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## 1. BACKGROUND

Patients with autoimmune diseases managed by rheumatologists may represent a vulnerable population with risk of serious complications if exposed to the novel coronavirus SARS-CoV2. The first case of COVID-19, a disease caused by SARS-CoV2, was diagnosed in the US on January 20, 2020. By the beginning of April, 42 states implemented stay-at-home advisories limiting non-essential activity, including non-emergency healthcare services, leading to a dramatic increase of routine healthcare visits being conducted via telehealth using audio and/or video technology. In May states began lifting stay-at-home orders and gradually renewing economic activity.

We evaluated the impact of these policies on volume and type of care provided by US community rheumatology practices through the end of May 2020.

## 2. METHODS

Electronic medical records (EMR) records from the American Rheumatology Network (ARN) - Trio Health Rheumatology registry were used for the study. The ARN is a physician led and owned organization that supports some of the largest independent practices with over 200 practicing rheumatologists across the US.

Patients with rheumatic diseases treated from Jan'19-May'20 were selected for analysis. Trends were evaluated for in-office drug administrations, new regimen starts on targeted immune modulating therapy (TIM), new and existing patient visits, telehealth visits, telephonic services, labs, x-rays, minor surgical procedures, and other diagnostic and treatment procedures.

Practices evaluated in the analysis were located in AZ, FL, GA, MO, SC.

## 3. RESULTS

Of 121,546 patients treated in the study period, 19,470 (16%) were treated in central region, 44,324 (36%) in western, and 57,752 (48%) in southern; there were no practices representing northeast hardest hit by COVID-19 in the beginning of the pandemic.

In Mar'20, treated patient number declined 6% vs Feb'20 and 1% vs Mar'19; in Apr'20 patient number declined 4% vs Mar'20 and 12% vs Apr'19, while in May'20 patient number was flat vs Apr'20 and down 11% vs May'19. Considering all services delivered by the practices, there was 11% decline in service volume in Mar'20 vs February, 27% decline in April vs March, and 22% increase in May'20 vs April. There was 2% decline in March, 35% in April, and 22% in May 2020 vs corresponding months of 2019.

Most affected services in March-April were procedures, new and established patient visits, x-rays, and labs [Figure 1]. Telehealth was implemented in Mar'20 with 2,453 patients seen via telehealth visits. Telehealth grew 438% in April from March reaching 13,197 patients, declined 47% in May vs previous month. Telephone services were provided to 266 patients in Mar'20 vs 9 patients in Mar'19, telephone services were up 82% in Apr'20 vs March and 443% in May vs April. Drug administrations were + 3% in Mar'20 vs February, -6% in April vs March, and +5% in May vs April. New regimen starts were down in April and May. Shares of patients starting new regimens containing biologics and JAK inhibitors were largely unchanged through reporting months [Figures 3-4].

## 4. SUMMARY

The COVID-19 US stay-at-home advisory period significantly influenced care patterns of patients with rheumatic diseases with sharp growth of telehealth and decline of in-person visits, drug administrations, and diagnostic testing. There was a 35% decline in all services in April 2020 compared to April 2019.

Further research is needed to evaluate these trends as the pandemic continues.

FIGURE 1: CHANGE IN PATIENT VOLUME BY SERVICE TYPE

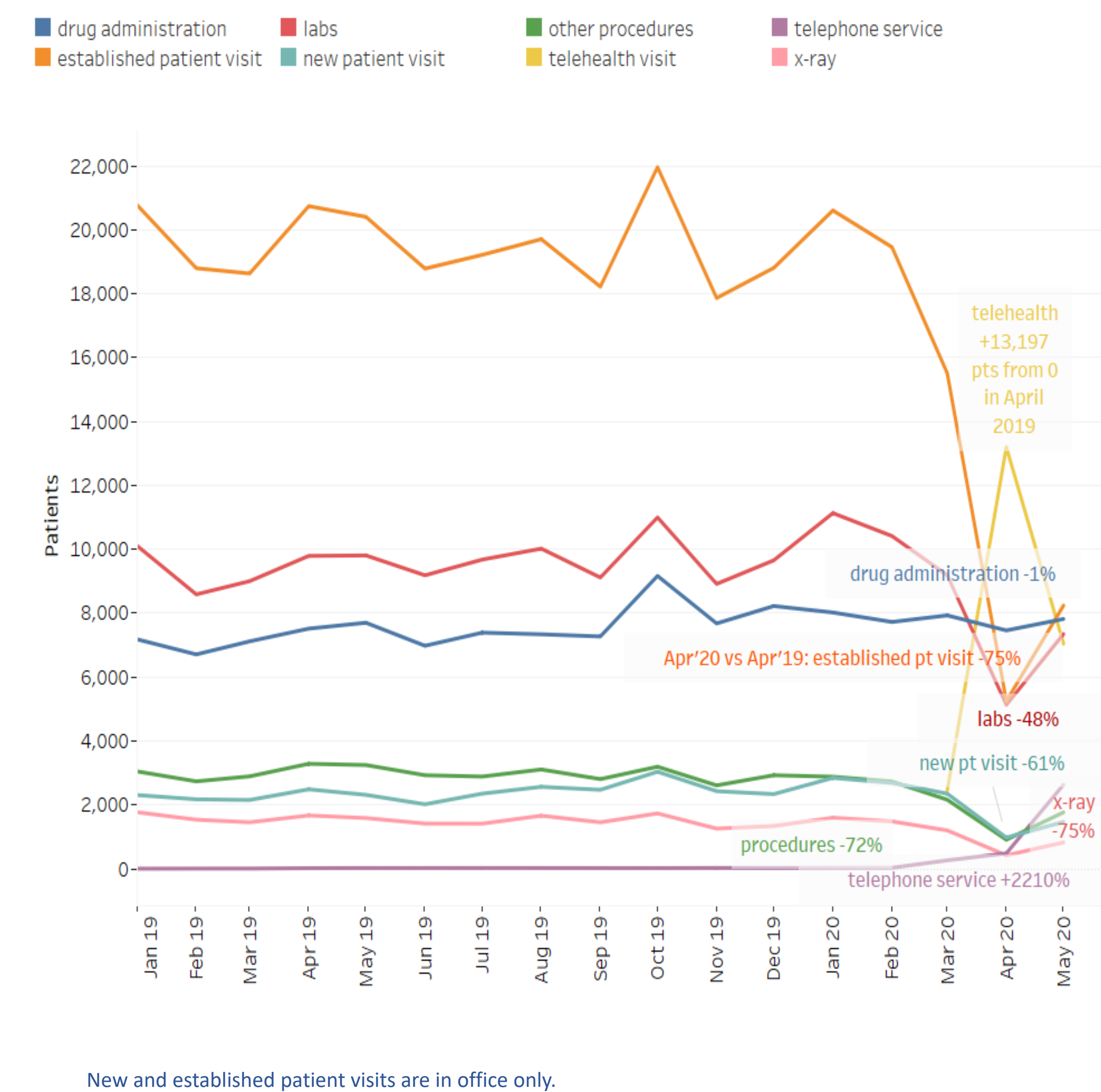


FIGURE 2: CHANGE IN VOLUME OF ENCOUNTERS

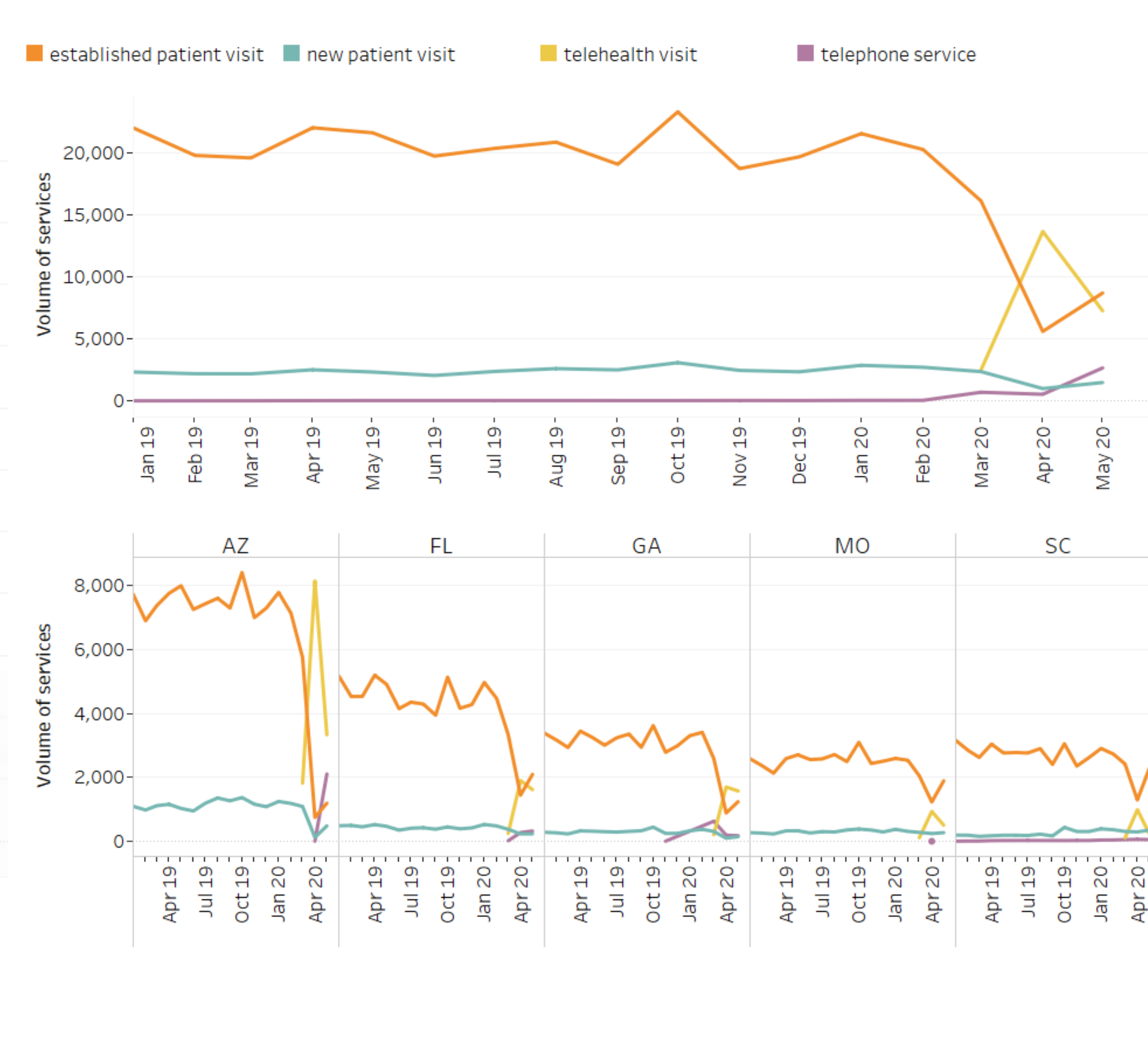


FIGURE 3: PROPORTION OF NEW REGIMEN STARTS ON BIOLOGICS

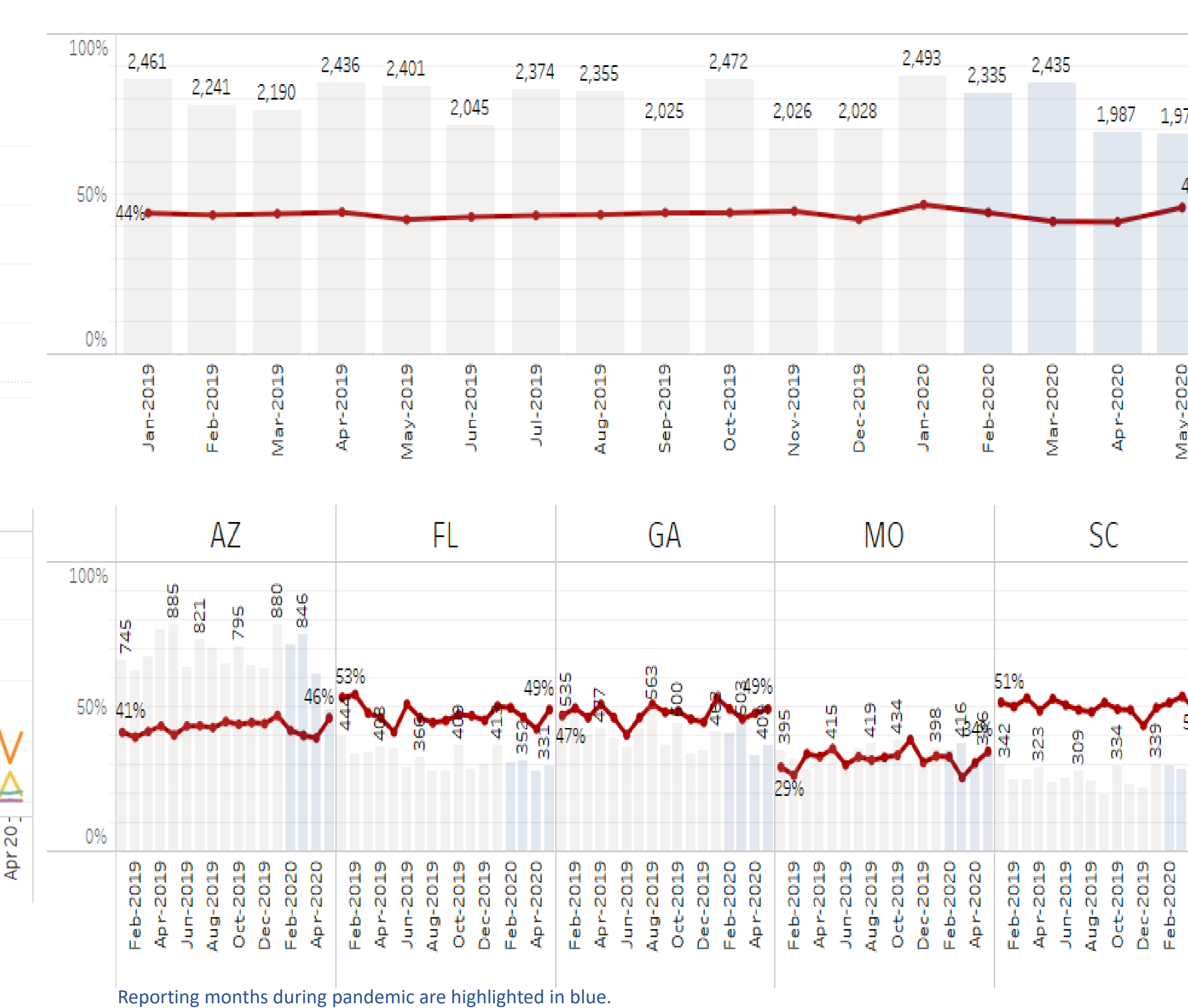


FIGURE 4: PROPORTION OF NEW REGIMEN STARTS ON JAKS

