With Great Clinical Practice Guidelines Comes Great (or at Least Better) Resource Allocation

The COVID-19 pandemic has wreaked havoc on the health-care system in the United States since March of 2020. Three years after the first United States patient was identified, the respiratory care profession has encountered substantial challenges, along with every other health-care discipline. There are two main contributing factors that have disrupted the respiratory therapists' (RT) workforce. The first has been the stress from caring for patients who are acutely ill through successive waves of the pandemic. Second, RTs have experienced high rates of burnout from working without adequate staffing.[1] Miller et al[2] reported that 79% of RTs reported having some level of burnout. Inadequate staffing, inability to complete work assignments, lack of leadership, and lack of respect were all contributing factors to an increased risk of burnout among RTs. The sequelae of burnout are well documented: adverse patient outcomes, reduced staff well-being, lapses in professionalism, and harm to the health-care system.[3,4] Research done in nursing has demonstrated that burnout can increase mortality and prolong length of stay. Although there is no research on outcomes specific to RTs, negative outcomes to patients from RT burnout likely exist.

In addition to the high burnout, the respiratory care profession is currently enduring the worst workforce shortage in memory. Between 2019 and 2020, RT job vacancies increased by 31%.[5] Throughout the pandemic, the large numbers of patients who were critically ill created a greater demand for RTs. As demand grew, hospitals sought to combat staffing gaps with increasing dependence on agency staff. The competitive market that ensued led to increasing costs to secure travel agency staff. These sharp increases in labor costs put many health-care organizations in the red. Hospitals were left with a grave choice: pay high rates for agency staff or leave departments under-resourced.[5]

Unfortunately, this workforce shortage may persist for some time. The national Bureau of Labor Statistics projects that the profession of respiratory therapy will grow by 14% by 2031, with a vacancy rate of 9,400 positions annually.[6] Our current educational system will need to increase its output to meet this projected demand. Otherwise, respiratory therapy, like other health-care professions will be locked in a vicious cycle: inadequate staffing levels contribute to high burnout rates and high rates of burnout cause RTs to leave the profession, which furthers the staffing shortage.

In this issue of Respiratory Care, Fleming et al[7]

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attempted to address one component of staffing issues through a process called de-implementation. Done as a quality improvement project, they evaluated specific modalities that the department provided that likely yield no benefit to patients. At their institution, they identified the delivery of 3% hypertonic saline solution and/or N-acetylcysteine as being at odds with the American Association for Respiratory Care's (AARC) clinical practice guideline (CPG).[8] The researchers accomplished this as a 3-step process to get buy-in from clinical leadership, training to providers on the change in policy, and implementation as a practice.[8] The change in policy empowered RTs to discontinue the therapy if the treatment was not indicated. To evaluate benefit, the researchers used the AARC's 15-min time standard for delivering 3% hypertonic saline solution and/or N-acetylcysteine to calculate full-time equivalents. The researchers demonstrated that, through the RT empowerment, they realized a reduction in treatments delivered from a mean of 3,565.2 to 547.7 and full-time equivalents required from 5.1 to 0.8 over 11 months.[8] By changing the policy to empower RTs to discontinue 3% hypertonic saline solution and/or N-acetylcysteine nebulizers, they eliminated the need for 4.3 full-time equivalents.[8] This in turn allowed the hospital to spend its RT resources more wisely and avoid costly agency coverage. This is an example of value-based efficiency. That is focusing on tasks that have patient important outcomes.

The researchers demonstrated that, through careful planning and follow-through, they could eliminate unnecessary therapies from their armamentarium. The reduction of 4.3

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DOI: 10.4187/respcare.11002

full-time equivalents is substantial because it represents staffing one RT for a 24/7 schedule. As hospitals struggle to fill open positions, this reduction is not insignificant. It should be noted the researchers achieved leadership buy-in from the outset of their project, likely contributing to its success. This would establish clear messaging, training, and understanding about the purposes of the policy and change in practice. Fleming et al[7] did note that the volume of orders for 3% hypertonic saline solution and/or N-acetylcysteine decreased but did not achieve statistical significance. This could indicate a benefit of the education to providers about evidence-based respiratory care practice. Although this was primarily a study about full-time equivalent reduction in unnecessary therapy, any differences in outcomes could have validated the recommendations from the CPG.

In this era of staffing scarcity, no department has the luxury of engaging in therapies unlikely to benefit patients. Research on respiratory care protocols has frequently been shown to decrease costs and over-utilization of resources.[9] Stoller and colleagues[10] found, in a randomized controlled trial of non-ICU subjects, that the use of RT-driven protocol improved agreement with CPGs versus physician-directed care and better aligned respiratory care resources. Likewise, Kollef et al[11] showed, in a randomized controlled trial, that an RT-driven protocol resulted in fewer therapy treatments and better concordance with standard of care. More recently, Kallam et al[12] demonstrated that the application of an RT-driven protocol reduced the frequency of bronchodilator treatments when compared with a physician-order strategy. Respiratory care protocols have already been shown as a tool to appropriately allocate resources. Likewise, de-implementation can be another tool to deal with the staffing shortage.

The use of the AARC evidence-based CPGs by Fleming and colleagues to remove and eliminate unnecessary therapies with no benefit is commendable. The AARC has more than 30 years of experience writing CPGs, and the process has matured over that time from mostly expert-based CPGs to evidence-based CPGs the authors used to inform their change in practice.[13] Guidelines are a benefit to the profession by informing our field with regard to the evidence, or lack of evidence, behind some of the modalities we provide. The AARC has made a commitment in the 2022–2025 strategic plan to support the production of 3 new CPGs annually within its education pillar. To ensure this, the AARC has invested in the position of a director of clinical practice guideline development, currently Lynda T Goodfellow EdD RRT FAARC. This investment will work to serve as an important resource for the profession to combat the staffing shortage. As more evidence-based CPGs are developed and published this will aid respiratory care department leaders to follow similar de-implementation that trims non-beneficial therapies. In addition to this benefit, publishing high-quality evidence-based practice guidelines will inform lines of possible research.

The staffing shortage that the profession is experiencing will not be resolved quickly. It may take several years for the workforce to recover. During this time our profession will continue to be at high risk of burnout from RTs frustrated by the inability to complete work assignments. Also, hospitals cannot continue to pay high agency costs to supplement their workforce. As RT leaders, we must use the AARC CPGs as Fleming et al[7] did and remove modalities for which there is no evidence of benefit. With this approach, we can improve patient care, better protect the RT workforce from burnout, and break the vicious cycle we are experiencing.

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