might contribute to ventilator weaning failure, persistent dyspnea, and fatigue in patients with COVID-19 who survive their ICU stay.6

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Diversity and Representation of Physicians During the COVID-19 News Cycle

Although 41% of medical school faculty are women,1 women appear underrepresented as authors of coronavirus disease 2019 (COVID-19) pandemic-related publications2 and as leaders of the US response.3 Given the news media’s long-standing role in shaping public consciousness,4 we sought to investigate whose voices are being broadcast. Because cable news provides extended segments that frequently include expert interviews (unlike shorter network nightly news broadcasts), we investigated the diversity of speakers who discussed COVID-19 and other content on cable news programs.

Methods | From May 18 to June 19, 2020, we analyzed prime-time programming on 3 popular American cable news networks: Fox News Network, CNN, and MSNBC. The prime-time slot, defined as 8 to 11 PM Eastern/Pacific Time, was chosen to sample programming with the highest ratings. The investigators filed the study plan with the University of Michigan Institutional Review Board, which does not regulate studies of this nature that use publicly available data.

The observation window began with the country’s early state reopenings, extended throughout the national protests over police brutality, and ended with President Trump’s controversial campaign rally in Tulsa, Oklahoma. We recorded the name, gender, given job title, degree, speaking time, and interview content (COVID-19 related vs unrelated) for every guest interviewed on a primetime show. A guest was defined as any nonanchor individual speaking on-air. Network employees, contributors, and correspondents were included. To avoid duplication, clips of past interviews shared on-air were excluded. Because some videos were not uploaded to public archives, speaking time was not recorded for a small subset of interviews (5%).

Data were analyzed both across and among networks. We also evaluated physician speakers (including MD/PhDs) and nonphysician PhD speakers separately. For comparisons of proportions, the Fisher exact test statistics were used. For comparison of average speaking times, network summaries were compared using the F statistic (analysis of variance). To compare average speaking time between COVID-19 content and other content (regardless of network), we used the Wilcoxon rank-sum test statistic. All summaries and statistics were calculated using the SAS, version 9.4 (SAS Institute), and P values less than .05 were considered statistically significant.

Results | Of the total 220 unique guests speaking on COVID-19 content, 66 (30.0%) were women (Table 1). Women
Table 1. Distribution of Speakers on Major News Media Outlets by Gender

<table>
<thead>
<tr>
<th></th>
<th>All guests</th>
<th></th>
<th>Other content</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No./No. total (%)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>COVID-19 content</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Unique speakers within content category</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>66/220 (30.0)</td>
<td>33/81 (40.7)</td>
<td>27/90 (30.0)</td>
<td>7/59 (11.9)</td>
<td>&lt;.001</td>
<td>128/476 (26.9)</td>
<td>64/166 (38.6)</td>
</tr>
<tr>
<td>Men</td>
<td>154/220 (70.0)</td>
<td>48/81 (59.3)</td>
<td>63/90 (70.0)</td>
<td>52/59 (88.1)</td>
<td></td>
<td>348/476 (73.1)</td>
<td>102/166 (61.4)</td>
</tr>
<tr>
<td>Speaking slots</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>97/351 (27.6)</td>
<td>43/108 (39.8)</td>
<td>44/153 (28.8)</td>
<td>10/90 (11.1)</td>
<td>&lt;.001</td>
<td>237/991 (23.9)</td>
<td>86/259 (33.2)</td>
</tr>
<tr>
<td>Men</td>
<td>254/351 (72.4)</td>
<td>65/108 (60.2)</td>
<td>109/153 (71.2)</td>
<td>80/90 (88.9)</td>
<td></td>
<td>754/991 (76.1)</td>
<td>173/259 (66.8)</td>
</tr>
<tr>
<td>Total speaking time, min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>347.5/1304.5</td>
<td>171.0/400.5 (42.7)</td>
<td>143.0/616.0 (23.2)</td>
<td>33.5/288.0 (11.6)</td>
<td>NA</td>
<td>971.5/3868.5</td>
<td>432.0/1263.5</td>
</tr>
<tr>
<td>Men</td>
<td>957.0/1304.5</td>
<td>229.5/400.5 (57.3)</td>
<td>473.0/616.0 (76.8)</td>
<td>254.5/288.0 (88.4)</td>
<td>NA</td>
<td>2897.0/3868.5</td>
<td>831.5/1263.5</td>
</tr>
<tr>
<td>Average speaking time, mean (IQR), min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>4.2 (3.0-5.0)</td>
<td>5.3 (4.5-5.75)</td>
<td>3.5 (2.0-4.5)</td>
<td>3.35 (3.0-4.0)</td>
<td>&lt;.001</td>
<td>4.2 (2.5-5.5)</td>
<td>5.1 (4.0-6.0)</td>
</tr>
<tr>
<td>Men</td>
<td>4.2 (3.0-5.0)</td>
<td>5.1 (4.0-6.0)</td>
<td>4.6 (3.0-6.0)</td>
<td>3.2 (2.0-4.0)</td>
<td>&lt;.001</td>
<td>4.0 (2.0-5.0)</td>
<td>5.1 (3.25-6.5)</td>
</tr>
<tr>
<td>Total</td>
<td>4.2 (3.0-5.5)</td>
<td>5.2 (4.5-6.0)</td>
<td>4.3 (2.5-6.0)</td>
<td>3.2 (2.0-4.0)</td>
<td>&lt;.001</td>
<td>4.0 (2.0-5.5)</td>
<td>5.2 (3.5-6.5)</td>
</tr>
</tbody>
</table>

Abbreviations: COVID-19, coronavirus disease 2019; IQR, interquartile range; NA, not applicable.

*P value for comparison within content area across the 3 media networks.

bP value for the comparison of the “all networks” between COVID-19 content vs other content.

cFor all networks, denominator is not total of unique speakers across the 3 networks because certain speakers

were featured on more than 1 network. These were counted only once in the “all networks” column and counted

once for each network on which they appeared.

dA single individual invited to speak multiple times counts more than once in this row.

bP value from analysis of variance between networks.
accounted for 97 of 351 (27.6%) of the interviews and 347.5 of the 1304.5 total minutes of speaking time (26.6%) on COVID-19 content. Almost all comparisons of the gender distribution among networks were highly significant (P < .001), with MSNBC generally leading in the proportion of female speakers, followed closely by CNN and distant by Fox. The speaker gender distribution between COVID-19 content vs other content was not significantly different.

Among the 220 unique speakers on COVID-19 content across all networks, 47 (21.4%) were physicians (45 MD, 2 DO) and provided 423.0 of 1304.5 minutes (32.4%) of the total minutes of COVID-19 content. Of these unique physicians, 12 (25.5%) were women, accounting for 17 of 116 (14.7%) of all physician interviews and 65.5 of 423.0 minutes (15.5%) of the total speaking time (Table 2). The most common specialty was internal medicine (28 speakers, 10 of whom were women; 9 of these specialized in infectious diseases, 4 of whom were women). In the nonphysician PhD cohort, 6 (20.7%) were women, encompassing 6 of 35 (17.1%) of nonphysician PhD interviews and 23.0 of 152.0 minutes (15.1%) of the total speaking time. The most common fields were economics (7 speakers, of whom 1 was a woman) and public health (7 speakers, of whom 3 were women).

The proportion of interviews with female physicians qualitatively differed between networks, but this difference was not statistically significant. MSNBC had 30.4% (7 of 23) unique female physician representation, encompassing 21.2% (7 of 33) of the interviews and 18.0% (21.5 of 119.5 minutes) of the total speaking time on COVID-19 content. Fox had 0% female physician representation throughout our 5-week observation window but did interview a female nurse.

Women were less often interviewed multiple times across networks. Among physicians, 10 women (83.3%) appeared once and 2 (16.7%) appeared 3 or more times. By contrast, 19 men (54.3%) appeared once, 6 (17.1%) appeared...
twice, and 10 (28.6%) appeared 3 or more times. Within the nonphysician PhD cohort, all 6 women (100%) appeared only once compared with 20 men (87.0%).

Discussion | In this study of primetime programming on 3 major networks, physicians constituted only one-fifth of unique speakers and had less than one-third of speaking time on COVID-19 content. Women’s voices were in the minority, including among physicians and nonphysicians with PhD degrees, with variability by network. The proportion of women speaking on COVID-19 content was no different from the proportion of women speaking on other content, suggesting that the paucity of female voices on cable news programs is not subject specific.

Limitations of the present study include the focus on binary gender, possible bias due to the observation window, and the small number of networks, shows, and time slots represented. Nevertheless, this study provides informative descriptive information on the representation of medical experts and gender gap in media representation during the COVID-19 pandemic. This inconsistency with the composition of the workforce could detract from the perceived legitimacy of female doctors amid a national crisis. Greater diversity of voices might enrich discourse.

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Outcomes of Universal COVID-19 Testing Following Detection of Incident Cases in 11 Long-term Care Facilities

Residents in long-term care facilities are at particularly high risk of infection and poor outcomes associated with coronavirus disease 2019 (COVID-19).1,2 Early in the course of the pandemic, testing recommendations by the Centers for Disease Control advised testing residents and staff solely based on the presence of typical symptoms. Despite these efforts, there have been widespread outbreaks across long-term care facilities in the US, with high mortality rates.

Methods | We performed universal testing of untested residents across 11 Maryland long-term care facilities that (1) had previously undergone targeted testing through the local health department based on individual residents’ symptoms and (2) had known positive cases. Nasopharyngeal swab samples were collected, and reverse transcriptase-polymerase chain reaction analysis was used to detect severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) RNA. Symptom status (any fever >99 °F, cough, diarrhea, respiratory decompensation, or other acute clinical status changes) at the time of universal testing was recorded based on discussion with facility staff. We used descriptive statistics to report the prevalence of positive test results and symptom status at the time of testing. Two-week telephone follow-up was conducted at 7 facilities following point-prevalence testing to obtain information regarding hospitalization and mortality status of all tested residents. This study was reviewed by the Johns Hopkins institutional review board and deemed exempt as public health surveillance activity.

Results | Targeted symptom-based testing identified 153 cases prior to point-prevalence surveys at 11 facilities within 20 days of detection of the index case. Among the remaining 893 residents who were universally tested, 354 (39.6%) tested positive for SARS-CoV-2 RNA. Thus, universal screening