

## ‘Certain communities were just hit extra hard’: COVID-19’s lethal effects upended Arizona life.



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COVID-19 was the third-leading cause of death in 2020 and 2021 behind heart disease and cancer, Arizona data shows, but some health experts say that isn’t telling the full story of its lethal effects in the state.

The provisional cause-of-death rankings from the Arizona Department of Health Services mirror a national [analysis](#) from the Kaiser Family Foundation that shows the SARS-CoV-2 virus that causes COVID-19 was the third-leading cause of death behind heart disease and cancer in the U.S. in both 2020 and 2021.

The Kaiser Family Foundation’s analysis, using mortality data from the Centers for Disease Control and Prevention, says COVID-19 is on track to remain the third-leading cause of death nationally in 2022. State data indicates that COVID-19 will likely continue to be a leading cause of death in Arizona in 2022, although whether it will remain the third-leading cause is unclear.

While the data on its face is sobering, it does not fully illustrate the brutality of COVID-19 in Arizona, some health experts say, including the loss of life expectancy for all Arizonans that occurred during the pandemic, and how communities of color were hit especially hard. Known COVID-19 deaths in Arizona as of Dec. 14 were nearing 32,000.



*Left: Dr. Norlalak Jiramethee a pulmonologist, examines a COVID-19 patient in one of the COVID-19 units at Valleywise Medical Center in Phoenix on January 14, 2021. Much of the hospital was converted to handle COVID-19 patients and they, like many other hospitals throughout Maricopa County were at or near capacity. David Wallace/The Republic.*

“We had the fifth-highest drop in life expectancy in the country, and you can’t ignore that,” said Swapna Reddy, a clinical associate professor in the College of Health Solutions at Arizona State University. “Certain demographics and certain communities were just hit extra hard in this state. There’s no way to sugarcoat that. And especially I’m talking about how our Native communities and our Latino community experienced this pandemic differently than the rest of the population.”

Agnes Attakai, a member of the Navajo Nation and public health expert, lost 13 family members to COVID-19. She said that level of loss is typical among the tribal members she knows.

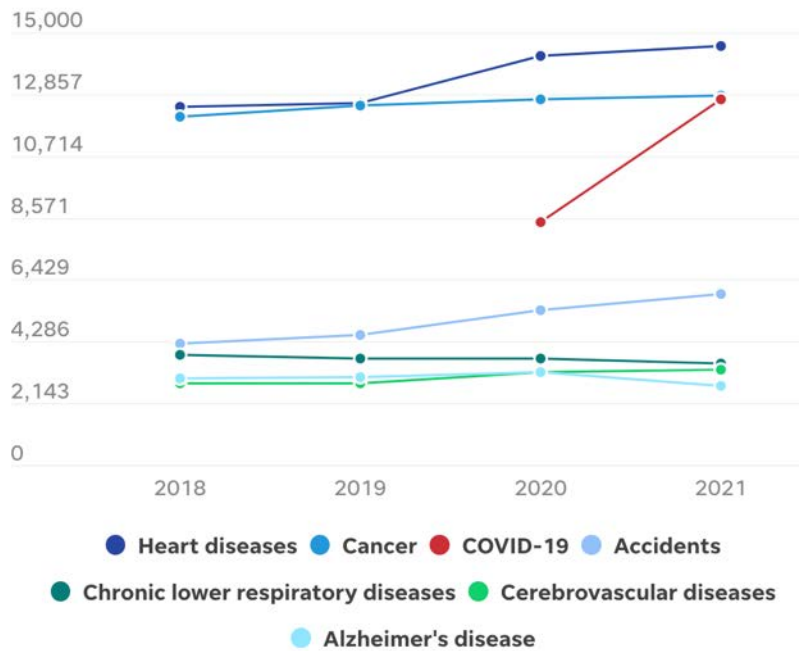
“I am not alone as a Navajo who has lost family - Navajo folks that I know, Navajo students at the UA, all have lost people to COVID,” said Attakai, who is director of health disparities outreach and prevention education for the Center for Health Equality at the University of Arizona’s Mel and Enid Zuckerman College of Public Health. From her own experience and

what she knows from other Navajo friends and family, it feels to Attakai as though COVID-19 has been the No. 1 cause of death among tribal members for the past couple of years, she said.

The average life expectancy for a Native American or Alaskan Native person in the U.S. as of 2021 had dropped to 65.2 years old, compared with the U.S. average of 76.1 years old, a recent federal analysis of provisional data says.

### Arizona's top causes of death, 2018-2021

In 2020, COVID-19 overtook accidents as Arizona's third most frequent cause of death.



Source: Arizona Department of Health Services.

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“It wasn’t all because of COVID. It was because of the underlying issues that were already there, and COVID just exposed and exploited that ... COVID is just unveiling the underlying reality of health inequity in Arizona,” said Dr. Farshad Fani Marvasti, a Phoenix physician and director of Public Health, Prevention and Health Promotion at the UArizona College of Medicine-Phoenix. “Hopefully we can learn from these really sad experiences and these numbers and make policy changes to address health disparities.”

While data for the leading causes of death in 2022 in Arizona to date is not available, provisional state numbers show that although COVID-19 deaths declined this year, they continued at a

relatively high level, particularly in January and February.

Provisional surveillance numbers from the state health department show that in 2022 in Arizona there were 6,278 COVID-19 deaths through Nov. 30, the equivalent of an average of nearly 19 deaths per day.

Many of the deaths were early in the year. State data shows there were 3,785 total COVID-19 deaths in January and February combined, which is 60% of all the COVID-19 deaths in Arizona this year. The numbers could change as death certificates are reviewed.

COVID-19 was the No. 1 cause of death for people between the ages of 45 and 84 in the U.S. in January and February of this year, the Kaiser Family Foundation analysis found, and was among the top four leading causes of deaths for other age groups starting at age 5 and up.

“COVID-19 deaths have since declined, but the virus remains a leading cause of death in the U.S.,” the analysis says. “So far in 2022 in the U.S., COVID-19 is the number three cause of death (through September). However, about half of COVID-19 deaths in 2022 thus far occurred in January and February of the year.”

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**COVID-19 vaccine arrives on Navajo Nation**

The Navajo Nation received its first doses of the COVID-19 vaccine on Dec. 14, 2020, and plans to administer them to health care workers.



*Left:* Navajo Nation Police Officer Jershon Begay transports the first delivery of COVID-19 vaccines to an ultra-cold freezer at the Indian Health Service’s Gallup Indian Medical Center in Gallup, New Mexico on Dec. 14, 2020. *Courtesy of Indian Health Service.*



*Right:* Navajo Nation Police Officers and Indian Health Service Officials deliver the COVID-19 vaccinations on Dec. 14, 2020, to Sage Memorial Hospital in Ganado, Arizona. *Courtesy of Sage Memorial Hospital.*



*Left:* U.S. Public Health Service (left) and Gallup Indian Medical Center Chief of Pharmacy Vicky Chavez (right) prepare COVID-19 vaccines to be redistributed from GIMC to other health care facilities on the Navajo Nation on Dec. 14, 2020. *Courtesy of Indian Health Service.*



*Right:* Vicky Chavez, chief of pharmacy for the Indian Health Service’s Gallup Indian Medical Center in Gallup New Mexico, counts vials of COVID-19 vaccines on Dec. 14, 2020. *Courtesy of Indian Health Service.*



*Left: Indian Health Service Officials deliver the COVID-19 vaccinations on Dec. 14, 2020, to Sage Memorial Hospital in Ganado, Arizona. Courtesy of Sage Memorial Hospital.*

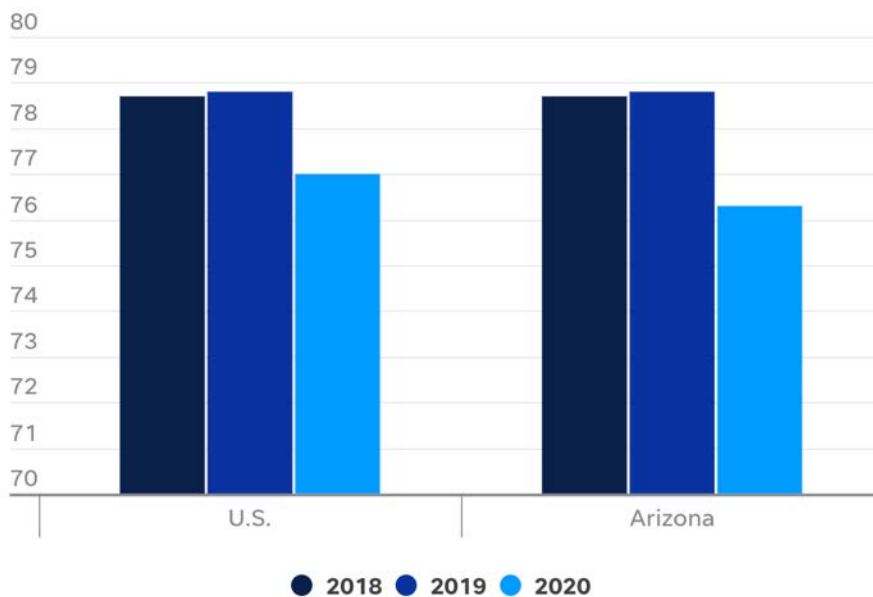
*Right: U.S. Public Health Service Lt. Kali Autrey, pharmacist, was the first IHS employee to receive a COVID-19 vaccine at the Crownpoint Health Care Facility in Crownpoint, New Mexico, as part of the Navajo Area IHS on Dec. 14, 2020. Courtesy of Indian Health Service.*



*Left: U.S. Public Health Service Capt. Jefferson Fredy, a member of the Navajo Nation and the chief of pharmacy at the Crownpoint Service Unit, was the second IHS employee to receive a COVID-19 vaccine at the Crownpoint Healthcare Facility in Crownpoint, New Mexico, as part of the Navajo Area IHS on Dec. 14, 2020. Courtesy of Indian Health Service*

## Life expectancy at birth, U.S. and Arizona

The drop in life expectancy nationwide in 2020 was the largest one-year decline since World War II, the Centers for Disease Control and Prevention said. The life expectancy of an average Arizonan fell to 76.3 years in 2020 from 78.8 years in 2019, according to data released by the CDC in August, which was below the 2020 U.S. life expectancy of 77 years old.



Source: Centers for Disease Control and Prevention.

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Arizonans lost 2.5 years of life expectancy in 2020. Life expectancy data shows how the deadly effects of COVID-19 may be even larger than the cause-of-death rankings suggest.

For one thing, a federal analysis says Arizonans lost 2.5 years of life expectancy between 2019 and 2020, which was worse than the average U.S. drop of 1.8 years of life lost during that same time period.

The drop in life expectancy nationwide in 2020 was the largest one-year decline since World War II, when life expectancy dropped 2.9 years between 1942 and 1943, according to the U.S. Centers for Disease Control and Prevention.

“I think what accounts for this is twofold. One is that we had little to no mitigation measures in place in Arizona. We did not follow the science, and we paid the price for it,” Marvasti said.

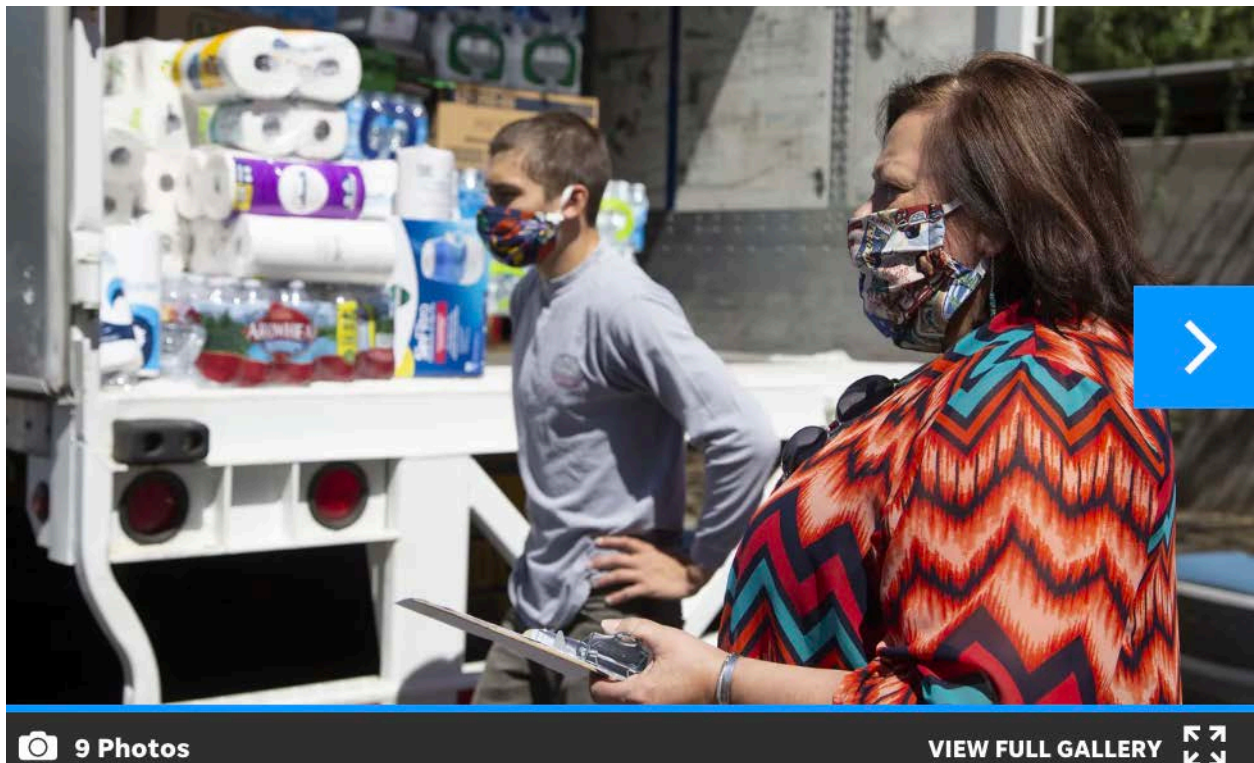
Arizona Gov. Doug Ducey, a Republican, did impose some mitigation measures, including the closure of bars, fitness clubs, indoor gyms and movie theaters in an order he issued in March 2020. The order ended in mid-May 2020, but the worst of the pandemic was still to come. Ducey was criticized for some of the decisions he subsequently made, including not imposing a statewide mask mandate and not having stricter shelter-in-place directives.

“The second one is probably a little harder to account for, but when you look at just deaths we know the studies nationwide show that there’s a clear connection between underlying chronic disease prior to COVID and increased risk with more severe disease and death,” Marvasti said. “That would be an interesting question, to see whether we have more chronic disease in Arizona.”

Arizona’s 2.5 years of life expectancy lost between 2019 and 2020 was tied for fifth-highest in the country along with Mississippi, [CDC data shows](#). New York state, the District of Columbia, Louisiana and New Jersey were in the top four spots for life expectancy lost in that same time frame.

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**COVID-19: Phoenix Indian Center collections donations to send to the Navajo Nation.** The Phoenix Indian Center collected donations and loaded them onto trucks to send to the Navajo Nation to help with the response to the COVID-19 pandemic.



9 Photos

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Patricia Hibbeler, Phoenix Indian Center CEO, right, and Jake Vercauteren, 22, help take in donations for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



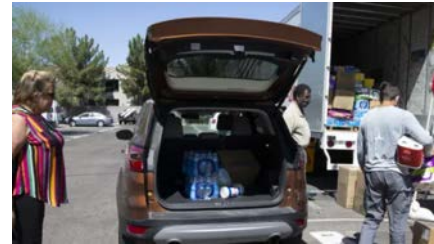
*Left:* Hickman Farms donates hay at the Phoenix Indian Center for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



*Right:* Rosemary Olson, of Phoenix, left, speaks with Patricia Hibbeler, right, Phoenix Indian Center CEO, after she dropped off some donations for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



*Left:* Jake Vercauteren, 22, and Hank Hibbeler, 22, help separate and load a truck at the Phoenix Indian Center for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



*Right:* Mary Cassellius, of Peoria, drops some donations at the Phoenix Indian Center for the COVID-19 to the Navajo Nation. *Cheryl Evans.*



The Phoenix Indian Center takes in donations for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*

*Right:* Hank Hibbeler, 22, left-in truck, and Jake Vercauteren, 22, help separate and load a truck at the Phoenix Indian Center for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



*Left:* Hank Hibbeler, and Jake Vercauteren, 22, help take in donations for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*

*Right:* Patricia Hibbeler, Phoenix Indian Center CEO, and Jake Vercauteren, 22, help take in donations for the COVID-19 relief to the Navajo Nation. *Cheryl Evans/The Republic.*



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The life expectancy of an average Arizonan fell to 76.3 years in 2020 from 78.8 years in 2019, according to data released by the CDC in August, below the 2020 U.S. life expectancy of 77 years old.

Provisional data indicates U.S. life expectancy dropped even more, by nearly a year in 2021 to 76.1 years. The final numbers, including state-by-state data on life expectancy in 2021, will not be available from the CDC until 2023, officials with the federal agency wrote in an email.

A national report about the loss of life expectancy blamed nearly 74% of the 2019 to 2020 loss on COVID-19. The report attributed 11% of the decline to increases in deaths from accidents and

unintentional injuries, a category that includes drug overdose deaths, which increased significantly during the COVID-19 pandemic, multiple studies have shown.

But the loss of life expectancy is not the same for everyone. Communities of color, already facing shorter lifespans before the pandemic, were far more severely affected.



*Left: Dr. Norlalak Jiramethee (center) a pulmonologist, speaks with nurses while working in the COVID-19 unit at Valleywise Health Medical Center in Phoenix on Jan. 21, 2021. Much of the hospital had been converted to handle COVID-19 patients and they, like many other hospitals throughout Maricopa County, were at or near capacity. David Wallace/The Republic.*

Loss of life expectancy in the U.S. disproportionately affected the Native American and Alaska Native population, who lost 6.6 years of life expectancy between 2019 and 2021, provisional CDC data shows, compared with the white population’s loss of 2.4 years of life expectancy during that same two-year period.

The Hispanic population in the U.S. has a longer life expectancy than the white, non-Hispanic population, yet lost more years of life expectancy between 2019 and 2021 – 4.2 years of life, the CDC analysis found.

COVID-19 served as a “massive spotlight on all these disparities and inequities and disproportionate burdens that were already happening prior to the pandemic,” ASU’s Reddy said. “While COVID affected all of us, it certainly affected some of us in very different ways. ... The loss of life expectancy is incredibly significant.”

People of color, including Latinos, are overrepresented among some front-line jobs like sanitation services. Front-line workers never had the luxury of working from home during the pandemic, Reddy said.



*Left: Navajo Nation President Jonathan Nez on May 1, 2020 helped deliver food to families on the Navajo Nation during the COVID-19 pandemic. Navajo Nation President Jonathan Nez and Vice President Myron Lizer Facebook Page.*

**‘Their bodies were not strong enough to fight off the infection’**

The Navajo Nation includes parts of Arizona, Utah and

New Mexico. During the late spring of 2020, it was the site of Arizona’s first major outbreak of COVID-19. For a time, the Navajo Nation had one of the highest infection rates in the country.

Among the Navajo people to lose their lives in the early first months of the COVID-19 pandemic, long before the vaccine was available, was 28-year-old Valentina Blackhorse, a former Miss Navajo pageant winner who died in April 2020. In May 2020, 57-year-old Navajo emergency room nurse Valrena Singer died from COVID-19, which she likely contracted from working at the Kayenta Health Center.

In February 2021, former Navajo Nation President Albert Hale died after a battle with COVID-19. He was 70. Just this year, former state Rep. Sylvia Laughter, a Navajo who served in the Arizona Legislature from 1999 to 2005, died after a 10-month battle with COVID-19, according to her family. She was 63.

Multigenerational living situations and a lack of running water in some areas put some Navajo at higher risk for infection. But a key factor that made tribal members more susceptible to worse outcomes once infected with the COVID-19 virus is that Native American people, including members of the Navajo Nation, tend to have a high burden of chronic diseases.

“Their bodies were not strong enough to fight off the infection,” Attakai said. “They were more likely to get complications. In particular, most of the folks that I know started developing pneumonia very early on and had to go on respirators.”

Those health problems can be traced back to an indigenous history of colonialization and forced relocation to reservations that caused generations of chronic disease, Attakai said. Indigenous people in Arizona lost access to the crops and traditional food they’d once relied on. Instead, they became dependent on rations of high-fat processed food from the government, which made them more likely to develop diabetes and other health issues, she said.

“You have a variety of stressors from displacement,” Attakai said. “The reservations were pretty much concentration camps. Fast forward and a lot of communities are still faced with having USDA (U.S. Department of Agriculture) commodities as a way to supplement their diets.”

Some studies have connected policies that diverted water away from indigenous communities to more populated areas of Arizona with the rise of diabetes among indigenous people, Attakai said.

The good news is that by regaining water rights through recent court settlements, indigenous people are beginning to grow crops and gain better access to healthier foods, she said. Also, culturally specific diabetes programs are helping to reduce the incidence of diabetes, she said. And Attakai said the USDA has improved food options tremendously and now offers healthier options like low sodium, no sugar canned and frozen vegetables and fruit.



**Inside a Valleywise COVID-19 unit during a pandemic hospital surge.** Jan. 14, 2021. (Note: at that time much of Valleywise Health Medical Center hospital was converted to handle COVID-19 patients and they, like many other hospitals throughout Maricopa County, were at or near capacity.) *Photos by David Wallace/The Republic.*



*Left:* Registered Nurses (RNs) Danielle Coates (left) and Alex Clark tend to a patient.



*Right:* Alex Clark, RN works in one of the Valleywise COVID-19 units.



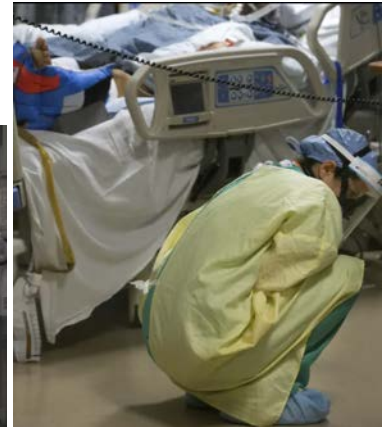
*Left:* A health care provider tends to a patient that is intubated in a COVID-19 unit.



*Left:* Certified Nurse Assistant Anahi Flores, looks on into a COVID-19 patient's room in a COVID-19 unit. This unit has a ventilation system that keeps the air between each patient's room completely isolated and then that air is vented outside.

*Right:* Danielle Coates, RN works in a COVID-19 unit.

A COVID-19 patient. Medical Equipment used for infusions in a COVID-19 unit.



*Left:* Alex Clark, RN tends to a patient in one of the COVID-19 units.

*Right:* Morgan Prescott, RN works in one of the COVID-19 units.





*Left:* Patricia Brown, a pharmacy technician, puts on her personal protective equipment before entering a COVID-19 unit.



*Right:* Danielle Coates, RN puts on her personal protective equipment before re-entering a COVID-19 unit.



*Left:* Leah Deutsch, RN wipes her face after exiting a COVID-19 unit.

*Right:* Victoria Jeffery, CNA looks on in one of the COVID-19 units.



Darlean Clark, RN (left) who is in a COVID-19 patient's room, tells Victoria Jeffery, Certified Nurse Assistant what supplies she needs through the crack of a sliding glass door in a COVID-19 unit

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Another problem with chronic illness that put some Navajo and other indigenous populations in Arizona at a disadvantage for poor outcomes from COVID-19 is that they tend to live in rural areas of the state that have shortages of health care professionals, said Dr. Dan Derksen, director of the Center for Rural Health at the University of Arizona's Mel and Enid Zuckerman College of Public Health. And Arizona in general suffers from a health care workforce shortage when compared with other states, he said.

"Most people train in Phoenix and Tucson, and a lot of our need is in the 13 other counties," he said. "We need to strengthen the rural health infrastructure. It's so threadbare. Part of that is embedding the pathway within the community itself, and making sure infrastructure is self-sustaining. ... I think we'll have more attention to that going forward."

Derksen and other experts say it's also important that the health care workforce reflects the population. Native Americans comprise less than 1% of Arizona's active physician workforce, even though Native Americans and Alaska Natives are 5.3% of the state population, according to the most recent Association of American Medical Colleges and census data.

### **Arizona deaths from heart diseases increased by 13% in 2020**

The state's cause-of-death ranking does not account for deaths that were caused by COVID-19 but were incorrectly classified as other causes because of issues like a lack of COVID-19 tests, particularly at the beginning of the pandemic.

Heart diseases long have been either the No. 1 or No. 2 two cause of death in Arizona, and the number of people who died of heart disease increased on average by 4.8% annually between 2015 and 2019.

In 2020, which included the first 9 ½ months of the COVID-19 pandemic, the number of Arizonans who died of heart disease jumped from 12,560 to 14,185 deaths – an increase of nearly 13%, which is more than twice the normal rate of increase, the data shows. In 2021, the number of Arizonans who died from heart disease was similarly high, at 14,536 deaths.



*Left: Registered nurse Danielle Coates removes her personal protective equipment after exiting one of the COVID-19 units at Valleywise Health Medical Center in Phoenix on Jan. 14, 2021. David Wallace/The Republic.*

The COVID-19 death numbers in the cause-of-death ranking data only include deaths where COVID-19 was the main or primary cause of death, which means they don't include deaths where COVID-19 was a contributing or secondary cause of death, such as someone whose death certificate says they died of a heart attack and COVID-19 was a secondary cause.

"The underlying cause of heart disease is chronic inflammation," Marvasti said. "And the problem with COVID is that it ramps up inflammation and wreaks havoc in the body by doing that. So it makes sense, that connection, where you are going to see more heart disease-related deaths."

Accidents, a category also labeled as unintentional injuries, showed an unusually large increase between pre-pandemic and post-pandemic years, too. In 2020, 5,377 Arizonans died from accidents, which was an increase of nearly 19% over the 4,522 Arizonans who died from

accidents in 2019 and more than twice the average annual increase of 8.4% for the five years prior to 2030.

The number of accidental deaths rose another 10% to 5,945 in 2021. One possible reason for the steep increase in 2020 and 2021 is that overdose deaths are typically counted as accidents.

The number of opioid overdose deaths in Arizona and across the U.S. grew during the COVID-19 pandemic, with factors like loneliness, anxiety and untreated mental health problems contributing to the rise.

Another category where Arizona deaths showed an unusually high increase between 2019 and 2020 was homicides, which rose by an average of 7.3% per year between 2015 and 2019 and then jumped by nearly 29% between 2019 and 2020 to 526 homicides. The number of homicides in 2021 was 561, an 11-year high.

The COVID-19 death data also leaves out deaths that were indirectly related to the pandemic such as suicides precipitated by mental health issues that arose due to social distancing and job loss. While the number of suicides declined by 3.7% in Arizona between 2019 and 2020, they rose to an 11-year high of 1,470 deaths by suicide in 2021, the state data shows.

### **Arizona fared poorly compared with other states**

The Arizona Public Health Association did its own analysis of the data and, like the state, found COVID-19 to be the third-leading cause of death in Arizona for both 2020 and 2021. Yet tallying the leading causes of death by calendar years doesn't take into account that there were no confirmed COVID-19 deaths in the U.S. for nearly all of January and February 2020, and none in Arizona until March 17, 2020, when 50-year-old Trevor Bui became Arizona's first confirmed COVID-19 fatality.

That's why the association did its own report on causes of death across the U.S. and only used the first 577 days of the pandemic, from March 17, 2020, to Oct. 14, 2021. Looking only at those first 19 months of the pandemic and using real-time surveillance data, the association's study found that COVID-19 was the No. 1 leading cause of death in Arizona, while it was the third-leading cause of death in two states of similar population size – Washington and Colorado.

“Our approach was to put COVID in a more complete perspective by looking at it compared to what the other causes of death would have been if not for COVID and then using that as a comparison. And the (Arizona) health department doesn't do that,” said association member Allan Williams, a retired epidemiologist with the Minnesota Department of Health and an adjunct faculty member at the University of Minnesota School of Public Health.

Williams said that since the worldwide pandemic didn't start until March 2020, it made sense to look at how the virus that causes COVID-19 affected the death rate in Arizona during the months when it was active, and leave out the months prior to the pandemic.

“What the health department did is pretty standard. If you want to rank deaths by cause in a given calendar year, that is usually the unit and so that is what it is,” Williams said. “But this is sort of a different scenario in that COVID deaths did not start until March 2020. So you are comparing COVID deaths for a partial year to cancer deaths and heart disease for a full year. It is apples and oranges.”

Williams continued his analysis as the pandemic progressed and found COVID-19 continued to be the leading cause of death in Arizona for the first 30 months of the pandemic. Williams used

real-time surveillance numbers from the state's COVID-19 dashboard to calculate average daily deaths and the average annual crude death rate during the pandemic.

Other metrics have similarly suggested COVID-19's effects in Arizona have been more severe than other states and national averages.

The number of child deaths from COVID-19 has been low, but the most recent Arizona Child Fatality Review report found Arizona's childhood mortality rate from COVID-19 last year, at 1.92 deaths per 100,000 children ages newborn through 17, was more than twice the U.S. average of 0.83 deaths per 100,000 children. The report says 31 children in Arizona died as a direct result of COVID-19 in 2021. A majority were children ages birth through 11.

The CDC places Arizona's overall pandemic death rate since early 2020, using real-time surveillance data, as tied for second-highest in the country with Mississippi. The CDC ranking breaks out New York City from New York state and as of Dec. 15 ranked New York City as having the highest death rate, at 518 deaths per 100,000 people. Arizona's rate is 438 deaths per 100,000 people, The national average is 326 deaths per 100,000 people.

Age-adjusted mortality rates for COVID-19, released quarterly by the CDC rank Arizona a little lower, though its age-adjusted mortality rate was among the 10 highest in the country in the third quarter of 2020 and the first and fourth quarters of 2021, the data says.

Arizona also has a high percentage of "excess deaths," meaning the difference between the number of deaths that occurred in a specific time frame and the number of expected deaths in that same time frame. Even when COVID-19 deaths are taken out of the equation, Arizona's excess death percentages were high when compared with other states during the pandemic years.

Between 2015 and 2019, the total number of deaths in the state increased, on average, by 2.7% per year. In 2020, there were 70,700 deaths in Arizona, an unusually large increase of 26% over 2019.

"The excess deaths is a better measure of the impact of COVID, in my opinion, because that metric also includes the people who died of non-COVID things because they couldn't get hospital care," said Will Humble, a former state health director who is director of the Arizona Public Health Association.

"It was the great displacement. People were unable to get care and some of them died and that's where you pick up an increase in all-cause mortality. It includes people who died because they were unable to get care because Arizona hospitals were completely swamped."

And while many people argue that Arizona has a population of older, more vulnerable residents, Humble notes that the median age in Arizona is 38.6, which is almost exactly the same as the U.S. median age of 38.8. The median age is the point at which one-half the population is older and one-half is younger.

There are two ways to define a COVID-19 death, and the state's cause-of-death rankings use the more narrow definition. Only deaths where COVID-19 is the primary or underlying cause of death are counted.

Deaths where COVID-19 may have been categorized as a contributing cause but is not listed as the underlying cause of death are not counted. Those deaths are often cases where the COVID-19 disease process progresses to death from another underlying or pre-existing condition.

The state's COVID-19 dashboard uses a broader definition and includes deaths where COVID-19 was listed either as a primary or contributing cause. The dashboard numbers are larger for that reason. The cause-of-death rankings list Arizona as having 8,430 COVID-19 deaths in 2020 and 12,693 in 2021, whereas the dashboard says there were 10,665 in 2020 and 15,043 in 2021. Both numbers are helpful, state officials say.

No matter how the deaths are counted, they don't portray the entire impact of COVID-19 in Arizona, Marvasti said.

"Just looking at the deaths by themselves definitely doesn't capture the toll of COVID on the community and people in the long term," he said.

"We know a number of conditions that are increased by COVID. You are much more likely to get diabetes, much more likely to be depressed. There are long-term consequences to the lungs, to brain health, cognitive ability, physical endurance and just level of fitness and conditioning ... I don't think this captures it all."

*Republic reporter Alison Steinbach contributed to this article.*

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