

generally supported by the latest ATS/IDSA recommendations. In highly suspected cases of PA in CAP, the algorithm in Figure 1 guides empiric anti-Pseudomonas therapy,

but this approach also requires rigorous use of deescalation whenever possible as part of responsible stewardship. ■

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The Societies' Responsibility for Wellness: Healing for the Healer

Alison Fox-Robichaud, M.Sc., M.D., F.R.C.P.C.¹

¹Department of Medicine, Division of Critical Care, Thrombosis and Atherosclerosis Research Institute, McMaster University, Hamilton, Ontario, Canada

ORCID ID: 0000-0001-9912-3606 (A.F.-R.).



Critical care practitioners have a moderate degree of resilience despite the stress-charged environment in which we work (1–3). We have chosen to work in this field. But constant traumatic events, particularly the experiences of the pandemic over the past 18 months, have stretched our limits (4–6). We work in an environment where moral distress and compassion fatigue are factors that lead to high rates of burnout among healthcare professionals (7, 8). Healthcare professionals who care for the sickest of the sick are constantly exposed to traumatic events (9). How can strategies that are used to support survivors of trauma (10) also be applied to those who work in sustained high stress environments? What are the wellness strategies that can be used to support healthcare workers?

Wellness is both a personal- and systems-level issue (11). Maintaining individual physical and mental health is usually taught at an early age or developed as part of a personal health strategy. The societal responsibility for wellness is a developing trend for healthcare professionals. In this issue of *AnnalsATS*, Rinne and colleagues (pp. 1482–1489) present their mixed methods study of 17 U.S. professional societies that support critical care practitioners (12). The investigators began with a survey of the burnout prevention and wellness initiatives as well as a search of the society's website for additional information. This was followed by interviews with the society representative best in a position to speak on the initiatives and how they related to both the directives provided by the Critical Care Societies Collaborative (13) and the

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National Academies of Medicine (14). Using an inductive coding analyses, the authors generated themes based on responses. The final stage brought together the investigators to develop a roadmap for future wellness strategies.

The societies' list of wellness initiatives included measuring of burnout of members, providing individual or group training in wellness strategies, plenary sessions at national meetings, listing strategies and providing resources on websites, and leading organizational improvement to benefit members and trainees. The interviews highlighted the following important roles for societies: a moral imperative to address burnout, creating a sustainable wellness plan that is integrated into all society activities, wellness advocacy, creating a safe space for open discussion, and working on solutions at both a personal and system level, including intersociety collaboration. Finally, the team of authors have presented a six-step roadmap for the wellbeing of our community led by our professional societies that begins with 1) acknowledging and regularly measuring the extent of burnout, 2) committing to sustainable wellness programs with structure and resources, 3) creating collaborations with

likeminded organizations to pool resources and ideas, 4) educating and advocating at the national and local level for change to support wellness and prevent burnout, 5) fostering innovative strategies to improve wellness through research, and 6) supporting both individual and organizational activities known to improve wellness and reduce burnout.

Rinne and colleagues have challenged the critical care community to look at our wellbeing in the context of the responsibilities of professional societies. This may address the concern expressed by many that we would be less burnt out if it wasn't for the systemic issues such as academic responsibilities, balancing home and career, and adapting to institutional requirements (8). The advocacy role of societies and a collaborative approach could provide the necessary lobbying for considering the wellbeing of a valuable and limited healthcare workforce such as critical care practitioners.

The focus on burnout and wellness strategies that have a limited evidence base among healthcare workers may reduce the effectiveness of their plan (15). Data from the Canadian Critical Care Society has shown that burnout is balanced by our resilience and a high level of compassion

satisfaction in our chosen profession (3). Focusing on wellness programs without understanding the strategies that make us able to cope with the challenges critical care practitioners face on a daily basis may limit our ability to grow (16). As the authors have highlighted, innovation and well-designed research programs are needed to better understand the balance between burnout and resilience, particularly as we train our next generation.

This work has broader implications for how our critical care societies can support their members after the pandemic. There is real worry that the incidence of burnout and the risk of post-traumatic stress disorder and suicide will increase with the stresses of the past 18 months. Rinne and colleagues have given the international critical care community a roadmap to support our wellbeing in the months and years to come. The challenge will be the uptake by individuals whether through activities in their institutions or engagement in society activities without making it one more thing on the list of tasks we must complete. ■

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Patients Choose Hypoxemia over Social Isolation

8 Susan S. Jacobs, R.N., M.S.¹, and Jerry A. Krishnan, M.D., Ph.D.²

¹Division of Pulmonary, Allergy and Critical Care Medicine, Stanford University, Stanford, California; and ²University of Illinois at Chicago, Chicago, Illinois

ORCID IDs: 0000-0002-8808-0038 (S.S.J.); 0000-0001-5525-4778 (J.A.K.).

Investigations around the provision of long-term oxygen therapy (LTOT) have generated a long-overdue call for action on behalf of the 1.5 million oxygen users in the United States. The goal of LTOT is to decrease dyspnea, to decrease comorbidities such as pulmonary hypertension, and to improve survival, physical activity, cognitive function, and mobility outside of the home. However, consistent findings of patient dissatisfaction highlight equipment malfunction, excessive weight of portable systems, short supply duration, and inadequate flow rates (1–4).

In a 2017 survey of 1,926 supplemental oxygen users in the United States, 38% of respondents reported a portable oxygen supply of 2 hours or less, although 66% desired 5 to 6 hours (1). Because of cumbersome equipment and inadequate supply duration, the prescription of supplemental oxygen therapy relegates many hypoxemic patients to an isolated lifestyle with limited ability to travel, socialize, care for family members, work outside the home, attend school, and exercise. Distant air travel using portable oxygen concentrators (POCs) is prohibitive because of Federal Aviation Administration (FAA) requirements to carry multiple batteries to cover 150% of flight time; airline power outlets either malfunction, do not exist, or work randomly throughout the plane.

High-flow oxygen users (>3 L/min) suffer the highest burden and confinement

because they and their caregivers maneuver multiple pieces of portable equipment with limited supply duration or capacity. Recent American Thoracic Society guidelines suggest the use of liquid oxygen tanks for high-flow patients on the basis of benefits to health-related quality of life, improved adherence, and increased time spent outside of the home (5). Unfortunately, access to more costly liquid oxygen systems is now rare because of the decline in reimbursement to durable medical equipment companies. Instead of patient-centric care, the basis for oxygen equipment and treatment selection is driven by financial constraints. Many patients pay out of pocket to obtain portable equipment or accessories so that they can leave the home (2, 5), including purchasing POCs. Despite providing a portable battery-powered option, POCs are not an option for many patients because of inconsistent triggering of oxygen flow, variability in the volume of oxygen delivered in each pulse across devices when using pulse-dose settings, differences in pulse-dose versus continuous-flow requirements during exertion for individual patients, lack of POC options for patients who need more than 3 L/min of continuous flow, short battery life, and noise (6).

In this issue of *AnnalsATS*, Dakkak and colleagues (pp. 1498–1505) investigate patient-reported experiences with portable oxygen therapy with the critical purpose of guiding equipment innovation from the patient's perspective (7). Online survey data were collected from 836 respondents with chronic obstructive pulmonary disease (COPD), interstitial lung disease, or pulmonary hypertension, with 50% reporting oxygen requirements of more than 3 L/min (presumably continuous flow) at rest and 40% reporting using more than 5 L/min with activity.



Social isolation related to lack of portability was a prominent finding noted by a third of respondents, who cited their need for assistance from another individual to carry their equipment; compressed gas tanks were ranked as the most “burdensome” oxygen device. These findings echo those of Jacobs and colleagues (1), who reported that 51% of their cohort of 1,926 oxygen users answered “yes” to experiencing oxygen problems around equipment and service delivery. Respondents experiencing oxygen problems ranked “lack of portable systems I can physically manage” fourth, after equipment malfunction, travel oxygen problems, and delivery problems. “Give me more portable tanks or supplies so I can leave the house more frequently and for longer periods of time” was the most frequent response when patients were asked the “... one thing you could change to improve your home oxygen experience.” Arnold (8) (in a qualitative COPD study) and Lindell (4) also identified inappropriate equipment and fear of “running out of oxygen” as key patient-reported concerns. Taken together, these findings confirm a consistent and disturbing pattern of barriers to accessing supplemental oxygen, especially by patients who require high-flow (>3 L/min continuous) oxygen,

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