COVID-19 Bi-Weekly Trend Insights

Data Week Ending 8/7/2020
Compiled on 8/21/2020
Executive Summary

COVID-19 in the News & Latest Trends

- Since our last COVID-19 insight report on August 7th, global cases have increased by approximately 3.29 million or 19%. Global recovered cases reached over 14.5 million, increasing by nearly 26%.
- PRA is tracking 250K Covid-19 patients during the most recent 4-week time period of July 19 to August 15, 2020. Amongst the Covid-19 diagnosed patients in this time period, 53% of the diagnosed patients are 50 years or older, the median age is 51, and 19% of diagnosed patients had at least one record of inpatient care for their diagnosis.
- According to the consumer sentiment tracking by The Harris Poll (taken between 7/30-8/3), pharma companies are experiencing reputation boosts. Gilead, Pfizer and Moderna, specifically, are trending positively with consumers for their respective COVID-19 treatments and vaccines.

Market Health Checks

- Telemedicine use by provider specialty has leveled off or declined slightly since the peak in mid-April. Among cardiologists, who were strong adopters early in the pandemic, the use of telemedicine peaked at 365 times 2019 levels but has since declined to 105 times 2019 levels.
- Use of telemedicine by nurse practitioner and neurologists has started to rise again during August.
- Neoplasms and Disease of the Blood currently have the highest relative increase in use of Telemedicine
- National prescription trends remain stagnant in recent weeks even as the COVID-19 death toll rises to over 170K.
- Current year prescription volumes have stabilized below prior year thresholds for key therapies. Continuing unemployment and new COVID-19 outbreaks may further delay the recovery of elective therapy markets.
- Medicare and Assistance Programs continue to cover more prescription costs than in 2019. Our next report will look deeper at Payer Market Dynamics and the impact of COVID-19 on key markets

Report Table of Contents

- COVID-19: Current Events & Latest Trends: Page 4-12
  - COVID-19 Current Events
  - COVID-19 Patient Monitoring
- General Market Health checks: Page 13-21
  - Telemedicine & Care Delivery Trends
  - Select Elective Therapy Monitoring
  - National / Pay Type / Channel Summaries
COVID-19: Current Events & Latest Trends

COVID-19: Current Events
August 10th
According to the latest takeaway from consumer sentiment tracking by The Harris Poll (taken between July 30th and August 3rd), pharma companies reaped hefty reputation boosts. Gilead, Pfizer and Moderna specifically are trending positively with consumers around their respective COVID-19 treatments and vaccines.

August 11th
Arcturus Therapeutics began human trials of a potential COVID-19 vaccine. The first group of participants had been dosed in an early-stage trial testing with Arcturus’ COVID-19 vaccine candidate. Results from the trial are expected in the fourth quarter.

August 14th
Austin, Texas-based TFF Pharmaceuticals inked a worldwide exclusive licensing deal with Hellerup, Denmark’s UNION Therapeutics, for the use of TFF’s Thin Film Freezing technology in combination with niclosamide for COVID-19 treatments.

August 18th
Experimental Covid-19 Drug Shows Promise (Reuters)
COVID-19 patients with pneumonia improved faster when treated with Vanda Pharmaceuticals’ experimental therapy than those on placebo [according to the company’s interim analysis of data from a late-stage study].

August 20th
Nearly one-third of parents (31%) say they will probably or definitely keep their child home this fall if schools open for in-person instruction, according to a survey published in JAMA Pediatrics.

Sources:
Nearly one-third of parents plan to keep kids home this fall even if schools reopen, survey
Global cases continue to rise as COVID-19 cases surge due to increased testing & lifting of social distancing guidelines. Four countries (US, India, Brazil, and Colombia) have observed an increase of over 100,000 new cases in the last two weeks.

Since our last COVID-19 insight report on August 7th, global cases have increased by approximately 3.29 million or 19%.

Global recovered cases reached over 14.5 million, increasing by nearly 26%.

Confirmed Cases
22,703,716

Deaths
794,187

Recovered
14,560,735

Source: https://www.theguardian.com/world/2020/may/07/coronavirus-world-map-which-countries-have-the-most-cases-and-deaths
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.

- California, Georgia, and Texas have observed an increase in cases over 20% since the last report.

- Florida, Georgia, and Texas have garnered over 20% increases in COVID-19 related deaths since our last report. Texas’ death toll reached nearly 10,800, which is an approximate increase of 3,000 deaths in two weeks.

<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>10,227,966</td>
<td>20%</td>
<td>644,751</td>
<td>22%</td>
<td>11,686</td>
<td>18%</td>
</tr>
<tr>
<td>Florida</td>
<td>4,339,356</td>
<td>12%</td>
<td>588,602</td>
<td>15%</td>
<td>10,186</td>
<td>29%</td>
</tr>
<tr>
<td>Texas</td>
<td>4,547,069</td>
<td>15%</td>
<td>562,559</td>
<td>20%</td>
<td>10,793</td>
<td>38%</td>
</tr>
<tr>
<td>New York</td>
<td>7,353,387</td>
<td>17%</td>
<td>427,803</td>
<td>2%</td>
<td>25,275</td>
<td>0.4%</td>
</tr>
<tr>
<td>Georgia</td>
<td>2,096,835</td>
<td>22%</td>
<td>246,741</td>
<td>20%</td>
<td>4,904</td>
<td>22%</td>
</tr>
<tr>
<td>Illinois</td>
<td>3,542,515</td>
<td>21%</td>
<td>215,053</td>
<td>13%</td>
<td>8,044</td>
<td>3%</td>
</tr>
<tr>
<td>Arizona</td>
<td>1,118,443</td>
<td>12%</td>
<td>196,280</td>
<td>7%</td>
<td>4,684</td>
<td>17%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>2,585,207</td>
<td>16%</td>
<td>188,527</td>
<td>3%</td>
<td>15,932</td>
<td>0.5%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2,003,307</td>
<td>5%</td>
<td>149,904</td>
<td>14%</td>
<td>2,465</td>
<td>18%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1,719,034</td>
<td>16%</td>
<td>140,821</td>
<td>11%</td>
<td>4,637</td>
<td>12%</td>
</tr>
</tbody>
</table>

Confirmed Cases: 5,572,007
Deaths: 174,204

COVID-19: Overview of PRA Real World Data

COVID-19 Patient Monitoring
Through patient activity observed for diagnosis, testing, exposure or symptoms of Covid-19 infection, we are tracking about 10.6M patients during the time period Feb 2, 2020 to August 12, 2020. Patients could be reported in multiple status categories based on claims captured and mapped to status PRA US patient longitudinally linked medical and hospital claims data, raw patient volumes.

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.
COVID-19 Infection Trends - Changing Location of Care

In recent weeks, there has been an increase in Covid-19 patients receiving diagnosis at office care and outpatient hospital department settings. Office care has increased more than 10% since early July.

Location of Covid-19 Diagnosis by Week

Average Over Last 6 Weeks

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital - Outpatient Department</td>
<td>28%</td>
</tr>
<tr>
<td>Independent Laboratory</td>
<td>12%</td>
</tr>
<tr>
<td>Office</td>
<td>18%</td>
</tr>
<tr>
<td>Hospital - Inpatient</td>
<td>16%</td>
</tr>
<tr>
<td>Telehealth</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
</tr>
<tr>
<td>Urgent Care Facility</td>
<td>6%</td>
</tr>
<tr>
<td>Hospital - Emergency Room</td>
<td>6%</td>
</tr>
<tr>
<td>Skilled Nursing Facility</td>
<td>1%</td>
</tr>
</tbody>
</table>

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.
COVID-19 Infection Trends - Changing Age

The average patient age has begun to increase since Jun 27th when the average patient age was the lowest at 44 years. School age children make up 10% of the Covid-19 Diagnosed Patients.

Covid-19 Diagnosed Patient Age by Week

Under 30 Distribution
Average Over Last 4 Weeks

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>2%</td>
</tr>
<tr>
<td>5-9</td>
<td>2%</td>
</tr>
<tr>
<td>10-14</td>
<td>3%</td>
</tr>
<tr>
<td>15-19</td>
<td>5%</td>
</tr>
<tr>
<td>20-24</td>
<td>6%</td>
</tr>
<tr>
<td>25-29</td>
<td>7%</td>
</tr>
</tbody>
</table>
PRA is tracking 250K Covid-19 patients during the most recent 4-week time period of July 19 to August 15, 2020.

Amongst the Covid-19 diagnosed patients:
- 53% of the diagnosed patients are 50 years or older
- Median age is 51
- 19% of the diagnosed patients had at least one record of inpatient care for their diagnosis.

COVID-19 Diagnosed Patients Demographics (N= 250,473)

Last 4 Weeks from July 19, 2020 to August 15, 2020

Caveats: Due to expected lag in claim submission 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.
General Market Pulse

Telemedicine & Care Delivery Trends

National / Channel / Pay Type Summaries & Elective Therapy Monitoring
Telemedicine Visits: Diagnosis

- 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 decline 66% from the high in the week of May 1, and visits for endocrine disease is off 56% from its high in the week of June 12.

![Index = Current Week vs. 12 Week Rolling Average (from the same time period in 2019)](image-url)
Office Visits: Diagnosis

- 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 only slightly since then.

Symphony Health
A PRA Health Sciences Company

Index = Current Week vs. 12 Week Rolling Average (from the same time period in 2019)
• 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 105 times 2019 levels.

• Use of telemedicine by nurse practitioner and neurologists has started to rise again during August.
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, fall between 80-100% of 2019 levels as of mid-June.
- Pediatrics remains down by -35% compared to 2019 levels.

Index = Current Week vs. 12 Week Rolling Average (from the same time period in 2019)
Office Visits: Payment Type

- Use of telemedicine for Medicaid patients initially increased by a factor of 57 of 2019 levels, but has declined by 36% since mid-May.
- Telemedicine use by Cash patients is currently 34 times higher than 2019 rates.
- Use of telemedicine by Commercial and Medicare patients increased significantly but has declined since May, likely because mandates on reimbursement and waiving of fees was only temporary during the early pandemic period.
- Office visits for Cash patients remain down over 55% from 2019 levels. This may be due, at least in part, to increased unemployment.
- Office visit 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 have gradually increased, reaching 85-100% of 2019 levels as of the week of August 14th.

Index = Current Week vs. 12 Week Rolling Average (from the same time period in 2019)
NATIONAL TRENDS: National prescription trends remain stagnant in recent weeks even as the COVID-19 death toll rises to over 170K.

Data Week 32: August 7th, 2020
Projected NRx/TRx Counts

Source:
NATIONAL TRENDS: Medicare and Assistance Programs continue to cover more prescription costs than in 2019

- PAID = Approved prescriptions taken home by the patient
- REJECTED = Prescription claims rejected by the payer
- ABANDONED = Prescription claims not taken home by the patient
NATIONAL TRENDS: Retail prescriptions continue to drive the bulk of the lower overall activity compared to 2019.

March 20th: Peak Week of COVID-19 Response
**ELECTIVE THERAPIES:** Current year prescription volumes have stabilized below prior year thresholds for key therapies. Continuing unemployment and new COVID-19 outbreaks may further delay the recovery of elective therapy markets.

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Data Week 32: August 7th, 2020

Projected TRx Counts