

# COVID-19 Update

## 8/30/21

*Marcy Flanagan, DBA, MPH, MA*

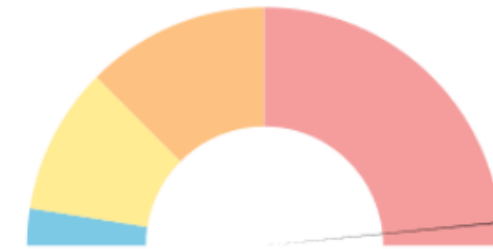
*Rebecca Sunenshine, MD, FIDSA  
CAPT, USPHS*

# COVID-19 in Maricopa County



Rate Benchmark: Dates 08/15/21 - 08/21/21

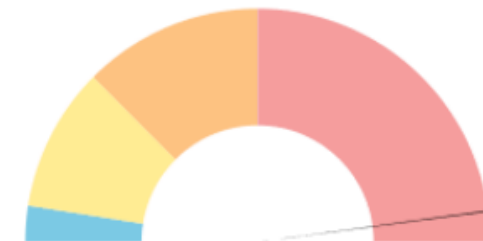
	Total number of cases*		Cases as of yesterday†	
	number	(%)	number	(change)
<b>Cases</b>	633127	(100%)	630605	(+2522)
<b>Gender</b>				
Female	328022	(52%)	326738	(+1284)
Male	303579	(48%)	302348	(+1231)
Unknown	1526	(0%)	1519	(+7)
<b>Age group</b>				
0-19 years	114137	(18%)	113263	(+874)
20-44 years	286174	(45%)	285208	(+966)
45-64 years	162696	(26%)	162171	(+525)
65+ years	69903	(11%)	69750	(+153)
Unknown	217	(0%)	213	(+4)
<b>Hospitalized‡</b>	44810	(7%)	44708	(+102)
<b>ICU‡</b>	2823	(0%)	2820	(+3)
<b>Deaths</b>	10738	(2%)	10696	(+42)



329

cases per 100,000 Maricopa County residents per week

Rate Benchmark: Dates 08/08/21 - 08/14/21



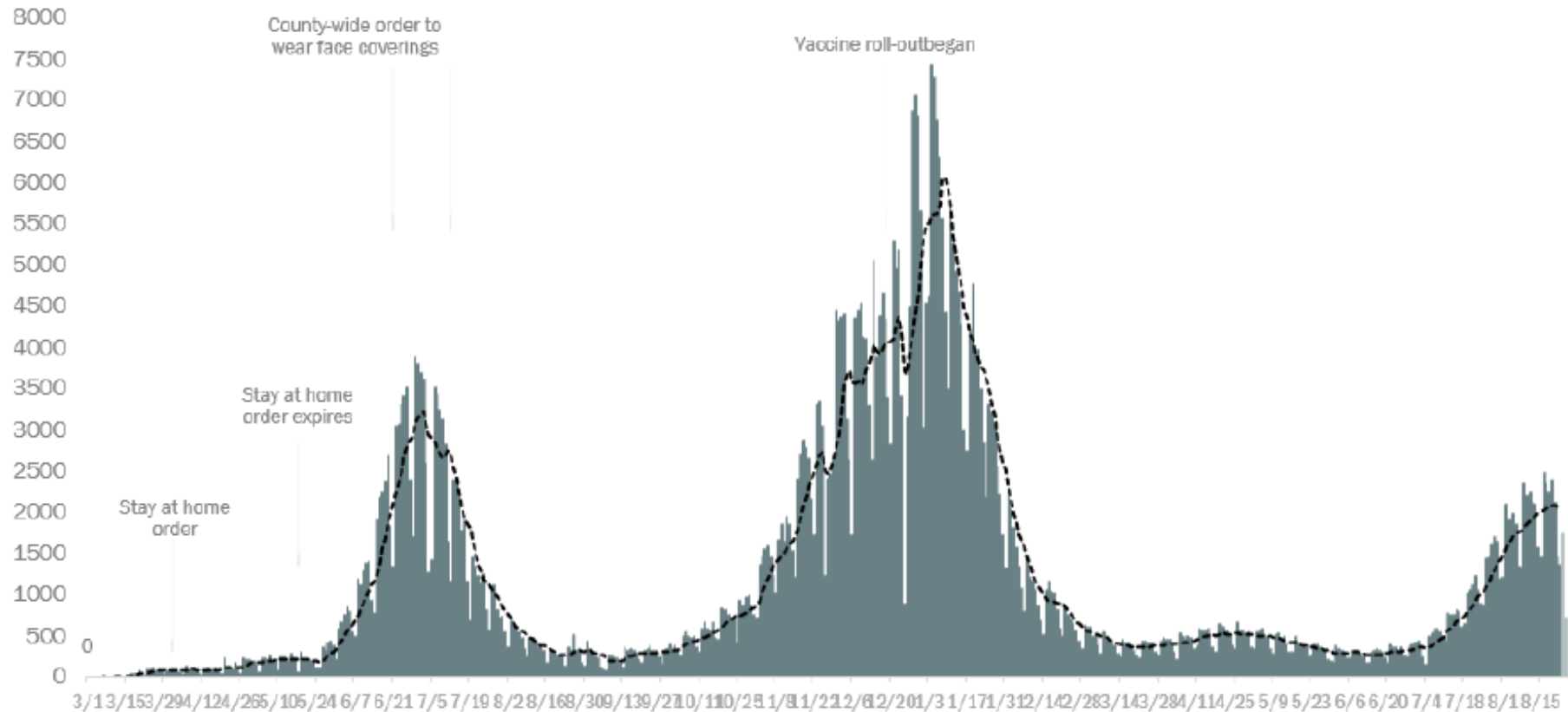
322

# Maricopa County Cases by Date



Maricopa County has received **633,127** confirmed and probable COVID-19 cases.

This number is likely to increase as there is a 4 day reporting delay from when specimens were collected.



Date of specimen collection

The dotted line, or trend line, represents an average of the last 7 days.

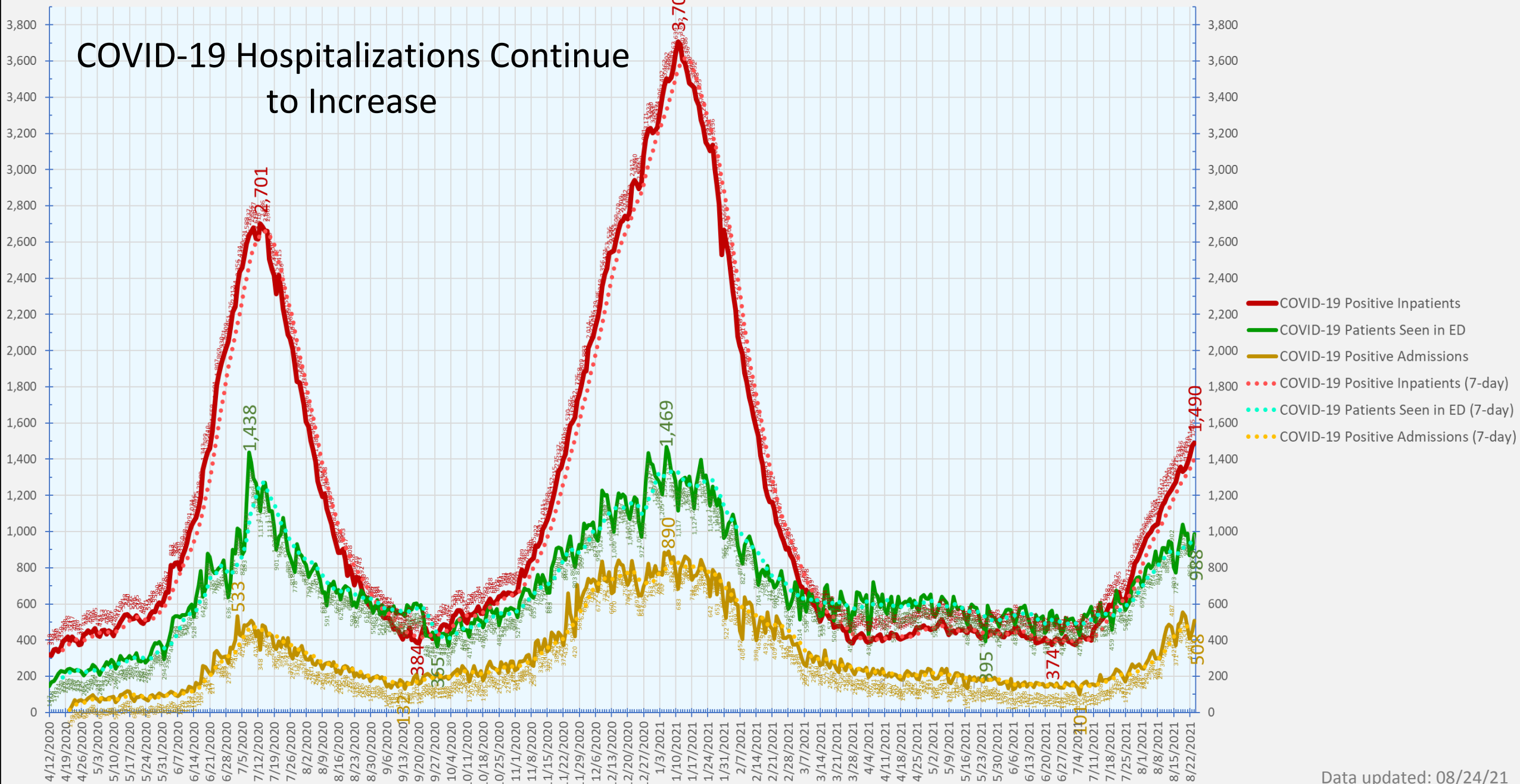
Epi Curve by Daily Case Counts

Data updated:  
8/26/21

# COVID-19 Positive Hospital Patients

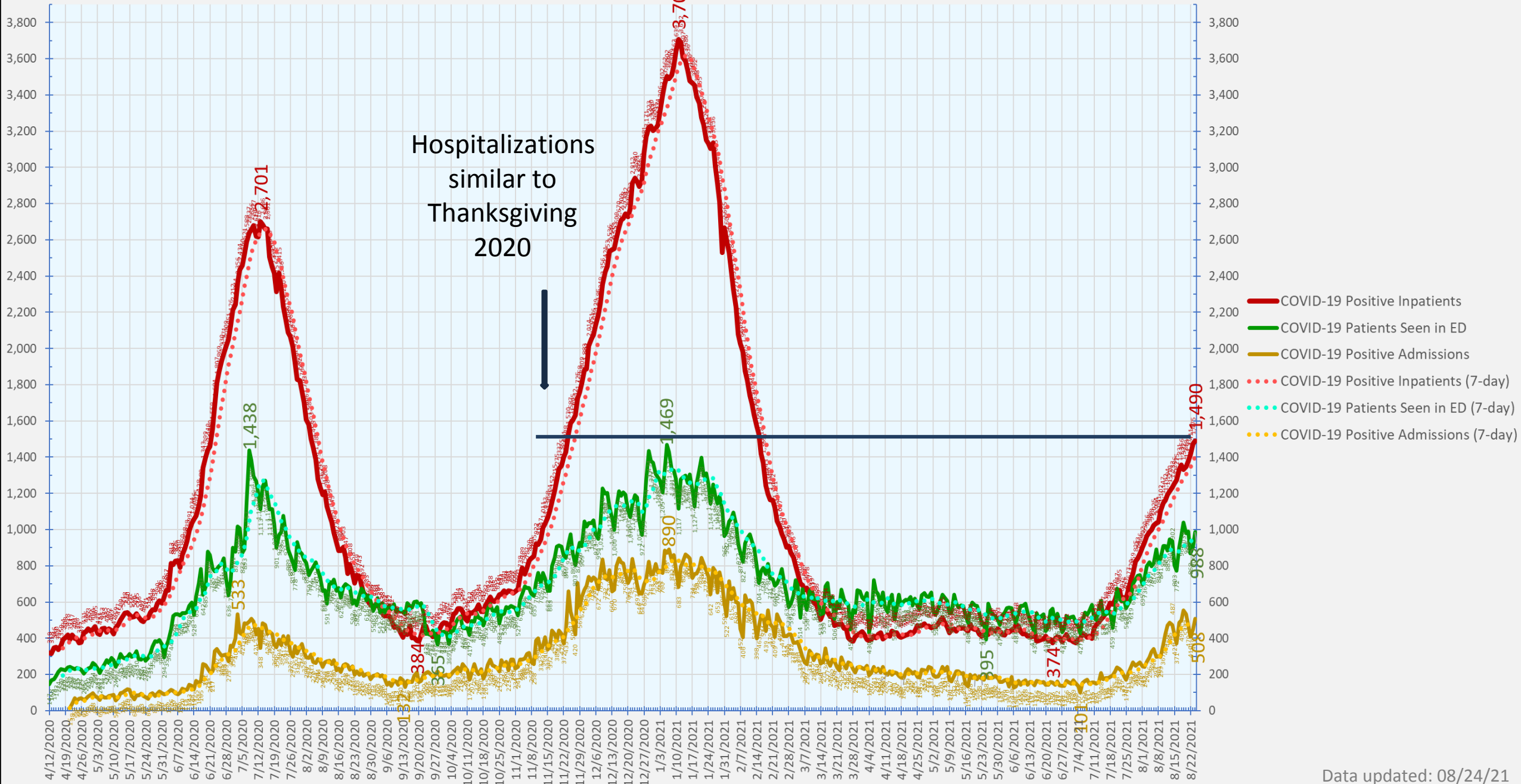
EMResource AZ Central Region - Daily Mean (AM+PM/2) - Since April 12, 2020

## COVID-19 Hospitalizations Continue to Increase



# COVID-19 Positive Hospital Patients

EMResource AZ Central Region - Daily Mean (AM+PM/2) - Since April 12, 2020



# There are plenty of beds, but **not staff**

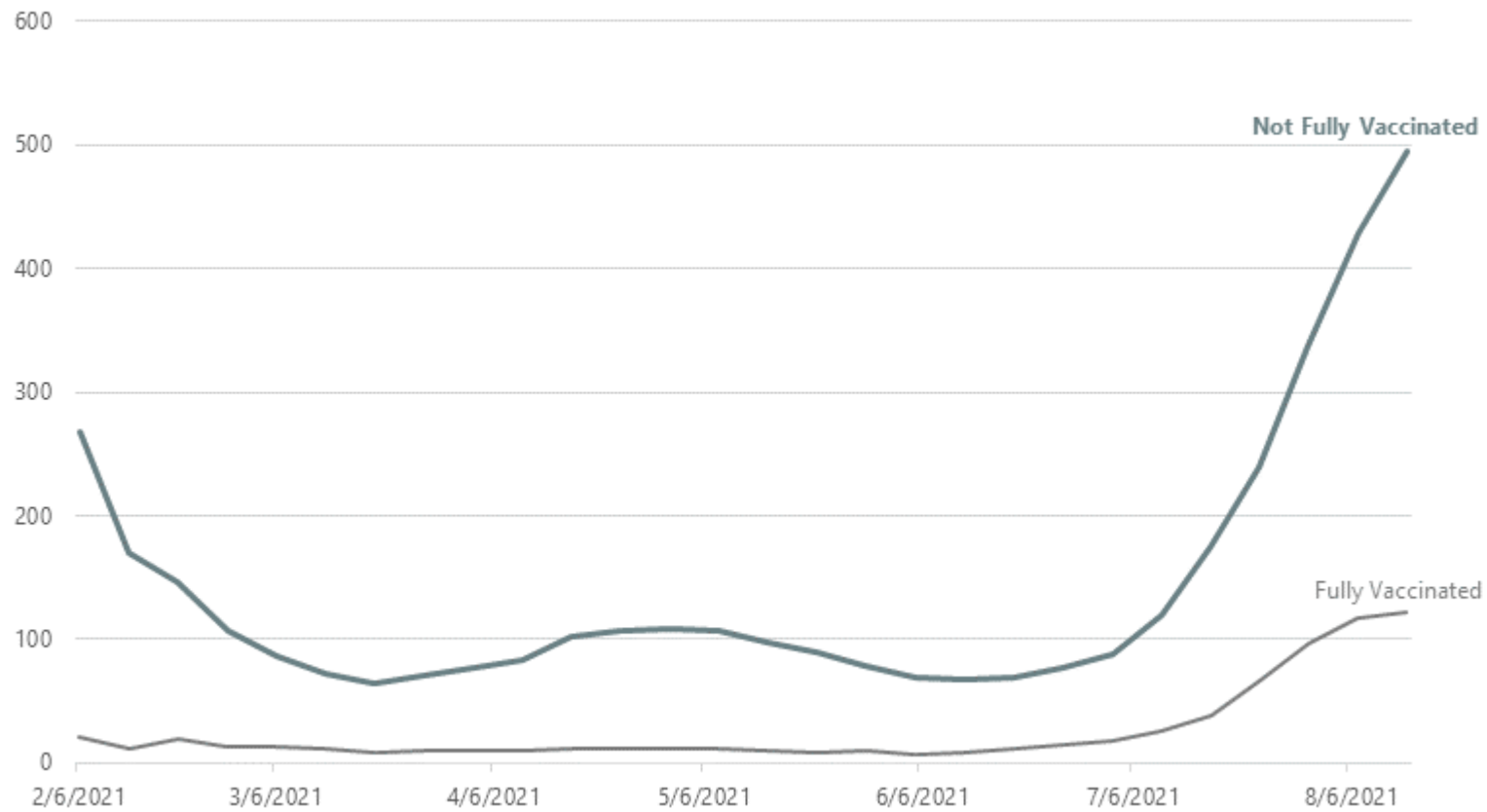


- During last peak, AZ had far more cases than the rest of the country, so staff resources were shifted here
- Currently, many other states have an increase so staff from other areas are not available
- Our own hospital staff are burned out from pandemic
- Nurses are retiring/leaving field at record rates
- A major hospital system in crisis levels of staffing

# The vast majority of cases are unvaccinated



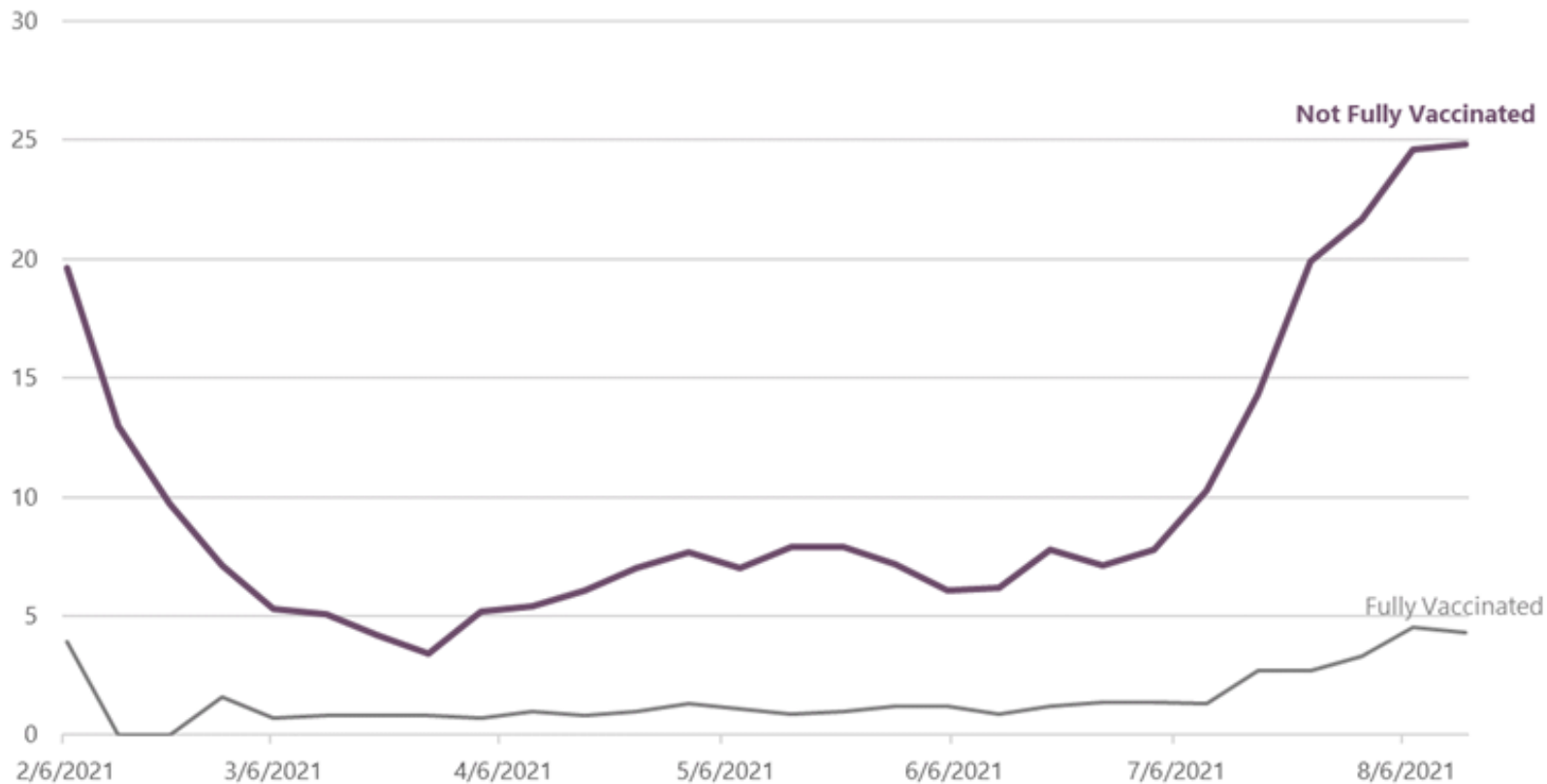
Rolling 7-day average COVID-19 case rate per 100,000 residents by vaccination status.



# The vast majority of people hospitalized are not fully vaccinated: 25 vs 5 per 100,000



Rolling 7-day average COVID-19 hospitalization rate per 100,000 residents by vaccination status.



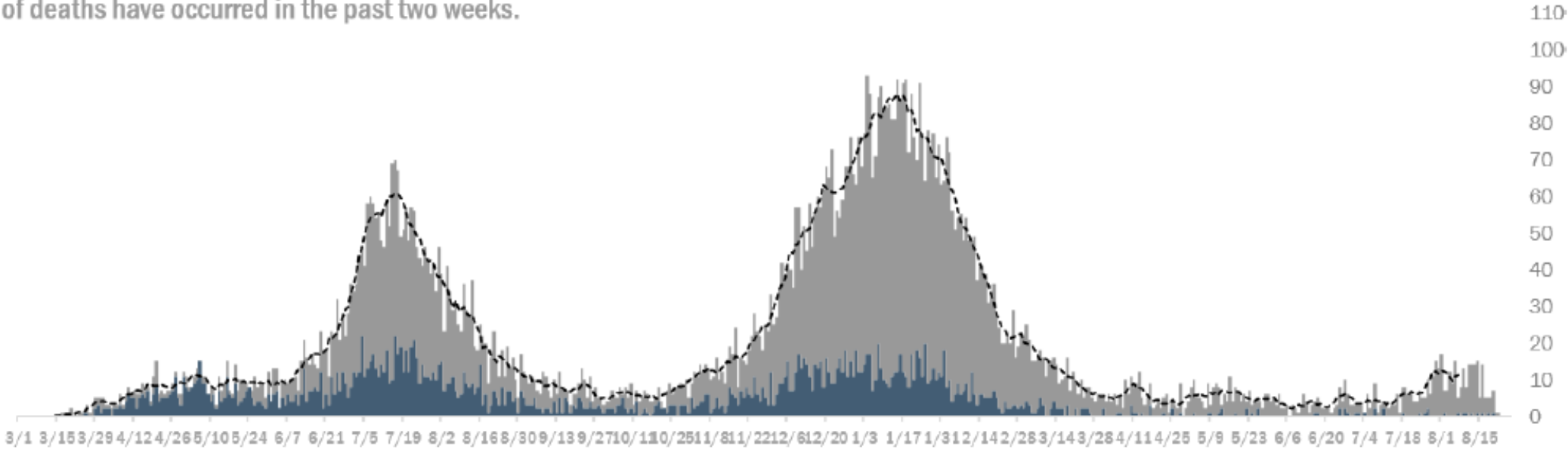
90 % of hospitalized COVID-19 patients are unvaccinated in a major hospital system



# Deaths continue to increase

Of the 10,738 COVID-19 deaths in Maricopa County, **2,506 (23%)** have occurred in LTCF residents.

1% of deaths have occurred in the past two weeks.



Date of death

The dotted line, or trend line, represents an average of the last 7 days.

Confirmed Deaths by LTCF Status

In August, 2% of COVID-19 deaths have been in children

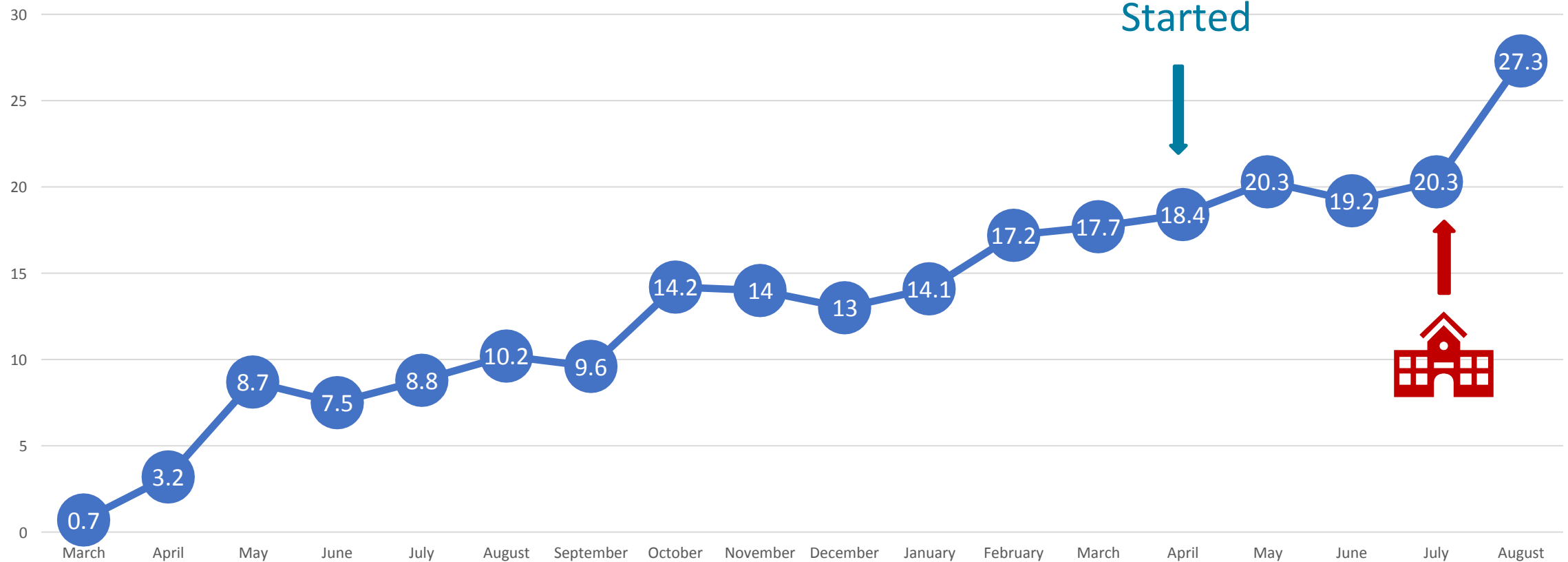


# Children & Schools

# 1 in 4 cases are children



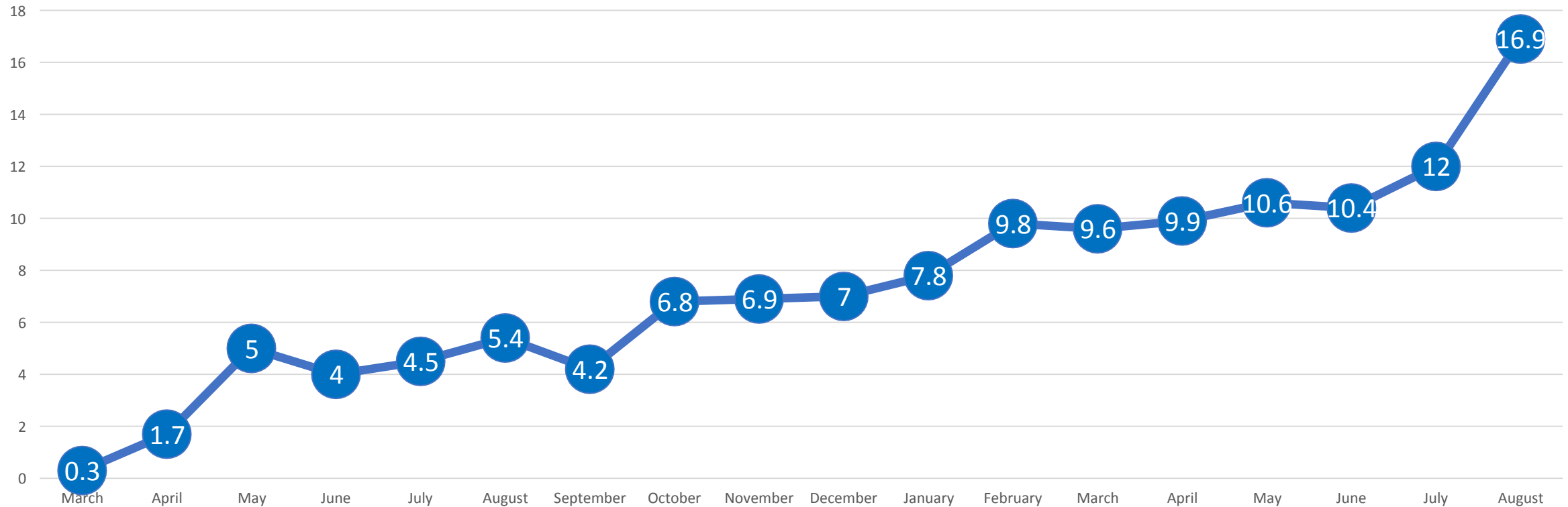
## Percent of Cases that are Children



# 1 in 6 cases are children under 12



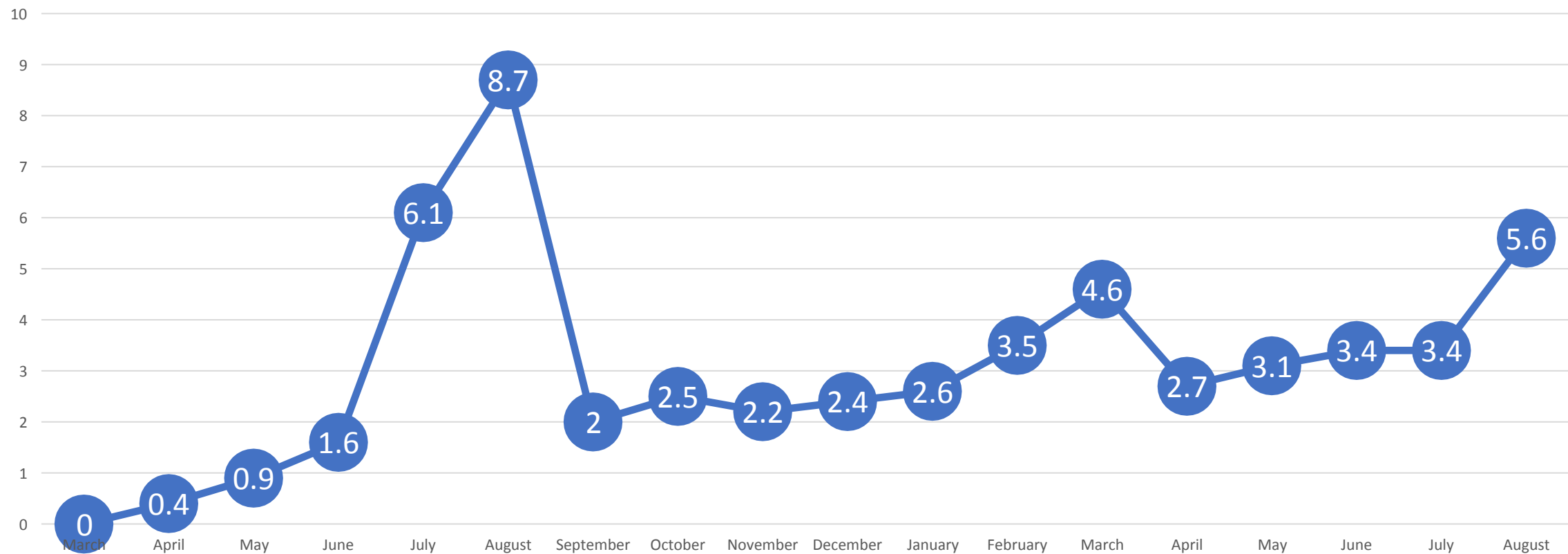
Percent of Cases that are Children < 12 Years



# 6% of hospitalizations are children with the number doubling monthly – 120 in August



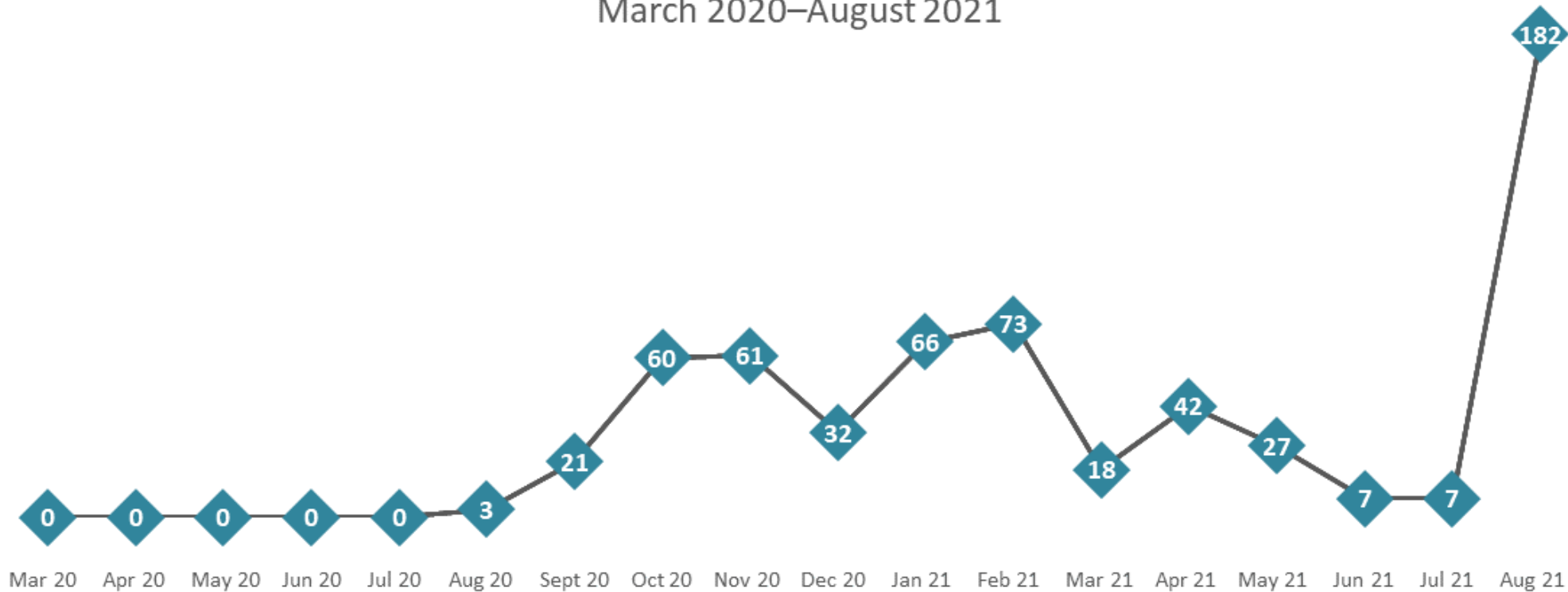
## Percent of Hospitalizations that are Children



# Almost 3X as many school outbreaks in August compared to the peak in February

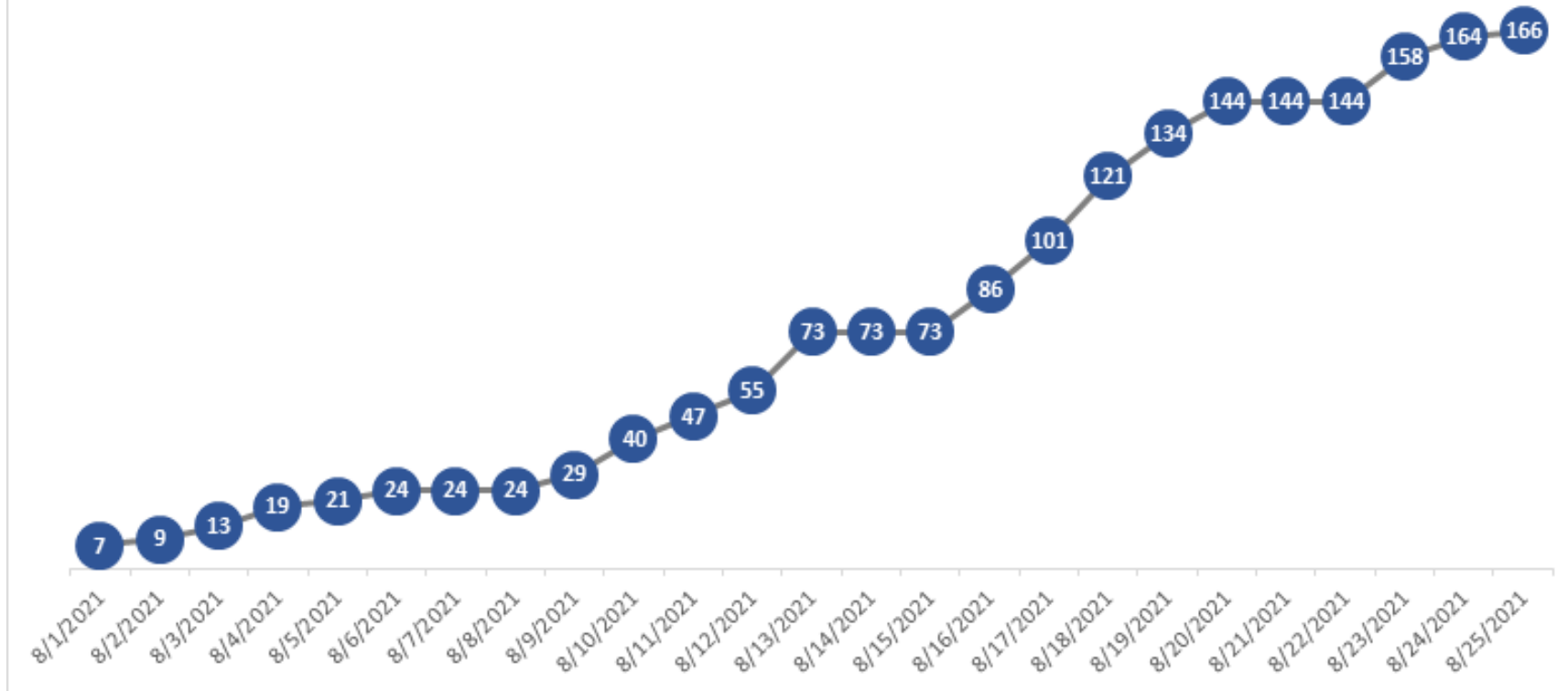


Number of K–12 School Outbreaks Opened by Month —  
March 2020–August 2021

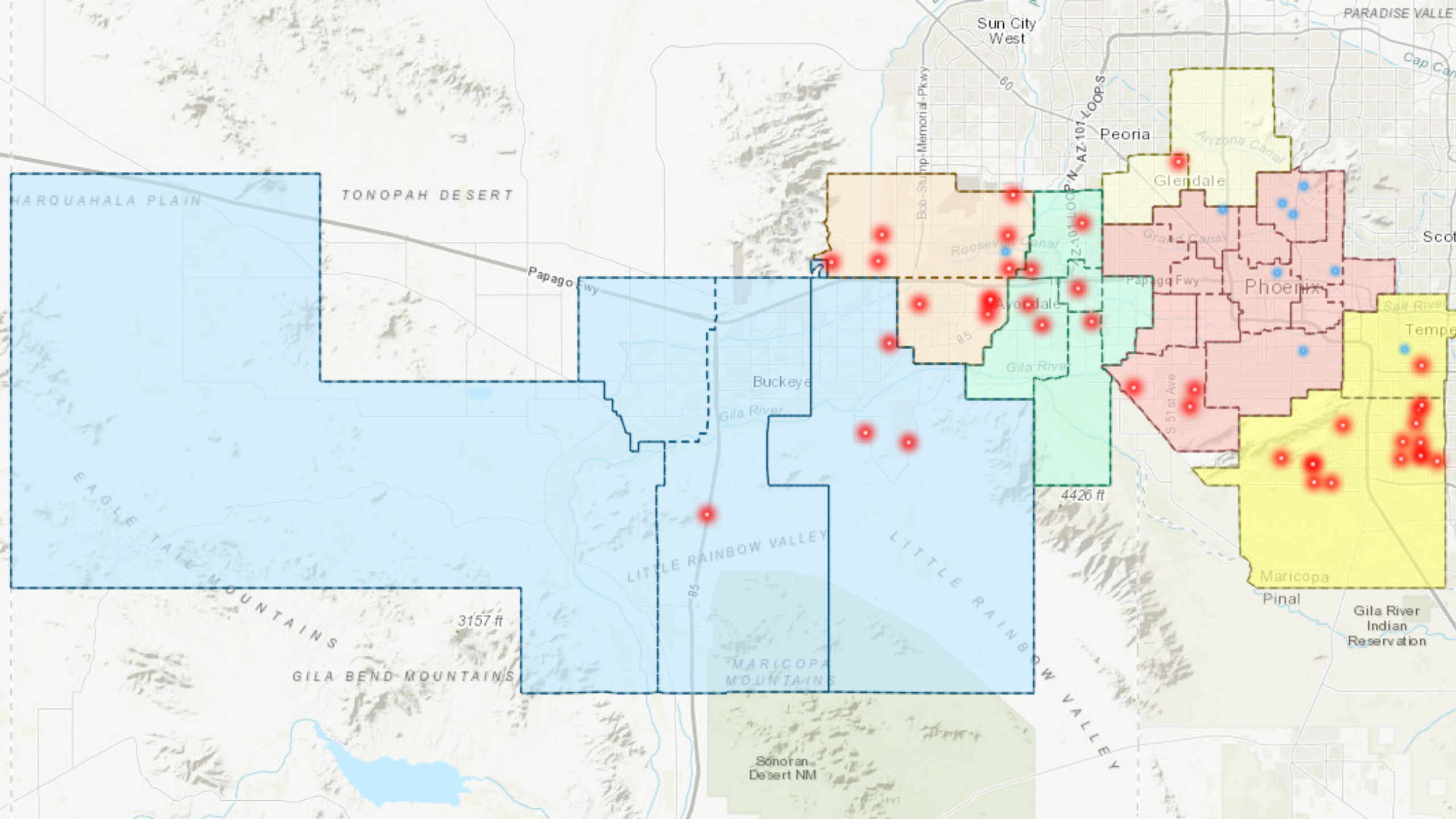


# Open school outbreaks have more than doubled weekly since school opened

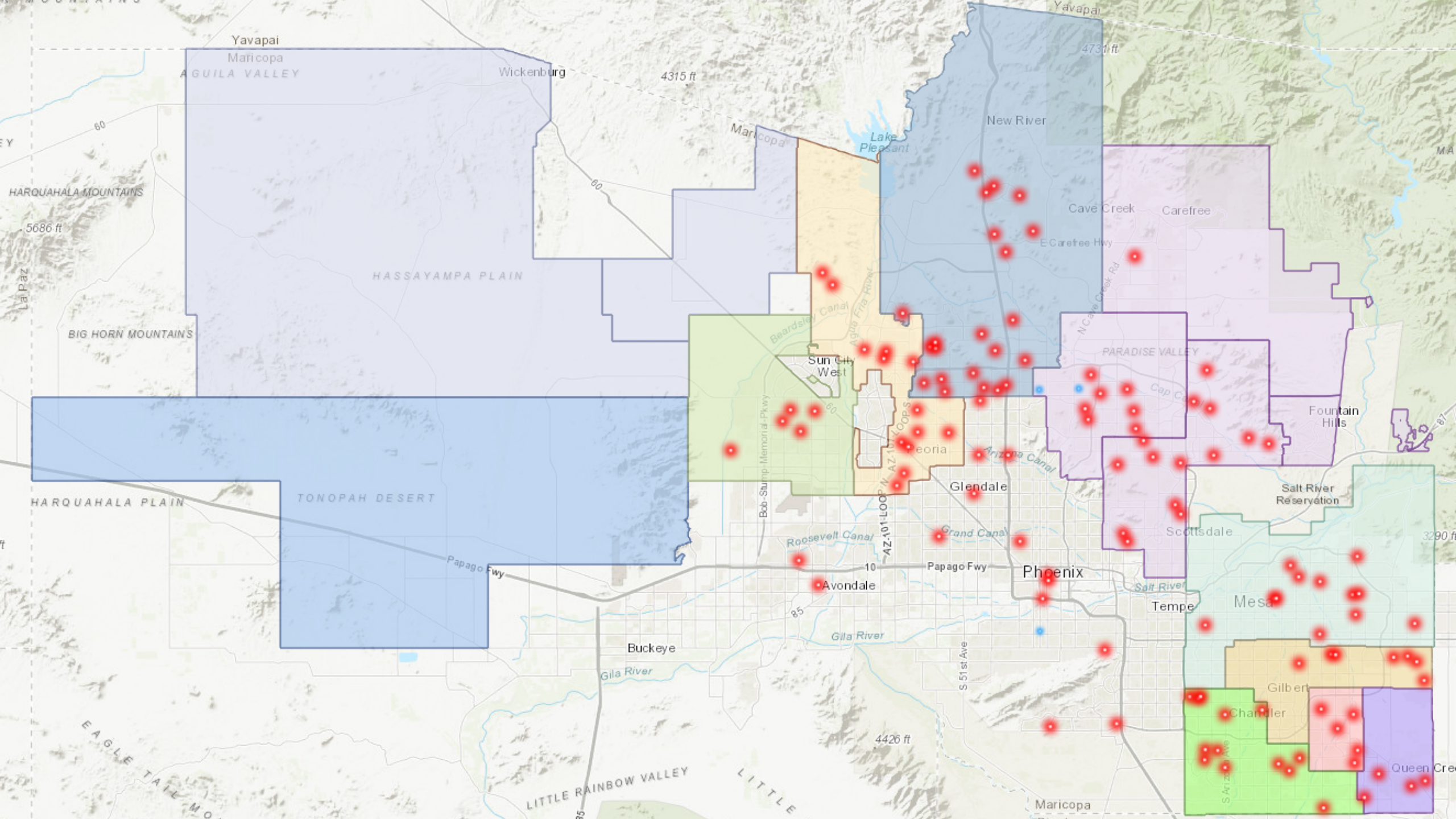
Number of Open K–12 School Outbreaks By Day —  
August 1–25, 2021

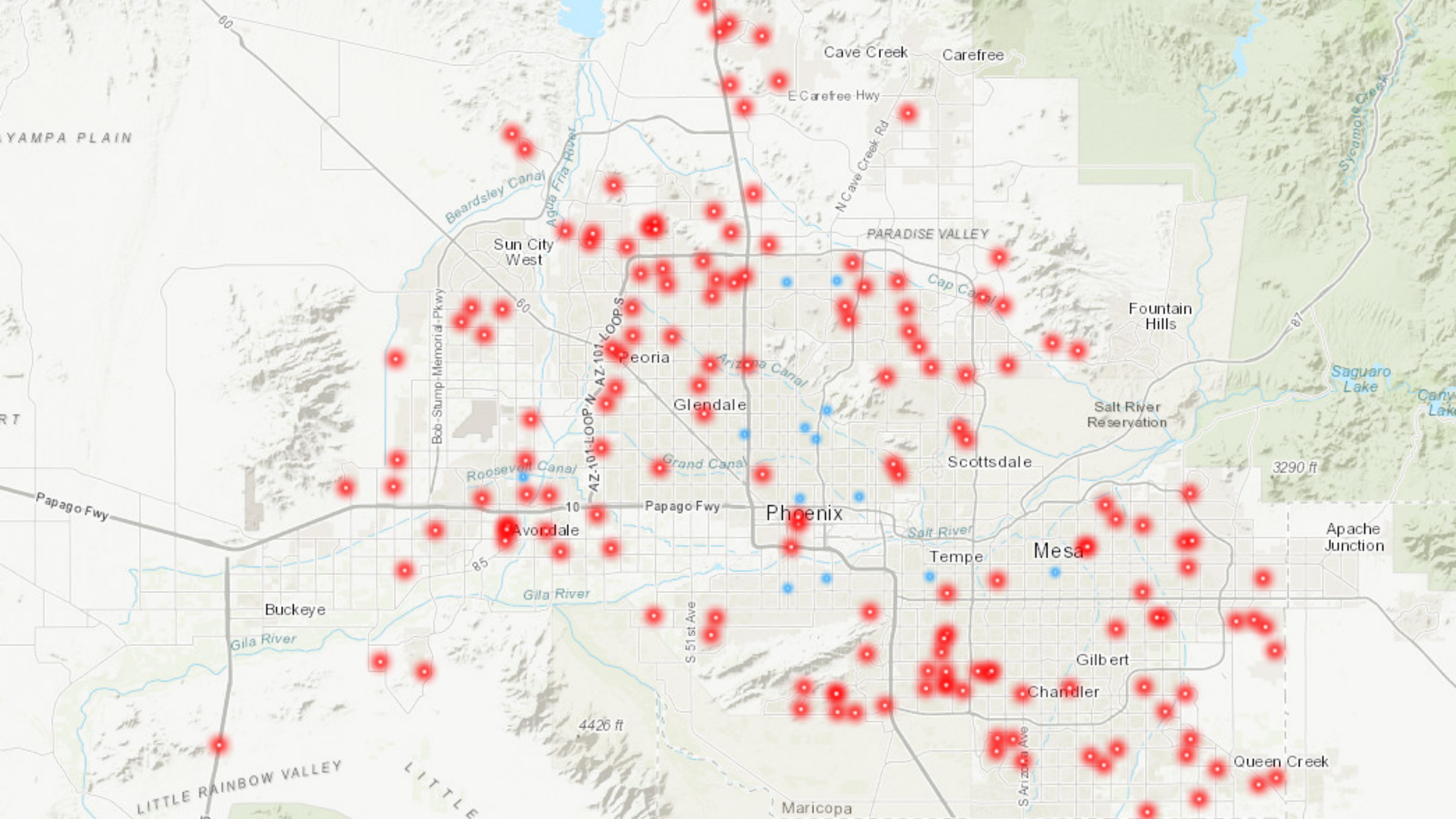


**166**  
Ongoing  
School  
Outbreaks











# What's Changed, Delta Variant, & Boosters

# What is different now than last December?



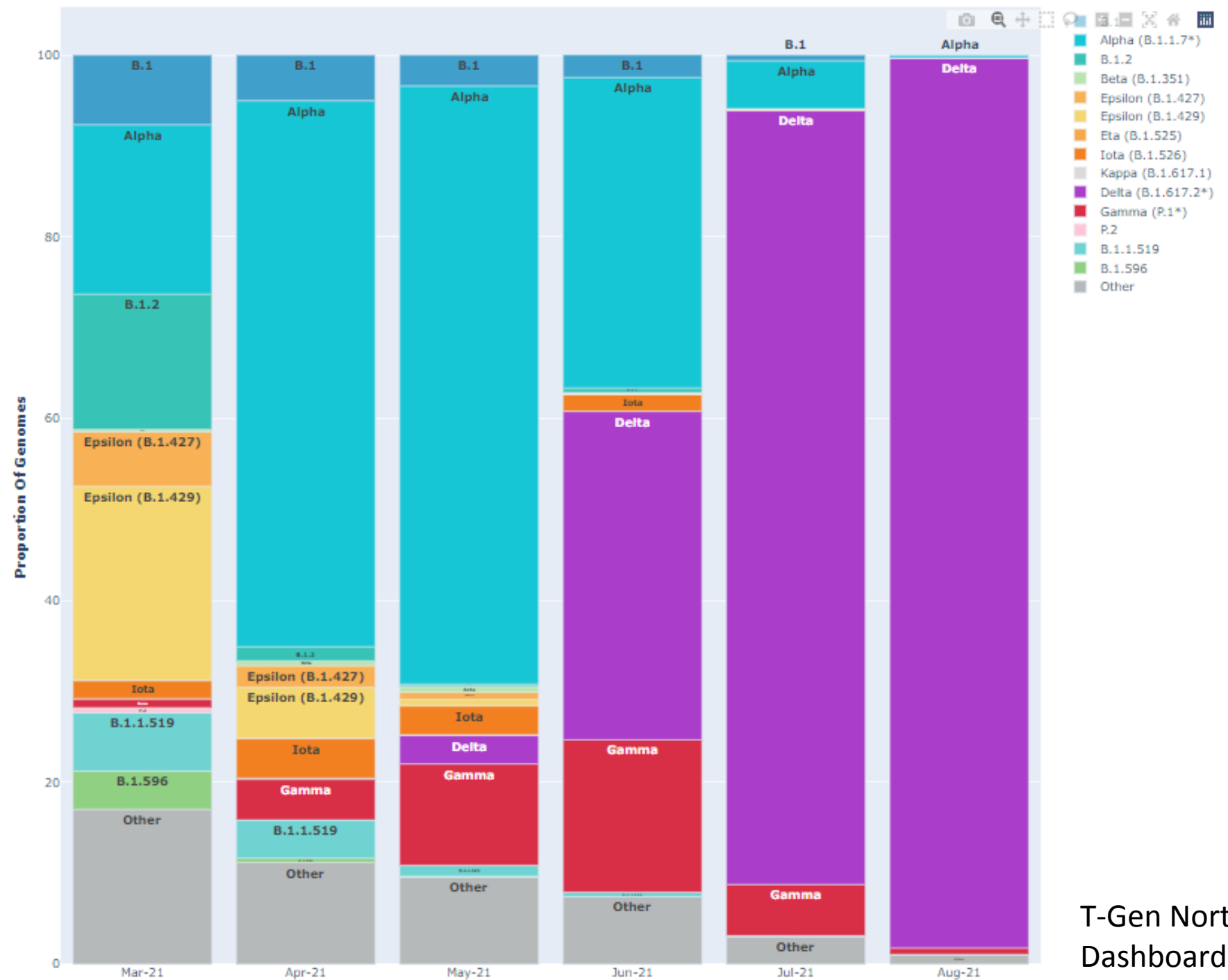
## Last December

- **B-117** variant is the dominant strain
- Schools are mostly in **hybrid** mode, which allows for more distancing
- Schools **required masks**
- Staff & children were **NOT vaccinated**

## Now

- **Delta** variant is the dominant strain
- Schools are **fully in-person**, which makes distancing harder
- **Masks not required** in all schools
- **Some** staff & older children **vaccinated**

# Variants – Delta Dominates

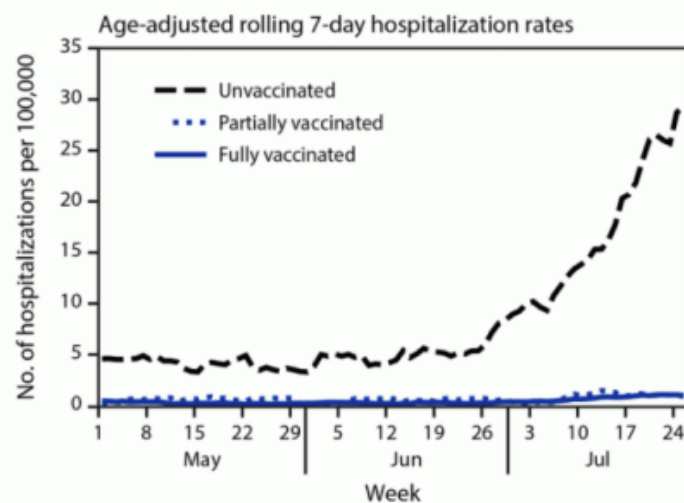
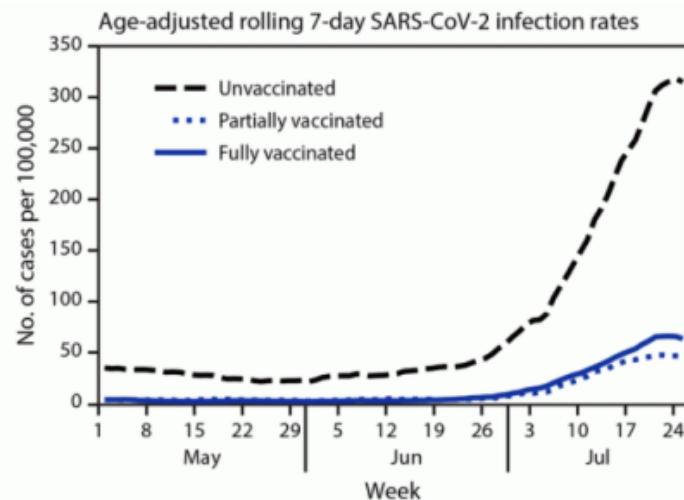


# What do we know about the Delta variant




- Delta is > 2X as infectious as the original COVID-19 strain
- Each infected person can infect 5 people compared with 2 people
- 2 studies (Canada and Scotland) show patients infected with Delta were more likely to be hospitalized than patients infected with the original strain
- Delta is more likely to cause infection in vaccinated persons compared to the original strain
- Vaccinated people who are infected can transmit disease
- Unvaccinated persons are at much higher risk of being infected, hospitalized or dying from the Delta strain

# Unvaccinated 5X more likely to be infected and 29X more likely to be hospitalized




Unvaccinated have **5X** more COVID-19 **infections** than fully vaccinated

Unvaccinated have **29X** more COVID-19 **hospitalizations** than fully vaccinated



322041-AC

Get vaccinated to reduce spread and protect yourself



SARS-CoV-2 Infections and Hospitalizations Among Persons Aged  $\geq 16$  Years, by Vaccination Status – Los Angeles County, California, May 1-July 25, 2021

Link when live: [https://www.cdc.gov/mmwr/volumes/70/wr/mm7034e5.htm?s\\_cid=mm7034e5\\_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7034e5.htm?s_cid=mm7034e5_w)

Effectiveness of COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Frontline Workers Before and During B.1.617.2 (Delta) Variant Predominance – Eight U.S. Locations, December 2020-August 2021

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# Update on Booster Doses



- CDC and the White House announced a plan for mRNA booster doses to be available starting September 20<sup>th</sup>, 2021
- All fully vaccinated people with mRNA vaccine will be eligible 8 months after their second dose
- Unclear whether some groups will be prioritized over others
- All pending recommendations from FDA, CDC and ACIP
- Not enough data to recommend booster for J&J vaccine as it was authorized later than the mRNA vaccines (~2 months)



# Why Boosters now?



- Several studies indicating decreased vaccine effectiveness for protection against infection beginning at 6-8 months
- Vaccine is highly effective in preventing hospitalization and death
- Unable to determine how much is waning immunity over time vs. changes in the delta strain
- Most relevant study among healthcare workers and first responders (HEROES cohort) showed effectiveness for preventing infection went from 91% before Delta to 66% after Delta

Fowlkes A, Gaglani M, Groover K, et al. Effectiveness of COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Frontline Workers Before and During B.1.617.2 (Delta) Variant Predominance — Eight U.S. Locations, December 2020–August 2021. MMWR Morb Mortal Wkly Rep 2021;70:1167-1169. DOI: <http://dx.doi.org/10.15585/mmwr.mm7034e4external icon>  
Tenforde MW, Self WH, Naioti EA, et al.

Sustained Effectiveness of Pfizer-BioNTech and Moderna Vaccines Against COVID-19 Associated Hospitalizations Among Adults — United States, March–July 2021. MMWR Morb Mortal Wkly Rep 2021;70:1156-1162. DOI: <http://dx.doi.org/10.15585/mmwr.mm7034e2external icon>

# When will kids under 12 be eligible for vaccine?



- Original estimates were in September
- At the end of July, FDA asked for clinical trials to include additional 3000 child study subjects, which pushed back the timing for FDA review

## **Covid vaccines for kids under 12 expected midwinter, FDA official says**

After emergency use authorization, the agency hopes to move quickly to full approval.





# Maricopa County Public Health Response

# What has public health done to respond?



- Testing events
  - 477 testing events (53 in August)
  - 33,919 individuals tested (2,638 in August)
- Webinars and partner meetings
  - Weekly school webinars
  - Healthcare webinars every 1-2 weeks
  - Weekly Fire/EMS webinars
  - Grand rounds to healthcare providers (Mayo, Banner, VA)
  - Weekly meetings with Chief Medical Officers of major healthcare systems

# Vaccination Outreach in 8 Months



## County-partnered Vaccine Efforts

- 250 Pop-up Events

69,434 doses given at school clinics: 1/3 of school & childcare workforce

150 Regional Events

- 1620 Long Term Care Facility Events with 862 facilities fully vaccinated

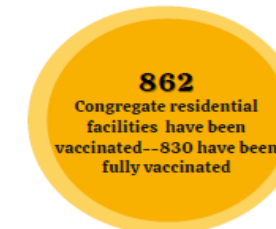
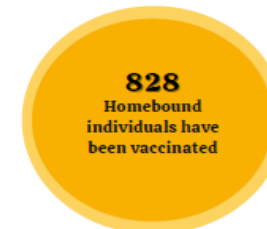
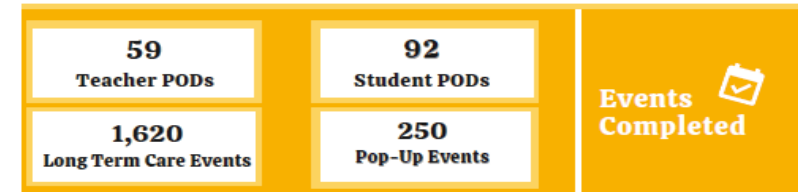
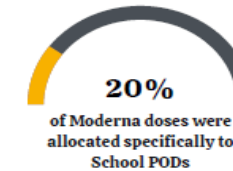
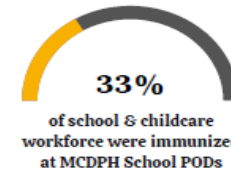
- 828 homebound vaccinated

### School & Childcare Workers

**28,148**  
1st doses were administered at MCDPH School PODs

**25,621**  
2nd doses were administered at MCDPH School PODs

**15,665**  
vaccines administered at student PODs across 38 schools and 2 family resource centers



POD= Points of Dispensing  
MCDPH= Maricopa County  
Department of Public Health

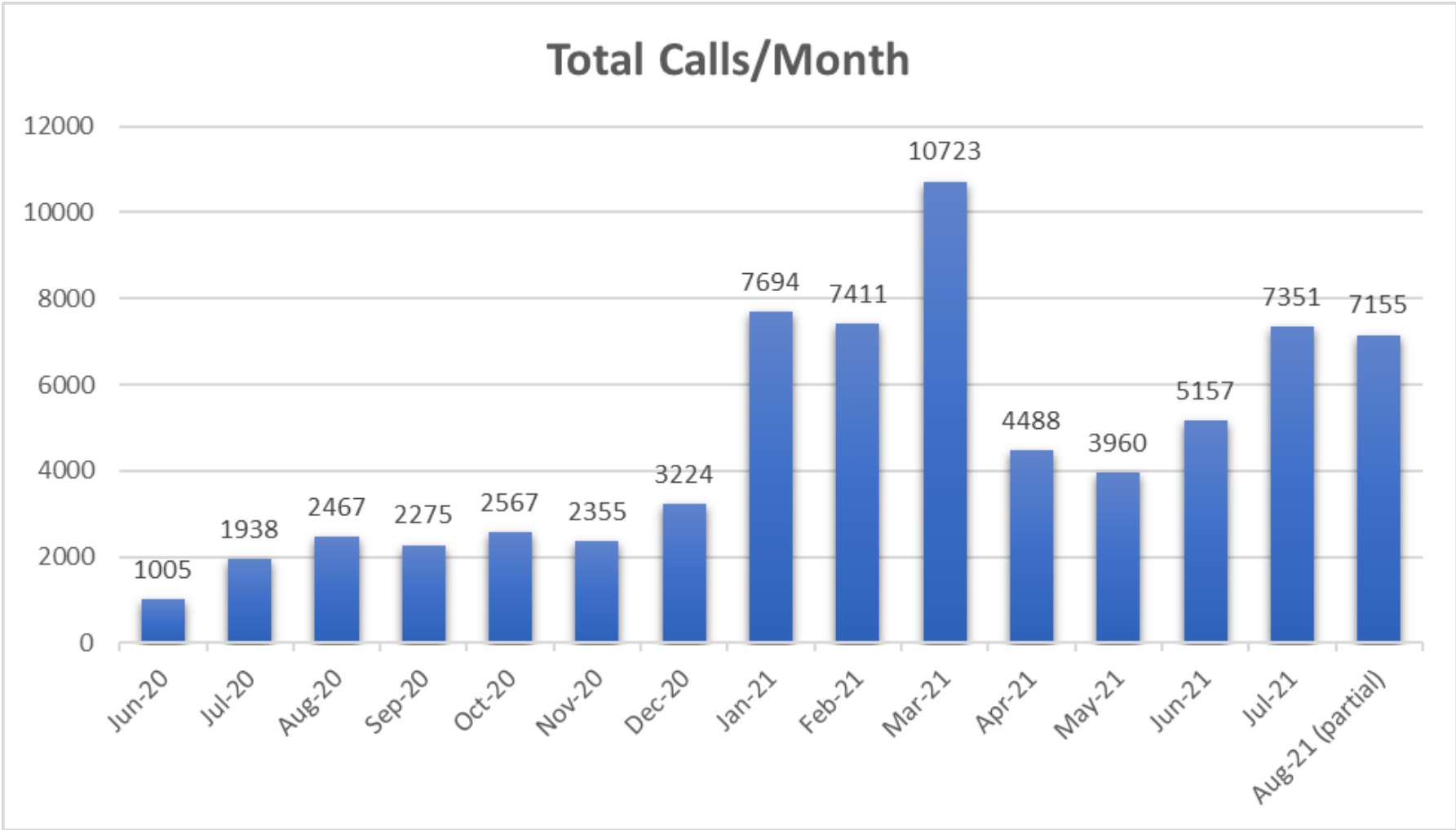
\*Administered by MCDPH Vaccination Teams and Vaccination Partners

# System Development & Innovation



- Automated case and contact notification & education
- Automated case interviews
- Automated case and outbreak reporting for schools
- Automated close contact notification for schools
- Data dashboard for cases, hospitalizations and deaths
- Vaccination rates by age, race, ethnicity and geographic area
- Vaccine location maps searchable by vaccine type

# MCDPH CARES Call Center Data



Community  
Action,  
Resources, &  
Emergency  
Support

# We had a lot of help from the community



## Volunteers



Estimated Value of Volunteer Time  
Based on Occupation

**\$3,847,570**



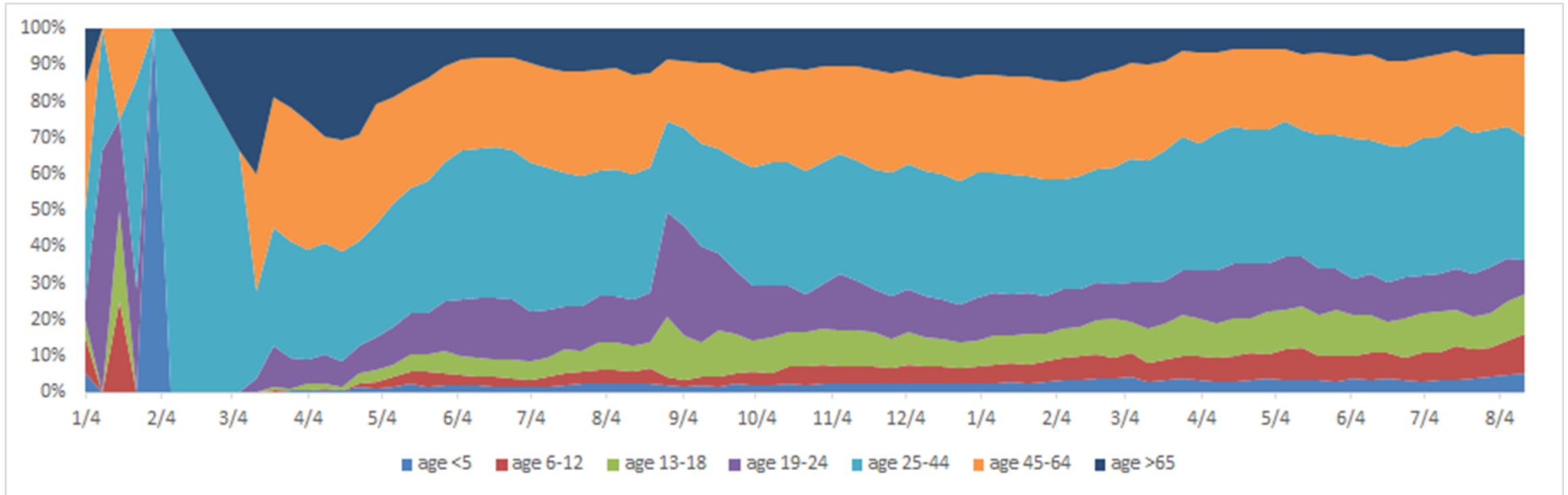
# Questions/Discussion



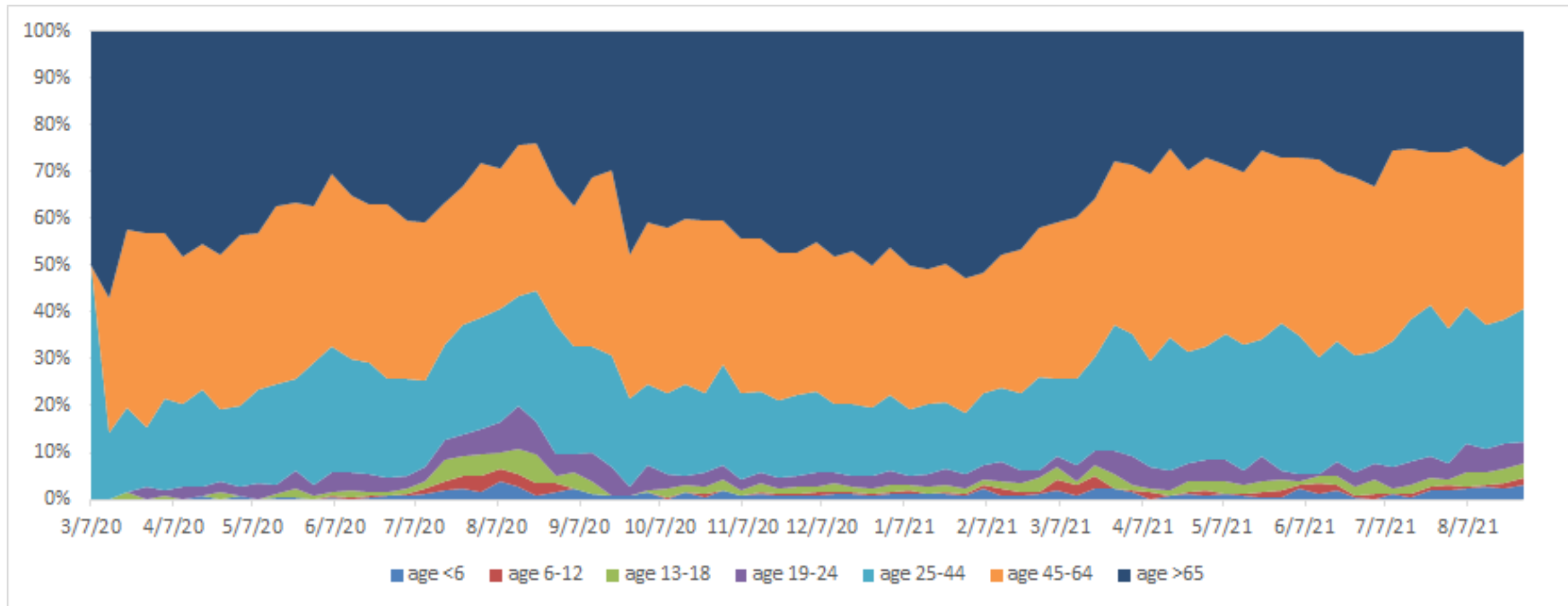


# Additional Data & Information

# Proportion of Cases by Age Group Over Time



# Proportion of Hospitalization by Age Group Over Time

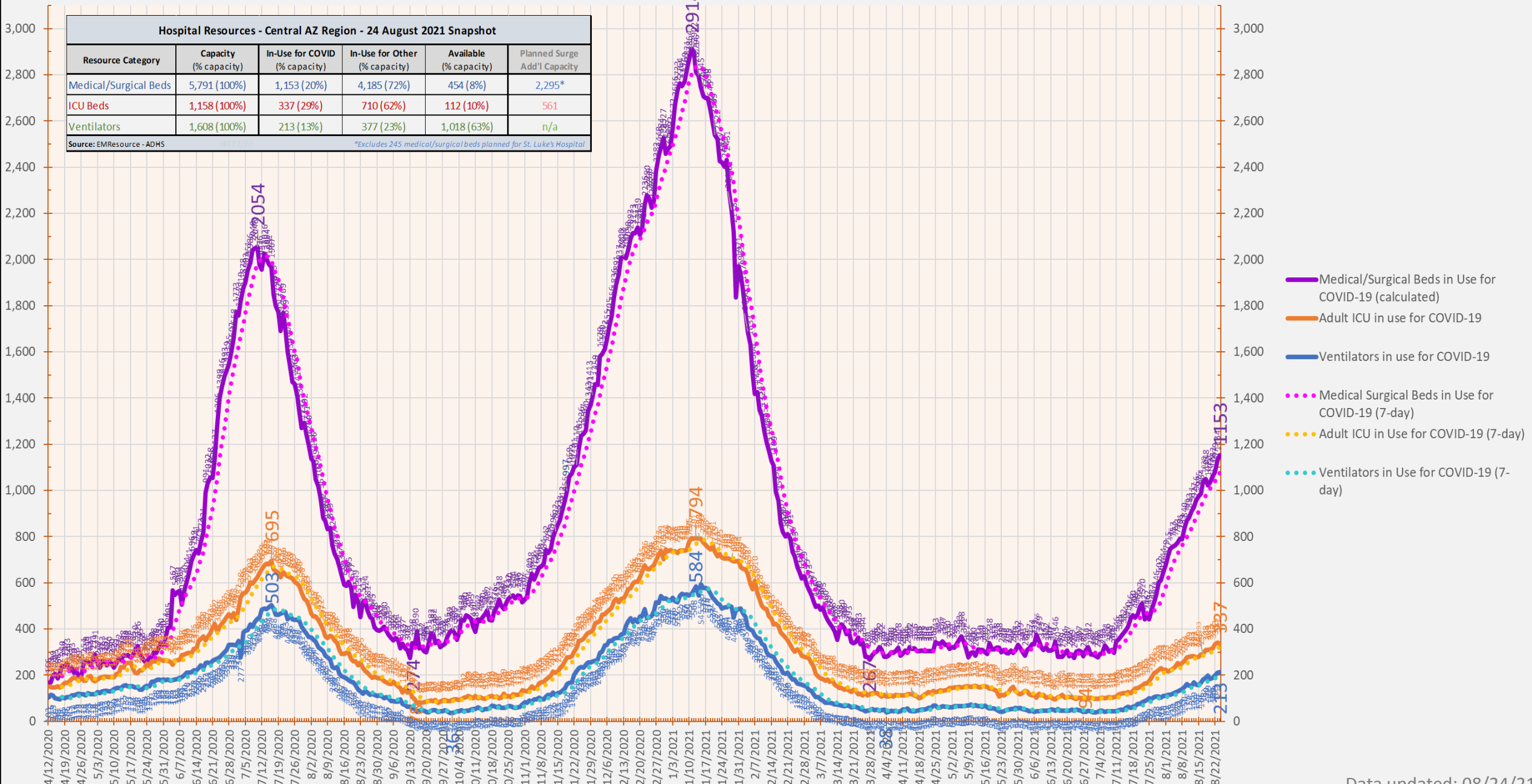


# Hospital Resources in Use for COVID-19 Patients

EMResource AZ Central Region - Daily Mean (AM+PM/2) - Since April 12, 2020

Hospital Resources - Central AZ Region - 24 August 2021 Snapshot					
Resource Category	Capacity (% capacity)	In-Use for COVID (% capacity)	In-Use for Other (% capacity)	Available (% capacity)	Planned Surge Add'l Capacity
Medical/Surgical Beds	5,791 (100%)	1,153 (20%)	4,185 (72%)	454 (8%)	2,295*
ICU Beds	1,158 (100%)	337 (29%)	710 (62%)	112 (10%)	561
Ventilators	1,608 (100%)	213 (13%)	377 (23%)	1,018 (63%)	n/a

Source: EMResource - ADHS \*Excludes 245 medical/surgical beds planned for St. Luke's Hospital



# Hospital Utilization (AZ Central Region)

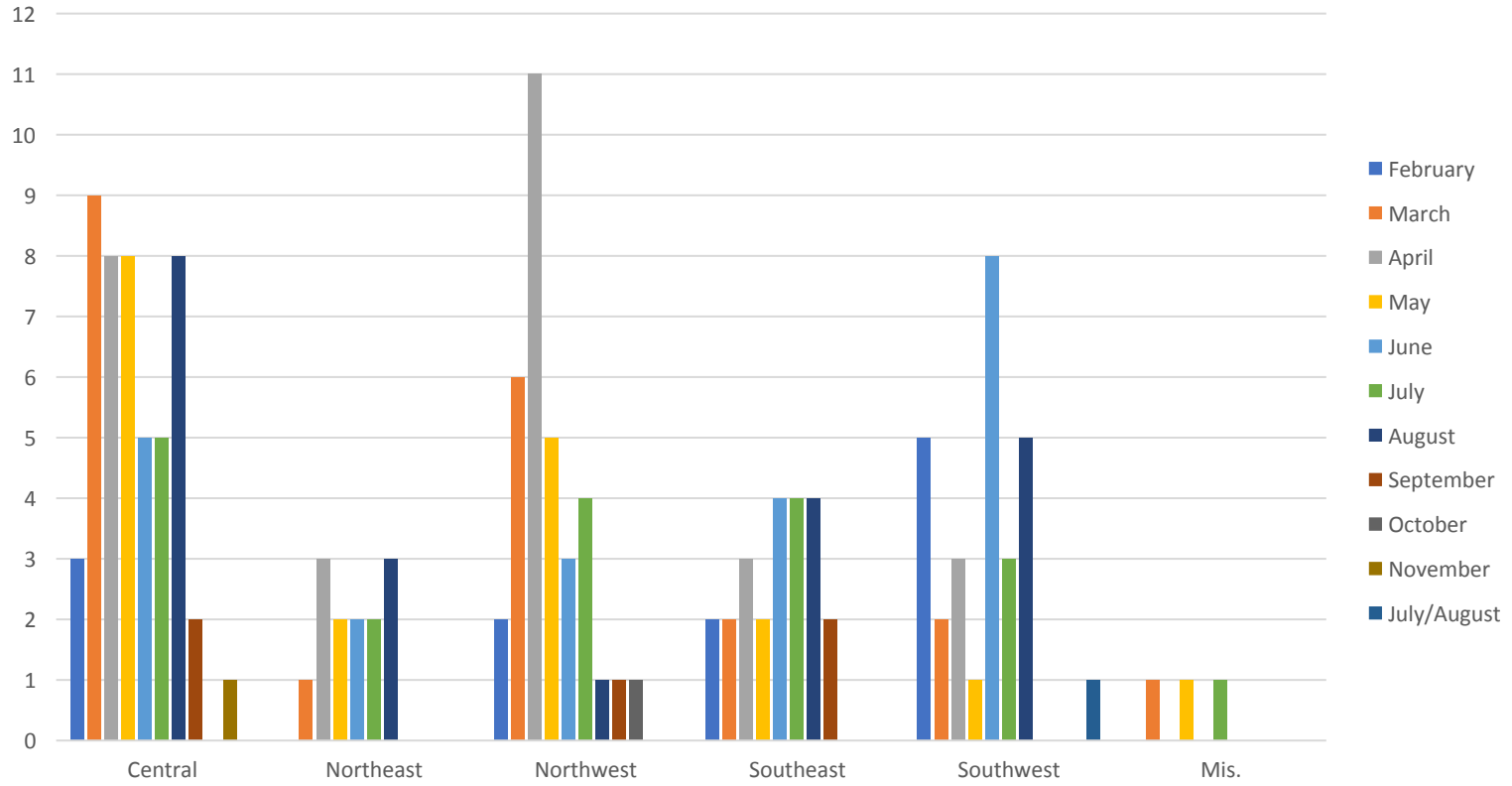


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Source: EMResource - ADHS JAS 12/20 \*Excludes 245 medical/surgical beds planned for St. Luke's Hospital

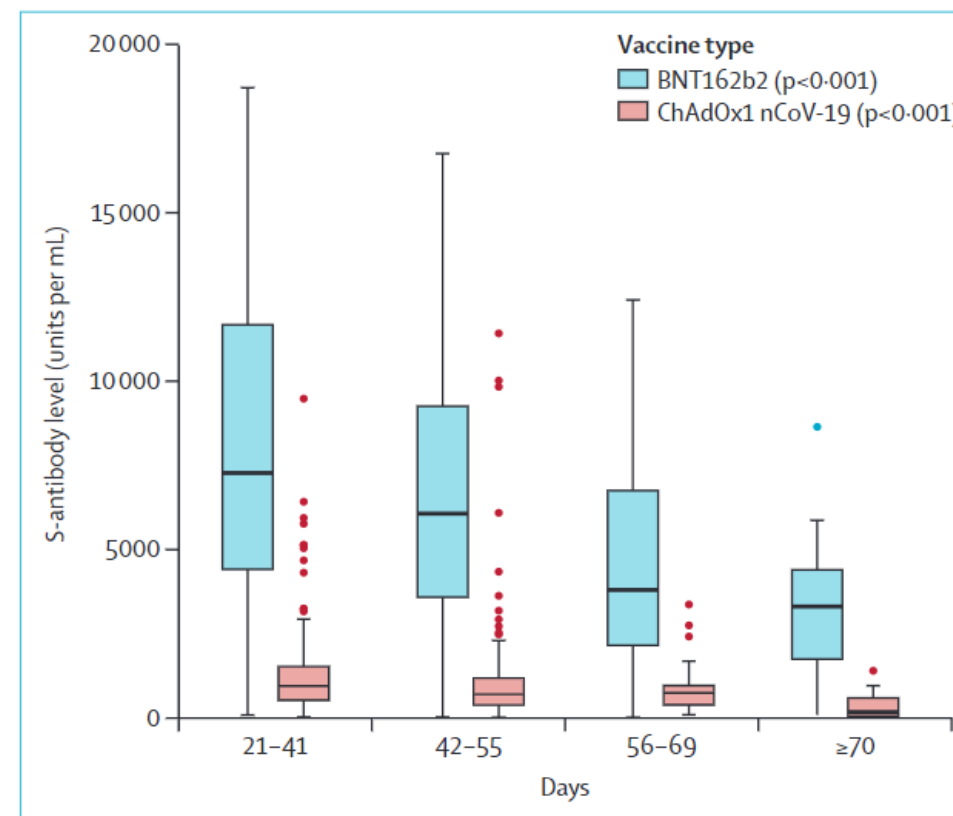
# 150 Regional Vaccine Events



# Data Supporting Boosters



- Declining spike protein antibodies after vaccination
- BNT162b2 = Pfizer vaccine



**Figure:** Levels of antibody against the spike glycoprotein of SARS-CoV-2 (S-antibody) at defined timepoints after second dose of vaccination (with extended dose intervals) in individuals with no previous infection, stratified by vaccine type p values derived from non-parametric tests for trend for each vaccine subgroup are given in parentheses in the key.

**THE LANCET**

Volume 398, Issue 10298, 31 July–6 August 2021, Pages 385-387



# Data Supporting Boosters



- HEROES Cohort (Including AZ Healthcare Workers)

TABLE. Effectiveness of COVID-19 vaccines against any SARS-CoV-2 infection among frontline workers, by B.1.617.2 (Delta) variant predominance and time since full vaccination — eight U.S. locations, December 2020–August 2021

Period and vaccination status	No. of contributing participants*	Total no. of person-days	Median days (IQR)	No. of SARS-CoV-2 infections	Adjusted VE, <sup>†</sup> % (95% CI)
<b>Full cohort to date</b>					
Unvaccinated	4,136	181,357	20 (8–45)	194	N/A
Fully vaccinated <sup>§</sup>	2,976	454,832	177 (115–195)	34	80 (69–88)
14–119 days after full vaccination	2,923	284,617	106 (106–106)	13	85 (68–93)
120–149 days after full vaccination	2,369	66,006	30 (30–30)	3	81 (34–95)
≥150 days after full vaccination	2,129	104,174	52 (37–64)	18	73 (49–86)
<b>Pre-Delta variant predominance</b>					
Unvaccinated	4,137	156,626	19 (8–43)	175	N/A
Fully vaccinated	2,875	329,865	124 (95–149)	10	91 (81–96)
<b>Delta variant predominance</b>					
Unvaccinated	488	24,871	43 (37–69)	19	N/A
Fully vaccinated	2,352	119,218	49 (35–56)	24	66 (26–84)

Fowlkes A, Gaglani M, Groover K, et al. Effectiveness of COVID-19 Vaccines in Preventing SARS-CoV-2 Infection Among Frontline Workers Before and During B.1.617.2 (Delta) Variant Predominance — Eight U.S. Locations, December 2020–August 2021. MMWR Morb Mortal Wkly Rep 2021;70:1167–1169. DOI: [http://dx.doi.org/10.15585/mmwr.mm7034e4external icon](http://dx.doi.org/10.15585/mmwr.mm7034e4externalicon).

# Delta vs. Lambda variant



## Delta variant (B.1.617.2)

- Variant of Concern
- First detected: India, October 2020
- Dominant variant in Maricopa County, Arizona and U.S.
- Spreads much faster than other variants
- May cause more severe cases than the other variants
- Infections happen in only a small proportion of people who are fully vaccinated
- Preliminary evidence suggests that fully vaccinated people who do become infected with the Delta variant can spread the virus to other

## Lambda variant (C.37)

- Variant of Interest
- First detected: Peru, December 2020
- Dominant variant in Argentina, Chile, and Colombia
- Has been identified in most US States, though the strain has yet to gain traction
- Spreads faster than Alpha strain, like delta
- Some concern that it is more resistant to vaccinations