How Did Medication Use Patterns Change Due to COVID-19 For People with Chronic Conditions?

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November 18, 2021
The COVID-19 Pandemic Caused Widespread Disruption and Uncertainty in Health Care Delivery

The impact of the COVID-19 pandemic on cancer care

Mike Richards, Michael Anderson, Paul Carter, Benjamin L. Ebert & Elias Mossialos

Nature Cancer 1, 565–567 (2020) | Cite this article

Delay or Avoidance of Medical Care Because of COVID-19–Related Concerns — United States, June 2020

The Impact of the COVID-19 Pandemic on Outpatient Visits: Practices Are Adapting to the New Normal

AUTHORS
Ateev Mehrotra, Michael E. Chernew, David Linetksy, Hilary Hatch, David A. Cutler

Download data

Note: Data are presented as a percentage change in the number of visits in a given week from the baseline week (Week 10, or March 1–7, 2020). "Typical year" data from 2016 to 2019 were also calculated as a percentage change from the baseline week.
Why Study Medication Use Patterns During COVID?


- For some patients, provider continuity is key to medication adherence (Brookhart, et al.(2007))

- Disruptions in healthcare negatively affect patients’ abilities to manage chronic conditions and avoid adverse health effects.

**Bottom Line:** Worse Health Outcomes, Higher Long-Term Health Care Costs, Inefficiency in Health Care Delivery System
How May the Pandemic Affect Medication Use Patterns?

Disrupting health care delivery due to the COVID-19 pandemic may:

- Improve adherence to medications
  - Patients and providers anticipate of disruptions to non-Rx care
  - More time at home

- Worsen medication adherence due to
  - Life stressors and disruptions in access to prescribers
  - Heightened sensitivity to cost-sharing (unemployment, insurance loss, financial insecurity)

- Differentially affect adherence by symptomatic condition
Research Design

- **Data:** Large commercial database of pharmacy and ambulatory claims (2018-2020)
  - Medicare Advantage and Commercial Insurance
- **Sample Inclusion and Cohort Construction:**
  - **Control:** Enrolled Q2 2018-Q4 2019, diagnosis and at least one prescription fill in 2018
  - **Treated:** Enrolled Q2 2019-Q4 2020, diagnosis and at least 1 prescription fill in 2019
- **Outcomes:**
  - Medication Adherence (Days Supply/Days between Fills)
  - Fraction of 90-day prescriptions
  - Fraction of Mail order prescriptions
  - Medication Discontinuation

<table>
<thead>
<tr>
<th></th>
<th>Asthma</th>
<th>Diabetes</th>
<th>RA</th>
<th>COPD</th>
<th>HFrEF</th>
<th>Cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control (2019)</strong></td>
<td>373,415</td>
<td>892,949</td>
<td>53,945</td>
<td>283,898</td>
<td>92,418</td>
<td>428,558</td>
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<tr>
<td><strong>Treated (2020)</strong></td>
<td>408,259</td>
<td>958,191</td>
<td>57,807</td>
<td>315,394</td>
<td>104,258</td>
<td>456,614</td>
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</tbody>
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Medication Adherence Spiked at the Onset of the Shutdown

- Adherence INCREASED at the beginning of the pandemic
- Adherence remained higher in 2020 compared to 2019
- Consistent (to varying degrees) across all chronic conditions
What Is NOT Contributing to the Observed Change in Adherence?

- Health Insurance Disenrollment
  - Estimate approximately 2% of beneficiaries lost insurance during pandemic (Bundorf, et al. (2021))
  - Beneficiaries must be continuously enrolled
  - Over half the sample enrolled in Medicare Advantage plans

- Mail Order Delivery
  - Mail order deliveries declined during the study period
What Is Contributing to the Observed Change in Adherence?

- Increased 90-day prescription fills in early 2020
- Attenuates throughout remainder of year
- Consistent across all chronic conditions, except RA
- Control vs Treated differences (raw):
  - Diabetes: 2.9%
  - Asthma: 7.8%
  - Cholesterol: 3.7%
  - COPD: 6.75%
  - HFrEF: 4.6%

Ratio of 90-Day Prescription Fills (Treated vs Control)
What Comes Next?

- Do we observe differential effects across race or payer type?
- How was in-office medication administration affected? Did patients transition to oral or subcutaneous medication administration?
- Was there a tradeoff between 90-day prescription fills and optimizing patients’ treatment plans?
- Are there lessons we can learn to maximize efficiency of health care delivery?
Questions?

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Thank you for your time!