Impact of the COVID-19 pandemic on follow-up colonoscopy rates after a positive stool-based screening test for colorectal cancer among U.S. health care organizations

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BACKGROUND AND OBJECTIVE

• The COVID-19 pandemic has disrupted cancer detection, diagnosis, and treatment including colorectal cancer (CRC) screening.1

• There was a sharp decline in screening colonoscopies during the COVID-19 pandemic, while utilization of stool-based screening tests (SBTs) such as fecal immunochemical test (FIT) or multtarget stool DNA test (mt-sDNA) increased.2,4

• A positive SBT result requires a follow-up colonoscopy (FU-CY) to complete the screening paradigm.

• Simultaneous increased use of SBTs for screening and decrease in colonoscopy accessibility creates a potential care gap if patients fail to follow up after a positive SBT.

• This study evaluated the impact of the COVID-19 pandemic on FU-CY rates within 90, 180, and 360 days of a positive SBT (FIT or mt-sDNA).

STUDY DESIGN

• A retrospective analysis of de-identified administrative claims and electronic health record data between June 1, 2015, and June 30, 2021, obtained from the Optum Labs Data Warehouse.

• The study population included 14,623 average-risk patients aged 50-75 years old with positive SBT (FIT or mt-sDNA) results in the years 2019 or 2020.

• The index date was the date of the first positive SBT result in 2019 or 2020.

• Patients were included if they had a primary care visit within 15 months prior to the index date and had documented activity at least 90 days after the index date.

• Patients were excluded if they were at higher-than-average CRC risk, had a prior CRC diagnosis, or had recent CRC screening tests prior to the index date.

• Patients were clustered by month of the index date, allowing a comparison of the evolving pandemic impact over time.

• The Kaplan-Meier method was used to compare FU-CY rates at 90, 180, and 360 days of the index date. Patients were censored on death or on the date of last known activity (e.g., visit, prescription, or procedure).

• A difference of differences analysis was used to compare the impact across patient characteristics, including race, Charlson Comorbidity Index (CCI), and insurance type.

RESULTS

The COVID-19 pandemic and related lockdowns significantly reduced rates of FU-CY

The COVID-19 pandemic and related lockdowns significantly reduced rates of FU-CY across the board. The percentage of patients who underwent colonoscopy within 90, 180, and 360 days of a positive SBT test result decreased significantly compared to the previous year.

<table>
<thead>
<tr>
<th>INDEX DATE</th>
<th>FU-CY RATE (%)</th>
<th>P-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>456 (44.0-50.6)</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>377 (35.5-40.2)</td>
<td>&lt;0.001</td>
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<tr>
<td>180-Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>392 (39.5-46.1)</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>302 (33.8-46.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>360-Day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>338 (32.3-40.9)</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>262 (27.1-36.5)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

FU-CY rates disproportionately impacted certain patient subpopulations

Patients at higher risk of mortality had lower FU-CY rates during the pandemic. The rates of follow-up over time were compared for patients indexed in 2020 vs 2019 (absolute change). No significant difference across African American and Caucasian patients (other patient races had insufficient data in 2020).

- Patients with 1-4 CCI (likely those with 1-2 chronic conditions) had the largest drop-off and the least recovery in FU-CY rates as compared to patients in other CCI categories.

- Medicare patients were overall less impacted than commercially insured patients, but this difference was small.

- No subpopulation recovered to 2019 rates within one year.

IMPLICATIONS FOR POLICY AND PRACTICE

• Our study demonstrates the long-lasting impact of the COVID-19 pandemic on follow-up colonoscopy rates after a positive SBT result.

• Patients with positive SBT had much lower rates of follow-up in 2020 relative to 2019, which created a potential backlog of patients at high risk of CRC that must be addressed.

• Patient and health systems utilize SBTs for initial CRC screening as a convenient way to increase population-level screening rates; however, a lack of follow-up after a positive SBT during and after the COVID-19 pandemic needs to be addressed.

CONCLUSION

50% of patients with a positive SBT CRC screening test result in 2020 failed to complete a follow-up colonoscopy within 1 year.

• This failure rate was approximately 10% higher than the prior years.

• Patients with a positive screening test in March were disproportionately affected and never recovered to the same (lower) level as other months, potentially due to the disruption at the initial scheduling stage.

• By June 2020, FU-CY rates recovered to 2019 levels.

• Patients at higher risk of mortality had lower FU-CY rates during the pandemic.

- A higher risk of mortality (as measured by CCI) was associated with lower FU-CY rates, perhaps due to difficulty in providing care to more complex patients.

- Overall, the differential impact of the pandemic across patient groups was modest, though this issue is separate from overall disparities in screening rates.

REFERENCES


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ANNUAL RESEARCH MEETING