COVID-19 Update
8/30/21

Marcy Flanagan, DBA, MPH, MA

Rebecca Sunenshine, MD, FIDSA
CAPT, USPHS
## COVID-19 in Maricopa County

**Data updated:** 8/26/21

### Total number of cases

<table>
<thead>
<tr>
<th></th>
<th>Total number of cases*</th>
<th>Cases as of yesterday†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>(%)</td>
</tr>
<tr>
<td><strong>Cases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>328022</td>
<td>(52%)</td>
</tr>
<tr>
<td>Male</td>
<td>303579</td>
<td>(48%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1526</td>
<td>(0%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-19 years</td>
<td>114137</td>
<td>(18%)</td>
</tr>
<tr>
<td>20-44 years</td>
<td>286174</td>
<td>(45%)</td>
</tr>
<tr>
<td>45-64 years</td>
<td>162696</td>
<td>(26%)</td>
</tr>
<tr>
<td>65+ years</td>
<td>69903</td>
<td>(11%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>217</td>
<td>(0%)</td>
</tr>
<tr>
<td><strong>Hospitalized‡</strong></td>
<td>44810</td>
<td>(7%)</td>
</tr>
<tr>
<td><strong>ICU‡</strong></td>
<td>2823</td>
<td>(0%)</td>
</tr>
<tr>
<td><strong>Deaths</strong></td>
<td>10738</td>
<td>(2%)</td>
</tr>
</tbody>
</table>

---

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

329 cases per 100,000 Maricopa County residents per week

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

322
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.
COVID-19 Hospitalizations Continue to Increase
Hospitalizations similar to Thanksgiving 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

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.

In August, 2% of COVID-19 deaths have been in children.
1 in 4 cases are children

Percent of Cases that are Children

Delta Started

0.7 3.2 8.7 7.5 8.8 10.2 9.6 14.2 14 13 14.1 17.2 17.7 18.4 20.3 19.2 20.3 27.3

March April May June July August September October November December January February March April May June July August

8/27/2021
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
Almost 3X as many school outbreaks in August compared to the peak in February.
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

SARS-CoV-2 Infections and Hospitalizations Among Persons Aged ≥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

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
Link when live: https://www.cdc.gov/mmwr/volumes/70/wr/mm7034e4.htm?s_cid=mm7034e4_w
Update on Booster Doses

• CDC and the White House announced a plan for mRNA booster doses to be available starting September 20th, 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


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
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
County-partnered Vaccine Efforts

- **250 Pop-up Events**
  69,434 doses given at school clinics: 1/3 of school & childcare workforce
  150 Regional Events

- **1,620 Long Term Care Facility Events**
  with **862** facilities fully vaccinated

- **828** homebound vaccinated

Vaccination Outreach in 8 Months

8/27/2021
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

Total Calls/Month

<table>
<thead>
<tr>
<th>Month</th>
<th>Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-20</td>
<td>1005</td>
</tr>
<tr>
<td>Jul-20</td>
<td>1938</td>
</tr>
<tr>
<td>Aug-20</td>
<td>2467</td>
</tr>
<tr>
<td>Sep-20</td>
<td>2275</td>
</tr>
<tr>
<td>Oct-20</td>
<td>2567</td>
</tr>
<tr>
<td>Nov-20</td>
<td>2355</td>
</tr>
<tr>
<td>Dec-20</td>
<td>3224</td>
</tr>
<tr>
<td>Jan-21</td>
<td>7694</td>
</tr>
<tr>
<td>Feb-21</td>
<td>7411</td>
</tr>
<tr>
<td>Mar-21</td>
<td>10723</td>
</tr>
<tr>
<td>Apr-21</td>
<td>4488</td>
</tr>
<tr>
<td>May-21</td>
<td>3960</td>
</tr>
<tr>
<td>Jun-21</td>
<td>5157</td>
</tr>
<tr>
<td>Jul-21</td>
<td>7351</td>
</tr>
<tr>
<td>Aug-21 (partial)</td>
<td>7155</td>
</tr>
</tbody>
</table>
We had a lot of help from the community

Volunteers

5,566 Volunteers

105,208 Volunteer Hours

16,164 Shifts Worked

Estimated Value of Volunteer Time Based on Occupation

$3,847,570
Questions/Discussion
Proportion of Cases by Age Group Over Time
Proportion of Hospitalization by Age Group Over Time
## Hospital Utilization (AZ Central Region)

### Hospital Resources - Central AZ Region - 24 August 2021 Snapshot

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Capacity (% capacity)</th>
<th>In-Use for COVID (% capacity)</th>
<th>In-Use for Other (% capacity)</th>
<th>Available (% capacity)</th>
<th>Planned Surge Add'l Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical/Surgical Beds</td>
<td>5,791 (100%)</td>
<td>1,153 (20%)</td>
<td>4,185 (72%)</td>
<td>454 (8%)</td>
<td>2,295*</td>
</tr>
<tr>
<td>ICU Beds</td>
<td>1,158 (100%)</td>
<td>337 (29%)</td>
<td>710 (62%)</td>
<td>112 (10%)</td>
<td>561</td>
</tr>
<tr>
<td>Ventilators</td>
<td>1,608 (100%)</td>
<td>213 (13%)</td>
<td>377 (23%)</td>
<td>1,018 (63%)</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Source: EMResource - ADHS  JAN 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
### 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

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

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 others

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