Expanding Opportunities for Handheld Technology Use in Respiratory Care

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Changes in health care delivery, reimbursement schemes, and organizational structure require health care organizations to manage the cost of providing care while maintaining high levels of clinical and patient satisfaction outcomes. As an integral part of the health care system, respiratory care departments must contribute to organizational goals that assist with the achievement and maintenance of financial viability. In order to compete on the basis of cost and quality, it is essential to collect and process accurate, timely, and complete clinical quality outcomes and financial information. Integrated computerized systems for order entry, clinical documentation, revenue-capture, and decision support specific to the needs of respiratory care departments are commercially available. These systems are designed to automate clinical documentation, work load assessment, quality monitoring initiatives, billing, and result reporting, and they have demonstrated favorable results.[1] Although the value of a respiratory care management information system is difficult to dispute, the cost is often prohibitive.[2] Consequently, many respiratory care departments lack such resources and must rely on clinicians to collect and analyze the data through cumbersome, nonautomated processes. Complex and time-consuming methods often negatively impact the population a respiratory care department serves, through the consumption of valuable time that could be better spent delivering bedside care.

SEE THE SPECIAL ARTICLE ON PAGE 1339

The respiratory care department at Tufts-New England Medical Center recognized the value of an electronic data-capture system.[3] The researchers did not rely on an expensive, commercially-available information management system to provide a versatile, convenient, and efficient means for the capture and synthesis of relevant clinical and outcomes data. Resources and talents were combined to construct an automated system to capture, analyze, and report clinical data with the use of handheld computers, also known as *personal digital assistants* (PDAs).[3] The system used the Palm M-130 PDA to capture patient data, ventilator settings, therapeutic modalities, and other measured and monitored patient variables. Prior to the implementation of the PDA-based system, the respiratory care department at Tufts-New England Medical Center relied on a traditional method of paper documentation. The development of a query component for the system streamlined the process by which practice standards were reviewed. The author of that study[3] pointed out that developing his department's data-collection system was time-intensive, but the development costs were minimal when compared to the substantial investment and maintenance costs of commercially available respiratory data management systems.

Palm PDAs, valuable and popular tools in the business world, are now experiencing widespread acceptance in the field of medicine. A plethora of literature describing the use of PDAs for patient tracking, clinical procedure documentation, medical education, research, and access to medical reference material is available,[4] but only a small number of articles document their value as point-of-care data-acquisition systems in terms of cost savings from increased charge-capture and improved productivity.[5,6] The article by Howard[7] in this issue of RESPIRATORY CARE expands on the description of the use of PDAs currently found in the literature, and the article reports the value of PDAs as relatively inexpensive, user-friendly respiratory information management systems. The article describes a new addition to the previously reported "electronic data-capture project" at the respiratory care department at Tufts-New England Medical Center—a point of care billing/charge-capture module, which enables the collection and synthesis of clinical, process, and financial outcomes data. The addition of the billing module maximized the capabilities of their existing clinical documentation system by enhancing revenue-capture and improving process and operational efficiencies for the clinical and clerical staff.

However, the researchers at Tufts realized a tremendous impact derived from the blending of time, talent, and portable technology. The cost savings associated with the charge-capture feature mirrored those obtained with commercially available respiratory management information systems. Howard reports[7] that the annual time-savings of approximately 730 hours coupled with the capture of 95% of their patient billing made this venture a worthwhile investment. The article[7] also provides the automation objectives, documentation redesign, and insight regarding valuable lessons learned in the process

of designing and implementing a respiratory care information management system. The article will help increase respiratory therapists' awareness of the expanding role of PDAs in medicine, specifically within respiratory care departments. The acceptance and favorable review by the administration at Tufts-New England Medical Center reinforces the important role of respiratory care departments in contributing to organizational future competitiveness. Howard's research offers encouragement for further evaluation of the use of PDAs for managing information in the field of respiratory care.

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