

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

*Analysis of 2 Million Patient Encounters Reveals U.S. Hospitals are Losing \$60 Billion per Month;
Uninsured Patients Up 114% During COVID-19 Pandemic*

WEEKLY UPDATE: May 26, 2020
NEW & UPDATED DATA ADDED

Table of Contents

Summary

- **UPDATED** Report Findings: Volume & Self Pay See Small Increases

3
7

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

- **UPDATED** Admissions, Stays & Visits Recent Volume Changes
- **UPDATED** Admissions, Stays & Visits Total and “Hot Spots” vs. non “Hot Spot”
- **UPDATED** Impact to Daily Inpatient Admissions and Patient Days
- **UPDATED** Impact to Daily Inpatient Admissions
- **UPDATED** Impact to Daily Observation Visits
- **UPDATED** Impact to Daily Emergency Visits
- **UPDATED** Impact to Daily Outpatient Visits

8

9

10

11

12

13

14

15

Analysis of Clinical Service Lines

- **UPDATED** Weekly Volume Change by Service Line Since Last Update
- **UPDATED** Volume Losses by Service Line 2019 vs 2020
- **UPDATED** Impact to Inpatient Procedures and Surgeries
- **NEW** Impact to Hospital Outpatient Visits
- **UPDATED** Impact to Top 15 Hospital Visits by Care Family

16

18

19

21

22

23

Self Pay Analysis

- **UPDATED** Increase in Self Pay & Uninsured

24

25

Appendix

26

help HEAL healthcare

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Summary

Version 5.26.2020

Background

The impact of the coronavirus pandemic is pushing many hospitals to the brink of a financial collapse. Even before COVID-19, hospitals were operating with razor thin margins of 2% and close to one-third of them were operating at a loss. COVID-19 has delivered the “double whammy” of higher costs and significantly lower revenue, with the potential to push many hospitals into bankruptcy without government help.

Costs have risen as they have purchased personal protective equipment (PPE) and ventilators, expanded lab and testing capacity, and converted surgical and other revenue-producing rooms to treat COVID-19 patients. They have also eliminated many capital projects and other critical investments due to their uncertain future.

At the same time, revenue has dropped precipitously due to the cancelation of all elective procedures. And a doubling of the number of self-pay patients has meant significant reductions in reimbursement and, therefore, revenue for hospitals.

The Federal Government has set in motion a number of initial programs providing billions in financial support. Hospitals, led by the American Hospital Association, are asking Congress for more bailout money to help them deal with the financial impact of the pandemic.

THREE PRIMARY QUESTIONS

1

What is the financial impact of cancelling elective procedures?

2

As elective procedures resume, when and how much of that volume and revenue will come back?

3

How much funding will be required from the Federal Government to adequately support hospitals on the front lines to avoid financial collapse?

Methodology

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 228 hospitals in 51 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 65 million Americans, account for \$68 billion in annual operating expense, and represent a broad national view across 40 states and all census regions with varying incidence rates of COVID-19 cases.

Two separate models were then created and analyzed to understand the impact of COVID-19 on 1) patient volume and 2) procedure volume. See the Appendix for details.

		Region				Total
		Midwest	Northeast	South	West	
Hot Spot Status	High	9	17	1	2	29
	Medium	55	4	64	18	141
	Low	22	11	13	12	57
Total		86	32	78	32	228

Based on New York Times "Hot Spot" Definitions

DATA COHORT

228	Hospitals
51	Healthcare Systems
65M	Patients Served
\$68B	Annual Operating Expense
40	States

Original Report Findings*: Volume & Revenues Decrease as Self Pay Increases

-54.5%
VOLUME

Across all service lines there was an average 54.5% decrease in the number of unique patients who sought care in a hospital setting during the study period.

-\$60.1B
REVENUE

The 228 hospitals lost an estimated \$1.3 billion in revenue compared to the prior year—the equivalent of \$60.1 billion per month in revenue loss for hospitals nationwide.

+114%
SELF PAY

The number of uninsured and self pay has increased dramatically. Early results from May indicate 9% of patients in the cohort are uninsured, an increase of 114%.

*Original Report published on May 11, 2020 and available [here](#).

UPDATED Report Findings: Volume & Self Pay See Small Increases

+3%
VISITS

Small increase in Hospital OP Visits. 3% increase in last 7 days and only off 2019 volumes by 14%

-8%-11%
REVENUE

Small increases in Service Line activity although volume numbers are still dramatically off compared to 2019. The updated data shows that some service lines are seeing small week over week growth (see page 18). However, Total Joint Replacement Volume is still near zero. Total Knee Replacement is down 98% while Total Hip Replacement is down 78% compared YOY 2019.

8%
SELF PAY

Self Pay numbers for May are volatile. In the original report Self Pay comprised 15% of the early May volume, it has stabilized to 8% this week. We are watching the mix carefully as volumes slowly return, but do expect high variability in week to week numbers.

*Original Report published on May 11, 2020 and available [here](#).

help HEAL healthcare

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

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

Version 5.26.2020



Strata Decision
TECHNOLOGY

UPDATED Admissions, Stays & Visits Recent Volume Changes

Change in last 30 days

Daily Emergency Visits	▼ -1.20%
Daily Inpatient Admissions	▲ 2.73%
Daily Observation Visits	▲ 13.05%
Daily Outpatient Visits	▲ 23.07%

Change in last 7 days

Daily Emergency Visits	▼ -1.39%
Daily Inpatient Admissions	▼ -1.17%
Daily Observation Visits	▼ -1.76%
Daily Outpatient Visits	▲ 3.21%

- **In the past 7 days**, volumes did not dramatically decrease and there is a small increase in hospital outpatient visits
- **In the past 30 days**, volumes increased slightly for inpatient admissions while observation and outpatient visits rose strongly but off a much lower post COVID-19 baseline
- As of May 16, 2020

UPDATED Admissions, Stays & Visits Total and “Hot Spots” vs. non “Hot Spot”

Metric	30 day Change Compared to Same Period 2019	7 day Change Compare to Same Period 2019
Daily Emergency Visits	▼ -43.56%	▼ -41.70%
Daily Inpatient Admissions	▼ -25.27%	▼ -25.50%
Daily Observation Visits	▼ -34.59%	▼ -30.03%
Daily Outpatient Visits	▼ -26.49%	▼ -14.18%

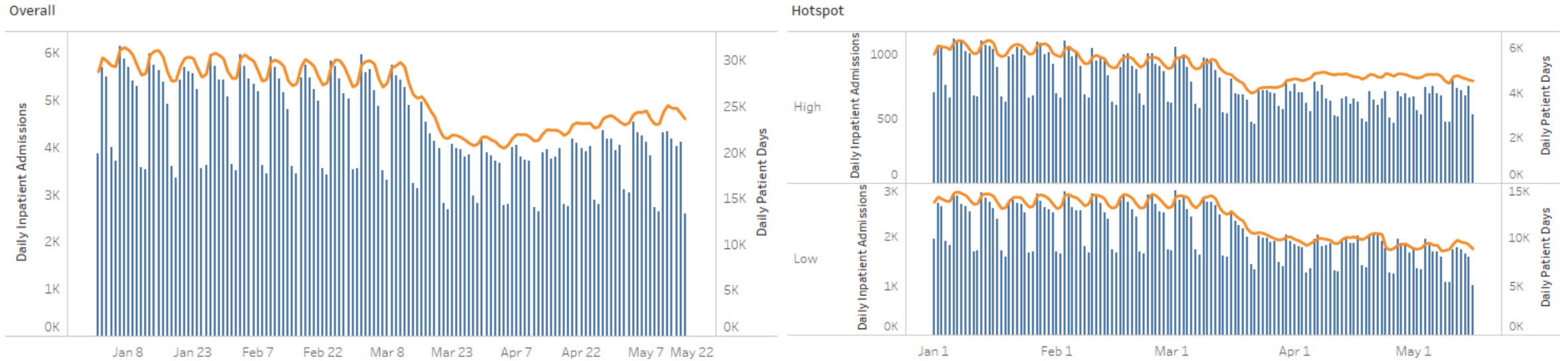
Hot Spot	Metric	30 day Change Compared to Same Period 2019	7 day Change Compare to Same Period 2019
High	Daily Emergency Visits	▼ -53.52%	▼ -49.50%
	Daily Inpatient Admissions	▼ -35.03%	▼ -34.21%
	Daily Observation Visits	▼ -39.19%	▼ -28.47%
	Daily Outpatient Visits	▼ -29.41%	▼ -20.03%
Low	Daily Emergency Visits	▼ -42.03%	▼ -45.61%
	Daily Inpatient Admissions	▼ -30.26%	▼ -37.34%
	Daily Observation Visits	▼ -37.29%	▼ -41.26%
	Daily Outpatient Visits	▼ -32.92%	▼ -24.01%

- Inpatient admissions, emergency visits and outpatient visits fell at a greater rate in high incidence areas (“Hot Spot Hospitals”)
- In hot spot areas, inpatient admissions were down by 35% and emergency visits were down 53% in the last 30 days compared to 2019 volumes
- Outpatient visits in hot spot areas were down less than areas not impacted by COVID-19 (“Low Spot Hospitals”)
- As of May 16, 2020

UPDATED Impact to Daily Inpatient Admissions and Patient Days

Patient Days and Inpatient Admissions Daily Trend

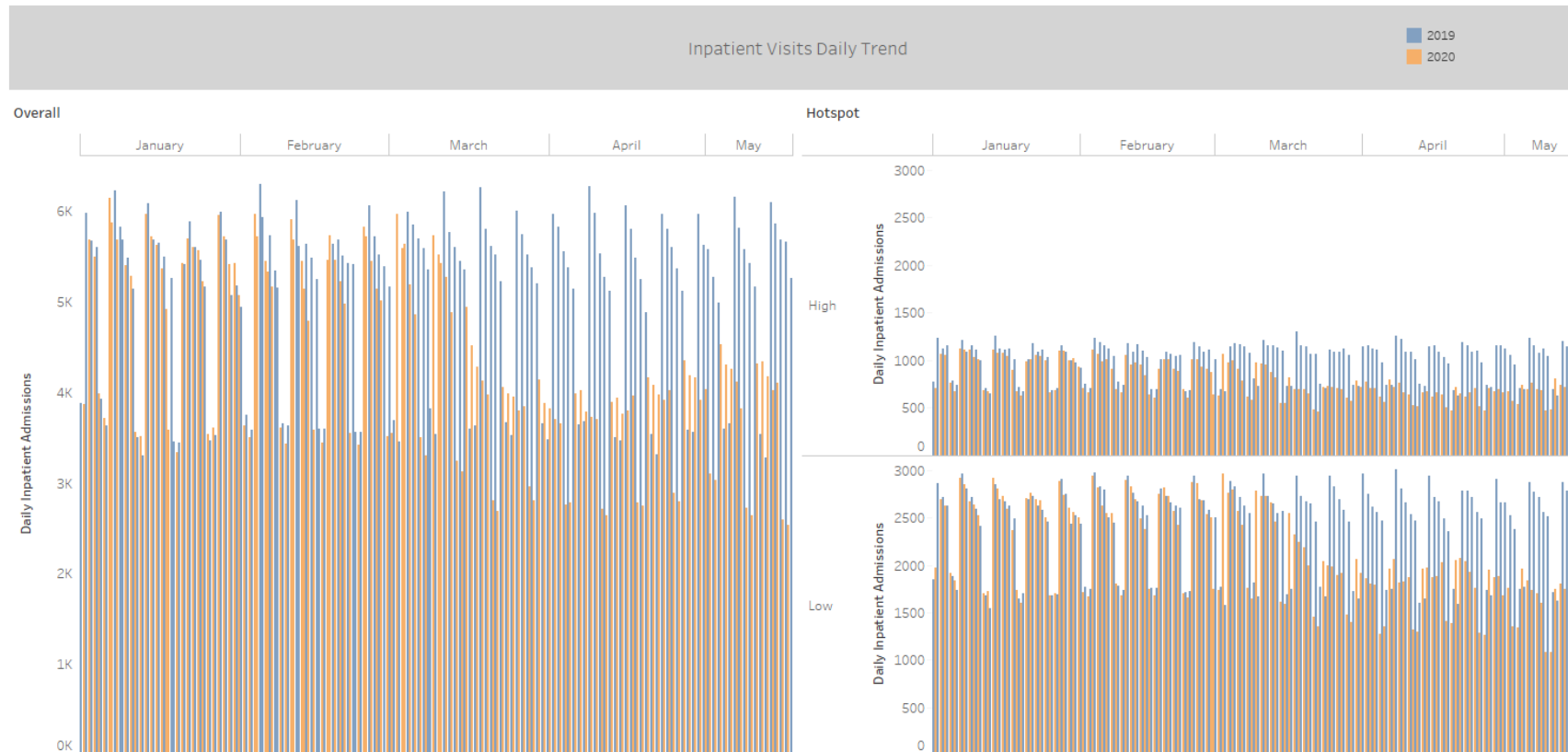
- Daily Inpatient Admissions
- Daily Patient Days



(January 1st to May 16, 2020)

- Although Inpatient Admissions have decreased, Patient Days in the Hot Spot Hospitals leveled off. This reflects that COVID-19 patients have longer length of stays than hospitals normally see
- **Organizations that are planning in increasing their elective volumes should also plan for accommodating longer length of stays should their region become a COVID-19 hotspot**

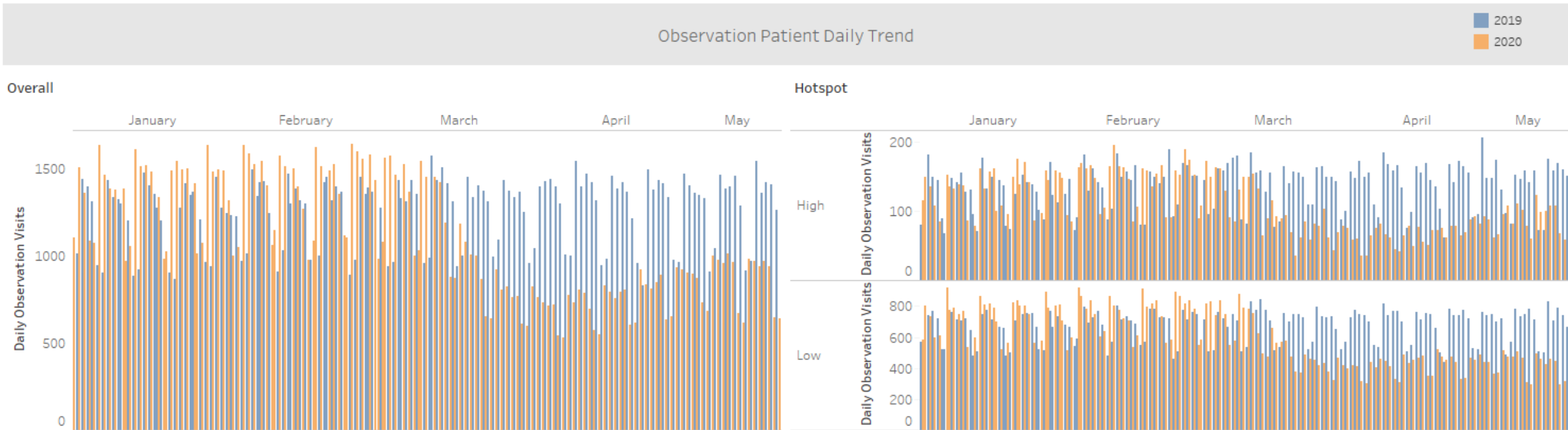
UPDATED Impact to Daily Inpatient Admissions



(January 1st to May 16, 2020)

- Inpatient admissions continue to be dramatically down compared to 2019 volumes, including hospitals that are in hot spots. No uptick is yet seen in the non hotspot markets

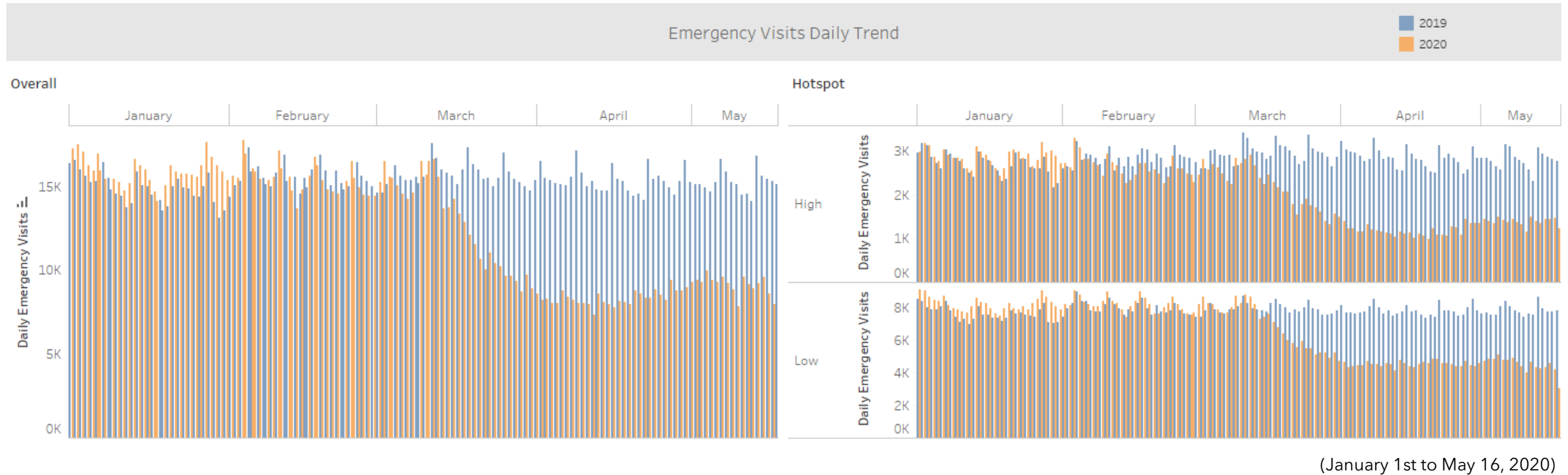
UPDATED Impact to Daily Observation Visits



- Observation visits remain down compared to 2019 volumes, including hospitals that are in hot spots

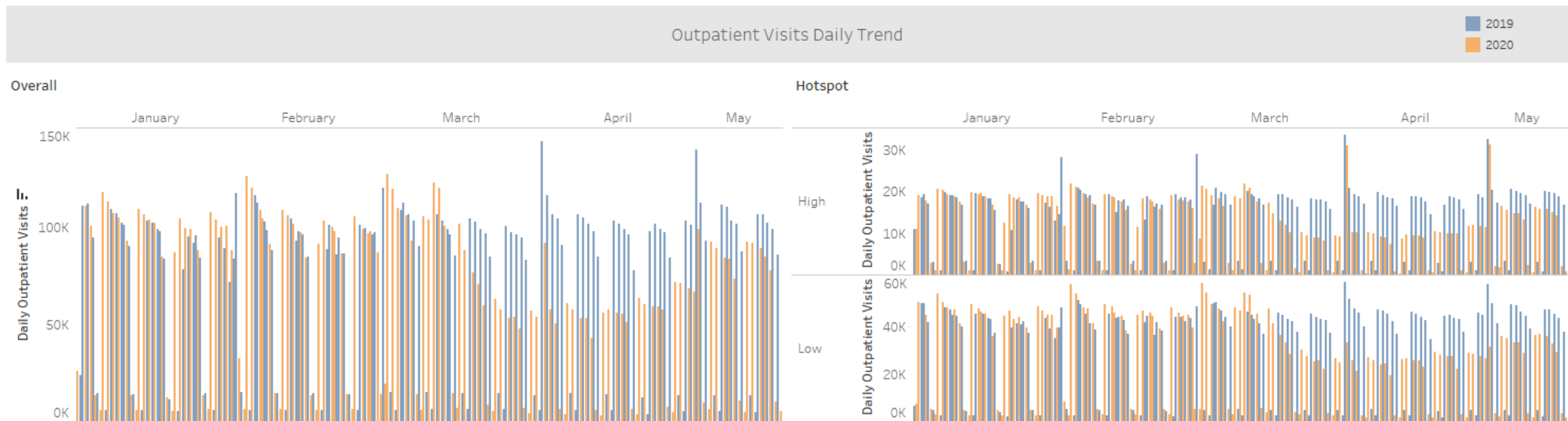
(January 1st to May 16, 2020)

UPDATED Impact to Daily Emergency Visits



- Emergency visits are still down compared to 2019 volumes, including hospitals that are in hot spots. They do not yet show signs of recovery

UPDATED Impact to Daily Outpatient Visits



- **Outpatient visits are starting to increase again**, but are still down compared to 2019 volumes

(January 1st to May 16, 2020)

help HEAL *healthcare*

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Analysis of Clinical Service Lines

Version 5.26.2020

Background

Strata reviewed a total of 2.0 million procedures, **which have now grown to 2.5M**, across 225 common procedure types for matching timeframes in 2019 and 2020.

Initial admission dates were between March 24 and April 6th in 2019 and March 22nd and April 4th in 2020. This represents \$2.3 billion in revenue for the 228 hospitals. With each weekly update, additional volume will be added to show year over year comparisons and changes in volume growth from week to week. **Since the original report, over 500K encounters have been added.**

The 2020 timeline was chosen to reflect the first full weeks of widespread closures and shelter-in-place orders. The end date was chosen to ensure enough time for patient discharge and diagnosis coding to take place. Validated revenue and costed encounter data available for the spring of 2019 and 2020.

All hospital billing encounters with nonzero charges were pulled. All encounters were processed through the 2020 Sg2 Care Grouper™ to assign Service lines and CARE Families (clinical groupings of like activities).

Change in patient volume between equivalent time periods in 2019 and 2020 was used to estimate changes in revenue and margin. These must be estimated rather than directly measured, because the length of the billing and payment cycle (60 to 90 days) means that payment information from late March and April is substantially incomplete.

2.5M	Procedures
225	Most Common Diagnoses Types
\$2.3B	Revenue

UPDATED Weekly Volume Change by Service Line Since Last Update

Many service lines are starting to see some volume increases

Sg2 Service Line

Allergy and Immunology	▼ -8.1%
Behavioral Health	▲ 0.8%
Breast Health	▼ -4.9%
Burns and Wounds	▼ -1.2%
Cancer	▼ -2.5%
Cardiology	▲ 3.4%
Dermatology	▲ 2.6%
Endocrine	▲ 9.3%
ENT	▼ -8.1%
Gastroenterology	▲ 7.4%
General Medicine	▲ 1.5%
General Surgery	▲ 5.8%
Genetics	▲ 10.8%
Gynecology	▲ 9.9%
Hematology	▲ 4.0%

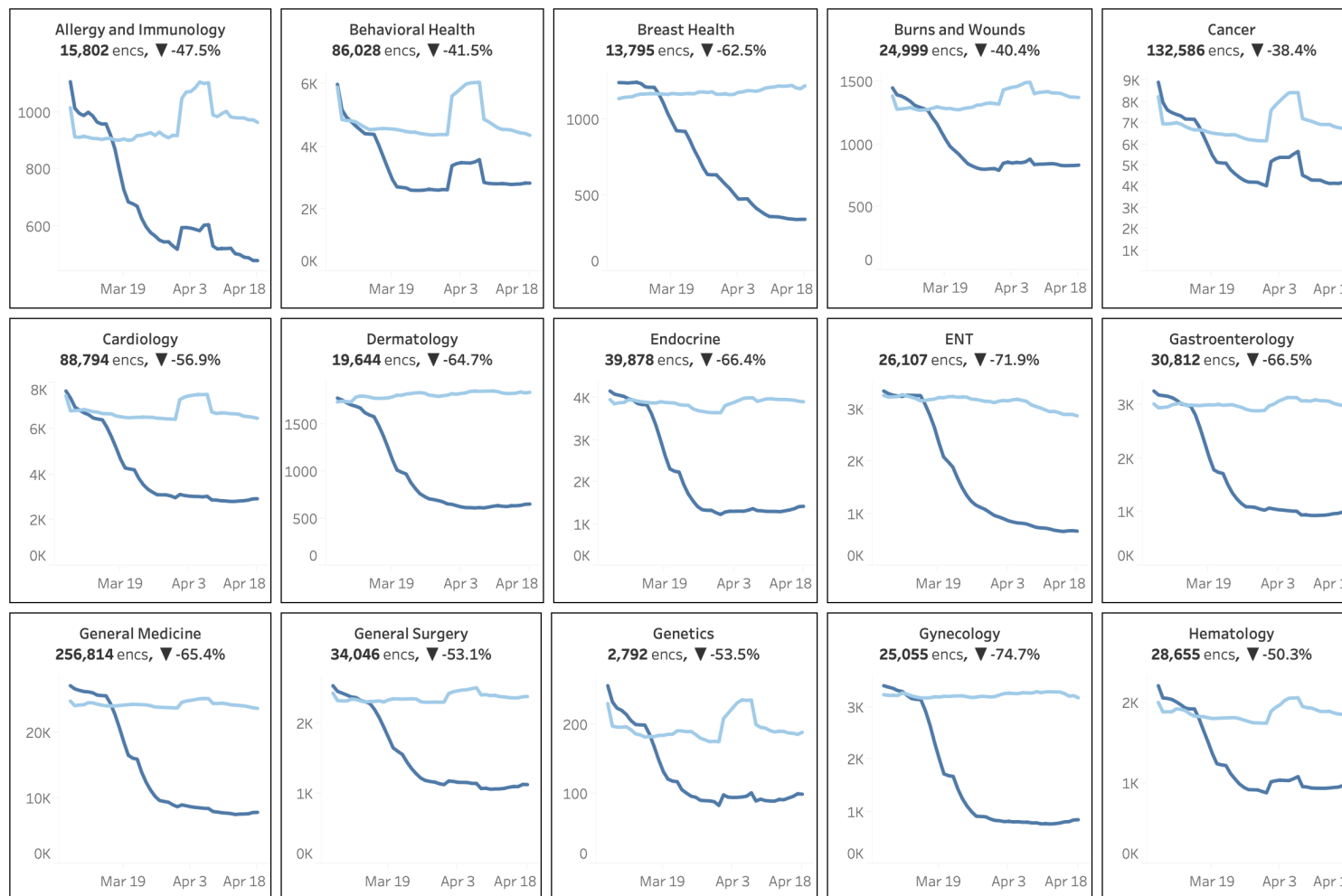
Sg2 Service Line

Hepatology	▲ 7.8%
Infectious Disease	▼ -5.4%
Neonatology	▲ 16.4%
Nephrology	▲ 0.4%
Neurosciences	▲ 0.5%
Normal Newborn	▼ -0.1%
Not Assigned	▼ -0.4%
Obstetrics	▲ 2.8%
Ophthalmology	▲ 0.1%
Orthopedics	▼ -1.5%
Pulmonology	▼ -4.2%
Rheumatology	▲ 2.3%
Spine	▲ 7.4%
Urology	▲ 11.5%
Vascular	▲ 1.4%

Data Compares Service Line Volume Changes for the week of 4/12 - 4/18/2020 to the week of 4/5 - 4/11/2020)

UPDATED Volume Losses by Service Line 2019 vs 2020

Many service lines are starting to see small volume increases, however volumes are still dramatically down compared to 2019

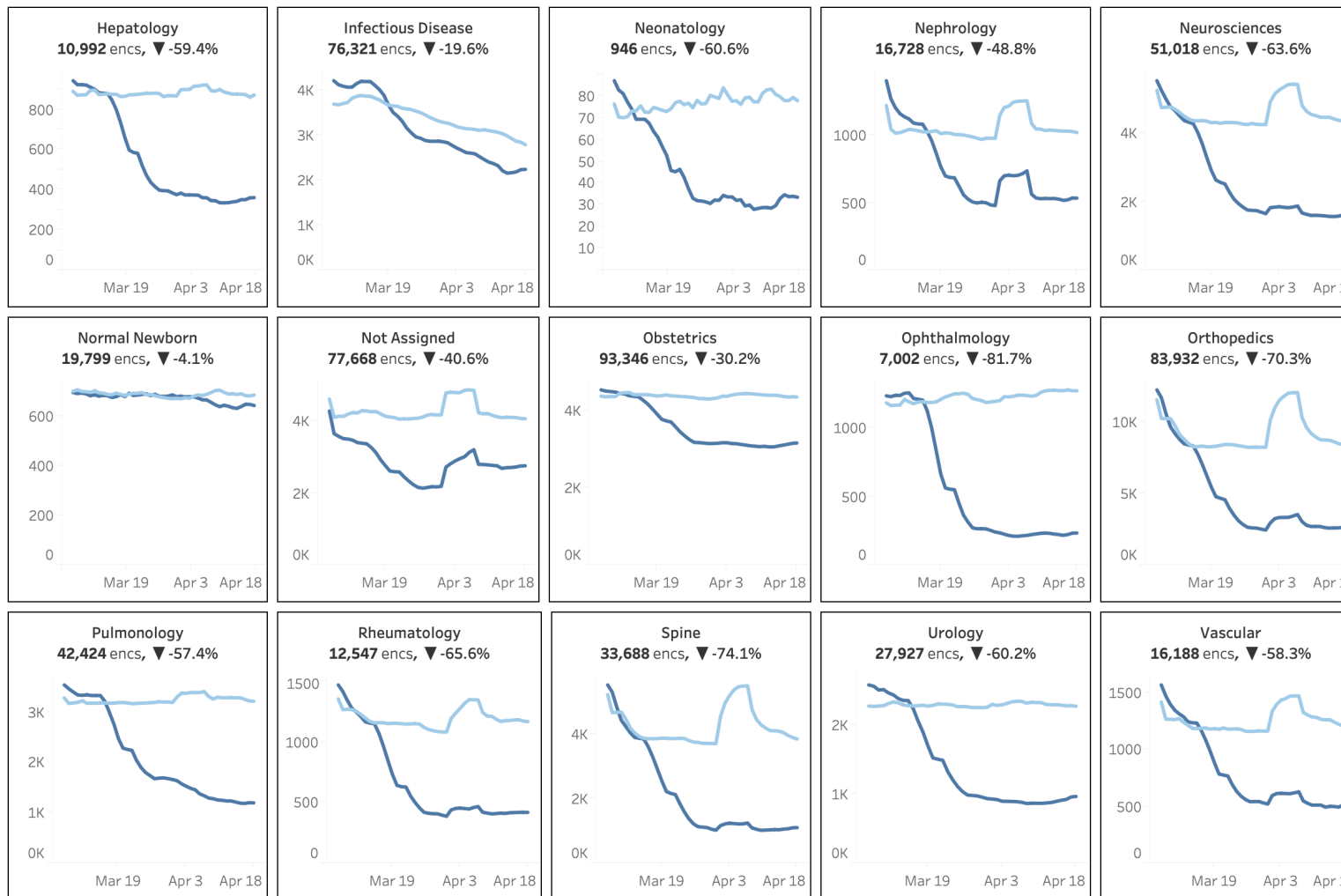


— 2019
— 2020

- Data shows YoY comparison for March 1 - April 18.
- Encounter volumes are 2020 data.
- Volume change percentages reflect changes after March 20.
- Note: Spikes at the beginning of the month for some service lines (Behavioral Health, Cancer) are related to recurring accounts (ie encounters that are set up for multiple visits throughout the month)
- Service Line definition per Sg2 Care Grouper™

UPDATED Volume Losses by Service Line 2019 vs 2020

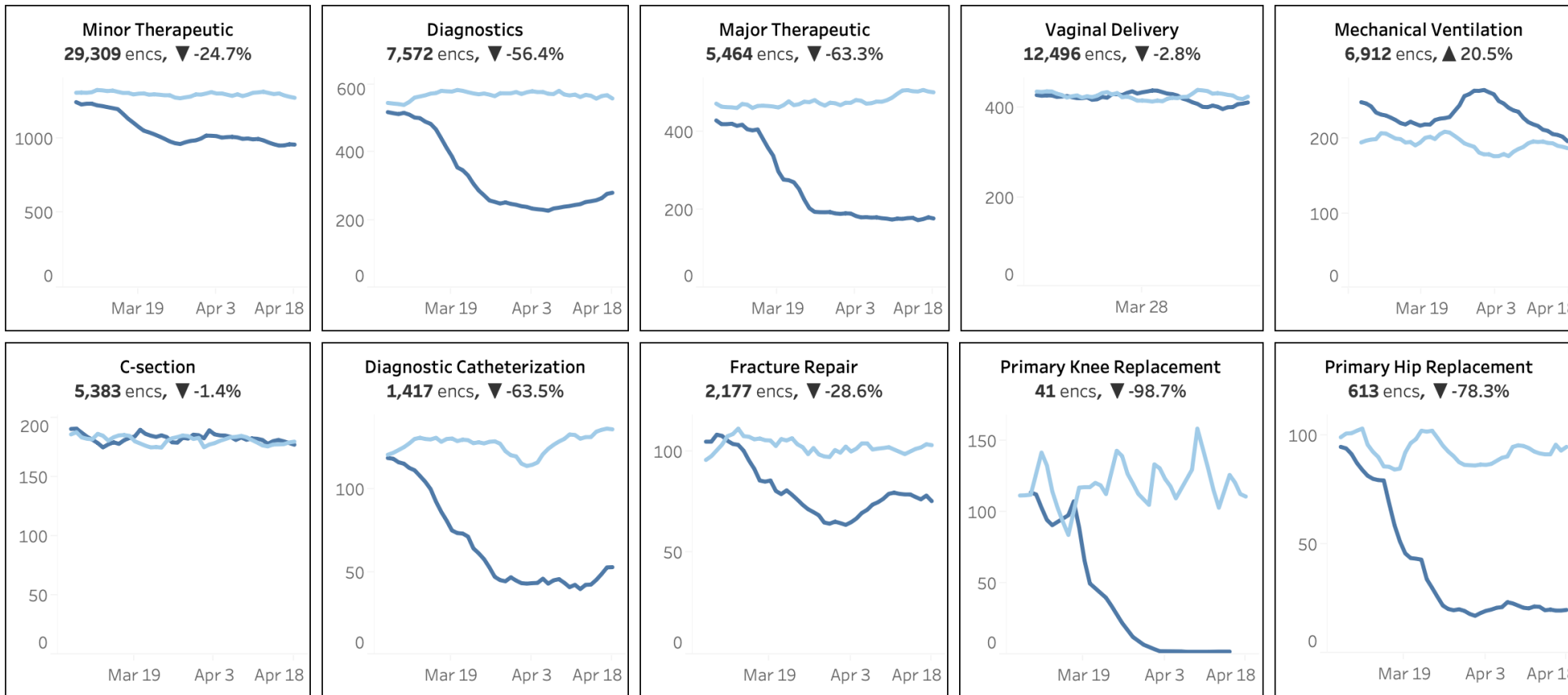
Many service lines are starting to see small volume increases, however volumes are still dramatically down compared to 2019



— 2019
— 2020

- Data shows YoY comparison for March 1 - April 18.
- Encounter volumes are 2020 data.
- Volume change percentages reflect changes after March 20.
- Service Line definition per Sg2 Care Grouper™

UPDATED Impact to Inpatient Procedures and Surgeries

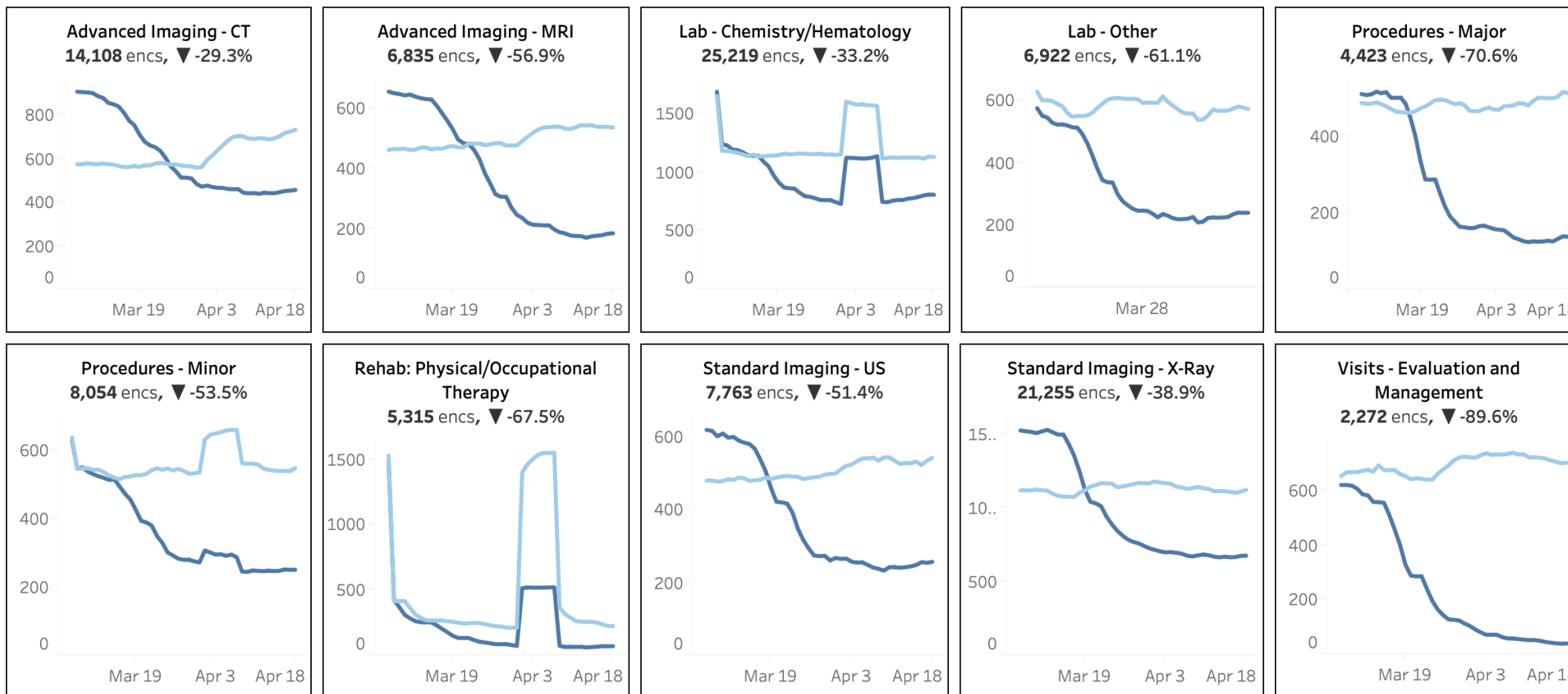


— 2019
— 2020

- Data shows YoY comparison for March 1 - April 18.
- Encounter volumes are 2020 data.
- Volume change percentages reflect changes after March 20.
- Procedure definition per Sg2 Care Grouper™

Obstetric services are tracking compared to 2019 volumes, Primary Knee and Hip Replacement procedures are still on hold.

NEW Impact to Hospital Outpatient Visits



- 2019
- 2020
- Data shows YoY comparison for March 1 - April 18.
- Encounter volumes are 2020 data.
- Volume change percentages reflect changes after March 20.
- Note: Spikes at the beginning of the month for some Outpatient Encounters (Lab, Rehab) are related to recurring accounts (ie encounters that are set up for multiple visits throughout the month)
- Procedure definition per Sg2 Care Grouper™

Hospital Outpatient encounter volumes are down compared to 2019. Imaging and Lab, gateways to diagnoses and management of disease fell dramatically.

UPDATED Impact to Top 15 Hospital Visits by Care Family



— 2019
— 2020

- Data shows YoY comparison for March 1 - April 18.
- Encounter volumes are 2020 data and represent inpatient and outpatient visits combined
- Volume change percentages reflect changes after March 20.
- Care Family definition per Sg2 Care Grouper™

Infectious Disease, including COVID-19 is the only Care Family with increased volume compared to 2019

help HEAL healthcare

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Self Pay Analysis

Version 5.26.2020

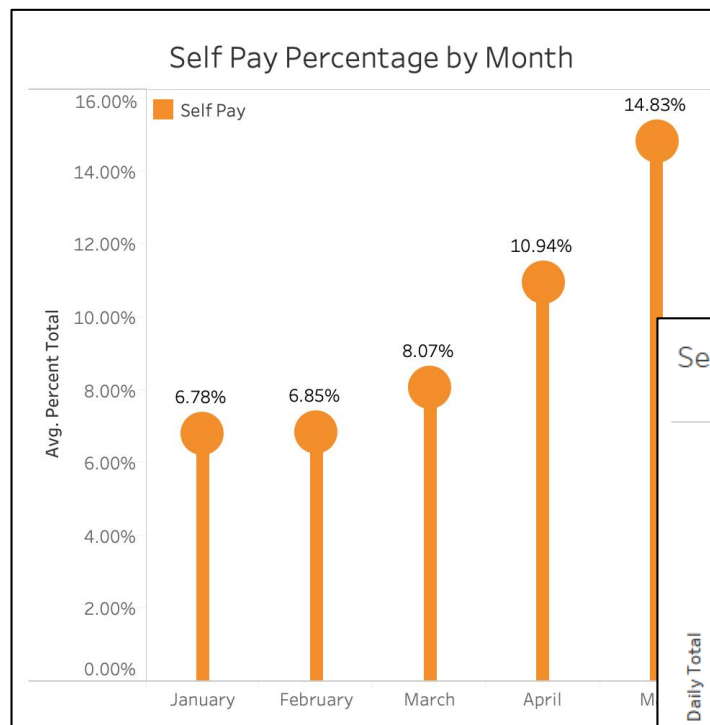
UPDATED Increase in Self Pay & Uninsured

The study found that the number of uninsured or self-pay patients has increased dramatically in the last 90 days, mirroring the rise in the national unemployment rate.

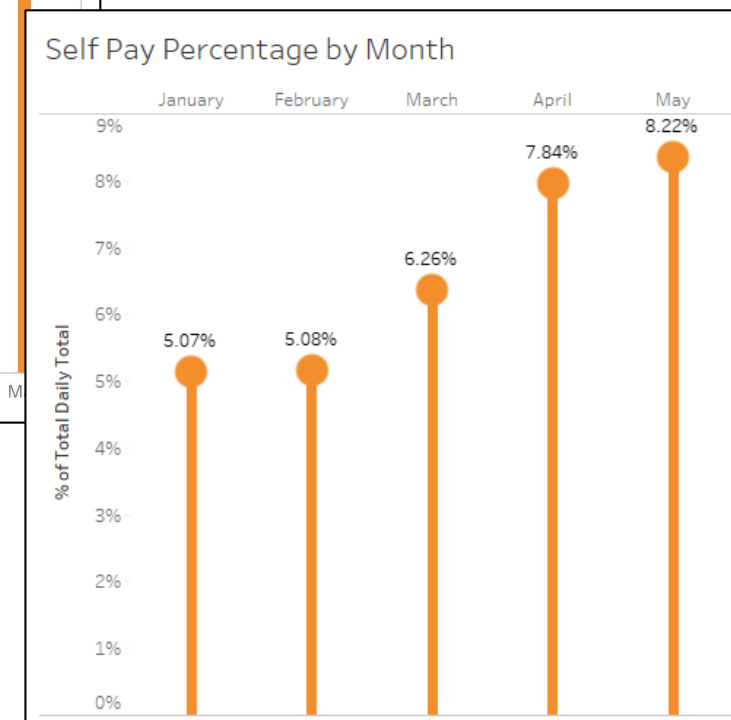
- In January, 5% of all inpatient and outpatient encounters in the study cohort were patients who lacked health insurance.
- By April that figure had risen to 8%
- Early results from May indicate 8% of all patients in the cohort are now uninsured¹

Nightly updates are received for encounter information. As providers validate or obtain insurance for patients it is added to the data set. Self Pay is still increased, but this week showed some normalization. We will watch this closely to see whether those seeking care are insured.

Original Report



Updated Report



help HEAL healthcare

NATIONAL PATIENT AND PROCEDURE VOLUME TRACKER™

Appendix

Version 5.26.2020

Methodology Details

Analysis of volumes and payer source of admissions, observation stays, emergency room and hospital outpatient visits trends for comparable three month, 30 and 7 day periods in 2019 and 2020

- Data Source: Health System billing encounter data for all 209 short term acute care hospitals from 49 health systems.
- Timeframe: January 1st to May 16th.
- Updates: The data will be updated weekly.
- Data Processing Considerations:
 - Patient Days: Includes inpatient and observation encounters with a length of stay greater than one day. Newborns are excluded from the calculation. For patients without a discharge date, the current date is used as a default date for calculation purposes only.
 - Self Pay: The hospital billing encounter's primary insurance plan and financial class were analyzed to identify patients that did not have insurance.
 - Hot Spots: Hot Spot counties comes from The New York Times (<https://github.com/nytimes/covid-19-data>), based on reports from state and local health agencies. Counties with fewer than 200 total cases are categorized as "Low." Otherwise, the prevalence (number of cases per 100,000 residents) is computed for each county across the StrataSphere combined health system. Counties above the 75th percentile prevalence are categorized as "High," counties between the 25th and 75th percentiles as "Medium," and below the 25th percentile as "Low."

Methodology Details

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

- Data Source: 51 StrataSphere health systems with decision support and valid costed encounter data available for the spring of both 2019 and 2020. Data was originally pulled for 54 health systems; 3 were excluded because some data was missing or not comparable. All hospital billing encounters with nonzero charges were pulled.
- Timeframe:
 - Baseline: Admit dates between March 3 and April 20, 2019.
 - COVID era: Admit dates between March 22 and April 18, 2020.
 - The COVID 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.
- Data Processing: All encounters were run through the [2020 Sq2 Care Grouper™](#) to obtain service lines and CARE families. Total actual payments were normalized to be positive across all systems.
- Methodology and Output
 - Use change in patient volume between equivalent time periods in 2019 and 2020 to estimate changes in revenue and margin. These must be estimated rather than directly measured, because the length of the billing and payment cycle (60 to 90 days) means that final payment information from late March and April is substantially incomplete.
 - 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:
 - Baseline encounters: Total number of encounters in the 2019 time frame.
 - COVID-era encounters: Total number of encounters in the 2020 time frame.
 - Volume loss: Baseline encounters minus COVID-era encounters.
 - Percent volume loss: Volume loss divided by baseline encounters.
 - Baseline total payments: Sum total of actual payments in the 2019 time frame.
 - Est. loss in total payments: Baseline total payments multiplied by percent volume loss. This assumes that a loss of volume corresponds to an equivalent loss in revenue

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 takes into account 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



Dan Michelson
Chief Executive Officer,
Strata Decision Technology



Xun Pei
Data Scientist
StrataDataScience



Tom Scanlan
Data Scientist
StrataDataScience



Aaron Wilson
Data Scientist
StrataDataScience