

COVID-19 Disease Outbreak Outlook Arizona and Pima County

Updated February 11, 2022

Disclaimer: This information represents my personal views and not those of The University of Arizona, the Zuckerman College of Public Health, or any other government entity. Any opinions, forecasts, or corresponding recommendations should be considered in conjunction with other corroborating and conflicting data. Past updates can be accessed at <https://publichealth.arizona.edu/news/2021/covid-19-forecast-model>.

For the week ending February 6th, at least 40267 Arizonans were diagnosed with COVID-19, a 45% decrease from the 73828 cases reported the prior week (Figure 1). This week's tally is smaller than the January 2021 peak (65094 cases) but it is higher than the June 2020 peak (28009 cases). The risk of contracting *Omicron* remains extremely high. It is still too soon for institutions and/or individuals to safely relax their mitigation practices as the level of transmission is more important than the direction of change.

Cases are currently being diagnosed at a rate of at 560 cases per 100K residents per week. *Omicron* peaked statewide about January 15th at 2017 cases per 100K residents per week. Currently, rates are highest among those 25 - 64 years and lowest among those <15 years, 610 and 466 cases per 100K residents, respectively (Figure 2a following page). Arizona's new case ranking fell to 11th place with the nation's leaders being Alaska (1231), Kentucky (990), West Virginia (920), Montana (905), and Mississippi (831).

According to the [CDC](#), 41% of Arizona adults and 58% of its seniors have obtained a third dose booster. The [ADHS Vaccine Dashboard](#) shows weekly doses delivered fell to 75K doses indicating progress is slowing even further. The [CDC](#) recommends everyone ≥12 years who received Pfizer primary sequence should receive a booster; ≥18 years if they received the Moderna primary sequence. Disappointingly, [Pfizer postponed its FDA request](#) for approval in children 6 months – 5 years to await data on third dose efficacy.

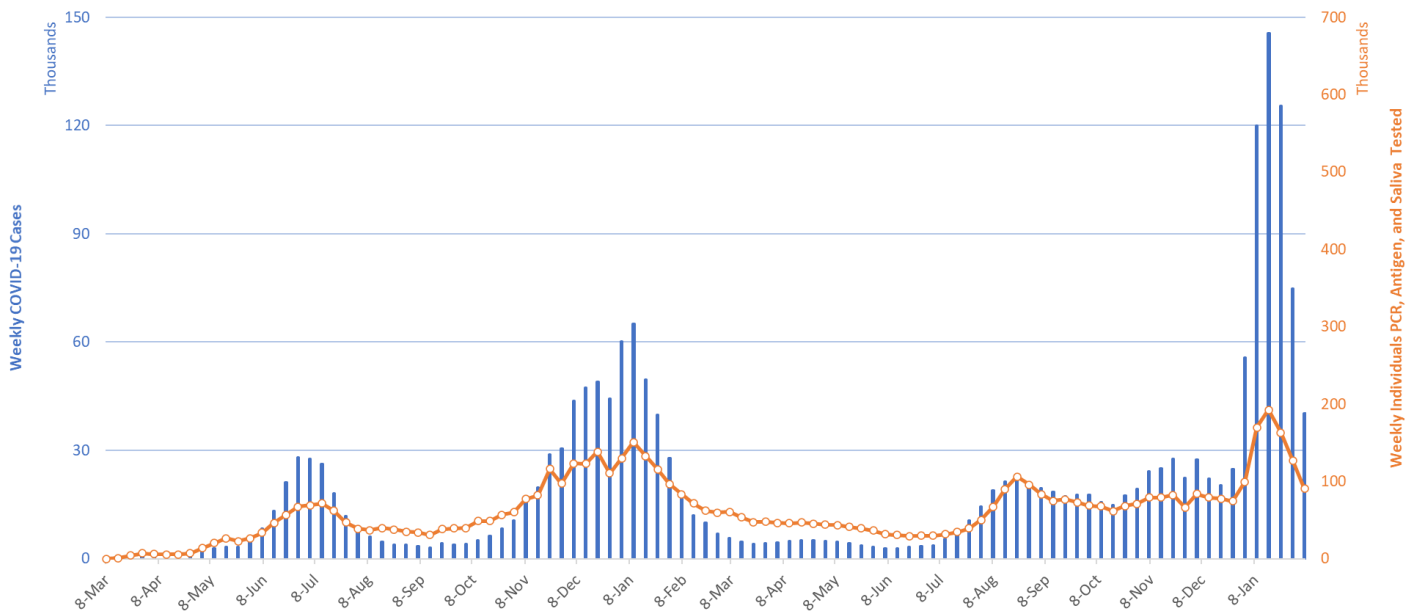


Figure 1. Weekly COVID-19 Cases in Arizona and Number of Individuals Undergoing COVID-19 Diagnostic Testing March 1, 2020 – February 6, 2022.

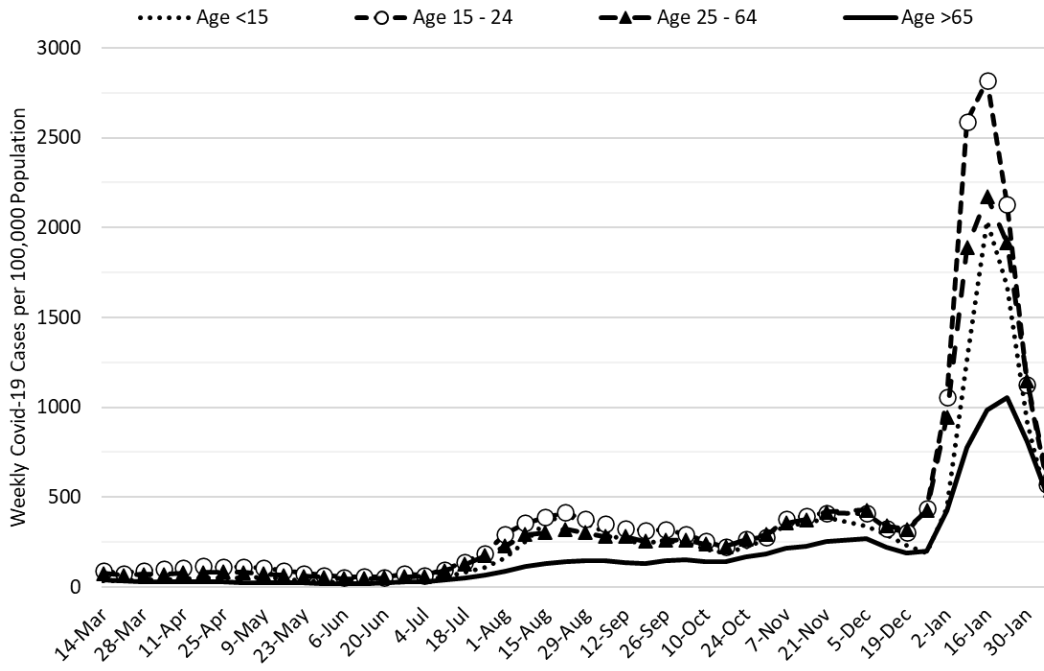


Figure 2a. COVID-19 Cases in Arizona by Age Group March 7, 2021 – February 6, 2022 (Data from week ending November 28 suppressed).

Figure 2a shows transmission among all age groups is decreasing with much less separation by age than during the peak. Figure 2b shows that transmission among children is also declining across all age groups.

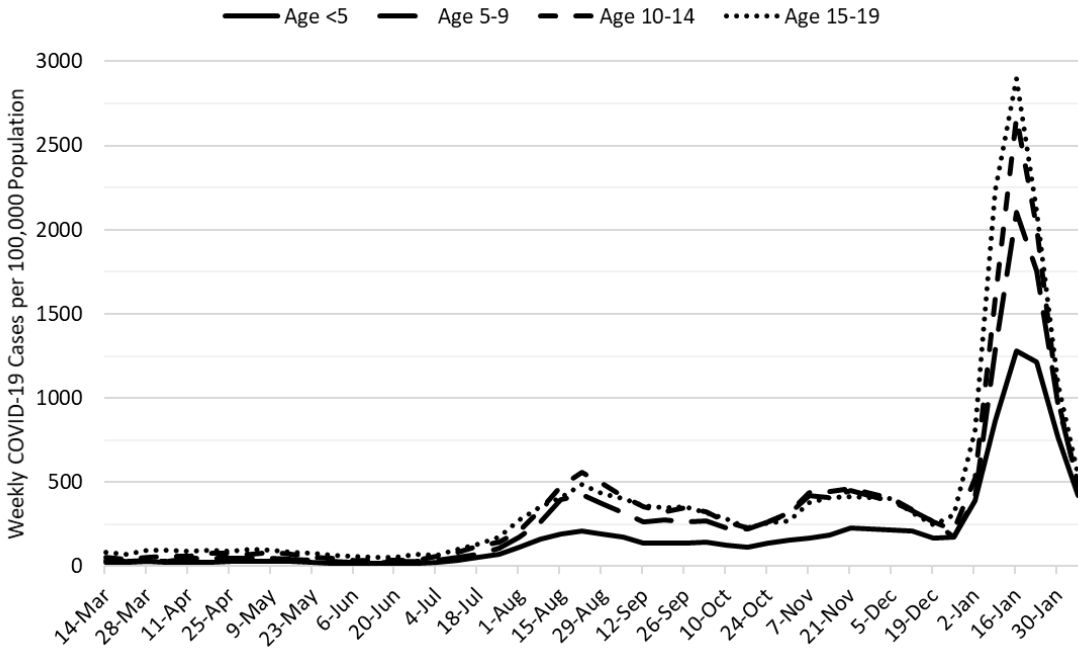


Figure 2b. COVID-19 Weekly Incidence in Arizona among children March 7, 2021 – February 6, 2022.

Test positivity fell this week but remains quite high at 49% (Figure 3).

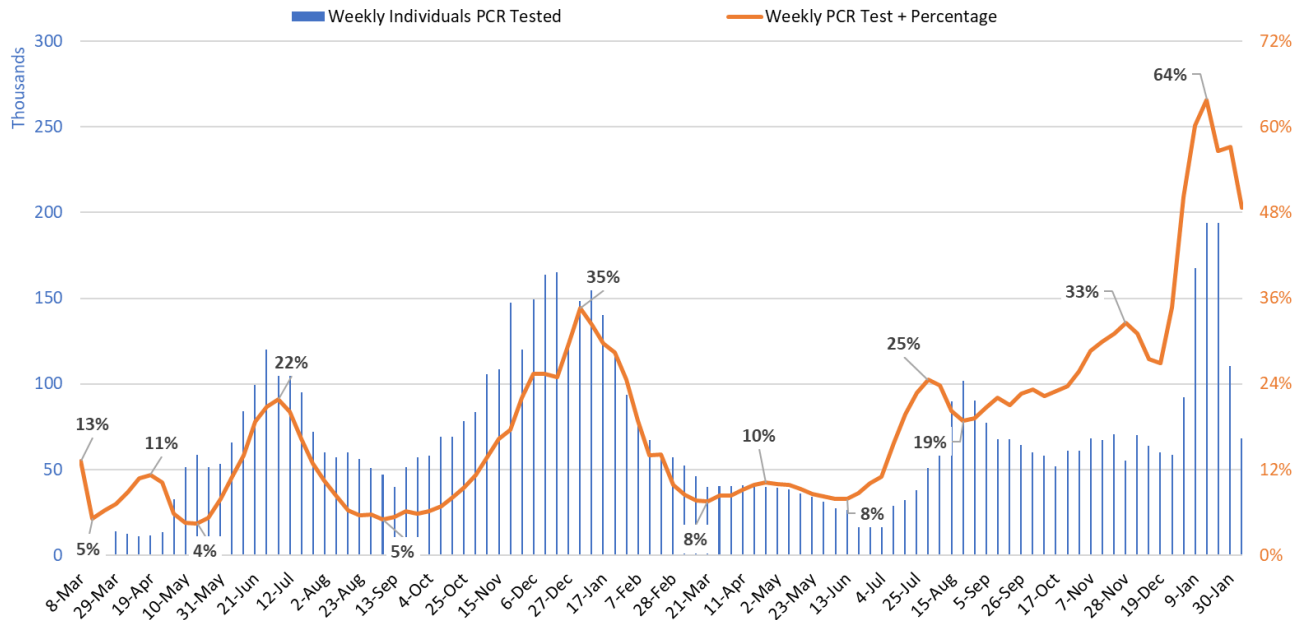


Figure 3. Weekly Number of Patients Undergoing Traditional Nasopharyngeal PCR Testing and Associated Percent Positivity March 1, 2020 – February 6, 2022.

As of February 10th, 2436 (28%) of Arizona’s 8743 general ward beds were occupied by COVID-19 patients, a 20% decrease from last week’s 3064 occupied beds (Figure 4 and Figure 5 Panel A). Another 604 (7%) beds remained available for use which is higher than last week’s 526 available beds. Four-hundred ninety-nine (499, 31%) of Arizona’s 1642 ICU beds were occupied by COVID-19 patients, a 21% decrease from last week’s 632 occupied beds (Figure 4 and Figure 5 Panel B). An additional 137 (8%) ICU beds remained available for use which is higher than last week’s 117 beds.

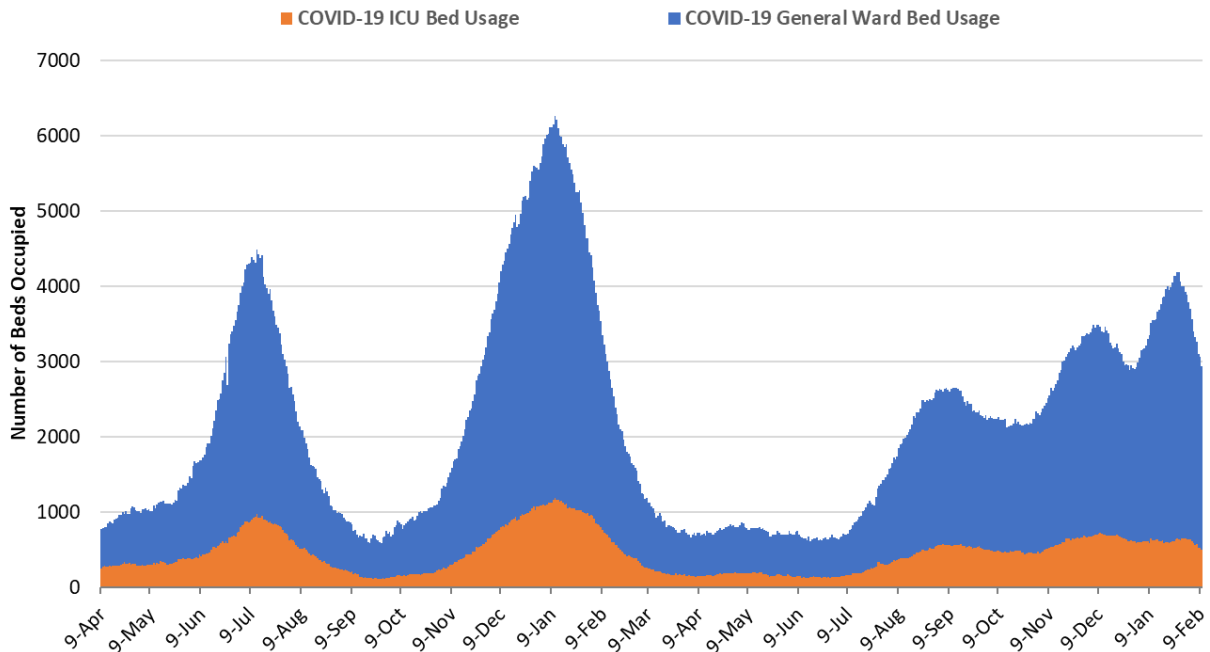


Figure 4. Arizona Daily COVID-19 General Ward and ICU Census April 9, 2020 – February 10, 2022.

In a sign of relief, we fell below 3000 combined occupancy this week. Nevertheless, hospitals remain very busy. They have now experienced 181 consecutive days with a combined occupancy >2000 patients whereas the summer 2020 and winter 2021 saw 57 and 98 days, respectively. We experienced 75 days with >3000 combined occupancy with the *Delta/Omicron* waves whereas the summer 2020 and winter 2021 waves saw 35 and 78 days, respectively.

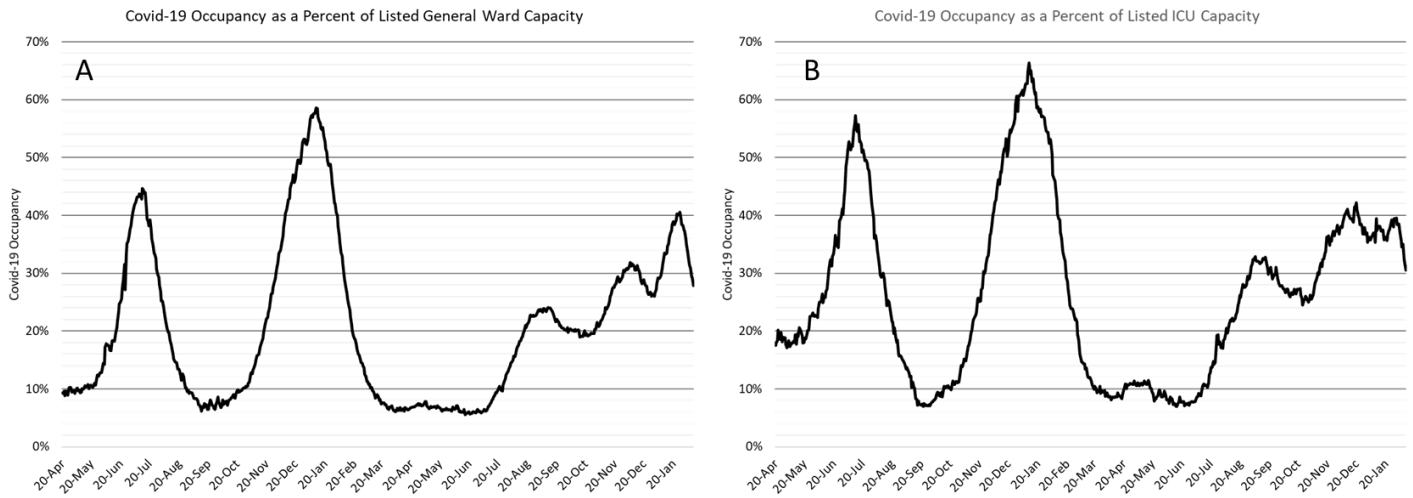


Figure 5. COVID-19 Occupancy as a Percent of Listed General Ward (A, left) and ICU (B, right) Capacity in Arizona April 20, 2020 – February 10, 2022.

Hospital occupancy remains far above seasonal levels with safety margins, as measured by available beds, remaining near historical lows (Figure 6).

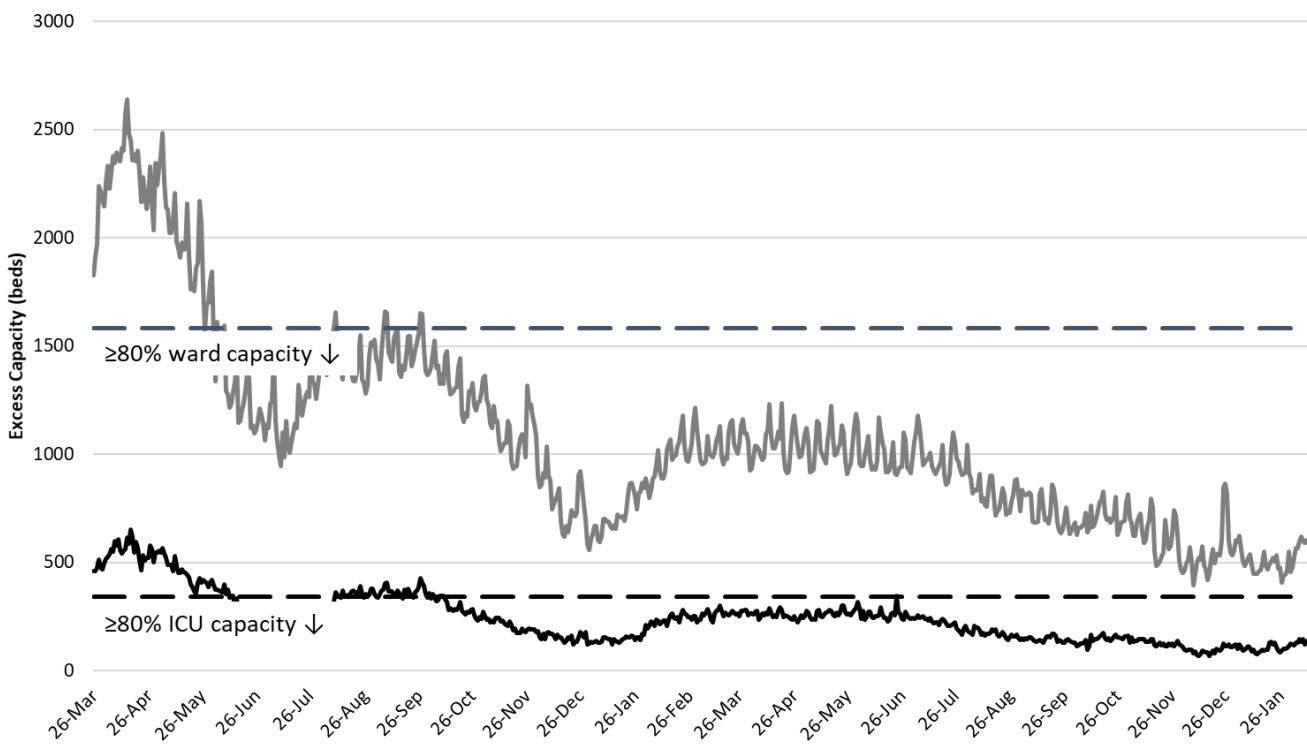


Figure 6. Observed Excess Non-Surge General Ward and ICU Capacity in Arizona Mar 26, 2020 – Feb 10, 2022.

[Seasonal influenza cases in Arizona](#) (blue line) has fizzled, at least as compared to the state's 5-year historical average (grey bars, Figure 7). COVID-19 mitigation efforts may have slowed influenza transmission. Hospitals should get further relief from fewer COVID-19 and fewer influenza cases over the coming weeks.

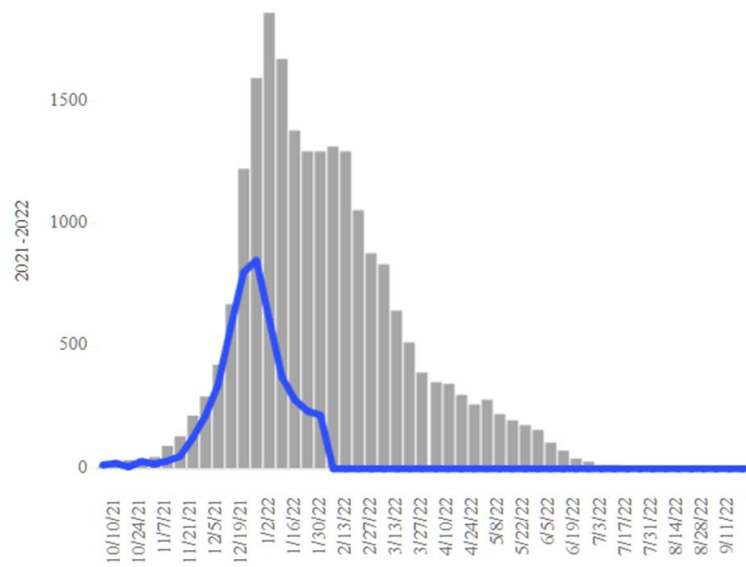


Figure 7. Arizona Influenza Cases in 2021 (blue) versus 5-Year Historical Average (grey)

The week ending December 12th has now recorded 552 deaths to date. Hopefully, this will be the only week this happens during the *Delta - Omicron* waves (Figure 8a). At least 27073 Arizonans have lost their lives to COVID-19. A [mortality report](#) from the AzPHA indicates that official statistics undercount actual deaths.

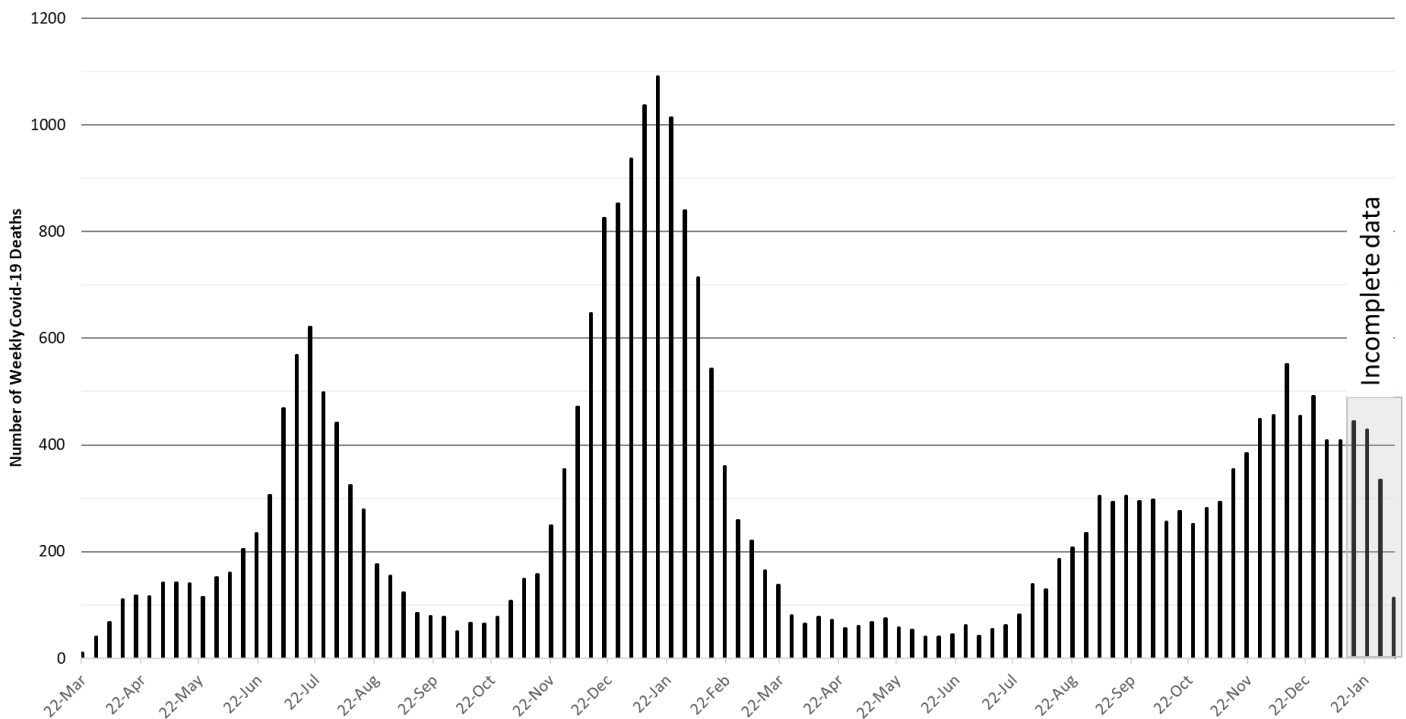


Figure 8a. Weekly Arizona COVID-19 Deaths March 16, 2020 – February 6, 2022.

Pima County

For the week ending January 30th, 5882 Pima County residents were diagnosed with COVID-19, a 44% decrease from the initial tally of 10507 cases last week (Figure 9). Transmission by age group is shown in Figure 10.

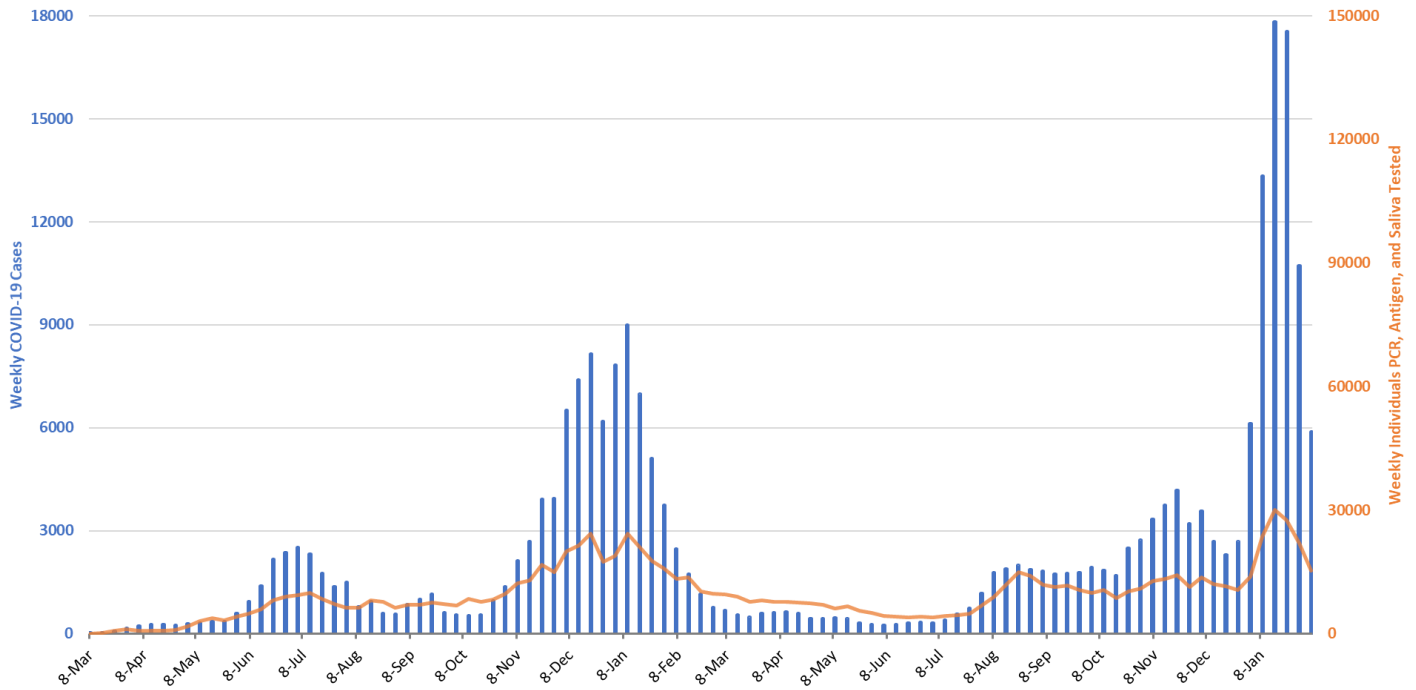


Figure 9. Weekly COVID-19 Cases in Pima County and Number of Individuals Undergoing COVID-19 Diagnostic Testing March 1, 2020 – February 6, 2022.

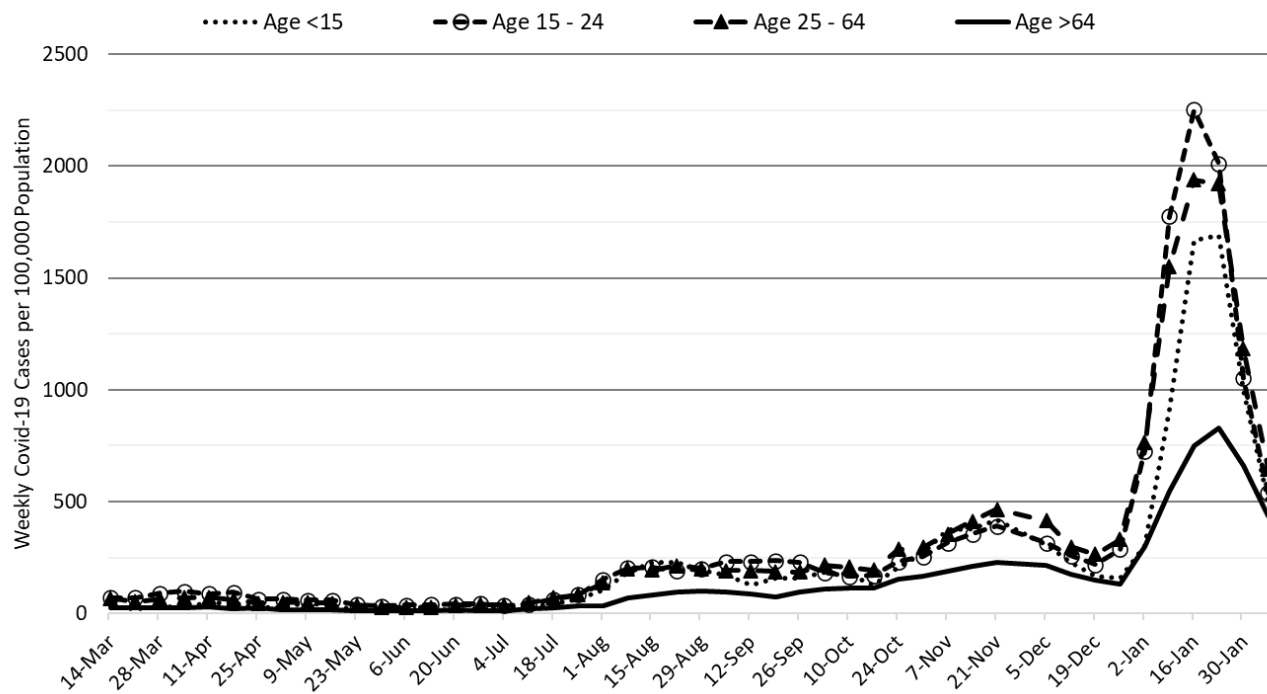


Figure 10. COVID-19 Weekly Incidence in Pima County by Age Group January 10, 2021 versus February 6, 2022.

Summary:

- Arizona continues to experience very high levels of community transmission. Test positivity remains high reminding us that test capacity, accessibility, and/or uptake is wholly inadequate. Arizona, like much of the United States, is emerging from its most recent pandemic wave. Transmission (cases) has peaked but risk of infection remains high.
 - **As of February 6th, new cases were being diagnosed at a rate of 560 cases per 100K residents per week.** Rates peaked on or about January 15th at 2017 cases per 100K residents per week, somewhat lower than other states, perhaps due to less testing.
 - **The risk of *Omicron* infection will remain high for the remainder of February.** Remember, the CDC defines high community transmission as levels >100 cases per 100K residents per week. We're a far cry from that!
- **COVID-19 hospital occupancy in both the wards and ICUs are decompressing.** Even so, access to care continues to be constrained by both COVID-19 occupancy and staff shortages owing to infections among healthcare workers.
- Weekly COVID-19 deaths peaked at 552 deaths the week ending December 12th. However, weekly totals in the low-400s are likely for another couple of weeks. So far, at least 27073 Arizonans have lost their lives to COVID-19.
- **What does the future of COVID-19 look like?** The UK's Scientific Advisory Group for Emergencies has something to say about it. I tend to agree with their Central Optimistic and Central Pessimistic scenarios; I'm hoping for the former, but we should prepare for the latter.
 - <https://www.gov.uk/government/publications/academics-viral-evolution-scenarios-10-february-2022>
- **What's going on with the UK and BA.2?** Well, here is the latest UK Technical Briefing. One of the more interesting factoids (page 21) is that the median serial interval for BA.2 is 2.7 days (lightening fast) compared to 3.3 days for BA.1 (thunder fast). The other factoid is the adjusted risk of ICU admission for Omicron is 0.5 (0.2 – 1.2) – which is consistent with the clinical picture – Omicron less severe.
 - <https://www.gov.uk/government/publications/investigation-of-sars-cov-2-variants-technical-briefings>
- **Is BA.2 here in Arizona?** It is present, but in low numbers (<5%). However, we should expect it to become the dominant variant over the coming months (not weeks like BA.1). The implication is that it will be a bit more difficult to push down transmission rates. <https://pathogen.tgen.org/covidseq-tracker/>
- Other odds and ends...over the coming months expect more information to clarify the long-term risk of COVID-19 infection. The cases, hospitalizations, and deaths we see in "real-time" aren't the only ones occurring. As if there weren't already good enough reasons to get vaccinated and mask-up!
 - <https://www.bmj.com/content/376/bmj-2021-068414>
 - https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4028547
 - <https://www.nature.com/articles/s41591-022-01689-3>
 - <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2788641>

Appendix

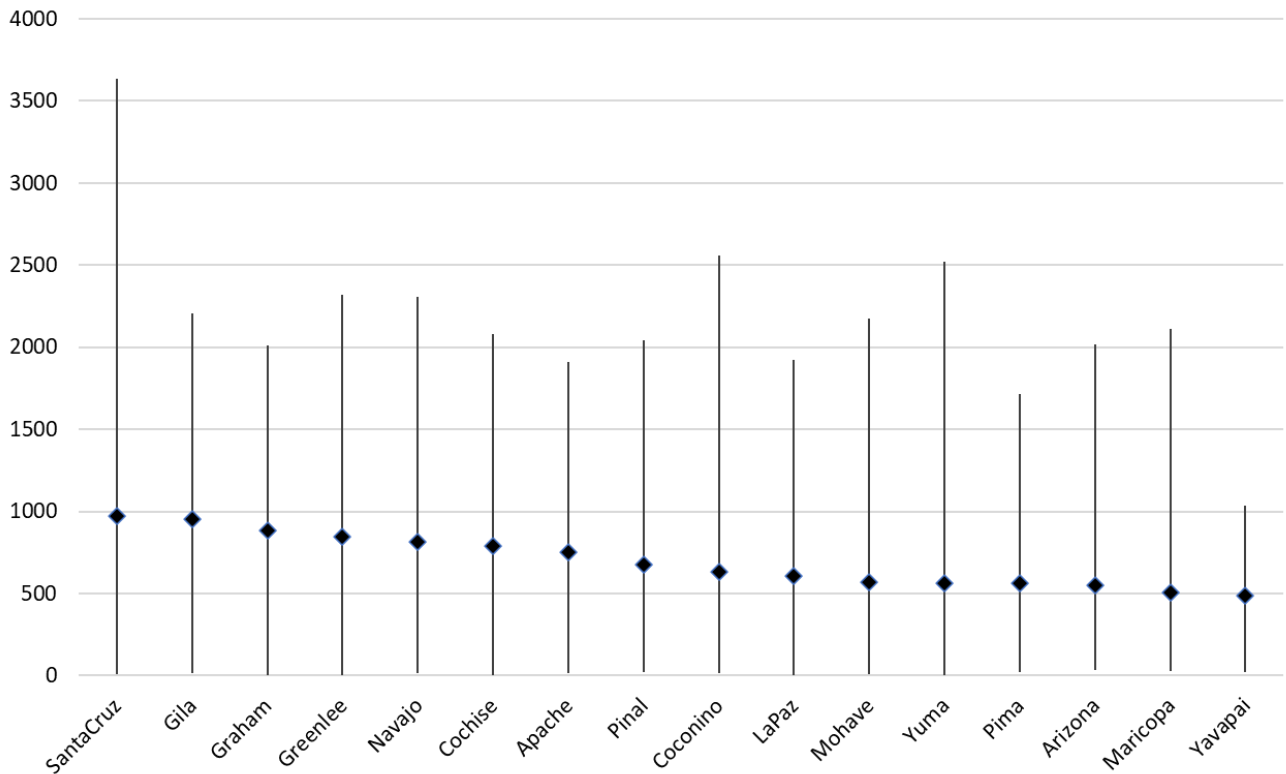


Figure 1A. Minimum, Maximum and Current COVID-19 Cases Rates per 100K Residents per Week by County April 1, 2020 – February 6, 2022.

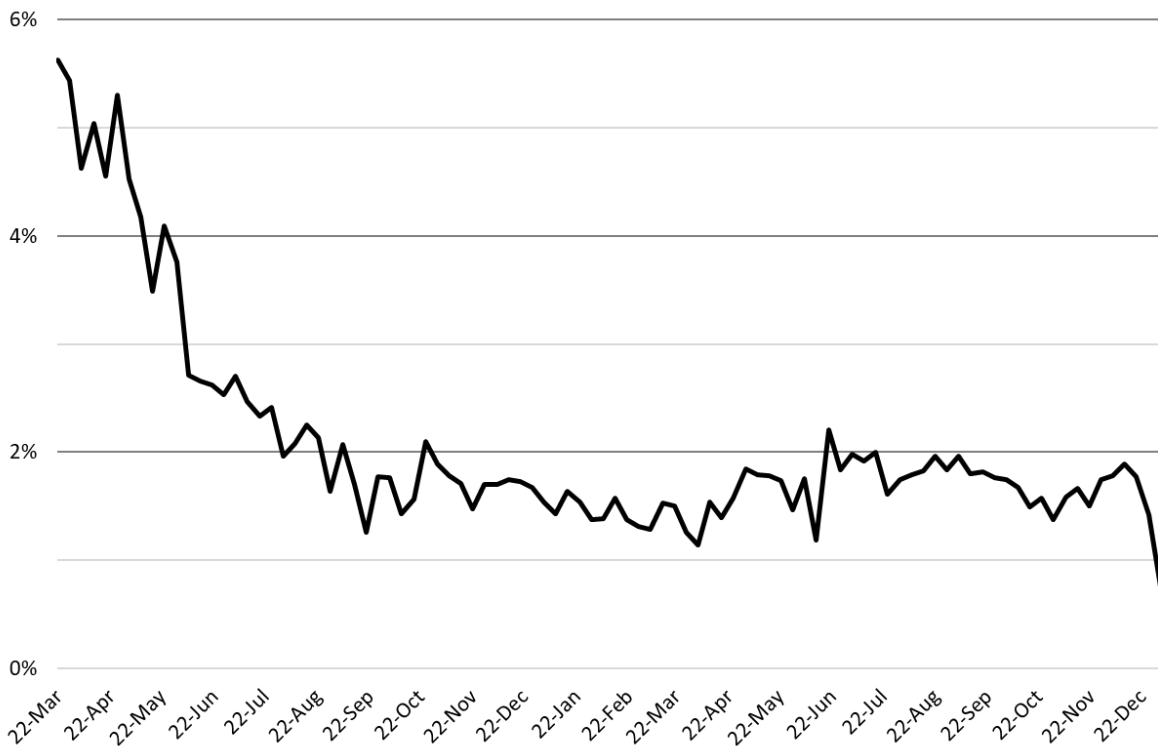


Figure 2A. COVID-19 Age-Standardized Case Fatality Rate March 22, 2020 – January 2, 2022 (October 25, 2020 case distribution).

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