**Supplemental Appendix**

We estimated a series of interrupted time series models (ITS) to evaluate the association between the COVID-19-related rapid shift to telemedicine and differences in outpatient E&M visits for Louisiana Medicaid beneficiaries by race, ethnicity, and rurality. The interrupted time series models allow us to assess trends in utilization prior to COVID-19 and then examine changes in those trends that coincide with the two peak COVID waves in April and July 2020. We specified our ITS models as follows:

$$Y\_{gt}=β\_{0}+β\_{1}Trend\_{gt}+β\_{2}Apr2020\_{t}+β\_{3}Jul2020\_{t}+β\_{4}Dec2020\_{t}+β\_{5}Trend\_{gt}×Apr2020\_{gt}+β\_{6}Trend\_{gt}×Jul2020\_{t}+γMonth\_{m}+δDiag\_{gt}+ε\_{gt}$$

Where $Y\_{gt}$ is either differences in total or telemedicine E&M claims per 1,000 Louisiana Medicaid beneficiaries for each subgroup pairing $g$ in each month-year $t$ (e.g., Black-to-Hispanic differences, White-to-Black differences, White-to-Hispanic differences, or rural-to-urban differences)[[1]](#footnote-1); $Trend$ is the number of months since January 2018 (i.e., a linear time trend); $Apr2020$, $Jul2020$, and $Dec2020$ are indicators for April 2020, July 2020, and December 2020 (the first two COVID waves and the last month in our sample); $Trend×Apr2020$ and $Trend×Jul2020$ are interactions between the monthly trend term and the indicators for April and July 2020; $Month$ is a vector of calendar months to control for seasonality; and $Diag$ is the difference in the monthly share of beneficiaries in each subgroup with a diagnosis of cancer, chronic kidney disease, chronic obstructive pulmonary disease, hear failure, and stroke. We estimated separate models by subgroup pairing and corrected our standard errors for autocorrelation.

Our primary goal was to estimate COVID-related changes in total outpatient E&M service use and outpatient telemedicine E&M service compared to baseline averages that we calculated from January 2018 through February 2020. To convert estimates from our ITS models to changes from baseline averages, we reported the following coefficient estimates and combinations of estimates in the paper tables:

1. Average baseline trend from January 2018 through February 2020 = $\frac{(β\_{0}+27\*β\_{1})+β\_{0}}{2}$
2. April 2020 change from baseline average = $β\_{2}$
3. April 2020 to June 2020 trend = $β\_{1}+β\_{5}$
4. July 2020 change from baseline average = $β\_{2}+β\_{3}+2\left(β\_{1}+β\_{5}\right)$
5. July 2020 to November 2020 trend = $β\_{1}+β\_{5}+β\_{6}$
6. December 2020 change from baseline average = $β\_{2}+β\_{3}+β\_{4}+6\left(β\_{1}+β\_{5}\right)+4\*β\_{6}$
1. Estimates in the Supplementary Appendix use levels of E&M claims by group as the dependent variables rather than differences between groups. [↑](#footnote-ref-1)