

SIX MONTH UPDATE:

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER

Version 9.23.2020

Table of Contents

Executive Summary	3
Overview of Findings	9
COVID-19: Analysis of 160K+ Cases	20
Office Visits and Telehealth Trends	36
Analysis of Admissions, Observation Stays, ER and Hospital Outpatient Visits	43
Analysis of Clinical Service Lines and Sub Service Lines	58
Self-Pay Analysis	68
Appendix	70

SIX MONTH SUMMARY: NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Executive Summary

Version 9.23.2020

COVID-19 Six Month Findings



COVID-19 inpatient volumes did not surge nationwide as expected and did not replace the dramatic decline in total admissions

-50%
ED VISITS

Admission rates from the ED declined across all age cohorts, suggesting providers have developed more skill in identifying who has COVID-19 and best treatment

+20%
LENGTH OF
STAY

Admitted COVID-19 patients in the top 7 DRGs have a length of stay 20% higher than non-COVID patients for the same DRGs, justifying government reimbursement

96
HOURS

While ventilator use has declined dramatically, most COVID-19 patients who are on a ventilator stay on it for over 96 hours

Patient & Procedure Volume Six Month Findings

Inpatient Volumes

- Volumes now approaching 2019 levels, but lost volumes have not recovered
- The “new normal” may be 90-95% of previous levels
- Inpatient procedures and surgeries continue to trail 2019 levels (down 18.6% cumulatively) having a negative financial impact
- Medical, not surgical, service lines have come back strongest as patients have focused on chronic, preventative and screening care

Outpatient Volumes

- Volumes fell significantly but have now recovered, down 56% at the start, but down only 1.5% for the past 30 days
- Recovery is not evenly distributed, as some areas have come back strongly, while other care areas still lag
- Volume rebound demonstrates ongoing recovery outside the inpatient setting, including new channels such as telehealth

Emergency Room Visits

- Emergency Room care fell by 50% with people only going to the ER if essential
- Potentially serious care that normally comes to the Emergency Room is still being avoided or is down
- This decrease in ER visits also potentially reflects a return to the optimal role of the ER
- ER volume is still down by approximately 25% nationally vs. 2019

Telehealth Six Month Findings

-50%
F2F VISITS

Telehealth filled a void during pandemic and was utilized for ~50% of telehealth eligible office visits at peak as face to face visits dropped by 50%

11%
CURRENT
TELEHEALTH

In-person visits have rebounded, driving telehealth down to 11% of eligible visits and reflecting the current hands-on nature of healthcare



Contrary to the belief that technology is for the young, telehealth utilization was strong across age cohorts



Some visits types like behavioral health sustained telehealth volume better than others, while phone check-ins, basic follow-ups and consultations show decline

Conclusion



Providers have quickly learned and heroically responded to COVID-19 as demonstrated by dramatically lower ventilator and mortality rates



Telehealth shows staying power as a new channel and will need to be evaluated and integrated into care planning in a thoughtful way



The impact to inpatient and ER volumes has been significant and the new normal may force a wide-spread re-evaluation of financial models



COVID-19 will have a lasting impact for health systems as they rethink care strategies, access points and address social disparities

Three Questions CFO's Must Ask Themselves

1

How would we weather another pandemic-like event? What would need to change to be prepared?

2

Are we in a better position to instantly recast plans and financials to react to potential future volume shocks?

3

Do we really know our true costs of care and revenue levers? What if they have irrevocably changed?

Recommendations

1

Accelerate Move From Fee-For-Service

FFS is a "Systemic Risk" The CARES Act provided a lifeline that avoided catastrophe. But health systems must evaluate their financial dependency on procedures and FFS models vs. chronic and disease care under value-based arrangements. Under- and over-care and the costs of unexplainable variance need to be further incentivized.

2

Dig Into True Costs of Care

Financial Model Flexibility is a Mandate Providers must be able to flex to instantly recast plans and financials to react to volume shocks. This requires deep understanding of true revenue and cost levers as determined by contracts, actual prices (not just charges) and actual supplies and time and labor costs.

3

Prioritize Chronic & Elder Care

Chronic and Elder Care Should be a National Priority Mortality among seniors and those with comorbidities that led to sepsis and ventilator use requires a deep examination of access to chronic and institutional care models.

4

Fast Track Digital Efforts

Dabbling in Digital Isn't Enough COVID-19 has accelerated the use of digital channels by five+ years. Virtual and physical delivery channels must interconnect seamlessly. Providers must examine COVID-19 telehealth and outpatient economics, volumes, and outcomes to optimize their investment strategies.

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Overview of Findings

Version 9.23.2020

Background

On May 11, 2020 we produced the original National Patient and Procedure Volume Tracker (NPPVT) published based on data from the StrataSphere network. At that time, the impact of the coronavirus pandemic was pushing many hospitals to the brink of financial collapse.

Volumes, particularly surgical procedure volumes, were falling rapidly across the country and the Northeast saw a massive spike in COVID-19 volumes with very high mortality rates. The rest of the country began to cancel "elective" care and took extraordinary measures to ensure that hospitals wouldn't be overwhelmed. At the same time, concern was growing as patients stopped coming in for needed care.

Six months later, the landscape, while still very difficult, looks markedly different thanks to the infusion of \$175 billion from the CARES Act and the heroic efforts of healthcare providers and systems. Despite highly politicized, state-by-state decisions, health systems stood resolute. In recent months, we have witnessed dramatically lower mechanical ventilator use and mortality rates. And today, it's clear that institutions can manage COVID-19 volumes while safely treating patients suffering from other issues.

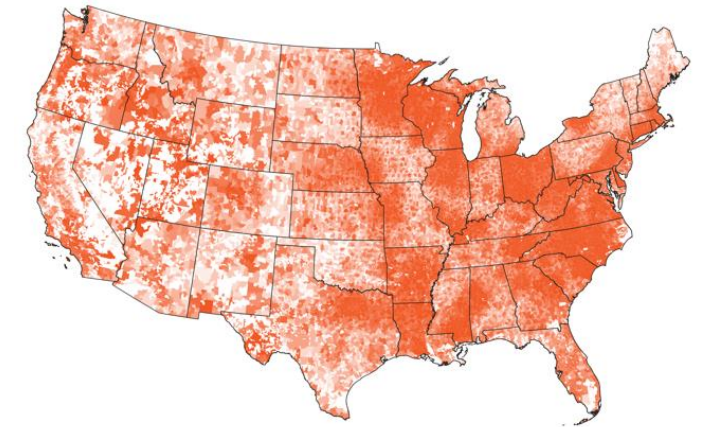
What we see in the data is the story of an industry learning to live in a new normal that may never look like it once did, not only because of COVID-19 but because of an acceleration of new care models, technology, and consumer preferences.

StrataSphere Network

100+ Participating Health Systems

100,000,000 Patients

\$160 Billion+ in Operating Expense



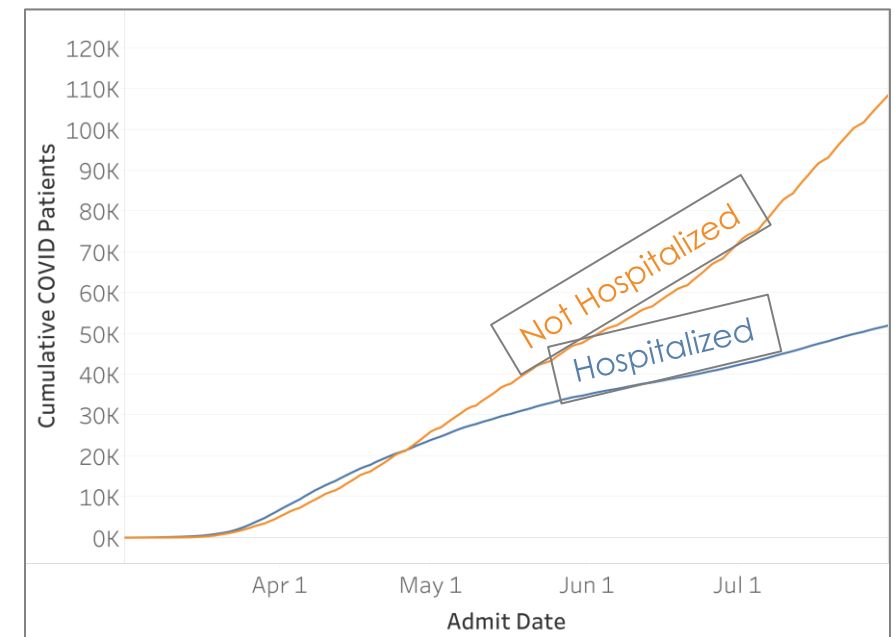
Findings: COVID-19 Hospitalizations Slow Down, Tend Toward Older Patients, ER Volumes of Young People Surge

- COVID-19 inpatient volumes did not surge nationwide as expected and did not replace the dramatic decline in total admissions
 - The massive spike in the Northeast subsided and COVID-19 admissions, as a proportion of total admissions, has moderated over the summer
 - Signs of increase as the country re-opens

COVID-19 hospital admissions continue to be in older age cohorts. While there is a significant increase in visits to the emergency room by 18-35-year-olds, their hospital admission rates remain comparatively low.

- Admission rates from the ED are declining across all age cohorts, suggesting providers have developed more skill in identifying who has COVID-19 and should be admitted as well as optimal treatment

Within the StrataSphere data set, there are
160,000+ COVID-19 cases



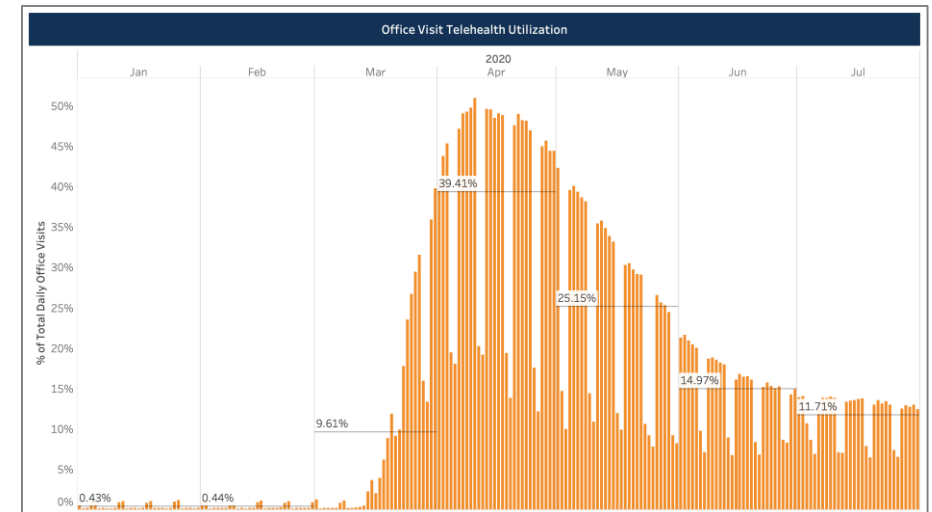
Findings: COVID-19 Patients Show Longer Lengths of Stay than Non-COVID-19 in Same DRGs, but Understanding and Treatment Gains Reduced Mortality

- **Admitted COVID-19 patients in the top seven DRGs used for COVID-19 have length of stay 20% higher than non-COVID-19 patients in the same DRGs justifying the 20% reimbursement increase the government offered providers**
- **Mortality of patients continues to decline dramatically, a testament to providers' ability to learn how to treat COVID-19 and those at high risk-taking measures to stay safe**
 - There has been a dramatic decline in mechanical ventilator use and mortality in all but the most severe cases and DRGs
 - Mortality across the seven most common DRGs has declined cross all age groups
 - Mortality is extremely rare in the younger age groups (<1% in 18-24 and 24-35-year-old age groups)
 - While ventilator use, has declined dramatically, most on a ventilator stay on it for 96 hours or more
 - Mortality in the most severe but less common DRGs, which tend toward mechanical ventilation, remains high
 - Critical care utilization continues steadily among admitted patients, but older patients are far more likely to require critical care

Findings: Telehealth Shows Staying Power as a New Channel

- Overall face-to-face office visits declined nearly 50% on average and have recovered significantly
- Face to face visits eligible to be done via telehealth surged as COVID-19 arrived and traditional office visits fell
- Telehealth filled a void and reached almost 50% of telehealth-eligible visits
- In-person visits have come back, driving telehealth down to 11% of eligible visits and reflecting the current hands-on nature of healthcare
- Contrary to the belief that technology is for the young, telehealth utilization was strong across age cohorts
- Some visits types like Behavioral Health sustained telehealth volume better than others while phone check-ins, basic follow-ups and consultations show weakness

Telehealth Visits Surged then Settled at 11%



Findings: Inpatient Volumes Plummet and Still Recovering; Outpatient Volumes Rebounding

- **Inpatient volumes are now approaching 2019 levels, but "lost" volumes have not been "made up" and major procedures, which tend to be high margin, are still lagging**
 - The "new normal" may be 90-95% of previous levels with increased focus on essential medical care
 - Volumes dropped dramatically across the country regardless of whether providers were seeing substantial volumes of COVID-19 patients
 - Traditional high margin surgical procedures still down but screening and chronic care have come back strong
- **Outpatient volumes are strongly back versus 2019 (down 56% at the start, but down only 1.5% for the past 30 days), demonstrating ongoing recovery outside the inpatient setting, including new channels such as telehealth**
 - Outpatient back above 2019 in many cases
 - Screening and chronic care and medical disease volumes have been the leaders
 - Regional differences show variance, perhaps tied to the ability to open/close with COVID-19 outbreaks as well as testing locations and protocols
- **Emergency Room care fell by 50% with people only going to the ER if essential, but also potentially reflecting a return to the optimal role of the ER**
 - Emergency volumes plummeted as people sought to avoid going to any setting where they might encounter COVID-19
 - Data also suggests that trauma volumes were down as the country locked down
 - Volumes have come back but are still well off 2019 levels and show no signs of returning

Findings: Essential Care Back to 2019 Levels but Electives Still Lagging

- **Volumes across all service lines are well above the lows of May/June and up 17.4% since the beginning of July**
- **Service lines that are medical rather than surgical have come back strongest as providers and patients focus on chronic, preventative and screening care but avoid exposure and more health compromising procedural work or in person care they view as temporarily avoidable**
 - Service lines that have come back strongest include cancer, breast care, nephrology and cardiology
 - Procedural work like orthopedics, spine, vascular and general surgery is still lagging
 - Certain specialties like allergy, dermatology and ENT that may be postponed or done well via telehealth still down
- **Essential chronic disease care has rebounded which may avert concerns of serious outcomes from delayed care. Potentially serious care that normally comes to the Emergency Room is still being avoided or is down.**
 - Diabetes and hypertension care has rebounded
 - Areas like non-cardiac chest pain are still down dramatically, suggesting people are avoiding hospital-based check-ins
 - Urinary tract infection volumes are way down, potentially being treated by telehealth volume which has surged

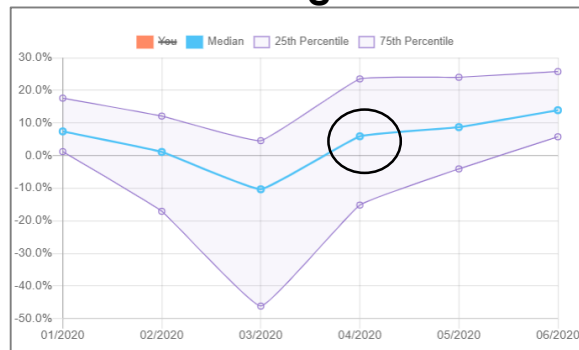
Findings: Procedures and Surgeries Continue to Lag and Office Visits Slow

- **Inpatient Procedures and surgeries continue to lag from 2019 levels (down 18.6%), having a negative financial impact (and potential negative patient impact) on hospitals**
 - Semi-elective procedures like hip and knee replacements continue to be well below 2019 levels (total hip down 38.8%, total knee down 52.0%)
 - Fractures are back to near 2019 levels as the country has resumed a lot of activity (down 0.3%)
 - Major and minor outpatient procedures, like inpatient, have lagged more than other areas (major procedures down 19.0%, minor procedures down 20.4%)
- **Outpatient visits are mixed as some have come back strongly, quickly and others still lag**
 - Advanced imaging and lab work has come strongly back in conjunction with screening and monitoring of cardiac, cancer and other issues
 - Standard imaging like x-ray has not come back as strong (down 20.3%)
 - E&M visits to the outpatient departments (not clinics) continue to be far down over 2019 (down 58.2%). This gap is likely being filled by telehealth volumes AND a lack of visits prior to procedures and other activity that is preceded by a visit

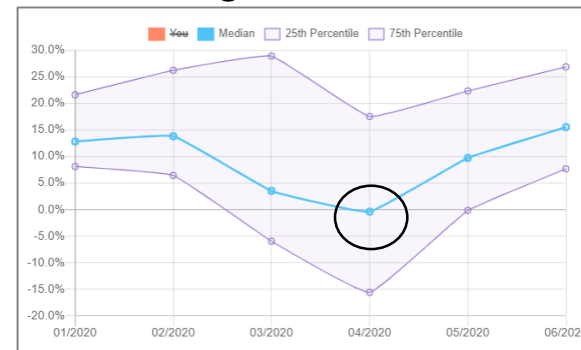
NOTE: All percentages reflect aggregate change from March 20 – August 15 of 2019 vs. 2020.

Findings: Due to Reduced Volumes, Margins were Negative in March and April, but Catastrophe was Avoided as Some Volume Returned and the CARES Act Provided Support

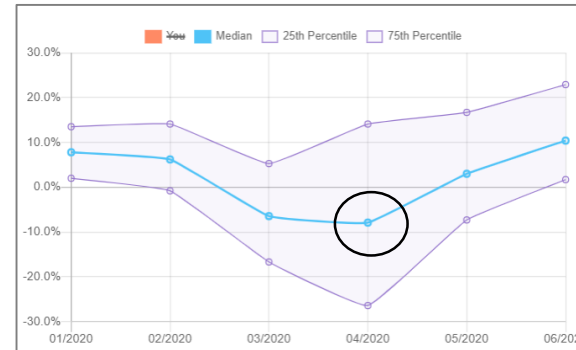
Net Income Margin



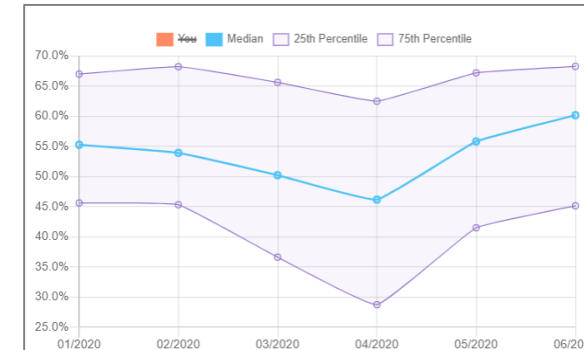
EBIDTA Margin



Operating Margin



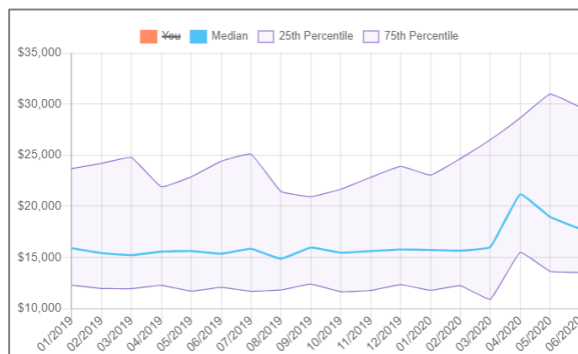
Contribution Margin



Data Source: StrataSphere Benchmarking comparisons of 73 health systems.

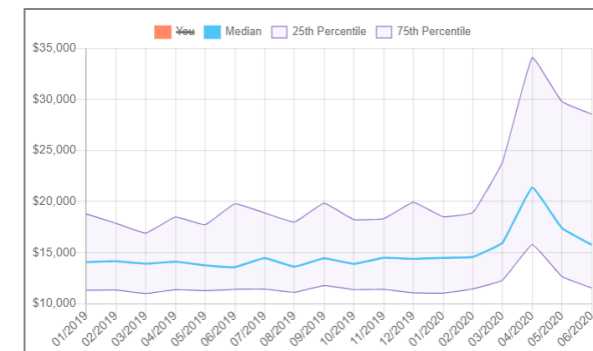
Findings: While Overall Margins were Negative, Driving Cash Down, Both Costs and Revenues were Higher and Just About Breakeven. Results Have Improved Slightly in Current Months.

Operating Revenue/Adj Discharge



Operating Revenue/Adj Disch	25th percentile	Median	75th percentile
2019	\$11,984	\$15,564	\$23,839
2020 YTD (Jan – Jun)	\$13,100	\$17,356	\$29,206

Operating Expense/Adj Discharge



Operating Expense/Adj Disch	25th percentile	Median	75th percentile
2019	\$11,376	\$14,142	\$17,959
2020 YTD (Jan – Jun)	\$12,487	\$16,737	\$25,857

Data Source: StrataSphere Benchmarking comparisons of 58 health systems.

Report Data Set

As a proxy for analyzing the impact of COVID-19 on patient and procedure volume, the data science team at Strata aggregated data from a cohort of 275 hospitals in 58 healthcare delivery systems, a subset of the over 1,000 hospitals and 220 healthcare delivery systems that use the company's StrataJazz® financial planning, analytics and performance platform.

Collectively these hospitals serve nearly 86 million Americans, account for \$81 billion in annual operating expense, and represent a broad national view across 34 states and all census regions with varying incidence rates of COVID-19 cases.

Four separate models were then created and analyzed to understand the impact of COVID-19 on 1) patient volume and 2) procedure volume 3) telehealth 4) COVID-19.

DATA COHORT

275	Hospitals
58	Healthcare Systems
86M	Patients Served
\$81B	Annual Operating Expense

Regional Distribution

Midwest	Northeast	South	West	TOTAL
110	35	95	35	275

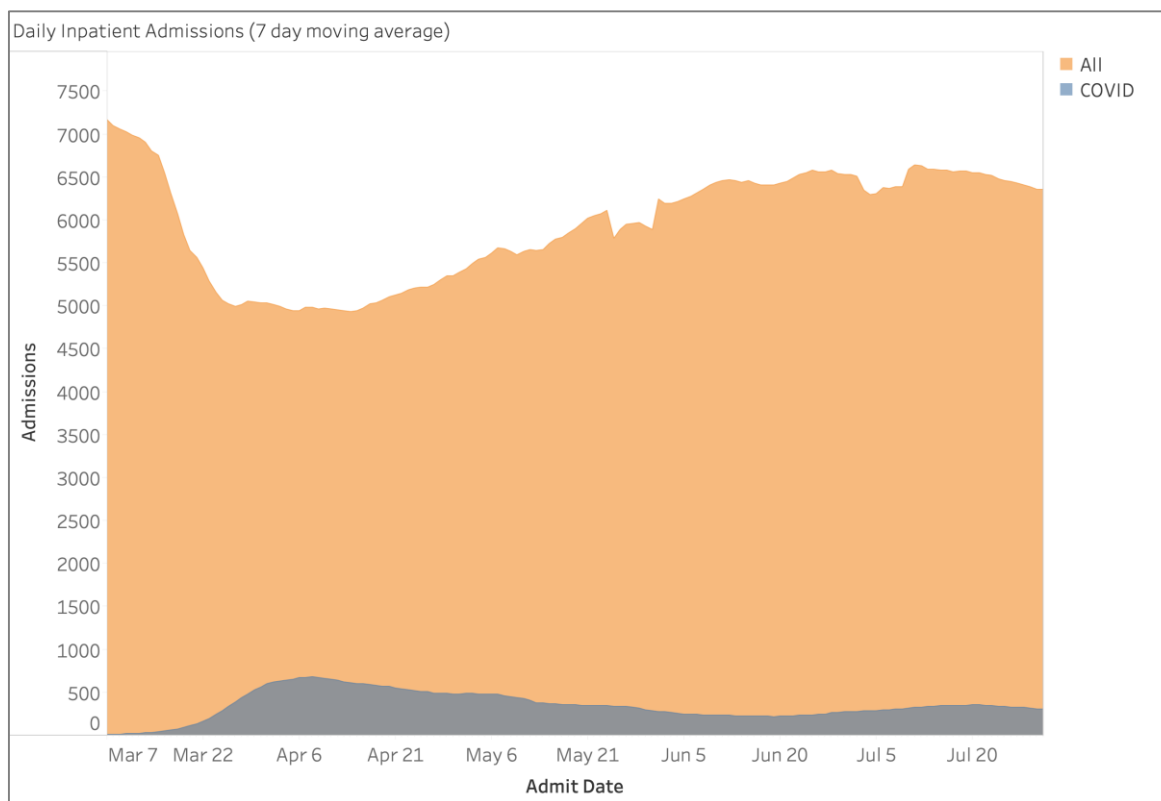
NOTE: See Methodology section for more details.

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COVID-19: Analyses of 160,000+ cases

Version 9.23.2020

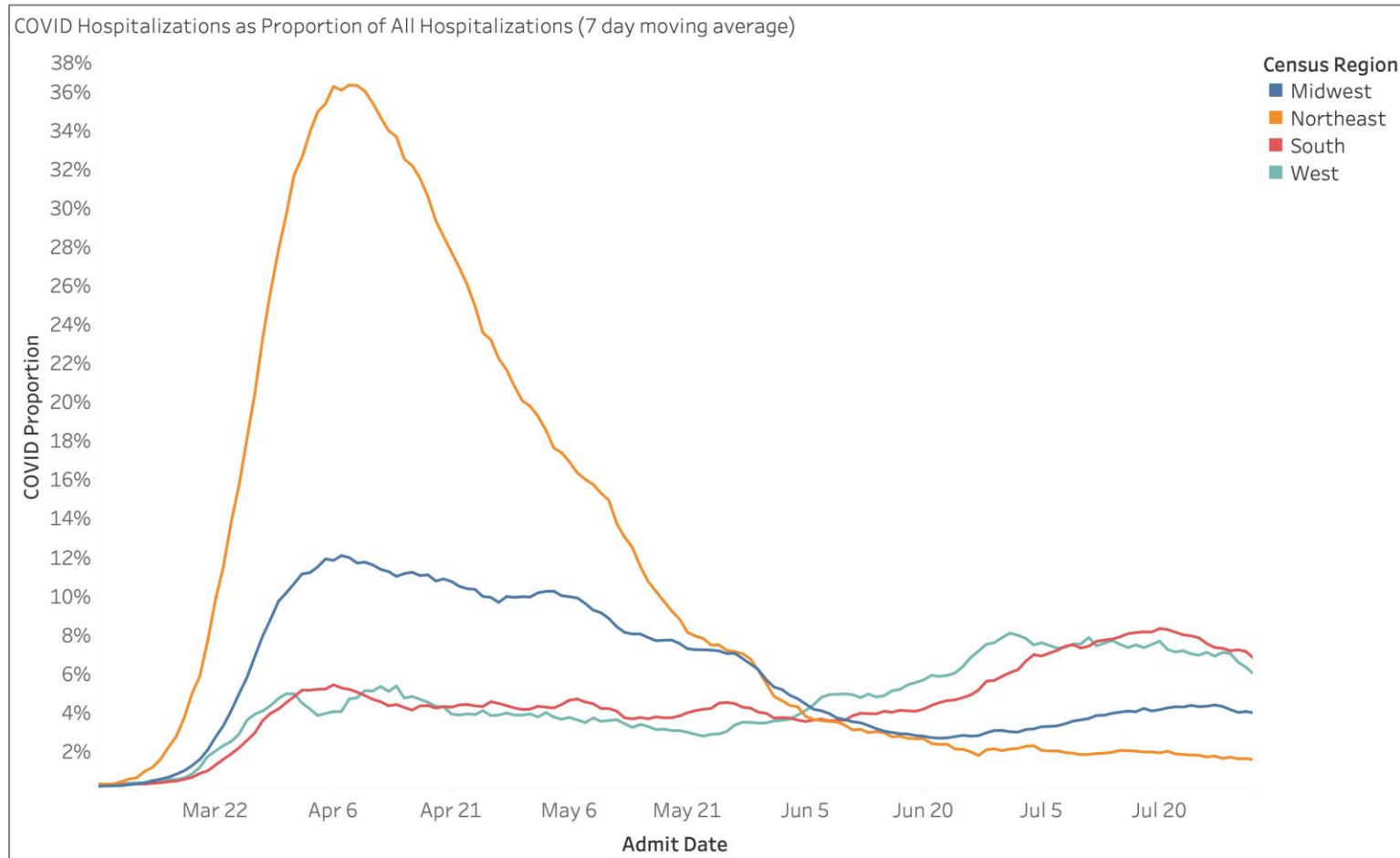
COVID-19 Hospitalizations Did Not Replace Lost Volume from the Shutdown of Non-critical Activity Early in the Pandemic



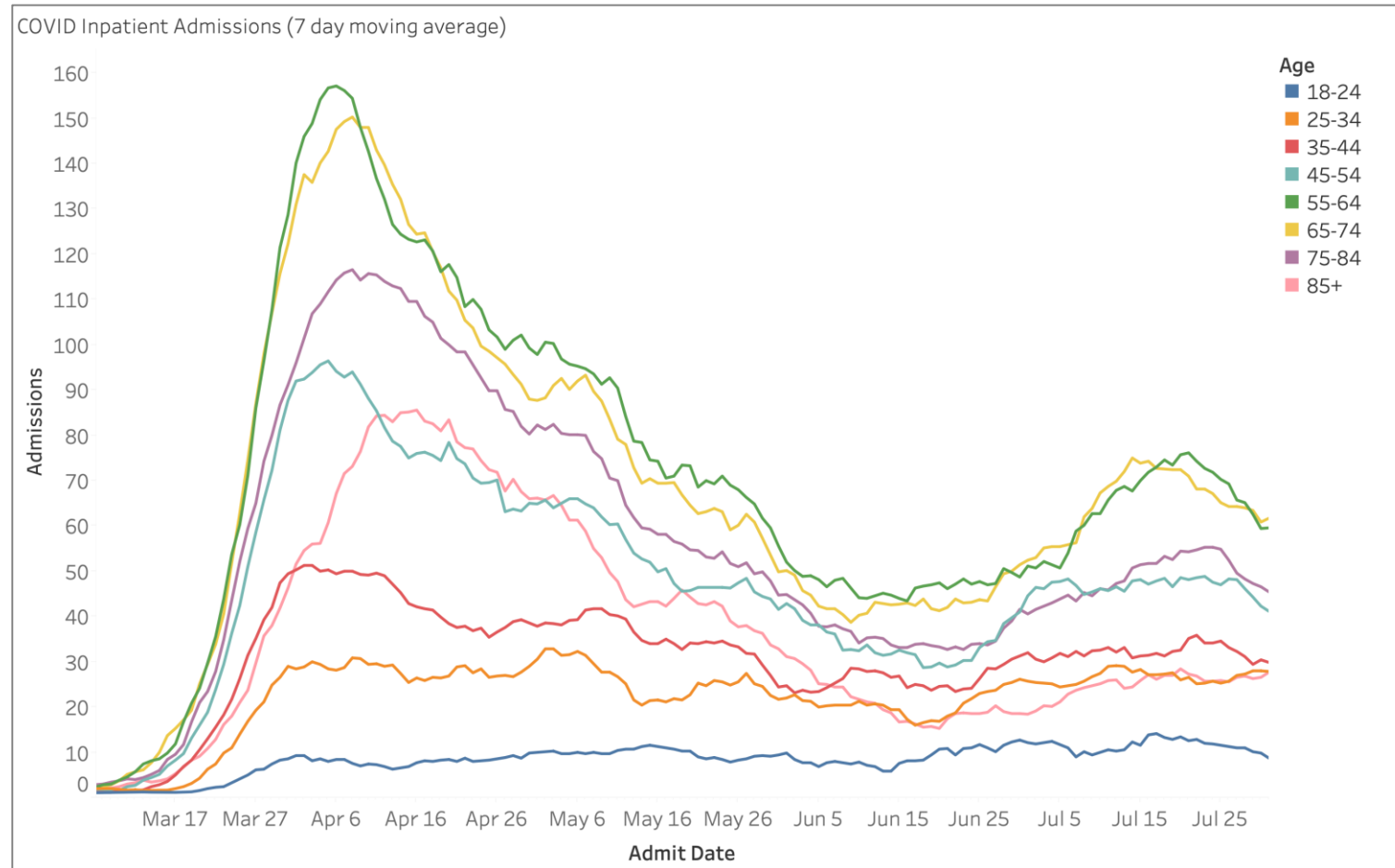
Monthly Inpatient Admissions

	March	April	May	June	July	TOTAL
COVID-19	6,161	17,267	11,336	7,235	10,011	52,010
All	186,957	153,880	178,487	195,574	201,508	916,406

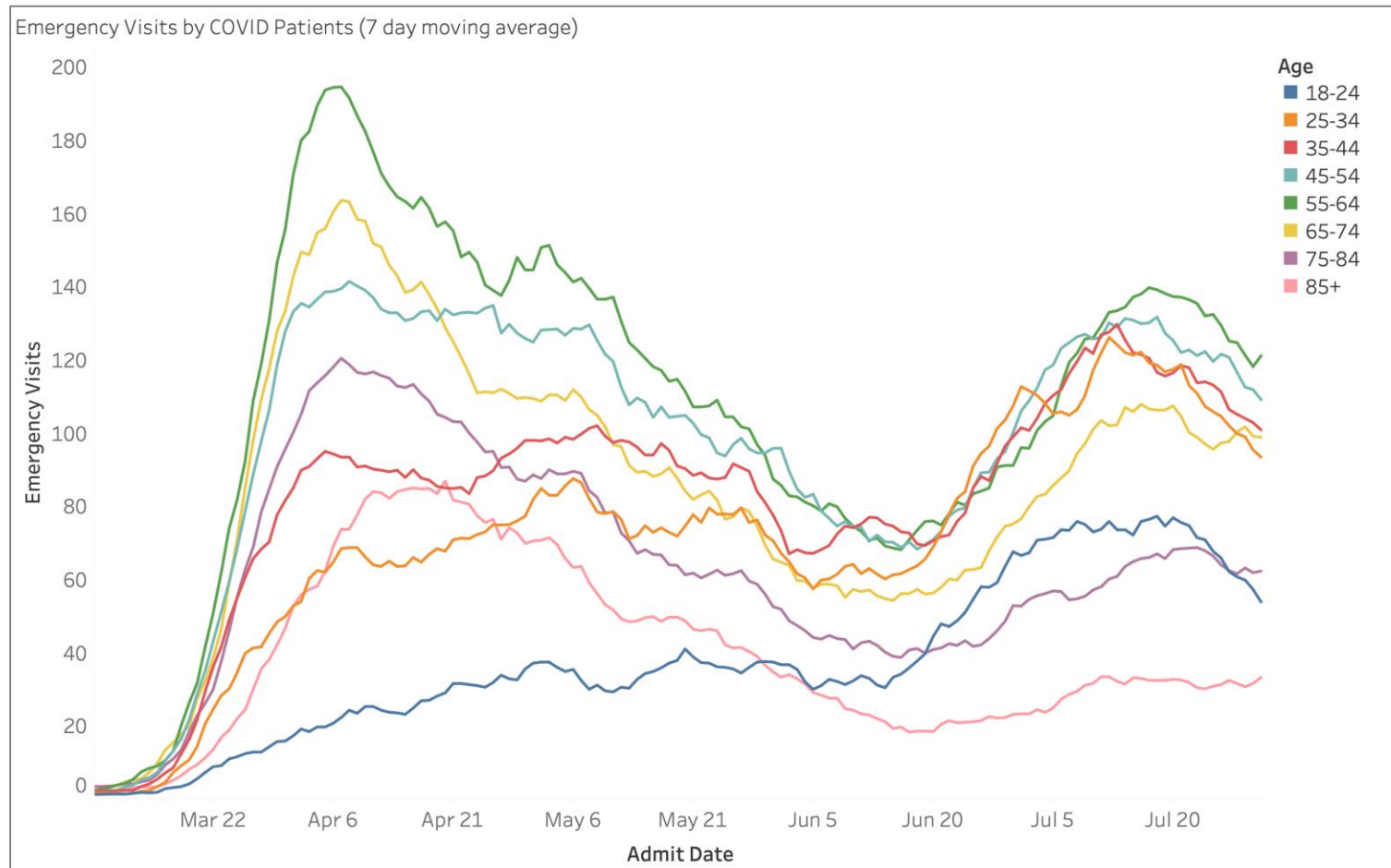
After the Northeast Spike, All Regions Learned How to Manage Inpatient Volume While Keeping COVID-19 Hospitalizations Low Relative to Totals



COVID-19 Hospitalizations Initially Spiked Across Most Ages, but Hospitalizations Still Trend Towards Older Patients

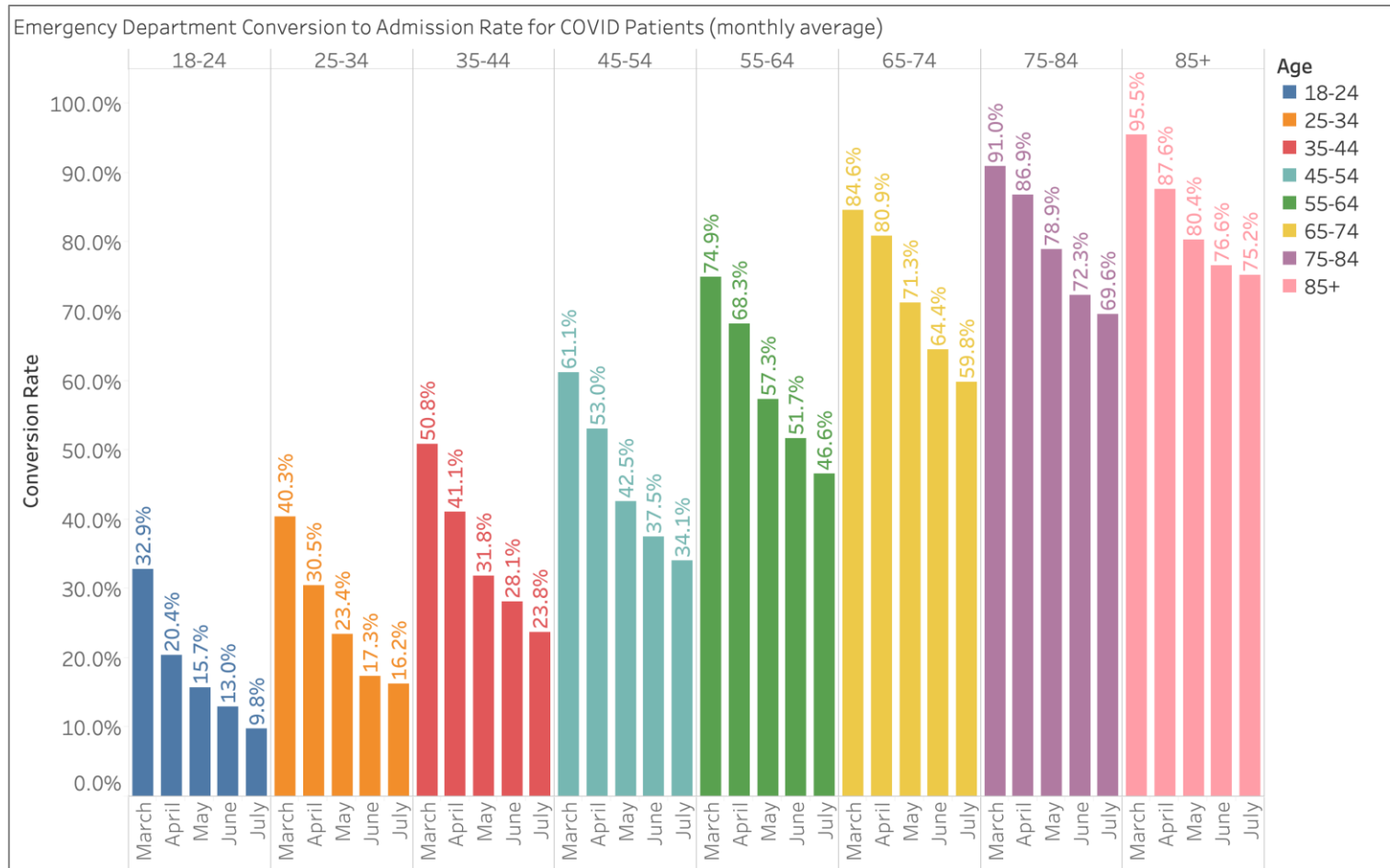


COVID-19 ER Visits Shifted to Younger Patients in June But All Age Groups Rose Over Summer with a July Taper

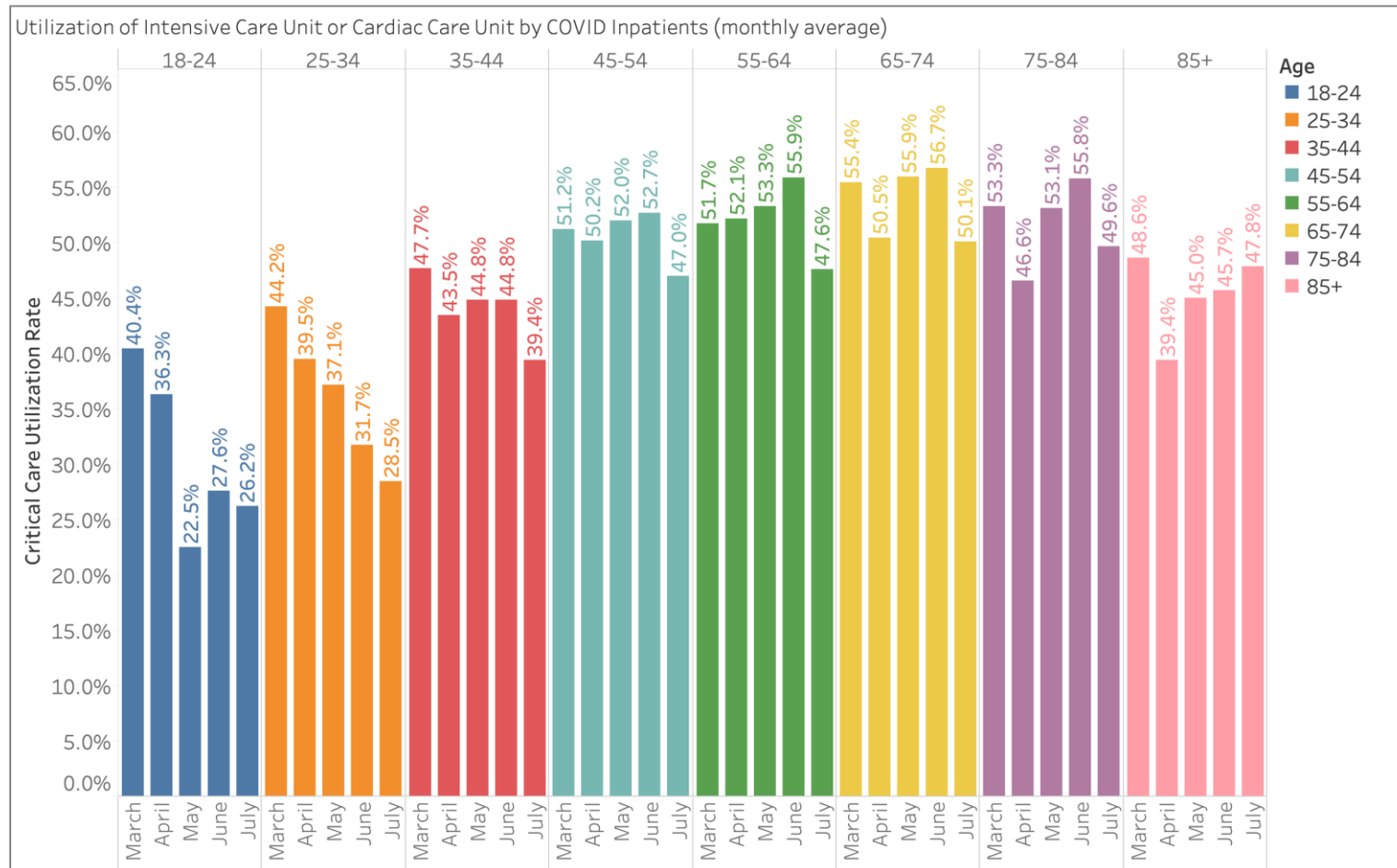


NOTE: We will update in October with the return to school.

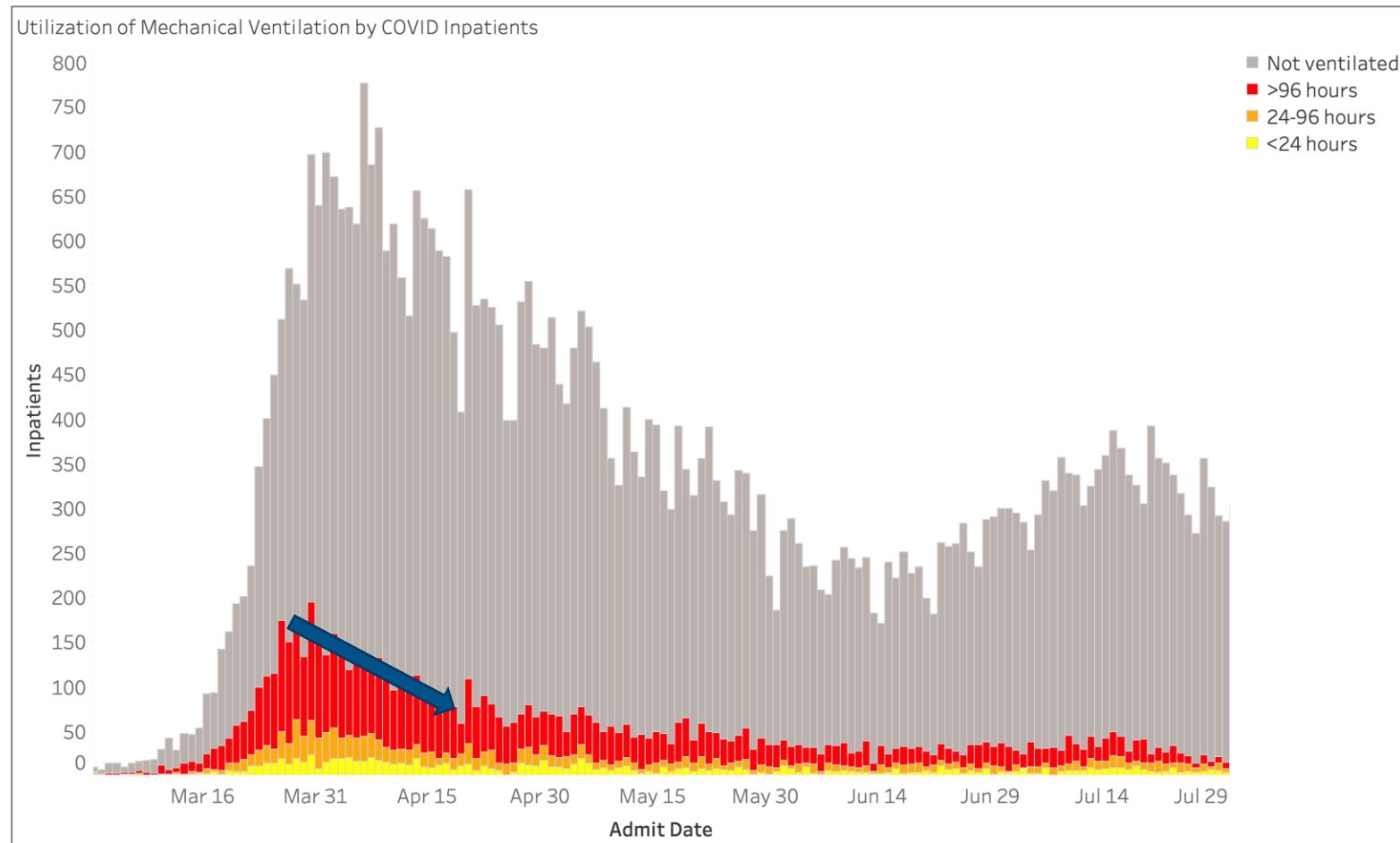
Conversion From ER to Being Admitted Increases with Age but Has Steadily Declined Across All Age Groups



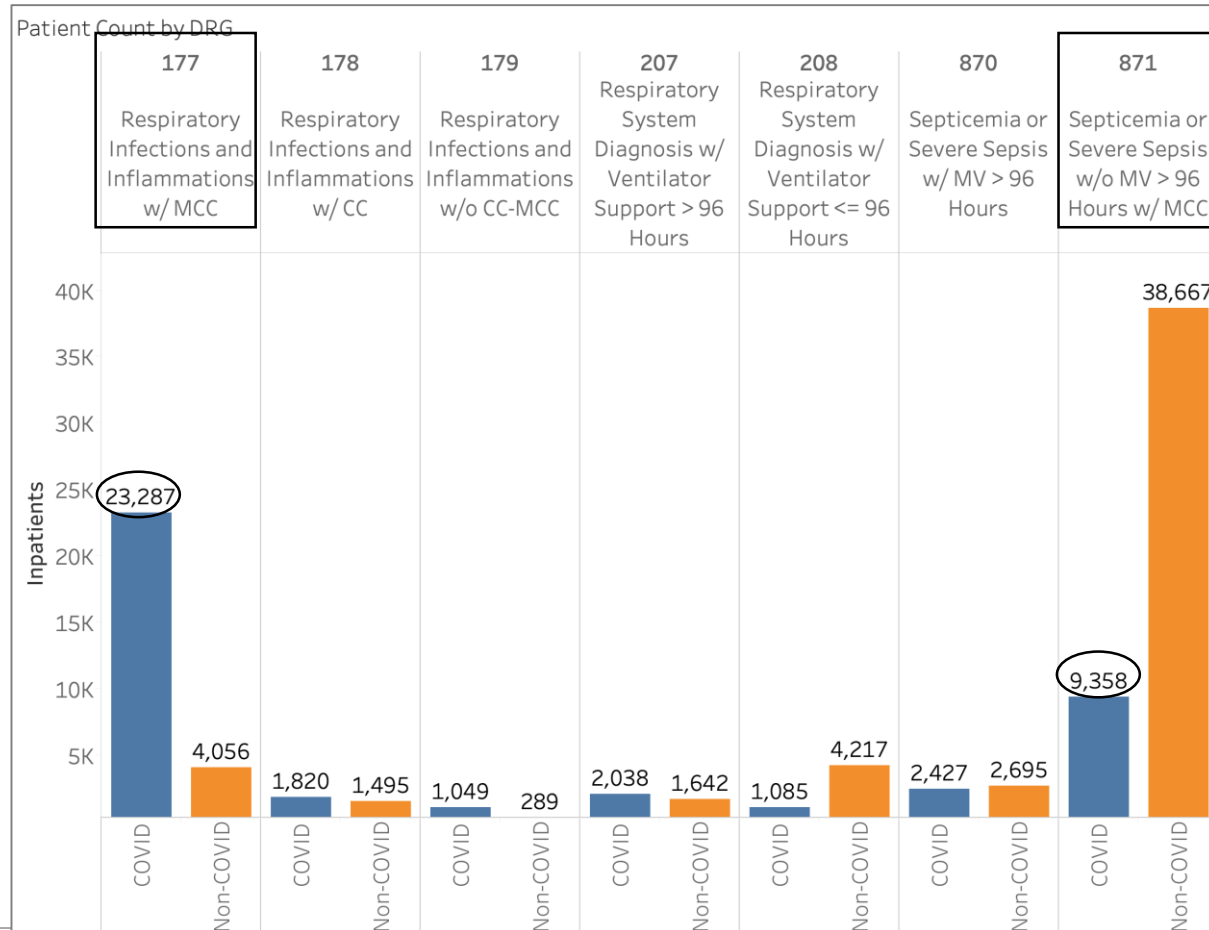
Critical Care Utilization Rate Remains Stable Across Most Age Groups Older Than 35, but Declined for Ages Younger Than 35



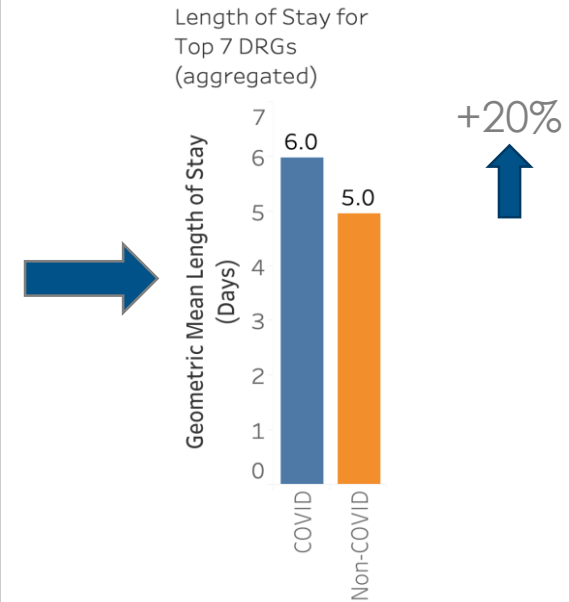
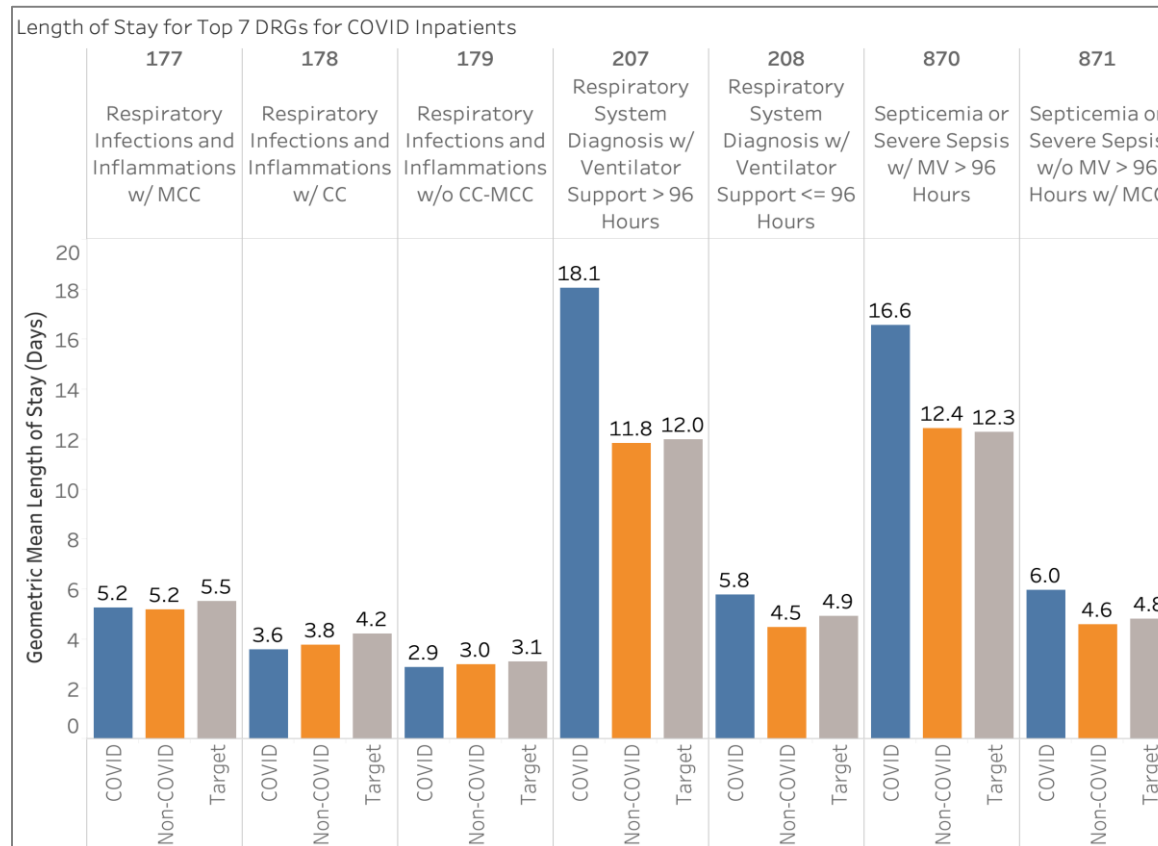
The Rate of Ventilator Usage Has Declined Dramatically, but Most Mechanically Ventilated Patients Received >96 Hours of Ventilation



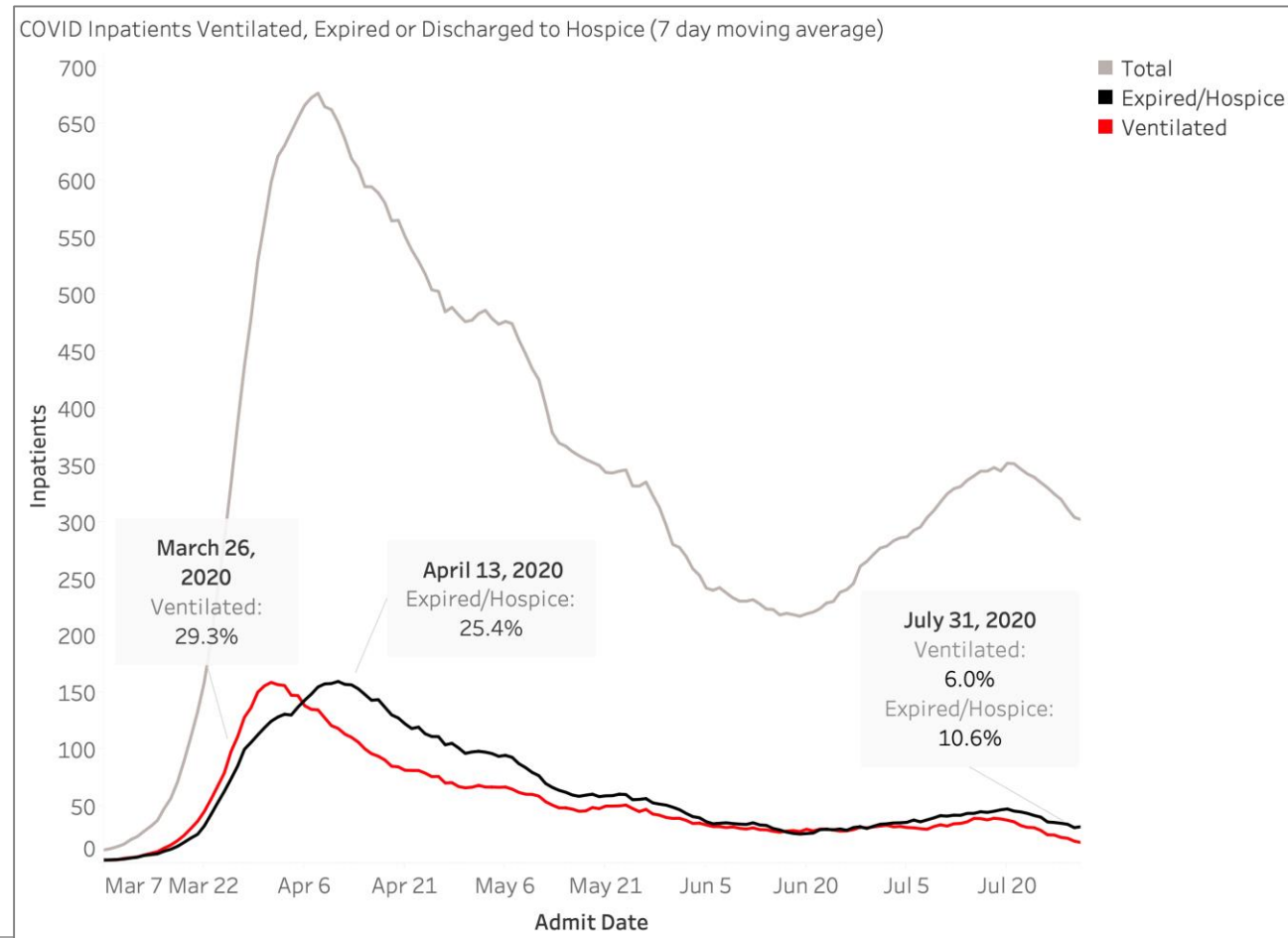
COVID-19 Inpatients Were Most Commonly Assigned to a Respiratory DRG 177 (45% Total) or Sepsis DRG 871 (18% Total)



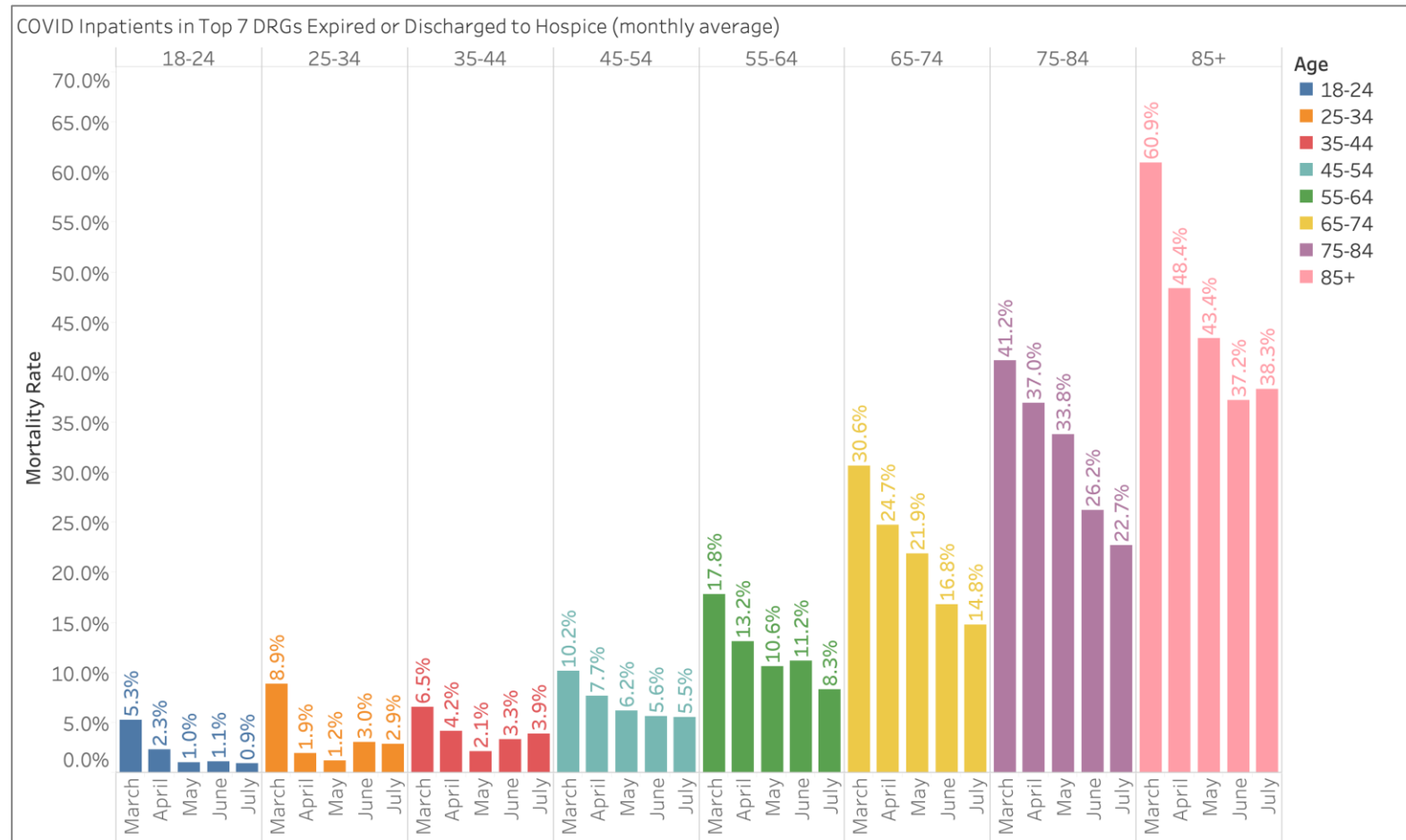
COVID-19 Patients in Top 7 DRGs Had 20% Longer LOS Than Patients Without COVID-19 in Same DRGs, Supporting Federal Payment Increase for COVID-19 Patients; Ventilated Patients Had Even Longer Stays Suggesting Higher Costs



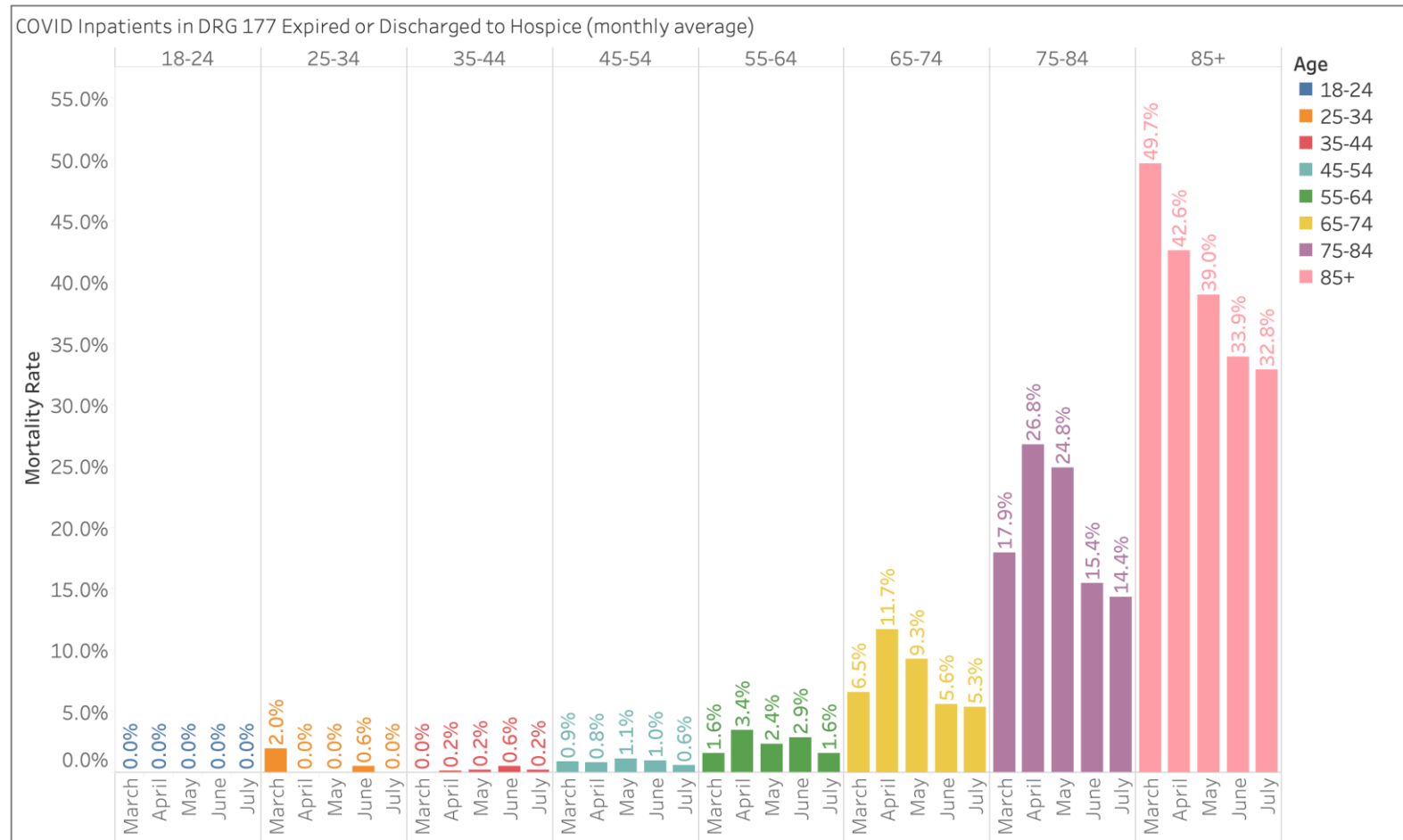
As COVID-19 Understanding and Treatment Has Improved, Mechanical Ventilator Usage and Mortality Among COVID-19 Inpatients Has Declined



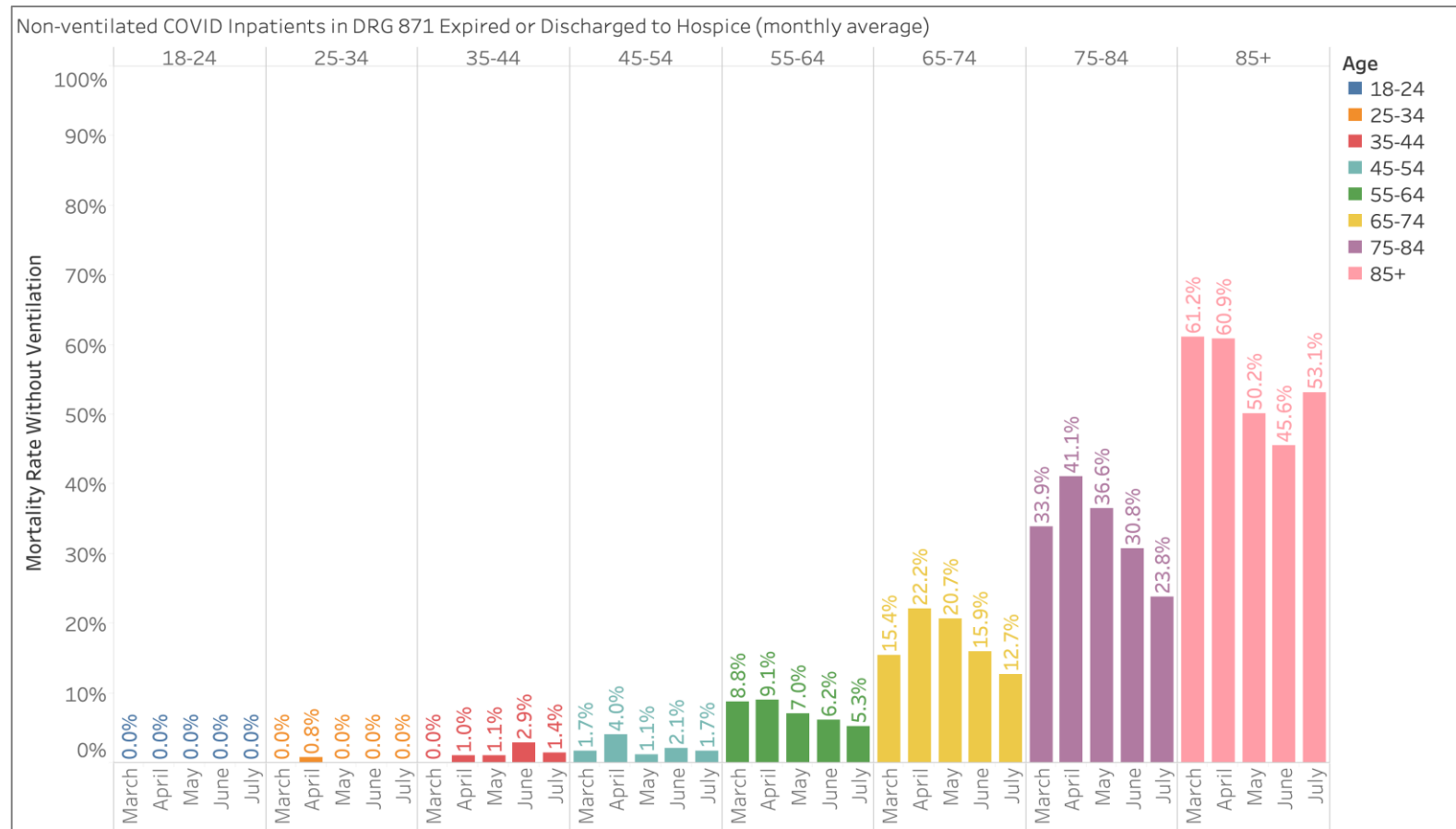
For the 7 Common COVID-19 DRGs, Inpatient Mortality Has Declined Across All Ages and Remains Low for the Youngest Age Groups Actually Admitted



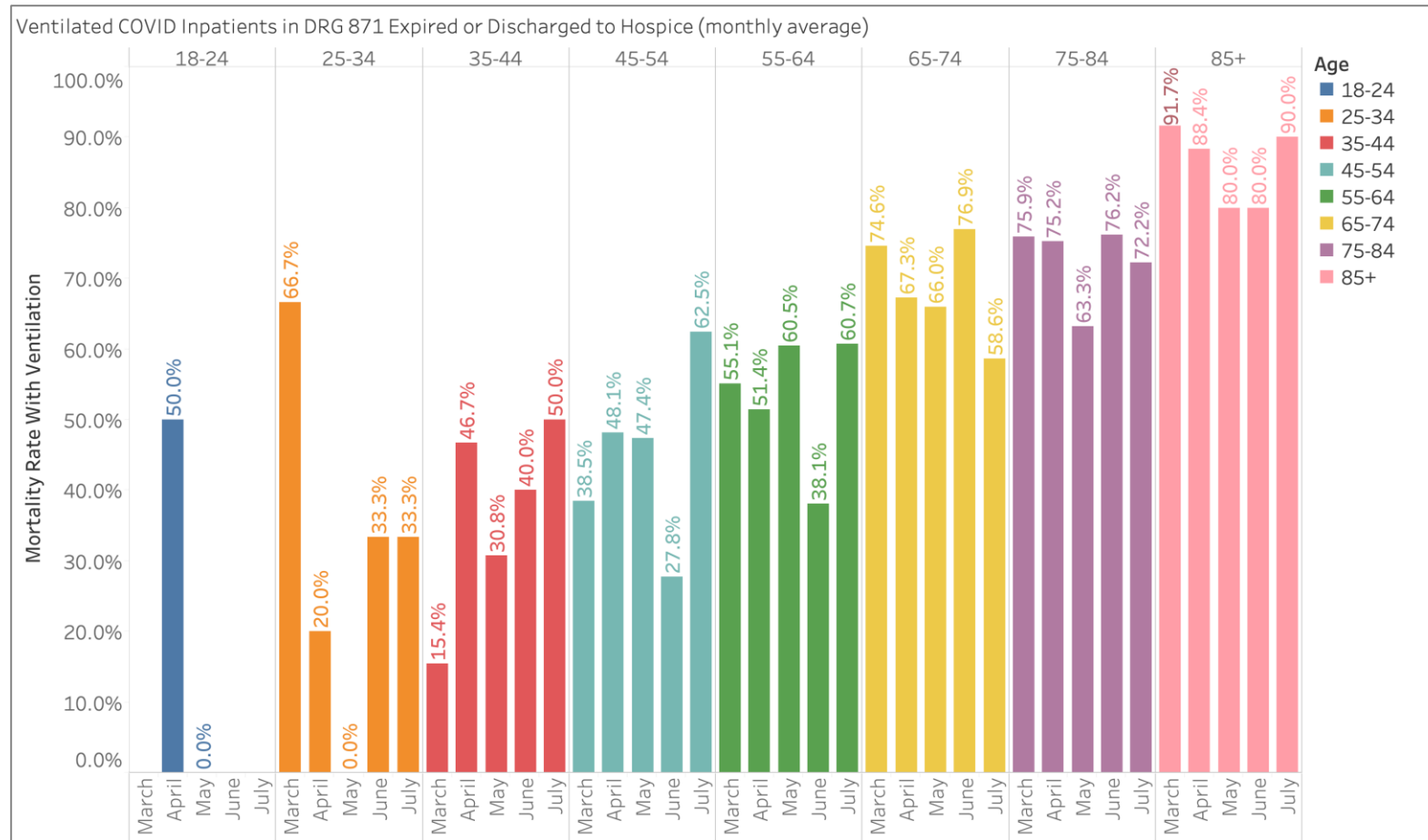
For the Most Common COVID-19 DRG (177, Respiratory), Mortality Has Declined For Most Age Groups Over 55 and Remains Very Low for Age Groups Under 55



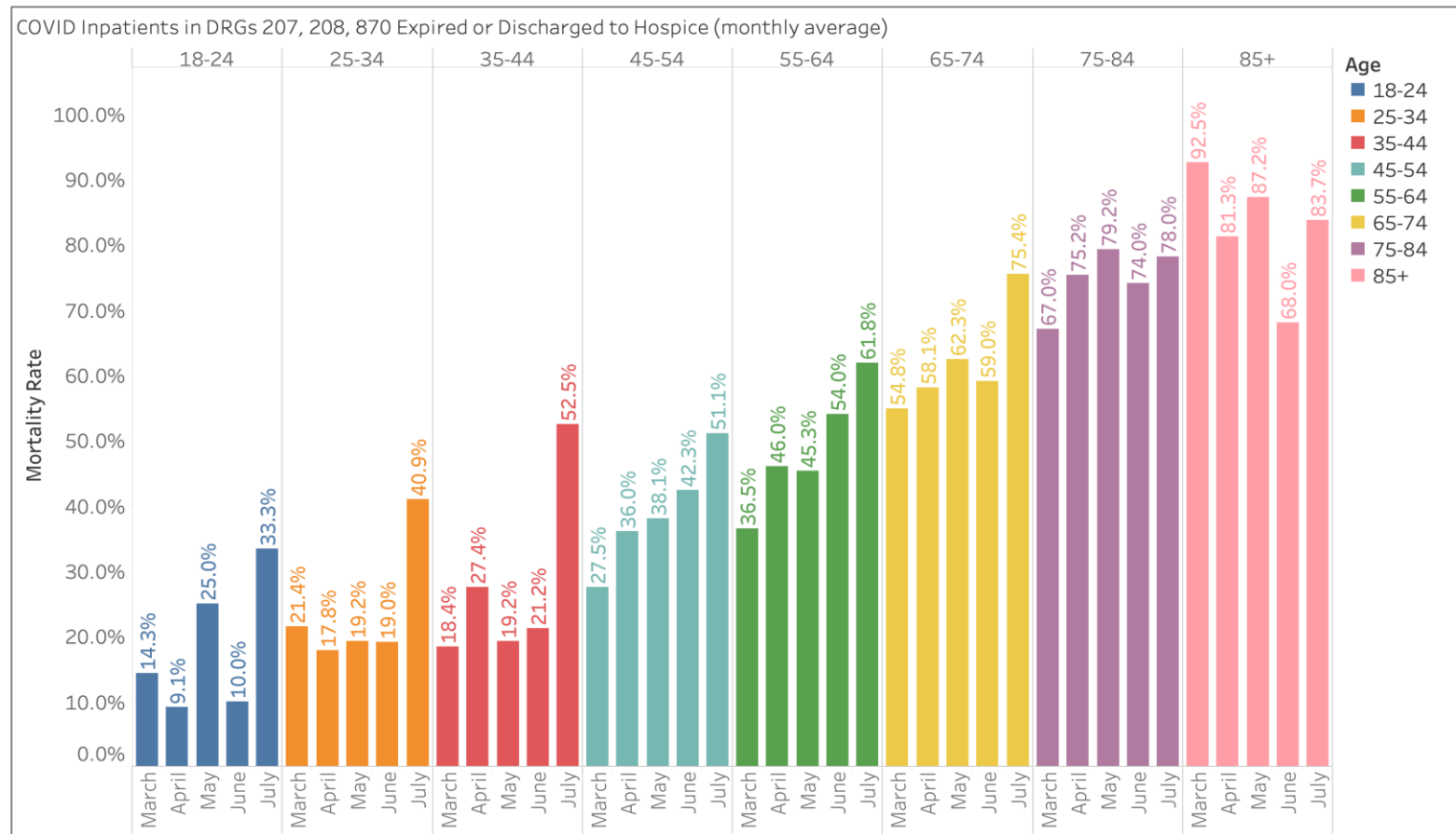
For the Second Most Common COVID-19 DRG, Mortality for Non-ventilated Patients Has Declined for Those Over 55. It Remains Very Low For Age Groups Under 55.



For DRG 871, Mortality for Ventilated Patients Is Much Higher Than for Non-ventilated Patients Across Most Age Groups



For COVID-19 DRGs with the Highest "Weights" Patient Counts Are Lower, but Mortality Increases with Age and Has Remained Higher Than the Other COVID-19 DRGs Across Most Age Groups



DRGs with the Highest Weights

- DRG 207 = 5.7
- DRG 208 = 2.5
- DRG 870 = 6.3

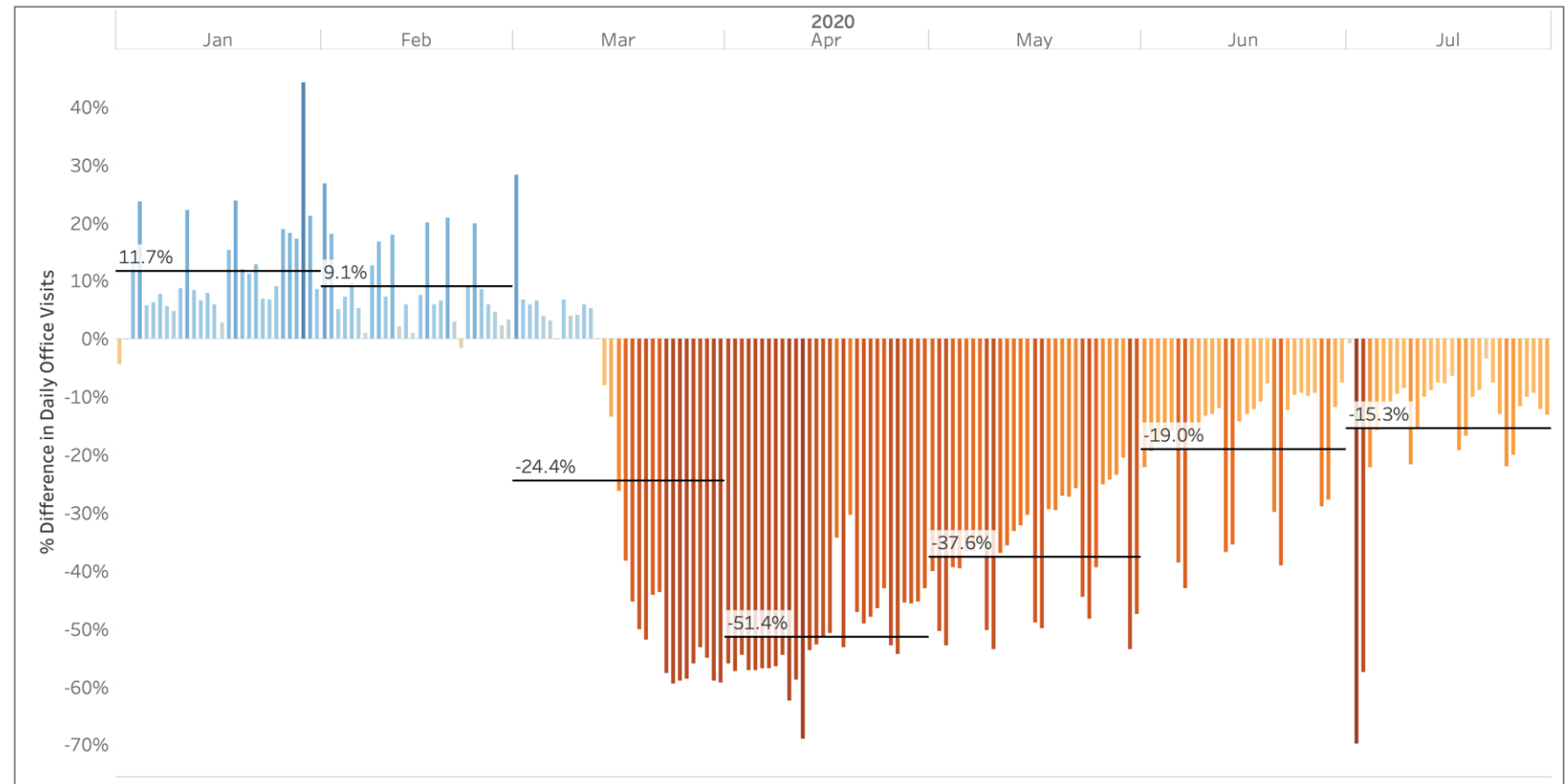
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Office Visit and Telehealth Trends

Version 9.23.2020

National Office Visits Daily Percentage Change Compared to 2019

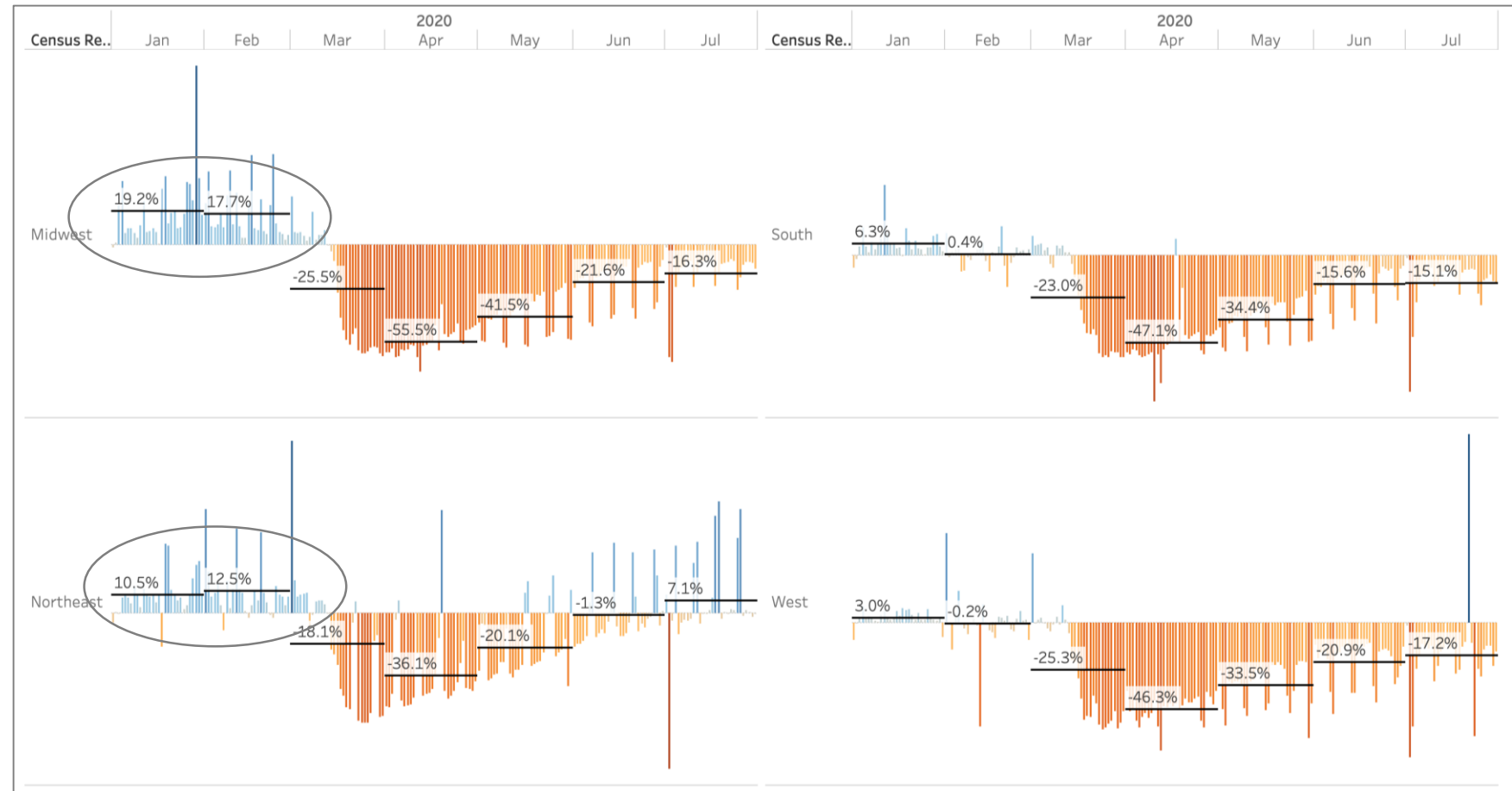
- Prior to the National Emergency announced in March, office visit volumes were well above 2019 levels
- Overall visits declined nearly 50% on average and have recovered significantly
- There was more than typical weekend volume over the summer. The large downward bars represent weekends and the July 4th holiday



Note: Data from January 1, 2019 to July 31, 2020

Regional Office Visits Daily Percentage Change Compared to 2019

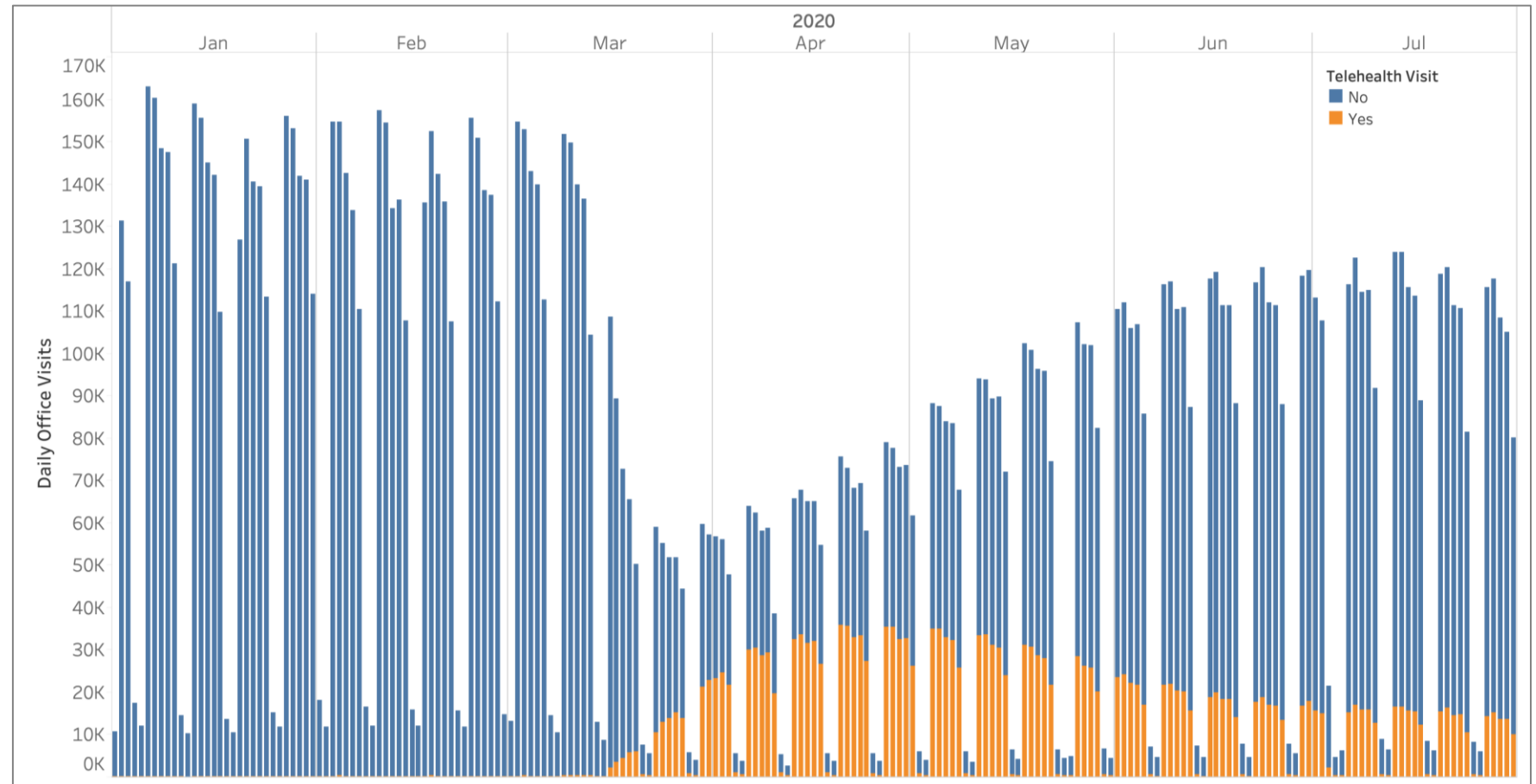
- Regional volumes followed a similar trend to the nation
- It's notable that the Northeast and Midwest, the hardest hit COVID-19 areas, had higher volumes in Jan/Feb 2020 versus 2019 than the South and West
- The Northeast seems to have fared somewhat better than regions where COVID-19 hit later in the spring and summer in terms of overall volumes
- The Northeast has rebounded above 2019 levels perhaps due to pent up demand



Note: Data from January 1, 2019 to July 31, 2020

Office Visit Telehealth Utilization

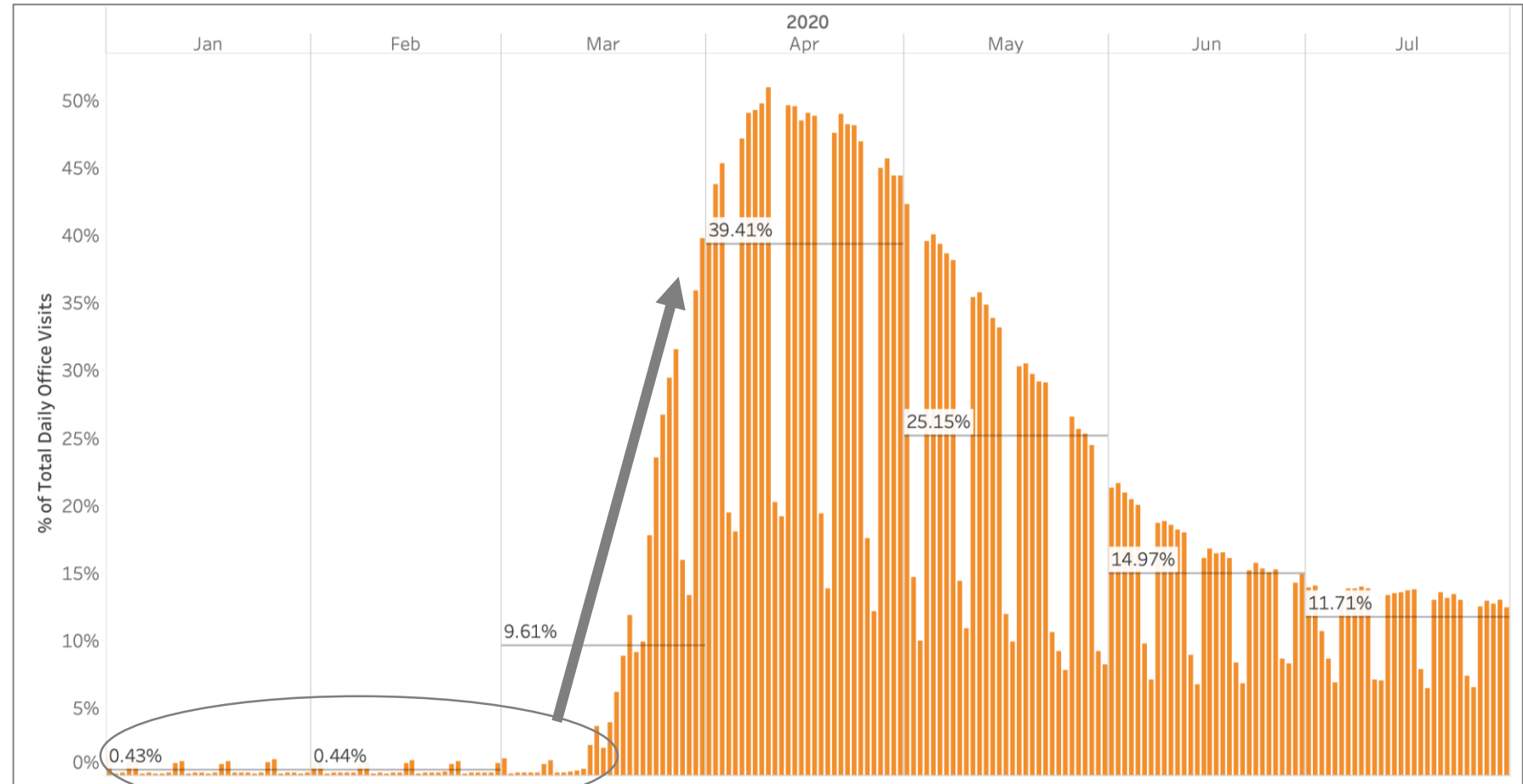
- Telehealth office visits surged during the pandemic as traditional office visits fell
- All visits shown are telehealth-eligible office visits



Note: Data from January 1, 2019 to July 31, 2020

Office Visit Telehealth Utilization

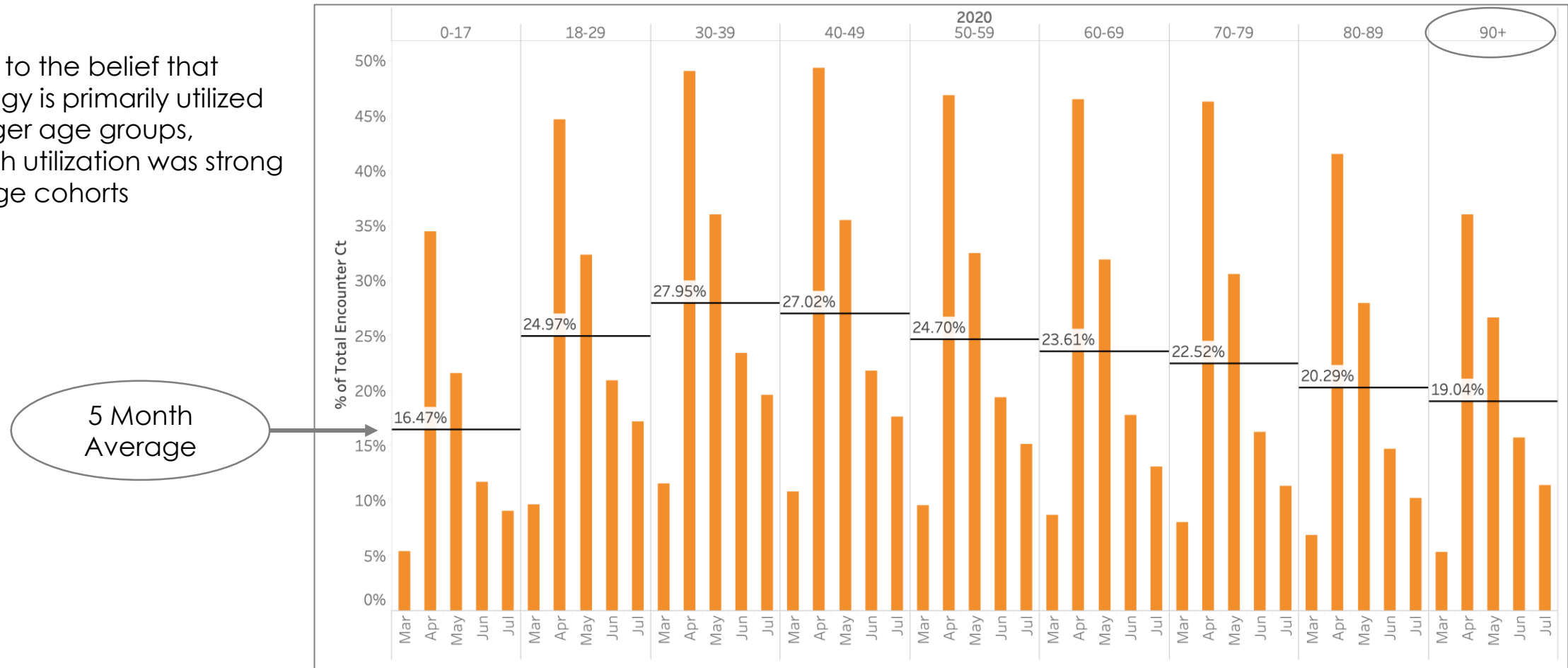
- Telehealth soared and filled a void during the pandemic and was utilized for almost 50% of office visits at the peak
- However, telehealth office visits have come back down to 11% reflecting the hands-on nature of healthcare



Note: Data from January 1, 2019 to July 31, 2020

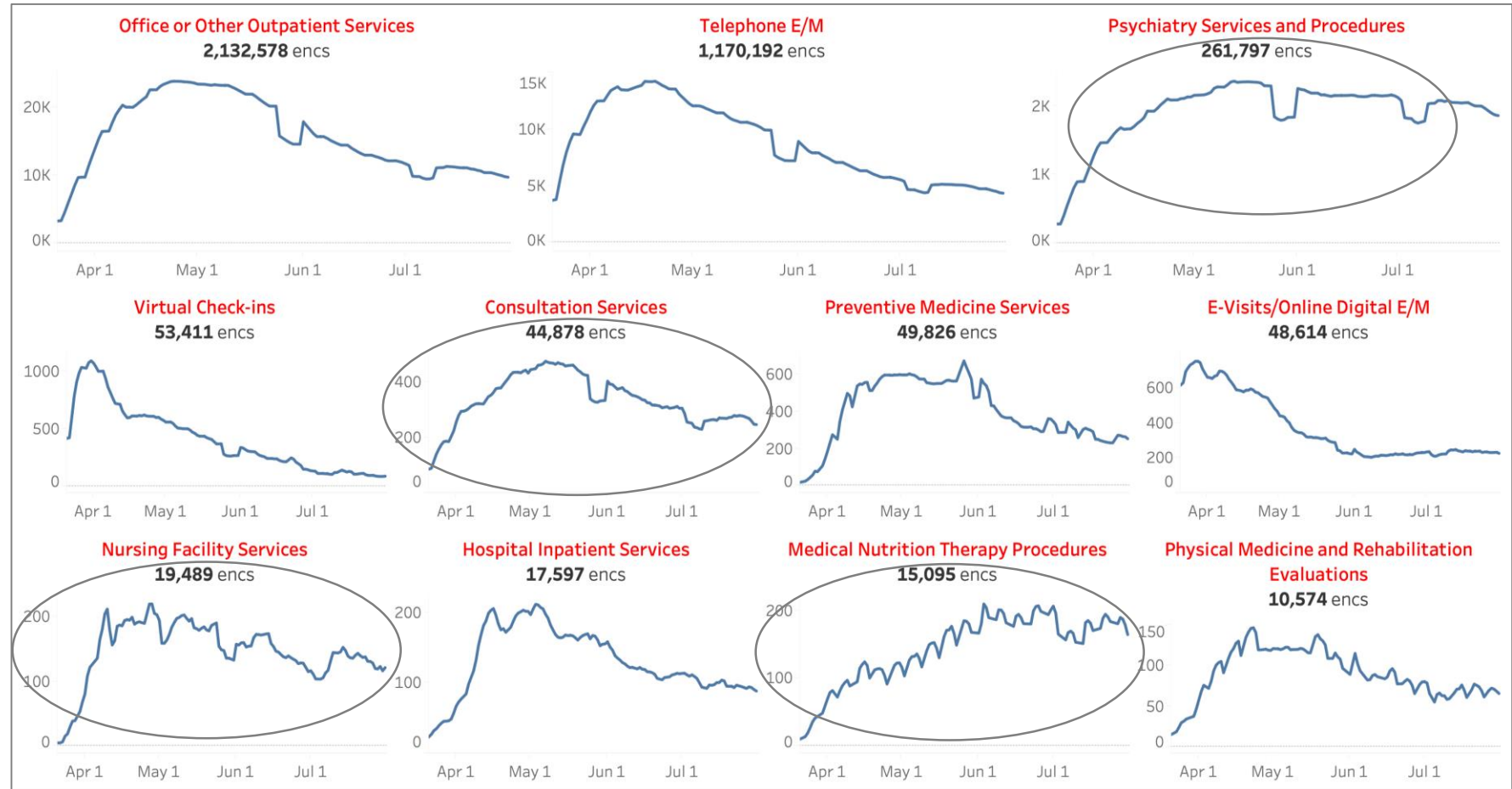
Telehealth Utilization by Age Group (% of Telehealth Visits)

- Contrary to the belief that technology is primarily utilized by younger age groups, telehealth utilization was strong across age cohorts



Top Telehealth Volume by CPT Grouping

- Some visits types like Behavioral Health sustained telehealth volume better than others
- In person visits are, at least for now, still the preferred method for receiving actual care
- Check-ins, follow-ups and consultations will continue to thrive in telehealth
- All visits shown are telehealth eligible visits only



Note: Data since March 20, 2020

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Analysis of Admissions, Observation Stays, Emergency Room and Hospital Outpatient Visits

Version 9.23.2020

Admission, Observation, ED and Outpatient Nationally YoY with Current 14- and 30-day Change

Overall Volume Change		
	30 Day Change Compare to 2019	14 Day Change Compare to 2019
DailyInpatientAdmissions	▼ -6.3%	▼ -7.0%
DailyObservationVisits	▼ -13.3%	▼ -13.9%
DailyEmergencyVisits	▼ -20.4%	▼ -21.5%
DailyOutpatientVisits	▼ -1.5%	▼ -5.9%

Recent Change		
	Change in Last 30 Days	Change in Last 14 Days
DailyInpatientAdmissions	▼ -1.5%	▼ -7.6%
DailyObservationVisits	▼ -1.2%	▼ -4.2%
DailyEmergencyVisits	▼ -1.2%	▼ -4.4%
DailyOutpatientVisits	▼ -6.1%	▼ -20.5%

Note: Data as of Sept. 5, 2020

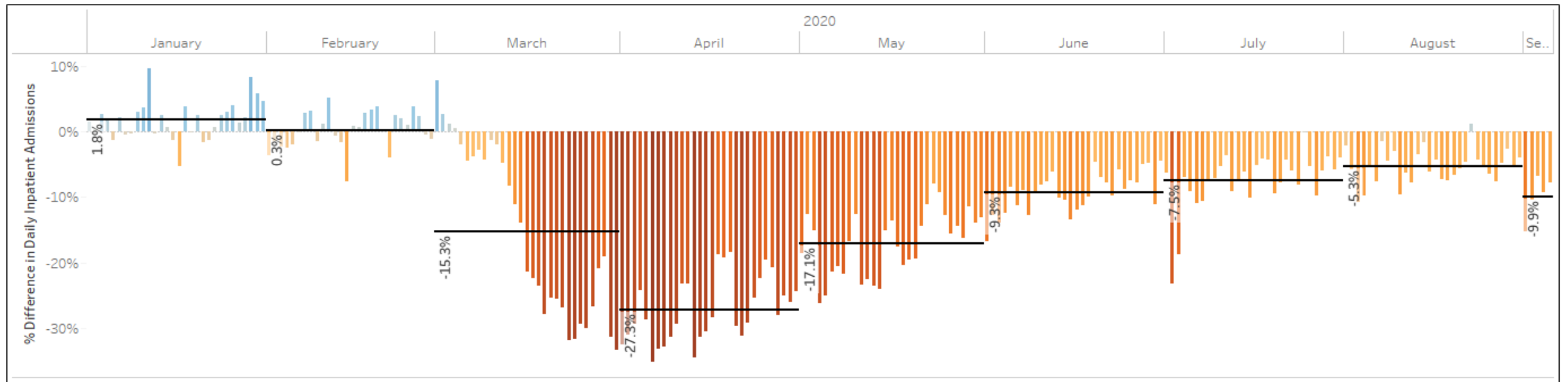
Admission, Observation, ED and Outpatient Year Over Year and Current 14- and 30-day Change by Region

Census Region	Metric	30 Day Change Compare to 2019	14 Day Change Compare to 2019
Midwest	DailyInpatientAdmissions	▼ -5.7%	▼ -6.6%
	DailyObservationVisits	▲ 0.2%	▼ -2.1%
	DailyEmergencyVisits	▼ -18.7%	▼ -19.9%
	DailyOutpatientVisits	▲ 2.0%	▼ -2.7%
Northeast	DailyInpatientAdmissions	▼ -2.9%	▼ -2.5%
	DailyObservationVisits	▼ -13.9%	▼ -12.2%
	DailyEmergencyVisits	▼ -23.3%	▼ -23.4%
	DailyOutpatientVisits	▲ 0.7%	▼ -2.4%
South	DailyInpatientAdmissions	▼ -8.2%	▼ -8.5%
	DailyObservationVisits	▼ -18.3%	▼ -18.5%
	DailyEmergencyVisits	▼ -22.1%	▼ -22.4%
	DailyOutpatientVisits	▼ -4.6%	▼ -9.0%
West	DailyInpatientAdmissions	▼ -8.5%	▼ -10.6%
	DailyObservationVisits	▼ -21.4%	▼ -22.9%
	DailyEmergencyVisits	▼ -17.4%	▼ -20.2%
	DailyOutpatientVisits	▼ -4.1%	▼ -9.6%

Census Region	Metric	Change in Last 30 Days	Change in Last 14 Days
Midwest	DailyInpatientAdmissions	▼ -0.7%	▼ -1.3%
	DailyObservationVisits	▼ -2.4%	▼ -2.7%
	DailyEmergencyVisits	▼ -1.0%	▼ -1.7%
	DailyOutpatientVisits	▼ -6.6%	▼ -1.8%
Northeast	DailyInpatientAdmissions	▲ 0.7%	▼ -0.8%
	DailyObservationVisits	▲ 0.7%	▲ 2.1%
	DailyEmergencyVisits	▲ 0.1%	▼ -2.1%
	DailyOutpatientVisits	▼ -2.9%	▼ -2.1%
South	DailyInpatientAdmissions	▼ -1.5%	▼ -2.2%
	DailyObservationVisits	▼ -0.2%	▼ -2.2%
	DailyEmergencyVisits	▼ -1.6%	▲ 0.4%
	DailyOutpatientVisits	▼ -5.6%	▼ -7.4%
West	DailyInpatientAdmissions	▼ -4.3%	▼ -3.3%
	DailyObservationVisits	▼ -3.1%	▼ -1.3%
	DailyEmergencyVisits	▼ -2.5%	▼ -1.0%
	DailyOutpatientVisits	▼ -9.3%	▼ -9.2%

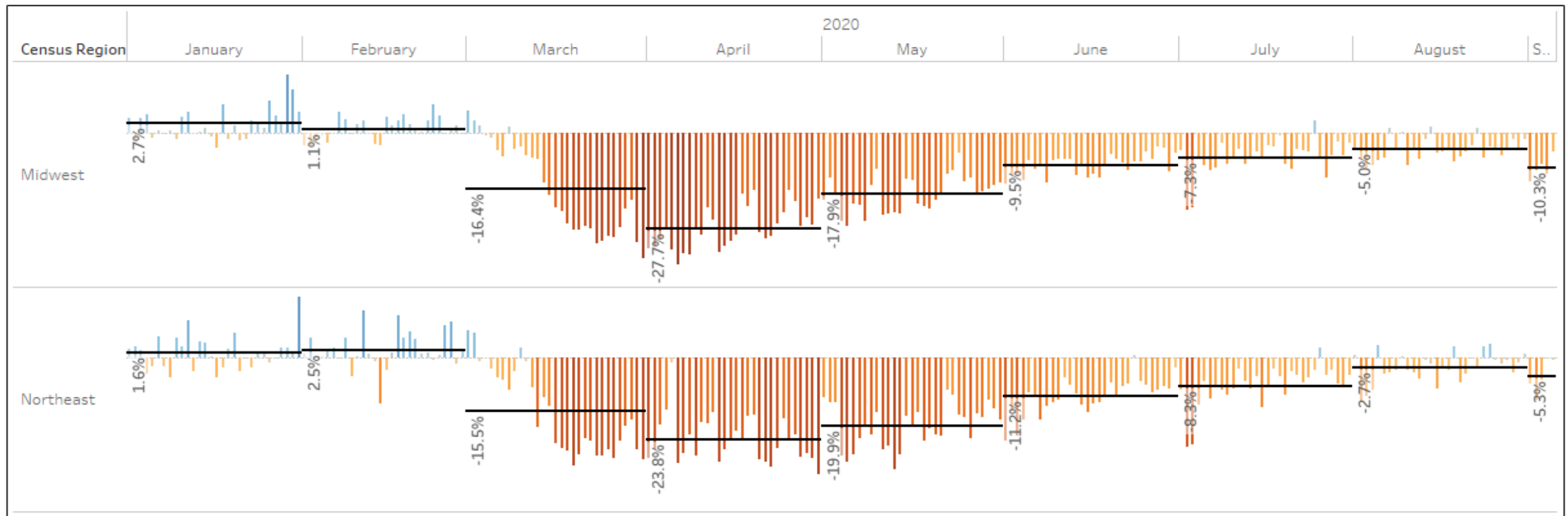
Note: Data as of Sept. 5, 2020

Inpatient Admissions Daily Rate of Change: January and February Above Normal Before Nationally, Rates Plummeted as COVID-19 Surged



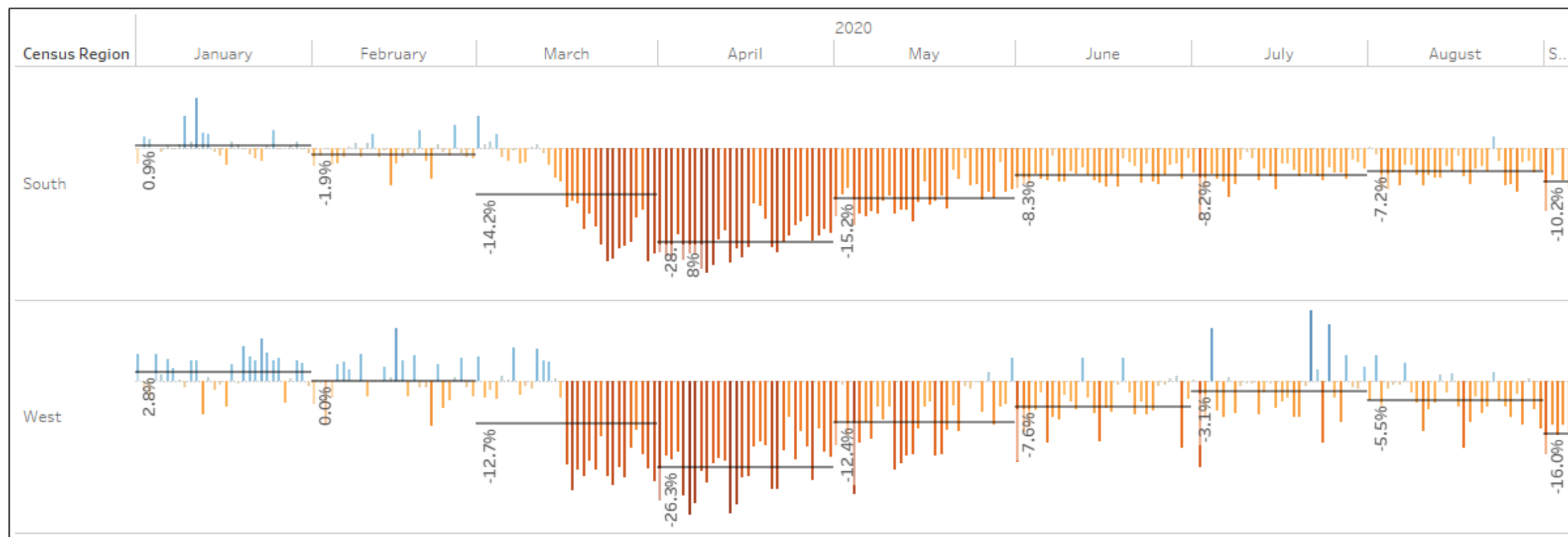
Note: Data as of Sept. 5, 2020

Inpatient Admissions Daily Rate of Change: Regionally – Midwest/Northeast



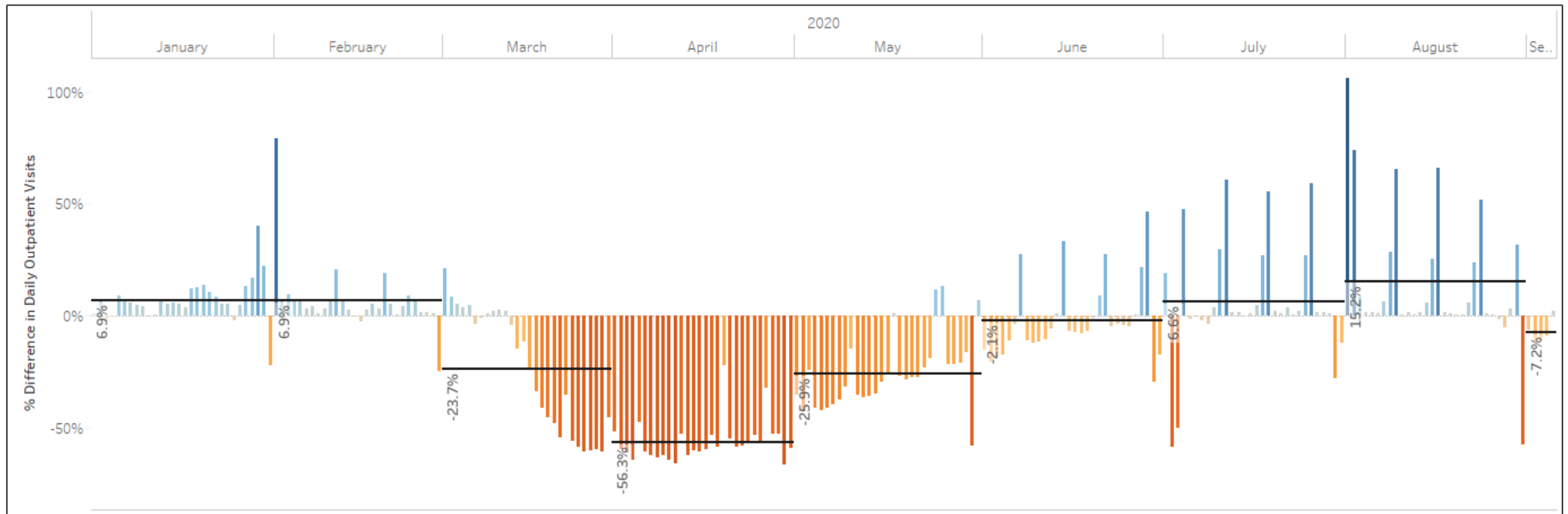
Note: Data as of Sept. 5, 2020

Inpatient Admissions Daily Rate of Change: Regionally – South/West



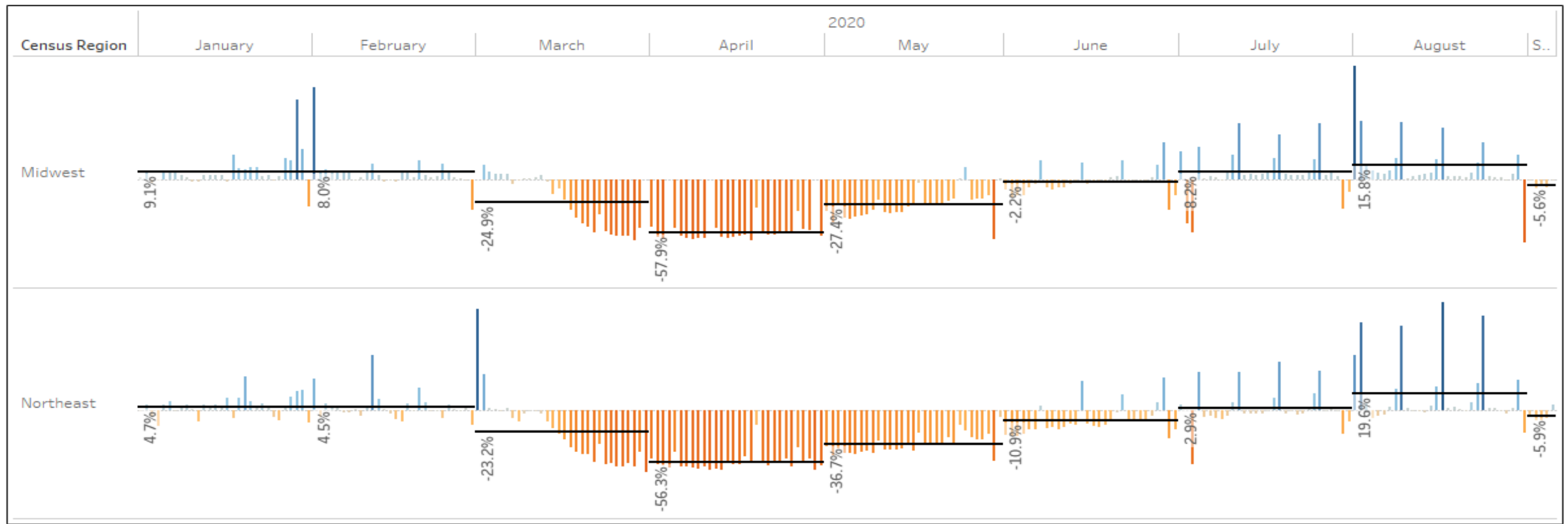
Note: Data as of Sept. 5, 2020

Daily Outpatient Rate of Change: Nationally, Outpatient Volumes Returning



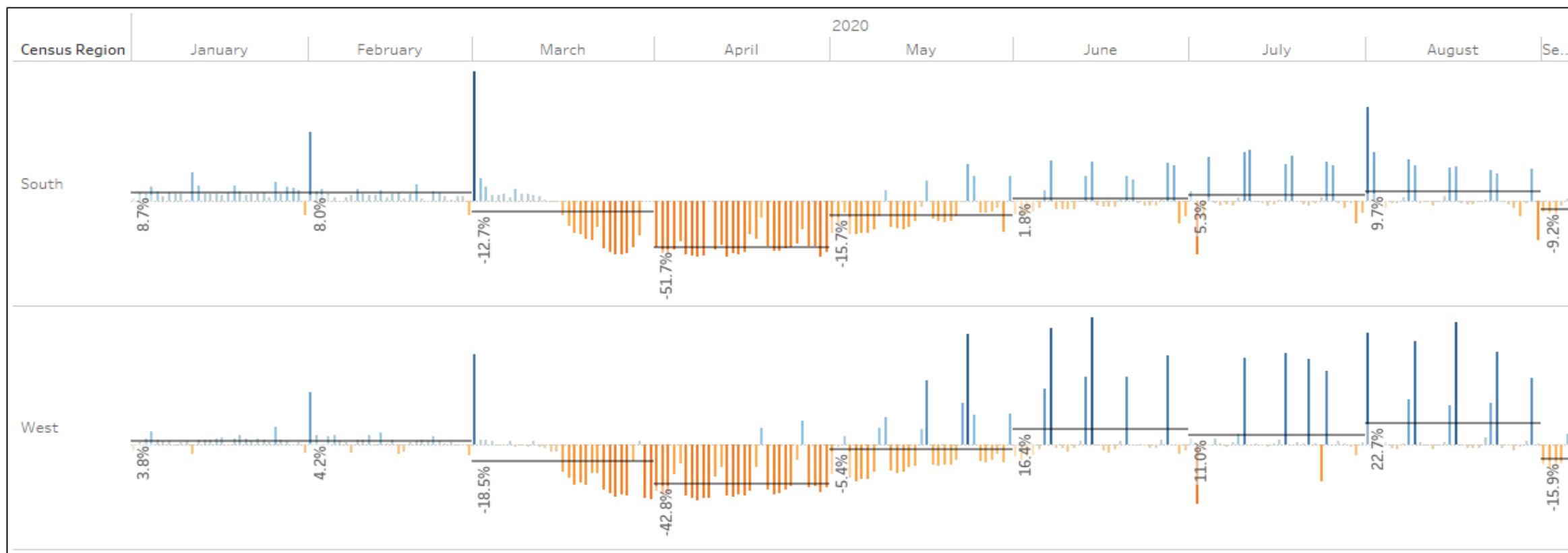
Note: Data as of Sept. 5, 2020

Daily Outpatient Rate of Change: Regionally – Midwest/Northeast



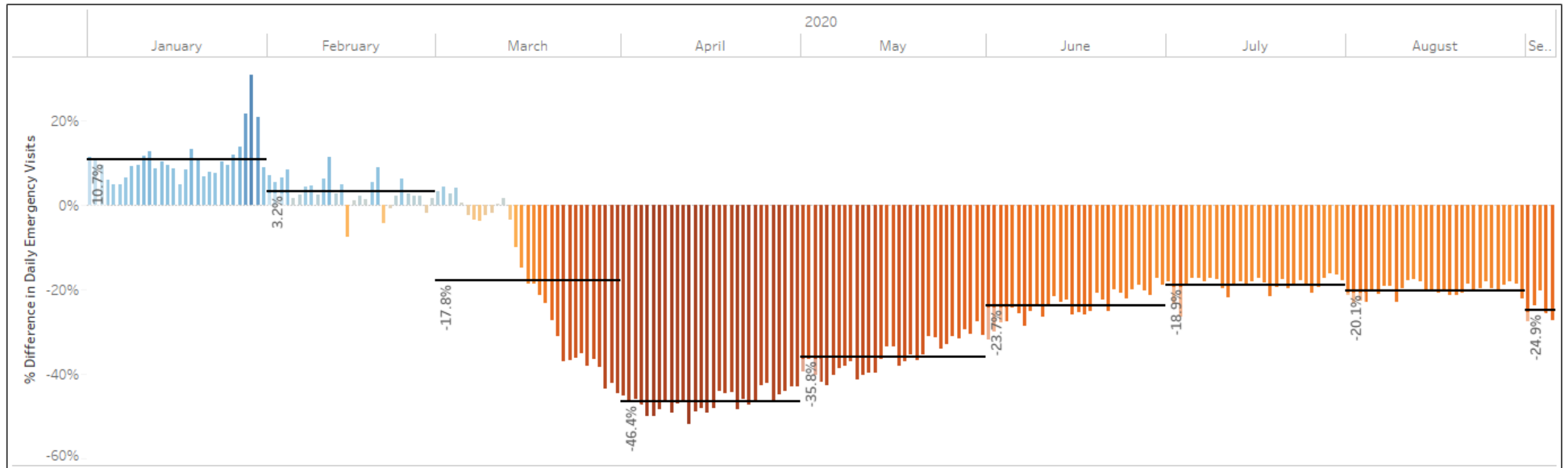
Note: Data as of Sept. 5, 2020

Daily Outpatient Rate of Change: Regionally – South/West



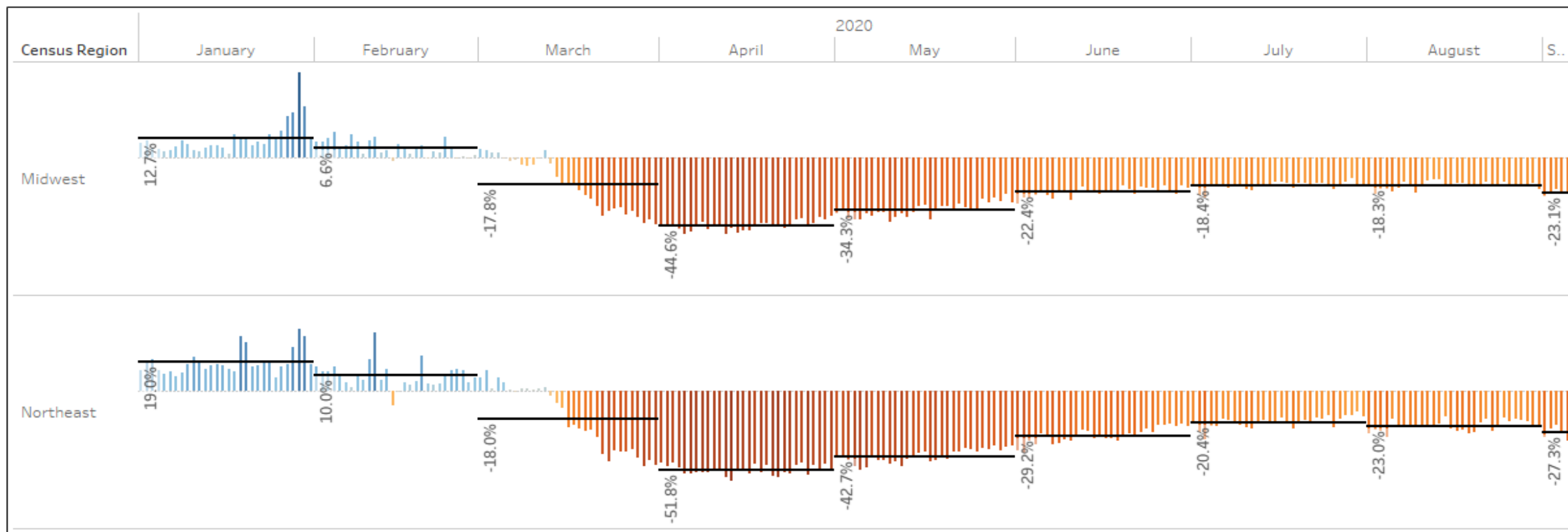
Note: Data as of Sept. 5, 2020

Daily Emergency Visits Rate of Change: Nationally



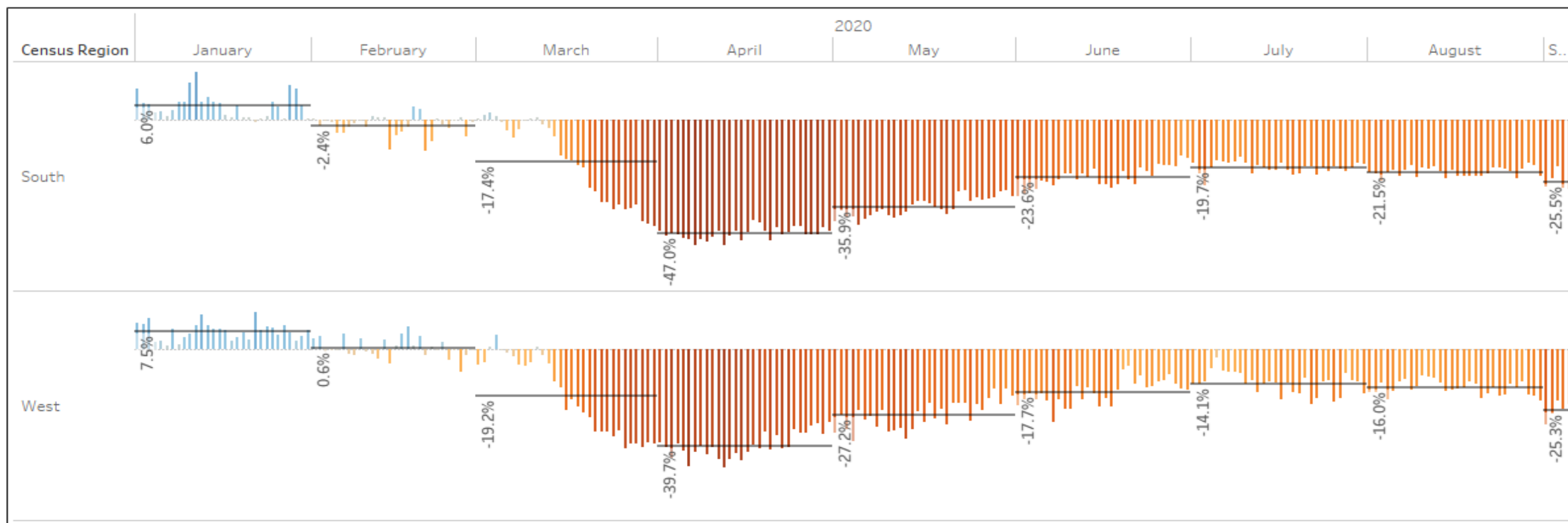
Note: Data as of Sept. 5, 2020

Daily Emergency Visits Rate of Change: Regionally – Midwest/Northeast



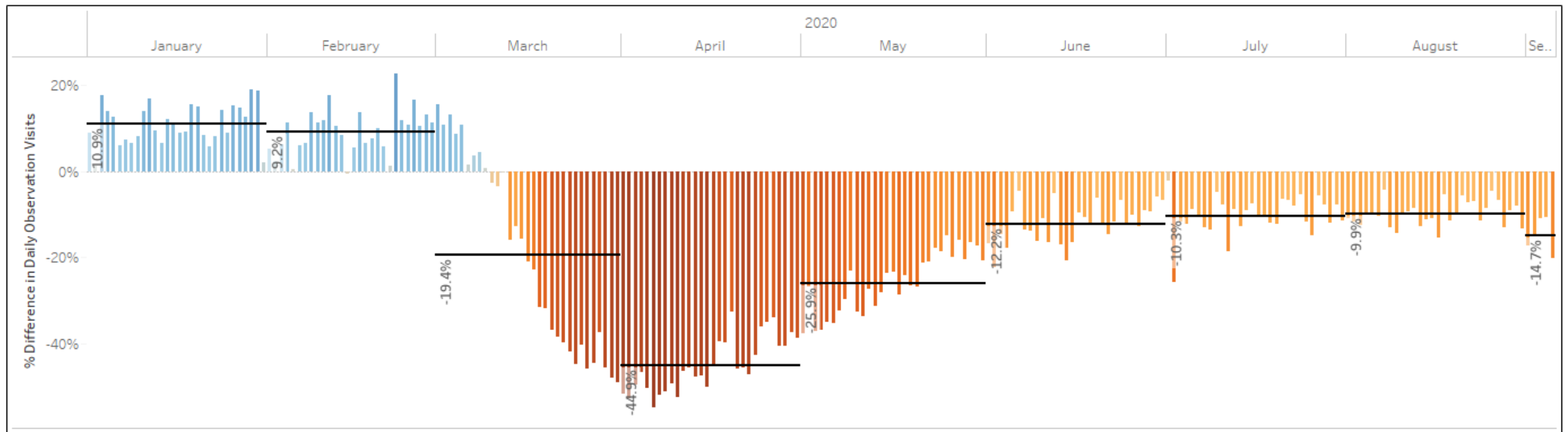
Note: Data as of Sept. 5, 2020

Daily Emergency Visits Rate of Change: Regionally – South/West



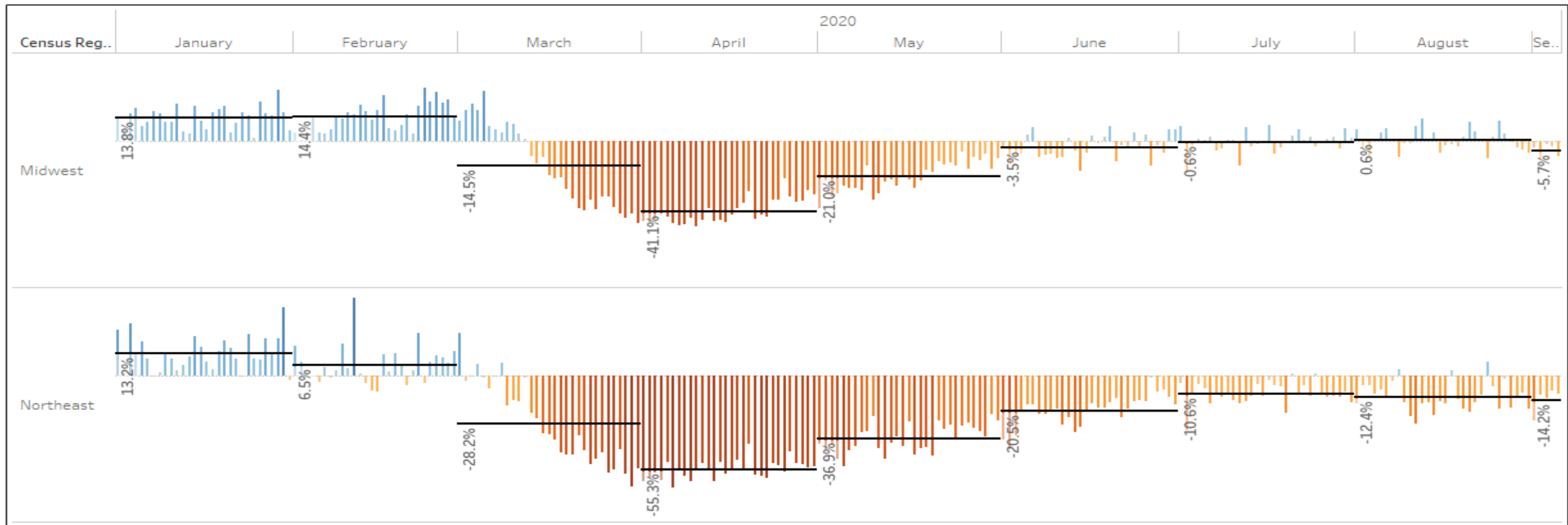
Note: Data as of Sept. 5, 2020

Daily Observation Visits Rate of Change: Nationally



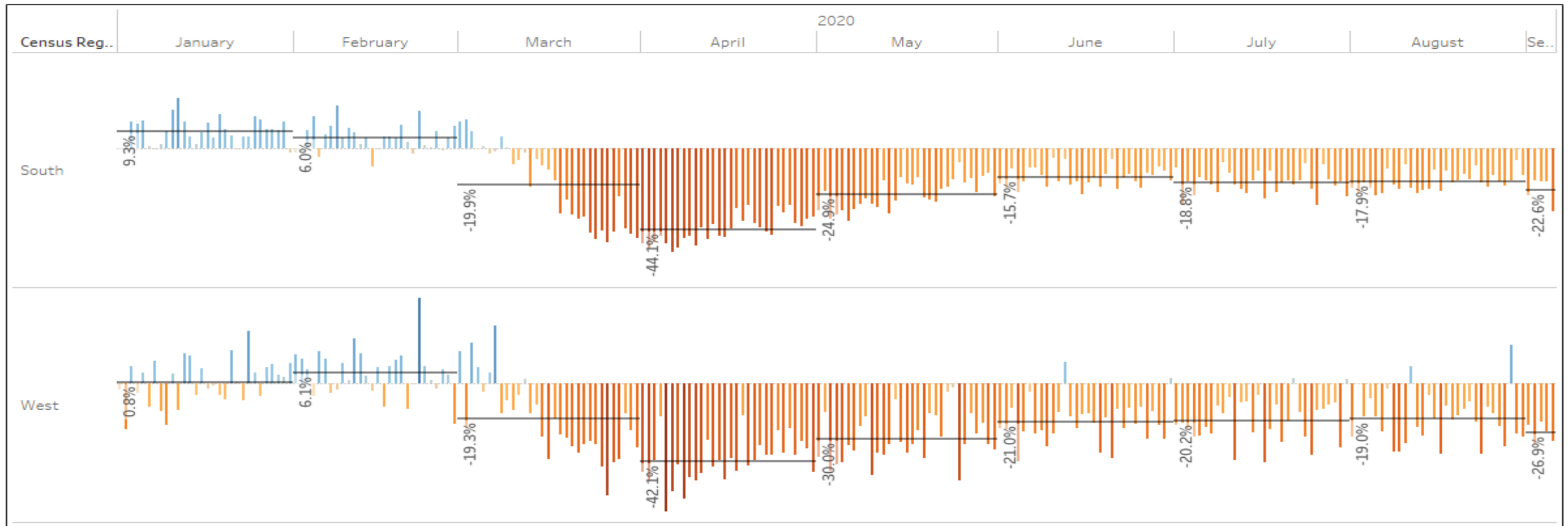
Note: Data as of Sept. 5, 2020

Daily Observation Visits Rate of Change: Regionally – Midwest/Northeast Rates Were Already Showing Above Normal in January and February



Note: Data as of Sept. 5, 2020

Daily Observation Visits Rate of Change: Regionally – South/West



Note: Data as of Sept. 5, 2020

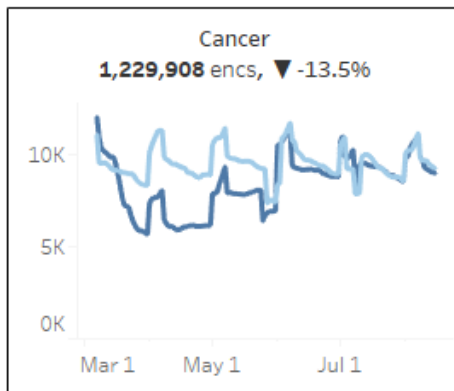
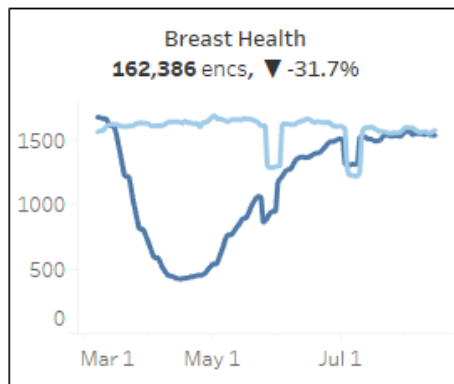
NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Analysis of Clinical Service Lines and Sub Service Lines

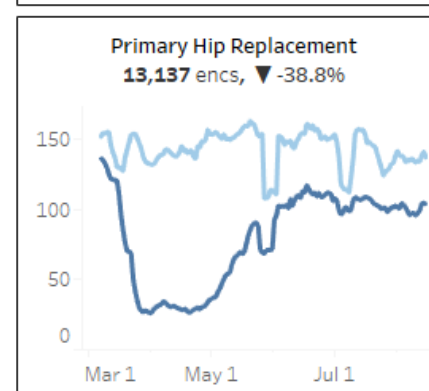
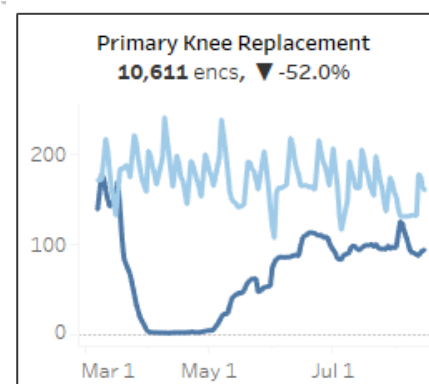
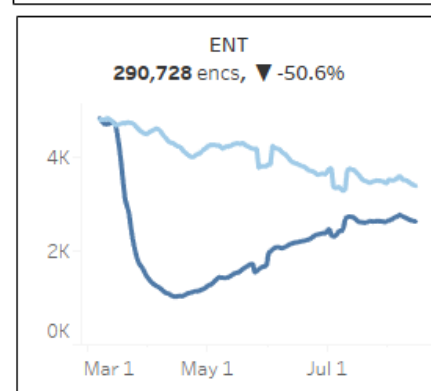
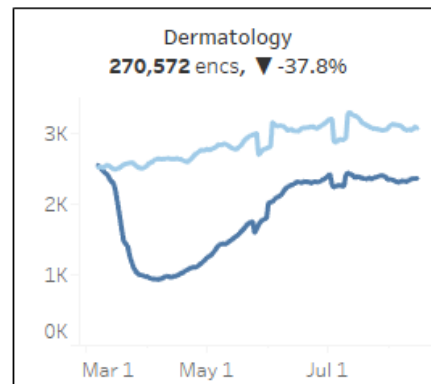
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Screening for Serious Conditions Is Normalizing, While More Elective and Procedural Services Lag

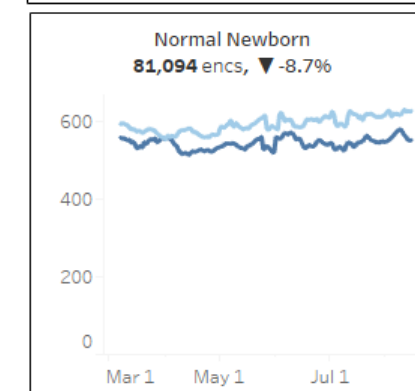
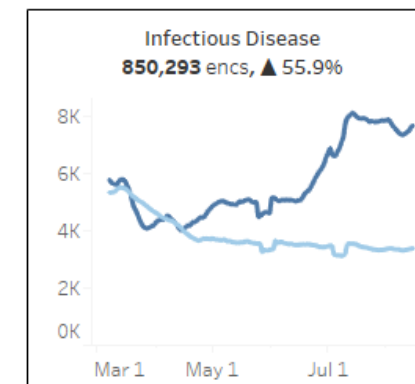
Back to Normal



Lagging



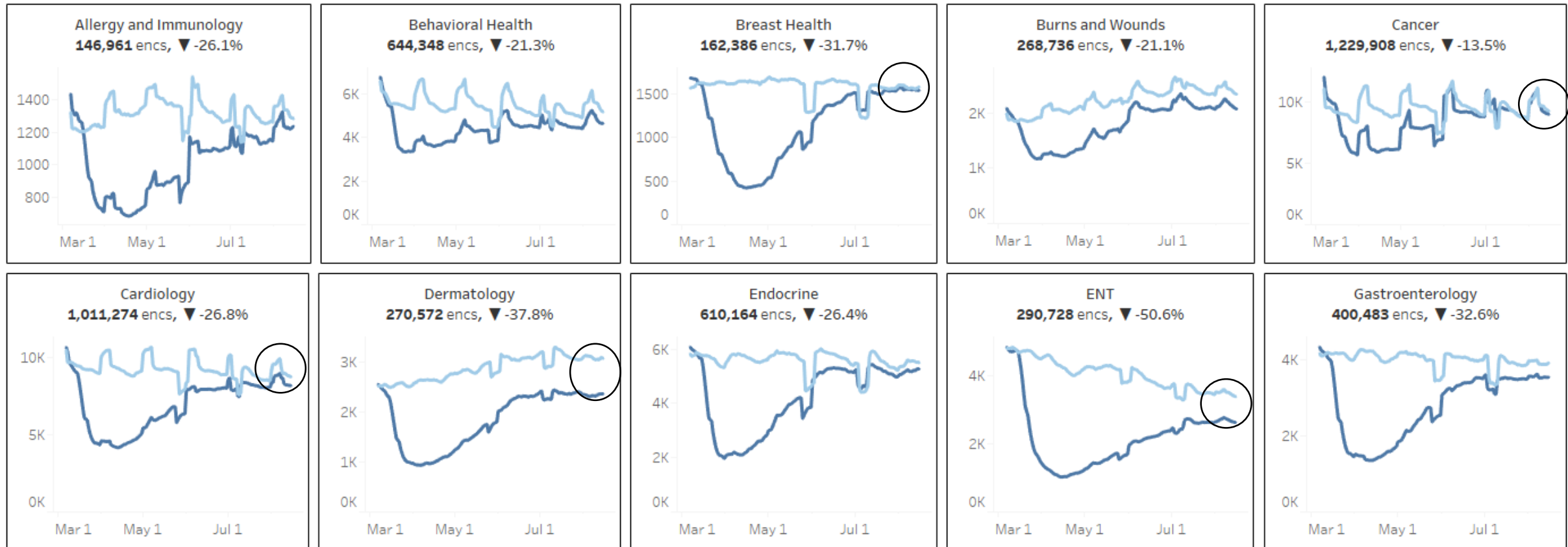
“Controls”



Control data validates that the volumes accurately represent what is happening in the StrataSphere sample

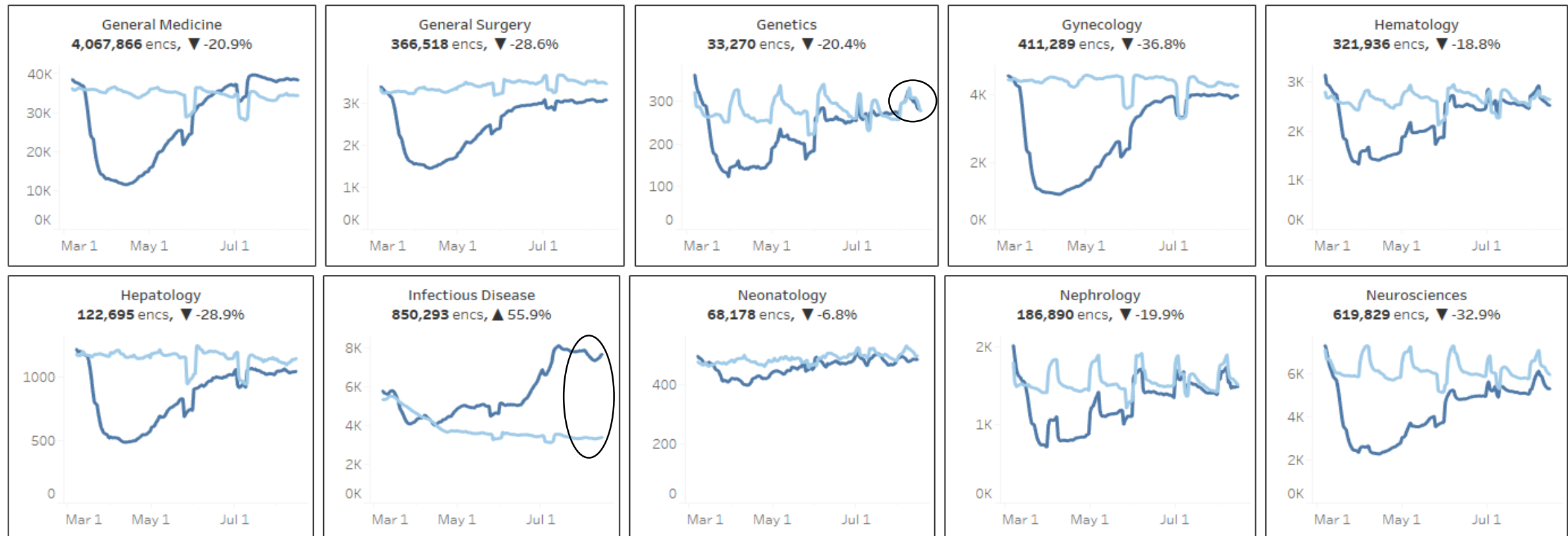
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Service Lines with High Percentages of Chronic and Preventative Care Strong, but Elective Care and Procedures Lag



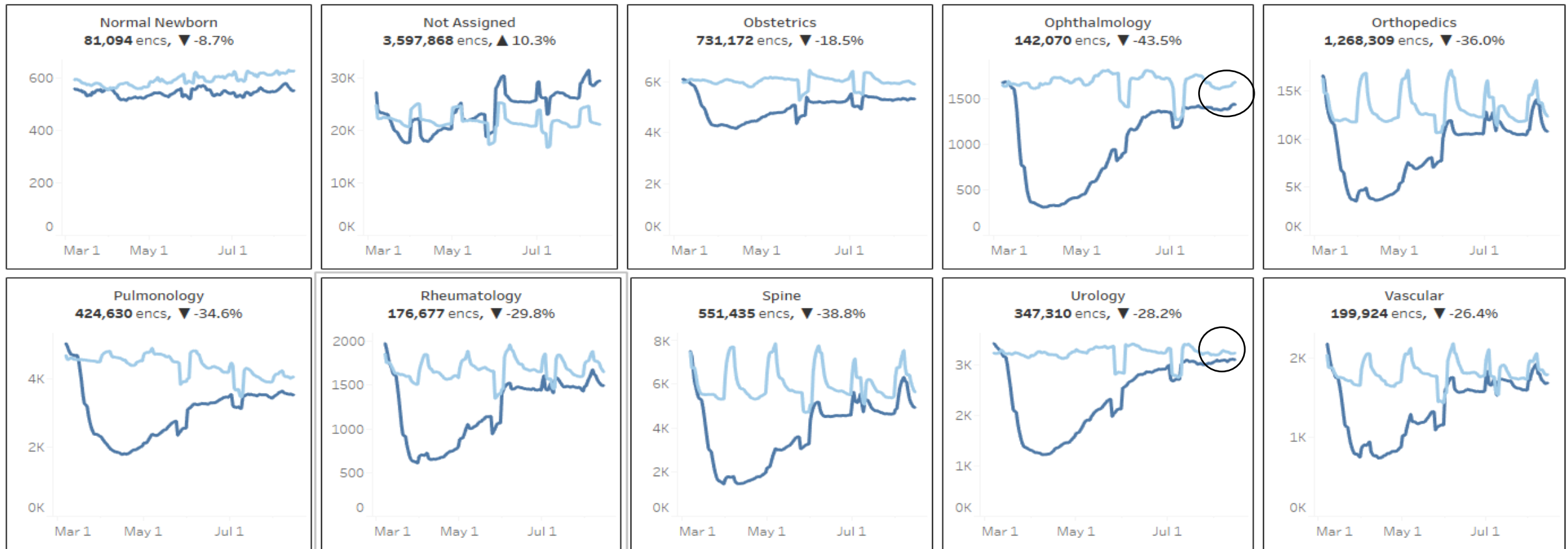
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Cont: Service Lines with High Percentages of Chronic and Preventative Care Strong, but Elective Care and Procedures Lag



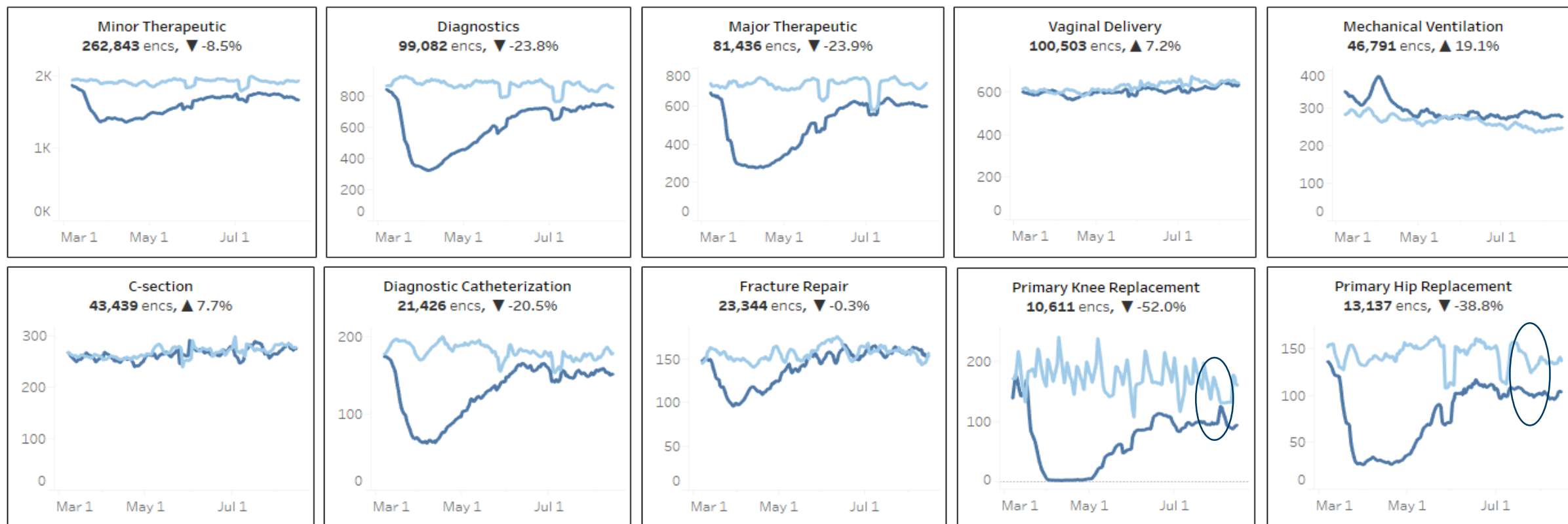
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Cont: Service Lines with High Percentages Of Chronic and Preventative Care Strong, but Elective Care and Procedures Lag



Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Inpatient Procedural Specialties Continue To Lag



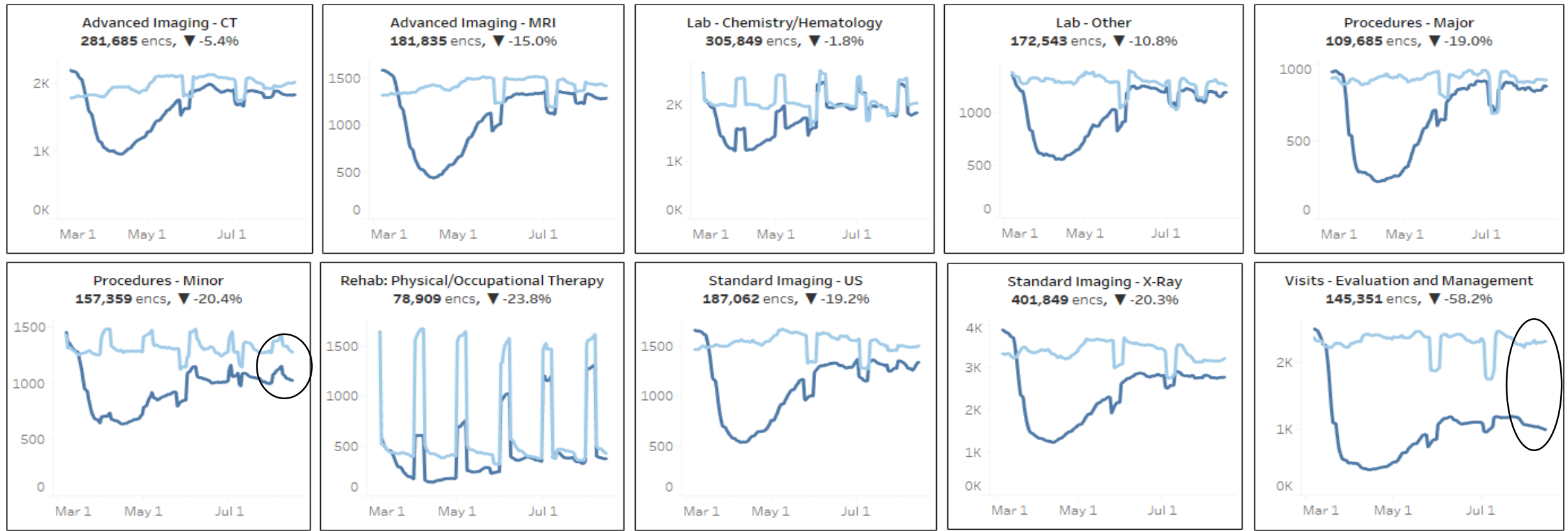
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Sg2 Service Line Percent Change Last 14 Days

Allergy and Immunology	▲ 0.2%	Hepatology	▲ 0.0%
Behavioral Health	▼ -8.5%	Infectious Disease	▲ 3.8%
Breast Health	▼ -0.9%	Neonatology	▲ 1.6%
Burns and Wounds	▼ -5.9%	Nephrology	▼ -3.4%
Cancer	▼ -7.8%	Neurosciences	▼ -10.1%
Cardiology	▼ -5.5%	Normal Newborn	▼ -4.7%
Dermatology	▲ 2.0%	Obstetrics	▲ 0.1%
Endocrine	▲ 1.8%	Ophthalmology	▲ 3.6%
ENT	▼ -3.9%	Orthopedics	▼ -20.6%
Gastroenterology	▲ 0.4%	Pulmonology	▼ -1.5%
General Medicine	▼ -0.5%	Rheumatology	▼ -7.6%
General Surgery	▲ 1.4%	Spine	▼ -19.1%
Genetics	▼ -8.8%	Urology	▲ 0.3%
Gynecology	▲ 0.3%	Vascular	▼ -6.4%
Hematology	▼ -5.2%		

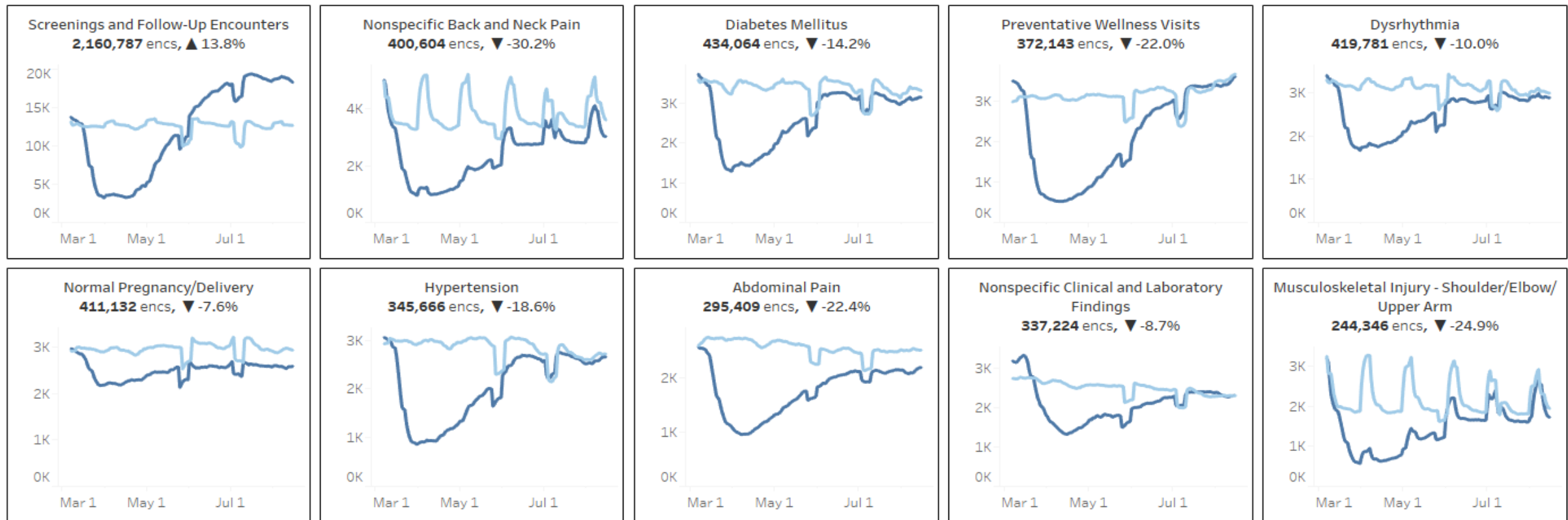
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Preventive and Chronic Care Trends Shows Strong In Outpatient Visits, but Face-To-Face Hospital Outpatient E&M Volumes Still Far Down



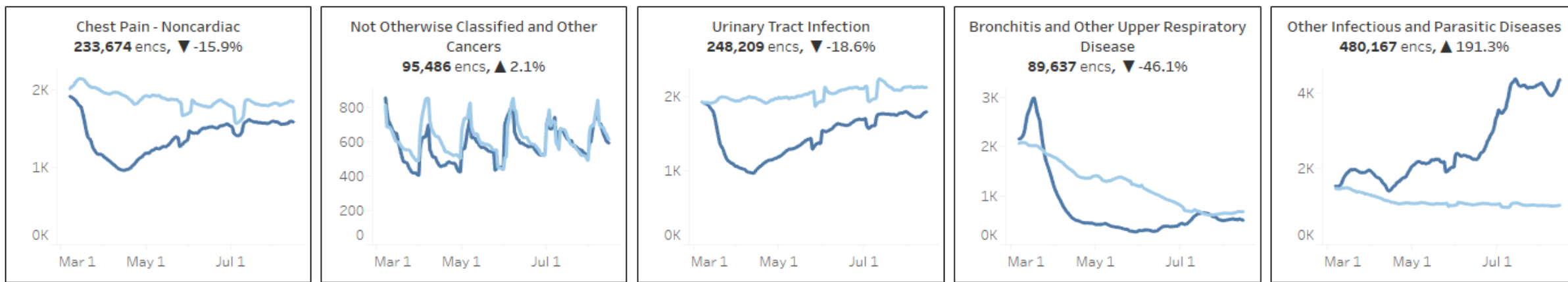
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Preventive and Chronic Care Trend Shows as Some Diagnostic Volumes Even Exceed 2019 In a “Catch Up”



Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

Cont: The Preventive and Chronic Care Trend Shows as Some Diagnostic Volumes Even Exceed 2019 In a “Catch Up”



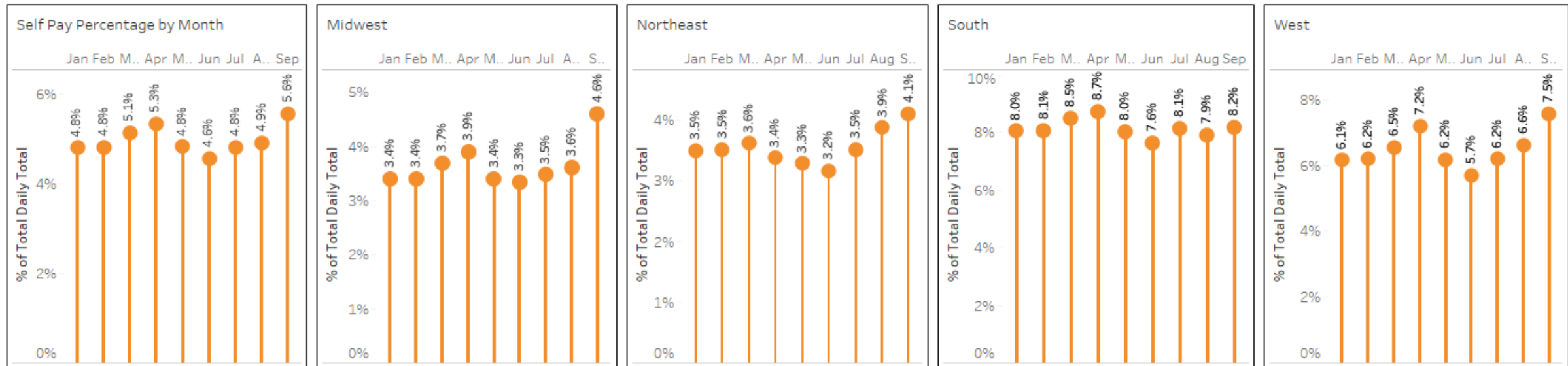
Note: Data as of Aug. 15, 2020. Service Line definitions using Sg2 CARE™ Grouper

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Self Pay Analysis

Version 9.23.2020

Modest Increase In Self Pay and Uninsured, Although Extreme Outliers (E.G. 25% Self Pay) Exist and Have Been Removed Since Initial Report



NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Appendix

Version 9.23.2020

Methodology Details: COVID-19 Analysis

Applies to slides 20 - 35

Data Source: All hospital billing encounters with nonzero charges from 62 StrataSphere health systems and 249 short term acute care hospitals with Decision Support were pulled the week of September 14, 2020. Adults admitted between 3/1/2020 and 7/31/2020 and discharged before 8/14/2020 were included. The census regions were defined at the hospital level.

Patient and Resource Flags:

- Inpatients: Identified by net nonzero charges for room and board UB revenue codes (0100-0169, 0190-0199, or 0200-0219). Hospice encounters with UB revenue codes 0115, 0125, 0135, 0145, or 0155 were excluded.
- COVID-19: Identified with a primary or secondary ICD10 diagnosis code matching B97.29 (discharged before 4/1/2020) or U07.1 (discharged after 4/1/2020).
- Emergency Services: Identified by net nonzero charges for emergency room UB revenue codes (0450-0459).
- Critical Care: Identified by net nonzero charges for intensive care unit UB revenue codes (0200-0209) or coronary care unit UB revenue codes (0210-0219).
- Mechanical Ventilation: Identified by ICD10 procedure codes 5A1935Z (<24 hours), 5A1945Z (24-96 hours), or 5A1955Z (>96 hours).

Outcome Calculations:

- Geometric mean length of stay (GMLOS): The GMLOS was calculated by taking the Nth root of the product of N lengths of stay. The target GMLOS for each DRG was determined according to the [2020 CMS standards](#).
- Mortality: Outcome identified by UB-04 Medicare discharge status codes for expired status (20, 40, 41, 42) or discharge to hospice status (50, 51). The mortality rate was calculated by dividing the total number of inpatients expired or discharged to hospice by the total number of inpatients.

Methodology Details: Telehealth Analysis

Applies to slides 36 – 42

Data Source: All physician billing encounters with nonzero charge and valid CPT codes from 43 StrataSphere™ health systems were pulled, and time frame is from January 1, 2019 to July 31st, 2020. Attributes from the physician billing data included the encounter date, age, gender, billed CPT/HCPCS code, modifiers, primary diagnosis code, total charges, and census region. The census region was determined by the primary location of the client.

Telehealth eligible visits were determined using the American Medical Association's "Telehealth Services Covered by Medicare and Included in CPT Code Set" and the Centers for Medicare and Medicaid Services' (CMS) list of telehealth eligible services.^{1,2} In addition to these code sets, HCPCS code G2025 was also added to this list to capture distant site telehealth services for Rural Health Clinics (RHCs) and Federally Qualified Health Centers (FQHCs).³

Amongst the telehealth eligible visits, encounters were classified as a true telehealth visit if (1) the billed CPT was a telehealth related CPT/HCPCS code or (2) the modifier fields indicated the usage of telehealth modifier codes 95, GT, or GQ.^{4,5,6} CPT groupings were determined using code ranges from the American Association of Professional Coders.⁷

1. <https://www.ama-assn.org/system/files/2020-05/telehealth-services-covered-by-Medicare-and-included-in-CPT-code-set.pdf>
2. <https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes>
3. <https://www.cms.gov/files/document/se20016.pdf>
4. <https://aasm.org/clinical-resources/coding-reimbursement/telemedicine-codes/>
5. https://www.aap.org/en-us/Documents/coding_factsheet_telemedicine.pdf
6. https://www.l1.anthem.com/provider/noapplication/f0/s0/t0/pw_g294938.pdf?refer=ahpmedprovider&state=mo
7. <https://www.aapc.com/codes/cpt-codes-range/>

Methodology Details: NPPVT Analysis

Applies to slides 43 - 69

Data Source: All hospital billing encounters with nonzero charge from 58 StrataSphere™ health systems and 275 short term acute care hospitals with decision support were pulled, and time frame is from January 1, 2019 to September 5, 2020.

Data Processing Considerations: All encounters with Total Charge = 0 are removed from the encounter count. Once the encounter has charges greater than 0 it will then be included in the encounter count. All encounters were run through the [2020 Sg2 Care Grouper™](#) to obtain service lines and CARE families.

Self Pay: The hospital billing encounter's primary insurance plan and financial class were analyzed to identify patients that did not have insurance.

Analysis of impact of COVID-19 on volumes by clinical service line and sub service lines

Timeframe:

- Baseline: Admit dates between March 20 and August 15, 2019.
- COVID-19 era: Admit dates between March 20 and August 15, 2020. The COVID-19 era timeline was chosen to reflect the first full weeks of widespread closures and shelter-in-place orders. The end date was chosen to ensure sufficient time for patient discharge and diagnosis coding to take place. The time frame will be expanded as time passes.

Methodology and Output

For all columns, data was aggregated by either service line or care family, and the metrics were calculated using the aggregate values.

- The columns in the output were calculated as follows:
- Volume loss: Baseline encounters minus COVID-19 -era encounters.
- Percent volume loss: Volume loss divided by baseline encounters.
- Baseline encounters: Total number of encounters in the 2019 time frame.
- COVID-19 era encounters: Total number of encounters in the 2020 time frame.

Additional Resources

Understanding the ongoing impact of COVID-19 on patient and procedure volume will be mission critical to effectively navigate our healthcare delivery system through this crisis. In addition to the National Patient and Procedure Volume Tracker, Strata has developed a series of resources and best practices to help hospitals tackle the planning, analytics and performance challenges resulting from the COVID-19 outbreak.

- **COVID-19 Cost Capture Recovery Model:** Accessing reimbursement, relief and funding programs at both the federal and state levels will require the complete and accurate accounting of costs related to COVID-19 by hospital and healthcare delivery systems. The COVID-19 Cost Capture and Recovery Model provides a complete process for understanding the cost and revenue impact of COVID-19 in order to support the efforts of healthcare providers. [Learn more about the model.](#)
- **COVID-19 Assumption Tracker:** Available exclusively to Strata customers, this tool provides a consolidated list of assumptions health systems should now consider when building a financial forecast which considers the impacts of COVID-19.
- **COVID-19 Starter Set Dashboards:** Strata has created a specific set of dashboards to eliminate time needed from your analytics team to develop new COVID-19 specific reports. The dashboards combine insight from Strata's experts and the 200+ healthcare delivery systems within the Strata network and are available free for Strata customers

Additional resources including a webinar series and articles can also be found here: www.stratadecision.com/covid_help

Contributors



Jennifer Ittner
Senior Director
StrataDataScience



Steve Lefar
Executive Director,
StrataDataScience & StrataSphere



Blair Hu, PhD
Data Scientist
StrataDataScience



Dan Michelson
Chief Executive Officer,
Strata Decision Technology



Xun Pei
Data Scientist
StrataDataScience



Tom Scanlan
Data Science Developer
StrataDataScience



Aaron Wilson
Data Scientist
StrataDataScience



Lyna Truong
Data Science Intern
StrataDataScience