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DS 201

9 May 2020

Project 3 Report

The Governor of New Jersey, Phil Murphy, issued a stay-at-home order to all residents that started on March 21st. Murphy stated, "To move out from under this order we will need to see, at least, a sustained reduction in the number of new positive COVID-19 test results, new COVID-19 hospitalizations, and other metrics." Murphy later expanded on this statement and said that a 14-day period of decreasing COVID cases would be required before any reopening can take place. The stay at home order will remain in effect until further notice. The governor also extended the state of emergency for another thirty days on May 6th.

While the stay at home order is in effect, New Jersey residents can leave their homes to obtain goods or services from essential businesses. If individuals leave their home to access essential goods, they are encouraged to go at non-peak times. Retail food stores have been encouraged to maintain separate operating hours for senior citizens and other high-risk populations. These hours are usually early in the morning, before possible carriers of COVID-19 go shopping.

If necessary, residents can seek medical attention, essential social services, or assistance from law enforcement or emergency services. Residents can leave their homes to visit family or other individuals with whom the resident has a close relationship, such as caretakers or romantic partners. In terms of restrictions on spending time outdoors, residents may go for a walk, run, or

engage in outdoor activities while social distancing, staying six feet apart from others. If residents feel unsafe in their homes and feel their health or safety is at risk, they are encouraged to leave. They can also report to, or perform, their job if they are employed by an essential business and it cannot be performed remotely. Non-essential businesses are closed and operating from home if possible. New Jersey has been emphasizing “flattening the curve” and continues to advise residents to stay at home.

On the other side of the spectrum, Georgia has already begun taking steps to return to normal operation. Governor of Georgia, Brian Kemp, issued a stay-at-home Executive Order to all residents that went into effect April 3rd. Amidst a rise in infections and deaths, barber shops, nail salons, gyms and other non essential businesses were reopened in Georgia as early as April 24th, despite health experts warnings. Beaches have reopened with the requirement that visitors follow CDC social distancing guidelines. Despite this, Georgians have been urged to stay home whenever possible. Governor Brian Kemp extended Georgia's public health state of emergency through June 12th. The shelter in place order has expired in Georgia for all healthy individuals, but a shelter in place requirement was recently issued to elderly and “medically fragile” residents.

New Jersey and Georgia have taken two radically different approaches at reducing the impact of COVID-19. These different responses to containing the spread of the virus in part has to do with how each state was initially affected. The impact the virus has had in each of these states is one possible explanation for the speed at which each local government is aiming to reopen. As seen in Figure 1, Georgia has reported significantly less cases of COVID-19 than New Jersey. This may come as surprise given their similar population sizes and Georgia’s

relaxed approach to stopping the spread, however, when we consider population density, we can see that New Jersey comes in at higher numbers. According to US 2019 census data estimates (based on 2010 census data) New Jersey has a population mean of 2,142 people/sq mile while Georgia has a population mean of 205 people/sq mile.

Of the 8,908,520 members of the population in New Jersey, 298,759 people have been tested. This translates to slightly more than three percent of the population being tested. Georgia has given 227,567 tests to its population of 10,519,475 people. This translates to around two percent of the population being tested. Despite having a comparable amount of tests, New Jersey reported 135,454 positive cases to Georgia's 32,106. This reflects a much higher infection rate in Jersey, and a possible reason for the aggressive actions taken by the government to control the disease. Around March 15th, both of these states had an insignificant amount of positive cases. Between March 15th and April 1st, New Jersey saw a massive spike in new cases. Georgia only saw a slight rise. Since then, New Jersey's number of new cases is on a decline. Georgia's number of new cases plateaued around April 15th and continues to float around 1,000 new cases. Both states' number of new cases is steadily increasing, New Jersey's will begin to flatten out if the number of new cases continues to decrease.

By April 1st, New Jersey had the second highest number of COVID-19 cases in the nation, only behind New York. A few factors play into the extreme infection rates in Jersey, including population density and heavy use of public transportation. New Jersey is the most densely-populated state in the nation. Any number of people living close together are bound to help an infectious disease like COVID-19 thrive. Residents of Jersey, especially those living in cities like Newark and Jersey City, rely heavily on public transportation. Public transportation is

considered an essential service, and despite running at reduced capacity, the NJ transit system continues to operate and facilitate the spread of the disease.

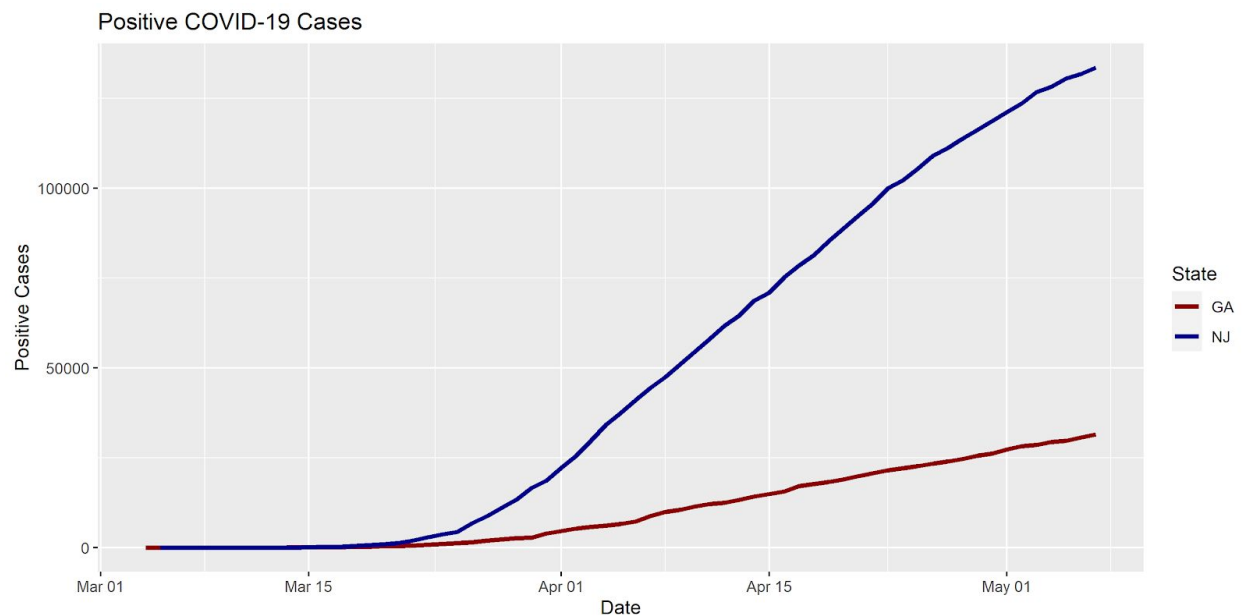


Figure 1

New Jersey's aggressive approach to containing the spread is appearing to work quite well. The restrictions and advisories put in place by the Jersey government have kept residents inside and safe, leading to a decrease in new cases daily. Despite the high initial spread, the disease has been contained relatively well and New Jersey continues to move towards reopening safely. The extension of the stay at home restrictions show that Governor Phil Murphy has no plans of reopening until it is absolutely safe to do so. With the recent reopening of Georgia, we can only predict that infection rates will rise. The loose restrictions that were in place prior to the reopening did not do much in terms of reducing the infection rate, it stayed at a flat rate for the duration of the stay at home order.

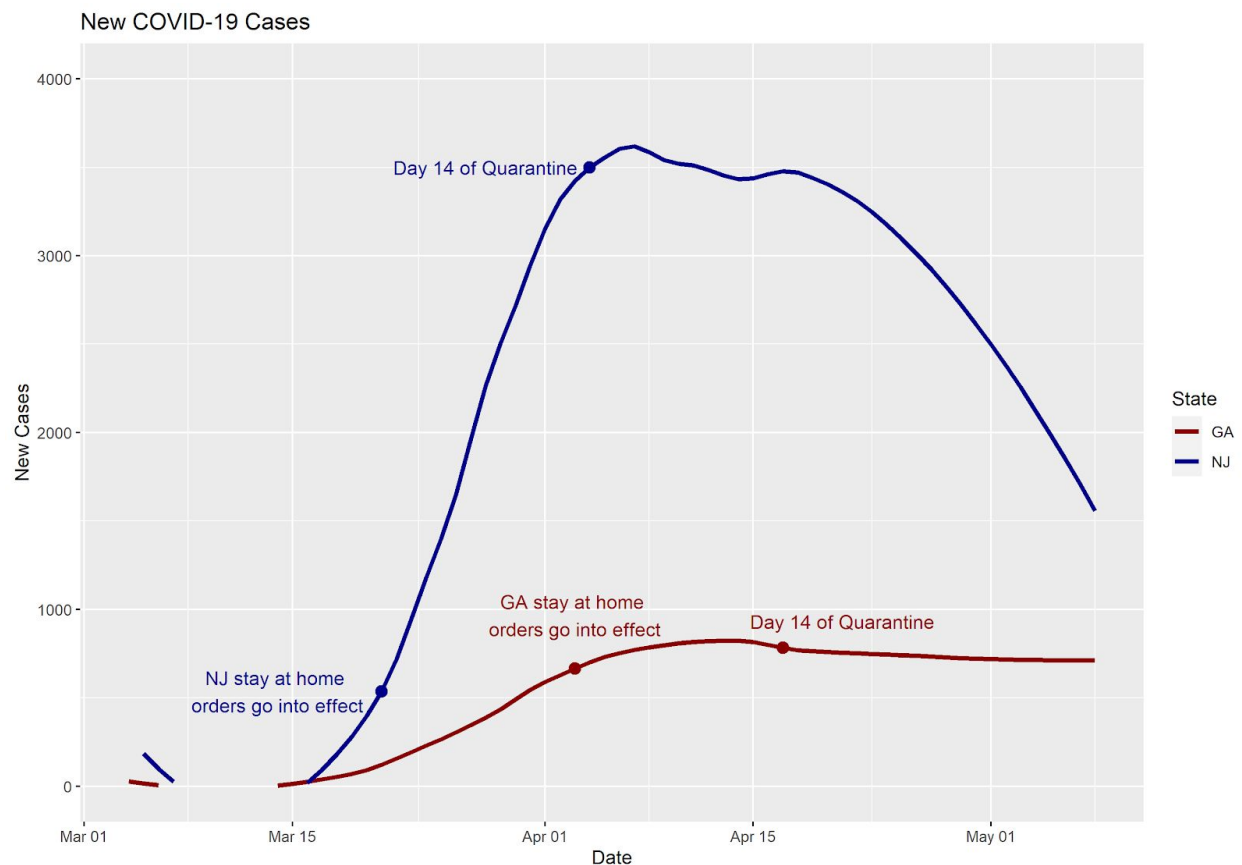


Figure 2

In Figure 2 we can see how effective New Jersey's stay at home order was in slowing down the curve. After the 14 day incubation period we can see New Jersey slowly reach its peak in new cases and quickly begin to decline. Issuing the stay at home order within the first week of increasing cases was a good call and completely necessary seeing how the pandemic had impacted New Jersey the weeks after. Had the stay at home order come any later, we would be seeing a much larger peak. Moreover, we can see that Georgia waited until week 3 of increasing cases to issue a stay at home order. Within the following 14 day incubation period, Georgia reached its peak and briefly began to decline before plateauing at around 700 new cases a day.

Right now, it is still hard to see what the future has in store for Georgia given their recent change in response to COVID-19 and the lack of steady decline the state has seen before moving to reopen. As seen in Figure 4, Georgia is having a relatively hard time decreasing their new cases compared to states like New Jersey that have been seeing a steady decline since hitting their peak in early April. In fact, Georgia even saw a slight increase in new cases the week after reopening many public spaces.

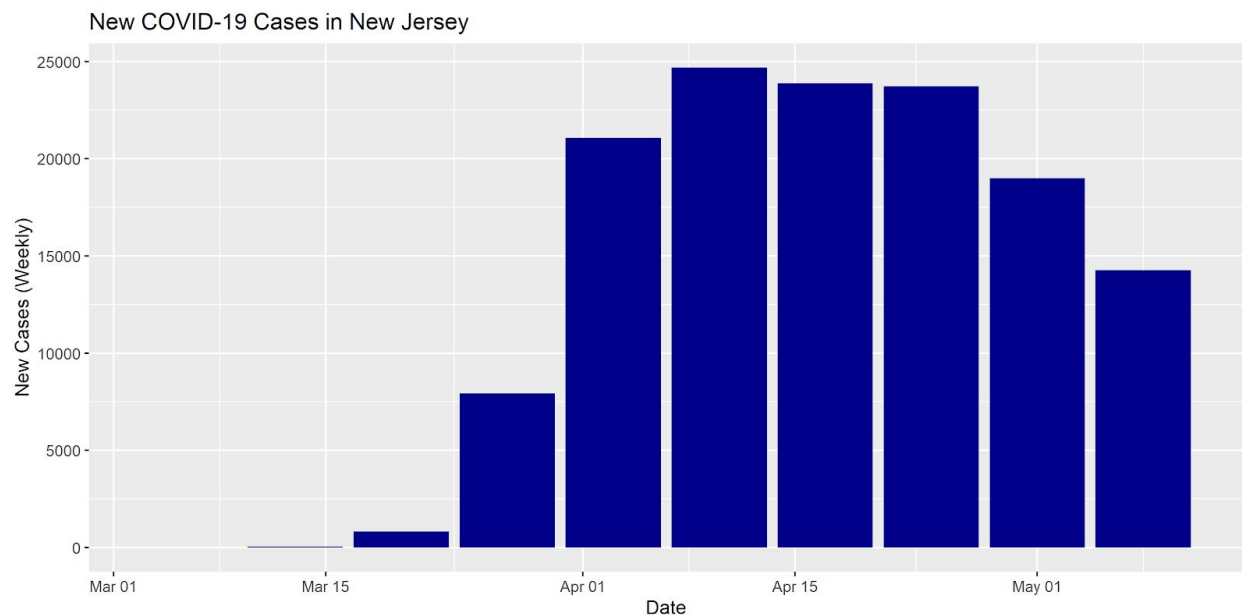


Figure 3

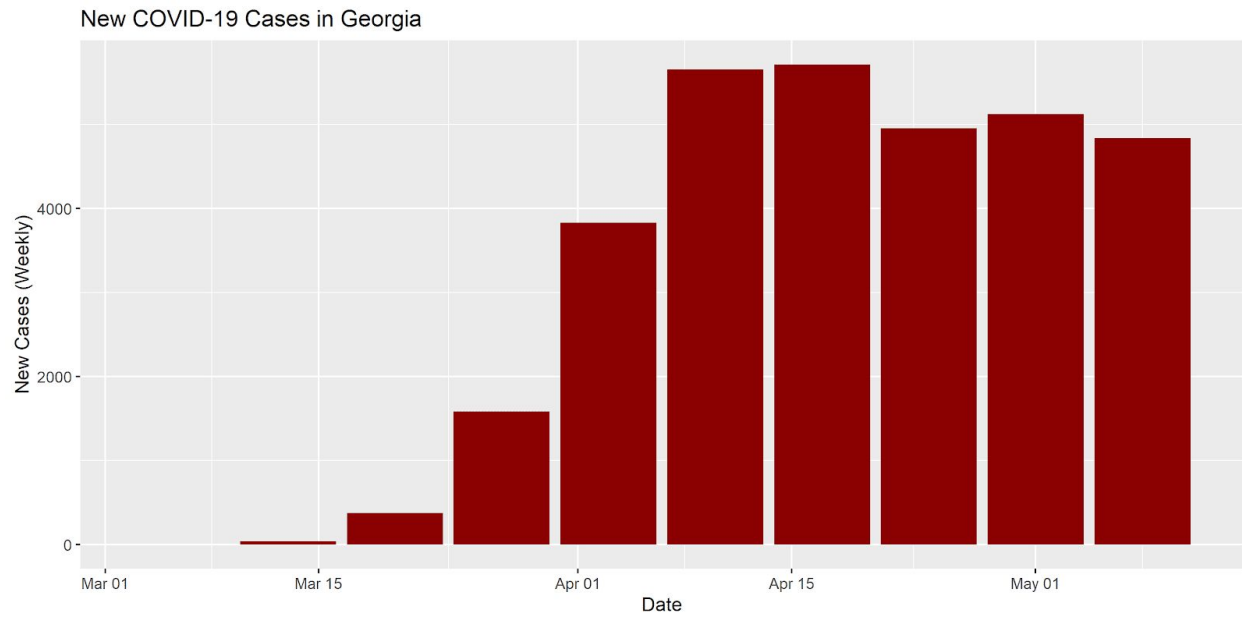


Figure 4

A lot still remains uncertain about the future of the pandemic. While we can analyse how COVID-19 has been spreading within New Jersey and Georgia, it is still too soon to determine the future spread of the outbreak and which policies worked the better for their situation.

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This Is Where All 50 States Stand on Reopening.

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