Clinical Information Systems

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A great deal has transpired in Clinical Information Systems during the past year. Hospital Information Systems are becoming sufficiently sophisticated that they are now being used as integrated system management tools. More and more hospitals and clinics are installing electronic medical record systems. A number of major medical groups have also begun to mine their extensive medical data records to see if this information can assist them in making better clinical decisions. Finally people are beginning to look at the organizational impact of information technology on health care delivery. The papers in this section touch on each of these topics and present some interesting observations on cutting edge developments in these areas.

The first paper by Panko and associates at the University of Illinois describe three technologies for extracting information from the unstructured medical text of reports and narrative portions of the Electronic Medical Record. They delineate three potentially complementary technologies: Markup Languages (such as Standard Generalized Markup Language), Concept Spaces and JAVA to accomplish this goal.

The next two papers look at the use of computer data bases for clinical trials and preventive screening. Grutter and his colleagues from the University of St. Gallen introduce the concept of the "knowledge medium" which they define as a platform for the exchange and management of knowledge within a specific community of agents. Such a medium contains the following components: information objects, agents who form a community with common interests and goals and a logical system, which defines the common syntax and semantics of the knowledge managed by the medium. Berndt, Jehle and Moore describe a large vascular database which is being developed to screen for strokes. They review the database design and data collection effort.

The final three papers describe the impact of clinical information systems on health care delivery. The first paper in this group is by Ton A.M. Spil and his group at the University of Twente in the Netherlands and details the definition, selection and implementation of a new clinical information system. The paper by Smit and van der Pijl from Tilburg University School of Economics describes the relationships between types of hospital management and the use of hospital information systems. They applied this framework to the study of a large general hospital in the Netherlands. Their findings support the assertion that the use of Information Services at the Hospital they studied did not develop according to the needs and developments in the hospital organization. The last paper is by Davidson and Chismar from the University of Hawaii. They examined the organizational implications of information technology in hospital based health care. They detail a case study of the introduction of a computerized order entry system at a large hospital in the United States.