# HIM Metamorphosis



*by Marcia Kalata, ART*

Five years ago, if someone had told me my organization would construct a new building without a chart room and would require half as many medical record clerks and that coders would work without stacks of charts at their desks, I'd have thought they were from a different planet. But it's not science fiction—today, Kaiser Permanente of Ohio is on MARS.

The Medical Automated Record System (MARS) has been fully implemented in 13 ambulatory care facilities and two emergency departments in Cleveland and surrounding communities. It is used routinely by 220 physicians and 110 allied health professionals for more than 900,000 patient visits annually.

Here's how it works: When a patient arrives for an appointment, a packet of information is printed directly in the patient care area. This includes a summary of pertinent data elements, medical alerts, reminders, and forms. Each page of this packet is barcoded with patient/encounter identification and form type. The provider uses and updates the encounter packet during the encounter. After the visit, all pages are scanned directly in the doctor's office. They are not routed to a central scanning point, such as medical records, which would delay entry into the chart.

MARS was implemented in phases over a period of eight years. Its goals were to improve the quality of care delivered to members, decrease the organization's operating costs, and create a stream of data for electronic billing. An encounter system was implemented in 1990-91 to improve the quality of care delivered to members—not to replace the paper chart. A crucial core set of data elements, such as vital signs, diagnoses, allergies, immunizations, prescriptions, procedures, and smoking status was collected and entered into the system by coders. Laboratory and radiology information systems were installed. In 1994 a GUI was developed for better data presentation from other clinical information systems. Then came planning for a document processing application, together with data extraction from optical mark sense forms and an order entry system.

## Important Players

Teamwork, communication, and commitment from top leaders in the organization were critical to successful implementation. Not surprisingly, the planning and implementation process magnified a number of unresolved issues and caused the team to question some long-standing policies. These challenges were resolved through a physician advisory group, a physician practice group, user focus groups, and, of course, the Ohio Medical Record Committee. The committee defined key deliverables and necessary performance measures to support MARS as the primary medical record. These included reliable system backup/recovery, system availability reporting, established downtime procedures, and demonstrated compliance with documentation standards.

## A Process of Change

With the hardware and networks installed, software designed and tested, and users trained, HIM work to operationalize the system intensified. The transformation of the medical record department to the health information services department was a tremendous growth experience. It became clear that while the media had changed from paper to electronic, our mission remained the same: to maintain and provide accurate, complete, and timely health information. MARS implementation affected all areas within the department. Here are some examples of how our department changed to meet the organization's needs for information through MARS.

*Chart Rooms*. With the availability of online information, the number of requests for paper charts has decreased 47 percent, from 116,000 chart pulls per month in 1995 to 60,000 per month in 1998. Through work flow analysis, time studies, definition of functions, consolidation, and change in (and even elimination of) procedures for loose-leaf filing and chart storage, record clerk positions were reduced by 49 percent.

*Coding*. As the need for coded data increased, the coding staff nearly doubled from 18 to 35. Images of selected pages from the medical record are automatically routed to coding workstations; they no longer wait for delivery of paper charts. The coding quality assurance program has expanded to include monitoring of data extracted from optical mark sense billing forms and data directly input by other departments/providers.

*Transcription*. While the number of transcription staff remained constant, the volume and scope of work increased. Our department was involved in the selection, testing, implementation, quality review, and cost/benefit analysis of the voice recognition system implemented in the mental health department. HIM professionals also played a key role in the design, testing, and monitoring of interfaces to upload transcribed reports to MARS. Errors in data transmitted from affiliated hospitals require name/MRN verification and retransmission by staff in this department.

*Manual indexing*. HIM skills were critical in defining the appropriate skill set and staffing for this new function, designing/testing the software application, developing procedures, training, and performing quality assurance of the process. Because bar-coded documents are printed from MARS, fewer than 10 percent of the more than 6 million documents scanned require manual indexing. The majority of these are documents generated by providers outside of the network, such as referrals and correspondence.

*Record storage*. A new medical office building, set to open in January 1999, was built without a chart room. The long-standing policy of storing a member's chart at the facility providing primary care was abolished as information became available online. With less need for paper charts at the facilities, one large central storage facility for both active and inactive charts was created.

*Correspondence*. With a decreased need to access the paper chart, this function was centralized at three facilities (instead of six) and staffing reduced 36 percent. The locations were based on member needs and geography. Turnaround time for disability form completion and the processing of requests for information has improved.

*Quality assurance*. Medical record monitors were changed to include mainframe, network, and print server availability rather than paper chart availability. With more than 900,000 encounters per year, we could not analyze each paper record for completeness. MARS system reports indicate which encounters are missing data; these are printed directly in the medical offices to provide timely feedback. With the use of bar-coded forms, documents are indexed to the correct medical record number and form category. Compliance with NCQA medical record documentation standards also increased.

Kaiser Permanente of Ohio has a more accurate, complete, available medical record through automation than with paper charts. There are fewer misfiles. Monitors focus on quality of documentation rather than quantitative analysis. Multiple providers at different locations have access to the medical record at the same time. Best of all, system users see the impact everyone has on the integrity of the medical record.

## *how HIM made a difference*

Health information management membership on the MARS core team had a significant impact on the course of development and implementation.

| Area | HIM Role |
|---|---|
| Standards | Evaluated/revised standards to reflect changes in organization and maintenance of the electronic medical record |
| Structure | Defined index of documents to specific category rather than section |
| Forms library | Required medical record committee approval of forms and category assignment |
| Security/confidentiality | Revised organizational policy; restricted system access |
| System requirements | Included the ability to merge medical records |
| Hardware | Determined specifications for scanners and work station monitors |
| Quality monitoring | Designed database to automate compliance reporting |
| System performance | Defined minimum performance standards |
| Acceptance testing | Designed, tested, and approved coding and indexing applications |
| User training | Staff trained by HIS management team instead of contracted trainers |
| Management reports | Designed user-specific productivity reports |

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**Article Citation:**

Kalata, Marcia. "An HIM Metamorphosis ." *Journal of AHIMA* 69, no. 9 (1998): 55-57.