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# **The Role of Computers and Technology in Health Care Education**

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## **INTRODUCTION**

The goal of health care education at the University of Arkansas for Medical Sciences (UAMS) is a good nurse, doctor, pharmacist, or allied health professional—a well-prepared health care professional who is knowledgeable, knows how to get information as needed, and knows how to use information in a clinical practice setting. The health care professional is trained and practices in a computer- and network-intensive environment where distributed access to electronic information—the medical literature, medical records, and laboratory data—is needed and is increasingly expected. It is during their education that professionals learn to use and value the electronic tools at their disposal. Institutions like UAMS search for ways to support teaching faculty, clinical educators, and students in making the most of useful computer-based practice tools, information resources, and educational technologies. Computer literacy, faculty development, facilities planning and support, access issues, and incorporation of increasingly sophisticated educational modalities are key elements in successful education at UAMS. The use of technology in health care and health care education is unavoidable and growing more so daily.

The convergence of the Internet and Internet 2 and other federal and state initiatives for faster and more extensive networks, combined with continually falling prices for increasingly powerful computers, has created a climate full of promise as well as unmitigated hype. It is often assumed that everyone is being swept along by the tide of computer technology and that the impetus of the tide will prepare faculty and students for this new age in medical education. It is wrong to assume that all faculty and students are prepared to use and manage sophisticated medical informatics tools. UAMS is looking beyond the myths of computer literacy to make a realistic appraisal of the computer readiness of their faculty and students, so that appropriate help and support is available.

This case study illustrates the ways that information technology is used in health care education at the University of Arkansas for Medical Sciences and other health care education institutions. It addresses the problems that must be overcome and the advantages and opportunities that information technology tools provide for health care education. It examines this in light of the changing face of health care and, consequently, health care education.

## CASE QUESTIONS

- How can faculty use information technology to best serve students in their health care education?
- In what ways are the information technology needs of health care practitioners similar or different from other disciplines in higher education?
- How can institutions and their academic affairs units support the use of technology in the educational experiences in health care education?

## CASE NARRATIVE

### Background

The University of Arkansas for Medical Sciences (UAMS) is a mid-sized academic health sciences center with Colleges of Health Related Professions, Medicine, Nursing, and Pharmacy, a Graduate School, and a 320-bed University Hospital. Total enrollment for 1999/2000 is 1,852 students with 835 teaching faculty. The University Hospital and the educational campus are located in Little Rock, with six associated Area Health Education Centers (AHECs) and a Delta Health Education Center located around the state. The Department of Pediatrics is located at Arkansas Children's Hospital two miles from the central campus, and many UAMS faculty members have joint appointments with the Central Arkansas Veteran's Health Care System that is located next to the main campus. UAMS supports the only medical and pharmacy schools in the state and is the central hub for health sciences education and research in Arkansas.

UAMS has been adversely affected by managed care and changes in the funding of health care and health care education, as have many other health sciences academic centers whose fortunes have been reported in the news media over the past year. However, research funding awarded to UAMS has grown at a healthy rate, and "centers of excellence" programs have drawn funds from local and national philanthropists and from state and federal programs. Several clinical programs at UAMS draw patients from around the country and the world. UAMS is currently in the middle of an extensive building program. Income-generating activities, grant-funded research, and clinical care are recognized as vitally important to the well being of the entire institution. In short, UAMS suffers the growing pains and faces the challenges common to many academic health sciences centers juggling educational, research, and clinical missions in very stringent financial straits.

In health care education and health care, generally, four major trends are affecting the incorporation of computers, networks, and telecommunications into the industry. They are: a) reliance on distributed access to electronic information in clinical practice at academic health sciences centers; b) managed care and health care competition; c) demands for access to electronic information and educational programs for distance education students and for students in clinical rotations away from the central campus; and d) accreditation and certification examinations conducted via computers.

### ***Distributed Access to Electronic Information***

Computers are found in virtually every aspect of health care—in the hospital ward stations, diagnostic laboratories, clinics, business offices, and physician, resident, and student on-call rooms. Access to electronic medical records, laboratory data, medical decision support tools, online bibliographic databases, and full-text journals and books from these locations requires pervasive data communication networks and health care

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