

# Politicization of Medical Care, Burnout, and Professionally Conflicting Emotions Among Physicians During COVID-19



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## Abstract

**Objective:** To evaluate the association of politicization of medical care with burnout, professional fulfillment, and professionally conflicting emotions (eg, less empathy, compassion; more anger, frustration, resentment).

**Participants and Methods:** Physicians in select specialties were surveyed between December 2021 and January 2022 using methods similar to our prior studies, with additional assessment of politicization of medical care; moral distress; and having had to compromise professional integrity, workload, and professionally conflicting emotions.

**Results:** In a sample of 2780 physicians in emergency medicine, critical care, noncritical care hospital medicine, and ambulatory care, stress related to politicization of medical care was reported by 91.8% of physicians. On multivariable analysis, compromised integrity (odds ratio [OR], 3.64; 95% CI, 2.31 to 5.98), moral distress (OR, 2.82; 95% CI, 2.16 to 3.68), and feeling more exhausted taking care of patients with coronavirus disease 2019 (COVID-19) (OR, 3.46; 95% CI, 2.63 to 4.54) were associated with burnout. Compromised integrity, moral distress, and feeling more exhausted taking care of patients with COVID-19 were also statistically significantly associated with lower odds of professional fulfillment and professionally conflicting emotions. Stress related to conversations about non-approved COVID-19 therapies (OR, 1.74; 95% CI, 1.08 to 2.89), patient resistance to mask wearing (OR, 1.84; 95% CI, 1.35 to 2.55), and working more hours due to COVID (OR, 0.66; 95% CI, 0.49 to 0.89) were associated with professionally conflicting emotions.

**Conclusion:** Most physicians experienced intrusion of politics into medical care during the pandemic. These experiences are associated with professionally conflicting emotions, including less compassion and empathy, greater frustration, and resentment. COVID-19-related moral distress and compromised integrity were also associated with less professional fulfillment and greater occupational burnout.

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The coronavirus disease 2019 (COVID-19) pandemic has placed an extraordinary strain on the US health care system and its workers.<sup>1-4</sup> In the first year of the pandemic, public support for health care workers was strong, meaning and purpose in work were clear, and physicians were likely strongly motivated by codes of professionalism and their personal sense of mission during a crisis.<sup>5,6</sup>

Unknowns about the virus, the lack of an effective vaccine, and fear of exposure to a deadly disease for oneself or one's family led some physicians to temporarily alter living arrangements, staying in hotels or sequestering in remote parts of their homes.<sup>7-9</sup> Physicians in the United States watched as more than 3600 colleagues and coworkers died of the virus in the first 12 months of the pandemic.<sup>10</sup>



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By the end of the pandemic's first year, much had been learned about this new disease, including the effectiveness of measures such as masking to reduce viral transmission<sup>11</sup> and the ineffectiveness of treatments such as ivermectin and hydroxychloroquine,<sup>12</sup> and a highly effective vaccine had become widely available.<sup>13</sup> Hopes were raised that the end was in sight. Yet, despite these positive developments, COVID-19-related hospitalizations surged in late 2021 to levels higher than during the first peak in 2020, once again overwhelming emergency departments, medical inpatient services, intensive care units, and COVID-19-facing outpatient ambulatory care,<sup>14</sup> with more COVID-19-related deaths in 2021 (n=472,698) compared with 2020 (n=351,849).<sup>15</sup> At this point, however, the context was different; the patients needing care were primarily those who had chosen not to be vaccinated,<sup>16,17</sup> potentially adding strain to physicians' ability to empathize with those patients. Despite the widespread availability of an effective vaccine, nearly 40 million adults remained unvaccinated against COVID-19 by the end of 2021, with rates of vaccination tracking closely with political affiliation.<sup>18,19</sup>

The COVID-19 pandemic has been associated with an unprecedented level of politicization of medical care.<sup>20</sup> For example, some elected officials declared COVID-19 a hoax,<sup>21</sup> ridiculed mitigation efforts such as mask wearing,<sup>20</sup> and promoted unproven therapies, such as the administration of hydroxychloroquine.<sup>22</sup> Whether one received a vaccine or wore a mask became, for some, a matter of political identity. Misinformation about COVID-19 was widely circulated in certain media channels,<sup>23,24</sup> resulting in partisan differences in social distancing,<sup>25</sup> interest in unproven or disproven therapies,<sup>22</sup> hesitancy regarding COVID-19 vaccination,<sup>26,27</sup> and increased rates of hospitalization and death.<sup>16</sup> Reports in the lay press highlighted the mistreatment of nurses and physicians by patients and family members influenced by politically motivated misinformation.<sup>28,29</sup>

Work overload and exhaustion among physicians and other health professionals in

the first year of the pandemic have been well-chronicled.<sup>2-4,30-36</sup> We have previously shown that physicians caring for patients with COVID-19 working with insufficient personal protective equipment, experiencing negative economic impact due to the pandemic, and personally having COVID-19 infection had higher rates of burnout compared with physicians without these experiences.<sup>37</sup> Less is known about negative work experiences related to the politicization of health care triggered by the pandemic and the impact of caring for patients with COVID-19 who chose not to be vaccinated, particularly in the setting of long work hours and workforce shortages reducing access to much-needed leave, adding to fatigue.

Given the political polarization of the country around the approach to preventing and treating COVID-19, this study sought to explore the association of pandemic-related work experiences with well-being and attitudes toward unvaccinated patients among a nationally representative sample of physicians in four COVID-19-facing specialty groups: emergency medicine; critical care; noncritical care hospital medicine; and non-hospital-based family medicine, general internal medicine, and pulmonary medicine, hereafter referred to as ambulatory care.

## PARTICIPANTS AND METHODS

We distributed an online cross-sectional survey to 49,674 US physicians practicing in emergency medicine, critical care (defined as pulmonary/critical care, internal medicine, and critical care), noncritical care hospital medicine (defined as family medicine primarily inpatient; internal medicine, primarily inpatient; pulmonary, including inpatient, without critical care), and COVID-19-facing ambulatory specialties (defined as family medicine, primarily outpatient; internal medicine, primarily outpatient; and pulmonary medicine, primarily outpatient), using methods similar to those in our previous cross-sectional surveys.<sup>37-41</sup> Physicians in these specialties were chosen because of their central roles in managing patients with COVID-19-associated illnesses. This

was a nationally representative sample of physicians in these four specialty groups, drawn from the American Medical Association's Physician Masterfile, a nearly complete record of all US physicians. No incentive was provided to participants. Email invitations were initially sent on December 9, 2021, with three reminder emails over the following 7 weeks (the survey closed on January 24, 2022). The University of Illinois (Chicago) institutional review board reviewed the study and deemed it exempt.

Demographic information regarding age, gender, practice setting, hours worked per week, specialty, and number of nights on call per week was collected. The Maslach Burnout Inventory<sup>42</sup> was used under license with Mindgarden, Inc, to measure burnout. Per convention, we considered physicians with a high score on the emotional exhaustion (scores  $\geq 27$  on a 54-point scale) and/or depersonalization scores ( $\geq 10$  on a 30-point scale) as experiencing burnout. The professional fulfillment subscale of the Stanford Professional Fulfillment Index<sup>43</sup> was used to measure professional fulfillment, with scores  $\geq 18$  on a 24-point scale considered to indicate high professional satisfaction.

Negative pandemic-related work experiences were defined by six items: four new items related to added stress due to the politicization of COVID-19, along with items adapted from the literature pertaining to moral distress<sup>44</sup> and having had to compromise one's professional integrity.<sup>45</sup> Items related to politicization included "the politicization of covid-19 has added stress on our practice" and "conversations about covid-19 vaccination are more stressful than about other vaccinations," each with response options of "not at all true," "somewhat true," "moderately true," "very true," and "completely true." Responses for each item were dichotomized with "moderately true," "very true," and "completely true" considered positive for added stress. Moral distress was assessed with "indicate level of moral distress experienced related to work during the most recent COVID surge in your region," with six response options ranging from "none" to "worst possible." Having

had to compromise one's professional integrity was assessed with "due to the impact of COVID-19, I have had to do things at work that compromise my professional integrity" with response options of "not at all," "somewhat," "moderate," and "to a great extent."

Three items were constructed to assess negative pandemic-related workload experiences: working more hours per month than typical because of pandemic-related workload (response options: "yes" or "no"), taking less vacation than planned because of COVID-19 (response options: "yes, because there was no place to go on vacation"; "yes, because there was too much clinical work"; or "no"), and feeling more exhausted caring for patients than earlier in the pandemic (response options: "not at all," "a little," "moderately," "a lot," or "extremely") (Supplemental Table 1, available online at <http://www.mayoclinicproceedings.org>).

Additional items were constructed based on the authors' expertise and experiences to assess the level of distressing, professionally conflicting emotions with unvaccinated COVID-19 patients during the most recent surge of COVID-19 in their region, defined by seven items, four of which were modified from the interpersonal disengagement scale of the Stanford Professional Fulfillment Index<sup>43</sup>: decreased empathy, decreased sensitivity toward patients' feelings, decreased interest in communication, feeling less connected, feeling more resentment, and feeling more anger toward unvaccinated patients, and feeling more compassionate toward vaccinated patients with COVID-19 (response options: "not at all," "a little," "moderately," "a lot," or "extremely"). Those responding moderately or above were considered positive for the item (Supplemental Table 1).

Standard descriptive statistics were reported for physicians' clinical and demographic characteristics and their responses to the survey questions. Survey responses among physician specialties were compared using analysis of variance (for continuous variables) and  $\chi^2$  test (for categorical variables) as appropriate. The Cochran-

Armitage trend test was used to examine the association between negative pandemic-related work experiences and the prevalence of burnout. The scale for professionally conflicting emotions with unvaccinated patients was dichotomized by first scoring each item from 0-4, then taking the average of these seven items and standardizing to a scale of 0-10. Cronbach's alpha, calculated to measure the internal consistency of this scale was 0.87. Those with high professionally conflicting emotions were defined as having scores one standard deviation above the average. Associations of the cumulative number of negative pandemic-related work experiences and negative pandemic-related workload experiences with the likelihood of burnout, professional fulfillment, and professionally conflicting emotions with unvaccinated patients were examined using multivariable logistic regression. Statistical significance was set at two-tailed  $P$  less than .05 for all analyses. All statistical analyses were conducted using R software version 4.1.2 (R Core Team, 2021).

Exploratory factor analysis was performed with the seven items comprising the professionally conflicting emotions with unvaccinated patients, the nine items for emotional exhaustion and the five items for depersonalization. The seven new items in the professionally conflicting emotions scale clustered together and were distinct from either emotional exhaustion or depersonalization, supporting the treatment of all three scales as distinct constructs (*Supplemental Methods and Results*, available online at <http://www.mayoclinicproceedings.org>).

## RESULTS

Of the 49,674 surveys distributed, 1939 were returned undeliverable, and 3417 responses were received (relative risk, 3417 of 47,735; 7.2%). Of the 3417 physicians who completed the survey, 637 (18.6%) did not identify a specialty and the remaining 2780 identified their specialty as emergency medicine (n=1156; 41.6%), critical care (n=515; 18.5%), noncritical care hospitalist (n=374; 13.5%), and ambulatory care (n=735; 26.4%). The median age in our

sample was 48 years (IQR, 41-57 years), 57.1% were male, 41.2% worked in private practice, and 29.6% worked in an academic medical center. Physicians in our sample worked a median of 50 hours per week (IQR, 36-60 hours). Most participating physicians (3313/3384, 97.9%) reported they were vaccinated against COVID-19. Our sample was compared with all practicing US physicians in the same specialties from the American Medical Association Physician Professional Database (previously known as the Masterfile). Survey respondents were more likely to be female (1131/ 2789, 40.6% vs 100,295/268,636, 37.3%) and younger (median age, 48 vs 53 years) (*Table 1*).

The percentage of respondents who reported negative pandemic-related work experiences related to the politicization of medical care, moral distress, and compromised integrity is shown in *Table 2*. Stress related to the politicization of COVID-19, conversations about COVID-19 vaccination, and discussions about non-approved therapies were reported by 91.8% (2737/2981), 89.2% (2660/2981), and 82.8% (2466/2978) of physicians, respectively. Although common in all four specialty groups, these negative pandemic-related work experiences were more common in emergency medicine and critical care than in noncritical care hospitalists and ambulatory physicians.

The percentage of respondents who reported negative pandemic-related workload experiences (eg, worked more hours, inability to take vacation due to COVID-19, and greater exhaustion than earlier in the pandemic) among responders overall and by specialty group is shown in *Table 3*. Working more hours because of COVID-19 was reported by 68.1% (1844/2706) of participating physicians, with 77.4% (1931/2496) taking less vacation and 72.1% (2136/2962) feeling more exhausted caring for COVID-19 patients at the time of the survey compared with earlier in the pandemic. Although experienced in all four specialty groups, working more hours was more common in critical care (370/440, 84.1%) and noncritical care hospital medicine (251/321,

TABLE 1. Demographic Characteristics of Responding Physicians Compared With All US Physicians in Emergency Medicine, Critical Care, Noncritical Care Hospitalist, and Ambulatory Care<sup>a</sup>

Characteristics	All physicians in sample (N=3417) <sup>b</sup>	All US physicians in study specialties <sup>b,c,d,e,f</sup> 2021 (n= 269,053)	Emergency medicine (n=1156)	Critical care <sup>c</sup> (n=515)	Noncritical care hospitalist <sup>d</sup> (n=374)	Ambulatory care <sup>e</sup> (n=735)
Sex						
Male	1593 (57.1)	168,341 (62.7)	709 (61.8)	346 (68.2)	211 (56.9)	311 (42.8)
Female	1131 (40.6)	100,295 (37.3)	409 (35.7)	148 (29.2)	154 (41.5)	403 (55.5)
Nonbinary/third gender	4 (0.1)		2 (0.2)	0 (0.0)	0 (0.0)	1 (0.1)
Genderqueer	2 (0.1)		0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)
Prefer not to say	45 (1.6)		21 (1.8)	10 (2.0)	4 (1.1)	8 (1.1)
Other	14 (0.5)		6 (0.5)	3 (0.6)	1 (0.3)	3 (0.4)
Missing	628	417	9	8	3	9
Transgender						
Yes	7 (0.3)		0 (0.0)	2 (0.4)	4 (1.1)	1 (0.1)
No	2727 (98.4)		1122 (98.5)	491 (97.2)	361 (98.1)	717 (99.2)
Prefer not to say	38 (1.4)		17 (1.5)	12 (2.4)	3 (0.8)	5 (0.7)
Missing	645		17	10	6	12
Age, y						
Median [IQR]	48.00 [41.00-57.00]	53 [43.00-63.00]	46.00 [40.00-54.00]	48.00 [42.00-55.00]	46.00 [38.00-55.00]	54.00 [44.00-61.00]
<35	171 (6.3)	14,511 (5.4)	90 (8.1)	9 (1.8)	41 (11.4)	29 (4.1)
35-44	869 (31.9)	59,667 (22.2)	384 (34.3)	186 (37.5)	125 (34.7)	163 (22.9)
45-54	830 (30.5)	73,444 (27.3)	366 (32.7)	165 (33.3)	94 (26.1)	192 (27.0)
55-64	575 (21.1)	67,109 (25.0)	203 (18.2)	83 (16.7)	65 (18.1)	218 (30.6)
≥65	275 (10.1)	53,952 (20.1)	75 (6.7)	53 (10.7)	35 (9.7)	110 (15.4)
Missing	697	370	38	19	14	23
Time worked per week, h						
Median [IQR]	50.00 [36.00-60.00]		36.00 [30.00-45.00]	60.00 [50.00-75.00]	60.00 [48.00-78.75]	50.00 [40.00-60.00]
<40	767 (27.9)		585 (51.9)	14 (2.8)	18 (4.9)	147 (20.4)
40-49	596 (21.7)		306 (27.1)	53 (10.7)	77 (21.0)	155 (21.5)
50-59	493 (17.9)		118 (10.5)	99 (19.9)	67 (18.3)	205 (28.4)
60-69	469 (17.1)		74 (6.6)	152 (30.6)	78 (21.3)	153 (21.2)
70-79	140 (5.1)		16 (1.4)	57 (11.5)	34 (9.3)	28 (3.9)
≥80	282 (10.3)		29 (2.6)	122 (24.5)	92 (25.1)	33 (4.6)
Missing	670		28	18	8	14
No. nights on call per week						

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TABLE 1. Continued

Characteristics	All physicians in sample (N=3417) <sup>b</sup>	All US physicians in study specialties <sup>b,c,d,e,f</sup> 2021 (n= 269,053)	Emergency medicine (n=1156)	Critical care <sup>c</sup> (n=515)	Noncritical care hospitalist <sup>d</sup> (n=374)	Ambulatory care <sup>e</sup> (n=735)
No. nights on call per week, continued						
Median [IQR]	1.00 [0.00-2.00]		0.00 [0.00-1.00]	2.00 [1.00-3.00]	1.00 [0.00-2.00]	1.00 [0.00-2.00]
Primary practice setting						
Private practice	1148 (41.2)		446 (39.1)	191 (37.7)	125 (33.7)	374 (51.7)
Academic medical center	825 (29.6)		324 (28.4)	230 (45.4)	124 (33.4)	123 (17.0)
Veterans hospital	61 (2.2)		23 (2.0)	11 (2.2)	7 (1.9)	19 (2.6)
Active military practice	22 (0.8)		5 (0.4)	6 (1.2)	5 (1.3)	6 (0.8)
Not in practice or retired	20 (0.7)		8 (0.7)	2 (0.4)	2 (0.5)	8 (1.1)
Other	709 (25.5)		334 (29.3)	67 (13.2)	108 (29.1)	194 (26.8)
Missing	632		16	8	3	11
Vaccinated						
Yes	3313 (97.9)		1130 (98.1)	508 (99.4)	365 (97.9)	707 (96.5)
No	71 (2.1)		22 (1.9)	3 (0.6)	8 (2.1)	26 (3.5)
Missing	33		4	4	1	2

<sup>a</sup>Values shown are n (%) unless otherwise noted.

<sup>b</sup>There were 637 physicians who did not indicate their specialty, of which 15 did not answer any questions.

<sup>c</sup>Critical care: pulmonary/critical care (n=409) and internal medicine critical care (n=106).

<sup>d</sup>Noncritical care: internal medicine-primarily inpatient (n=184); family medicine-primarily inpatient (n=29); and family medicine/internal medicine -both inpatient and outpatient[n=76 and n=61 respectively]; Pulmonary, including inpatient, without critical care medicine (n=24).

<sup>e</sup>Ambulatory care: family medicine-primarily outpatient (n=442); internal medicine-primarily outpatient (n=272), pulmonary-primarily outpatient (n=21).

<sup>f</sup>Source: AMA Masterfile.

**TABLE 2. Negative Pandemic-related Work Experiences due to Politicization of Medical Care, Moral Distress, and Compromised Integrity in the Second Year of the COVID-19 Pandemic<sup>a</sup>**

Experience	All physicians in sample (N=3417)	Emergency medicine (n=1156)	Critical care <sup>b</sup> (n=515)	Noncritical care hospitalist <sup>c</sup> (n=374)	Ambulatory care <sup>d</sup> (n=735)	P <sup>h</sup>
Politization of medical care						
The politicization of COVID-19 has added stress on our practice.						
Not at all true	59 (2.0)	15 (1.3)	11 (2.1)	8 (2.1)	17 (2.3)	
Somewhat true	185 (6.2)	44 (3.8)	33 (6.4)	24 (6.4)	68 (9.3)	
Moderately true	200 (6.7)	59 (5.1)	31 (6.0)	27 (7.2)	69 (9.4)	
Very true	562 (18.9)	183 (15.9)	100 (19.5)	65 (17.4)	165 (22.5)	
Completely true	1975 (66.3)	852 (73.9)	339 (66.0)	250 (66.8)	415 (56.5)	
Overall stress due to politicization of COVID-19 <sup>e</sup>	2737 (91.8)	1094 (94.9)	470 (91.4)	342 (91.4)	649 (88.4)	<.001
Missing, n	436	3	1	0	1	
Conversations about COVID-19 vaccination are more stressful than conversations about other vaccinations						
Not at all true	111 (3.7)	44 (3.8)	21 (4.1)	11 (2.9)	20 (2.7)	
Somewhat true	210 (7.0)	69 (6.0)	34 (6.6)	28 (7.5)	62 (8.4)	
Moderately true	254 (8.5)	80 (6.9)	39 (7.6)	35 (9.4)	86 (11.7)	
Very true	632 (21.2)	200 (17.3)	109 (21.2)	81 (21.7)	201 (27.3)	
Completely true	1774 (59.5)	760 (65.9)	310 (60.4)	219 (58.6)	366 (49.8)	
Overall perception of conversations about COVID vaccinations are moderately or more stressful than conversations about other vaccines <sup>e</sup>	2660 (89.2)	1040 (90.2)	458 (89.3)	335 (89.6)	653 (88.8)	.81
Missing, n	436	3	2	0	0	
Conversations about non-approved COVID therapies are more stressful than similar conversations for other conditions						
Not at all true	197 (6.6)	80 (6.9)	17 (3.3)	22 (5.9)	65 (8.9)	
Somewhat true	315 (10.6)	119 (10.3)	43 (8.4)	37 (9.9)	96 (13.1)	
Moderately true	392 (13.2)	144 (12.5)	46 (9.0)	57 (15.2)	113 (15.4)	
Very true	650 (21.8)	231 (20.0)	118 (23.0)	72 (19.3)	175 (23.9)	
Completely true	1424 (47.8)	579 (50.2)	289 (56.3)	186 (49.7)	284 (38.7)	
Overall perception of conversations about non-approved COVID therapies are more stressful than similar conversations for other conditions <sup>e</sup>	2466 (82.8)	954 (82.7)	453 (88.3)	315 (84.2)	572 (78.0)	<.001
Missing	439	3	2	0	2	
Patient resistance to mask wearing is stressful for our practice						
Not at all true	465 (15.6)	140 (12.1)	80 (15.6)	56 (15.0)	141 (19.2)	
Somewhat true	587 (19.7)	175 (15.2)	89 (17.4)	83 (22.2)	203 (27.7)	

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TABLE 2. Continued

Experience	All physicians in sample (N=3417)	Emergency medicine (n=1156)	Critical care <sup>b</sup> (n=515)	Noncritical care hospitalist <sup>c</sup> (n=374)	Ambulatory care <sup>d</sup> (n=735)	P <sup>h</sup>
Moderately true	403 (13.5)	146 (12.7)	72 (14.1)	47 (12.6)	114 (15.6)	
Very true	487 (16.4)	195 (16.9)	89 (17.4)	60 (16.0)	110 (15.0)	
Completely true	1036 (34.8)	497 (43.1)	182 (35.5)	128 (34.2)	165 (22.5)	
Overall perception that patient resistance to mask wearing is stressful <sup>e</sup>	1926 (64.7)	838 (72.7)	343 (67.0)	235 (62.8)	389 (53.1)	<.001
Missing, n	439	3	3	0	2	
Moral distress and compromised integrity						
Indicate level of moral distress experienced related to work during the most recent COVID- 19 surge in your region						
None	280 (9.7)	103 (8.9)	36 (7.0)	35 (9.4)	93 (12.7)	
Mild	471 (16.3)	172 (14.9)	73 (14.2)	57 (15.3)	150 (20.5)	
Uncomfortable	616 (21.3)	233 (20.2)	100 (19.5)	80 (21.4)	177 (24.1)	
Distressing	810 (28.0)	307 (26.6)	146 (28.4)	118 (31.6)	203 (27.7)	
Intense	557 (19.3)	257 (22.3)	121 (23.5)	65 (17.4)	95 (13.0)	
Worst possible	155 (5.4)	81 (7.0)	38 (7.4)	18 (4.8)	15 (2.0)	
Overall moral distress <sup>f</sup>	1522 (52.7)	645 (55.9)	305 (59.3)	201 (53.9)	313 (42.7)	<.001
Missing, n	528	3	1	1	2	
Due to the impact of COVID-19, I have had to do things at work that compromise my professional integrity						
Not at all	1489 (50.0)	460 (40.0)	279 (54.6)	194 (51.9)	445 (60.6)	
Somewhat	927 (31.1)	389 (33.8)	144 (28.2)	130 (34.8)	208 (28.3)	
Moderately	341 (11.5)	169 (14.7)	54 (10.6)	35 (9.4)	59 (8.0)	
To a great extent	220 (7.4)	133 (11.6)	34 (6.7)	15 (4.0)	22 (3.0)	
Overall compromised integrity <sup>g</sup>	561 (18.8)	302 (26.2)	88 (17.2)	50 (13.4)	81 (11.0)	<.001
Missing, n	440	5	4	0	1	

<sup>a</sup>Values shown are n (%) unless otherwise noted.<sup>b</sup>Critical Care: Pulmonary/critical care and internal medicine critical care.<sup>c</sup>Noncritical care hospitalist: internal medicine—primarily inpatient; family medicine—primarily inpatient; family medicine/internal medicine — both inpatient and outpatient; Pulmonary, including inpatient, without critical care medicine.<sup>d</sup>Ambulatory care: family medicine — primarily outpatient; internal medicine—primarily outpatient, pulmonary —primarily outpatient.<sup>e</sup>Aggregate n (%) of those indicating "moderately true," "very true," or "completely true."<sup>f</sup>Aggregate n (%) of those indicating "distressing," "intense," or "worst possible."<sup>g</sup>Aggregate n (%) of those indicating "moderately" or "too a great extent."<sup>h</sup>P values are from  $\chi^2$  test to examine if there are difference in distributions of responses across specialties; "all physicians" column was excluded from the comparison.

78.2%) than in ambulatory care (399/603, 66.2%) and emergency medicine (624/1002, 62.3%) ( $P<.001$ ).

The percentage of respondents who reported professionally conflicting emotional experiences with unvaccinated patients is shown in Table 4. In aggregate, 56.2% (1660/2956) of physicians reported moderate or higher decreased empathy, 48.5%

(1432/2950) greater resentment, and 43.6% (1287/2950) greater anger toward unvaccinated patients relative to vaccinated patients. Although common in all four specialty groups, professionally conflicting emotional experiences were more prevalent in emergency medicine and critical care than in noncritical care hospitalists and ambulatory physicians.

TABLE 3. Negative Pandemic-related Workload Experiences in the Second Year of the COVID-19 Pandemic<sup>a</sup>

Experiences	All physicians in sample (N=3417)	Emergency medicine (n=1156)	Critical care <sup>b</sup> (n=515)	Noncritical care hospitalist <sup>c</sup> (n=374)	Ambulatory care <sup>d</sup> (n=735)	P <sup>f</sup>
Have you worked more hours/month than typical because of COVID related workload						
Yes	1844 (68.1)	624 (62.3)	370 (84.1)	251 (78.2)	399 (66.2)	<.001
No	862 (31.9)	378 (37.7)	70 (15.9)	70 (21.8)	204 (33.8)	
Missing, n	711	154	75	53	132	
Taken less vacation than planned because of COVID-19						
Yes, because there was no place to go on vacation	933 (37.4)	421 (45.2)	99 (24.5)	100 (32.8)	190 (34.3)	<.001
Yes, because there was too much clinical work	998 (40.0)	307 (33.0)	235 (58.2)	134 (43.9)	217 (39.2)	
No	565 (22.6)	203 (21.8)	70 (17.3)	71 (23.3)	147 (26.5)	
Missing, n	921	225	111	69	181	
I have found myself feeling more exhausted caring for patients with COVID-19 than earlier in the pandemic						
Not at all	347 (11.7)	104 (9.0)	42 (8.2)	44 (11.8)	128 (17.6)	
A little	478 (16.1)	142 (12.3)	63 (12.2)	64 (17.1)	176 (24.1)	
Moderately	669 (22.6)	220 (19.1)	114 (22.1)	86 (23.0)	198 (27.2)	
A lot	709 (23.9)	304 (26.4)	142 (27.6)	93 (24.9)	134 (18.4)	
Extremely	758 (25.6)	383 (33.2)	154 (29.9)	87 (23.3)	93 (12.8)	
Overall more exhausted <sup>e</sup>	2136 (72.1)	907 (78.7)	410 (79.6)	266 (71.1)	425 (58.3)	<.001
Missing, n	456	3	0	0	6	

<sup>a</sup>Values are n (%) unless otherwise noted.<sup>b</sup>Critical care: pulmonary/critical care and internal medicine critical care.<sup>c</sup>Noncritical care hospitalist: internal medicine-primarily inpatient; family medicine-primarily inpatient; family medicine/internal medicine — both inpatient and outpatient; pulmonary, including inpatient, without critical care medicine.<sup>d</sup>Ambulatory care: family medicine-primarily outpatient; internal medicine-primarily outpatient, pulmonary-primarily outpatient.<sup>e</sup>Aggregate n (%) of those indicating "moderately," "a lot," or "extremely."<sup>f</sup>P values are from  $\chi^2$  test to examine if there are difference in distributions of responses across specialties; "all physicians" column was excluded from the comparison.

Symptoms of burnout were reported by most physicians in our sample (72.1%; 2193/3040) and were more common in emergency medicine (80.1%; 923/1152) than in critical care (70.2%; 360/513), noncritical care hospitalists (67.6%; 252/373), and ambulatory care (64.0% 469/733) ( $P<.001$ ). Few physicians reported high levels of professional fulfillment (17.3% 518/3002), including only 12.6% (145/1151) of emergency medicine physicians, 20.0% (103/514) of critical care, 20.4% (150/734) of ambulatory care, and 21.0% of noncritical hospitalists ( $P<.001$ ). (Supplemental Table 2, available online at <http://www.mayoclinicproceedings.org>)

We next explored the association of negative pandemic-related work experiences, including the politicization of medical care (Figure A), moral distress (Figure B), and compromised integrity (Figure C), with burnout and professional fulfillment (Supplemental Figure 1). Burnout was greater as the extent of each of these negative work experiences increased. For example, when asked if the politicization of COVID-19 had added stress to their practice, slightly more than 40% of physicians who indicated "not at all" experienced burnout compared with nearly 80% of physicians who indicated that the statement was "completely true." Similarly, less than 50% of physicians who

**TABLE 4. Professionally Conflicting Emotions (eg, Less Empathy and Compassion, More Anger, Frustration and Resentment) in the Second Year of the COVID-19 Pandemic<sup>a</sup>**

	All physicians in sample (N=3417)	Emergency medicine (n=1156)	Critical care <sup>b</sup> (n=515)	Noncritical care hospitalist <sup>c</sup> (n=374)	Ambulatory care <sup>d</sup> (n=735)	P <sup>f</sup>
When my patients are unvaccinated, I feel...						
Less empathy for them						
Not at all	543 (18.4)	161 (14.0)	87 (17.0)	71 (19.0)	187 (25.5)	
A little	753 (25.5)	232 (20.2)	135 (26.3)	115 (30.8)	222 (30.3)	
Moderately	606 (20.5)	239 (20.8)	95 (18.5)	79 (21.2)	152 (20.8)	
A lot	567 (19.2)	255 (22.2)	112 (21.8)	63 (16.9)	101 (13.8)	
Extremely	487 (16.5)	264 (22.9)	84 (16.4)	45 (12.1)	70 (9.6)	
Overall decreased empathy <sup>e</sup>	1660 (56.2)	758 (65.9)	291 (56.7)	187 (50.2)	323 (44.2)	<.001
Missing, n	461	5	2	1	3	
Less sensitivity to their feelings						
Not at all	802 (27.2)	246 (21.4)	135 (26.4)	116 (31.1)	252 (34.6)	
A little	787 (26.7)	268 (23.3)	136 (26.6)	105 (28.2)	230 (31.6)	
Moderately	563 (19.1)	228 (19.8)	98 (19.1)	70 (18.8)	128 (17.6)	
A lot	430 (14.6)	211 (18.3)	74 (14.5)	49 (13.1)	68 (9.3)	
Extremely	368 (12.5)	198 (17.2)	69 (13.5)	33 (8.8)	51 (7.0)	
Overall decreased sensitivity <sup>e</sup>	1361 (46.1)	637 (55.3)	241 (47.1)	152 (40.8)	247 (33.9)	<.001
Missing, n	467	5	3	1	6	
Less interested in communicating with them						
Not at all	1061 (35.9)	352 (30.6)	186 (36.4)	148 (39.8)	298 (40.7)	
A little	720 (24.4)	246 (21.4)	122 (23.9)	102 (27.4)	209 (28.6)	
Moderately	489 (16.6)	212 (18.4)	81 (15.9)	60 (16.1)	102 (13.9)	
A lot	349 (11.8)	163 (14.1)	56 (11.0)	34 (9.1)	75 (10.2)	
Extremely	333 (11.3)	179 (15.5)	66 (12.9)	28 (7.5)	48 (6.6)	
Overall decreased interest in communication <sup>e</sup>	1171 (39.7)	554 (48.1)	203 (39.7)	122 (32.8)	225 (30.7)	<.001
Missing, n	465	4	4	2	3	
Less connected with them						
Not at all	763 (25.8)	250 (21.7)	135 (26.3)	100 (26.8)	225 (30.7)	
A little	708 (24.0)	218 (19.0)	118 (23.0)	113 (30.3)	212 (29.0)	
Moderately	553 (18.7)	223 (19.4)	99 (19.3)	69 (18.5)	130 (17.8)	
A lot	491 (16.6)	228 (19.8)	79 (15.4)	53 (14.2)	97 (13.3)	
Extremely	440 (14.9)	231 (20.1)	82 (16.0)	38 (10.2)	68 (9.3)	
Overall decreased interest connection <sup>e</sup>	1484 (50.2)	682 (59.3)	260 (50.7)	160 (42.9)	295 (40.3)	<.001
Missing, n	462	6	2	1	3	
More resentful of them						
Not at all	770 (26.1)	234 (20.4)	122 (23.9)	119 (31.9)	238 (32.6)	
A little	748 (25.4)	261 (22.7)	134 (26.2)	98 (26.3)	199 (27.2)	
Moderately	507 (17.2)	198 (17.2)	84 (16.4)	70 (18.8)	129 (17.6)	
A lot	443 (15.0)	207 (18.0)	80 (15.7)	42 (11.3)	89 (12.2)	
Extremely	482 (16.3)	249 (21.7)	91 (17.8)	44 (11.8)	76 (10.4)	
Overall more resentful <sup>e</sup>	1432 (48.5)	654 (56.9)	255 (49.9)	156 (41.8)	294 (40.2)	<.001
Missing, n	467	7	4	1	4	
More angry with them						
Not at all	854 (28.9)	274 (23.8)	133 (26.0)	121 (32.5)	257 (35.1)	
A little	809 (27.4)	278 (24.2)	149 (29.2)	113 (30.4)	216 (29.5)	
Moderately	492 (16.7)	214 (18.6)	78 (15.3)	54 (14.5)	119 (16.3)	
A lot	395 (13.4)	174 (15.1)	76 (14.9)	47 (12.6)	78 (10.7)	
Extremely	400 (13.6)	209 (18.2)	75 (14.7)	37 (9.9)	62 (8.5)	
Overall more angry	1287 (43.6)	597 (52.0)	229 (44.8)	138 (37.1)	259 (35.4)	<.001
Missing, n	467	7	4	2	3	

Continued on next page

TABLE 4. Continued

	All physicians in sample (N=3417)	Emergency medicine (n=1156)	Critical care <sup>b</sup> (n=515)	Noncritical care hospitalist <sup>c</sup> (n=374)	Ambulatory care <sup>d</sup> (n=735)	P <sup>f</sup>
When my patients are unvaccinated, I feel..., continued						
I have felt more compassionate toward						
vaccinated patients with COVID-19 than						
unvaccinated patients with COVID-19						
Not at all	478 (18.8)	159 (15.5)	74 (16.6)	71 (21.8)	135 (22.4)	
A little	475 (18.7)	152 (14.8)	87 (19.6)	74 (22.8)	137 (22.8)	
Moderately	485 (19.1)	184 (17.9)	87 (19.6)	59 (18.2)	130 (21.6)	
A lot	551 (21.7)	250 (24.4)	107 (24.0)	54 (16.6)	114 (18.9)	
Extremely	549 (21.6)	281 (27.4)	90 (20.2)	67 (20.6)	86 (14.3)	
Overall more compassionate toward	1585 (62.5)	715 (69.7)	284 (63.8)	180 (55.4)	330 (54.8)	<.001
Missing, n	879	130	70	49	133	

<sup>a</sup>Values are n (%) unless otherwise noted.

<sup>b</sup>Critical care: pulmonary/critical care and internal medicine critical care.

<sup>c</sup>Noncritical care hospitalist: internal medicine — primarily inpatient; family medicine — primarily inpatient; family medicine/internal medicine — both inpatient and outpatient; pulmonary, including inpatient, without critical care medicine.

<sup>d</sup>Ambulatory care: family medicine — primarily outpatient; internal medicine — primarily outpatient, pulmonary — primarily outpatient.

<sup>e</sup>Aggregate n (%) of those indicating "moderately," "a lot," or "extremely."

<sup>f</sup>P values are from  $\chi^2$  test to examine if there are difference in distributions of responses across specialties; "all physicians" column was excluded from the comparison.

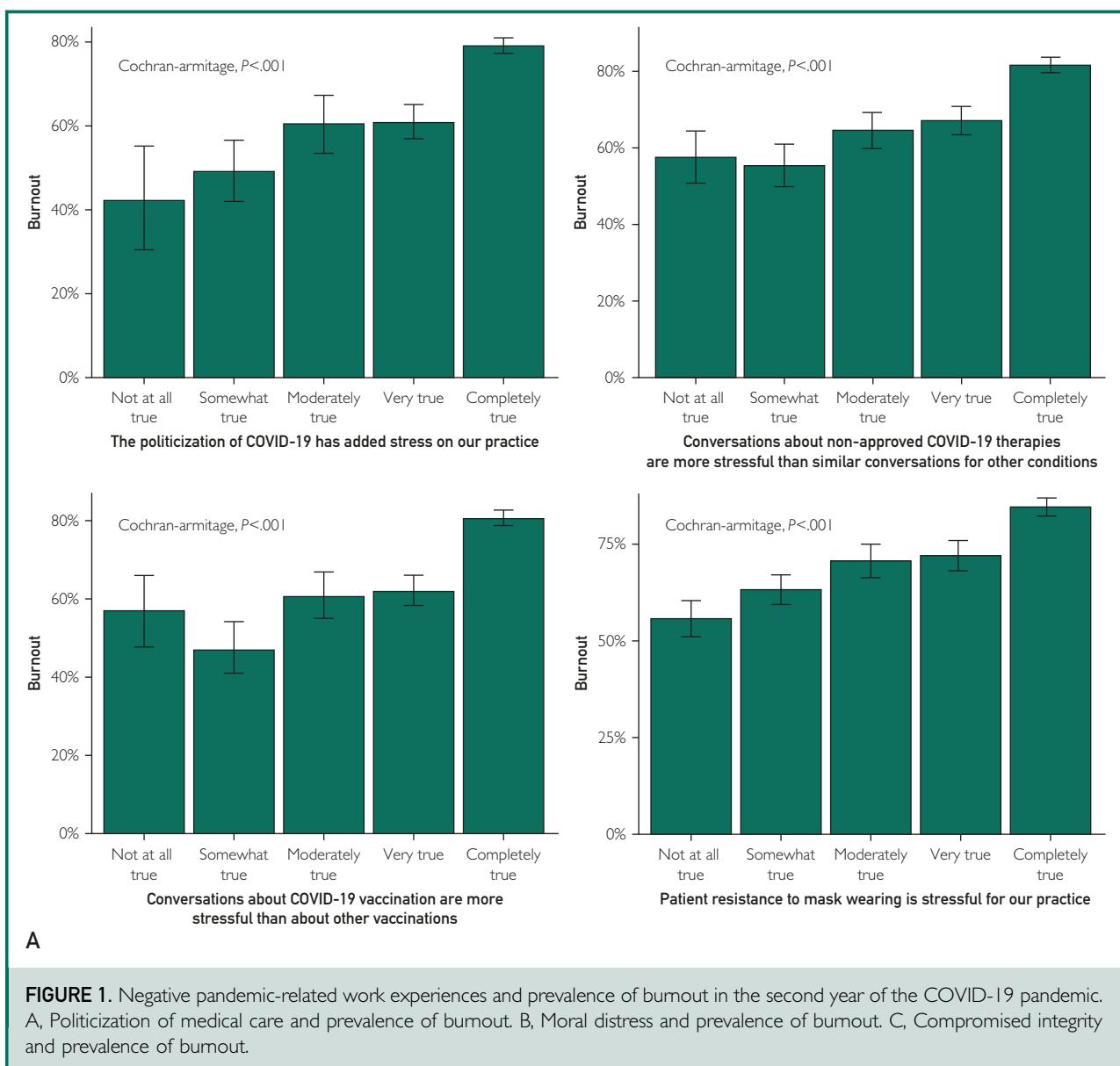
indicated "none" for moral distress experienced burnout, whereas greater than 90% who indicated that they had experienced the "worst possible" level of moral distress also experienced burnout. The association between negative pandemic-related work experiences and prevalence of professionally conflicting emotions in the second year of the COVID-19 pandemic are shown in **Supplemental Figure 2** (available online at <http://www.mayoclinicproceedings.org>).

We next conducted a multivariable analysis to identify the associations of the items in the negative work experiences and increased workload due to COVID-19 scales with burnout after controlling for age, gender, practice setting, hours worked per week, specialty, and number of nights on call per week. In this analysis, compromised integrity was associated with higher odds of burnout (odds ratio [OR], 3.64; 95% CI, 2.31 to 5.98), as was moral distress (OR, 2.82; 95% CI, 2.16 to 3.68), feeling more exhausted taking care of patients with COVID-19 than earlier in the pandemic (OR, 3.46; 95% CI, 2.63 to 4.54), and taking less vacation (OR, 1.44; 95% CI, 1.08 to

1.91). Other explanatory variables, including conversations about vaccines and unapproved COVID-19 therapies and mask wearing, were not independently associated with burnout (**Supplemental Table 3**, available online at <http://www.mayoclinicproceedings.org>).

On multivariable analysis including the same variables to identify factors associated with professional fulfillment, compromised integrity was associated with lower odds of professional fulfillment (OR, 0.41; 95% CI, 0.25 to 0.65), as was moral distress (OR, 0.57; 95% CI, 0.43 to 0.77), and feeling more exhausted taking care of patients with COVID-19 than earlier in the pandemic (OR, 0.39; 95% CI, 0.29 to 0.53) (**Supplemental Table 4**, available online at <http://www.mayoclinicproceedings.org>).

A final multivariable analysis including the same factors was conducted to identify the association between negative work experiences and increased workload due to COVID-19 and experiencing professionally conflicting emotions. Compromised integrity was associated with higher odds of professionally conflicting emotions (OR,



2.04; 95% CI, 1.54 to 2.7), as was moral distress (OR, 1.86; 95% CI, 1.41 to 2.48), and feeling more exhausted taking care of patients with COVID-19 than earlier in the pandemic (OR, 2.19; 95% CI, 1.40 to 3.27). Stressful conversations about non-approved COVID-19 therapies (OR, 1.74; 95% CI, 1.08 to 2.89) and stress related to patient resistance to mask wearing (OR, 1.84; 95% CI, 1.35 to 2.55) were also associated with higher odds of reporting professionally

conflicting emotions (Supplemental Table 5, available online at <http://www.mayoclinicproceedings.org>).

## DISCUSSION

We report here the results of a large study to understand the stressors among US physicians toward the end of the second year of the pandemic. Notably, 9 of 10 physicians reported that politicization had added stress to their practice, including with respect to

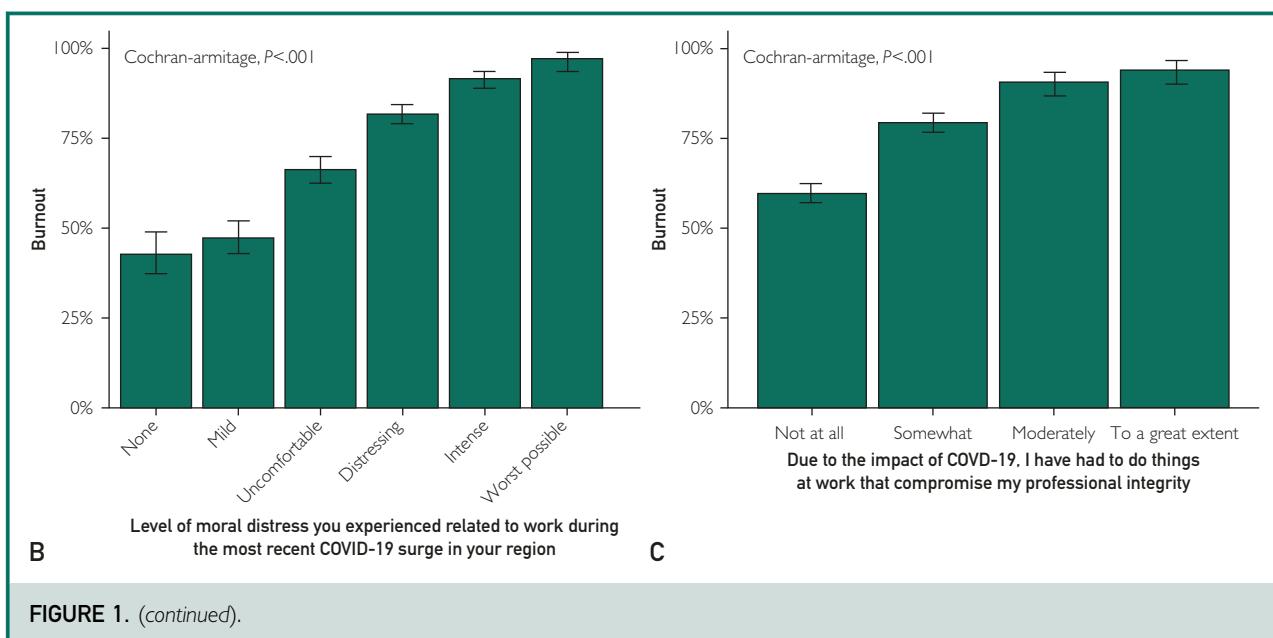


FIGURE 1. (continued).

conversations about vaccines and ineffective therapies for COVID-19. More than two-thirds of physicians reported working longer hours, taking less time off, and feeling greater exhaustion providing care of COVID-19 patients than earlier in the pandemic.

Nearly three-quarters of the physicians in our study population, who practiced in specialties that were among the most impacted by the pandemic, experienced symptoms of burnout. Experiencing moral distress or compromised integrity was associated with higher rates of burnout and lower professional fulfillment in multivariable analysis controlling for other personal and professional factors. Taking less vacation due to COVID-19 was also associated with higher odds of burnout in this analysis. The high level of burnout reported here and in our earlier study of physicians across all specialties<sup>41</sup> is a critical threat to the US health care delivery system given the well-established association between burnout and reductions in clinical work effort,<sup>46</sup> turnover,<sup>47,48</sup> patient experience,<sup>47,49</sup> and quality of care.<sup>50,51</sup>

Politicization of medical care (eg, stressful conversations about non-approved COVID-19 therapies and patient resistance

to mask wearing), moral distress, compromised integrity, and feeling more exhausted caring for COVID-19 patients as the pandemic wore on were also associated with more professionally conflicting emotions (eg, less empathy and compassion; more anger, frustration, and resentment).

To our knowledge, this is the first study to examine distressing, professionally conflicting experiences of anger, resentment, and reduced compassion and empathy among physicians during the COVID-19 pandemic. It is important to emphasize that this study assessed conflicting professional feelings experienced by physicians during the most recent surge of COVID-19 in their region; our study did not assess what physicians did when experiencing these feelings.

We believe that physicians strive to treat patients in ways consistent with their professional values, even when distressed. Physicians are trained to care for patients without judgment for choices made that may have contributed to personal illnesses. In the case of the COVID-19 pandemic, these choices may have led to the sickness or death of other patients, coworkers, or physicians and added to clinical overwhelm within the health system. Accordingly, conflicting feelings and moral distress might be

considered normal human reactions in health care workers in response to preventable sources of work overload, stress, sickness, and death resulting from the choice of some individuals not to be vaccinated.

How can the medical community respond to these results? Individual physicians may benefit by recognizing and normalizing the distressing, professionally conflicting emotions they may naturally experience after the intrusion of caustic political dynamics into their medical practice. Explanation and normalization of these feelings will help physicians cultivate the awareness that enables consistent, professionally congruent behavior, even when experiencing conflicting emotions. Educators may benefit from our findings by helping developing physicians understand that political factors can influence their feelings, with the goal of using that understanding to create space for an intentional, professionally practiced response rather than an automatic and unintended reaction.

Our study is subject to several limitations. The study was cross-sectional, so inferences regarding causality and potential direction of effect cannot be made. Given the low response rate, our data could be subject to response bias. It is unknown whether physicians who experience more politicization of medical care in discussions with their patients, who experience higher pandemic-related workloads, or who experience more professionally conflicting emotions with unvaccinated patients are more or less likely to participate in a survey assessing these dimensions. Previous studies using a similar methodology and which incorporated secondary surveys of nonresponders and other approaches to evaluate response bias have found that participating physicians are typically similar to both the overall sample and the US physician workforce with respect to their degree of burnout and demographic characteristics.<sup>37,38</sup> Several of the instruments for negative pandemic-related work experiences and professionally conflicting emotions were constructed for this study and have not been independently validated. The integrity, moral distress, and politicization items were dichotomized for the

multivariable analysis and this categorization of responses may result in some nuances within the associations being missed. Finally, the questions about workload (taking less vacation or working more hours) were framed in the negative and may have biased responses compared with framing in the positive.

## CONCLUSION

The COVID-19 pandemic has been a great challenge that taxed the health care system to its limits. Physicians have faced levels of death among their patients and colleagues, health risks to themselves and their families, overwork, rejection of medical science, and the incursion of political identity into health care decisions to degrees previously unseen in most of their careers. At the close of the second year of the pandemic, a picture emerged of a physician workforce on the brink. The politicization of medical care is associated with professionally conflicting emotions, including erosion of empathy and compassion, along with higher rates of frustration and resentment. In parallel, moral distress and work overload are associated with lower rates of professional fulfillment and higher rates of occupational burnout. These findings should motivate a broader discussion of the politicization of medicine and the emotional burden it places on physicians as they strive to treat all of their patients with compassion and empathy.

## POTENTIAL COMPETING INTERESTS

The authors report no potential competing interests.

## SUPPLEMENTAL ONLINE MATERIAL

Supplemental material can be found online at <http://www.mayoclinicproceedings.org>. Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

**Abbreviations and Acronyms:** OR, odds ratio; MBI, Maslach Burnout Inventory

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