

On Finding a Better Way

The cost of health care in the United States continues to exceed that of all other wealthy, industrialized nations reporting data to the Organization of Economic Cooperation and Development (OECD). It is estimated that the United States spent > 17% of its gross domestic product on health care in 2019, roughly twice the OECD average.¹ Hospital costs represent 33% of total spending in the United States, with in-patient hospitalization prices rising 32% from 2012 to 2018.² Despite this higher spending, the United States ranks last in access to health care, equitable treatment, and outcomes.³

By far the predominant role for respiratory therapists in the United States is caring for hospital in-patients.⁴ This fact has been evident during the COVID-19 pandemic, where respiratory therapists have worked long and hard to care for their patients under very stressful conditions. Since Edwin R. Levine MD began teaching inhalation therapy at Michael Reese Hospital in Chicago over 75 years ago, respiratory therapists have embraced innovation and new information in technology, patient care, and community health to add value to the services they provide. Desautels and colleagues⁵ describing the use of intermittent mandatory ventilation in 1973, Nielsen-Tietsort et al⁶ introducing respiratory care protocols in 1981, Hess and Kauffman⁷ describing a method to monitor infant airway pressure during manual ventilation in 1982, Kacmarek and colleagues⁸ illustrating dose-response of inhaled nitric oxide in 1993, and the premonitory body of work by Branson and colleagues⁹⁻¹¹ on mechanical ventilation in mass casualty respiratory failure in the 2000s are all shining examples. Innovation and value in clinical practice, however, are often not as readily apparent as a technological breakthrough or a dramatically elevated scope of practice. The literature suggests that most innovative ideas introduced into practice rise from collaborative processes cultivated within an environment that supports the sharing of knowledge.¹² Stoller and colleagues¹³ at the Cleveland Clinic demonstrated this by identifying features of respiratory care teams with

a successful culture for change. These included a clear vision; a propensity for knowledge, data, and evidence acquisition; cultivation of ownership and empowerment; collaboration; and relentless communication, among others.

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In this issue of *RESPIRATORY CARE*, Jackson et al¹⁴ present a descriptive study to detail the education and implementation processes to safely and effectively provide high-flow nasal cannula (HFNC) therapy to subjects outside of the ICU. The authors' stated objectives were to improve patient outcomes, reduce ICU-associated costs, and ease ICU bed availability in a tertiary medical center where HFNC therapy was previously administered only in the ICU. This project arose from an issue common in hospitals in the United States and throughout the world: a supply of intensive care resources insufficient to meet the needs of patients requiring such levels of care, an issue that is particularly apparent during the COVID-19 pandemic.¹⁵ With these objectives in mind, the interprofessional research team devised a robust protocol and education plan to prepare nonintensive care personnel to care for patients who would benefit from HFNC therapy but did not otherwise require an intensive level of care and monitoring. Comprehensive education was provided first to respiratory therapists, and then by respiratory therapists to nurses and physicians. Nursing staff preparedness and a heightened awareness and rounding frequency by the respiratory therapists helped achieve the desired results. The authors observed that two thirds of study subjects received all care outside of the ICU, saving 486 ICU days during the study period.¹⁴

It was recognized early that appropriate patient selection was paramount for patient safety and for the success of the endeavor. HFNC therapy is becoming a standard intervention in cases of de novo hypoxemic respiratory failure; when compared to conventional oxygen therapy, its use has resulted in a reduced need for endotracheal intubation without increasing mortality.^{16,17} As Jackson et al¹⁴ report, patients responding to this high inspiratory gas flow and undiluted F_{IO₂} who, based upon careful assessment, do not require other life-saving interventions or intensive physiologic monitoring, may fare well outside of the ICU. With the cost of care in the ICU reported to be 3 times that of

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non-ICU care,¹⁸ the reader could assume a significant expense reduction was realized due to ICU avoidance.

Because HFNC therapy is a service typically provided by respiratory therapists, this study provides a simple yet clear example of the innovation and value a progressive and collegial respiratory therapy team can provide their institution and community. While we recognize that therapists elsewhere may have previously instituted such a practice within their hospital, the authors have provided a template for others to follow in pursuit of such increased value within their own institution. Innovation need only go as far as your practice and workplace to create added value. One may ask the question: What other services can respiratory therapists provide or redesign to reduce cost, improve outcomes, or otherwise add value for the patients, institutions, and communities they serve? Initiation of a ventilator liberation protocol using the ABCDEF bundle¹⁹ to reduce ICU length of stay, development of a telehealth-based outpatient pulmonary rehabilitation program to improve access for patients with chronic lung disease or COVID-19 sequelae,²⁰ or opening a community lung clinic for the underserved population to mitigate emergency department visits and hospitalization are all ideas brought to fruition. With hospital care becoming increasingly unaffordable, now is the time for forward-thinking respiratory therapists to expand upon their heritage and clearly and convincingly demonstrate the value they bring. An opportunity awaits!

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