Using Evidence to Adjust Productivity: Bringing Respiratory Care into the 21st Century

On July 30, 1965, President Lyndon B. Johnson signed Medicare into law, providing medical insurance for Americans aged 65 years or older. In 1972, eligibility for the program was extended to Americans aged less than 65 years with certain disabilities and people of all ages with permanent kidney disease who require dialysis or a transplantation. In December 2003, President George W. Bush signed into law the Medicare Modernization Act, which added out-patient prescription drug benefits to Medicare. Approximately 19 million people were enrolled in Medicare when it went into effect in 1966. By 2020, there were more than 61 million Medicare enrollees. Medicare is the largest payer of health-care services, and its policies are often used by private payers.

Originally, Medicare was fee-for-service coverage, in which the provider was paid for each service rendered. When Medicare was first rolled out, there were no questions about the effectiveness of a therapy. If the physician prescribed and the therapy was provided, then the bill was sent to Medicare and the hospital was paid. This allowed proliferation of unproven therapies. An example was intermittent positive-pressure breathing (IPPB) treatments. In the late 1960s and 1970s, respiratory therapists administered huge numbers of IPPB treatments. This generated considerable revenue for hospitals, and the respiratory care department was an important revenue generator for the hospital. Money speaks, and, given the revenue stream generated by IPPB treatments, there was little attempt to curb this ineffective therapy. It could be argued that revenue generated by IPPB fueled the establishment of respiratory care departments throughout the United States.

Full payment for prescribed therapies such as IPPB began having an impact on the federal budget in the 1970s and thus received increasing scrutiny. In 1977, the Department of Health, Education and Welfare secretary, Joseph A. Califano, testified before congressional hearings on rising health-care costs, citing limited evidence for inhalation therapy services. This was an attack on IPPB, which was synonymous with inhalation therapy. As a young respiratory therapist, I feared that attacks like this, and the proceedings of the Sugarloaf Conference,[1] would bring an end to IPPB, respiratory care departments would be dismantled, and my chosen profession would be eliminated, perhaps by federal mandate.

SEE THE ORIGINAL STUDY ON PAGE 1892

Diagnosis-related groups (DRGs) were developed in the 1970s to address the rising health-care costs. Medicare implemented DRGs for in-patient care in 1983 to address price inflation in medical care. Control was thereby exerted over formerly autonomously acting service providers such as hospitals. DRGs are a prospective payment system, in which hospitals are paid based on patient acuity (case mix). This replaced fee for service that had been used previously. Under the DRG prospective payment system, hospitals are paid a fixed amount based on diagnosis regardless of the services provided. Under this system, the charges applied to respiratory care procedures are not billed. Some providers are currently paid under a fee-for-service model (children's hospitals and critical access hospitals), but this may change in the future. With the implementation of the DRG prospective payment system, respiratory care departments became cost centers rather than the revenue generators that they were previously. With the advent of prospective payment, charges became irrelevant. Rather, it became relevant to address waste in the form of inappropriate therapy and to focus on therapy likely to reduce outcomes such as hospital length of stay. Therapies that increase cost without benefit reduce the margin when the payment is fixed.

Nonetheless, respiratory care managers need to account for productivity, and many have used the coding conventions such as the Current Procedural Terminology (CPT) Manual because that is requested by hospital leadership and consultants. There are several issues with this approach. First, and most important, most respiratory care procedures do not have CPT codes. Thus, a CPT–based approach to productivity will miss much of the activity of respiratory therapists. Second, CPT codes are general and broad, lacking the granularity necessary to fully capture time requirements. Take the CPT code 94003 for mechanical ventilation as an example. Imagine a comatose stable patient

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who requires little respiratory care beyond airway suctioning and patient-ventilator assessments; here, the time commitment is low. But imagine another patient on pressure-support ventilation receiving spontaneous breathing trials, interventions to improve patient-ventilator interactions, a mobility protocol, and a transport to the radiology department; here, the time commitment is quite high. Some might argue that this all works out in the case mix. I would argue that the details are important. I am interested in knowing how much respiratory therapist time is spent addressing evidence-based activities such as implementation of lung-protective ventilation[2] and spontaneous breathing trials.[3]

It is important to appreciate the difference between costs, charges, and billing. Cost is the expense-related materials and personnel needed to complete an activity. Charge is the price tag that is applied to the activity. Charges are always greater than costs, and the difference is often arbitrary.[4] Thus, when a quality improvement project uses a reduction in charges as an outcome, that analysis is inherently flawed. Billing is the amount that the payer is asked to pay. In the case of prospective payment, the bill, with a few exceptions, is unrelated to cost and charge. Thus, the terms "billable" and "non-billable" respiratory care activities do not have relevance in a prospective payment environment. Codes for activities provided by respiratory therapists during an in-patient hospital stay are not separately billed but are used by the finance department to assess productivity.

The number of procedures performed is part of the routinely tracked data monitored in all hospitals. This is used regardless of how the hospital is paid and is unrelated to payment. But how can procedures and related clinical activities be tracked when there is not a CPT code for most respiratory therapy procedures? The American Association for Respiratory Care published the Safe and Effective Staffing Guide[5] to address this issue. It identifies billable and non-billable respiratory care activities. The time required to perform those activities has been identified. The guide provides a solution for accurately assessing productivity. Managers of respiratory care departments are encouraged to engage their administrators and finance departments to adopt the guide as the standard for tracking patient demand and productivity. Managers of the electronic medical record, depending on how activity is tracked, might also need to be involved.

But there is more to the story. Just because a procedure is performed does not mean it should be performed, even when physician prescribed and expertly administered. This is the story of evidence-based practice.[6] Much of the practice of respiratory care is not based on high-level evidence. Practice is often based on lower-level evidence, which does not mean that it is wrong but that we should recognize that the practice is not based on high-level evidence. Note that there is always evidence, even if it exists at a low level, such as unsystematic clinical observations. Unfortunately, when it has been shown that a therapy is ineffective, that therapy is sometimes replaced with an equally ineffective therapy. An example is the widespread replacement of IPPB with incentive spirometry 40 years ago. Once a therapy such as incentive spirometry becomes ingrained into practice, it is difficult to move away from that practice despite accumulating evidence of ineffectiveness.[7,8] The respiratory care profession is also plagued by a task orientation, particularly because productivity is rewarded when many procedures (tasks) are performed. Indeed, traditional measures of productivity might suffer from respiratory therapist protocols intended to prioritize evidence-based practices.

In this issue of the Journal, Chatburn et al[9] introduce the concept of value-efficiency. The authors define value-efficiency as the product of activity efficiency and activity value. Activity efficiency is activity hours (product of activity volume and standard time) divided by worked hours. Activity value is a novel concept, and the authors are applauded for introducing this idea. As the authors propose, no longer is it adequate to consider only the time necessary to complete tasks, but the evidence that supports those tasks must also be considered. Managers should not be rewarded with higher staffing levels to perform tasks associated with low levels of evidence but rather should be rewarded for focusing on activities with high-level supporting evidence. For example, the time spent initiating noninvasive ventilation for a patient with COPD exacerbation has far higher value than performing incentive spirometry after surgery.

Implementation of value-efficiency will demand that managers immerse themselves in the principles of evidence-based practice. Activities supported by evidence-based clinical practice guidelines should be prioritized. These include noninvasive ventilation,[10] high-flow nasal cannula,[11] lung-protective ventilation,[2] spontaneous breathing trials,[3] and oxygen therapy.[12] This demands that managers are fluent in current best evidence. But beyond that, managers will need to communicate that best evidence to their respiratory therapy staff, their medical director, and their medical staff. In addition, managers and their medical directors must engage hospital leadership to pivot from determining clinical staff needs based on busyness to one based on adding value. Respiratory care managers must demonstrate leadership with the medical staff to prioritize evidence-based practices. Moreover, respiratory care managers must equip their staff with the tools to advocate evidence-based practices when interacting with physicians and other clinicians at the bedside. Performing large numbers of tasks supported by low levels of evidence is not contemporary best practice.

I suspect that some managers might argue that implementation of value-efficiency will result in staffing cuts and the death of their departments. But, for the visionary manager, value-efficiency creates opportunity. Elimination

of large numbers of low-evidence tasks allows practice to be shifted to high-evidence tasks. Although not universally the case, I suspect that, in many hospitals where respiratory therapists are performing low-evidence tasks, there are opportunities to shift practice to high-evidence activities. Through partnering with physician leadership, it may be possible to develop patient-focused respiratory care protocols to better allocate respiratory care toward activities supported by higher levels of evidence.[13,14] For patients receiving mechanical ventilation, there is an opportunity to develop respiratory therapist protocols to assure lung-protective ventilation and timely initiation of ventilator liberation. Such practices have a survival benefit.[2,3] Not only will these improve patient care and likely reduce costs (important with prospective payment) but will improve respiratory therapist job satisfaction, reduce turnover, and reduce job stress.[15] These protocols will allow respiratory therapists to practice near the top of their skill level rather than repetition of menial low-level tasks poorly supported by evidence. This promotes a feeling of reward by the realization of making a difference in patient outcomes.

I encourage respiratory care managers to prioritize evidence-based practice and to embrace the concept of value-efficiency. Further, I encourage managers to pursue this in the context of a quality improvement project with institutional review board oversight. The results can be shared in the RESPIRATORY CARE OPEN FORUM and ultimately as a full paper published in the Journal.[16] In this way, successes of a value-efficiency approach can be shared with and adopted by others. This also helps to better establish evidence-based respiratory care and demonstrates that our profession has taken a lead in the pursuit of value-added practice.

In summary, Chatburn et al[9] are congratulated for introducing the novel concept of value-efficiency. It is up to all of us to heed the call. This is not a shout from the ivory tower but rather a grassroots call to action. The future of our profession is at stake.

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