ICU MANAGEMENT & PRACTICE

ICU Volume 5 - Issue 4 - Winter 2005 - Editorial

Care with IT

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Information technology has 'invaded' the intensive care unit at an astonishing rate over the last few years. Hand-held personal digital assistants (PDAs), patient databases, and clinical information systems are now widely used in many units, and telemedicine, and even robots, are being seen increasingly frequently in our ICUs. The advantages of PDAs, clinical information systems and patient databases are clear to see, including providing more rapidly available and reliable data on everything from bed occupancy to pathogen frequency to staffing patterns. Practicing medicine increasingly requires good data management as well as good patient management. Using computerized systems, with links to all areas of the hospital, results of laboratory, radiological, and other investigations can be available immediately, saving valuable time chasing the paper trail. Medical errors can also be reduced by the improved exchange of, and access to, information. Automatic reminders about abnormal results or potential drug interactions can improve patient management and limit the likelihood of error. As the ICU population increases in size, out of step with the numbers of available intensivists, telemedicine also has considerable appeal, not least to ensure at least some form of 24-hour intensivist cover, especially for smaller ICUs. Using such technology, intensivists can assess distant patients 'virtually', with full access to their online data and monitoring systems.

Information technology clearly has an important role to play in improving the effectiveness and efficiency of intensive care medicine, but ongoing development and acceptance may be limited by several factors.

First, the effects of such technology on patient outcomes need to be carefully assessed, particularly considering the high financial costs of creating and implementing medically applicable information technology. Second, many hospitals already have some computerized systems in place, but these are not standardized and may not even be able to interact with each other. Overhauling or replacing these more rudimentary systems is a complex, time-consuming and expensive process, but for such systems to work at their best they need to be able to function as an integrated whole, hospital-wide. Ideally, internationally accepted standards should be developed and used so that data can be transferred across international boundaries. Finally, information technology is still somewhat of an enigma to many ICU staff members, as well as to patients and their families. Although email and Internet are now used by many at home, the idea that similar technology could be applied and offer benefit to patient care is still a relatively new concept and, as with any other new development in medicine, will take time to become accepted and applied. Fears about patient privacy and even concerns about technology 'replacing' medical staff also need to be addressed as medicine adapts to the new era of information technology.

In this issue of ICU Management, we discuss some (of the many) applications and limitations of information technology in the ICU.

Published on : Fri, 21 Oct 2011