This model projects a current “best guess” scenario for COVID-19 impacts (SEIR Model Assumptions included below). However, mitigative measures, such as social distancing and travel restrictions, are anticipated to reduce the spread.

### Current Cases
(JHU, 4/13/2020)
- **Cases**: 3,542
- **Casualties**: 93

### Current Hospital Utilization
(AZ Department of Health Services, 4/13/20, 1:00 PDT)

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>TOTAL</th>
<th>IN USE</th>
<th>% AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LICENSED BEDS</td>
<td>13,387</td>
<td>6,252</td>
<td>48%</td>
</tr>
<tr>
<td>ICU BEDS</td>
<td>2,001</td>
<td>545</td>
<td>73%</td>
</tr>
<tr>
<td>VENTILATORS</td>
<td>1,585</td>
<td>395</td>
<td>75%</td>
</tr>
</tbody>
</table>

### SEIR Model Assumptions
- Doubling Time: 5.5 days
- Initial R0: 2.5
- Overall Unmitigated Serologic Attack Rates: 60%
- Symptomatic Case Fatality Ratio (%): 0-4: 0.01; 5-17: 0.0075; 18-49: 0.045; 50-64: 0.1; 65+: 1.75; Overall: 0.25
- Symptomatic Case Hospitalization Ratio (CHR): 0-4: 4.5; 5-17: 0.8; 18-49: 3.5; 50-64: 7.0; 65+: 10; Overall: 5.5
- Proportion of infections that are asymptomatic: 35%
- Latency period: 5 days
- Infectious period post-hospitalization: 3.3 days
- Age stratification hospitalization time
- Relative infectiousness of asymptomatic individuals (among asymptomatic individuals): 100%
- Proportion of transmission occurring prior to symptom onset (among symptomatic individuals): 35%
- Pre-existing Immunity: None
- Time to Symptom Onset: 5 days
- Average time between primary and secondary infection: 7 days

### Projected Requirements & Shortfalls (Without Additional Augmentation) (Peak ETA = June 11, 2020)

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>TOTAL REQUIRED FOR COVID-19</th>
<th>AVAILABLE / TOTAL</th>
<th>SHORTFALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LICENSED BEDS</td>
<td>~6,300</td>
<td>7,135 / 13,387</td>
<td>0</td>
</tr>
<tr>
<td>ICU BEDS</td>
<td>~1,280</td>
<td>1,456 / 2,001</td>
<td>0</td>
</tr>
<tr>
<td>VENTILATORS</td>
<td>~895</td>
<td>1,190 / 1,585</td>
<td>0</td>
</tr>
</tbody>
</table>
Projected Ventilator Capacity

1,505
Total number of ventilators

400
In-use

31 March
“Stay at home” effective through 30 April

Source: FEMA National Response Coordination Center (NRCC), as of April 12, 2020

Modeling Assumptions
- $R_0 = 2.5$
- Latent Period = 5.2 days
- Infectious Period = 7.2 days
- 40% of pre-symptomatic individuals are infectious
- 50% of infected individuals are symptomatic

Modeling Assumptions
- Asymptomatic individuals are equally infectious as symptomatic individuals
- 3 days from symptom onset to hospitalization
- 6 days from hospitalization to ventilation

Hospitalization rates
- 5% for 0-4 years
- 2% for 5-17 years
- 5% for 18-49 years
- 7% for 50-64 years
- 60% for 65+ years

Ventilator usage
- 3.32% for 0-4 years
- 3.26% for 5-17 years
- 7.71% for 18-49 years
- 10.1% for 50-64 years
- 7.02% for 65+ years