

# Resilience and Burnout Resources in Respiratory Care Departments

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**BACKGROUND:** Burnout is a major problem in health care, with rates of approximately 33% and 50% in nurses and physicians, respectively, prior to the COVID-19 pandemic. Respiratory therapist (RT) burnout rates and drivers have not been specifically examined. The purpose of this project was to determine resilience and burnout resources available within respiratory care departments and to provide an estimate of pre- and post-COVID-19 RT burnout rates. **METHODS:** A survey was developed to evaluate resilience and burnout resources in respiratory care departments. The survey was posted online to the AARConnect management, education, adult acute care, neonatal/pediatrics, COVID-19, and help line communities. Data analysis was descriptive. Key drivers of burnout among RTs were identified from qualitative answers. **RESULTS:** There were 221 responses, and 72% reported experiencing burnout. Ten percent of the departments that responded measured burnout; 36% utilized resilience tools, and 83% offered free employee assistance for those struggling with burnout. In January 2020, 30% of departments reported an estimated burnout rate > 40%, which increased to 44% of departments ( $P = .007$ ) in the COVID-19 pandemic period. The most common drivers reported were poor leadership (32%), high work load (31%), and staffing (29%); 93% of respondents agreed that burnout is a major problem in health care, 33% agreed that burnout is primarily driven by external factors, 92% agreed that RTs have a similar risk of burnout as other health care professionals, 73% agreed that they were comfortable discussing challenging situations with colleagues, 32% agreed that their leadership provided adequate support for those suffering from burnout, and 79% agreed that they would be open to utilizing resilience tools from the AARC or other professional organizations. **CONCLUSIONS:** Most respondents experienced burnout and few respiratory care departments measured burnout. Resilience resources were not commonly used but employee assistance and wellness programs were common. Key drivers of burnout identified were poor leadership, staffing, and high workloads. *Key words: burnout; resilience; respiratory therapy; respiratory therapist; respiratory care practitioner; well-being; leadership.* [Respir Care 2021;66(5):715–723. © 2021 Daedalus Enterprises]

## Introduction

Health care is a high-stress field, and health care providers are at risk of developing burnout, which is characterized by emotional exhaustion, depersonalization, and lack of efficacy. Burnout is associated with adverse patient outcomes, reduced staff well-being, lapses in professionalism, and a negative effect on health system functioning.<sup>1</sup> Rates of burnout have been reported to be around 50% for physicians,<sup>1</sup> 33% for critical care nurses,<sup>2</sup> and 50% for physician trainees.<sup>3</sup> The American Thoracic Society, the American Association of Critical-Care Nurses, the American College of Chest Physicians, and the Society for Critical Care Medicine have published calls for action to battle burnout in critical care.<sup>4-7</sup> Despite being important members of the

critical care team, respiratory therapists (RTs) were not mentioned in these calls for action. The follow-up report from a national summit organized by the authors of the original report convened 55 experts to discuss how to combat burnout in critical care also neglected to include RTs.<sup>8</sup>

Data evaluating RT burnout are limited; however, RTs' exposure to work-related drivers of burnout are likely similar to those experienced by nurses and physicians. RTs may also have unique factors that make them more or less susceptible to burnout. In one cohort of intensive care providers, 26% of RTs met criteria for severe burnout, and half were emotionally exhausted.<sup>9</sup> Another study reported that RTs had a moral distress score similar to that of physicians and nurses, but a higher score for depersonalization; burnout was not specifically measured in this study.<sup>10</sup> A

different study examined moral distress in pediatric critical care providers and noted that RTs and nurses had higher moral distress intensity than physicians, but the effect on

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RT burnout was not reported specifically in this study.<sup>11</sup> Finally, Burr et al<sup>12</sup> examined the effect of secondary traumatic stress in RTs and found 36% of respondents met diagnostic criteria for posttraumatic stress disorder, a rate higher than what has been reported in nurses and physicians.<sup>12</sup>

Due to limited data evaluating burnout and resilience in RT departments, we designed a survey to determine resilience and burnout resources available within RT departments and to provide an estimate of RT burnout rates both before and after the COVID-19 pandemic. We also sought to identify key drivers of burnout among RTs and compare differences in responses between areas with high and low COVID-19 prevalence.

### Methods

Following a literature search, the authors developed a survey instrument was developed in REDCap. No questions were taken directly from other surveys. After the survey was declared exempt by the Duke University Institutional Review Board, it was posted on the American Association for Respiratory Care (AARC) social media platform, AARConnect. It was posted to the help line, COVID-19, management, adult critical care, education, and neonatal/pediatrics sections on May 18, 2020, with reminders posted on May 25, 2020, and June 1, 2020. The help line includes all members of the AARC; however, members

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### QUICK LOOK

#### Current knowledge

Health care is a high-stress field and health care providers are at risk of developing burnout, which is characterized by emotional exhaustion, depersonalization, and lack of efficacy. Burnout is associated with adverse patient outcomes, reduced staff well-being, lapses in professionalism, and a negative effect on health system functioning. Burnout rates and drivers for respiratory therapists (RTs) have not been specifically examined.

#### What this paper contributes to our knowledge

The majority of RTs in our survey self-reported having suffered from burnout, yet few departments measured burnout or utilized resilience tools. Overall estimates of burnout rates were low, but increased since the COVID-19 pandemic onset. Poor leadership, staffing, and high workloads were identified as the most common drivers of burnout among RTs. Future research is needed to evaluate the true prevalence of burnout and effects on RTs' well-being and the quality of patient care.

can opt out of receiving e-mails. Therefore, it is not possible to assess how many members received the survey. The other sections require members to sign up, and the management, adult critical care, and neonatal/pediatric sections require fees to join. RTs may also be members of multiple sections. For these reasons, it is not possible to calculate a response rate. The survey closed for responses on June 12, 2020. The survey included questions about respondents' self-identified burnout status, burnout resources within departments, estimated burnout rates, attitudes about burnout, and demographics. Estimated burnout rates were divided into 5 discrete ranges, and departments were categorized by those with an estimated burnout rate > 40% and those with an estimated burnout rate ≤ 40%. A burnout rate > 40% was chosen because this value has been identified as the threshold at which intervention is required.<sup>13</sup>

Those who reported suffering from burnout were asked what resources they utilized to address their burnout. Respondents were also asked what resilience activities were available within their institutions. Key drivers of burnout among RTs were identified from qualitative answers and classified a priori into categories by the authors. Key drivers reported by ≥ 5% of respondents were included; key drivers reported by < 5% of respondents were included if felt to be important by the authors.

Areas with high COVID-19 prevalence, defined as 500 cases per 100,000 individuals as of May 29, 2020, in the

aggregated data sourced from the Johns Hopkins COVID-19 database, were compared to areas with low COVID-19 prevalence. Key drivers were compared between areas with high COVID-19 prevalence (defined as hotspots) and non-hotspots. Responses were also compared between staff RTs and management. Staff RTs included those who identified as staff RTs and charge/lead RTs to represent bedside RTs. Management was defined as directors, managers, supervisors, educators, and clinical specialists/coordinators. Data analysis was largely descriptive; categorical data were compared with the chi-square and Fisher exact tests. Analysis was performed with SPSS 25 (IBM, Armonk, New York), and a  $P < .05$  was considered statistically significant.

**Results**

There were 221 complete responses from the United States, representing 46 states and territories (ie, Puerto Rico), with one response from outside the United States. Respondents had a median (interquartile range [IQR]) of 29 (18–36) y of experience as an RT. Ninety-nine (44.8%) worked in community hospitals; 87 (39.4%) in academic hospitals; 12 (5.4%) in out-patient clinics; 12 (5.4%) in universities, colleges, or community colleges; and 11 (5.0%) in other settings. Patient populations were reported as adults (131 respondents [59.5%]), neonatal/pediatrics (37 respondents [16.8%]), or out-patient (17 respondents [7.7%]); 35 respondents (15.9%) did not provide direct patient care in their current job. Respondents' roles within the department were staff RT (56 [25.3%]); director, including program director (50 [22.6%]); manager (36 [16.3%]); supervisor (20 [9.0%]), educator/clinical specialist (17 [7.7%]); charge/lead RT (8 [3.6%]); and other (8 [3.6%]). The number of RTs on staff ranged from 0 to 20 for 63 respondents (28.3%), from 21 to 40 for 43 respondents (19.5%), from 51 to 100 for 46 respondents (20.8%), and > 100 for 68 respondents (30.8%). The highest level of education was a master's degree or higher for 74 respondents (33.8%), bachelor's degree for 95 respondents (43.4%), associate's degree for 46 respondents (21.0%), and other for 4 respondents (1.8%).

Twenty-two (10%) departments measured burnout, 78 (35.8%) utilized resilience tools, 182 (83.1%) offered free employee assistance programs (EAP) for those struggling with burnout or psychological distress, and 161 (73.2%) offered wellness programs. One hundred sixty respondents (72.4%) reported experiencing burnout in the past, with 72 respondents (32.6%) having experienced burnout within the prior 6 months. Fifty-two (32.5%) respondents did not utilize any resources for burnout, while 18 (11.3%) took time off, 18 (11.3%) exercised, 13 (8.1%) meditated or practiced mindfulness, 14 (8.8%) sought counseling/therapy or used their EAP, and 7 (4.4%) changed jobs. For departments using resilience tools, the most common tools

Table 1. Burnout and Resilience Responses

Survey Questions	Responses
Does your department or organization measure burnout?	220
Yes	22 (10.0)
No	178 (80.9)
I don't know	20 (9.1)
Have you personally experienced burnout?	221
Yes	160 (72.4)
No	51 (23.1)
I don't know	10 (4.5)
When did you experience burnout?	160
Within the past week	10 (6.3)
Within the past month	30 (18.8)
Within the past 6 months	32 (20.0)
Within the last year	38 (23.8)
> 1 y ago	50 (31.3)
Estimate the percentage of people within your department were suffering burnout in January 2020	218
0–20%	81 (37.2)
21–40%	45 (20.6)
41–60%	26 (11.9)
61–80%	15 (6.9)
81–100%	12 (5.5)
Don't know/prefer not to answer	39 (17.9)
Estimate the percentage of people within your department currently suffering burnout	220
0–20%	60 (27.2)
21–40%	41 (18.6)
41–60%	35 (15.9)
61–80%	27 (12.3)
81–100%	17 (7.7)
Don't know/prefer not to answer	40 (18.2)
January 2020: Burnout > 40% for those reporting an estimated burnout rate	179
Yes	53 (29.6)
No	126 (70.4)
At time of survey, burnout rate > 40% for those reporting an estimated burnout rate	180
Yes	79 (43.9)
No	101 (56.1)

Data are presented as the number of respondents to each question or  $n$  (%) respondents for a given question.  $N = 221$ .

were mindfulness (22 [28.2%]), EAP (16 [20.5%]), increased recognition (9 [11.5%]), a mobile application (7 [9.0%]), a respite room (5 [6.4%]), and practicing gratitude (4 [5.1%]). Free employee assistance consisted of counseling (97 [53.3%]), unspecified EAP (72 [39.6%]), and a telephone hotline (14 [7.7%]). For those offering wellness programs, 42 (26.1%) offered exercise programs, 34 (21.1%) offered gym memberships or had a gym onsite, 19 (11.8%) offered healthy living program, 17 (10.6%) offered a general wellness program, 14 (8.7%) offered yoga, and 10 (6.2%) offered incentives. Compared to January 2020, more respondents reported a burnout rate > 40% at the

## RESILIENCE AND BURNOUT RESOURCES FOR RTs

Table 2. Likert Scale Responses

	Respondents, <i>n</i>	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Answer or I Don't Know
Burnout is a major problem in health care	221	114 (51.6)	92 (41.6)	12 (5.4)	2 (0.9)	0 (0)	1 (0.5)
Burnout is primarily driven by external factors	219	14 (6.4)	59 (26.9)	84 (38.4)	50 (22.8)	10 (4.5)	2 (0.9)
Respiratory therapists have a similar risk of burnout as other health care workers	220	116 (52.7)	86 (39.1)	5 (2.3)	9 (4.1)	4 (1.8)	0 (0)
I feel comfortable discussing emotionally challenging situations with colleagues	220	52 (23.6)	107 (48.6)	27 (12.3)	25 (11.4)	9 (4.1)	0 (0)
My leadership provides adequate support for those suffering from burnout	219	18 (8.2)	53 (24.2)	60 (27.4)	52 (23.7)	33 (15.1)	3 (1.4)
I would be open to utilizing resilience tools from the AARC or other professional organization	220	95 (43.2)	79 (35.9)	35 (15.9)	4 (1.8)	5 (2.3)	2 (0.9)

Data are presented as *n* (%). *N* = 221.

Table 3. Key Drivers of Burnout

Key Drivers	Cited by Respondents
Poor leadership	70 (31.7)
Staffing	68 (30.8)
High work load	65 (29.4)
COVID-19	30 (13.6)
Lack of recognition	28 (12.7)
Lack of appreciation	22 (10.0)
Lack of time off/long hours	20 (9.0)
Lack of respect	19 (8.6)
Lack of resources	18 (8.1)
Stress	18 (8.1)
Emotional toll	16 (7.2)
High acuity	14 (6.3)
Lack of autonomy	12 (5.4)
Lack of professional development opportunities	12 (5.4)
Change	11 (5.0)
Pay	9 (4.1)

Data are presented as *n* (%). There were 95 unique drivers total. Includes only those key drivers mentioned by > 5% of respondents.

time of the survey (79 [43.9%] versus 53 [29.6%], *P* = .009). Results are summarized in Table 1.

Two-hundred six (93.2%) respondents agreed or strongly agreed that burnout is a major problem in health care; 73 (33.3%) agreed or strongly agreed that burnout is primarily driven by external factors; 202 (91.8%) agree/strongly agreed that RTs have a similar risk of burnout as other health care professionals; 159 (72.6%) agreed or strongly agreed that they were comfortable discussing challenging situations with colleagues; 71 (32.4%) agreed or strongly agreed that their leadership provided adequate support for those suffering from burnout; and 174 (79.1%) agreed or strongly agreed that they would be open to utilizing

resilience tools from the AARC or other professional organization. Attitudes about burnout are summarized in Table 2.

A total of 95 unique key drivers were reported by the respondents (Table 3). The most common drivers mentioned were poor leadership (70 [31.7%]), high work load (68 [30.8%]), staffing (65 [29.4%]), COVID-19 (30 [13.6%]), lack of recognition (28 [12.7%]), long hours/lack of time off (20 [9.0%]), lack of respect (19 [8.6%]), lack of resources (18 [8.1%]), emotional toll (16 [7.2%]), high acuity (14 [6.3%]), lack of professional development opportunities (12 [5.4%]), change (11 [5.0%]), and pay (9 [4.1%]).

### Comparison Between Management and Staff RTs

There were 152 respondents in management roles and 64 in staff RT or charge/lead RT roles. Management respondents had more median (IQR) years of experience as an RT (30 [21–37] versus 24.5 [12.3–35.8] y, *P* = .03). There were significant differences in workplace (*P* = .02), patient population cared for (*P* < .001), and highest degree earned (*P* < .001). Management respondents were more likely to have a master's degree or higher (42.4% vs 11.1%, *P* < .001) and were less likely to provide direct patient care (77.0% vs 100%, *P* < .001). There were no differences in the ranges of RTs on staff (*P* = .10) or for respondents from COVID-19 hotspots (27.6% vs 15.9%, *P* = .15).

There were no differences between managers and staff RTs in history of burnout (74.3% vs 67.2%, *P* = .30), when burnout was experienced (*P* = .15), burnout within the prior 6 months (33.6% vs 32.8%, *P* = .92), or whether their organizations measured burnout (10.6% vs 9.4%, *P* = .32). Results are summarized in Table 4. Likert scale questions are summarized in Table 5. The top 10 drivers are summarized in Table 6.

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Table 4. Comparison of Burnout and Resilience Responses

	Management	Staff + Charge/Lead RTs	<i>P</i>
Respondents	152	64	
Does your department utilize any resilience tools?	150	63	.003
Yes	65 (43.3)	13 (20.6)	
No	80 (53.3)	42 (66.7)	
I don't know	5 (3.3)	8 (12.7)	
Does your organization offer free employee assistance?	151	63	< .001
Yes	138 (91.4)	42 (66.7)	
No	6 (4.0)	5 (7.9)	
I don't know	7 (4.6)	16 (25.4)	
Does your organization offer wellness programs?	152	63	.002
Yes	119 (78.3)	40 (63.4)	
No	31 (20.4)	16 (25.4)	
I don't know	2 (1.3)	7 (11.1)	
Estimate the percentage of people within your department suffering burnout in January 2020.	151	62	.038
0–20%	65 (43.0)	14 (22.6)	
21–40%	32 (21.2)	13 (21.0)	
41–60%	17 (11.3)	7 (11.3)	
61–80%	9 (6.0)	6 (9.7)	
81–100%	6 (4.0)	6 (9.7)	
Don't know/prefer not to answer	22 (14.6)	16 (25.8)	
Estimated burnout rate > 40% in January 2020 (for those reporting an estimated rate only).	129	46	
Yes	32 (24.8)	19 (41.3)	.039
No	97 (75.2)	27 (58.7)	
Estimate the percentage of people within your department are currently suffering from burnout.	152	63	.008
0–20%	47 (30.9)	11 (17.4)	
21–40%	34 (22.4)	7 (11.1)	
41–60%	26 (17.1)	9 (14.3)	
61–80%	15 (9.9)	11 (17.4)	
81–100%	9 (5.9)	8 (12.7)	
Don't know/prefer not to answer	21 (13.8)	17 (27.0)	
Estimated burnout rate > 40% when survey was completed (for those reporting an estimated rate only).	131	46	
Yes	50 (38.2)	28 (60.9)	.001
No	81 (61.8)	18 (39.1)	

Data are presented as the number of respondents to each question or *n* (%) respondents for a given question. *N* = 221.  
RT = respiratory therapist

### Comparison Between COVID-19 Hotspots and Non-Hotspots

The range of RTs on staff within each department was significantly different ( $P = .01$ ) between COVID hotspots and non-hotspots, with COVID hotspots having more RTs on staff (56.4% had > 50 RTs on staff vs 37.3%,  $P = .03$ ). More respondents in COVID-19 hotspots reported high work load as a driver of burnout (43.1% vs 25.6%,  $P = .02$ ). There were no other statistically significant differences in responses between COVID-19 hotspots and non-hotspots (see the supplementary materials at <http://www.rcjournal.com>).

### Discussion

The majority of RTs in our survey self-reported having experienced burnout, yet few departments measured burnout or utilized resilience tools. Most departments reported having access to free EAPs and wellness programs. Overall estimates of burnout were low, but increased since onset of the COVID-19 pandemic. Poor leadership, staffing, and high workloads were identified as the most common drivers of burnout among RTs. Responses were significantly different between management and staff RTs. Staff RTs provided higher estimates of burnout, did not agree that leadership provided



## RESILIENCE AND BURNOUT RESOURCES FOR RTs

Table 5. Comparison of Responses to Likert Scale Questions

	Management	Staff + Charge/Lead RTs	<i>P</i>
Burnout is a major problem in health care	152	64	.02
Strongly agree	75 (49.3)	37 (57.8)	
Agree	71 (46.7)	19 (29.7)	
Neither agree nor disagree	5 (3.3)	6 (9.4)	
Disagree	0 (0)	2 (3.1)	
Strongly disagree	0 (0)	0 (0)	
No answer or I don't know	1 (.6)	0 (0)	
Burnout is primarily driven by external factors.	151	63	.21
Strongly agree	6 (4.0)	8 (12.7)	
Agree	43 (28.5)	14 (22.2)	
Neither agree nor disagree	57 (37.7)	25 (39.7)	
Disagree	35 (23.2)	25 (39.7)	
Strongly disagree	9 (6.0)	1 (1.6)	
No answer or I don't know	1 (.6)	1 (1.6)	
Respiratory therapists have a similar risk of burnout as other health care providers.	152	63	.23
Strongly agree	76 (50.0)	35 (55.6)	
Agree	65 (42.8)	21 (33.3)	
Neither agree nor disagree	4 (2.6)	1 (1.6)	
Disagree	4 (2.6)	5 (7.9)	
Strongly disagree	3 (2.0)	1 (1.6)	
No answer or I don't know	0 (0)	0 (0)	
I feel comfortable discussing emotionally challenging situations with colleagues.	151	64	.042
Strongly agree	40 (26.5)	12 (18.8)	
Agree	77 (51.0)	27 (42.2)	
Neither agree nor disagree	14 (9.3)	12 (18.8)	
Disagree	17 (11.3)	7 (1.9)	
Strongly disagree	3 (2.0)	6 (9.4)	
No answer or I don't know	0 (0)	0 (0)	
My leadership provides adequate support for those suffering from burnout.	150	64	< .001
Strongly agree	15 (10.0)	3 (4.7)	
Agree	49 (32.7)	4 (6.3)	
Neither agree nor disagree	37 (24.7)	19 (29.7)	
Disagree	36 (24.0)	15 (23.4)	
Strongly disagree	11 (7.3)	22 (34.3)	
No answer or I don't know	2 (1.3)	1 (1.6)	
I would be open to utilizing resilience tools from the AARC or other professional organization.	152	63	.01
Strongly agree	74 (48.7)	20 (31.2)	
Agree	53 (34.9)	24 (38.1)	
Neither agree nor disagree	22 (14.5)	13 (2.6)	
Disagree	0 (0)	3 (4.8)	
Strongly disagree	2 (1.3)	3 (4.8)	
No answer or I don't know	1 (.6)	0 (0)	

Data are presented as the number of respondents to each question or *n* (%) respondents for a given question.  
RT = respiratory therapist

adequate support for those suffering from burnout, and were more likely to identify poor leadership as a driver of burnout. Surprisingly, there were few differences between COVID-19 hotspots and non-hotspots, raising the question of whether self-perceived burnout is a generalized concern among RTs. The lack of differences may

be related to individual COVID-19 exposure as we determined hotspots by case load in each state, which may not have reflected the true impact in individual RT departments.

Despite the high prevalence of self-reported RT burnout in our study, few RT departments measured burnout or

Table 6. Comparison of Key Driver Responses

	Management	Staff + Charge/Lead RTs	P
Unique drivers	83	46	
Top 10 key drivers	152	64	
Staffing	52 (34.2)	13 (20.3)	.051
High work load	44 (28.9)	22 (34.3)	.43
Poor leadership	39 (25.7)	27 (42.2)	.02
COVID-19	25 (16.4)	5 (7.8)	.13
Lack of recognition	21 (13.8)	7 (10.0)	.66
Lack of respect	15 (9.9)	4 (6.3)	.60
Stress	15 (9.9)	3 (4.7)	.28
Lack of appreciation	14 (9.2)	8 (12.5)	.47
Long hours	14 (9.2)	1 (1.6)	.044
Emotional toll	13 (8.6)	3 (4.7)	.40
Lack of resources	13 (8.6)	4 (6.3)	.78
High acuity	10 (6.6)	4 (6.3)	>.99
Work/life balance	5 (3.3)	3 (4.7)	.70
Change	8 (5.3)	3 (4.7)	>.99

Data are presented as the number of respondents for each driver or *n* (%) respondents for a given driver.

RT = respiratory therapist

utilized resilience tools. The most common intervention was nothing, although taking time off, exercise, mindfulness, counseling, and changing jobs were also mentioned. Given that management respondents reported lower estimated burnout rates than RT staff and low levels of burnout overall, management respondents may not be aware of burnout within their departments, may perceive burnout to be an individual problem, or may not be aware of resources for burnout. This is despite very high levels of agreement that RTs have similar risk of burnout as other health care providers and that burnout is a problem in health care. To help reduce the stigma associated with asking for help, leaders need to be willing to be open about their own use of resources and encourage staff to take advantage.

Poor leadership was the most common driver of burnout reported in our study. Though the relationship between RT leadership and burnout has not been specifically studied, studies of physicians and nurses have found leadership behaviors significantly impact burnout and well-being.<sup>14-16</sup> Nursing studies indicate that low support from leadership, inauthentic leadership, and negative team relationships are associated with burnout.<sup>16</sup> The first step in combating burnout within RT departments is to accurately measure burnout rates and identify key drivers in individual centers. RT leaders could then use these data to focus on specific leadership behaviors as a strategy to combat burnout. RT leaders should also learn to recognize the signs of burnout, understand the causes of burnout, and help staff overcome burnout while creating a positive, supportive work environment.

Staff RTs were less aware of burnout and resilience resources than management, suggesting that improved communication and reduction of stigma related to asking for help may increase awareness of these resources among front-line staff. Managers are more likely to be aware of these resources as part of their regular job duties, while staff may have been informed during orientation but are no longer aware after being employed for a period of time. Other drivers, such as lack of recognition/appreciation, are areas in which leadership can have an impact. A recent study of an in-patient infusion team reported that peer recognition and daily huddles resulted in reductions in burnout and stress and increased job satisfaction.<sup>17</sup> Leadership also influences staffing and high workloads, which may be related to poor staff retention, difficulty recruiting staff, or distribution of work load.

Staffing and high work load are highly interrelated. High work load in nurses was associated with burnout in 13 of 15 studies, although no studies have been performed in RTs to date.<sup>16</sup> Interestingly, 15 studies reported that high patient to nurse ratios were associated with burnout, but there were no studies that found an association with more than sufficient staffing and burnout.<sup>16</sup> Thus, for RTs, simply increasing staffing to reduce burnout is an effective strategy only when short-staffed, and it may not be impactful when staffing is already sufficient. There is no current national standard to establish RT staffing norms, and determining adequate staffing can be complex when considering patient acuity, staff skill levels, and physical layout of the hospital. The AARC Uniform Reporting Manual (<https://www.aarc.org/resources/tools-software/benchmarking>, Accessed November 12, 2020) provides time standards for most RT clinical tasks. However, hospital executive leadership and other benchmarking groups may be dismissive of the data because the time standards are published by an RT professional organization. What constitutes an acceptable work load or staffing likely varies between centers and between individual RT perceptions and hospital leadership. Finally, more experienced and skilled RTs may be asked to take on heavier assignments and non-clinical tasks, which may increase their susceptibility to burnout.

Strategies to reduce burnout are commonly focused on individual health care providers. A single-center quality improvement project that evaluated the role of brief mindfulness sessions during RT staff meetings reported reductions in physical and emotional stress levels.<sup>18</sup> The relationship between these interventions and burnout was not evaluated, and the authors did not evaluate whether the intervention resulted in sustained differences over time. Mindfulness training in nurses reduced burnout, stress, anxiety, and depression and improved job satisfaction in a meta-analysis of 9 studies, although the effect of brief sessions (ie, < 4 h) on clinical outcomes has yet to be clearly demonstrated.<sup>19,20</sup> Mindfulness also aids physicians in emotional regulation and

reducing burnout.<sup>21</sup> Mindfulness was the most common resilience strategy noted by our respondents; however, it was only mentioned by 10% of total respondents, indicating mindfulness strategies are currently underutilized by RT departments. The second most common strategy was referring staff to EAPs, which used counseling and unspecified employee assistance. The effectiveness of counseling for burnout is unclear, as some studies have reported a modest benefit while others were not effective.<sup>22</sup> There is significant overlap between depression, anxiety, and burnout, and symptoms may be similar, so referring staff to counseling or EAPs is a reasonable strategy to help staff obtain treatment for burnout or other mental health challenges.<sup>23</sup> In summary, burnout is multifactorial and complex, and focusing solely on the individual's resilience without addressing systemic issues will have minimal positive effects on staff well-being in the long term. Too much focus on individuals' resilience carries the implication that staff who are suffering from burnout are weak, flawed, or unable to cope with their job requirements.

Our respondents indicated they were unsure whether burnout was primarily caused by external forces, but most of the reported drivers were external. Individual responses to stress and emotional toll may be modifiable through resilience training, although the effectiveness of resilience training to reduce burnout is unclear.<sup>24</sup> A recent study by West et al<sup>24</sup> reported that physicians with the highest resilience scores still had a burnout rate of 29%. This is highly indicative that burnout is driven largely by organizational or departmental factors such as staffing, leadership, workloads, and perceived lack of appreciation, respect, or recognition. Studies of nurses have provided inconclusive results about which individual factors associated with burnout.<sup>16</sup> Organizational strategies to reduce burnout need to be identified, and RT leaders need to evaluate staffing and workloads. Reducing unnecessary therapies or non-evidence-based care through development of RT-driven protocols has been shown to reduce work load, stress, and RT intentions to leave their current positions.<sup>25,26</sup> Burnout was not directly measured in these studies; however, turnover and intentions to leave their current position are highly associated with burnout in nurses.<sup>16</sup> A simple organizational intervention that has been demonstrated to have a positive effect on burnout is "Three Good Things"; in this activity, staff write down 3 good things at the end of each shift or at the end of the day, and highlights can then be shared with the oncoming shift.<sup>27</sup> This was reported to increase overall happiness, decrease burnout, decrease depression, and improve work-life balance in a cohort of health care workers.<sup>27</sup>

### Limitations

There are significant limitations to our study. Only members of the AARConnect sections were eligible for

inclusion, thus the generalizability of our results to non-AARC members is unknown. There were a limited number of respondents, and they may have a particular interest in burnout and resilience or biased views on the topic. The study did not measure reported burnout rates using a validated scale, and some questions may not have been worded clearly. The survey was developed independently of prior burnout research, which likely reduces the comparability of our results to prior studies. COVID-19 hotspots were determined at the time the survey was deployed; the answers may have changed during the ongoing pandemic. We also determined COVID-19 hotspots based on state case load, which may not have been reflective of individual RTs' exposure or departmental stress related the pandemic. This may explain why we did not observe differences between hotspots and non-hotspots.

### Conclusions

Most respondents experienced burnout at some point in their careers, yet few RT departments measured burnout. Resilience resources were not commonly used, but employee assistance programs and wellness programs were common. Key drivers of burnout identified were poor leadership, staffing, and high workloads. Estimated burnout rates differed between management and front-line staff respondents. Future research is urgently needed to evaluate the true prevalence of burnout and effects on RTs' well-being and the quality of patient care.

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