Key Outcomes
Hospitalized Patients

After peak of 584 on 11/30, census has declined to 328 as of 1/19/2021.

Source: https://public.tableau.com/profile/oregon.health.authority.covid.19#!/vizhome/OregonCOVID-19HospitalCapacitySummaryTables_15965754787060/HospitalizationbySeveritySummaryTable
Regional Hospital Census

Regions 5 and 7 are still high

Regions 1, 2, 3, 9 are on slight declines.

Region 6 has a spike

Source: https://public.tableau.com/profile/oregon.health.authority.covid.19#!/vizhome/OregonCOVID-19HospitalCapacity/BedAvailabilitybyRegion
Oregon Hospital Capacity

As of 1/11/21, of the 508 occupied ICU beds, 84 (17%) are filled with COVID patients.

<table>
<thead>
<tr>
<th>Region</th>
<th>ICU</th>
<th>Non-ICU</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13%</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>23%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>12%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>27%</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>0%</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>21%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>36%</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>17%</td>
<td>9%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: https://public.tableau.com/profile/oregon.health.authority.covid.19#!/vizhome/OregonCOVID-19HospitalCapacitySummaryTables_15965754787060/HospitalizationbySeveritySummaryTable
New Cases per Capita

After 4 weeks of slow decline, cases have shown slight increase over last 2 weeks.

Oregon has the 2nd lowest rate of cases in the US.

Source: http://91-divoc.com/pages/covid-visualization/
Statewide Forecast
So far, the age group with the highest percentage of population vaccinated is 40-49.

Source: OHSU COVID Forecast Model
Long Term Model-Vaccine Schedule

Schedule shows the percent of population vaccinated by date assuming 10k per week are possible.

Note: This chart will be updated/revised with actuals as they become available.

Source: OHSU COVID Forecast Model
The long term forecast shows the fear and fatigue cycles continuing. It is has been re-estimated based on additional effectiveness from holidays.

It also includes a trend toward reduction in effectiveness over time.

Source: OHSU COVID Forecast Model
Vaccine schedule is pushed back a little due to slower roll out.

Recent drop in census has provided for a lower peak level of second wave.

While B117 Variant is not included, its eventual presence could cause a similar spike a few weeks later if the fatigue does not create it.

Model: The OHSU state hospital census forecast is an SIR model that includes traditional assumptions about first transmission (2/1/2020), doubling rate (5 days), days from exposure to admission (12 days), length of stay (8 days, 13 days for ICU), and recovery period (14 days). It has an innovative feature which is that it includes a factor that moderates transmission rates which is called policy effectiveness. The factor

Source: OHSU COVID Forecast Model
This chart shows the number of people in each of four categories:

- Susceptible
- Infected
- Vaccinated
- Both (infected then vaccinated)

As the susceptible population declines the ability for the virus to spread decreases.

Source: OHSU COVID Forecast Model
State/IDM Scenario Projections

The state model shows projections of two scenarios:
1) $R_e$ persists at 1.29
2) Decrease in $R_e$ to 0.9

Review of Leading Indicators
People have returned levels of work and school and time with others similar to prior to holiday season.

No particular increase/decrease in shopping, restaurant/bars, large events, mask wearing.

Some continued decline of “Time w/Others”.

Source: https://delphi.cmu.edu/covidcast/export/?signalType=value
Leading Indicators Comparison

Mobility engagement index and google work index are both up.

Retail, social distance, and device exposure indices all remain low.

Source: Rt from COVIDactNow [https://covidactnow.org/us/or/?s=1006211](https://covidactnow.org/us/or/?s=1006211), MEI from [https://www.dallasfed.org/research/mei.aspx](https://www.dallasfed.org/research/mei.aspx), DEX from [https://github.com/COVIDExposureIndices](https://github.com/COVIDExposureIndices), SDI from [https://data.covid.umd.edu](https://data.covid.umd.edu) (Details in slide notes)
COVID Symptoms

Symptoms have plateaued in Oregon but have not shown declines.

ID/MT/UT are showing some recent declines

CA is more steady.

WA is steady and similar to OR.

Source: https://covidcast.cmu.edu/
COVID Hotline Calls

Calls are showing declines back to levels 50% as large as peak.

Source: OHSU COVID Connected Care Center Data
Policy Issues
Oregon Risk Levels

Most of state remains in Level 4 which is extreme risk.

13 counties are in other categories

Administered doses per day have increased steadily.
Age distribution is more reflective of healthcare workers.

**AGE GROUPS**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Doses Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 to 19</td>
<td>1,470</td>
</tr>
<tr>
<td>20 to 29</td>
<td>25,754</td>
</tr>
<tr>
<td>30 to 39</td>
<td>41,948</td>
</tr>
<tr>
<td>40 to 49</td>
<td>40,506</td>
</tr>
<tr>
<td>50 to 59</td>
<td>35,125</td>
</tr>
<tr>
<td>60 to 69</td>
<td>26,998</td>
</tr>
<tr>
<td>70 to 79</td>
<td>12,453</td>
</tr>
<tr>
<td>80+</td>
<td>8,295</td>
</tr>
</tbody>
</table>

**Total People:** 192,549

**Oregon’s Vaccination Trend: Doses Administered by Day**

This chart shows the total number of COVID-19 vaccine doses that have been given in Oregon.

*Doses administered during this time may not yet be reported.*

Oregon has given out 31% of its allotted doses and have vaccinated 2.3% of its population. These are 37th and 35th ranks out of the 51 states and DC.

The chart shows how that compares with other states.

Long Term Model-Specs

Assumptions

1) Vaccine schedule by week through 8/31/2021 (approx. 10k per day after start-up)
   • Project number replaced by actuals as they become known
2) Vaccine acceptance rate (75%)
3) Lagged affect on protection (2 weeks until vaccinated have protection)
4) Efficacy of vaccine (54% at first dose, 95% after second dose at 24 days)
5) Impact on hospitalization rate of new cases
   • Vaccine schedule prioritizes older individuals
6) Fear and Fatigue cycle of intervention effectiveness estimated with sinusoidal function
   (approx. 8 weeks/each)
7) Ascertainment rate- True infected are estimated to be 3.5 times larger than cases.
8) Vaccination of previously infected is possible based share of population infected.

Source: OHSU COVID Forecast Model
Long Term Model-Specs

Limitations

1) There are a lot of assumptions for a model like this to work. Rather than it being an expectation of the future it is more of an exercise to see what our best guess is given information we have. The assumptions will change over time.

2) Additional dynamics that are not included (yet):
   1) Impact of B.1.1.7 variant on transmission rate or vaccine efficacy
   2) Whether vaccine only prevents symptoms or also prevents transmission
   3) Efficacy differences by age group

3) It has not been resolved why the effectiveness appears to be declining over time. It may be an artefact of how the parameter is calculated.

Source: OHSU COVID Forecast Model