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# Satisfaction, Stress, and Turnover: Comparing U.S. Intensivist Physicians Before and During the Severe Acute Respiratory Syndrome Coronavirus 2 Pandemic

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**OBJECTIVES:** To evaluate changes in work satisfaction, work-life balance (WLB) satisfaction, stress, and turnover intention among U.S. critical care physicians during the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic of 2021–2022 compared with prepandemic levels in 2016.

**DESIGN:** A cross-sectional electronic survey.

**SETTING:** Critical care practices in the United States.

**SUBJECTS:** U.S. physician members of the Society for Critical Care Medicine.

**MEASUREMENTS AND MAIN RESULTS:** A total of 1,148 intensivists completed online surveys administered in two waves: in 2016 (693 respondents) and in the late 2021 to early 2022 (455 respondents). They reported demographic and practice characteristics, self-perceived levels of satisfaction, stress, health, and intention to leave their current job. U.S.-based critical care physicians in 2022 report significantly lower levels of job satisfaction compared with 2016. Frequency of work stress and turnover intention also increased, whereas WLB satisfaction has remained the same. Nearly two-thirds of intensivists wish they could work fewer hours, and this discontentment is correlated with decreased satisfaction, increased stress, and increased turnover, particularly in pandemic respondents. More than 25% of physicians rated their mental health as poor or fair, and 20% rated their physical health as poor or fair; these self-ratings correlated with decreased satisfaction and increased stress and turnover intention.

**CONCLUSIONS:** The SARS-CoV-2 pandemic has further burdened an already-strained critical care workforce. During the pandemic, job satisfaction fell, work stress became more frequent, and turnover intention increased for critical care physicians. They also have consistently low rates of WLB satisfaction. Work hours matter the most for physician satisfaction, stress, and turnover intention, and the desire to work fewer hours is negatively related to all outcomes. Many critical care physicians reported poor mental and physical health during the pandemic, which is strongly and negatively related to all outcomes. These results emphasize the importance of prioritizing the working preferences and the self-care of intensivist physicians.

**KEY WORDS:** administration; burnout; pandemic; satisfaction; stress; turnover; workforce

Even before the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, demands placed on intensivists led to great concern over high rates of burnout syndrome in the critical care workforce. Prepandemic studies found that almost half of critical care physicians exhibit

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DOI: 10.1097/CCE.0000000000000883



## KEY POINTS

**Question:** How has the SARS-CoV-2 pandemic changed work and work/life balance satisfaction, work stress, and turnover intention for U.S. critical care physicians?

**Findings:** This two-wave online survey (2016 and 2022) of critical care physicians finds a sharp drop in work satisfaction, greater work stress, and increased turnover intention compared with pre-pandemic levels. Negative outcomes are correlated with high work hours and poor mental and physical health.

**Meaning:** Many pandemic-era physicians experience poor mental and physical health, stress, and work dissatisfaction, but those satisfied with their work hours are more satisfied with work and work/life balance, less stressed, and less likely to leave their jobs.

high levels of burnout (1–3). Yet some studies of intensivists have also found high job satisfaction (4, 5). In 2016, we investigated this seeming contradiction using alternate ways of assessing intensivists' satisfaction or discontent with their jobs. We evaluated four areas and the work and personal factors that influenced them: 1) satisfaction with work, 2) satisfaction with work/life balance (WLB), 3) frequency of stress at work, and 4) turnover intention.

The pandemic only increased the demands upon critical care providers, and understanding how these factors influenced their satisfaction, stress, and turnover intention became even more important. In addition, new emphasis has been placed on the mental and physical health of the healthcare workforce. We sought to understand a more current picture of the well-being of intensivists and assess changes to it wrought by the recent pandemic. A second wave of our survey, updated to assess new sources of pandemic-related stress and measures of health, was distributed to the Society of Critical Care Medicine (SCCM) members 5 years later in the late 2021 to early 2022. By comparing responses drawn from the same target population at these two times, we can assess how living and working through the recent pandemic has affected the U.S. physician intensivist workforce.

## MATERIALS AND METHODS

### Design, Setting, and Participants

A web-based, cross-sectional survey of all U.S.-based physician members in the database of the SCCM was conducted. Members received survey invitation e-mails on June 9, 2016, and June 23, 2016; the survey was closed for data collection on October 31, 2016. This study was reviewed and deemed exempt by the Institutional Review Board of The Mount Sinai Hospital (protocol HS#14-00829). A second, updated survey was also sent to all U.S.-based members in the database of the SCCM on November 9, 2021, January 5, 2022, and January 18, 2022; the survey was closed for data collection on February 20, 2022. The second study was reviewed and deemed exempt by the Institutional Review Board of Columbia University Vagelos College of Physicians and Surgeons (protocol AAAQ6797). The procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975. The Qualtrics platform (Qualtrics, Provo, Utah) administered both surveys.

### Instrument Development

We developed the survey instruments via: 1) content prioritization by a project advisory committee at The Mount Sinai Hospital, 2) literature review to identify related, existing questions (6–8), 3) interviews and pilot survey data, and 4) edits from SCCM survey reviewers and a survey design expert. The 2021 survey was slightly modified to remove the least helpful questions (questions 3, 6, 8, 14A, and 22) and incorporate health pandemic-related queries and refined demographic questions suggested by reviewers (questions 1, 9, 11, 14, and 25); all other questions were consistent in phrasing and scoring.

### Dependent Variables

Four dependent variables were adapted from other physician surveys (6–8). To assess work and WLB satisfaction, respondents were asked to rate their overall satisfaction with work and WLB. To assess work stress, respondents were asked how often they feel stressed in a typical week. To assess their intention to leave their current position, respondents

were asked the likelihood they would look for another job within the year. Each dependent variable was assessed on a 4- or 5-point Likert or modified-Likert-scaled item.

## Independent Variables

We examined several personal and job characteristics regarding satisfaction, stress, and turnover intention. Demographic data included gender, marital status, parenthood, generation (9, 10), and career stage, which can affect WLB expectations and satisfaction (11, 12). Job characteristic questions included average weekly work hours, annual income, and types of ICU and hospital system.

In 2021, we additionally asked respondents to self-report their mental and physical health, on a 5-point Likert scale.

## Data Analysis

We used bivariate statistics to examine correlations between participant and work characteristics with our four main outcome variables: 1) work satisfaction, 2) WLB satisfaction, 3) frequency of work stress, and 4) likelihood of seeking a new job. In **Tables 1–4** below, we dichotomized the responses to Likert-scaled dependent variables for clarity in interpretation. Chi-square tests were used to assess relationships between categorical variables and these dichotomized dependent variables, employing the Bonferroni correction to reduce the likelihood of Type I errors. *p* values in Tables 1 and 2 were considered significant at adjusted alpha levels of 0.01 or 0.013, respectively. Missing values were not imputed.

## RESULTS

We received 755 responses (7.6% of an estimated U.S.-based SCCM physician population), of which 693 were complete in 2016. We received 455 (7.0% of opened emails) completed responses from physicians in 2022.

### Demographic Characteristics

Among our respondents, 64.2% were men in 2016 and 53.6% in 2022; similar proportions were married (81.4% vs 82.3%) and had minor children (50.8% vs 53.4%) (**Table 1**). Respondents' ages ranged from 29 to 77, and the average age of respondents in each

survey was 49–50. They were mainly Baby Boomers (40.0%) in the 2016 survey and mainly Generation Xers (49.3%) by the 2022 survey.

Professionally, over half reported an annual income between \$200,000 and \$400,000 in both waves (Table 2). Nearly half (48.6%) of intensivists reported more than 60 hours on an average week in 2016, and this dropped to 38.2% of intensivists by 2022. Most respondents continued to work in academic environments (63.9% in wave 1; 58.9% in wave 2) and spent most of their time (>75%) practicing critical care medicine (45.7% in 2016; 51.7% in 2022).

### Bivariate Analyses

All four outcome variables were significantly correlated with each other: satisfaction with work and WLB were positively correlated (0.49) and negatively correlated with frequency of work stress (−0.49 and −0.53) and the intention to leave one's job (−0.50 and −0.39).

### Overall Work Satisfaction

Physicians' satisfaction with their work has sharply fallen during the pandemic, from 81.8% in 2016 to 64% of respondents by 2022 ( $p < 0.001$ ; Table 1). Prepandemic, Baby Boomers and parents reported higher work satisfaction, but by 2022, these demographic differences disappeared. No other work or demographic characteristics—including gender or income—have a significant relationship with work satisfaction (Table 2).

Most physicians wanted to work fewer hours (62.2% in wave 1; 62.4% in wave 2). Respondents who wanted to work fewer hours per week (Table 3) were significantly less likely to be satisfied with their work (74.1% in wave 1; 55.1% in wave 2) than physicians who wanted to work the same or more hours (93.5% in wave 1; 78.4% in wave 2).

Work satisfaction correlated with mental and physical health during the pandemic (Table 4). Over one-quarter of intensivists in 2022 indicated they have poor or fair mental health (27.8%), and one-fifth (20.8%) reported poor or fair physical health. Those who rated their mental health favorably were more likely to be satisfied with work (74.4%) than those who rated their mental health poorly (37.3%;  $p < 0.001$ ). Similarly, intensivists scoring good or excellent physical health were more satisfied with work (68.3%) compared with those with poor health (42.6%;  $p < 0.001$ ).

**TABLE 1.**  
**Relationship Between Personal Characteristics and Satisfaction With Work Overall and Work-Life Balance, Frequent Work Stress, and Turnover Intention**

Characteristic	Wave	n (%)	Satisfied With Work Overall	Satisfied With Work-Life Balance	Frequent Work Stress	Likely to Seek a Job Within a Year
			% Very/Somewhat Satisfied	% Very/Somewhat Satisfied	% Always/Most of the Time	% Very Likely/Likely
All respondents	1	693 (100.0)	81.8 <sup>a</sup>	35.6 <sup>c</sup>	28.9 <sup>a</sup>	24.6 <sup>b</sup>
	2	455 (100.0)	64.0 <sup>a</sup>	36.1 <sup>c</sup>	39.8 <sup>a</sup>	32.0 <sup>b</sup>
Gender						
Female	1	248 (35.8)	80.7	31.5	34.7	27.8
	2	205 (45.0)	65.7	29.4 <sup>b</sup>	43.4	33.2
Male	1	445 (64.2)	83.2	38.0	25.7	22.8
	2	244 (53.6)	63.6	41.8 <sup>b</sup>	35.7	30.7
Generation						
Baby boom	1	287 (41.7)	86.1 <sup>b</sup>	41.5 <sup>b</sup>	22.5 <sup>b</sup>	18.5 <sup>b</sup>
	2	100 (24.4)	65.0	45.0	37.0	29.0
Generation X	1	323 (47.0)	77.1 <sup>b</sup>	29.1 <sup>b</sup>	34.4 <sup>b</sup>	27.6 <sup>b</sup>
	2	202 (49.3)	61.4	31.7	40.1	39.6
Millennial	1	78 (11.3)	85.9 <sup>b</sup>	41.0 <sup>b</sup>	29.5 <sup>b</sup>	34.6 <sup>b</sup>
	2	108 (26.3)	66.7	38.0	40.7	25.9
Marital Status						
Married	1	563 (81.4)	82.2	37.3	28.5	24.2
	2	373 (82.3)	64.0	38.7	38.1	31.1
Not married	1	129 (18.6)	80.6	28.7	30.2	25.6
	2	373 (17.7)	63.8	23.8	46.3	36.3
Parenthood						
No children	1	160 (23.1)	74.4 <sup>b</sup>	28.8 <sup>b</sup>	33.1	30.0
	2	121 (26.6)	62.0	35.5	40.5	33.9
Minor children	1	352 (50.8)	81.5 <sup>b</sup>	33.0 <sup>b</sup>	29.8	25.6
	2	243 (53.4)	62.8	32.6	41.2	35.0
Adult children	1	181 (26.1)	89.0 <sup>b</sup>	47.0 <sup>b</sup>	23.5	17.8
	2	91 (20.0)	69.2	46.2	33.0	22.0
Career stage						
Early (<10 yr)	1	300 (43.3)	80.0	32.7	33.7	29.0 <sup>b</sup>
	2	191 (42.0)	67.4	34.2	41.9	35.6
Mid (10–20 yr)	1	184 (26.6)	77.7	32.1	29.0	26.2 <sup>b</sup>
	2	127 (27.9)	61.4	36.2	39.4	31.5
Senior (>20 yr)	1	209 (30.2)	88.0	43.1	22.1	16.8 <sup>b</sup>
	2	137 (30.1)	61.3	38.7	35.8	27.7

<sup>a</sup> $\chi^2$  significant at  $p < 0.001$ .

<sup>b</sup> $\chi^2$  significant at adjusted alpha,  $p < 0.01$ .

<sup>c</sup> $\chi^2$  not significant,  $p = 0.868$ .

**TABLE 2.**

**Relationship Between Work Characteristics and Satisfaction With Work Overall and Work-Life Balance, Frequent Work Stress, and Turnover Intention**

Characteristic	Wave	n (%)	Satisfied With Work Overall	Satisfied With Work-Life Balance	Frequent Work Stress	Likely to Seek a Job Within a Year
			% Very/Somewhat Satisfied	% Very/Somewhat Satisfied	% Always/Most of the Time	% Very Likely/Likely
All respondents	1	693 (100.0)	81.8 <sup>a</sup>	35.6	28.9 <sup>a</sup>	24.6 <sup>b</sup>
	2	455 (100.0)	64.0 <sup>a</sup>	36.1	39.8 <sup>a</sup>	32.0 <sup>b</sup>
Yearly earnings						
<\$200K	1	154 (22.5)	83.1	35.7	34.0	33.8 <sup>b</sup>
	2	45 (10.1)	61.4	40.9	44.4	40.0
\$200–\$400K	1	396 (57.7)	79.0	33.6	29.4	23.8 <sup>b</sup>
	2	242 (54.1)	63.2	32.6	42.2	32.6
> \$400K	1	136 (19.8)	88.2	40.4	22.8	17.7 <sup>b</sup>
	2	160 (36.8)	64.4	40.0	33.8	28.8
Work hours per week						
<60 hr	1	356 (51.4)	84.8	45.2 <sup>a</sup>	23.7 <sup>b</sup>	21.1
	2	281 (61.8)	63.7	40.9 <sup>b</sup>	33.1 <sup>b</sup>	31.3
>60 hr	1	337 (48.6)	78.6	25.5 <sup>a</sup>	34.5 <sup>b</sup>	28.3
	2	174 (38.2)	64.2	28.3 <sup>b</sup>	49.4 <sup>b</sup>	33.3
Academic institution						
Yes	1	443 (63.9)	82.1	32.7	28.9	26.7
	2	268 (58.9)	64.4	34.8	37.3	31.0
No	1	272 (36.1)	82.6	40.8	28.0	20.5
	2	187 (41.1)	63.1	38.0	42.3	33.7
ICU environment						
MICU/neuro	1	109 (15.7)	81.7	28.4	40.4	27.5
	2	120 (26.4)	58.0	26.1	44.2	35.0
SICU/CTICU	1	108 (15.6)	83.3	30.6	23.4	21.3
	2	101 (22.2)	68.3	40.6	28.7	34.7
PICU/NICU	1	171 (24.7)	79.0	36.3	29.8	25.7
	2	127 (27.9)	68.5	39.4	37.8	30.7
Other/multiple ICUs	1	305 (44.0)	83.0	39.7	26.3	24.0
	2	107 (23.5)	60.8	39.3	45.8	28.0
Time spent in CCM						
< 25%	1	183 (26.4)	82.0	38.3	30.2	21.3
	2	92 (20.2)	71.7	39.1	33.7	30.4
50%	1	193 (27.9)	82.4	28.5	28.5	23.3
	2	128 (28.1)	60.9	34.4	37.5	30.4
> 75%	1	317 (45.7)	81.4	38.5	28.5	27.2
	2	235 (51.7)	62.4	35.9	42.6	33.6

CCM = critical care medicine, CTICU = cardiothoracic ICU, MICU = medical ICU, NICU = neonatal ICU, SICU = surgical ICU.

<sup>a</sup> $\chi^2$  significant at  $p < 0.001$ .

<sup>b</sup> $\chi^2$  significant at  $p < 0.01$ .

**TABLE 3.**

**Relationship Between Work Hour Preferences and Satisfaction With Work Overall, Work-Life Balance, Frequent Work Stress, and Turnover Intention**

Characteristic	Wave	n (%)	Satisfied With Work Overall	Satisfied With Work-Life Balance	Frequent Work Stress	Likely to Seek a Job Within a Year
			% Very/Somewhat Satisfied	% Very/Somewhat Satisfied	% Always/Most of the Time	% Very Likely/Likely
All respondents	1	693 (100.0)	81.8 <sup>a</sup>	35.6	28.9 <sup>a</sup>	24.6 <sup>b</sup>
	2	455 (100.0)	64.0 <sup>a</sup>	36.1	39.8 <sup>a</sup>	32.0 <sup>b</sup>
Work hour preference						
Fewer hours	1	431 (62.2)	74.7 <sup>a</sup>	17.9 <sup>a</sup>	38.6 <sup>a</sup>	30.7 <sup>a</sup>
	2	284 (62.4)	55.1 <sup>b</sup>	18.0 <sup>b</sup>	51.1 <sup>b</sup>	41.2 <sup>b</sup>
Same/more hours	1	262 (37.8)	93.5 <sup>a</sup>	64.9 <sup>a</sup>	13.0 <sup>a</sup>	14.5 <sup>a</sup>
	2	171 (37.6)	78.4 <sup>b</sup>	66.1 <sup>b</sup>	19.9 <sup>b</sup>	17.0 <sup>b</sup>

<sup>a</sup> $\chi^2$  significant at  $p < 0.001$ .

<sup>b</sup> $\chi^2$  significant at  $p < 0.01$ .

**TABLE 4.**

**Relationship Between Self-Rated Mental and Physical Health and Satisfaction With Work Overall, Work-Life Balance, Frequent Work Stress, and Turnover Intention**

Characteristic	n (%)	Satisfied With Work Overall	Satisfied With Work-Life Balance	Frequent Work Stress	Likely to Seek a Job Within a Year
		% Very/Somewhat Satisfied	% Very/Somewhat Satisfied	% Always/Most of the Time	% Very Likely/Likely
All Respondents	453 (100.0)	63.8	36.0	39.5	32.2
Self-rated mental health					
Poor/fair	126 (27.8)	37.3 <sup>a</sup>	9.5 <sup>a</sup>	69.1 <sup>a</sup>	51.6 <sup>a</sup>
Good/excellent	327 (72.2)	74.0 <sup>a</sup>	46.2 <sup>a</sup>	28.1 <sup>a</sup>	24.8 <sup>a</sup>
Self-rated physical health					
Poor/fair	94 (20.8)	42.6 <sup>a</sup>	16.0 <sup>a</sup>	59.6 <sup>a</sup>	54.3 <sup>a</sup>
Good/excellent	358 (79.2)	68.3 <sup>a</sup>	41.1 <sup>a</sup>	34.4 <sup>a</sup>	26.3 <sup>a</sup>

<sup>a</sup> $\chi^2$  significant at  $p < 0.001$ .

### Work/Life Balance Satisfaction

Satisfaction with WLB did not change during the pandemic: it has remained consistently low for critical care physicians (35.6% in 2016 and 36.1% in 2022; Table 1). In 2016, Millennials and Baby Boomers reported more WLB satisfaction than Generation X,

and parents had more WLB satisfaction than nonparents. By 2022, these demographic differences were no longer significant.

In contrast, the gender gap with WLB satisfaction widened during the pandemic, with 41.8% of men being satisfied or very satisfied with their WLB, compared with only 29.4% of women ( $p < 0.01$ ).

Physicians reporting more than 60 weekly work hours (Table 2) were significantly less satisfied with their WLB (25.5% in wave 1; 28.3% in wave 2), and those who wanted to work less reported the lowest levels of reported WLB satisfaction (17.9% in wave 1; 18% in wave 2) (Table 3).

Self-rated health had a very strong relationship with WLB satisfaction. During the pandemic, only 9.5% of those with poor or fair mental health and 16% of those with poor or fair physical health reported satisfaction with their WLB, compared with 46.2% and 41.1% of those with better mental and physical health ( $p < 0.001$ ).

### Frequency of Work Stress

More than a quarter of intensivists (28.9%) reported feeling stressed always or most of the time before the pandemic, and in 2021–2022, this rose to 39.8% (Table 1). In 2016, Generation X reported higher work stress (34.4%), but these generational differences disappeared as all groups' stress became more frequent in the pandemic. The relationship between gender and work stress has been described to be higher in women (13), but we did not find gender correlated with work stress.

Work hours have a consistently strong relationship to work stress, both in terms of the number of weekly hours and physicians' preferences for them. Those working more than 60-hour weeks were more likely to describe frequent work stress ( $p < 0.01$ ) in 2016 (33.1%) and 2021–2022 (49.4%), compared with those working fewer hours (Table 2). Physicians who wanted to work fewer hours (Table 3) reported high frequencies of work stress (38.6% in wave 1 and 51.1% in wave 2); these levels were vastly higher than those who desired the same or more hours (13.0% in wave 1; 19.9%, in wave 2).

The highest levels of work stress appeared for pandemic physicians reporting poor or fair mental health (69.1%) or physical health (59.6%) in 2022 (Table 4). Work stress was much lower in those respondents with good or excellent mental health (28.1%) or physical health (34.4%) ( $p < 0.001$ ).

### Likelihood of Seeking New Employment

Before the pandemic, one-quarter of respondents (24.6%) reported that they were likely to seek a new

job within 1 year, mainly Millennials (34.6%), early-career (29.0%) physicians (Table 1), and lower earners (33.8%) (Table 2). During the pandemic, turnover intention rose to nearly a third of respondents (32%), whereas generational, career stage, and income differences dissipated.

Satisfaction with one's work hours consistently affected turnover intention (Table 3). Physicians wanting to work fewer hours were more than twice as likely to intend to leave their jobs (30.7% in 2016; 41.2% in 2022) than other physicians (14.5% in 2016;  $p < 0.001$ ; 17.0% in 2022;  $p < 0.01$ ).

Pandemic physicians with poor self-rated mental or physical health were also about twice as likely (51.6% and 54.3%) to intend to leave jobs, compared with those with good mental or physical health (24.8% and 26.3%;  $p < 0.001$ ) (Table 4).

## DISCUSSION

The COVID-19 pandemic has placed heavy demands on the healthcare workforce (14), and we seek to expand the understanding of the changes in work satisfaction, stress, and turnover intention between 2016 and 2022. This research matters because physicians' satisfaction is a valuable goal, both as a bulwark against burnout and to prevent the loss of highly trained staff through job turnover or attrition (15, 16). The lack of well-being in healthcare workers is associated with negative personal outcomes (1, 2, 17) and poorer work performance, including medical errors directly impacting patient care and hospital costs (18). High levels of distress have been attributed to an increased workload, redeployment, stress from acute patients, moral distress, limited personal protective equipment, rapidly changing guidelines, and perceived work/life imbalance (1, 2, 14, 19–22).

Most intensivists remain satisfied with their work to a greater degree than international findings (5, 23), but their levels of satisfaction fell dramatically between 2016 and 2022. Prior high satisfaction rates may be surprising given the extensive reporting of burnout among critical care workers (24, 25), but these previously robust work satisfaction findings have been eroded during the pandemic era.

WLB satisfaction at both time points in our study ranked lower than that of every other U.S. physician specialty evaluated in 2011 (6) and was similar to the lowest specialty in a 2020 follow-up (26). Indeed,

almost half of respondents reported being somewhat or very dissatisfied. This pattern is also observed in oncologists and is characterized by physicians who find great meaning in the work they do (resulting in high career satisfaction) but must do too much of it (affecting WLB) (27). We found women were less satisfied with their WLB than their male counterparts, possibly because of the unequal stresses of the COVID-19 pandemic (28).

Critical care physicians report frequent stress, whereas work-related stress is well documented in the ICU whereas (29); these rates have notably increased during the pandemic (30). Our study also provides important insights into the short-term career plans of U.S. intensivists. Nearly a quarter of all respondents intended to leave their job in 2016, and this has risen to almost one-third of respondents, which represents a major disruption and significant cost to healthcare institutions (31).

The demographic associations between work and WLB satisfaction, stress, and turnover have also been greatly disrupted by the pandemic. In 2016, generation was significantly related to all four outcome variables; these generational effects have largely dissipated 6 years later. Other studies have found work satisfaction lowest in early career (32) and increasing age weakly but independently associated with satisfaction (33). In 2016, our work concurred, as the highest rates of work and WLB satisfaction were among senior physicians and turnover intention highest in early-career physicians. These effects had also waned by 2022.

As in prior studies (34), we found a significant association between high earnings and a lower turnover intention in 2016, and again this effect weakened by 2022. In essence, the increasing likelihood of all respondents to be dissatisfied or intend to leave their jobs has taken precedence over the life stage and economic differences that were clearly delineated previously.

Weekly work hours continue to have strong relationships to WLB satisfaction and job stress, consistent with findings in other workplaces (35). We found the inflection point was working over 60 weekly hours, above which satisfaction, stress, and turnover intention worsened. Critical care physicians work long hours, as half of respondents reported working greater than 60 hours in 2016 and 38% in 2022. Only 25% of full-time salaried U.S. workers and 20% of the general physician population report working this much (36, 37).

Most importantly, physicians' satisfaction with their work hours may be even more relevant than the number of hours (38). Most respondents desired to work fewer hours, and this desire significantly affected all outcome variables, consistent with other studies (39–41). Further, these effects are more pronounced in 2022. Workers who wanted to work fewer hours reported lower levels of work and WLB satisfaction, more frequent work stress, and higher turnover intention.

The COVID-19 pandemic has had widespread effects on physical and mental health (42). We find the rates of poor or fair mental health (27.8%) and physical health (20.8%) to be distressingly high among critical care physicians. Poor health is more common among intensivists than college-educated, working-age Americans (14.9%) in 2021 (43). Previous research points to many mechanisms of diminished health among physicians, including the lack of routine check-ups, untreated mental health conditions (44), and presenteeism while sick (45).

Our study has limitations, including that data are self-reported, and we relied on item-level analysis. Though self-reported data are prone to recall biases and inherent subjectivity, they remain the most useful sources of data when examining the subjective experiences of individuals (46).

We targeted the entire SCCM population, and our low response rate may compromise representativeness of U.S.-based critical care physicians. A higher proportion of our respondents, for instance, practiced in academic settings. However, this remains the largest survey of U.S. intensivists to our knowledge ( $n = 1,148$ ).

## CONCLUSIONS

The SARS-CoV-2 pandemic has further strained a critical care workforce that was already under pressure. Work satisfaction—once a strength of physician intensivists—has sharply dropped, whereas work stress and turnover intention have increased. High numbers of intensivists report poor mental and physical health, and this poor health is strongly linked to lower satisfaction, higher stress, and an intention to quit one's job. Only a minority of intensivists are satisfied with their WLB, before or during the pandemic.

Notably, the only work structure consistently related to these outcomes is weekly work hours, both in



number and in alignment with personal preferences. In order to support the work satisfaction of critical care providers and reduce their job turnover, we need to create durable structures that allow the overtaxed physician workforce to work less.

The poor self-reported mental and physical health of intensivists indicate the vulnerability of these providers as individuals, and these health indicators have an outsized correlation with satisfaction, stress, and turnover intention. To preserve both the individual physicians and the health of the critical care workforce, we need to allow physicians to care for themselves. *Medice, cura te ipsum: physician, heal thyself.*

## ACKNOWLEDGMENTS

We thank Shuang Wang, PhD, who provided valuable statistics support for survey analysis in 2016 and 2022; Madhabi Chatterji, PhD, who provided valuable design, insight, and analysis to the 2016 version of this survey; and May Hua, MD, Kristen Burkart, MD, and Briana Short, MD, all contributed to the 2022 survey design.

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Support for the 2016 survey was provided by The Mount Sinai Hospital, Department of Anesthesiology, New York, NY and support for the 2021 survey was provided by Columbia University Vagelos College of Physicians and Surgeons, Department of Anesthesiology, New York, NY.

The authors have disclosed that they do not have any potential conflicts of interest.

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