Automated Medical Records and Quality Assurance

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The medical record is the primary repository of patient care data accumulated during inpatient and outpatient care. Each day, tens of data entries containing hundreds of individual items of data, from any of the two or three hundred service centers are entered into a preselected section of the record. The manual record is designed as a repository of this individual patient data.

But the medical record functions in support of many roles that require more than data storage. These roles include clinical and administrative management, research, review, accounting and many other individual and collective services for the patient, staff, review organizations, payers, payees, legal authorities etc. Each role requires a unique set of data elements and definitions, file structures, data and file processing, output manipulations, forms and formats.

Assurance of certain qualities, or characteristics, of the care delivered, requires one of these unique records of the care process and products. The following papers discuss various aspects of automated records used for quality assurance.

Downey and Walczak in "Evaluating Hospital Compliance with JCAH Quality Assurance Standards" give a brief history of the role of the Joint Commission on Accreditation of Hospitals in assuring the presence of stipulated qualities in the care process. Hospitals are surveyed for the presence of general provisions and specific review requirements. An automation assisted system has been developed to record, store and process the results of the surveys. The system and some of the results are discussed.

A substantial portion of the documentation for quality assurance is entered into the medical record, or is derived from data entered into the record by the professional staff. John Tornow discusses a quality assurance computer application derived from the automated record, COSTAR, that enables real-time medical record review and encounter audit using a medical query language.

Craig et al, in "A Simulation of Automated Treatment Planning in a Mental Hospital" focus on the practical utility of output reports because highly sophisticated clinical systems based on the latest clinical and automated technology often go unused because clinical staff find their output reports unsuited to their needs. They review the utilization of an automated record. The findings of this attitudinal study are of value to everyone involved in design, development or implementation of systems. They affirm the necessity of systems designed for specific workplaces and raise questions on the utility of automated systems for some clinical purposes.

Silva et al, use an extract from the medical record in the form of ambulatory claims. From this they have developed and implemented a utilization review system with validated measures to detect unusual patterns of practice and statistical techniques to select providers for review. It is apparent from this and other observations that the practice of medicine, regardless of its breadth of scope and individual variations, generally follows patterns. Applications that use these patterns for education, research, clinical management review, care efficiencies, and as in this case, monitoring of practice for billing purposes, depend on an accessible, accurate medical record. The problems inherent in making a data base readily accessible and manipulable are, most prominently, security, privacy and accuracy, not to mention the technical problems of design etc. Fortunately, only extracts from the data base are required for many purposes, so the main data bank can remain inaccessible. For example, this United Mine Workers system extracts three practice measures; visits, diagnostic tests, and injections, per beneficiary seen. The paper discusses the practices of more than 600 physicians using a statistical analysis of these practice measures.

As mentioned, accuracy both initial and continuing, is of prime concern for the medical record. Brown et al, in "Validation Techniques for Medical Data" discuss making medical data accurate, timely, complete, and retrievable. They describe two types of error detection used to provide data quality control and discuss a workable approach to this prerequisite of quality assurance.