## State Health Workforce Deficit Estimator Methods

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<th>Demand Data</th>
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### Supply Data
- **Case load per FTE per ICU shift (Non-surge/Surge)**
  - Respiratory Therapist: 4 / 6
  - Intensivist: 7 / 10
  - Hospitalist: N/A
  - Critical Care Registered Nurses: 1 / 3
  - Critical Care Advanced Practice Clinicians (APC): N/A
  - Hospitalist APC: N/A
  - Pharmacists: N/A

### Notes on Supply
- **Supply Data**
  - AHA Annual Hospital Survey FY 2018
  - PECOS PUF 2020.01
  - NPPES 2020.04
  - Medicare Part B PUF 2017

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### Non-COVID-19 Patients
- Medicare Hospital Cost Reports: We take the total number of inpatient days for hospital and total number of ICU patient days (annualized to Calendar Year 2018). We divided those number by 365 to get the average daily non-COVID-19 occupancy of general acute care hospital beds and ICU beds. When relevant for acute care beds, we applied 25% reduction in occupancy to account for cancellation of elective procedures. We do not apply reduction in ICU occupancy as we see it as a hard demand.

### Calculation
- We assume all professions satisfy COVID-19 demands first and then serve other non-COVID-19 patients. We divide the demand data from IHME (multiply by 3.5 to adjust for shifts) by case load to calculate the number of FTEs needed for every profession. We then compare the demand data (in FTEs) against the supply data with various health care worker attrition rate (to account for sickness, fatigue, and/or other reasons). We categorize the states by whether they have enough supply for every profession under 3 different demand scenarios (low, mean, high). We then present number of providers available for non-COVID-19 patients (if any left) and average patients every remaining provider need to take care of (if any left). We only present shortage/surplus for the future date with highest demands.