

# Enhancing Respiratory Therapists' Well-Being: Battling Burnout in Respiratory Care

Andrew G Miller, Katlyn L Burr, Jerin Juby, Carl R Hinkson, Cheryl A Hoerr, Karsten J Roberts, Brian J Smith, Shawna L Strickland, and Kyle J Rehder

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**Burnout is a major problem in health care and is associated with adverse sequelae for patients, health care workers, and organizations. Burnout among respiratory therapists (RTs) is as high as 79% and is associated with poor or ineffective leadership, inadequate staffing, high work load, non-leadership position, and work environment. An understanding of burnout is necessary for both staff and leadership to ensure RT well-being. This narrative review will discuss the psychology of burnout, prevalence, drivers, mitigation strategies, and future directions for research. Key words: burnout; well-being; respiratory therapy; respiratory therapist; respiratory care practitioner; leadership; management. [Respir Care 2023;68(5):692–705. © 2023 Daedalus Enterprises]**

## Introduction

Given the inherent stresses of working in health care, burnout is a major challenge for health care workers (HCWs). Burnout includes 3 domains: emotional exhaustion, depersonalization, and professional inefficacy.<sup>1</sup> HCW burnout has been consistently documented to be substantially higher than the general population.<sup>2-4</sup> On average, about half of HCWs report burnout, with females and persons of color affected more than male and white counterparts.<sup>5</sup> Whereas burnout is a specific work-related phenomenon, the negative effects can contribute to broken relationships, substance abuse, depression, and suicide.<sup>5,6</sup> Nurse and physician burnout is also associated with deleterious effects on patient care and has been associated with increased turnover, intent to leave, and lower staff engagement.<sup>6,7</sup> Because of the high prevalence and the negative effects on patients, HCWs, organizations, the Surgeon General of the United States, and the Critical Care Societies Collaborative have each published calls to action.<sup>8,9</sup> Whereas burnout has been well studied in physicians and nurses, there are limited data evaluating the relationship between respiratory therapist (RT) burnout and patient outcomes; however, several studies have been published on RT burnout prevalence.<sup>10-14</sup>

The COVID-19 pandemic significantly increased stress on HCWs as many centers experienced massive surges in critically ill patients coupled with staff shortages.<sup>15,16</sup> Early in the pandemic, there were significant concerns about a shortage of mechanical ventilators, shortages of personal protective equipment, unknowns about the virus, exacerbations of existing staffing challenges, and fear of transmitting the virus to family or other loved ones. Some centers were forced to facilitate non-RTs to provide respiratory

care.<sup>17,18</sup> Additional stress resulted from constantly changing information from the Centers for Disease Control and Prevention, frequent changes in local policies and procedures, and ineffective communication around constantly changing guidelines. As COVID-19 becomes endemic, HCWs will continue to suffer from the negative impact, and many individuals may struggle to mentally recover.

In addition to burnout, HCWs are also at an increased risk of other mental health challenges, including anxiety, depression, posttraumatic stress disorder (PTSD), stress, and difficulty sleeping.<sup>19,20</sup> RTs may have a high prevalence of PTSD,<sup>21</sup> and HCWs in some settings carry a risk of PTSD that is similar to or slightly higher than veterans returning from active combat zones.<sup>19,22</sup> Importantly, there are limited well-being resources available for RTs.<sup>10</sup> Respiratory care leaders must be aware of the psychological impacts of burnout, especially as HCWs face continued high work loads despite ongoing challenges to their mental health.<sup>23</sup> Leaders also must understand the impacts of individual resilience and organizational strategies on HCW well-being.<sup>4,6,24</sup> This narrative review will discuss the psychology of burnout, consequences of burnout, prevalence, drivers, mitigation strategies, and future directions to enhance RT well-being.

## Pathophysiology and Psychology of Burnout

### Physiologic Response to Stimuli

Physiologic responses to stimuli or stress are autonomic responses that cannot be controlled. Threatening or negative stimuli will trigger the flight or fight instinct. This reflex developed in humans as a method to deliver adrenaline to provide a survival advantage when faced with external threats. In modern society we face few life-threatening events in daily life but often experience similar physiologic responses to stress in daily life: a rude colleague, a patient in distress, traffic, or time pressure can each trigger a similar response. The stress response is associated with increased inflammatory response and oxidative stress,<sup>25</sup> and burnout has been implicated in a host of adverse physical conditions.<sup>26</sup>

It has been stated by Sexton and Adair<sup>27,28</sup> that “burnout is the impaired ability to experience the restorative effects of positive emotions.” Essentially, burnout affects how clinicians interpret and respond to everyday situations, with those suffering from burnout tending to focus more on negative situations and outcomes preferentially over positive situations.<sup>23</sup> Staff suffering from burnout may interpret routine interactions through a negative lens and have difficulty experiencing healing positive emotions. The stressful effects of work-place challenges, uncertainty, incivility, emotional and moral distress, and poor work-life balance are all then magnified to further drive burnout.

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Mr Miller and Dr Rehder are affiliated with Duke University Medical Center, Durham, North Carolina. Ms Burr is affiliated with Nemours Children’s Health, Wilmington, Delaware. Mr Juby is affiliated with Thomas Jefferson University Hospital, Philadelphia, Pennsylvania. Mr Hinkson is affiliated with Providence Regional Medical Center, Everett, Washington. Ms Hoerr is affiliated with Phelps Health, Rolla, Missouri. Mr Roberts is affiliated with Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania. Mr Smith is affiliated with University of California, Davis, Sacramento, California. Dr Strickland is affiliated with Rush University, Chicago, Illinois; and American Epilepsy Society, Chicago, Illinois.

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Correspondence: Andrew G Miller MSc RRT RRT-ACCS RRT-NPS FAARC, Duke University Medical Center, Durham, North Carolina. E-mail: Andrew.g.miller@duke.edu.

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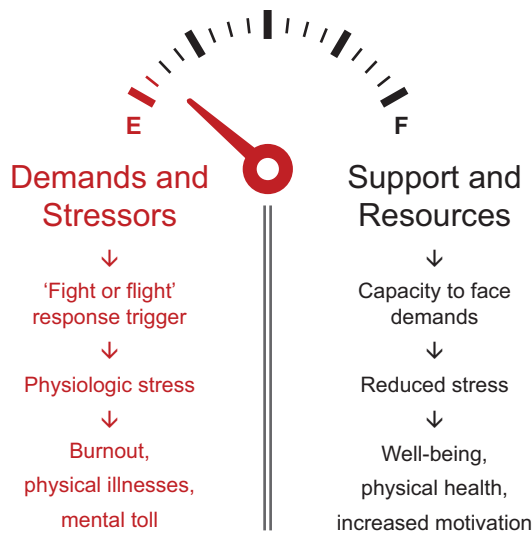


Fig. 1. The relationship between demands and stressors and support and resources. When demands and stressors are greater than support and resources, individuals will be emotionally drained into the red zone.

Positive interactions can mitigate negative interactions; but they are not as impactful; to counteract negative stimuli, a ratio of at least 3 positives to each negative is ideal<sup>29,30</sup> (Figure 1). In order to design effective interventions to combat the effects of burnout, leaders must understand the science of burnout and partner with clinicians to determine interventions that will most effectively integrate workflow, well-being, and work-life balance.<sup>31</sup> Most interventions require volunteer engagement and will be less effective with forced participation.

### Negative Consequences of Burnout

#### Health Care Providers

Loss of energy, focus, and engagement are the most commonly reported symptoms of burnout.<sup>32,33</sup> Numerous associated negative physical health consequences have also been associated,<sup>26,34-43</sup> including chronic issues such as type 2 diabetes,<sup>36,38</sup> coronary heart disease,<sup>39</sup> musculoskeletal pain,<sup>38,42</sup> prolonged fatigue,<sup>40</sup> respiratory infections,<sup>41</sup> gastrointestinal disorders,<sup>41</sup> weight gain,<sup>37</sup> increased use of drugs and/or alcohol, sleep disorders, depression, and musculoskeletal pain.<sup>26</sup> Cardiovascular diseases are the most common physical consequences; however, pain, headaches, and on-the-job injuries have also been reported.<sup>26,36</sup>

There is additional overlap between mental health disorders and burnout. Whereas depression and burnout are unique disorders, there is a strong association between burnout and depressive symptoms, including increased psychotropic and antidepressant treatment.<sup>36,42,43</sup> Several studies have identified an association between burnout and suicidal ideation.<sup>34,35,44,45</sup> Other studies have noted that burnout was

associated with decreased empathy,<sup>35</sup> compassion fatigue,<sup>13</sup> poor self-care,<sup>34</sup> substance abuse,<sup>34</sup> and motor vehicle crashes.<sup>34-36</sup> Depersonalization is often expressed as cynicism or sarcasm, which can manifest itself as compassion fatigue. A lack of efficacy is used to describe the feeling one is not making a difference or lack of purpose, along with reduced productivity and inadequate coping skills.<sup>1,32</sup>

#### Patient Care

Burnout in HCWs negatively impacts patient care.<sup>46</sup> Staff suffering from burnout are twice as likely to report medical errors,<sup>45</sup> and nurses with a high mental work load were 2.8 times more likely to make medication errors.<sup>47</sup> Safety culture, quality of care, and patient experience all suffer when staff are burned out.<sup>34,36,48,49</sup> One systematic review identified HCW burnout as a predictor of lower adherence to infection control precautions,<sup>48</sup> whereas another found an association between nurse burnout and lower quality of care, error reporting, medication errors, infections, falls, and patient/family dissatisfaction with care.<sup>46</sup> A study of physician-patient pairs found depersonalization as perceived by both physician and patient was associated with lower patient satisfaction and longer patient-reported recovery time.<sup>49</sup> The effect of RT burnout on patient care has not been studied; however, it is reasonable to conclude similar negative effects on quality of care for RT departments with high burnout prevalence.

#### Health Care Systems

Burnout is associated with decreased productivity, job dissatisfaction, and increased self-reported intent to leave the workplace.<sup>26,34,36</sup> Turnover related to burnout increases costs for temporary staff, recruitment, onboarding and orientation, as well as greater resource utilization and a lack of access to quality care.<sup>34,36</sup> The cost of turnover and reduced productivity among physicians due to burnout costs is estimated at approximately \$4 billion annually.<sup>36</sup> High turnover increases the short-term stress on permanent staff as they are forced to work shorthanded until new, often less-experienced staff are hired and fully oriented. Most RT departments require approximately 3–6 months of orientation, depending on the experience level of the new hire; however, some pediatric hospitals require nearly a full year of orientation for new graduates.<sup>50</sup> Even after completing orientation, new graduate RTs need support from supervisors, management, and experienced RTs as they gain experience (Figure 2).

### Prevalence of Burnout

#### Respiratory Therapists

Compared to other health professions, understanding burnout among RTs is an emerging science. The largest

## Consequences of Burnout

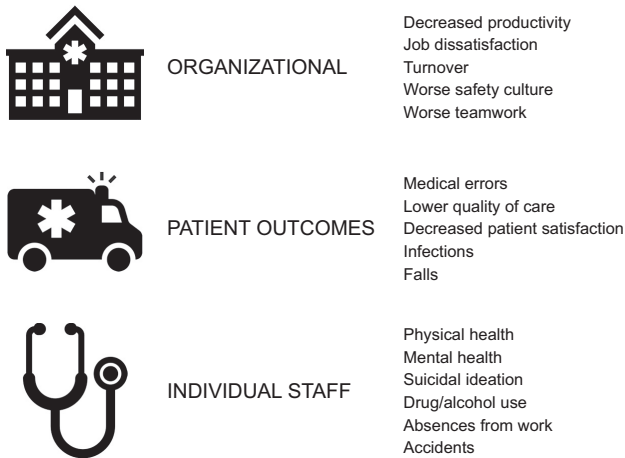


Fig. 2. Consequences of burnout to the organization, patients, and individual staff.

prevalence study of RTs to date<sup>11</sup> included 1,114 RTs from 26 centers and was performed in early 2021 during the COVID-19 pandemic. The overall burnout rate was 79%, with 10% reporting severe, 32% moderate, and 37% mild burnout. Logistic regression revealed staffing, inability to complete all work, burnout climate, and missing work were all significantly associated with an increased risk of burnout, whereas a positive view of leadership and a non-clinical role were protective against burnout.<sup>11</sup> Other studies have reported RT burnout rates of 74%<sup>51</sup> and 77%,<sup>14</sup> with one reporting 26% of RTs were suffering from severe burnout with 50%<sup>52</sup> emotionally exhausted. A longitudinal study completed during the COVID-19 pandemic found RTs were 3.7 times more likely to be suffering from burnout than other professions.<sup>51</sup>

### Non-RT Health Care Workers

Burnout among physicians has been described as endemic, associated with decreased quality of patient care, unprofessional behaviors, and reduced patient satisfaction. Self-reported physician burnout increased from 38% in 2020 to 63% by the end of 2021 and beginning of 2022.<sup>53</sup> Burnout was 46% in 2011, 54% in 2014, and 44% in 2017.<sup>53</sup> Forty-five percent of physicians reported at least one symptom of burnout; 38% screened positive for depression, and 6.4% had suicidal ideation within the prior 6 months.<sup>54</sup> First-year residents have been noted to have a burnout rate as high as 92%.<sup>55</sup> Physicians were at an increased risk of burnout compared to non-physicians, and those in first-line specialties, such as emergency medicine or internal medicine, were at the greatest risk for burnout.<sup>54</sup> A systematic review of burnout prevalence

among physicians found an overall prevalence of 34%, with significant variation among individual studies and specialties.<sup>56</sup>

Prevalence in nursing varies between 35% and 45%<sup>23</sup> but has been reported as high as 72% in critical care nurses after the COVID-19 pandemic.<sup>57</sup> A reporting longitudinal data on 296 clinicians during the COVID-19 pandemic reported an overall burnout rate of 67%, with 30% of physicians, 68% of advanced practice providers, 67% of pharmacists, and 74% of RTs experiencing burnout symptoms.<sup>51</sup> Depression was also high, with 30% of physicians, 47% of advanced practice providers, 56% of pharmacists, and 57% of RTs showing signs of depression<sup>51</sup> (Figure 3).

### Drivers of Burnout

#### Work Load

Work load has been consistently cited as a driver of burnout across professions and settings,<sup>10,11,23,58-60</sup> including multiple studies of RTs.<sup>10,11,13</sup> The respiratory care profession is currently experiencing a staffing shortage, and many departments are struggling to fill open positions. This results in an increase in work load for available staff, who then feel obligated to pick up extra shifts, are given larger than normal assignments, and may be forced to cut corners to complete all their work. Some centers may require mandatory overtime when short staffed. In one study, 29% of RTs reported inability to complete all their assigned work in at least half of their shifts, with an associated increase in burnout.<sup>11</sup> Whereas not observed in RTs,<sup>11</sup> physician burnout has been associated with additional hours, night shifts, and weekend call.<sup>34,35</sup> The COVID-19 pandemic and surge of critical care patients significantly increased the work load and acuity while decreasing efficiency of RT work (including donning and doffing of personalized protective equipment), and some departments were forced to utilize non-RTs to provide respiratory care.<sup>17,18</sup> Whereas the burden of COVID-19 on critical care providers has decreased, the residual psychological damage remains; and it is likely many RTs suffering from burnout left the profession, took on less stressful roles, retired early, or reduced their working hours.

A study of resident physicians and medical students found higher patient volumes and lower autonomy to be associated with burnout.<sup>35</sup> Lack of autonomy was cited by only 5% of RTs as a driver of burnout.<sup>10</sup> A large prevalence study of RTs reported in univariate analysis that higher protocol use was associated with increased burnout; however, this became nonsignificant on multivariable analysis.<sup>11</sup> Whereas RT-driven protocols have been shown to improve patient outcomes,<sup>61-64</sup> they can result in an increased work load,<sup>62</sup> especially when short staffed. Even with adequate RT staffing, the increased cognitive load associated with

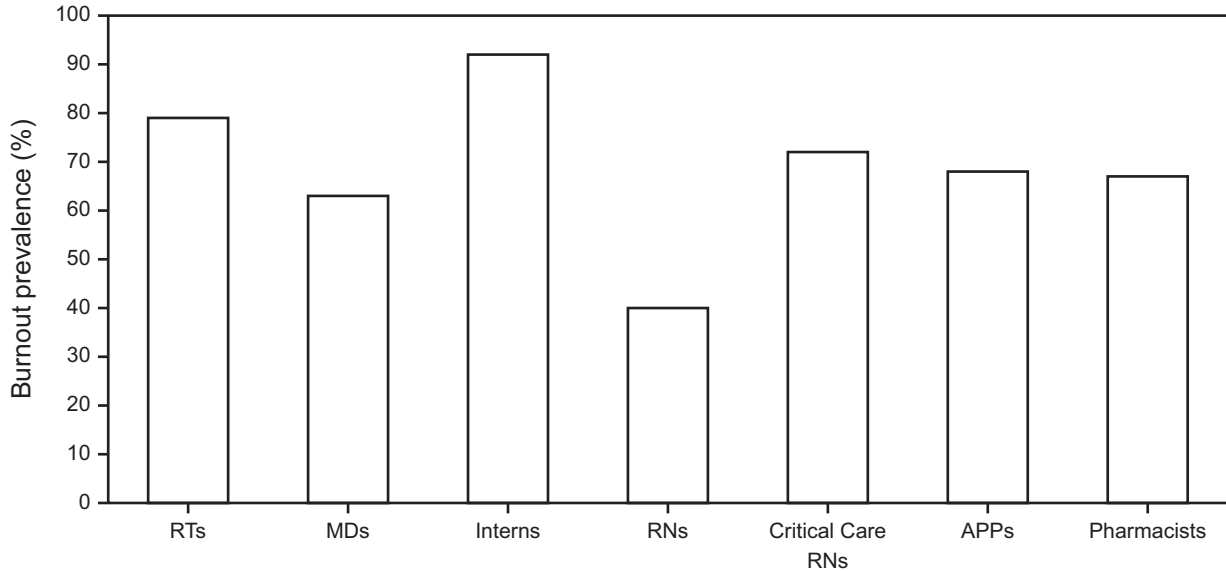


Fig. 3. RTs = respiratory therapists<sup>10</sup>; MDs = medical doctors<sup>53</sup>; interns = first-year resident physicians<sup>63</sup>; RNs = registered nurses<sup>1</sup>; critical care RNs<sup>64</sup>; APPs = advanced practice providers<sup>64</sup>; pharmacists.<sup>64</sup>

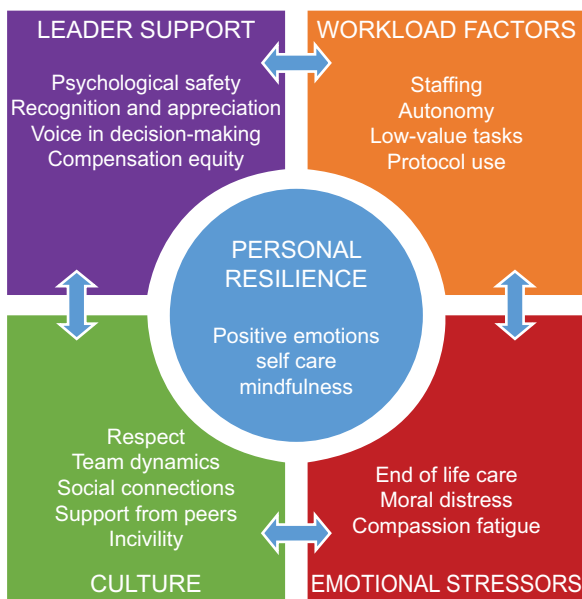


Fig. 4. Drivers of burnout.

complex decision-making may be a risk factor for RT burnout and is an important area of future study.

The electronic medical record has also been implicated as a driver of increased work load and burnout in physicians.<sup>65,66</sup> Electronic medical record usability has also been associated with burnout and intention to leave among nurses<sup>67</sup> and critical care providers.<sup>68</sup> The effect of the electronic medical record on RTs' work load has not been studied, but it can be assumed RTs experience the same frustrations as other providers. RT departments should

work to streamline their charting processes to minimize the charting burden for bedside staff.

Given the complexities of modern health care, effective teamwork is essential to optimize work load, patient outcomes, and well-being.<sup>69-71</sup> A large study of 85 health care facilities and 50,000 HCWs found significant decreases in teamwork during the COVID-19 pandemic, and safety culture was highly correlated with well-being. This study also noted increases in emotional exhaustion, lower local leadership score, worsened work-life balance, and fewer respondents were thriving.<sup>70</sup>

### Staffing

Staffing has been identified as a driver of burnout in RTs and nurses.<sup>10,13,68</sup> Nursing studies also found burnout to be associated with intention to leave their current role.<sup>4,72</sup> In contrast to nursing, most hospitals do not have a pool of RTs to pull from to cover callouts or the ability to close beds if adequate RT staff are not available. Most RT departments will cover sick calls by redistributing the work load among staff, cover with management, or be forced to triage care. In a large prevalence study, 73% of RTs reported being inadequately staffed for more than half of shifts, and only 8% reported being fully staffed for all shifts.<sup>11</sup> RTs suffering from burnout were twice as likely to miss work,<sup>11</sup> and it is known that burned-out team members are less likely to help others.<sup>68</sup> Short staffing and burnout create a feedback loop, which in turns drives additional shifts missed, increasing the work load on other staff.<sup>11,68</sup> Many departments will attempt to compensate for the lack of staff through the use of mandatory overtime and/or use of

agency staff. Whereas agency staff can help cover in the short term, they can have a major negative impact on department and hospital finances. The high salaries make traveling an enticing option for many RTs but results in even greater pressure on their “home” departments.<sup>73</sup> This in turn can create friction between full-time staff, management, and agency staff due to potential disparities in pay.

Each RT department is required to justify the number of full-time equivalents (FTEs) employed. A full description of different methods is beyond the scope of this article; in brief, the number of FTEs may be determined by billing codes alone, whereas other departments may determine FTEs using standardized time codes that include non-billable procedures. The American Association for Respiratory Care provides guidelines for standard times for respiratory care procedures<sup>74</sup> that can be utilized, but consultants and hospital administrators often use other, less validated metrics to determine FTEs and benchmark departments.<sup>75</sup>

A major challenge for RT departments is how to equitably divide the work among shifts. Staffing models chosen by hospital or departmental leadership can have large impacts on the daily work load of individual therapists. Some departments may choose to run lean to reduce overall labor costs; however, this often results in excessive or unsafe work loads. Some departments may also choose to employ a system of minimal safe staffing that does not account for the quality or value of the care delivered. Finally, most current systems do not create an incentive for departments to reduce unnecessary care, especially if they are concerned about layoffs or FTE reductions. To date, published data on RT department staffing models are limited.

### Leadership

Multiple studies of HCWs have shown associations between perceptions of leadership and burnout.<sup>4,10,11,72,76,77</sup> A post hoc analysis of a large prevalence study found most RTs positively viewed leadership, although a negative view of leadership was associated with inadequate RT staffing, working night shift, having a non-leadership position, burnout climate, missing work for any reason, and overall burnout.<sup>77</sup> This suggests the poor perception of leadership results from RT leaders not providing adequate resources, inability to provide adequate staffing, non-equitably distributing work load, or failing to provide clinical support.

A key feature of effective teams is the presence of psychological safety or the freedom to express concerns and ideas without fear of retaliation.<sup>78</sup> Psychological safety supports staff to speak up before patient safety is compromised and not after an event has already happened. Effective leaders need to work to engage staff in key decisions to support organizational learning around clinical issues, interpersonal conflicts, and changing drivers of burnout. Given that staff

suffering from burnout are more likely to make mistakes, identifying and fixing systems problems and supporting staff should be the focus rather than blame or punishment. A lack of psychological safety will undermine teamwork, increase risk of burnout, contribute to staff turnover, and negatively affect patient safety.<sup>79</sup>

### Hospital, Department, or Unit Culture

Work environment has a significant effect on individual well-being. An environment lacking professional growth opportunities, control over work schedule, peer support, and efforts to cultivate well-being results in higher risk of burnout.<sup>23</sup> A large study of HCWs found burnout was clustered within work units and was associated with worse work-life balance, teamwork, safety climate, improvement readiness, and local leadership.<sup>80</sup> This was confirmed in a large prevalence study of RTs where respondents agreeing others in their department were burned out were 9.4 times more likely to be burned out themselves.<sup>11</sup> As burnout diminishes opportunities for positive experiences at work, it is associated with decreased job satisfaction and a reduced commitment to the job or the organization.<sup>26,34,36,48</sup>

Whereas bullying has not been specifically studied in RTs, it is common in nursing<sup>81</sup> and among physicians.<sup>82</sup> Victims of bullying are at risk of burnout and other mental health-related distress.<sup>83</sup> In addition, those who witness the bullying but are unable to intervene may suffer as a secondary victim. A large study of HCWs noted 98% were exposed to disruptive behaviors including bullying, with associated lower safety culture scores and lower well-being.<sup>31</sup> Those who are experiencing burnout are also more likely to act out in inappropriate ways, both causing greater personal conflict and disrupting job tasks.

Through teamwork breakdowns and interpersonal interactions, burnout perpetuates through social interactions in the workplace.<sup>26,34,48</sup> Approximately 20% of burnout can be explained by co-workers.<sup>84</sup> Health care organizations need to develop strong systems to deal with bullying, incivility, and disruptive behaviors because tolerance of this conduct can have a widespread negative impact on the organization. Whereas this can be done at the department level, it requires buy-in from organizational leadership as RT leaders will have limited influence over physicians, nurses, or other staff demonstrating unacceptable behavior. Most RT departments are decentralized, and RTs interact with nearly every unit within each institution; thus, they may be exposed to units with high burnout; and as a result, departmental efforts to curb burnout may be less effective.

### Lack of Recognition, Respect, Appreciation, and Pay

Another key dimension of burnout is the feeling of professional inefficacy.<sup>32</sup> Recognition has been reported as a

Table 1. 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. It includes only those key drivers mentioned by > 5% of respondents.  
 From Reference 10, with permission.

factor affecting RT burnout and job satisfaction.<sup>85</sup> A study published in 2021 found that recognition, appreciation, and respect were 3 of the top 10 drivers of burnout for RTs<sup>10</sup> (Table 1). RTs reporting lack of respect indicated health care peers, news media, hospital administration, general public, and professional organizations as sources.<sup>13</sup> Other studies have reported a lack of respect between RTs and other HCWs as a key driver of burnout.<sup>68,86</sup> Non-physician team members reported team dynamics were affected by a perceived lack of trust and respect from physicians, whereas physicians perceived a reciprocal lack of trust.<sup>68,86</sup>

Lack of respect, appreciation, and recognition results in RTs often feeling undervalued by their institutions, departmental leadership, or multi-professional colleagues. The degree to which leadership acknowledges individuals for their contributions affects well-being, burnout, and career satisfaction by modeling respect and appreciation.<sup>34</sup> A study of critical care providers found that leaders were more likely to point out simple errors rather than recognize near heroic efforts.<sup>68</sup> Conversely, an early study of RTs reported peer recognition, specifically from nurses and physicians, as a predictor of job satisfaction.<sup>85</sup> Enhancing recognition efforts by both RT leadership and external sources should be a priority.<sup>73,77</sup>

Miller et al<sup>10</sup> identified that only 4.1% of RT respondents cited compensation as a driver of burnout, and previous work from 1992 indicated that higher salaries were not associated with decreased burnout.<sup>85</sup> Nursing pay was also not associated with burnout but did influence their intention to leave their position.<sup>87</sup> Whereas pay has not been consistently identified as a driver of burnout, RTs have noted

Table 2. Drivers of Burnout and Potential Solutions

Driver	Potential Solutions
Work load	Value efficiency
	Improved efficiency
	Reduced services
Staffing	Increased pay
	Use of protocols
	Reduced services
Leadership	Acknowledgement of burnout
	Regular measurements of burnout
	Training and education
Hospital or unit culture	Local interventions of resilience tools
	Accountability for disruptive behavior
	Leadership education
Lack of recognition, respect, appreciation	Accountability for disruptive behavior
	Team training on communication
	Employee assistance programs
Pay	Socialization programs
	Recognition programs
	Peer-to-peer recognition
Moral distress	Awards programs
	Leadership training
	Market adjustments
Compassion fatigue	Pay equity
	Increased non-salary benefits
	Clinical ladders
Compassion fatigue	Schwartz Rounds
	Open communication
	Increased autonomy for RTs
Compassion fatigue	Resilience tools
	Respite rooms
	Time off or reduced hours

RTs = respiratory therapists

inequity in pay between professions as a potential driver. A key example was COVID-19 pandemic “hero pay” provided to some professions (RNs, MDs) but not RTs.<sup>13</sup> Also, tension within the department may grow when hospitals pay lucrative external agency wages but do not increase their own staff wages.<sup>73</sup> These pay inequities could be considered an extension of the lack of respect, recognition, or not feeling valued, and leaders should work to ensure their staff are being paid adequately and equitably.

**Moral Distress, Compassion Fatigue, and End-of-Life Care**

Moral distress occurs when institutional policies, systems, or standards of care are at odds with an HCW’s personal values. It is common among critical care staff who witness suffering that they feel is not in the patient’s best interest.<sup>88</sup> Ongoing improvements in technology allow sicker patients to either survive or be supported indefinitely, increasing opportunities for moral distress, particularly

among critical care HCWs and RTs.<sup>89,90</sup> Pediatric nurses have reported that feeling powerless and voiceless in such situations drives moral distress.<sup>89</sup> Similarly, RTs usually have limited influence or are not involved in end-of-life decision making despite being present to turn off ventilators and extracorporeal membrane oxygenation pumps, perform terminal extubations, and support families.

Compassion fatigue has been described as the “cost of caring,” which results from HCWs providing empathy during distressing situations and is associated with burnout.<sup>91,92</sup> A meta-analysis of nurses found 53% suffered from compassion fatigue,<sup>93</sup> which was associated with lack of leader support.<sup>91</sup> Whereas compassion fatigue has not been studied in RTs, secondary traumatic stress has been described in 79% of RTs.<sup>21</sup>

Respiratory modalities are commonly used at the end of life, and 84% of RTs have participated in at least 5 terminal extubations, yet only 29% felt comfortable discussing end-of-life care with their patients or families.<sup>94,95</sup> A recent qualitative study reported a significant RT emotional toll associated with end-of-life care. Deep ties with certain patients, social isolation, and lack of support from non-RT colleagues all worsen the emotional burden of withdrawal of care (Fig. 4 and Table 2).<sup>96</sup>

### Mitigation Strategies

Reducing burnout is essential in preserving the well-being of HCWs and minimizing negative impacts on patients. Burnout mitigation strategies have largely focused on individuals; however, most drivers of burnout reported in the literature are external. Thus, efforts to combat burnout should primarily focus on organizational strategies designed to improve the work environment, along with secondary efforts to support personal resilience.

#### Staff in Crisis

People in crisis from burnout will lack the agency to help themselves and should be immediately referred to mental health services. Many hospitals have employee assistance programs that can be used for short-term counseling.<sup>10</sup> Leadership should be empathetic and focus on supporting the team member. This could include time off, change in assignment, redistribution of duties, and formal medical leave. Care should be taken to help refer those struggling to the appropriate services and encourage individuals not to attempt to cope in unhealthy ways like alcohol or drugs. For longer-term mental health challenges, formal therapy may be warranted. The entire team should be educated on well-being to remove stigma of burnout and foster a supportive environment.

#### Organizational Strategies

Organizational approaches to mitigating burnout address the systemic issues that drive burnout that are beyond

individual control. Any organizational strategy must begin with assessment of burnout using a validated tool, yet only 10% of RT departments measure burnout.<sup>10</sup> Various tools are available, though details are beyond the scope of this article. Health care has long promoted a culture that does not value work-life balance, resulting in the acceptance of individuals pushing their physical and mental limits. Education on work-life integration provides a tangible intervention that will reduce burnout and support work-life balance.<sup>80</sup>

Wellness programs have been attempted to reduce burnout, with most being focused on overall physical health over mental health, including exercise programs, smoking cessation, and weight loss programs. Randomized controlled trials (RCTs) of wellness programs in retail workers and university employees found improved exercise and weight control but no differences in clinical outcomes.<sup>97,98</sup> Wellness programs have shown limited success in reducing burnout in physicians.<sup>99,100</sup> Given their lack of proven efficacy, executives should be cautious about devoting resources that provide the illusion of intervention but do not actually address the underlying issues. Resources may be better utilized at the local level so interventions can be customized to each department. Future studies should work on targeted interventions for mental health, specifically targeting resilience and community building.<sup>23,101</sup>

In order for HCWs to be fully engaged, they need to have enough autonomy and voice to feel as though they have some control over their work.<sup>23</sup> Engagement falls and burnout rises when individuals feel as though they are interchangeable or are not able to use their strengths at work.<sup>102</sup> RT departments can increase staff autonomy by allowing self-scheduling, utilizing RT-driven protocols,<sup>75,103</sup> and giving staff influence over daily assignments. Engagement at large facilities may increase by aligning staff skills and interests through the use of “core teams” in which individuals are primarily assigned to certain areas such as pediatric or adult ICUs or step-down floors. Core teams may not be feasible at smaller hospitals due to coverage models. In either setting, RTs should be encouraged to participate and lead quality improvement projects as this has been associated with lower rates of burnout, despite the potential increase in work load.<sup>104</sup>

Work on research and quality improvement projects can increase meaning in work by shifting the perception of work from “just a job” to a career with opportunities for professional growth.<sup>54,102</sup> It is important for leaders to ensure all staff have the opportunity to participate in projects without forcing extra work on those not interested or too burned out to consider extra work. Leaders should also be cognizant to appropriately resource these projects and not to overload participating staff. Projects may need to be limited in scope or given flexible deadlines to provide a balance between project completion and staff well-being.



Given significant associations with staffing, work load, and burnout, organizational leaders should work to optimize staffing and work load. Whereas it has not been studied in RTs, reducing the patient-nurse ratio has been shown to decrease burnout in nurses.<sup>105</sup> A study of physicians observed a decrease in burnout after changing their work process that changed team dynamics and increased resources available to the team.<sup>106</sup> Prior work to make RT departments increasingly efficient resulted in many departments being under-equipped to adapt to the sudden surges during the COVID-19 pandemic. Given that a large percentage of RTs report being unable to complete all their work in a given shift,<sup>11</sup> RT departments should reevaluate their work processes to reduce stress upon the staff. Developing evidence-based staffing models, strategies to provide equitable work loads, and off-loading low-value work are strategies that may help reduce work load in the short term.

The nationwide RT staffing shortage will not be resolved quickly, and departments need to adapt. In the short term, departments can utilize overtime, incentive pay, agency staff, or management to provide clinical coverage. Agency staff can help obviate shortages at one facility but may leave their prior facilities short staffed, creating a situation where at least some departments are always short staffed.<sup>73</sup> Currently, departments have 3 potential long-term options to address the staffing shortage: (1) hire more RTs, (2) become more efficient, or (3) reduce the services offered by the department. Most departments have focused on options 1 and 2; however, stretching each RT to their limits each shift is not sustainable and not only drives burnout but also reduces the quality of care. We are not aware of departments reducing services, but this needs to be a consideration so RT resources can be prioritized to interventions known to improve patient outcomes such as lung-protective ventilation, daily spontaneous breathing trials, disease management, and RT-driven protocols.

A negative perception of leadership has been identified as a major driver of burnout among RTs.<sup>10,11</sup> An authentic and trustworthy leadership style that promotes relationship transparency, openness, and support is preferred by HCWs.<sup>107</sup> Leaders are responsible for fostering a positive work environment that promotes health and well-being. Three aspects of leadership responsibility have been identified as key to mitigating burnout: creation of a supportive environment, early recognition of warning signs that burnout may be developing, and the development of strategies to mitigate the negative impact of burnout.<sup>108</sup> Positive leader behaviors may provide significant benefits.<sup>10</sup> Leadership rounding and regular, positive, and constructive feedback between leaders and staff have been associated with a decreased burnout.<sup>11,24</sup> Daily huddles can be utilized to support communication between leadership and staff and to improve resource allocation.<sup>109</sup> Whereas the specific relationship between burnout and daily huddles has not

been investigated, this strategy may allow proactive problem-solving to reduce daily stress related to systems issues.

Whereas published data on addressing negative interactions and combating disruptive behavior are limited, it is an important area of future research as the loss of psychological safety will have a significant negative effect on overall team function. Unprofessional behavior is reported less often than safety concerns, and there are significant barriers to speaking up, especially in environments with a history of retaliation, bullying, and fear.<sup>31</sup> If disruptive behavior goes unaddressed, it becomes tolerated as part of the culture, and trust in local leadership wanes.<sup>31</sup> When leaders have created an environment where everyone feels comfortable speaking up, employee engagement, wellness, and teamwork should improve.

Effective leaders develop requisite skills, characteristics, and competencies through training and deliberate practice. Transformational and authentic leadership styles have been found to facilitate a healthy working environment necessary to reduce burnout, build resilience, and enhance staff engagement.<sup>110</sup> Unfortunately, many leaders rise to leadership positions based on high performance in clinical environments or seniority, with little education or experience in leading others.<sup>111</sup> Leaders who lack personal integrity, effective communication skills, conflict resolution skills, and relationship-building skills will struggle to be effective, which will in turn influence burnout.<sup>112</sup> Contributing to this phenomenon further is lack of mentoring or coaching programs and organizational programs to support new leaders.<sup>111</sup> Coaching has been shown to decrease emotional exhaustion, improve quality of life, and increase resilience, although without improvements in depersonalization or engagement.<sup>113</sup> Unfortunately, this intervention is expensive and likely beyond the reach of most RT departments. Data on RT leadership training are sparse; however, we recently found 95% of RT leaders had received at least some formal training.<sup>114</sup> Future training programs should include staff wellness, education on burnout, and emotional intelligence in programs for new and prospective leaders.

### Individual Interventions

The psychology of burnout results in staff being focused on negative events and inability to notice or appreciate positive events.<sup>23</sup> This may be particularly true of leaders who are often tasked with identifying and solving problems. Individual interventions that can be employed to promote well-being by HCWs include activities that foster positive emotions, social connections, gratitude and giving, self-care, mindfulness, and meditation.<sup>23</sup>

Several interventions have been tested to refocus individuals' awareness of positive events, centered around cultivating the positive emotions of gratitude, love, joy, amusement, hope, awe, serenity, inspiration, pride, and interest.<sup>23</sup> A large

RCT of HCWs testing a low-resource, simple intervention, Three Good Things, demonstrated increased happiness, decreased burnout, decreased depression, and improved work-life balance following the intervention.<sup>27</sup> Based on the results of this study, additional bite-sized interventions have been developed and have been or are currently being tested in RCTs of HCWs.<sup>23</sup> A web-based intervention where respondents wrote a gratitude letter writing has been shown to improve work-life balance, reduce emotional exhaustion, and increase happiness.<sup>115</sup> An important finding from this study was that a significant number of respondents were surprised where they fell on the burnout scale and in relation to their peers, and the vast majority reported knowing their score made them want to further work on their resiliency and burnout.<sup>115</sup>

Lack of social connectivity has been cited as a significant risk factor for poor overall well-being. Absence of strong social connections has been found to carry a similar mortality risk as smoking.<sup>116</sup> Negative interactions with others and exposure to disruptive behaviors have also been associated with burnout.<sup>31</sup> A study of 20 pediatric ICUs found that one-on-one discussions with colleagues and informal socialization outside the hospital had a large positive effect on well-being.<sup>101</sup> Taking a break from stressful patients, being able to go home after a patient death, palliative care support for staff, Schwartz Center Rounds, and structured social activities were also noted to be helpful but underused in nurses.<sup>101</sup> Schwartz Center Rounds are meetings in which 3 to 4 people tell stories in a safe, confidential manner about the care of a specific patient and how it affected them, with discussion participation from the audience.<sup>117</sup>

Mindfulness and meditation training has been studied extensively and has been shown to reduce burnout among nurses and physicians.<sup>118,119</sup> A recent study of first-year residents found that mindfulness training resulted in increased awareness of mindfulness activities but did not impact burnout or use of mindfulness practices.<sup>55</sup> A single-center study of a mindfulness intervention for RTs resulted in decreased stress; however, the intervention was done in only two 30-min sessions and did not evaluate burnout.<sup>120</sup> Mindfulness training has been associated with a number of positive effects in nurses, including job satisfaction and intention to leave.<sup>121,122</sup> Many HCWs do not have time to complete the training required, as most successful interventions have required 8–10 weeks of training and a total commitment of 75 hours.<sup>123</sup> In addition to the time commitment, these programs are expensive and likely infeasible for most RT departments.

Self-care has also been cited as a strategy to improve well-being. Self-care encompasses many different components including sleep hygiene, exercise, meditation, hobbies, and yoga. Two of the most effective interventions for burnout are exercise<sup>124,125</sup> and getting more than 6 hours of sleep.<sup>126</sup> Unfortunately, sleep disorders are common in

HCWs suffering from burnout.<sup>127</sup> Additional areas of daily self-care include healthy eating, adequate hydration, taking scheduled breaks, and using all allocated vacation time. Regardless of the method, each individual needs to identify what recharges their batteries and make time to engage in those activities. Importantly, these strategies are unlikely to be effective when individuals are already in crisis.<sup>23</sup> Also, destructive behaviors such as alcohol or drug use, denial, venting, self-blame, and disengagement increase the risk of burnout.<sup>128</sup>

## Future Directions

### Leadership and Well-Being

As part of leadership efforts to combat burnout, improved recognition and increased understanding of the problem are keys to mitigation efforts.<sup>10</sup> Hospital and local RT leaders need to recognize burnout in individual staff, how systems contribute to burnout, and identify local contributors to burnout. Well-being should be measured every 18–24 months, especially if mitigation efforts have been deployed. Beyond leaders, education of staff on the symptoms of burnout and personal mitigation strategies may help with self-awareness and increase team recognition and support for those who are burned out or are at risk of developing burnout.

The strong relationship between leadership and well-being in RTs' needs requires further investigation to delineate optimal strategies.<sup>11,77,129</sup> Good leadership influences job satisfaction and job well-being, whereas negative leadership has been associated with higher burnout and absenteeism.<sup>77,129</sup> When psychological safety is absent, leaders may be unaware they are ineffective or distrusted by their employees. Identification of future leaders, leadership training, mentorship, and characteristics of effective HCW leaders are areas of important future research. Future studies of leadership should identify behaviors and characteristics of successful leaders and link specific leadership behaviors to staff well-being. Once these data are available, specific educational content can be developed and shared with current and future RT leaders. Current evaluation systems of RT departments should consider the inclusion of wellness a quality measure.

### Work Load and Burnout

Health care systems are constantly adapting and evolving. The current staffing crisis, staff turnover, increased acuity, and other factors are impacting the health care workforce by causing increased stress, burnout, and illnesses.<sup>58</sup> RTs are often being spread thin with limited resources, which increases stress and burnout. Studies suggest prevention of burnout as a better strategy than treating it after it develops.<sup>58</sup> Future studies need to objectively

measure RT work load and how it relates to burnout. An important area of study is the concept of value efficiency, in which daily activities undertaken by RT departments are considered for their value to the patient.<sup>75</sup> The implementation of a value-based system should reduce the total work load for RTs by minimizing time spent on low-value or no-value activities and allowing RT resources to be redirected to high-yield activities.<sup>130</sup> Another advantage of value efficiency is the opportunity to create evidence-based RT-driven protocols that allow RTs to practice at the top of their license.<sup>131</sup>

**Interventional Studies of RTs**

Even though burnout among HCWs has been an important topic of discussion, there are limited number of interventional studies completed specifically measuring RT well-being and burnout. Existing research has only minimal consideration of the dynamic nature of underlying processes in leadership behavior, work load, and employee well-being.<sup>132</sup> Studies of specific interventions or programs to improve RT wellness should be undertaken at the local and macro level. A large national bench-marking program would be ideal but would require substantial resources to implement and may not be feasible at this time. At minimum, local leaders should work to educate themselves and implement as many well-being interventions as possible, including reevaluating workflows and incorporating a focus on well-being into the orientation process.

**Summary**

There is a high prevalence of burnout in health care that is driven by high work load, staffing, work environment, and leadership. Burnout has negative sequelae for patient care, staff, and organizations. Certain mitigation strategies have had modest success in reducing burnout.

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