COVID-19 Weekly Trend Insights

Data Week Ending 9/11/2020
Compiled on 9/18/2020
Since our last COVID-19 insight report on September 4th, global cases have increased by approximately 3.87 million or 15%. Global recovered cases reached over 20.5 million, increasing by 17%.

The United States has had an increase of roughly 523,000 cases or 9% since last report. For the second consecutive report, No states within the top 10 reported a growth in cases over 20%. Illinois and Tennessee both garnered a 12% increase in cases since the last report.

Patients under 30 continue to increase and are now 30% of the total volume. These patients have been mostly diagnosed at office, outpatient hospital, and telehealth locations.

School age children (age group 5-19 years) are about 13% of diagnosed patients - majority being high school students.

While telemedicine visit remain well above 2019 levels, they have leveled off or declined from the COVID-19 peak for most diagnoses. Neoplasms and Disease of the blood currently have the highest relative increase in use of telemedicine.

Telemedicine use for patients with diseases of the circulatory system has declined more than 50% from the high in the week of May 1, and visits for endocrine disease are down more than 40% from its high.

Office visits have been gradually increasing from their lowest point during the week of March 27. Diseases of the respiratory system and mental and behavioral health, which bottomed out during the week of April 17, have improved but still remain ~40% below 2019 levels.

NATIONAL VOLUME TRENDS: Although September started with higher weekly volumes overall, the Labor Day Holiday exacerbated the lower 2020 reporting trends compared to the prior year.
COVID-19: Current Events & Latest Trends

COVID-19: Current Events
September 11th
The National Institutes of Health (NIH) launched two of the three late-stage clinical trials to test the effectiveness and safety of different types of blood thinners in treating COVID-19 among adults. The three trials are being run under the U.S. government’s Operation Warp Speed program, which aims to speed up the development, manufacturing and distribution of vaccines, tests and drugs against the coronavirus.

September 15th
Novavax inked another manufacturing deal, this time with Serum Institute of India. The company now says its peak capacity will be more than 2 billion doses annually. Meanwhile, Gilead Sciences is testing new uses for remdesivir, and AstraZeneca’s vaccine phase 3 faces continued scrutiny in the U.S.

September 16th
According to the head of the CDC, a COVID-19 vaccine could be broadly rolled out in the United States by the middle of next year or a little later.

September 17th
The U.S. National Institutes of Health launched a clinical trial of fostamatinib, currently used to treat a blood platelet-destroying autoimmune disorder, in patients hospitalized with severe COVID-19. For reasons that are still not clearly understood, the immune systems of some COVID-19 patients can overreact, creating an inflammatory cascade that can be toxic to organs, cause blood clots and worsen pneumonia.

September 8th
“CEOs Pledge to Stand Behind Science, Not Politics” in potential vaccine approval. In order to quell concerns over the politicization of a potential vaccine for COVID-19, nine pharmaceutical companies developing a preventative treatment signed a pledge promising to uphold the integrity of the scientific process ahead of any potential approval of a medication.

Sources:
https://www.pharmalive.com/v-u-s-could-have-capacity-of-3-million-covid-19-tests-per-day-hhs-official-says
COVID-19 INSIGHTS
Confirmed Cases Worldwide

• Global cases continue to rise as COVID-19 cases surge due to increased testing & lifting of social distancing guidelines. Six countries (Argentina, Brazil, France, India, Spain, and US) have observed an increase of over 100,000 new cases in the last two weeks.

• Since our last COVID-19 insight report on September 4th, global cases have increased by approximately 3.87 million or 15%.

• Global recovered cases reached over 20.5 million, increasing by 17%.

Confirmed Cases
30,205,226

Deaths
946,685

Recovered
20,549,203
COVID-19 INSIGHTS

Confirmed Cases in the USA

- The United States has seen a shift in the epicenter of the COVID-19 pandemic, originating in the northeast transitioning to the southern & western states.

- The United States as a whole observed an increase of roughly 523,000 cases or 9% since last report.

- For the second consecutive report, No states within the top 10 reported a growth in cases over 20% since our last report.

- Illinois and Tennessee both garnered a 12% increase in cases from last report, most among states in the top 10.

<table>
<thead>
<tr>
<th>State/Territory</th>
<th>Tests</th>
<th>Test % Change</th>
<th>Confirmed Cases</th>
<th>Case % Change</th>
<th>Deaths</th>
<th>Death % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>13,080,037</td>
<td>12%</td>
<td>766,201</td>
<td>7%</td>
<td>14,721</td>
<td>10%</td>
</tr>
<tr>
<td>Texas</td>
<td>5,345,176</td>
<td>5%</td>
<td>678,819</td>
<td>9%</td>
<td>14,590</td>
<td>11%</td>
</tr>
<tr>
<td>Florida</td>
<td>5,014,790</td>
<td>6%</td>
<td>674,456</td>
<td>6%</td>
<td>13,247</td>
<td>12%</td>
</tr>
<tr>
<td>New York</td>
<td>9,621,920</td>
<td>13%</td>
<td>447,262</td>
<td>2%</td>
<td>25,413</td>
<td>0.3%</td>
</tr>
<tr>
<td>Georgia</td>
<td>2,679,891</td>
<td>11%</td>
<td>300,903</td>
<td>9%</td>
<td>6,474</td>
<td>10%</td>
</tr>
<tr>
<td>Illinois</td>
<td>4,923,033</td>
<td>18%</td>
<td>270,302</td>
<td>12%</td>
<td>8,624</td>
<td>4%</td>
</tr>
<tr>
<td>Arizona</td>
<td>1,352,882</td>
<td>11%</td>
<td>211,660</td>
<td>4%</td>
<td>5,409</td>
<td>5%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>3,265,818</td>
<td>11%</td>
<td>198,361</td>
<td>3%</td>
<td>16,057</td>
<td>0.5%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2,714,175</td>
<td>16%</td>
<td>189,576</td>
<td>10%</td>
<td>3,180</td>
<td>13%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>2,564,879</td>
<td>13%</td>
<td>178,140</td>
<td>12%</td>
<td>2,164</td>
<td>19%</td>
</tr>
</tbody>
</table>

Through patient activity observed for diagnosis, testing, exposure or symptoms of Covid-19 infection, PRA is tracking about 13.8 million patients in its U.S. real world data during the time period Feb 2, 2020 to September 10, 2020.

Caveats:

- Due to expected lag in claim submissions to payers, trends for metrics such as patient volumes by all demographic and other attributes are expected to change on a rolling 8 to 10 weeks period.
- PRA is using guidance provided by CDC and CMS, to classify patients as diagnosed, tested, exposed, symptomatic and exposed or tested.
- Patients may be diagnosed at multiple places of service. Each patient is counted once for each place of service where they have been diagnosed.

+1.4 Million

Diagnosed Patients
between Feb. 2nd and Sept. 10th

- Patients under 30 continue to increase and are now 30% of the total volume. These patients have been mostly diagnosed at office, outpatient hospital, and telehealth locations.
- School age children (age group 5-19 years) are about 13% of diagnosed patients - majority being high school students.
- The median age of patients is trending younger to 45 years (down from 49 years) in the start of August.
- Office visits have continued to increase by 15% since early July.
- Diagnosed patients have begun to plateau with a decline of cases week over week.
PRA US Patient Real World Data COVID-19 Infection Trends

Through patient activity observed for diagnosis, testing, exposure or symptoms of Covid-19 infection, PRA is tracking about 13.8 M patients during the time period Feb 2, 2020 to Sep 10, 2020. Patients could be reported in multiple status categories based on claims captured and mapped to status.

COVID-19 INCEPTIVE PATIENT DEMOGRAPHICS BY SEGMENT

13,836,842 UNIQUE PATIENTS
PATIENTS WITH COVID-19 CLAIMS FEB 02, 2020 - SEP 10, 2020

1,414,620 DIAGNOSED
10,750,631 TESTED (COVID-19)
8,851,670 EXPOSED
244,578 TESTED (COVID-19 COMPLICATIONS)

NEW PATIENTS BY FIRST DIAGNOSIS OR TEST DATE

PRA US patient longitudinally linked medical and hospital claims data, raw patient volumes
COVID-19 Infection Trends - Changing Location of Care

In recent weeks, there continues to be an increase in Covid-19 patients receiving diagnosis at office settings.

**Location of Covid-19 Diagnosis by Week**

<table>
<thead>
<tr>
<th>Location</th>
<th>Average Over Most Recent 4 Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSPITAL - INPATIENT</td>
<td>15%</td>
</tr>
<tr>
<td>HOSPITAL - EMERGENCY ROOM</td>
<td>6%</td>
</tr>
<tr>
<td>HOSPITAL - OUTPATIENT DEPARTMENT</td>
<td>25%</td>
</tr>
<tr>
<td>OFFICE</td>
<td>24%</td>
</tr>
<tr>
<td>TELEHEALTH</td>
<td>10%</td>
</tr>
<tr>
<td>SKILLED NURSING</td>
<td>2%</td>
</tr>
<tr>
<td>URGENT CARE FACILITY</td>
<td>8%</td>
</tr>
<tr>
<td>OTHER</td>
<td>10%</td>
</tr>
</tbody>
</table>
COVID-19 Infection Trends: Changing Age

The average patient age has started to decrease again since August 15th.

Patients under 30 have increased to 30% of the diagnosed population.

School age children (5-19) has increased to 13% of the Covid-19 Diagnosed Patients.

<table>
<thead>
<tr>
<th>Under 30 Distribution</th>
<th>Diagnosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>2%</td>
</tr>
<tr>
<td>5-9</td>
<td>3%</td>
</tr>
<tr>
<td>10-14</td>
<td>3%</td>
</tr>
<tr>
<td>15-19</td>
<td>7%</td>
</tr>
<tr>
<td>20-24</td>
<td>9%</td>
</tr>
<tr>
<td>25-29</td>
<td>6%</td>
</tr>
</tbody>
</table>

PRA US patient longitudinally linked medical and hospital claims data, raw patient volumes.
Respiratory symptoms such as shortness of breath, chest pain, and respiratory distress have become less common for diagnosed patients.
Acute Upper Respiratory infection and pharyngitis have slightly increased since the start of August
While hypertension, hyperlipidemia, and T2DM have been less common amongst patients diagnosed in recent weeks than earliest weeks, they remain the most common chronic comorbidities.
PRA is tracking 171,552 Covid-19 patients during the most recent 4-week time period of August 16 - September 12, 2020.

Amongst the Covid-19 diagnosed patients:

- 57% of the diagnosed patients are 50 years or older
- Median age is 53
- 18% of the diagnosed patients had at least one record of inpatient care for their diagnosis.
Place of Service Distributions by Age for COVID-19 Diagnosed Patients (N=171,552)

Amongst the most common locations of care for Covid-19 diagnosed patients, patients seen in inpatient hospital setting are almost 20 years older than patients seen through outpatient, office, and telehealth.

<table>
<thead>
<tr>
<th>Place of Service</th>
<th>All Age Groups</th>
<th>Mean Age</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>30%</td>
<td>43.4</td>
<td>45</td>
</tr>
<tr>
<td>Hospital - Outpatient Department</td>
<td>21%</td>
<td>45.4</td>
<td>48</td>
</tr>
<tr>
<td>Hospital - Inpatient</td>
<td>17%</td>
<td>63.7</td>
<td>66</td>
</tr>
<tr>
<td>Telehealth</td>
<td>12%</td>
<td>45.9</td>
<td>48</td>
</tr>
<tr>
<td>Home</td>
<td>11%</td>
<td>61.3</td>
<td>62</td>
</tr>
</tbody>
</table>

PRA US patient longitudinally linked medical and hospital claims data, raw patient volumes.
Observed Treatments by Drug Class Within +/- 30 Days of COVID-19 Diagnosis

PRA evaluated Covid-19 diagnosed patients for observed treatments within a 30-day window of diagnosis. Over the most recent 4 weeks from August 16 - September 12, 28% of these patients had an observed steroid use.

Observed Treatments by Age within +/- 30 days of Covid-19 diagnosis

N= 44,473
General Market Pulse

Care Delivery Trends: Telemedicine & Office Visits

National / Channel Summaries & Elective Therapy Monitoring
• While telemedicine visit remain WELL above 2019 levels, they have leveled off or declined from the COVID-19 peak for most diagnoses.

• Neoplasms and Disease of the blood currently have the highest relative increase in use of telemedicine.

• Telemedicine use for patients with diseases of the circulatory system has declined more than 50% from the high in the week of May 1, and visits for endocrine disease are down more than 40% from its high.

• Respiratory, Genitourinary and Infectious/Parasitic diseases initially spiked but have since returned to pre-COVID levels.

Index = Current Week divided by the 12 Week Rolling Average (from the same time period in 2019)

• An index of 1 means the current week has the same number of claims as the 12 week rolling average from 2019 (100% of 2019 volume).

• An index of 5 means there are 5 times as many claims in the current week as in the 12 week rolling average from 2019 (500% of 2019 volume).

• An index of 0.5 means the current week had 50% fewer claims than the 12 week rolling average from 2019 (50% of 2019 volume).
Office visits have been gradually increasing from their lowest point during the week of March 27.

Visits for pregnancy and childbirth were the least affected diagnosis group.

Diseases of the respiratory system and mental and behavioral help, which bottomed out during the week of April 17, have improved but still remain ~40% below 2019 levels.

Index = Current Week divided by the 12 Week Rolling Average (from the same time period in 2019)
Telemedicine visits by specialty

- Telemedicine use by provider specialty has leveled off or declined slightly since the peak in mid-April.
- Among cardiologists, the use of telemedicine peaked at 365 times 2019 levels, but has since declined to 102 times 2019 levels.
- Use of telemedicine by nurse practitioners and neurologists has started to rise again during August.

Index = Current Week divided by the 12 Week Rolling Average (from the same time period in 2019)

- An index of 1 means the current week has the same number of claims as the 12 week rolling average from 2019 (100% of 2019 volume).
- An index of 5 means there are 5 times as many claims in the current week as in the 12 week rolling average from 2019 (500% of 2019 volume).
- An index of 0.5 means the current week had 50% fewer claims than the 12 week rolling average from 2019 (50% of 2019 volume).
Office Visits: Specialty

- Office visits continue to increase from their low point in the week of March 27 for all specialties.
- Psychiatry office visits are down more than 60% below 2019 levels and show no signs of improvement.
- All other specialties, except pediatrics, are between 80-100% of 2019 levels as of mid-June.
- Pediatrics remains down by -40% compared to 2019 levels.

Index = Current Week divided by the 12 Week Rolling Average (from the same time period in 2019)

- An index of 1 means the current week has the same number of claims as the 12 week rolling average from 2019 (100% of 2019 volume).
- An index of 5 means there are 5 times as many claims in the current week as in the 12 week rolling average from 2019 (500% of 2019 volume).
- An index of 0.5 means the current week had 50% fewer claims than the 12 week rolling average from 2019 (50% of 2019 volume).
Office Visits: Payment Type

- Use of telemedicine for Medicaid patients initially increased by a factor of 57 of 2019 levels, but has declined by 33% since mid-May.
- Telemedicine use by Cash patients is currently 40 times higher than 2019 rates.
- Use of telemedicine by Commercial and Medicare patients has declined since May, likely because mandates on reimbursement and waiving of fees was only temporary during the pandemic.
- Office visits for Cash patients remain down by ~45% from 2019 levels. This may be due, at least in part, to increased unemployment.
- Office visits for all other payment types reached a low in the week of April 17 (down 60-80%). Since then office visits for all payment types other than Cash has gradually increased, reaching 90-100% of 2019 levels as of the week of September 4th.

Index = Current Week divided by the 12 Week Rolling Average (from the same time period in 2019)

- An index of 1 means the current week has the same number of claims as the 12 week rolling average from 2019 (100% of 2019 volume).
- An index of 5 means there are 5 times as many claims in the current week as in the 12 week rolling average from 2019 (500% of 2019 volume).
- An index of 0.5 means the current week had 50% fewer claims than the 12 week rolling average from 2019 (50% of 2019 volume).

Telemedicine Visits by Payment Type

Office Visits by Payment Type
NATIONAL TRENDS: Although September started with higher weekly volumes overall, the Labor Day Holiday exacerbated the lower 2020 reporting trends compared to the prior year.
ELECTIVE THERAPIES: Current year prescription volumes continue to report below prior year thresholds for key therapies. Continuing unemployment may further delay the recovery of elective therapy markets.