Assessing Patterns in Cancer Screening Use by Race and Ethnicity During the Coronavirus Pandemic Using Electronic Health Record Data

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Motivation
- There were dramatic reductions in breast cancer and colorectal cancer screenings during the beginning of COVID-19 pandemic among privately insured (Song et al. 2021; Martin et al. 2021)
- Prior to COVID-19, there were significant racial and ethnic disparities in breast and colorectal screenings and mortality rates, especially for Black individuals (Hunt et al. 2014; Ko et al. 2020; CDC 2019; CDC 2020)
- It is not known how cancer screening volume changed differentially for patients of different races and ethnicities during COVID-19

Research Questions
- How did orders for mammograms and colonoscopies change during the first nine months of the pandemic?
- How did patterns vary for patients of different races and ethnicities?

Data and Methods
- Allscripts Electronic Health Record data from the pro-bono COVID-19 Research Database
- Created panel of providers that placed orders in any month in ‘19-’20 for (1) mammograms and (2) colonoscopies (July missing due to data issue)
- Restricted the sample to providers who had at least 30 patient encounters of any type each month of ‘19-’20, excluding March-May ‘20 when in-person services were largely unavailable
- Patient race and ethnicity information recorded on patients’ demographic records
- Examined overall trends in screenings, as well as monthly changes by race/ethnicity
- Compared orders before the onset of COVID-19 and after using difference-in-differences (DID) approach

Results and Discussion
- Screenings for mammograms and colonoscopies significantly declined in March through May 2020 relative to their monthly levels in 2019
- In April 2020, mammograms and colonoscopies declined by over 50% of their expected levels
- Service use eventually began to rebound—the overall level of screenings from June through December 2020 were similar to those observed in June through December 2019
- The decline in use from March to May 2020 appear to be permanent losses in preventative care utilization (not enough “rebound”)
- The rebound showed few significant differences across racial and ethnic groups for colonoscopies and none for mammograms

Year-to-Year Percent Change in Monthly Mammograms, by Patient Race/Ethnicity

Changes in Monthly Mammograms per Provider, by Period and Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Period 1 (January-February)</th>
<th>Period 2 (March-May)</th>
<th>Period 3 (June-December)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>0.31</td>
<td>0.33</td>
<td>0.02</td>
</tr>
<tr>
<td>Black or African American</td>
<td>0.81</td>
<td>0.86</td>
<td>0.05</td>
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<tr>
<td>Hispanic or Latino</td>
<td>0.85</td>
<td>0.95</td>
<td>0.10</td>
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<tr>
<td>Other</td>
<td>0.18</td>
<td>0.21</td>
<td>0.02</td>
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<tr>
<td>Unknown</td>
<td>1.76</td>
<td>1.71</td>
<td>-0.04</td>
</tr>
<tr>
<td>White</td>
<td>7.71</td>
<td>8.71</td>
<td>1.00</td>
</tr>
</tbody>
</table>