

Computers in Respiratory Care

Twenty-two years ago *RESPIRATORY CARE* published its first special issue on computers in pulmonary medicine.¹ The issue started with the question, “Are we ready?” In the ensuing decades that question is still pertinent, despite the fact that computers are now not only hidden in mysterious data centers, but also in our ventilators, thermometers, cars, and pockets. Can we embrace the computer and accept its role? Or should we?

The conference commemorated in this and the next issue of *RESPIRATORY CARE* was not initiated because of a sudden change in computerization, data techniques, or other technologic leaps. It was intended to provide a state-of-the-art view of technology and information management. We have slowly removed ourselves from the need to write programs and understand arcane algorithms, as described in numerous articles from 10–20 years ago. Rather than wondering if computer programs are useful for diagnosing acid-base disorders, we are now analyzing the methods used for arriving at the decisions and finding how those data fit into the whole patient-care picture.

One theme that has endured is the struggle with cost. Computers are now much less expensive, and it is now software and support that are the large and recurring costs. Likewise, there is still a question about whether computer systems will provide all that they are purported to. A more current question is the longevity of the company that makes the computer systems and software, and what parts will survive through today’s economic environment of mergers and acquisitions. Finally, a number of projects will simply fail to meet expectations and will be abandoned. Evaluation of risks must include all of these factors.

Jeromin’s prediction in that first computer-focused special issue of *RESPIRATORY CARE*,² proved correct: though computers have been useful to write documents and create enormous mountains of colorful reports, their real value is still being developed. He correctly predicted the clinical database as having the greatest impact on the practice of respiratory care. In that same issue McPeck warned that we may need to become “techno-RTs.”³ Fortunately, technology has allowed us to continue to progress without needing to become intimately involved with the nuts and bolts of computers. Just as we no longer have to assemble H-valves and monitor columns of water to provide positive end-expiratory pressure, we no longer have to learn the BASIC programming language and assembly code to operate a computer.

Computers have affected respiratory care in obvious ways such as respiratory care management information systems. We have gone from hand-held computers that could store a few hundred lines of a program and display a couple lines of text to pocket-size devices that can communicate with centralized da-

tabases and display full-motion video. With all of this computing and communication power available to a practitioner the obvious question is, why are so few departments taking advantage of it? What impediment keeps respiratory therapy departments in more than 95% of United States hospitals from taking advantage of these systems?

Some aspects of computerization have subtly crept into our practice. Many of us were aware of the Internet and used it to look up information at home or school long before it became a valuable tool at the bedside in the guise of evidence-based medicine.

Protecting patient health information has become more important with recent federal requirements that carry the risk of fines and incarceration. Health information comes in many forms; we need to recognize them and know how to use health information legally.

Education aimed at respiratory therapy students, staff, and patients is now available at any time and many locations. Will the Internet replace traditional schools? Are traditional techniques such as classroom lectures and hands-on labs easily converted to a distance-learning format? How can we be sure that the training material we use is accurate and timely?

The common thread of this conference was that all of us are still finding new ways to view, use, and analyze information. Though changes in computerization of respiratory care may progress at glacial speed, they are no less subtle than the changes caused by the massive forces of ice over land. Fortunately, we have heeded the advice issued in that 1982 special issue of *RESPIRATORY CARE* and have remained actively involved in computerization to improve patient care, education, and administration.

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