



A P O L L O N

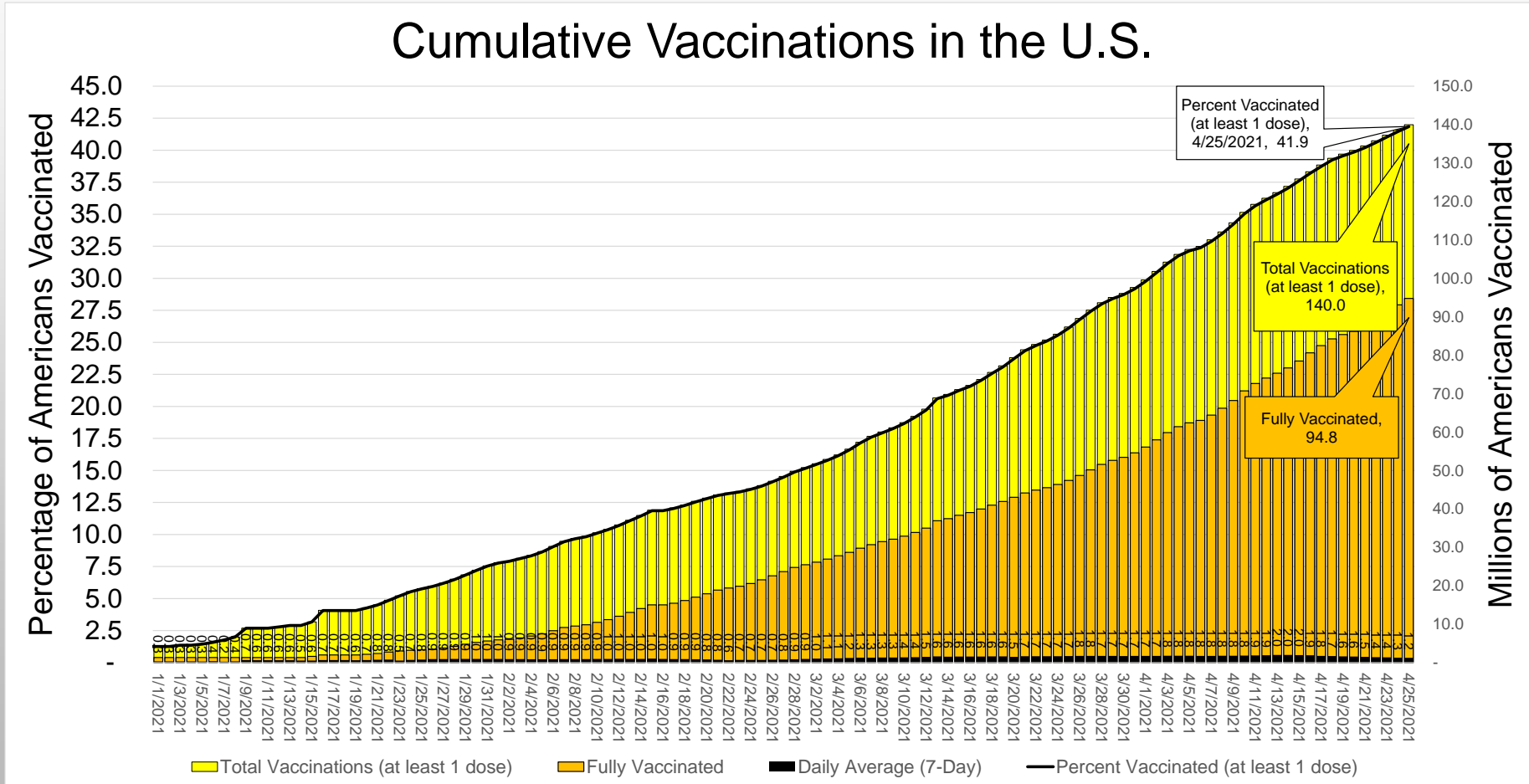
COVID-19 UPDATE

APRIL 26, 2021



VACCINATION PROGRESS IN THE UNITED STATES

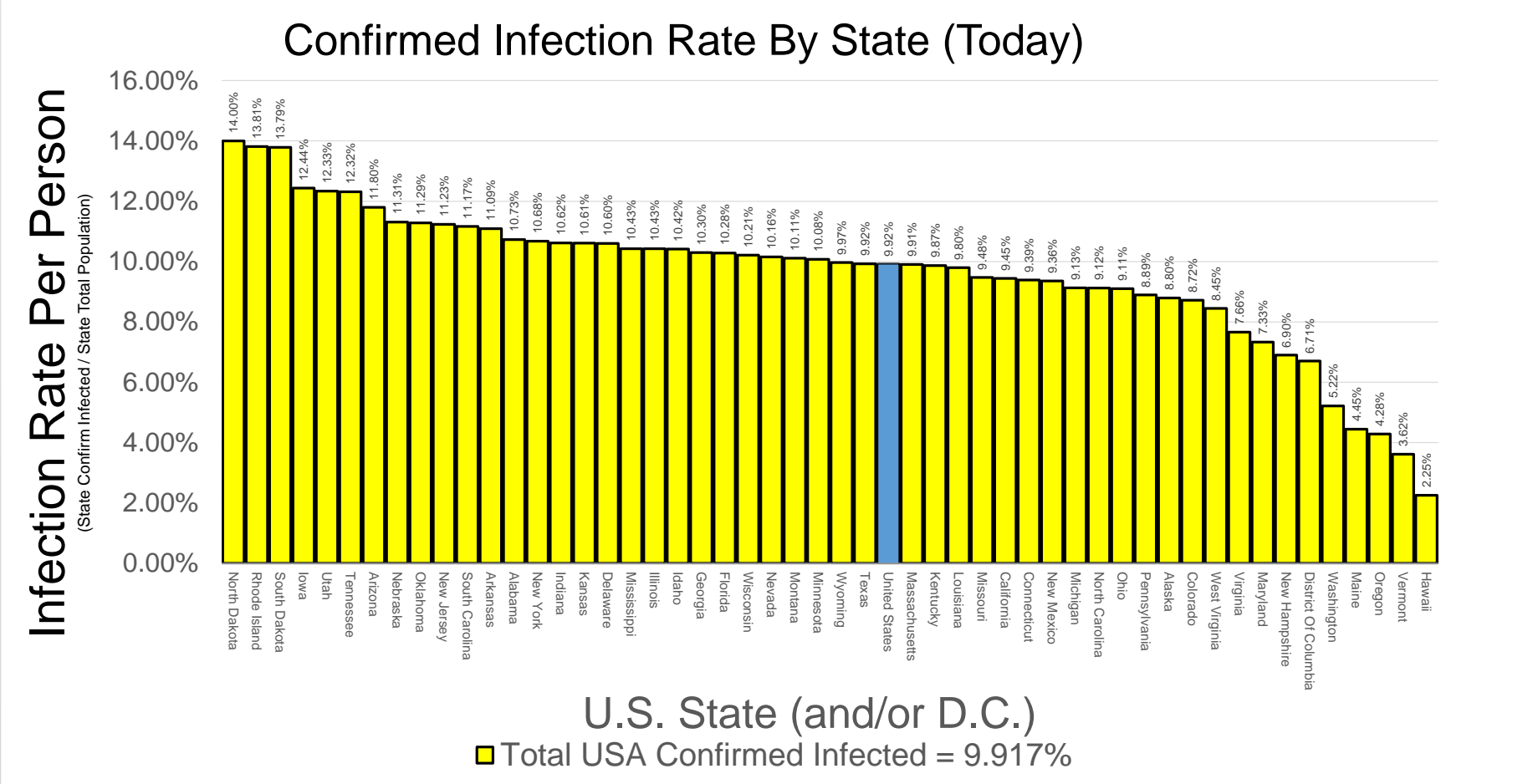
- According to the World Health Organization, 60% to 80% of a community's population must have natural antibodies to a virus or be vaccinated against the pathogen to reach herd immunity.
- 8.7 MM Americans (2.6%) were vaccinated in the last week. Extrapolating the last 7 days' vaccination progress, a 60% vaccination rate would be 1.6 months away (June 13) & 80% would be 3.4 months away (August 5).



See the Disclosures page of this presentation for the sources of COVID-19 data.

CONFIRMED INFECTIONS / POPULATION BY STATE

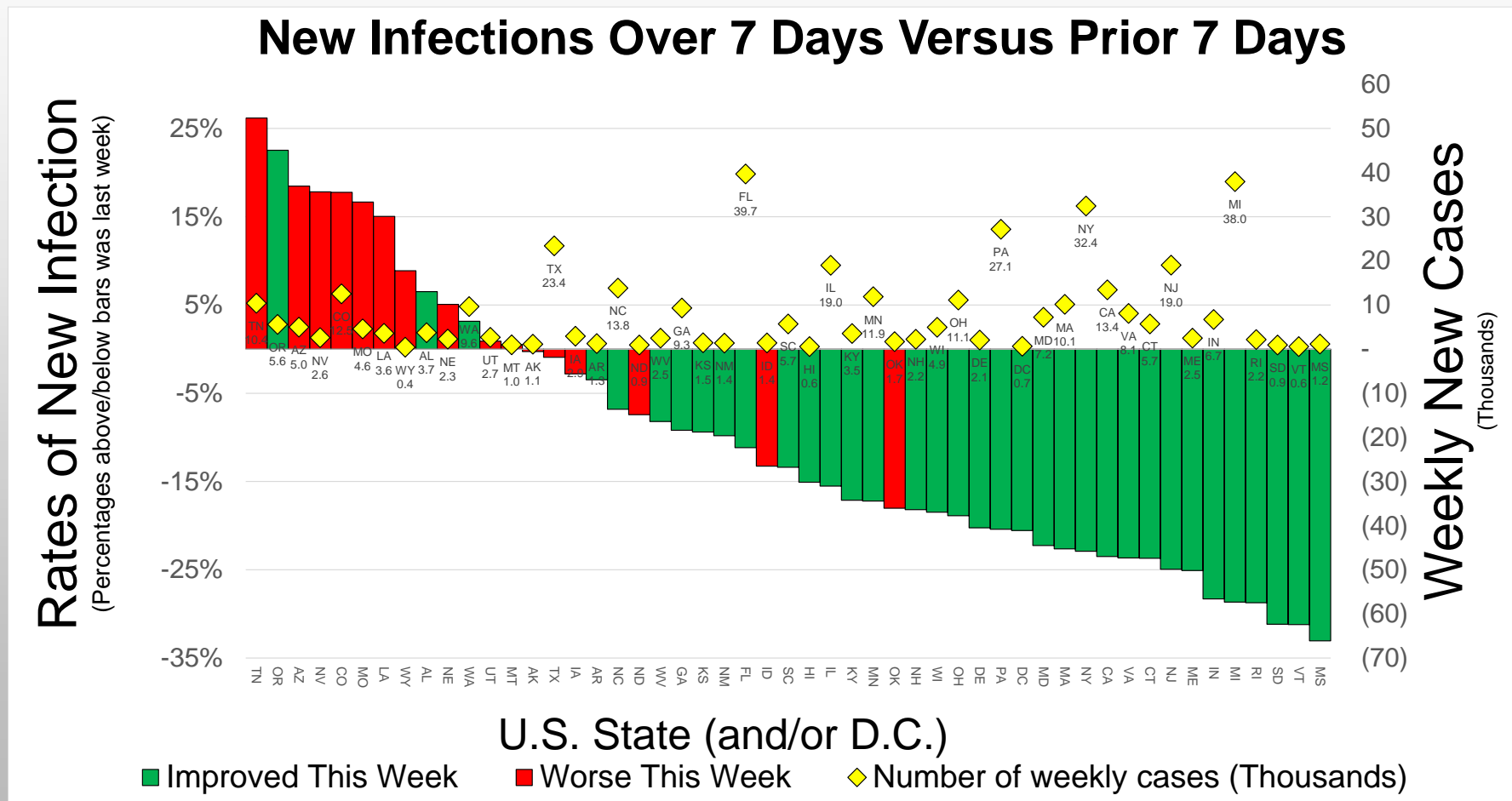
- The CDC estimates the true mortality rate of COVID to be ~0.65%. Given the confirmed mortality rate of 1.79%, this implies that true infections exceed confirmed infections by ~2.8X. This number was higher in March and April (perhaps as high as 20X) and has trended down since with expanded testing.
- This implies the true U.S. infection rate may be 27.3% rather than 9.87% (or 90.3 MM rather than 32.8 MM Americans)
- On January 15, 2021, the CDC estimated that 71.6 – 97.2 million Americans had been infected (with 95% confidence)



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WEEKLY TREND BY STATE

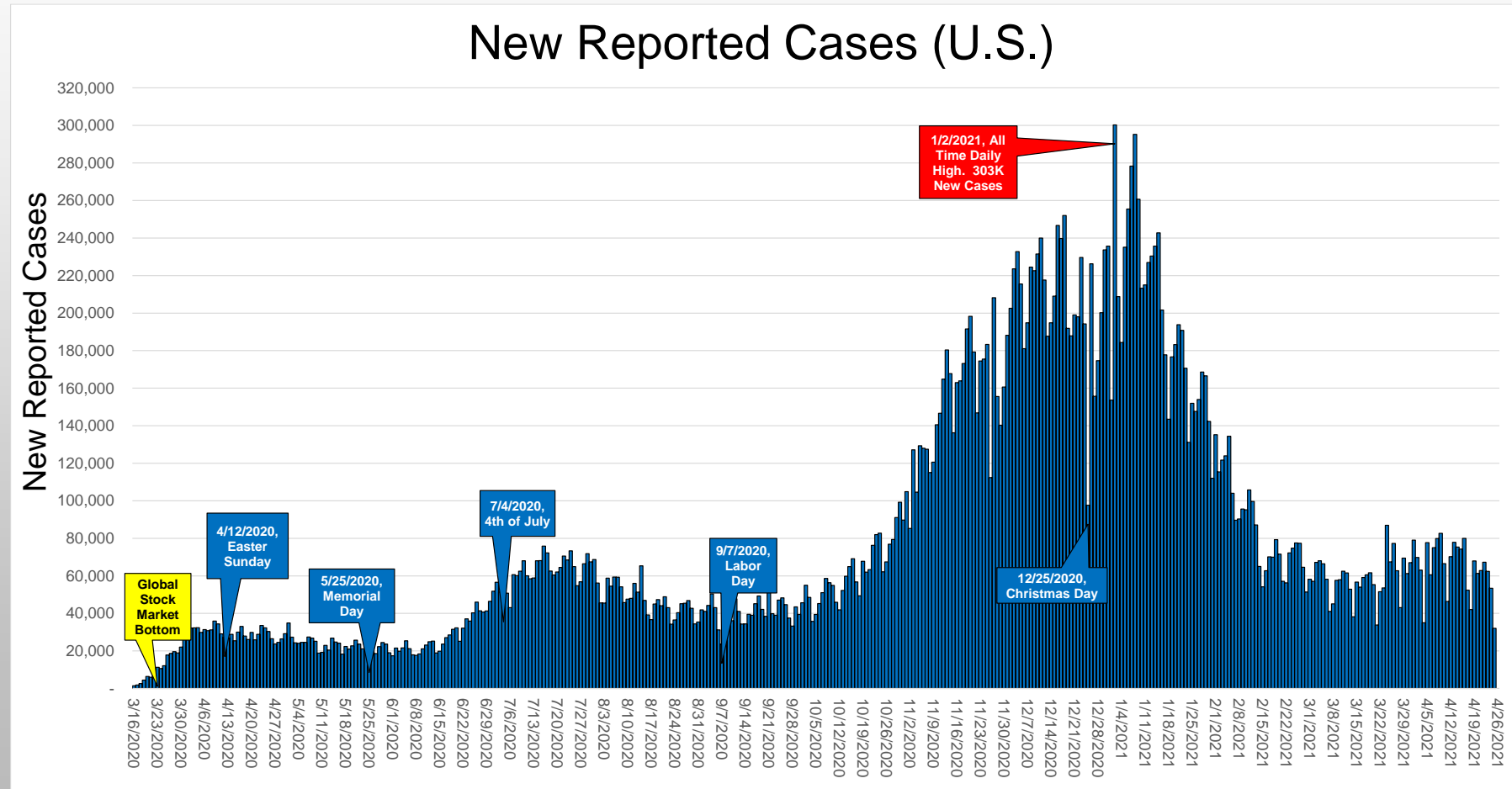
- 13 states/DC saw increased cases over last week. 38 showed declines.
- A week ago, it was a 22/29 +/- ratio.
- 35 states/DC improved versus last week. 16 regressed.



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NEW REPORTED CASES (UNITED STATES)

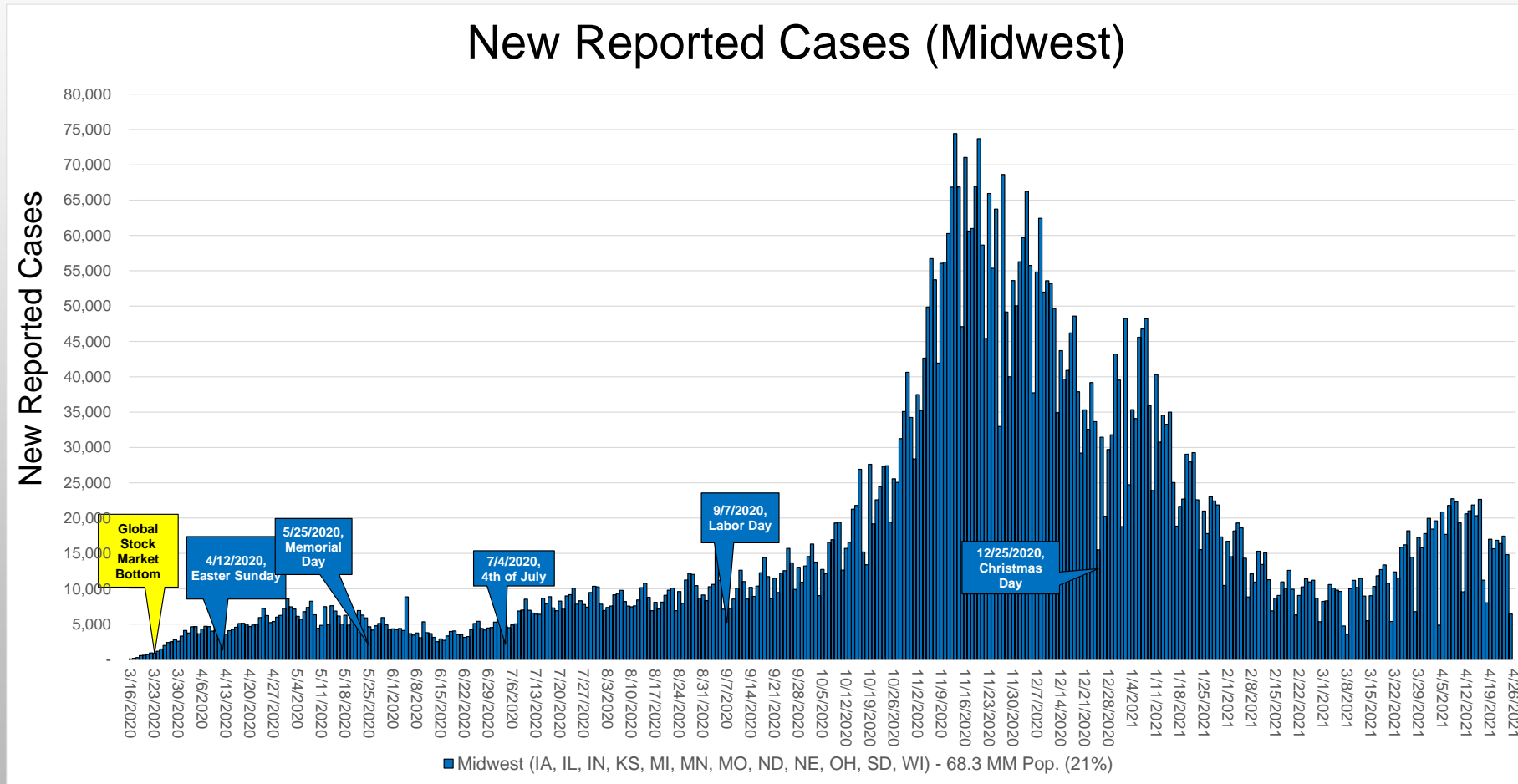
- New daily U.S. cases hit an all time high (303K) on Saturday, January 2.
- Cases have been trending down steadily since January 2.
- On April 25, 2021, new case counts hit a new 2021 low (32.1K).
- New cases have flattened in recent weeks.



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NEW REPORTED CASES (MIDWEST)

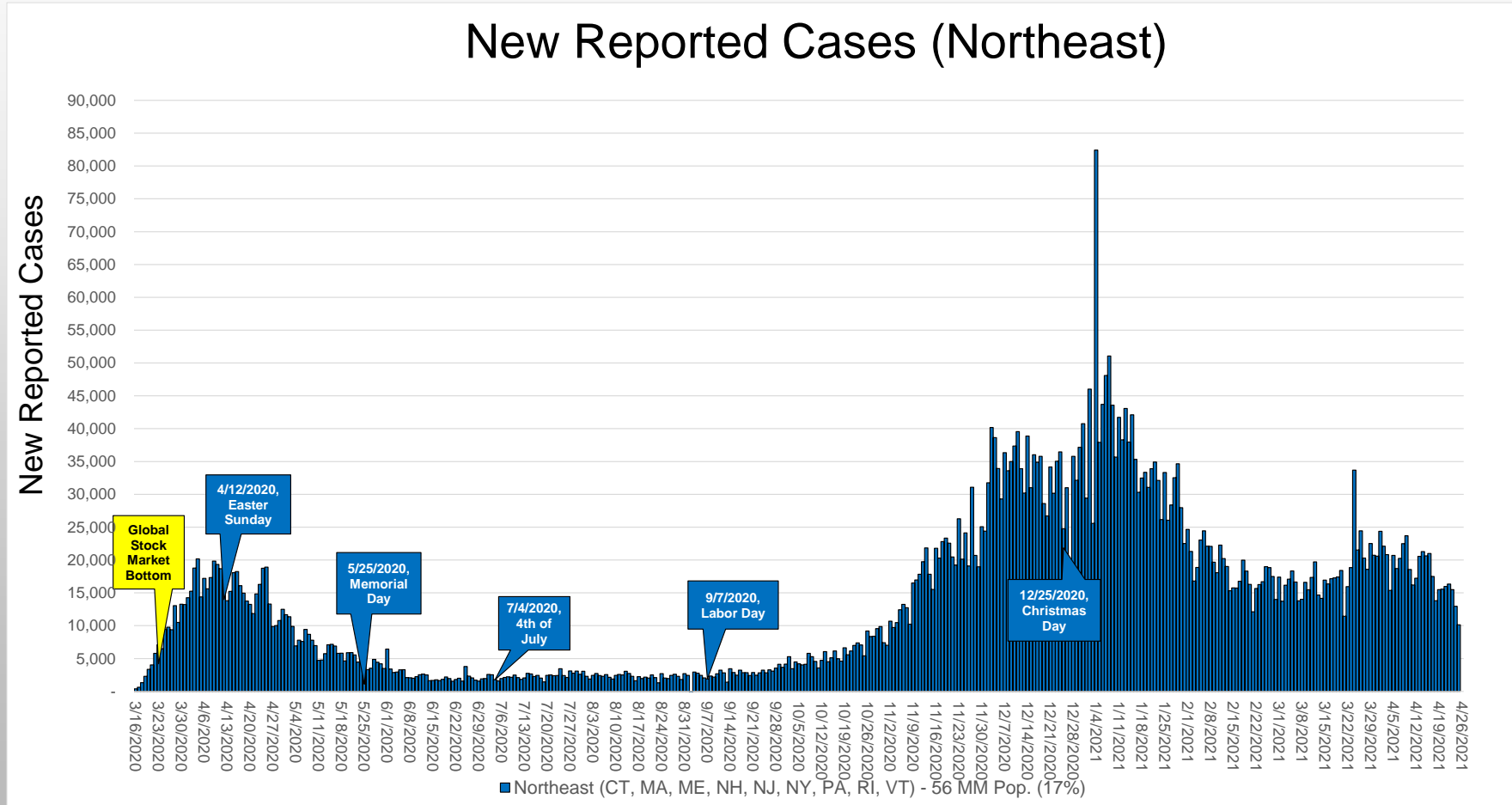
- New cases trended down from the November 2020 to mid March 2021.
- New cases have flattened in recent weeks.



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NEW REPORTED CASES (NORTHEAST)

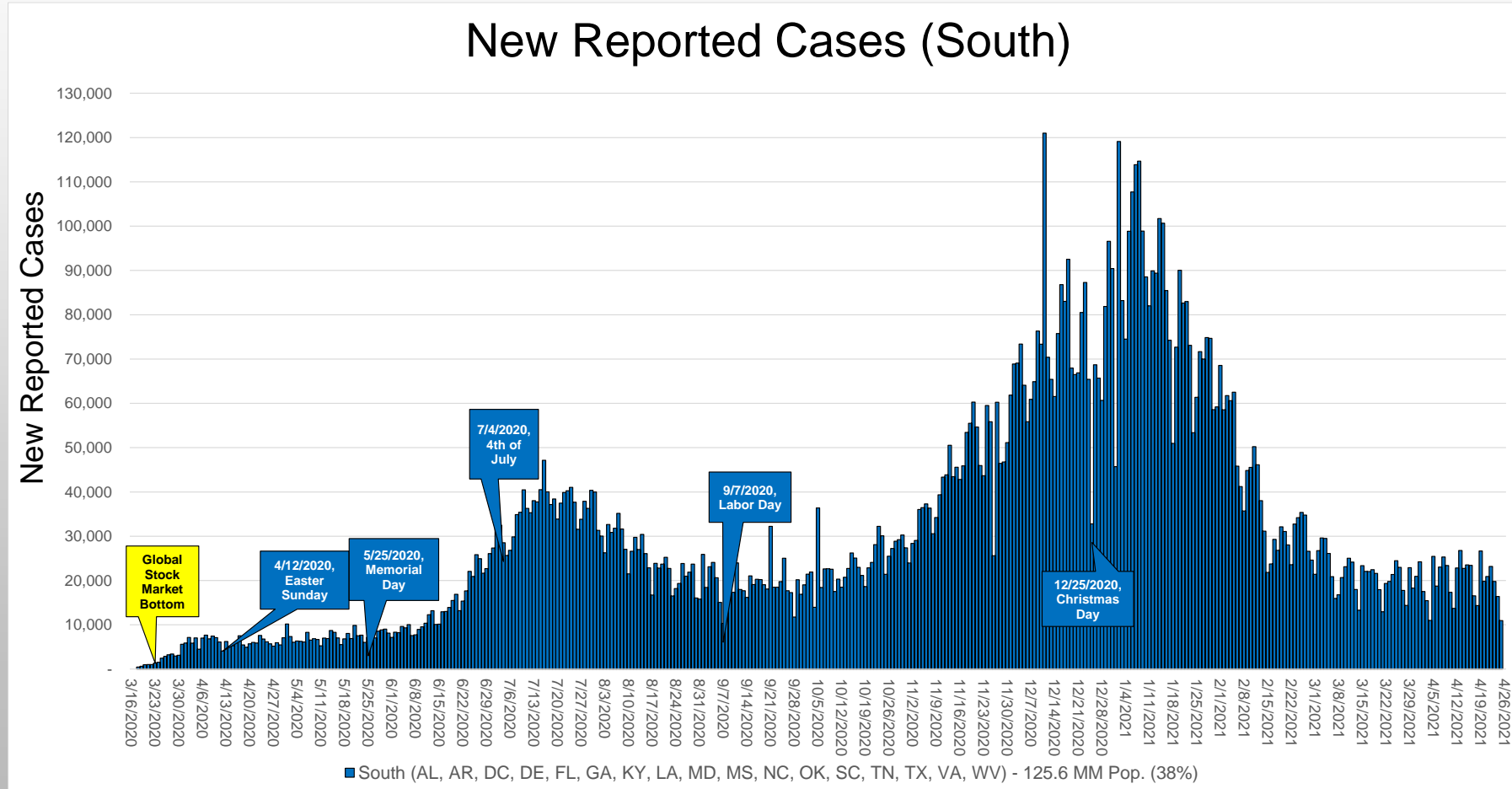
- New cases trended down from the start of 2021 to mid March.
- New cases have trended lower in recent weeks.



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NEW REPORTED CASES (SOUTH)

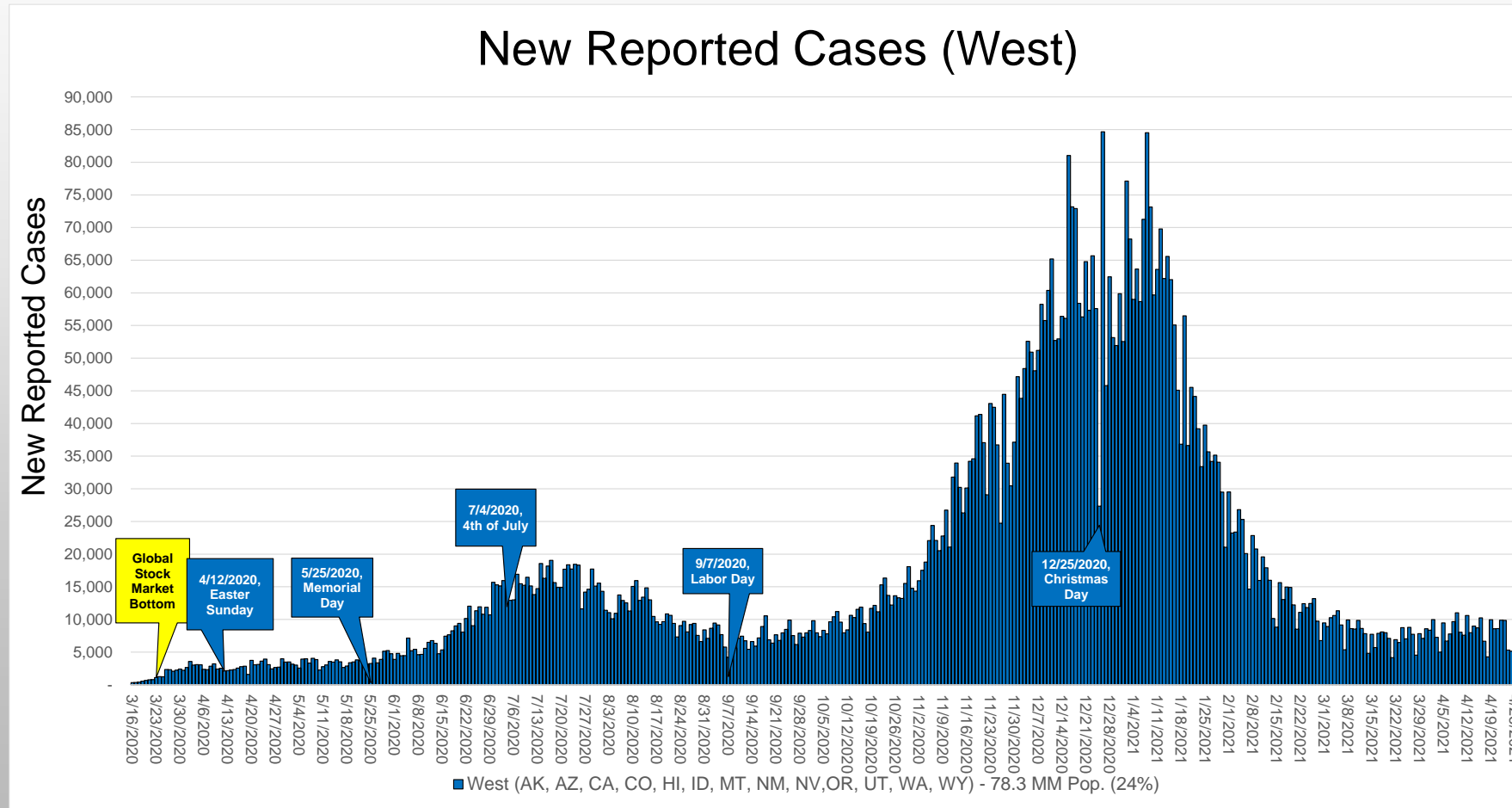
- New cases trended down from the start of 2021 to early March.
- In recent weeks, new cases have trended flat.



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NEW REPORTED CASES (WEST)

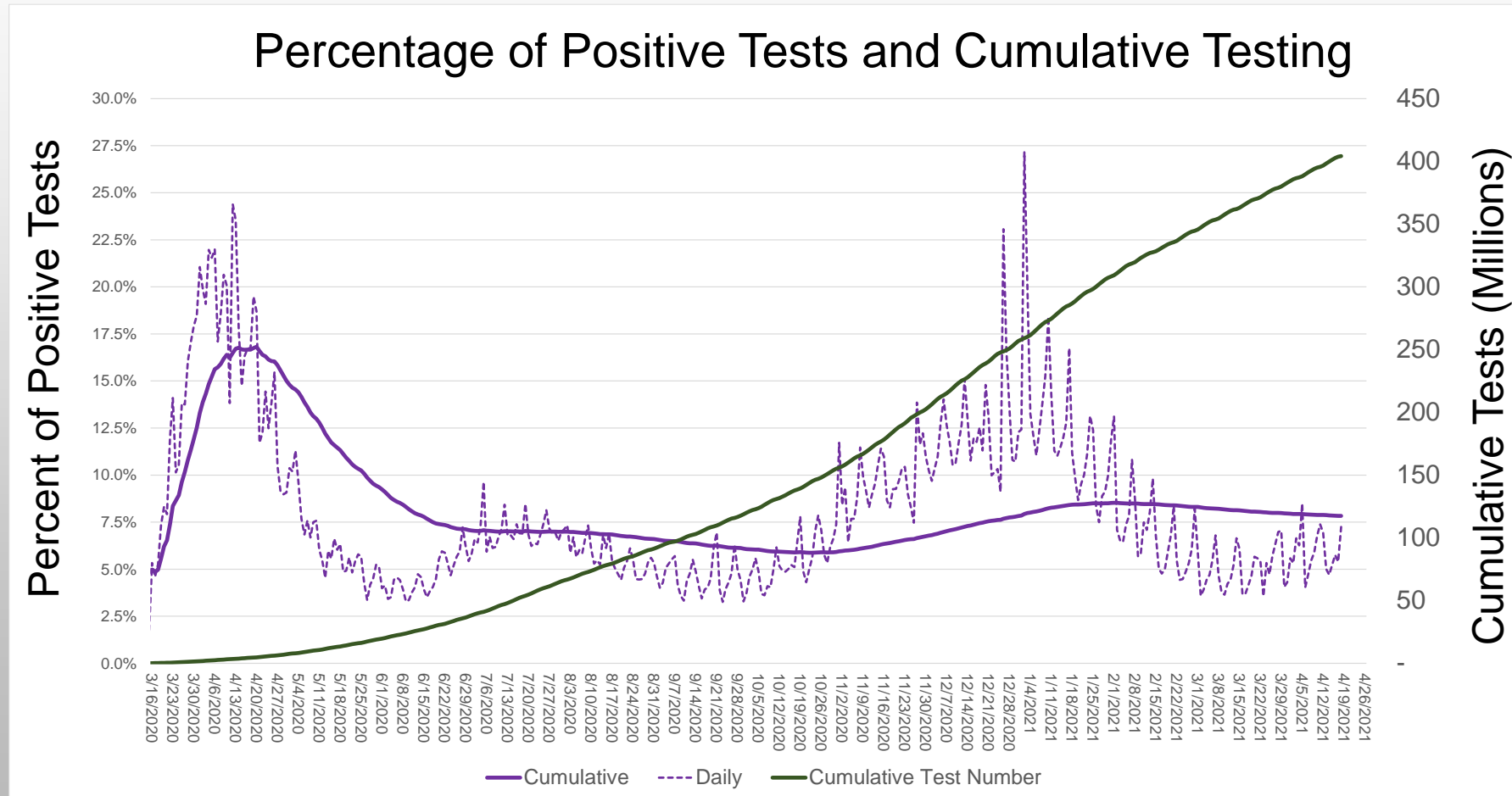
- New cases trended down from early 2021 to early March.
- In recent weeks, new cases have trended flat.



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POSITIVE TESTS AND CUMULATIVE TESTING

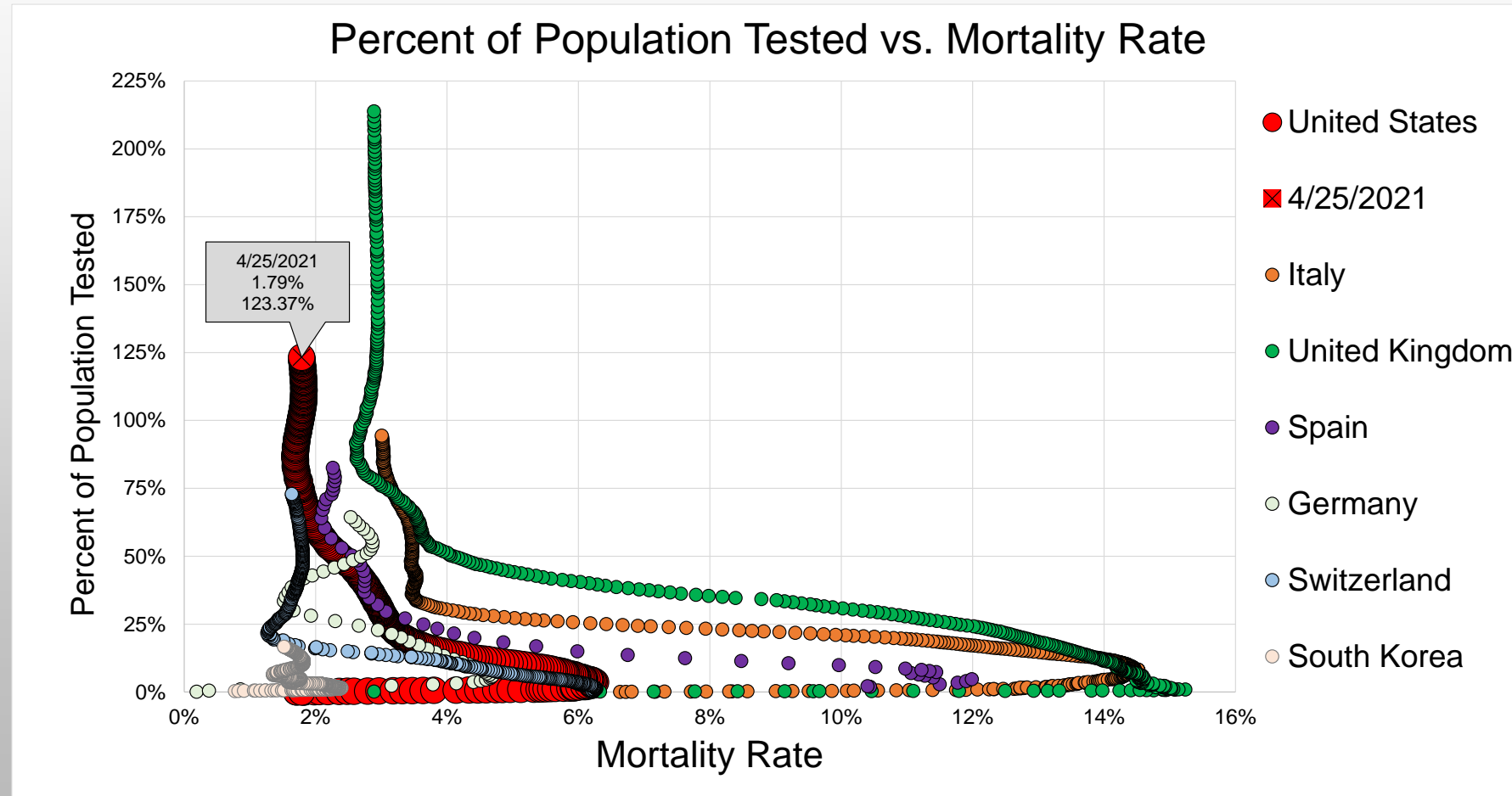
- Test positivity rates have been trending sideways in recent weeks.



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MORTALITY VS. TESTING RATES

- Actual infections have been much higher than confirmed case counts, so mortality rates are overstated.
- Early mortality rates in March and April missed a lot of infections (particularly in Italy, UK and Spain to the right). Over time, as fewer infections are missed (as testing ramped up), mortality rates trend down.
- The U.S. has trended to a ~1.79% mortality rate, but that's perhaps a 2-3X overstatement in the according to CDC true mortality rate (0.65%) estimates.





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