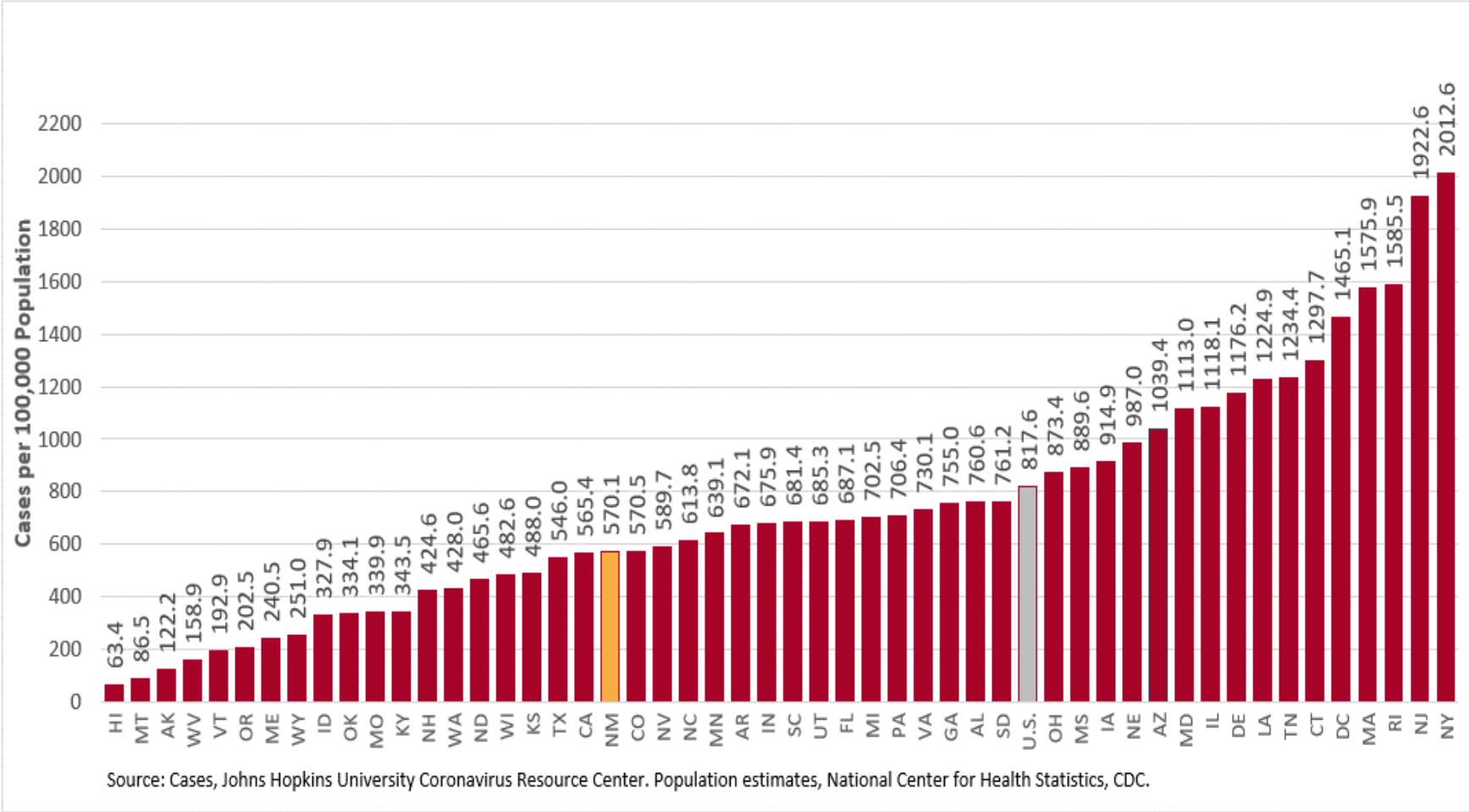


COVID-19 in New Mexico: Epidemiologic and Modeling Update

June 30, 2020

New Mexico has the 32nd highest prevalence in the United States



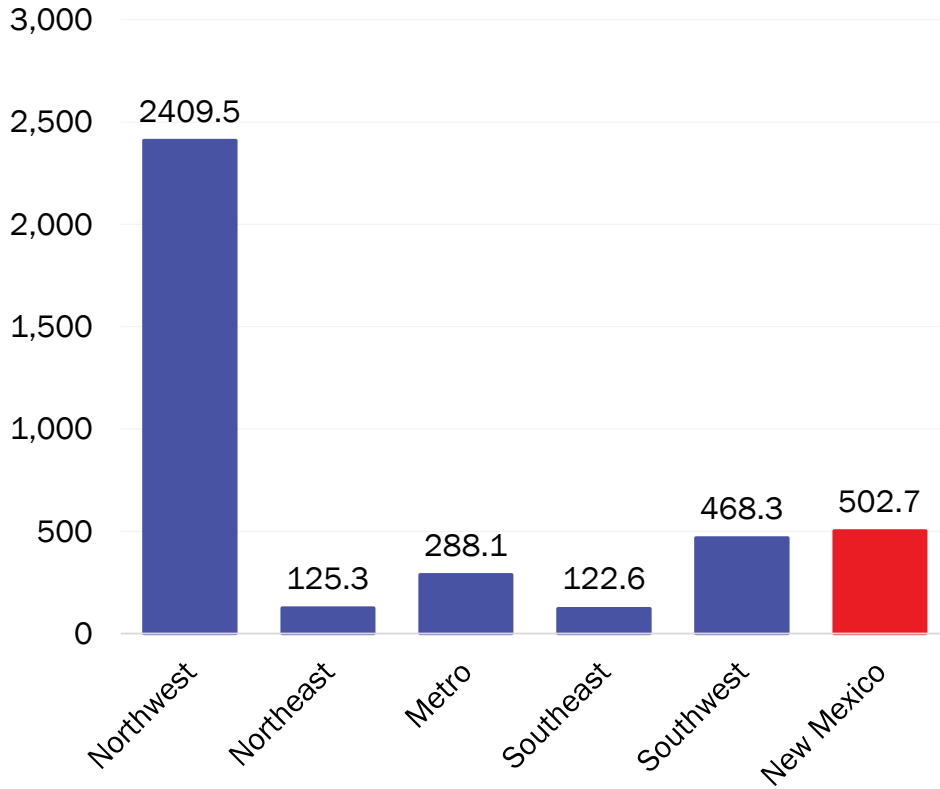
As of June 30, 2020



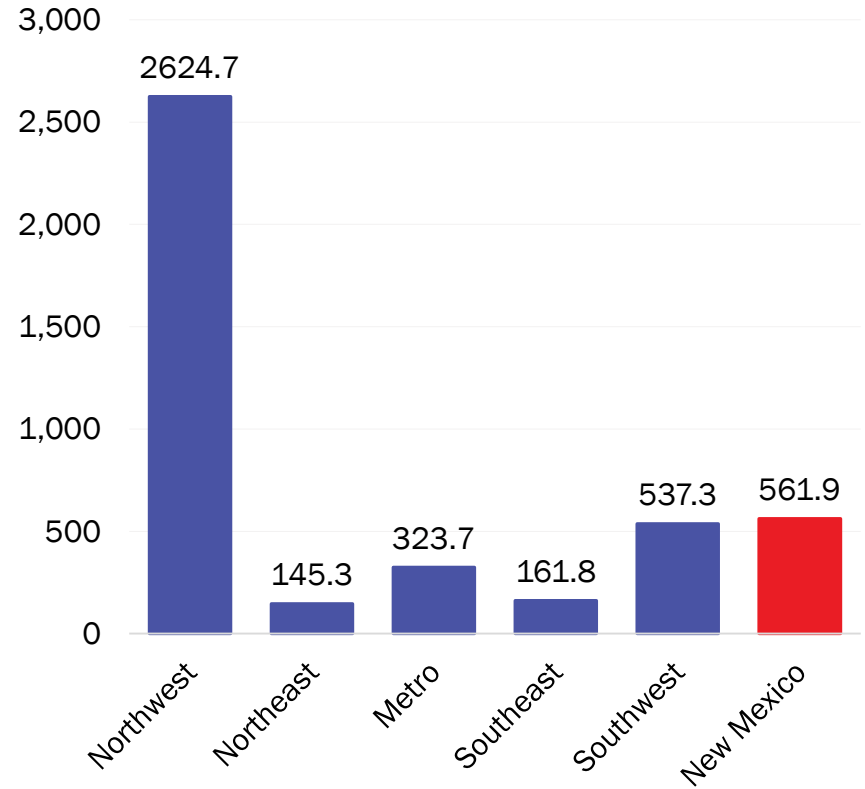
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COVID-19 prevalence per 100,000 population has increased across all regions

June 22, 2020

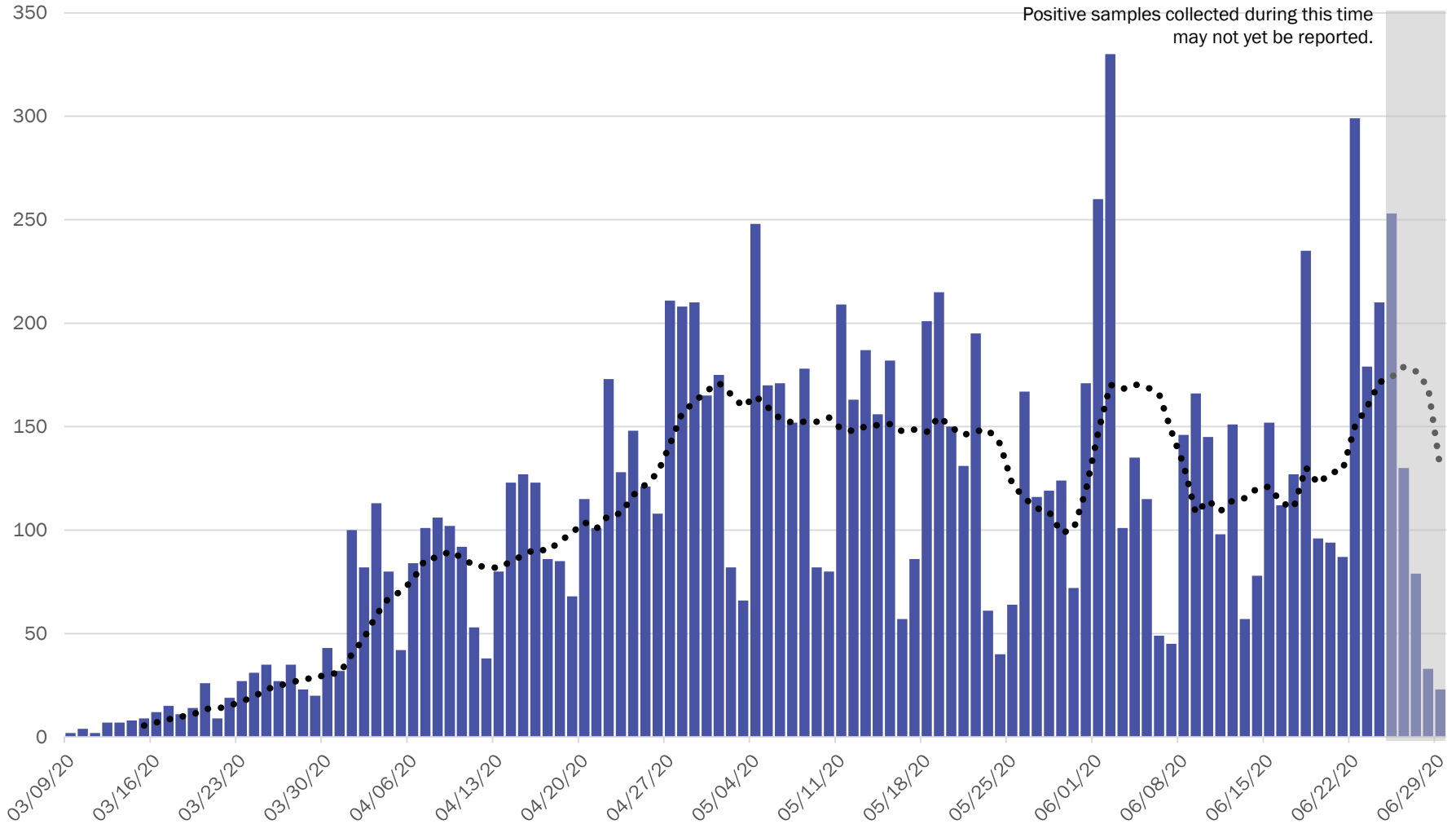


June 29, 2020



Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.28.2020, New Mexico Department of Health. Population estimates, UNM Geospatial and Population Studies Program.

New Mexico COVID-19 Cases by Date of Specimen Collection - 6/30/20



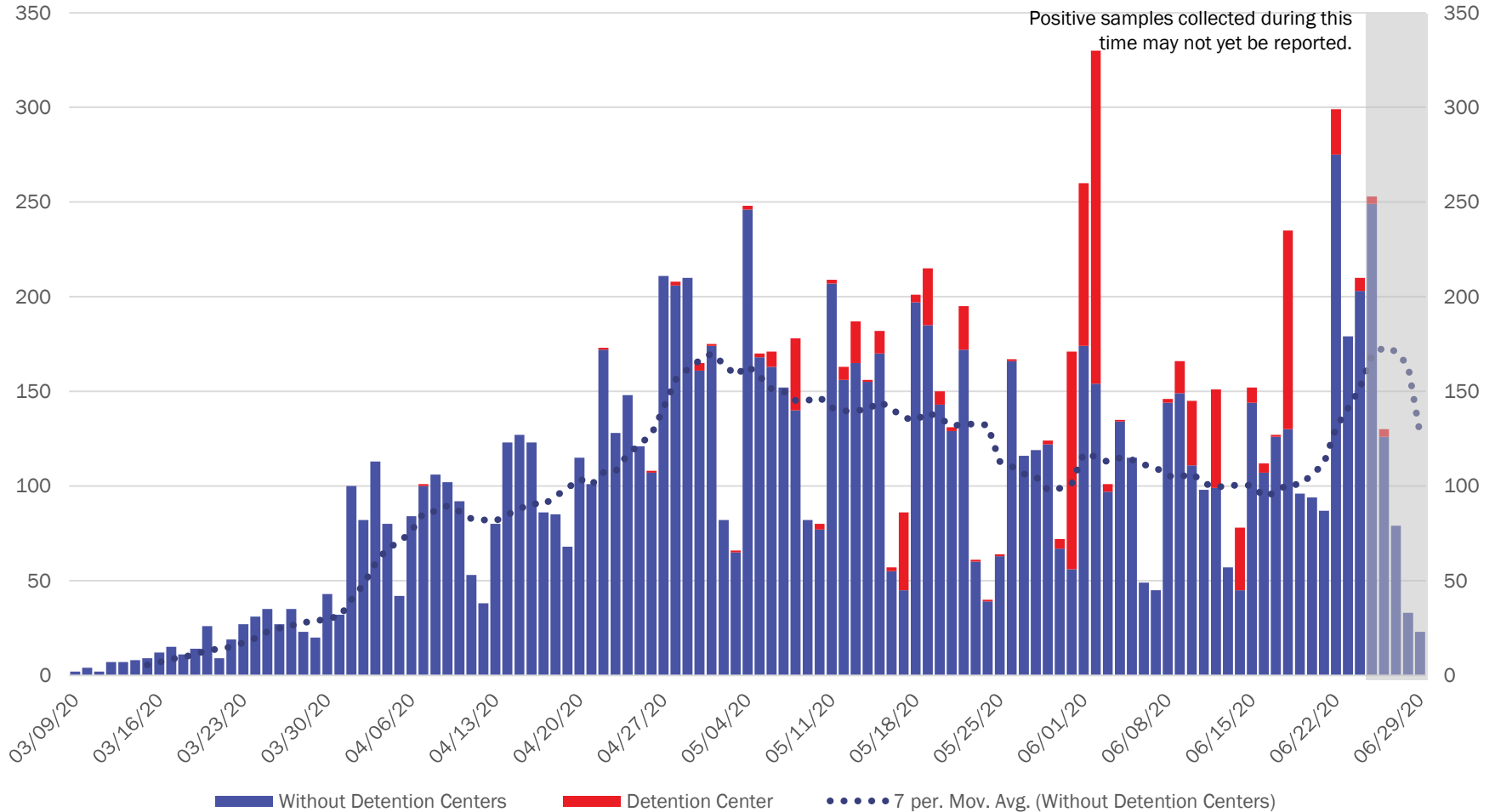
Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.



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Detention Center Impact: New Mexico Case Count by Collection Date - 6/30/2020



Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.

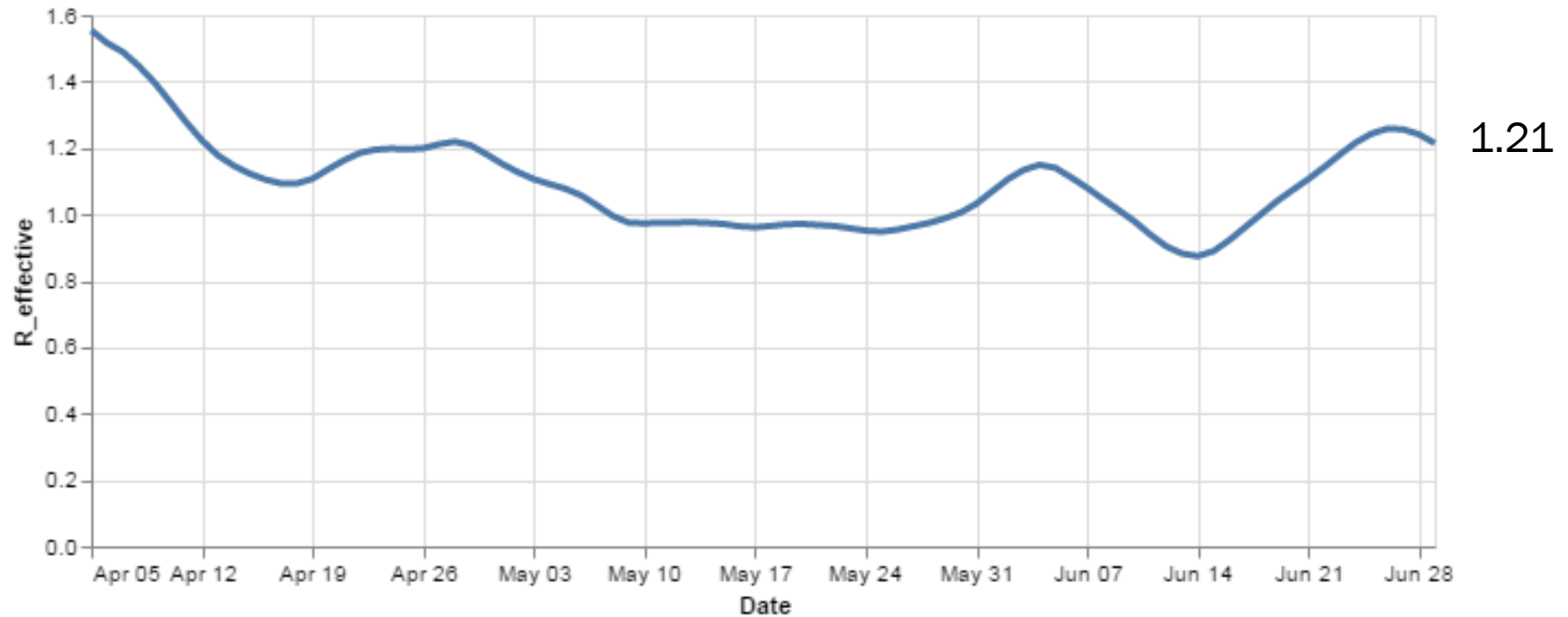


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Statewide R-effective continues to climb.

R_effective over time, state



1.21

Courtesy of Presbyterian Healthcare Services – June 29, 2020.

Key

- Low Level Endemic <1.0
- Approaching Low Level Endemic 1.0-1.05
- Requiring further mitigation >1.05

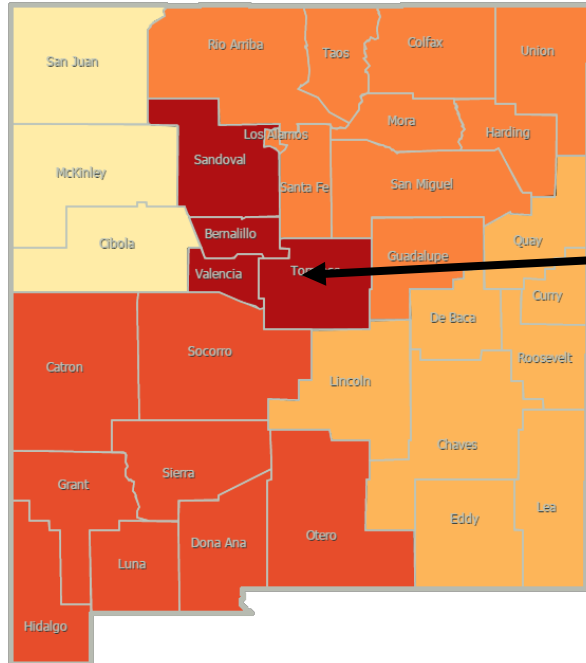
Northwest
R_effective 1.12 ↑

Northeast
R_effective 1.25 ↓

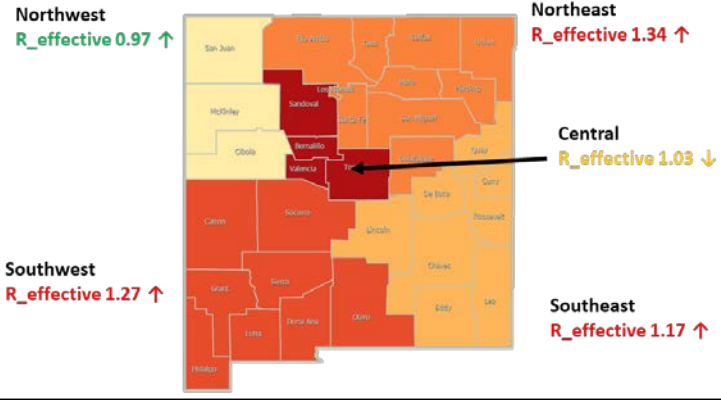
Central
R_effective 1.48 ↑

Southwest
R_effective 1.06 ↓

Southeast
R_effective 1.56 ↑



As of June 23, 2020



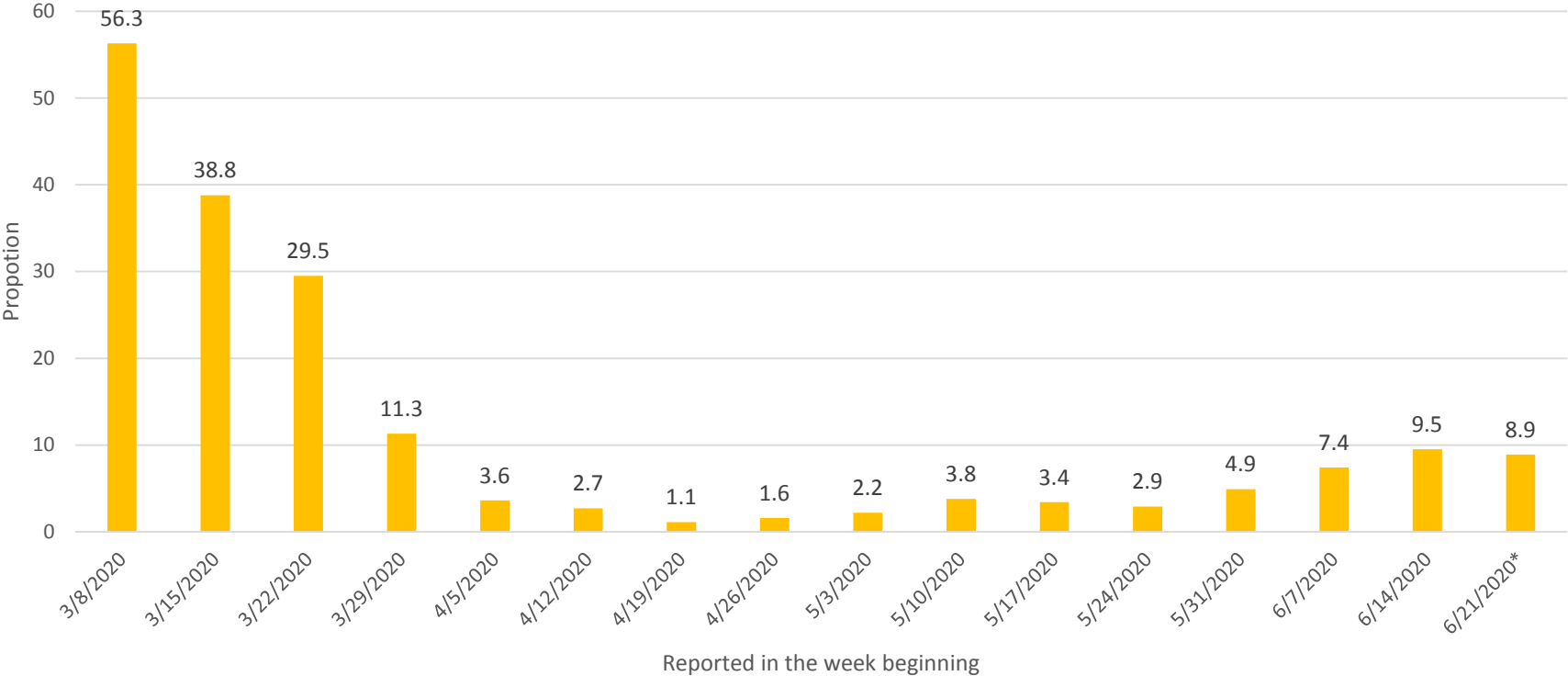
Courtesy of Presbyterian Healthcare Services – June 29, 2020.



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Proportion of New Mexico resident COVID19 cases who traveled outside of New Mexico in the 14 days before symptom onset by reported week (excluding state, federal and ICE prisoners, and out of state residents)



These data are based on self report and may be an underestimate
 *This report was generated before the week was finished, so not all cases have been counted

Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.26.2020, New Mexico Department of Health.



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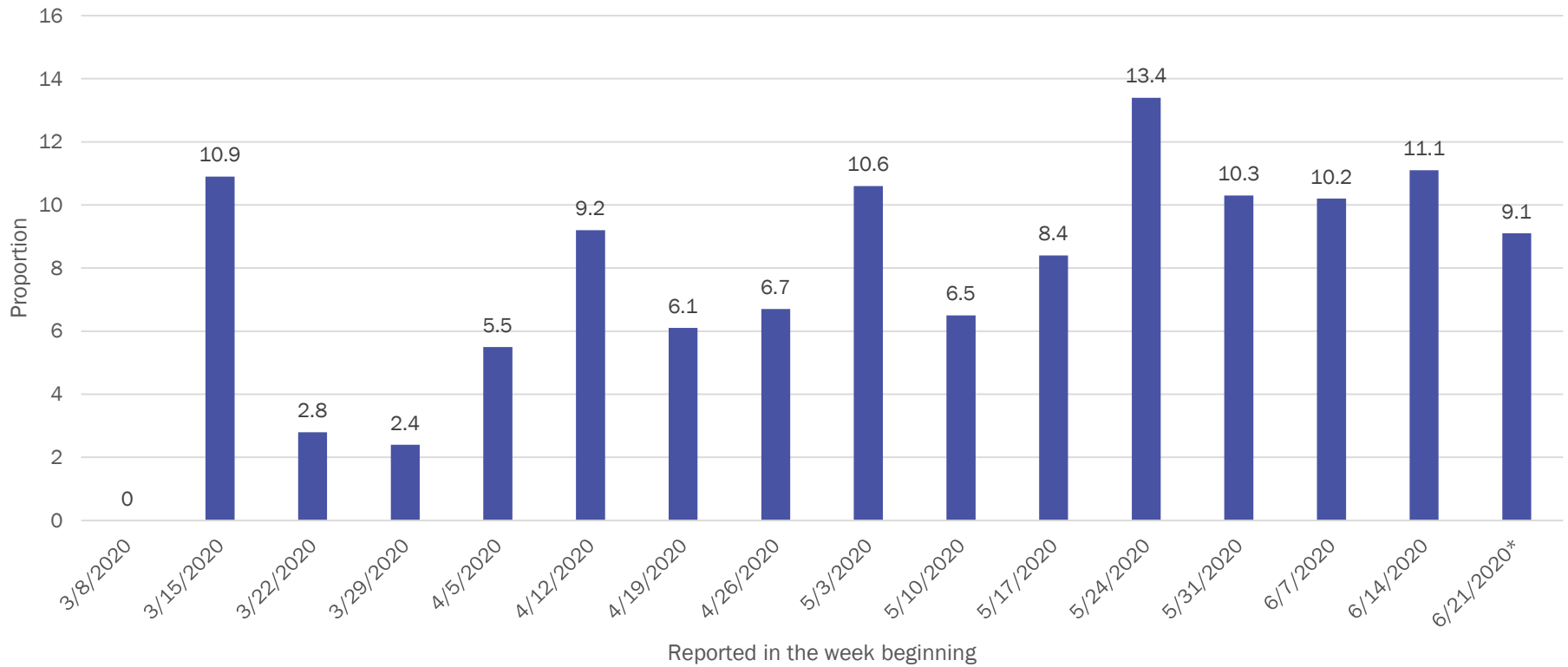


Most Commonly Cited Out-of-state Travel Locations



Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.26.2020, New Mexico Department of Health.

Proportion of COVID19 cases reported to NMDOH who are out-of-state residents by reported week, NMEDSS (excluding state, federal and ICE prisoners from denominator)



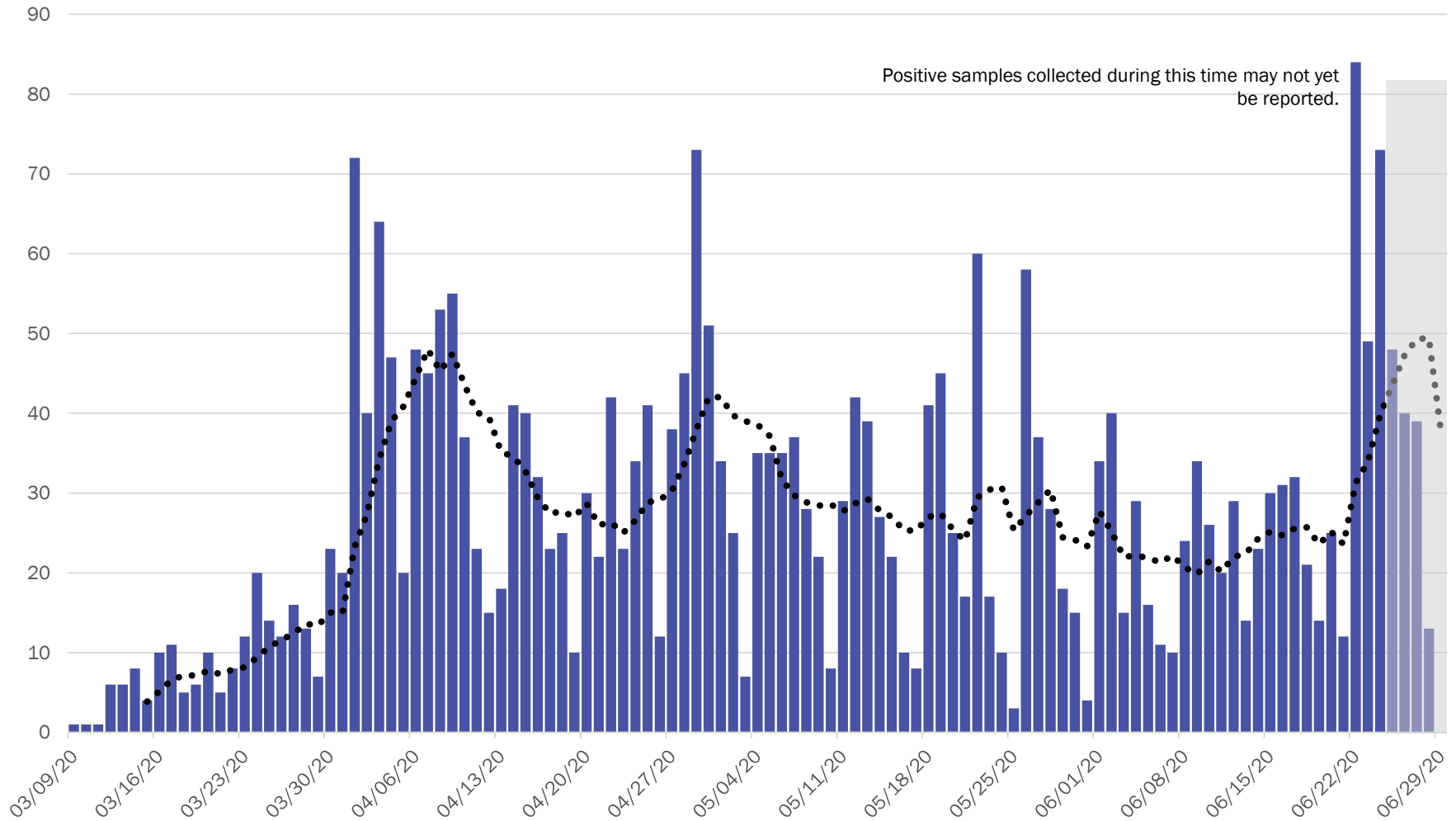
*This report was generated before the week was finished, so not all cases have been counted

Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.26.2020, New Mexico Department of Health.



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Metro Region Case Count by Collection Date with 7 Day Moving Average – June 30, 2020



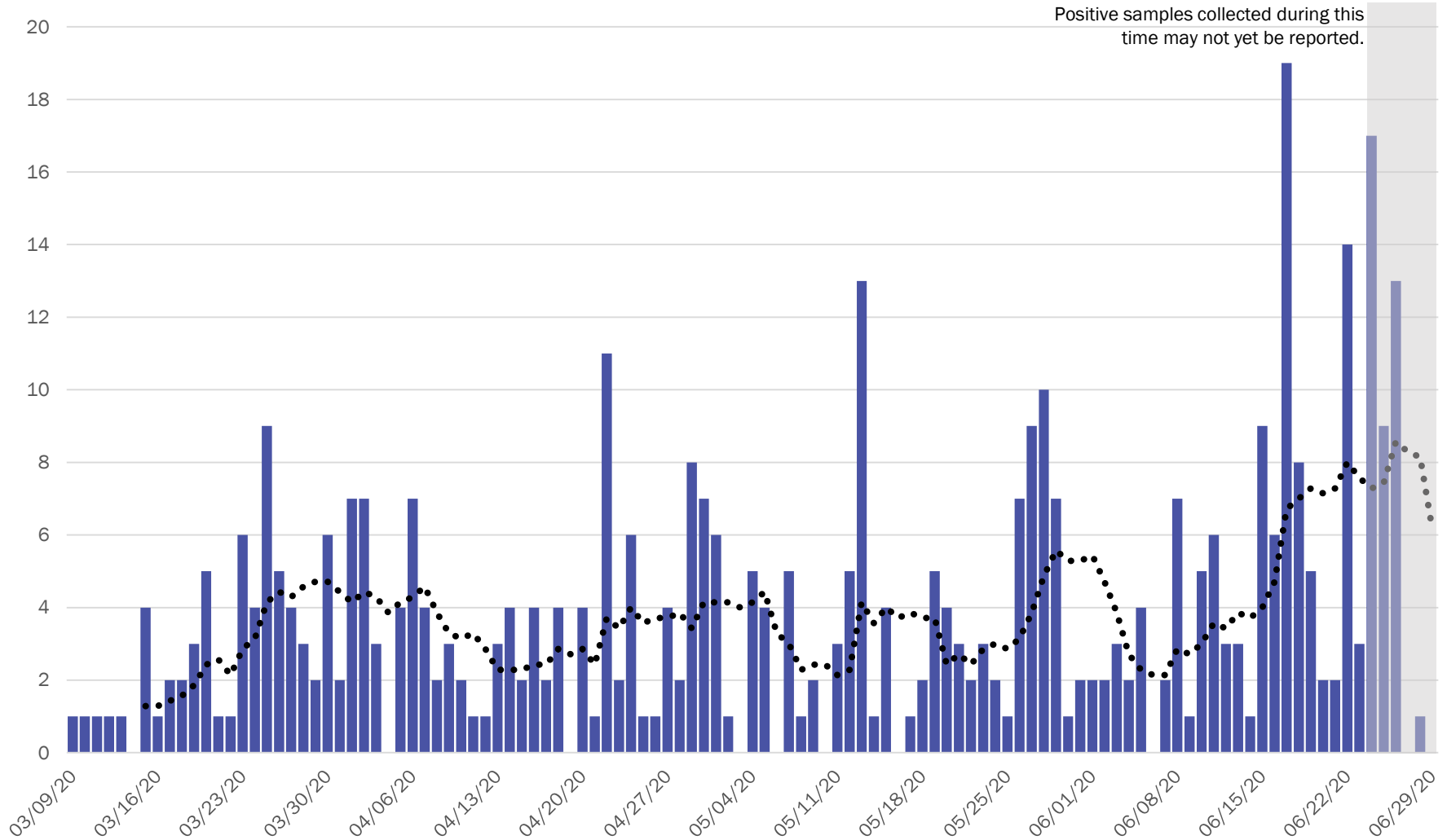
Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.



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Northeast Region Case Count by Collection Date with 7 Day Moving Average – June 30, 2020



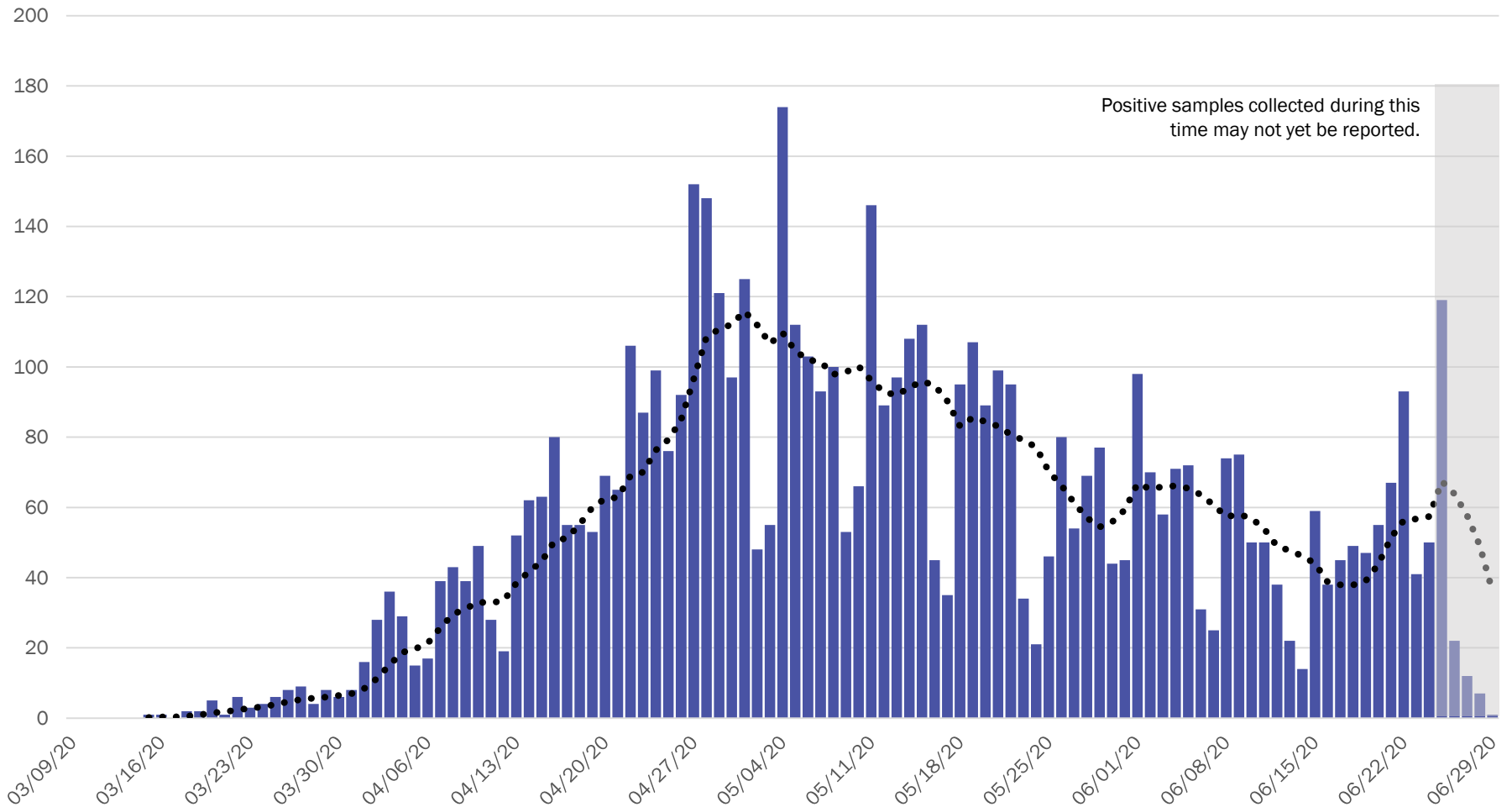
Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.



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Northwest Region Case Count by Collection Date with 7 Day Moving Average – June 30, 2020



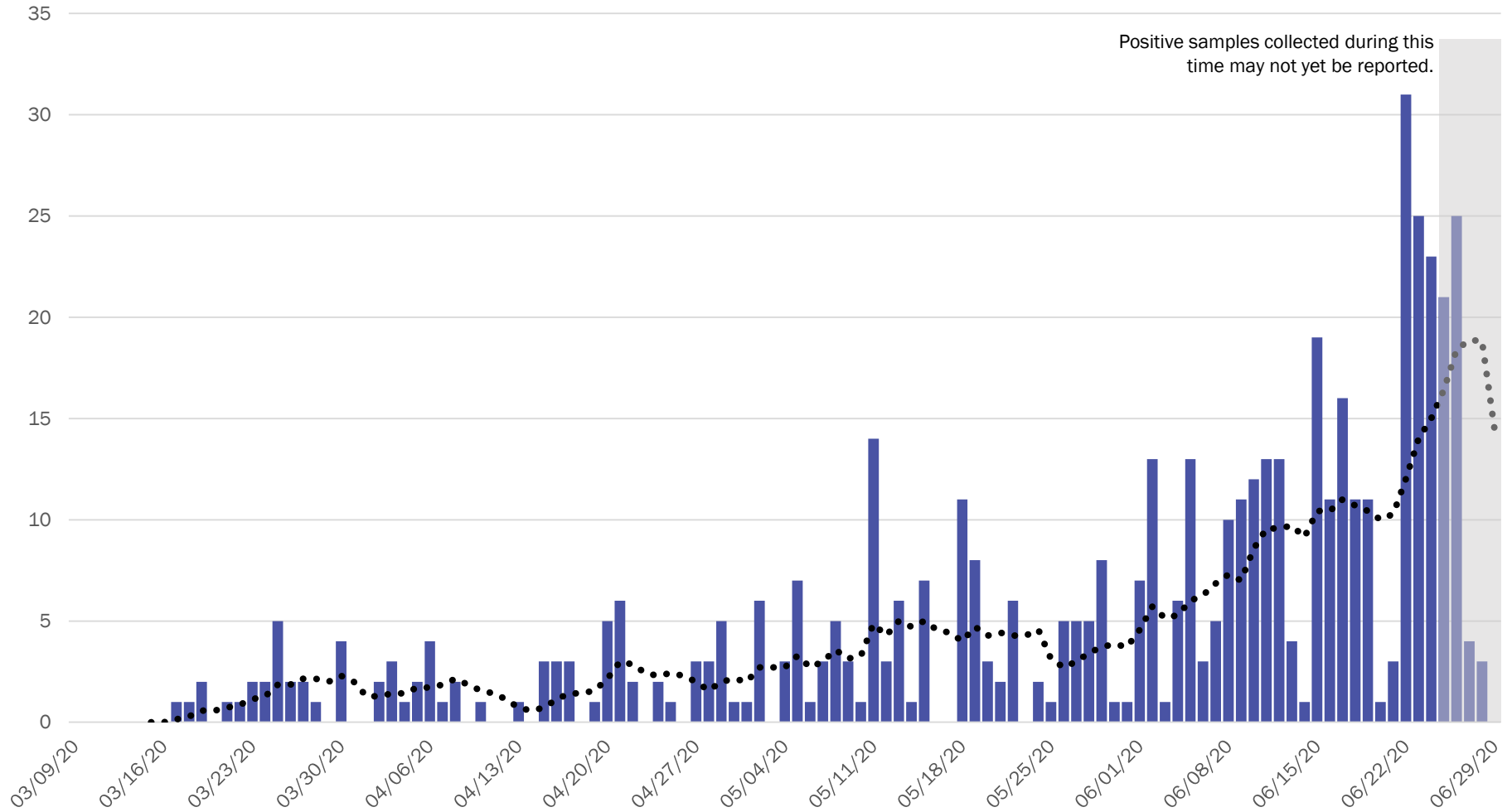
Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.



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Southeast Region Case Count by Collection Date with 7 Day Moving Average – June 30, 2020



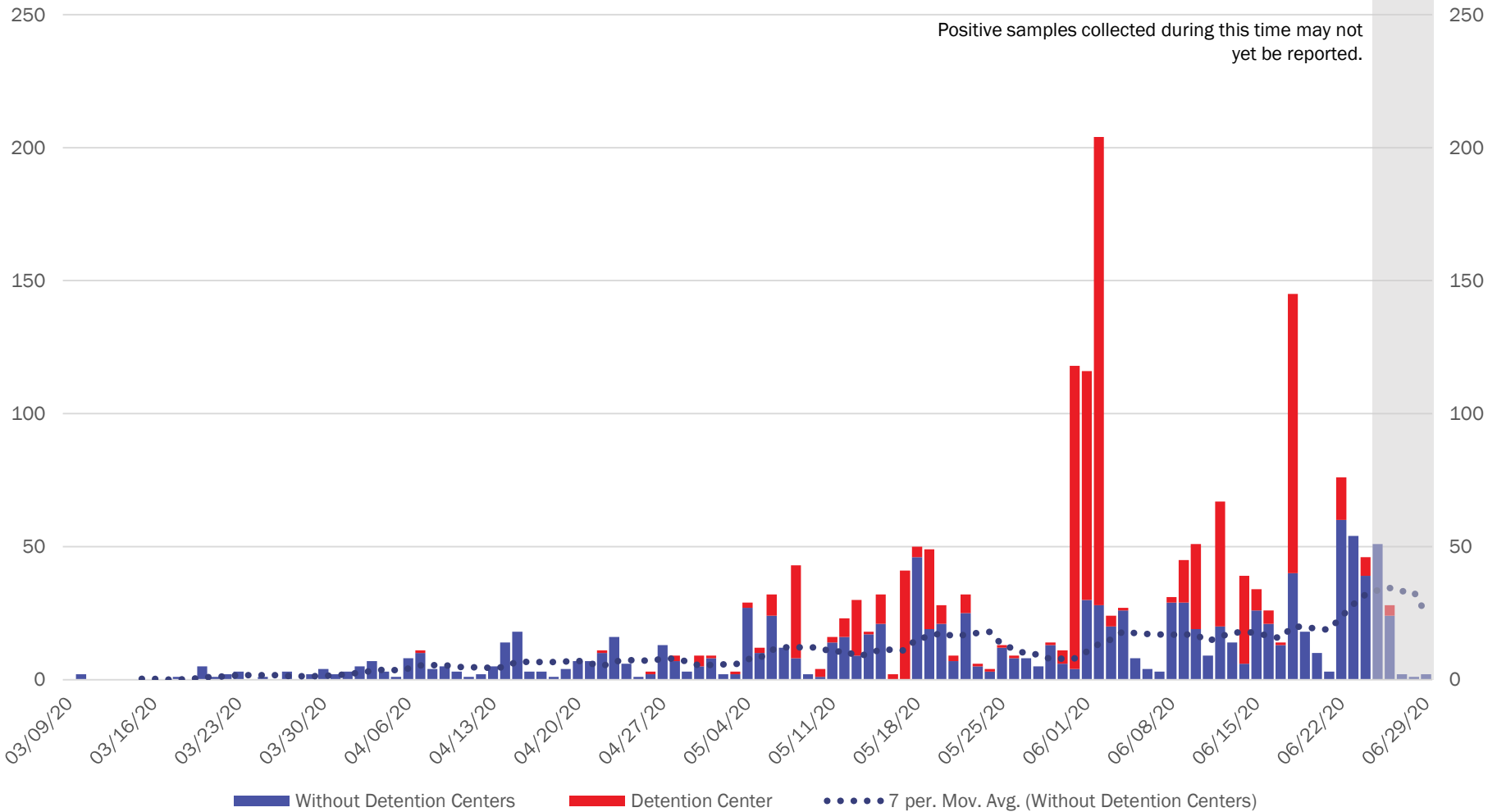
Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.



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Southwest Region Case Count by Collection Date with 7 Day Moving Average June 30, 2020



Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.30.2020, New Mexico Department of Health.

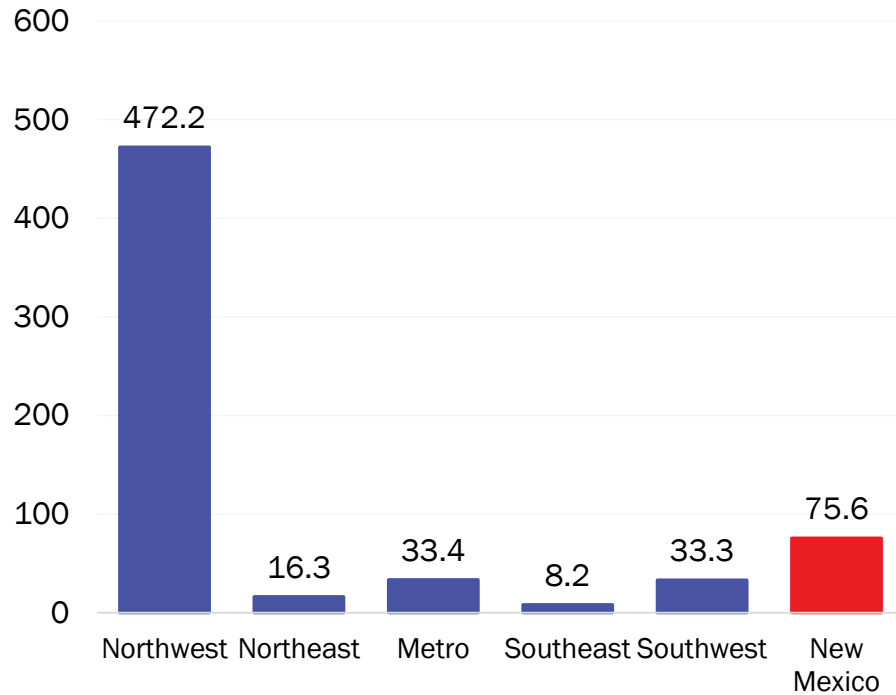


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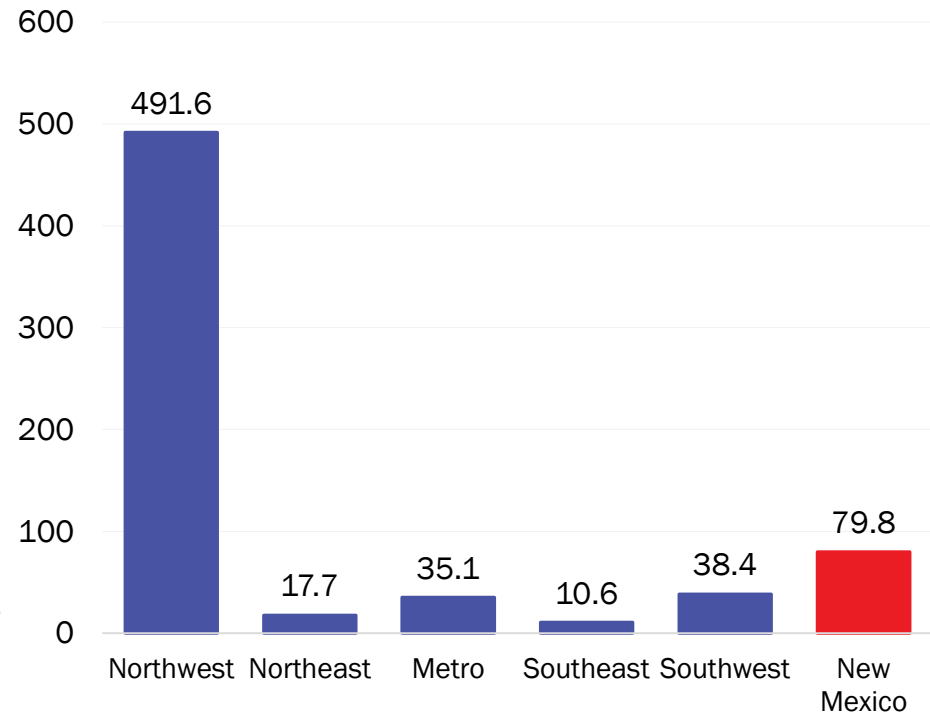
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The largest increase in COVID-19 hospitalization rate per 100,000 population is in the NW region

June 22, 2020

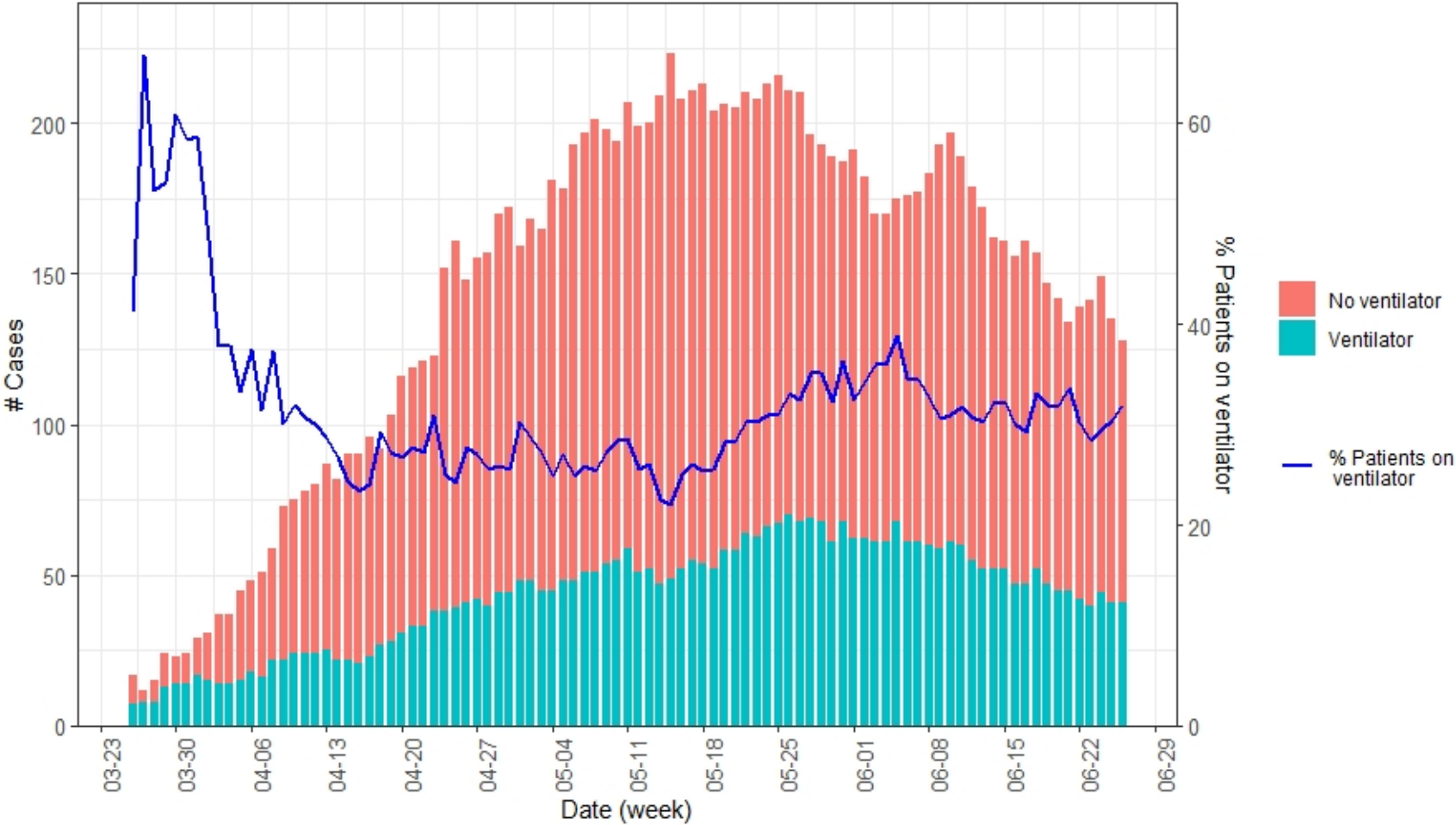


June 29, 2020



Source: Infectious Disease Epidemiology Bureau, Epidemiology and Response Division 6.29.2020, New Mexico Department of Health. Population estimates, UNM Geospatial and Population Studies Program.

COVID-19 hospitalizations are declining, and ventilator use remains ~30%



As of June 25, 2020

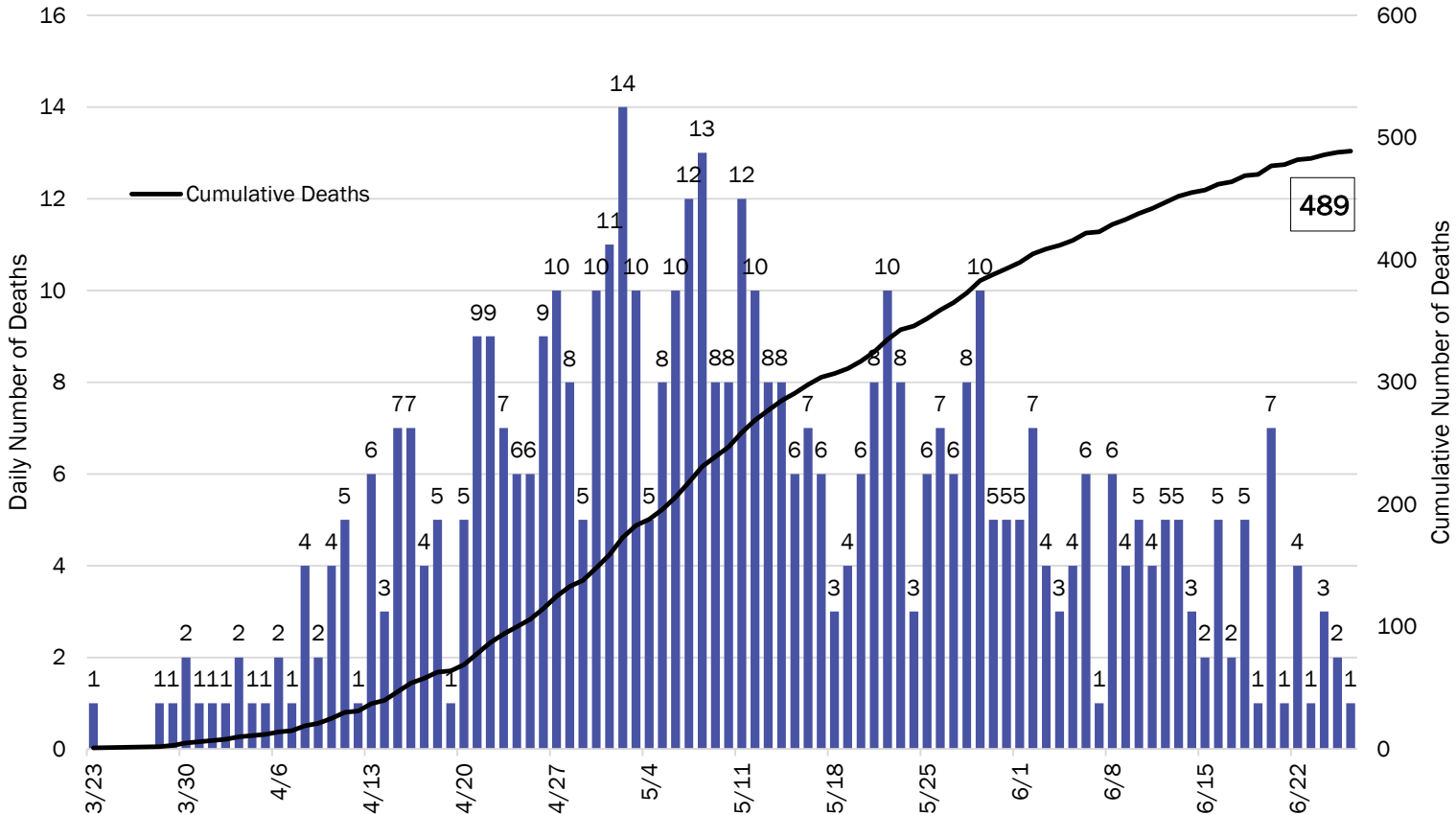


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COVID-19 deaths are declining



Reporting through 6/26/2020

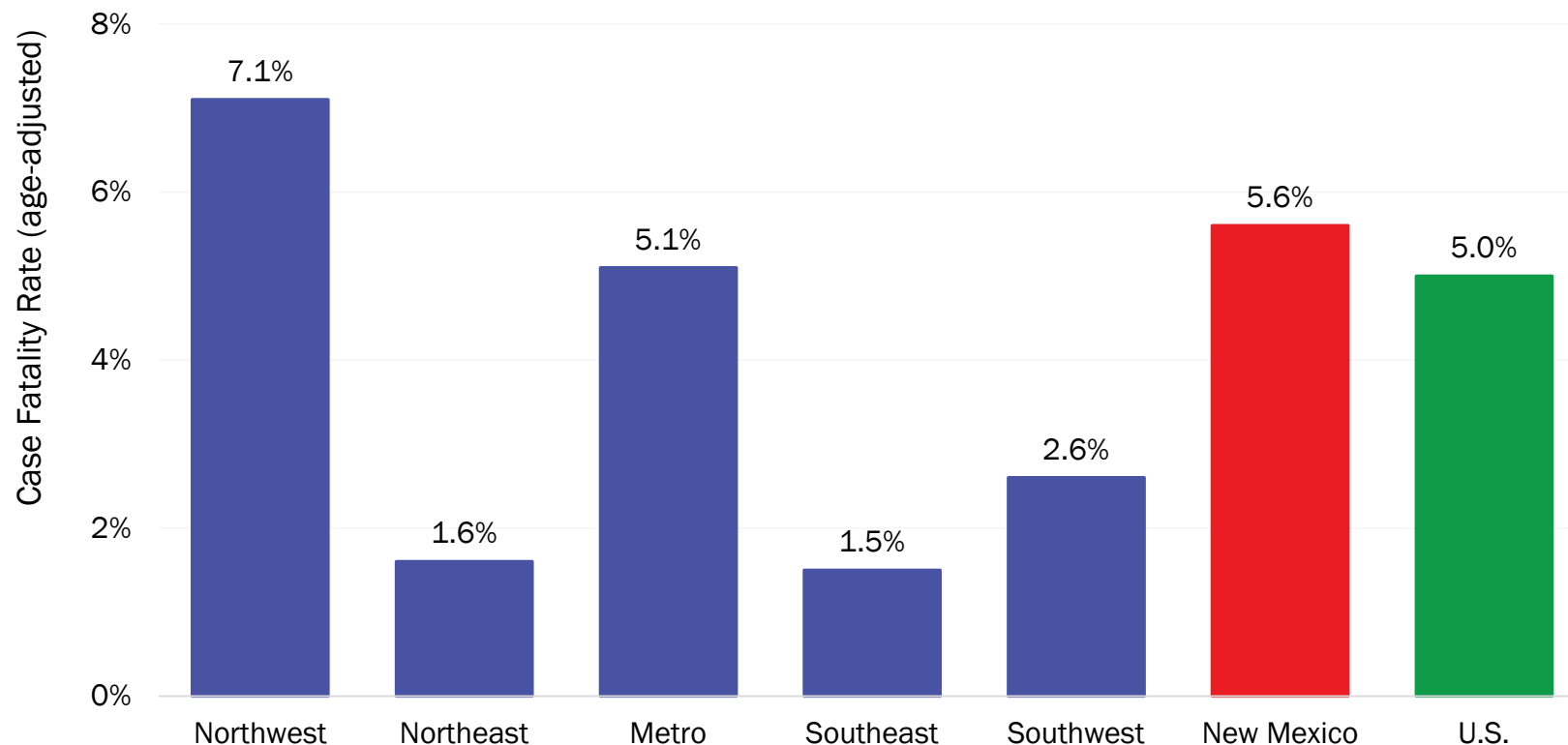


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COVID-19 case fatality rates have decreased in the NW, Metro, and Southeast regions since last week

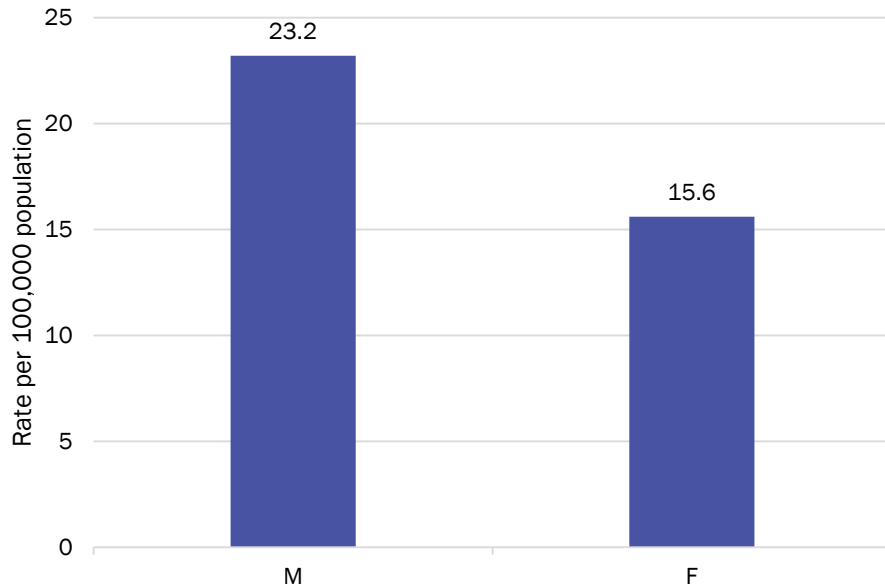


Rates have been age-adjusted to U.S. COVID-19 cases.

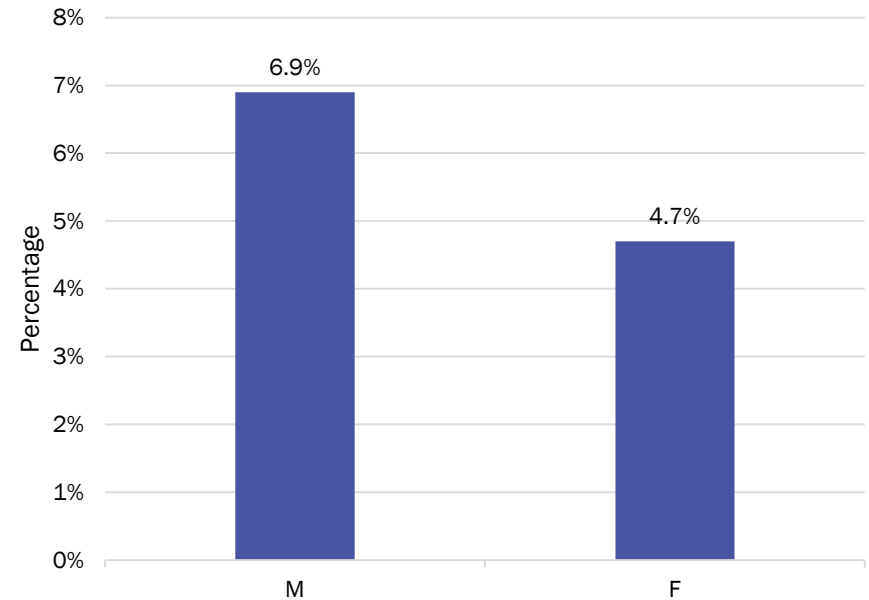
Source: Bureau of Vital Records and Health Statistics and Infectious Disease Epidemiology Bureau, Epidemiology and Response Division, reporting through 6.29.2020, New Mexico Department of Health.

The COVID-19 mortality and case fatality rates are higher in males than females

COVID-19 Age-Adjusted Mortality Rate by Gender, New Mexico



COVID-19 Age-Adjusted* Case Fatality Rate by Gender, New Mexico

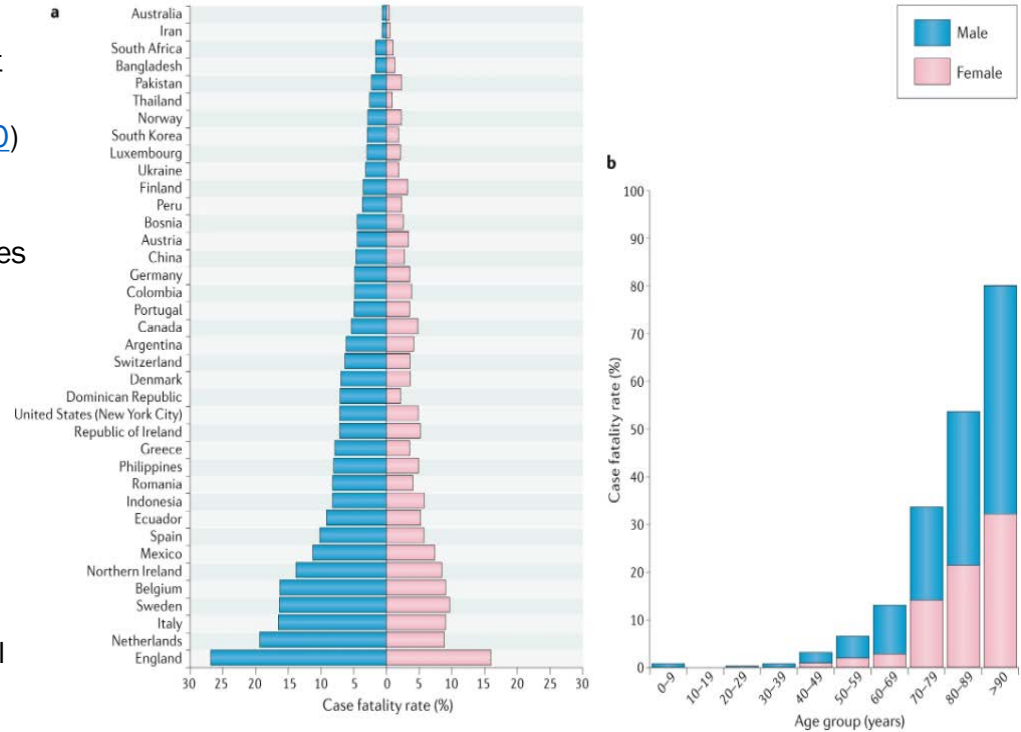


Reporting through 6/26/2020

Reporting through 6/26/2020; *Adjusted to U.S. COVID-19 cases.

A male bias in COVID-19 mortality and case-fatality rates has emerged worldwide

- Early evidence in China, South Korea, and United States
 - China: Increased hospital admissions and mortality rate in males ([Chen et al. 2020](#), [Guan et al. 2020](#))
 - South Korea: ~60% of females tested positive, but had lower case fatality rate ([Dudley et al. 2020](#), [Ministry of Health and Welfare of South Korea 2020](#))
 - United States: prioritization of testing for symptomatic disease revealed similar diagnosis rates between males and females, but 1.5 times higher mortality in males ([NYC COVID-19 data](#))
- 37/38 countries that provide sex aggregated data report a male bias in mortality ([Jin et al. 2020](#), [Peckham et al. 2020](#))
 - Male CFR is 1.7 times higher than females (male CFR 7.3, female CFR 4.4)
 - Increased risk with advancing age and/or co-morbidity for both sexes, but higher in males at all ages above 30 years
 - Increased mortality risk in males, but gender-associated risks influence differences in infection rates

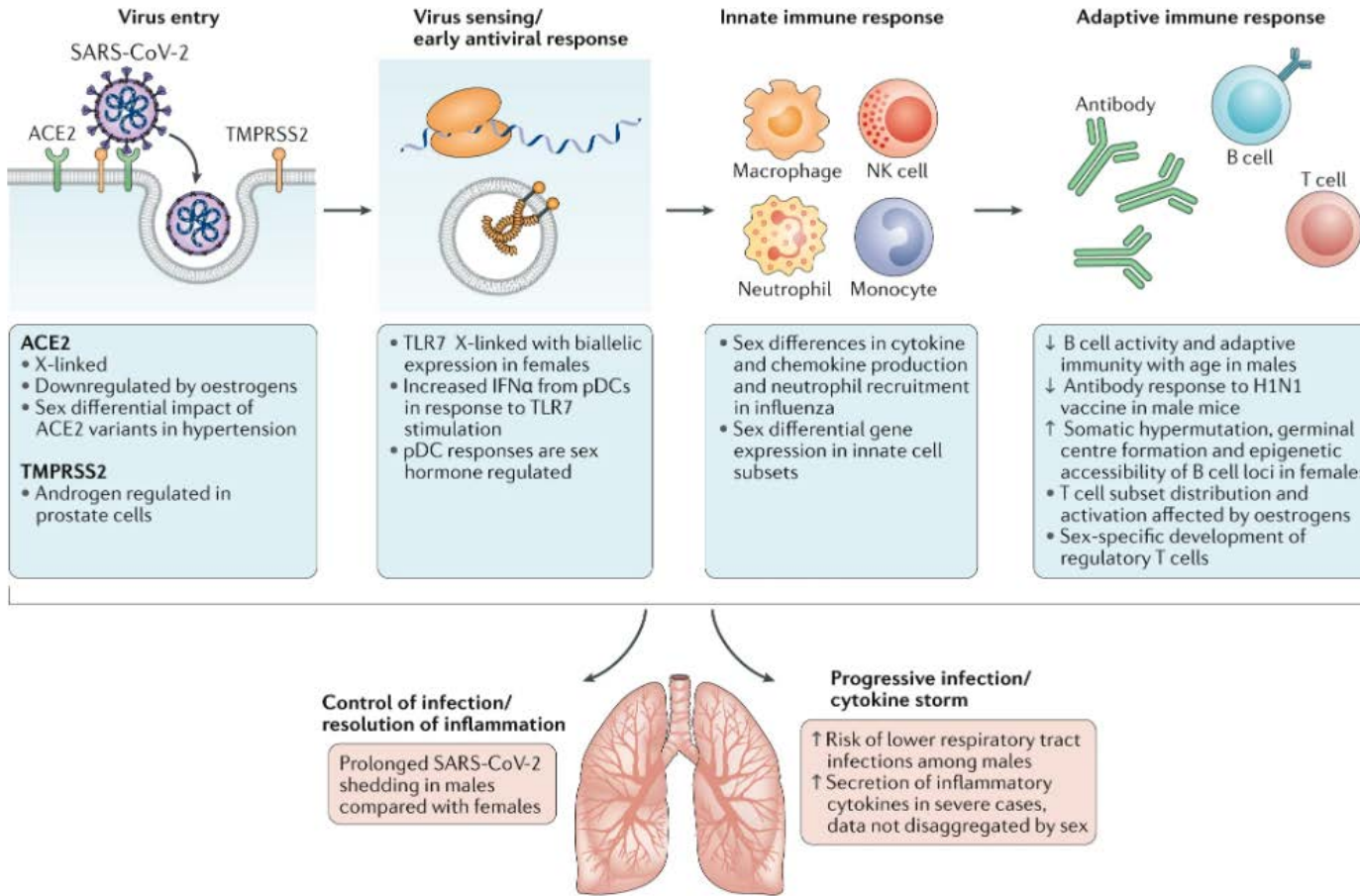


[Scully et al. 2020](#)

Biological sex differences in response to COVID-19 are consistent with other viral pathogens

- These differences encompass “susceptibility to infection, early pathogenesis, innate viral control, adaptive immune response or the balance of inflammation and tissue repair in the resolution of infection.” ([Scully et al. 2020](#))
- Influence of sex steroids, sex chromosomes, genomic and epigenetics
- Differentially affects the aging of the immune system. The resulting immune response to SARS-CoV-2 infection remains unclear
 - Alterations in sex steroid concentrations
 - Age-related mosaic loss of chromosome Y in leukocytes may cause changes in transcriptional regulation of immunoregulatory gene ([Dumanski et al. 2020](#))
- Consistent with observations during the MERS and SARS epidemics

Known sex differences that may impact immune responses to SARS-CoV-2 and COVID-19 progression



Integrate sex as a biological variable in all stages of the research and development pipeline (for example- improve therapeutics, vaccine design and efficacy)

Include sex in the intersection of other demographic variables such as age and race/ethnicity to understand the biological and sociocultural factors that result in differing COVID-19 outcomes

[Scully et al. 2020](#)

New Mexico Status Updates

- Case count: Statewide, daily case counts are increasing.
- Hospitalizations: For the past three weeks, hospitalizations have declined.
- Deaths: Deaths have been steadily declining since mid-May.
- Social distancing: Cell phone data suggests the mobility of New Mexico is on the rise and, in some counties, is reaching pre-pandemic levels.
- Contact tracing: The median time to quarantine for contacts identified last week was 2 days.

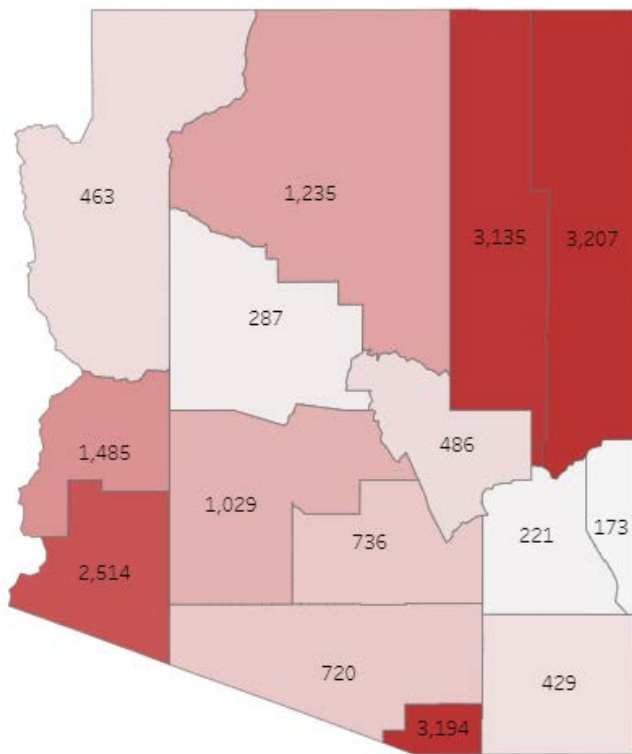
Supplementary Slides

Modeling Assumptions

Variable	Measured Value	Value as of 6.29.20
R_Effective	Actual Measured Daily Value by key county	R_eff=1.21
Positive Test Multiplier	Calculated by LANL	4.1
Hospitalization and Mortality	Actual rolling value / estimated number of total infected	Medical 0.2% ICU 0.2% Vent Rate 63.5% of ICU Crude Case Fatality Rate 4.1%
Length of Stay	Actual rolling value / estimated number of total infected	Medical 5 days ICU 14 days ICU on Vent 14 days

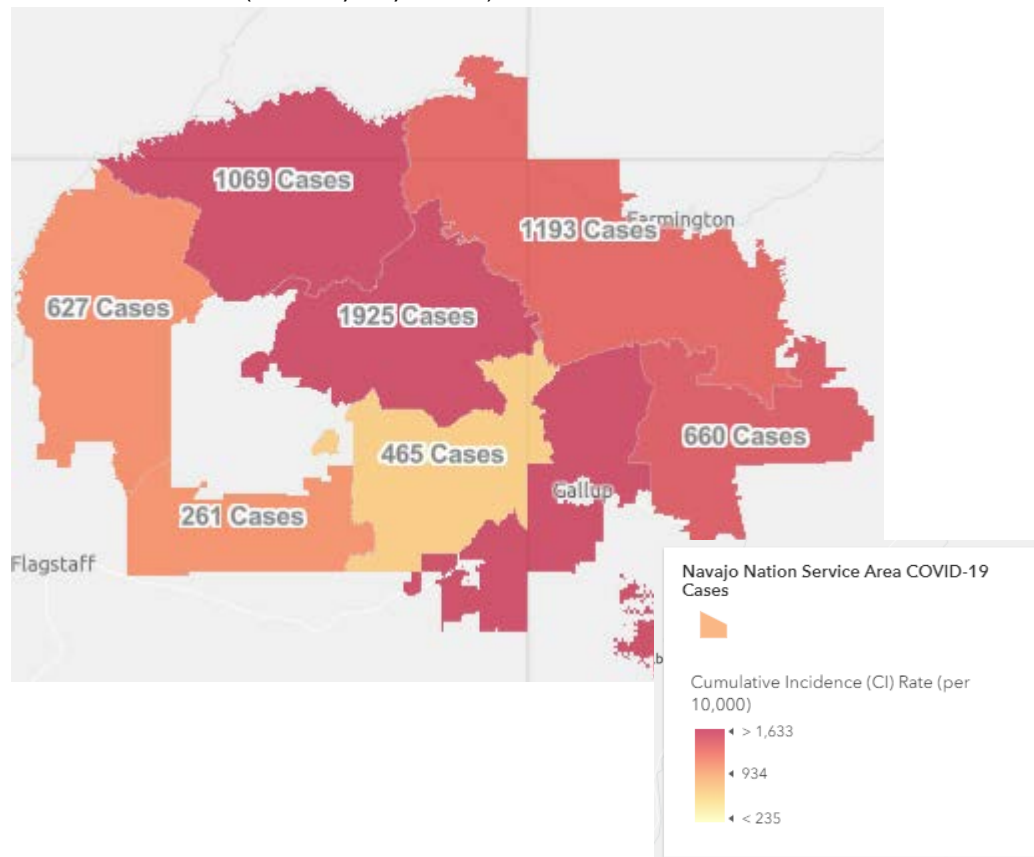
The areas with the largest burden of disease in AZ also border the NW region in NM

AZ cases per 100,000 population
(as of 6/29/2020)



Source: <https://www.azdhs.gov/preparedness/epidemiology-disease-control/infectious-disease-epidemiology/covid-19/dashboards/index.php>

Navajo Nation Service Area
Cumulative incidence rate per 10,000
(as of 6/27/2020)

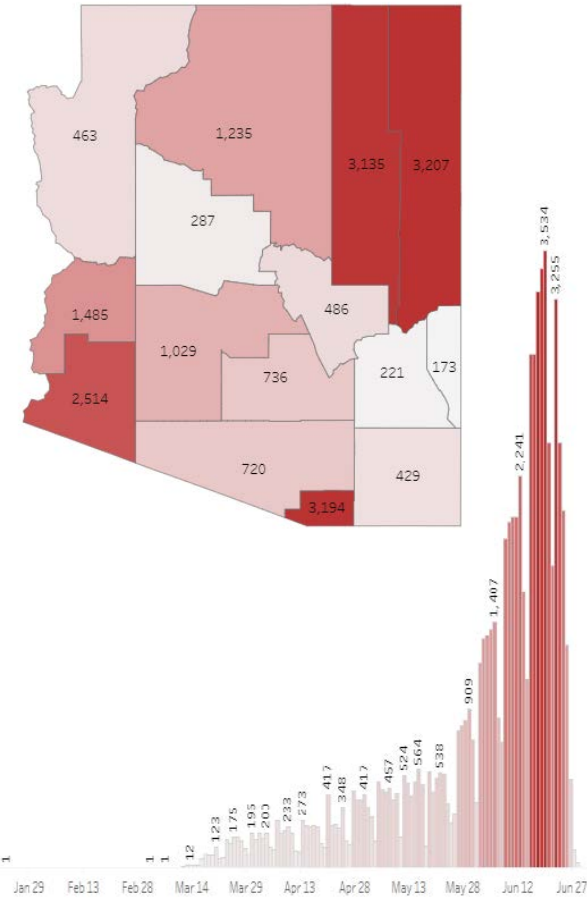


Source: <https://navajo-nation-coronavirus-response-ndoh-nec.hub.arcgis.com/>

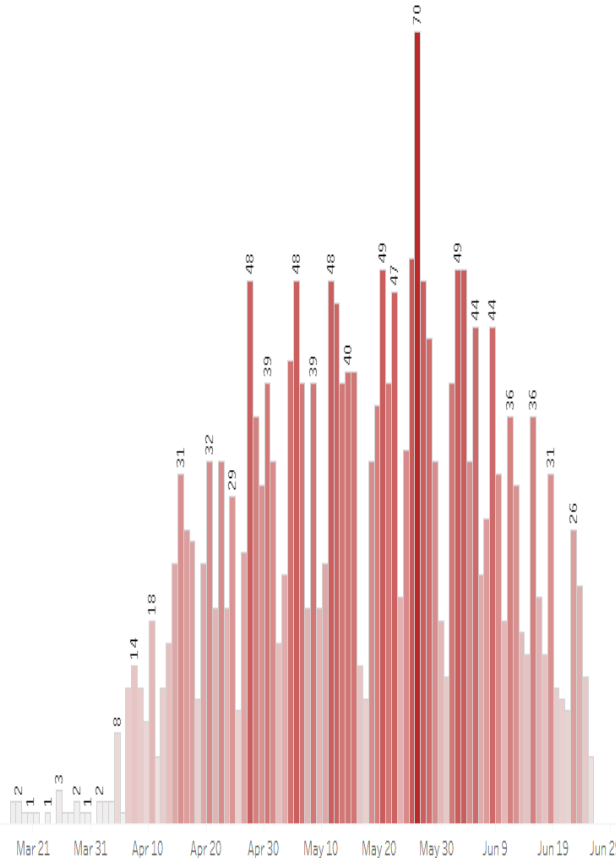
Case counts in Apache County may be decreasing, while Navajo County is increasing (as of June 29, 2020)

Note: Illness in the last 4-7 days may not be reported yet

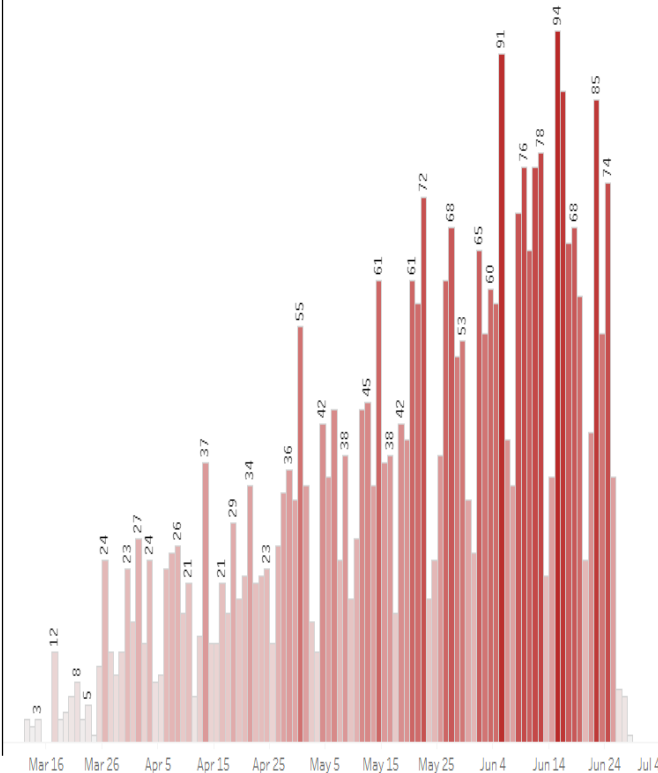
Arizona



Apache County (n=2,309)



Navajo County (n=3,570)

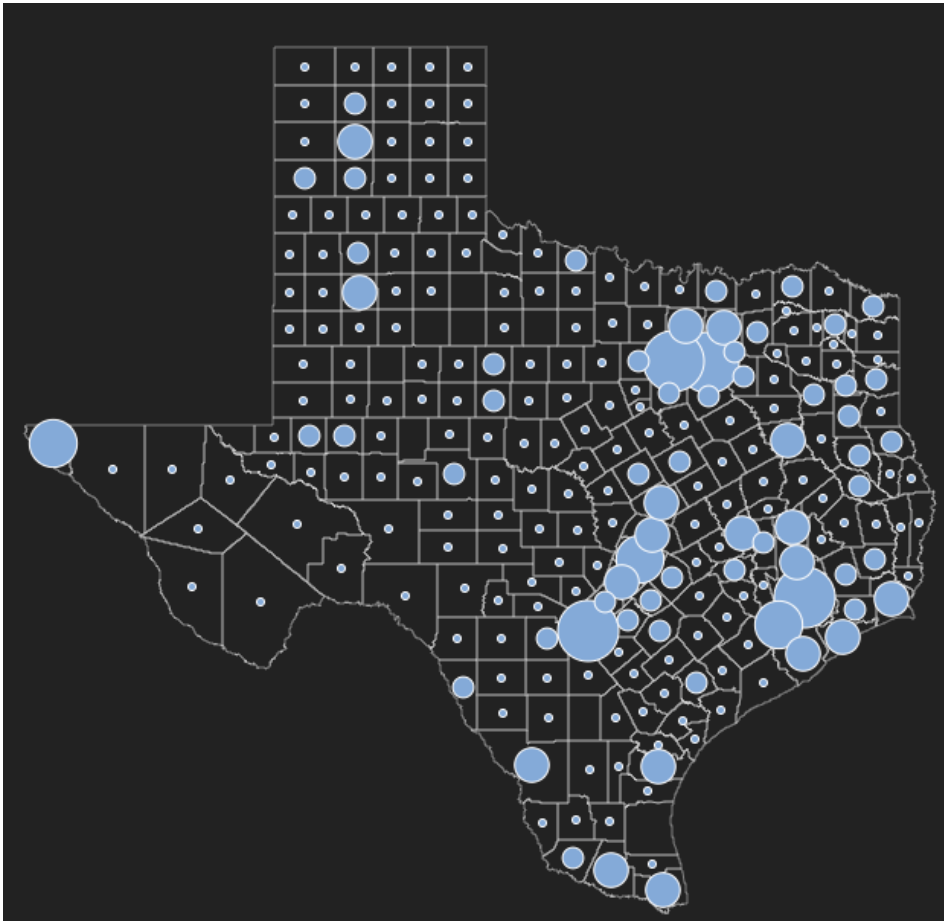


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Source: <https://www.azdhs.gov/preparedness/epidemiology-disease-control/infectious-disease-epidemiology/covid-19/dashboards/index.php>

El Paso County has the 6th highest number of cases in Texas: 5,745 (as of 6/28/2020)



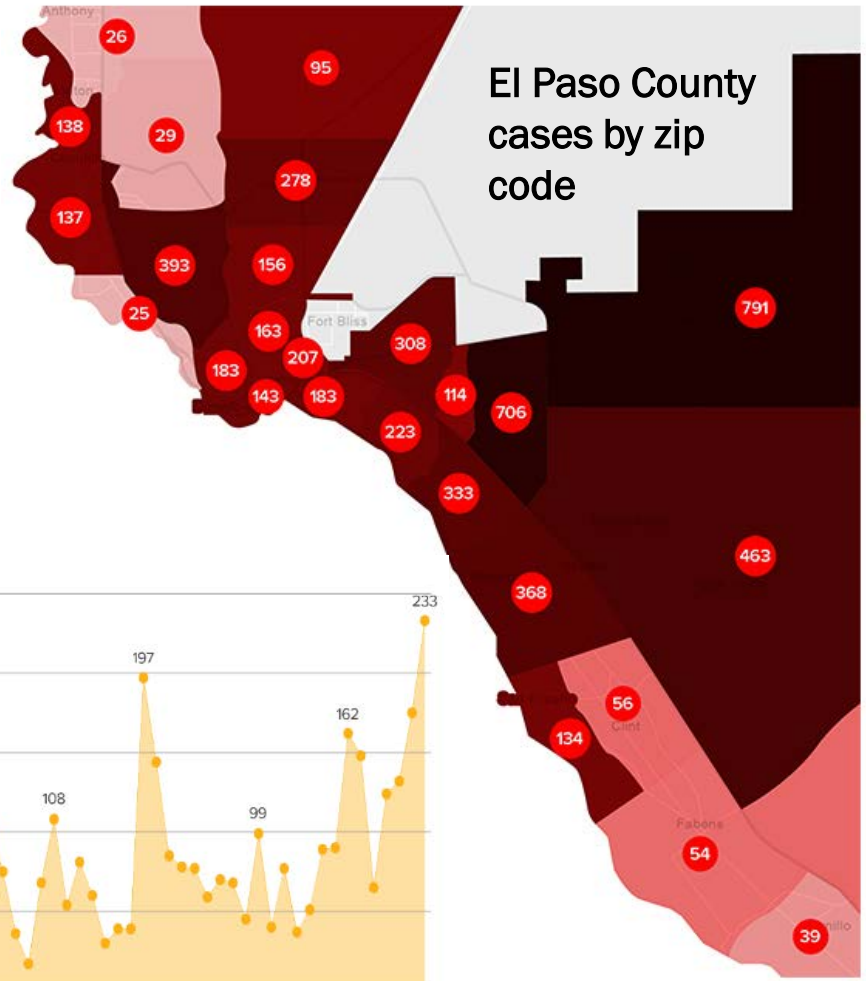
COVID-19 in El Paso, TX	
Total cases	5,745
Active cases	1,932
Recoveries	3,685
Fatalities	128

Source: <http://epstrong.org/results.php>

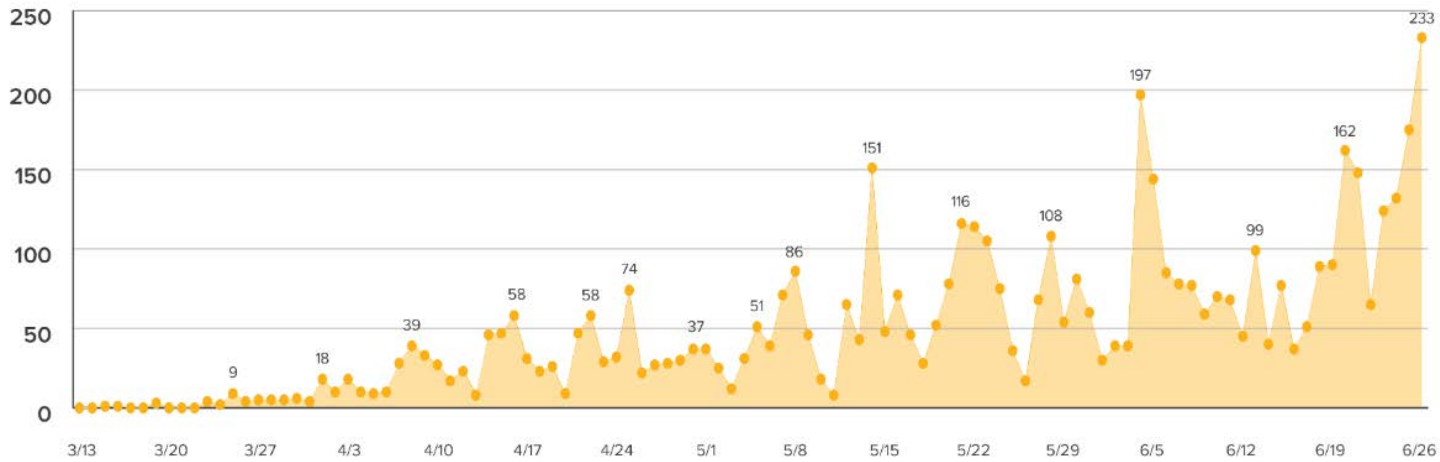
Source:

<https://txdshs.maps.arcgis.com/apps/opsdashboard/index.html#/ed483ecd702b4298ab01e8b9cafc8b83>

Number of cases in El Paso, TX is increasing



Day by day cases (as of June 26, 2020)



>100 cases confirmed near the border with NM (as of June 21, 2020)

Source: <http://epstrong.org/results.php>



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