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## COVID-19 Updates

The University of Arkansas for Medical Sciences' (UAMS) Fay W. Boozman College of Public Health (COPH) COVID-19 Research Team has conducted forecasts, projections, and impact assessments, starting as weekly reports in March 2020. We slowly transitioned to monthly reports as the pandemic progressed. This month, we announce the transition to a new bi-monthly Public Health Brief. We present the current status on COVID-19 and long COVID-19 in this report. Subsequent reports will focus on other key public health issues in Arkansas, such as syphilis and Human papillomavirus (HPV). The new briefs will be in partnership with the Arkansas Department of Health, drawing on expert knowledge across a range of public health topics. We will continue to track the COVID-19 pandemic and present quick facts. If a new surge happens, we may produce a supplementary COVID-19 projections report. Our goal is to provide timely, easy to understand public health briefs relevant to Arkansans.

Our forecasts and projections of COVID-19 cases, hospitalizations, and deaths were developed using data from the Arkansas Department of Health through May 22.

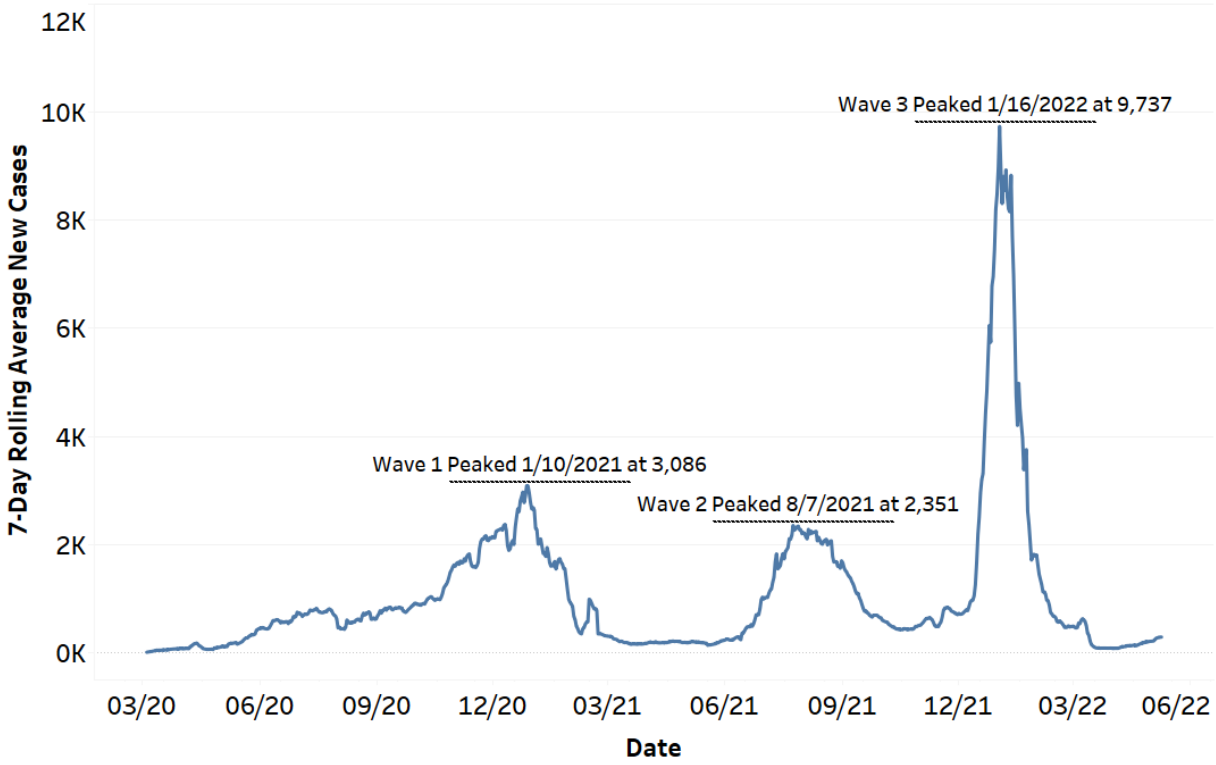
Quick Facts:

- The seven-day rolling average shows cases in Arkansas in March were 417, then dropped to 98 in April, and rose again this month to 210.
- The relative change rates show an increase in cases (1.5%), hospitalizations (1.7%), and deaths (3.5%) over the past 90 days.
- Forecasts for the next 30 days include a 1.9% increase in hospitalizations and 0.9% increase in deaths. Predictions for cases have been excluded due to the uncertainty in case counts.

Finally, we recommend Arkansas launch a program to describe the impact of Long COVID on the state and its citizens.

## The COVID-19 Snapshot in Arkansas

**Figure 1.** *Seven-day rolling average of new cases*




As shown in Figure 1, the COVID-19 pandemic in Arkansas has followed a wave pattern. Figure 1 shows the seven-day rolling average of new infections since March 2020. Daily numbers are often considered too "noisy" to accurately reflect an epidemic's growth. To reduce noise, we use rolling averages to smooth out meaningless daily differences in infections. The reason for the wave pattern is primarily related to the virus' infectiousness and the number of people within a population susceptible to infection at a given time. Both factors are now highly dynamic.

What is easily discernable from Figure 1 is that Arkansas recently experienced a COVID-19 wave that far exceeded all previous COVID-19 activity in the state. Prior to 2022, the month with the highest overall average of seven-day averages of new cases per day was January 2021, which saw an average of 2,262 cases per day. In January 2022, Arkansas experienced a overall seven-day average number of new daily cases equal to 6,783. The overall seven-day rolling average of new daily cases in Arkansas in February dropped to 1,544, and further dropped to 417 in March and 98 in April. During the first 24 days of May 2022, the new daily cases rate has increased to 210.

The COVID-19 virus mutates often. Like any virus, most COVID mutations are not viable and pose no risks to humans. However, occasionally, a mutation will produce a new variant with the potential to infect more people and/or to make people sicker. New mutations may not pose much risk unless they are able to supplant or replace the circulating dominant variant. The dominant variants in Arkansas have been the Alpha, Delta and Omicron variants. As illustrated in Figure 1, each variant caused a surge in COVID cases, hospitalizations and deaths. The latest surge, which produced the most cases, hospitalizations and deaths so far in the pandemic, was

due to the Omicron variant. Omicron at its peak infected more than twice as many Arkansans as the Alpha and Delta variants combined. In mid-March, Omicron BA.2.12.1 and sister subvariant BA.2.12.2 made up only 1.5% of newly-sequenced positive tests in the U.S. Today, the two Omicron variants comprise 57.9% of all new positive Covid test samples sequenced to determine the variant involved, with essentially all of the Omicron cases being BA.2.12.1. The Centers for Disease Control and Prevention has released data this month that shows BA.2.12.1 is thought to be 30% more infectious than BA1.1.529. If any new surge happens we expect BA.2.12.1 to drive the surge.

Immunity to COVID-19 wanes over time. It does not matter whether immunity is induced by vaccination or is naturally acquired. Immunity acquired through vaccination is more predictable and certain. Natural immunity, acquired from having been infected with COVID, varies with the severity of COVID disease. As immunity wanes, whether induced by vaccination or disease, a person becomes more susceptible to a new infection. A person can be repeatedly infected.

**Table 1.** *COVID-19 at a glance: cases, hospitalizations and deaths*

| | **Today** | **In the last 3 months (90 days)** | | **Forecast for the next month (30 days)**** | | **Forecast for the next month (90 days)**** | |
|---|---|---|---|---|---|---|---|
| | 5/22/2022 | 2/22/2022-5/22/2022 | | 5/23/2022-6/21/2022 | | 5/23/2022-8/21/2022 | |
| | | N | % Change | N | % Change | N | % Change |
| **Cases** | 842,331 | 12,134 | 1.5 | -* | -* | -* | -* |
| **Hospitalizations** | 37,641 | 638 | 1.7 | 356 | 1.9 | 1,105 | 2.9 |
| **Deaths** | 11,727 | 399 | 3.5 | 229 | 0.9 | 709 | 5.9 |

*Projections for cases are excluded due to potential inaccuracy of reported case rates due to at home testing.
** Our confidence is much greater for the 30 day projections as we don't expect pandemic patterns to change. However, at 90 days there could be significant changes like reduced or increased numbers of cases. Our confidence is lower.

America has had over 1 million deaths from COVID-19. Arkansas has had over 11,000 deaths. Changes and projections of new cases, new hospitalizations and deaths are reported in Table 1. Absolute change (N) is the increase or decrease in values over the 90-day period. Relative change (% Change) is calculated as the percent change over the 90-day period. The absolute change in the past 90 days is 12,134 new cases, 638 new hospitalizations and 399 new deaths.

Due to the increased usage of at-home tests and the underreporting of laboratory-based tests, incidence of infection is underreported. Thus, the forecast for the next 30 and 90 days for cases has been excluded. The absolute change forecasted in the next 30 days is 356 hospitalizations and 229 deaths. Thus, the forecast for the next 90 days is 1,105 new hospitalizations and 709 new deaths.

## Long COVID in Arkansas

Long COVID-19 is not one medical condition and has yet to be defined as more than a list of symptoms. Patients with Long COVID experience weeks, months and even years of symptoms including muscle or joint pain, shortness of breath, headaches, heart palpitations, gastrointestinal problems, mood swings and brain fog, among other symptoms. Any person who thinks they are experiencing symptoms of Long COVID should contact their primary care provider and seek help. If the person does not have a provider, recovery groups in the U.S. can help locate local help, including multiple medical practices in Arkansas that help with recovery.

It is estimated that 10-30% of all persons infected with the COVID-19 will develop Long COVID symptoms. According to the current projections, approximately 84,000 to 253,000 Arkansans will be experiencing Long COVID symptoms. These estimates do not account for unconfirmed cases or confirmed cases using at-home testing. Statewide follow-up of COVID-19 cases in Arkansas is critical to better understand exact numbers and symptoms of such patients.

We recommend Arkansas develop a Long COVID surveillance program for the following reasons:

1. We do not know how Long COVID is being experienced by Arkansans and whether those experiences vary across geography, race, ethnicity, gender or age. Without this knowledge it will be a challenge to make resource allocation decisions.
2. The cost of Long COVID is unknown.
    a. How much is Long COVID affecting labor shortages across the state? It is estimated by the Brookings Institution that 15% of unfilled jobs are a result of Long COVID. In one United Kingdom study, 25% of employers said Long COVID was driving long-term disability.
    b. How is Long COVID affecting productivity? We can assume persons with Long COVID will experience declines in the capacity to work efficiently and effectively; however, exact metrics for the number of persons and the amount that productivity has declined are lacking.
3. We do not know how Long COVID is affecting learning for Arkansans in the educational system.
4. We do not know the impact of Long COVID on the public health and health care systems. Will those seeking care be heavy users of health care? Will insurance matter?
5. Will Long COVID drive households into poverty? Health care can be expensive, affecting employment and contributing to mental health issues.
6. National data may provide valuable information, but information should be collected among Arkansans to understand the local impact.

Long COVID is not going away and as it infects our labor markets, our housholds and our public health and health care systems we should develop the relevant data points to make decisions.