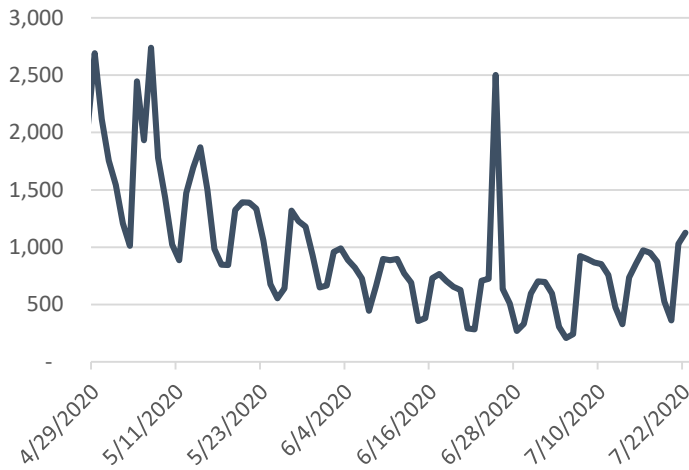


United States

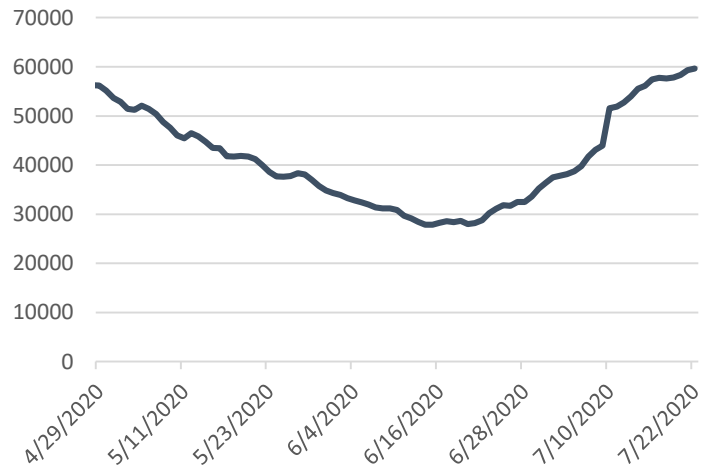
U.S. COVID-19 cases have seen significant increases over the last five weeks, driven primarily by the most populous states like California (CA), Texas (TX) and Florida (FL). Fortunately, TX, FL, and Arizona (another recent hotspot), have started to see cases stabilize and decline in the last few days. U.S. hospitalizations now exceed April's peak; however, current hospitalizations are spread across more hospitals versus April. Daily testing continues to increase with now over 5.5mm being tested per week - about 800K a day. The cumulative percentage of positive tests is well below the peak of 19.4%, but now hovering around 8%. On a positive note, case fatality rates for the current hotspots are well below states hit with the virus early and continue to decline even weeks after cases started spiking. This is likely a result of increased testing finding more mild and asymptomatic cases (the topic of our June report), improved care for hospitalized patients, and both state governments and the public's effort to protect the most vulnerable. Hopefully, it holds true. State case fatality rates can be found later in this report.

U.S. Daily Deaths



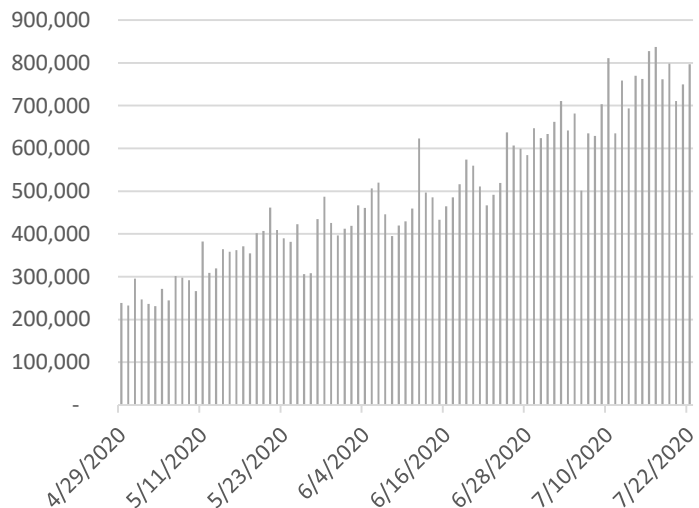
Source: Worldometer

U.S. Hospitalizations



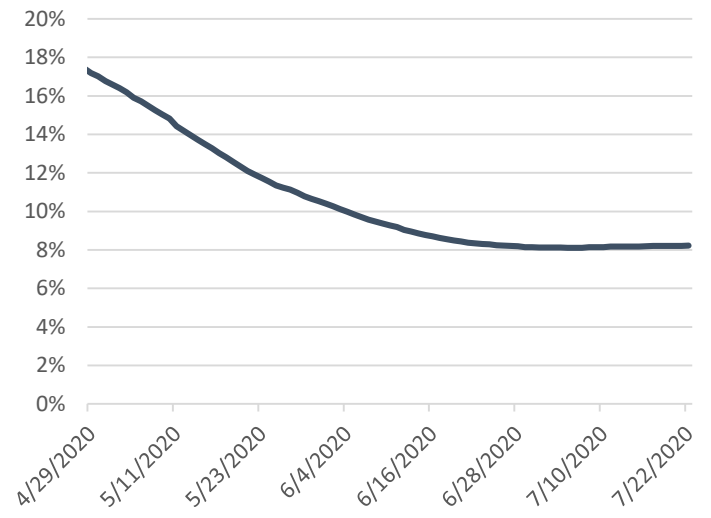
Source: COVID Tracking Project

U.S. COVID-19 Daily Testing



Source: COVID Tracking Project

% of U.S. Tests Processed with Positive Results

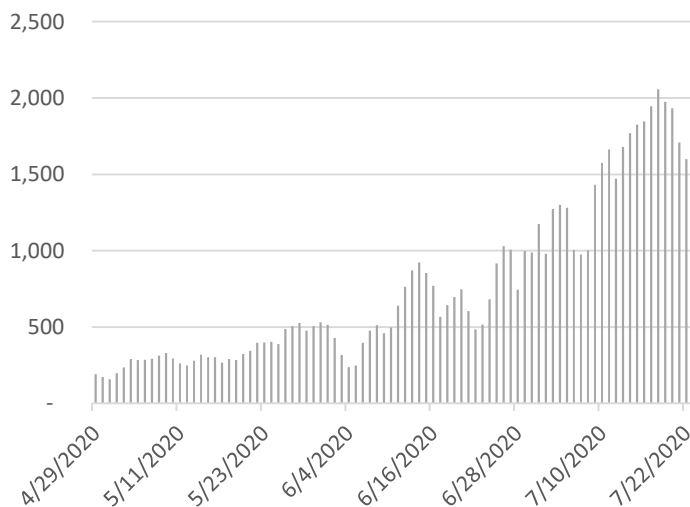


Source: COVID Tracking Project

Alabama Update

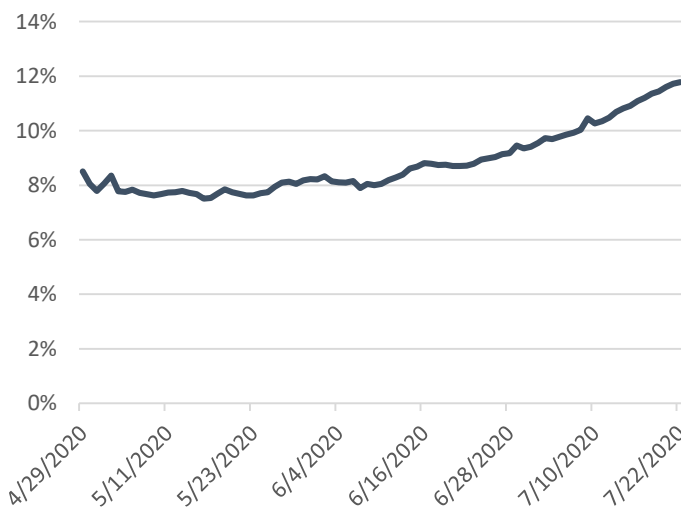
Alabama had relatively low cases and hospitalizations early in the pandemic. Since reopening however, cases have increased and hit a new peak yesterday, but on a 3-day rolling average are beginning to show declines. Alabama also saw its highest recorded daily death this week. The % of positive tests are also increasing, now at about 12% cumulatively, and currently in the high teens daily. Increasing cases have led to higher hospitalizations, but according to IHME, Alabama is still well below hospital bed and ICU capacity. Current hospitalizations in Alabama stand at almost 1,600 versus about 600 back in May. Alabama is continuing to see greater spread of the virus among younger demographics who have a much lower mortality rate; therefore, while deaths are also increasing, the case fatality rate continues to decline.

Alabama – Daily Cases (3 Day Rolling Average)



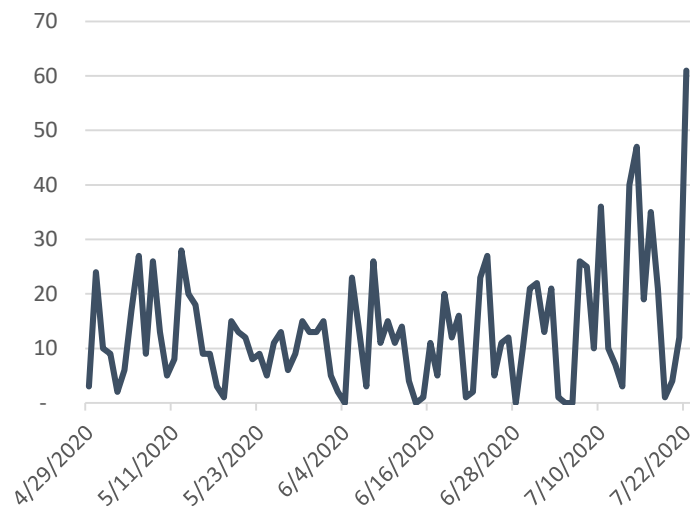
Source: Worldometer

Alabama – % Positive Tests



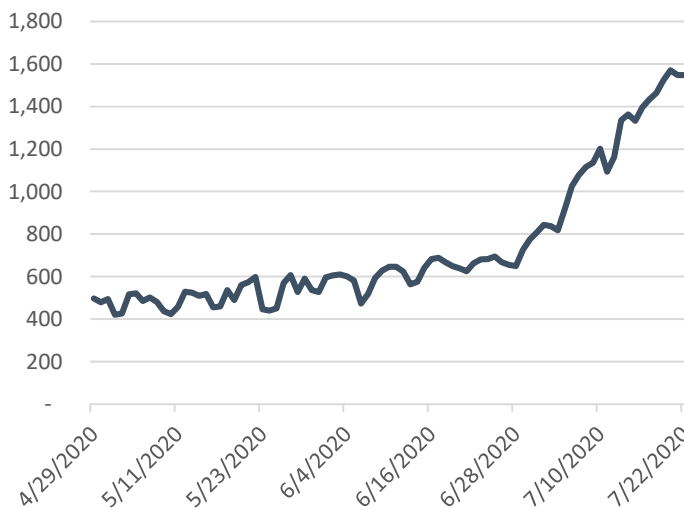
Source: COVID Tracking Project

Alabama – Daily Deaths



Source: COVID Tracking Project

Alabama – Hospitalizations



Source: COVID Tracking Project

Good News: Research Finds Possible “Hidden Immunity”

New York has seen a dramatic decline in daily cases and deaths – so has Sweden. This is where things get confusing. Both have seen a decline in cases, but one is attributed to an extended shut-down and strict social distancing (NY), and the other never shut down and is the whipping boy of the international community of how not to fight the virus. Why have both had success reducing cases with two totally different strategies? This, again, highlights the fact we are in uncharted waters and still have much to learn about this virus. Could it be there is some herd immunity occurring in these areas? Several recent studies published or reported on by like *Science Magazine*, *Nature*, & *The Scientist*, but with very little coverage from the U.S. mainstream media are finding encouraging news about the immune response to COVID 19. This is a very technical topic, so we suggest you read the articles for yourself (see below), but if you don't have a lot of time the studies are summed up in this *BBC* article: <https://www.bbc.com/future/article/20200716-the-people-with-hidden-protection-from-covid-19>. Studies suggest up to 60% of the population may have "hidden immunity," - T-cells, specifically tailored to detect proteins on the surface of COVID-19. Even better, these T-cells existed before COVID-19, meaning a large percentage of the population may have a pre-existing degree of resistance against the virus. Early immunity studies were focused on antibodies, but antibodies have not turned out to be a reliable source for detecting who may have already had the virus because some people who were infected and recovered show no antibodies and others show antibodies going away within a short time period. T-cells appear to be a much better marker for those who have had the virus and suggests that infection may be two times that of what antibody studies show. You might remember that a NY study reported in May suggested 20% of New York City residents had antibodies, and Florida's Governor recently said FL studies show greater than 16% of Florida residents have antibodies. This is good news on two fronts, 1) some herd immunity might be closer than we think, and 2) this finding could be the key to developing an effective vaccine.

More Articles On Recent T-Cell Research

Science Daily, 16 July 2020; <https://www.sciencedaily.com/releases/2020/07/200716101536.htm>

Nature, 15 July 2020; <https://www.nature.com/articles/s41586-020-2550-z>

Wired, 10 July 2020; <https://www.wired.com/story/covid-19-immunity-may-rely-on-a-microscopic-helper-t-cells/>

The Scientist, 3 July 2020; <https://www.the-scientist.com/news-opinion/sars-cov-2-reactive-t-cells-found-in-patients-with-severe-covid-19-67695>

Science News, 1 July 2020; <https://www.sciencenews.org/article/coronavirus-covid-19-t-cells-patients-immune-system>

Science Magazine, 14 May 2020; <https://www.sciencemag.org/news/2020/05/t-cells-found-covid-19-patients-bode-well-long-term-immunity>