or loss due to childcare or other family demands. Health workforce attrition estimates for COVID-19 have ranged from 7.5% in Washington to 34.5% in New York.

Methods


For our estimations, the date with the highest demand in the remaining period of IHME’s projections (7/23/2020 through 11/1/2020) is classified as the peak date for each state. Additionally, IHME presents three scenarios: (1) Current Projections; (2) Mandates Easing; and (3) Universal Masks. We use the Current Projections scenario for our estimations.
Planning for COVID-19 Health Workforce Needs

Even for states with sufficient health workforce for COVID-19 patients, states will have varying degrees of capacity to meet ongoing non-COVID-19 patient needs. Hospitals could further face challenges due to health worker attrition, and hospitals resuming full service with potential pent-up demand may increase overall health workforce needs over time.

A first point to consider is that the Bureau of Labor Statistics and NSSRN data estimate there are 21,000 additional advanced practice nurses working in critical care settings and 93,000 working in inpatient settings. The NCCPA reported 1,502 physician assistants specialized in critical care medicine and 3,436 were hospitalists in 2018. These practitioners are an important resource to consider. Because of data uncertainty, these professions were not included in the Estimator, but they are important resources that policymakers and planners should consider in their efforts to meet the demand for COVID-19 care.

For states that have already implemented surge capacity staffing ratios, for a short period, more aggressive staffing ratios are possible. The Society of Critical Care Medicine provides a Tiered Staffing Strategy for Pandemic, augmenting experienced intensivists, respiratory therapists, and ICU nurses with non-ICU health workers. Shifting to surge capacity and tiered staffing models requires advance planning, with training and support for health workers. Additionally, surge staffing ratios may be unsustainable over longer periods of time.

Another strategy healthcare organizations and states are pursuing is re-deploying or recruiting health workers from other settings. While the Estimator predicts shortages based on the active adult intensivist and hospitalist workforce, for each state, it also identifies the number of intensivists and hospitalists active in non-ICU or non-hospital settings (respectively) or no longer active (e.g. retired), and primary care physicians billing a large portion of their Medicare services (50-90%) in the inpatient setting. These are individuals that might be identified and re-deployed to support COVID-19 needs.

State-by-state modeling can further inform federal and state planning. The military has an estimated medical workforce of 180,000, including respiratory therapists. Understanding which states face the greatest predicted shortfalls can help the federal government plan and deploy to meet national needs. Understanding their own health workforce capacity can also help states target their efforts and support the release of health workers to other states with greater need, following California’s recent example of sending 500 ventilators back to the national stockpile.

Understanding health workforce needs for COVID-19 can help states prepare to meet these needs. However, it should be noted that the state modeling does not consider the distribution of the health workforce across the state and in different health care organizations. Health workers
do not move easily – planning and extensive negotiated coordination is needed. That is why it is important to have data for conversations about health workforce needs early in the process.

For additional Emerging Health Workforce Strategies to Address COVID-19, click here.