

# Finding the Knowledge in Information

BURTON WILCKE

In 1934, when T.S. Eliot wrote the following in his poem, “The Rock”, it is doubtful he envisioned his words being applied to the field of clinical laboratory science some 74 years later.

*“Where is the wisdom we have lost in knowledge?  
Where is the knowledge we have lost in information?”*

Perhaps more than any other group of healthcare professionals, clinical laboratory scientists can easily become lost in data and information. Indeed, the primary focus of the field of clinical laboratory science is the generation of data for clinical decision making. Through production of this data, laboratorians contribute critical information for use by physicians and others for the diagnosis, treatment, and monitoring of disease.

Today, the clinical laboratory depends heavily upon computers for processing and handling the large volumes of data it generates. In fact, in the early stages of their development, computers were referred to as “data processing machines”.<sup>1</sup> Having a solid understanding of the function of computers has become an essential part of becoming a clinical laboratory scientist. A working knowledge of the use of computers and common software applications is now an essential prerequisite for students entering into clinical laboratory science programs such as that at the University of Vermont. Accrediting bodies that oversee clinical laboratory science programs now expect and require evidence of this in our curricula. But merely knowing *how* to use computers and computer software is no longer sufficient in today’s world.

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Throughout its history, the focus of the field of informatics has gradually evolved from information technology (IT) to the broader discipline of information science (IS). In many ways this parallels changes that have occurred in the field of clinical laboratory science, for this field too had its origins in technology but is now legitimately identified as a science. Reflecting the maturation that has occurred in both fields, it is not enough for clinical laboratory scientists to simply be knowledgeable about the mechanics of information systems. Today, they must be truly “information literate”.

Information literacy is defined as “the ability to recognize a need for information, find, evaluate, and use that information in whatever format ... it appears.”<sup>2</sup> As academics, we must educate our students to a level of expertise that goes far beyond the basics of information technology and addresses these higher functions. In addition to being able to operate sophisticated instruments to generate data, we need to ensure that our students have the ability to translate data into information, and information into knowledge.

In practice, clinical laboratory scientists are called upon to transform information into knowledge on a regular basis. Whether it is to write or update technical protocols, document best practices, design methods for new assay evaluation, or write grant and project proposals, all require the ability to access and use information effectively.

Yet to be truly information literate, the clinical laboratory scientist cannot rely on information found in hard-bound references and textbooks. Given the rapid changes in the field, such sources quickly become outdated and the information contained therein either incomplete, incorrect, or both. With the volume of published literature growing exponentially and new publication formats continuously being developed, clinical laboratory science students and practitioners need a toolbox filled with a variety of resources upon which to draw. These will include online literature databases, citation indexes, Internet search engines, and clinical decision-making resources.

This series of articles will help clinical laboratory scientists become more facile with using contemporary information

retrieval techniques and tools. As we continue to modify and improve the way in which we educate our future clinical laboratory scientists, we should be certain that informatics and information literacy are a standard part of their primary as well as continuing educational experiences. In answer to Eliot's question, "Where is the knowledge we have lost in information?" we respond that "knowledge is found in education".

*Burton W Wilcke Jr PhD is associate professor and chair of the Department of Medical Laboratory and Radiation Sciences at the University of Vermont, Burlington VT.*

*Frances Delwiche MLIS MT(ASCP) is the Focus: Information Literacy guest editor.*

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