so what?

Our model suggests that the number of daily cases is expected to be around 400 in the next few weeks (middle case scenario)
So what?

Our model suggests that the number of daily deaths is expected to range between 5 and 20 in the next few weeks (worst case scenario).
Growth Rate for NM

So what?
As of September 26th, the average growth rate in NM is at 0.24% (down from 0.27%)
Otero, Torrance, and Northeast corner have increased growth rates

*Growth rate is in cumulative cases
Number of New Mexicans living in regions with particular combinations of per capita case counts and 7-day growth rates

- **So what?**
  - Otero, Valencia, Guadalupe are accelerating with high per-capita; Santa Fe is accelerating with medium per-capita.
  - Most people in New Mexico are living in a county that is medium per-capita case counts and decelerating.

<table>
<thead>
<tr>
<th>Growth Rate</th>
<th>Low &lt;10 cases/100k per week</th>
<th>Med 10-99 cases/100k per week</th>
<th>High &gt;100 cases/100k per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0k</td>
<td>0k</td>
<td>0k</td>
</tr>
<tr>
<td>Med</td>
<td>0k</td>
<td>53k</td>
<td>363k</td>
</tr>
<tr>
<td>High</td>
<td>0k</td>
<td>1.05M</td>
<td>336k</td>
</tr>
</tbody>
</table>
> Additional Regional Forecasts
So what?
The number of daily cases across most regions appear to plateau but the Northwest may see a slight increase.
The number of daily cases across the Southeast appear to plateau but the Southwest may see a slight decrease.
Hospitalization Forecast: This analysis will resume shortly
28 Sept 2021: EpiGrid modeling

- NM daily incidence remains consistent with the model. **Caution: Week-on-week cases are flat for the last week.**
- By-county time dependence continues to be highly heterogeneous.
- Effectiveness of *some* mitigations likely improving (i.e. tracing, followed by quarantine or isolation).
- NM daily deaths will likely peak in September. A long tail into October is certain.
A look at the raw incidence data

- Sunday
- Monday
- Tuesday
- Wednesday/Thursday
- Friday
- Saturday

Cases rates are down due to mitigations.

The 190 cases in the Lea county correctional facility are removed from data reported on March 26th. The 1/3 of reported cases that were > 2 weeks prior were removed from March 24th. Case reported for weekends starting April 10-12th are each divided by 3 to estimate individual day counts.
28 September 2021 Vaccine Analysis and Summary

- ~1404k first doses have been administered in NM.
- ~1235k completed vaccine series in NM.
- Epigrid is modeling this as 1407k first doses.
- ~67.1% of all persons in New Mexico are at least minimally vaccinated.
- ~85.5% of all persons in New Mexico are currently eligible (~1792k).
- Time to completely vaccinate all eligible at the current rate is ~18.4%\(\times\)0.5%/week = ~37 weeks; mid-June 2022.

Federal vaccine orders: 8 December 2021

Federal civilian employees
- in the US: 1847k,
- in NM: 22k

Federal contractor employees in the US:
- Large ...

Safe relaxation of masking orders will be difficult for months to come based on current vaccination rates.
Variants: Still Delta-dominant.

- B.1.617.2, “Δ” is the “Indian variant”
- B.1.1.7, “α” is the “UK variant” (apparently now minor)
- P.1 is the “Brazil variant” (apparently now minor)

New Mexico’s data are consistent with Delta being dominant.


What is happening in the rest of the U.S.? The 10 most populous states and New Mexico


<table>
<thead>
<tr>
<th>State</th>
<th>Cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>26.62</td>
<td>0.203</td>
</tr>
<tr>
<td>Michigan</td>
<td>32.84</td>
<td>0.306</td>
</tr>
<tr>
<td>Ohio</td>
<td>52.4</td>
<td>0.426</td>
</tr>
<tr>
<td>Florida</td>
<td>33.42</td>
<td>1.523</td>
</tr>
<tr>
<td>New Mexico</td>
<td>27.61</td>
<td>0.502</td>
</tr>
<tr>
<td>Illinois</td>
<td>25.06</td>
<td>0.301</td>
</tr>
<tr>
<td>Texas</td>
<td>38.45</td>
<td>0.984</td>
</tr>
<tr>
<td>California</td>
<td>17.53</td>
<td>0.254</td>
</tr>
<tr>
<td>North Carolina</td>
<td>51.53</td>
<td>0.654</td>
</tr>
<tr>
<td>Georgia</td>
<td>42.11</td>
<td>1.141</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>35.62</td>
<td>0.316</td>
</tr>
</tbody>
</table>

Daily rates per 100,000 residents averaged September 13th thru September 27th 2021.

State-wide epidemics continue to be strongly heterogeneous.
The relationship between vaccination and cases is strong and **highly** protective on a by-county basis.

**Infection control relative to vaccination rates.**
- Quay County daily incidence has risen very high.
- Lea, Lincoln, Colfax Counties are high.
- Eddy, Chaves, San Miguel, Cibola, and Rio Arriba Counties are marginally high compared with vaccination.
- Socorro, Los Alamos, Roosevelt, and Luna have better than typical incidence compared to vaccination.
- Seven counties are not on this plot due to relative isolation and small populations: Catron, De Baca, Guadalupe, Harding, Hidalgo, Mora and Union.

**Vaccination rates are uniformly low in:** Quay, Lea, Eddy, Chaves, Torrance, Curry, Otero, and Roosevelt Counties. All have rates below 40% of their total population.
- Most counties continue to have high absolute transmission, well above 10 per 10^5 per day.
- Further improvement in both vaccination and infection control are crucial to minimizing the pandemic’s burden.
- Improvement in low vaccination rate regions benefits all counties because travel drives epidemic spread from areas of high incidence.
Recent by-county trends in daily incidence (are things getting better?)

• Trends, meaning time-dependence, not magnitude
• Per capita normalization not needed here (trends, not magnitude)
• Not referenced to vaccination rates (see the previous slide)
• Not referenced to whether the situation is currently intermediate, bad, or really bad. Barely reaching good anywhere in the USA.

• Counties with falling incidence: Bernalillo, Chaves, Curry, Eddy, Sandoval.

• Counties with slowly falling incidence: Colfax, Dona Ana, Lea, Los Alamos, McKinley, Roosevelt, San Miguel, Santa Fe, Socorro, Taos, Valencia.

• Counties with steady incidence: Grant, Guadalupe, Hidalgo, Lincoln, Luna, Mora, Otero, Rio Arriba, San Juan, Sierra, Torrance, Union.

• Counties with rising incidence: Quay.

Need a broad understanding of what makes good infection control. It is plausible that the Delta variant is sufficiently contagious that residents have to re-learn what constitutes good infection control because lessons learned during the Alpha variant wave are no longer correctly calibrated.

Comparisons of what is “what works” for infection control differs between areas with 70+% vaccination and those with ~35% vaccination.
Hospital bed concurrent usage by COVID-19 patients (Statewide)

- Left panel: linear vs. time (y-scale = 0:800)
- Right panel: log vs. time (y-scale = 40:800, 20x)
- Deviation of the data below the model is evident beginning on ~19 August.
- Flattening of the hospital load data is due to improved disease outcomes and or other factors not present from March through late July or early August, 2021.
- An empirical, linear extrapolation of data seems useful at this point in time.