

Implementation of Paperless Credentialing in a Multi-State Managed Care Organization

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Compared with other sectors in the US economy, the health-care industry has been slow to adopt information technologies.¹⁻³ Recent estimates suggest that less than a quarter of US hospitals have even a moderate level of organizational paperless record utilization.^{4,5} Yet electronic health records have been shown to improve communication, collaboration, and efficiency.^{1,6,7} Transitioning to paperless records has also been shown to reduce costs⁵ and to improve document fidelity within health organizations.^{8,9} The existing literature on electronic medical records is largely related to clinical use and clinical outcomes, and thus is largely unrelated to fully administrative processes such as the one presented in this case study, which is not clinical in nature.

In this case study, we present a productivity and efficiency analysis of the implementation of a paperless healthcare provider credentialing system within a multi-state managed care organization. All primary care providers, most physician/osteopathic medicine specialists, and a wide array of ancillary providers (eg, nurse practitioners, physical therapists, podiatrists, or social workers) require credentialing, as do several types of health facilities (eg, hospitals and skilled nursing facilities). Every healthcare organization (eg, insurance agency, hospital, or licensing board) must verify provider credentials before contracting with, employing, or directing organization members to a provider. Consequently, there is a very large need for the credentialing process to be as expedient as possible, in order to ensure that members and patients of each respective organization have appropriate access to healthcare providers.

Credentialing typically involves various provider record checks (ie, state licensure, board certification, education, etc) and often requires extensive documentation and frequent communication with providers to clarify or verify these details. This process must be completed every 2 to 3 years while the provider remains contracted with an organization. Credentialing is entirely document- and process-driven, and the industry generally relies on paper records rather than electronic records. In addition, credentialing regulations vary by state and frequently change. Consequently, credentialing is often a time-consuming and expensive process. Each day that a credentialing file remains in process is another day of incurred cost, so any reduction to file processing time that results from the imple-

Objectives: To evaluate the impact of paperless provider credentialing in a multi-state managed care organization.

Study Design: Implementation took place from June to October of 2009. A total of 6220 providers were credentialed during this study period and selected for analysis. We used an interrupted time-series design, centered the data on implementation, and then compared efficiency rates for the 14 weeks before implementation of paperless credentialing to efficiency rates for the 14 weeks after implementation.

Limitations: The absence of a control group and a relatively short observation period are potential threats to validity.

Methods: The main unit of analysis was the provider credentialing file. We compared quality review pass rates, processing time (in days), and processing cost per file before and after paperless credentialing implementation.

Results: The percentage of files passing quality review increased from 83% to 92%. The turnaround time for the credentialing process dropped from 53 calendar days to 36 calendar days.

Conclusions: Implementation of electronic credentialing appears to significantly improve processing efficiency. Indeed, credentialing seems to be a particularly promising area for adoption of electronic records in an administrative setting.

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Take-Away Points

Healthcare provider credentialing is required to limit risk and ensure quality of provider networks. Providers cannot be contracted until credentialing is completed. The bigger the network, the more important it becomes to use an efficient and effective credentialing process. In this case study, implementation of a paperless credentialing process resulted in the following outcomes:

- Improved quality scores: 83% before, 92% after.
- Reduction in file processing times: 53 days before, 36 days after.

mentation of an electronic records process leads to a reduction in the cost of credentialing for the organization.

METHODOLOGY

Molina Healthcare is a managed care organization that serves more than 1.5 million beneficiaries in multiple states. The Spokane, Washington, office houses the corporate credentialing office, and processes credentials for approximately 300 to 500 providers per week. From June to October 2009, the office implemented a paperless credentialing process, with implementation staggered over 8 different geographic business regions. This was necessary due to the large scope of the implementation and the impracticality of slowing or interrupting business for the entire department and risking a critical work flow failure. While regionalization led to variable volumes for each implementation segment, the regionalization of implementation would not have had a significant impact on outcome variables because the core credentialing criteria and implementation plan utilized was identical from region to region. To prevent an immediate production failure, credentialing employees were trained to use the new paperless healthcare provider credentialing system (Lasercache software) prior to first production use.

Various data elements were tracked for each file processed by each employee in Molina Healthcare's credentialing database (CACTUS software), and these data were pulled ad hoc from the database for analysis in this study. We limited our analysis to file processing time and file quality for files completed during the 14 weeks prior to implementation and 14 weeks post-implementation, with data for each file centered around the implementation date respective to that file (due to the staggered implementation schedule). There were a total of 8068 files that fell into the study period before selection criteria were applied. For the data categorized into the 14 weeks post-implementation, only files that were started and completed in a paperless format were included; any paper-based files that were completed during the 14 weeks post-implementation were removed from analysis. Data for the week of implementation were removed due to the lack of inherent score validity during that week. Records processed by new em-

ployees, departing employees, and employees on leave for 1 or more weeks during the study period were omitted from the analysis to control for any existing learning curve and any vacation-related productivity backlog. Records that were only partially completed would not have been submitted for quality review and were not included

in the analysis. A total of 6220 provider files were selected for final analysis after these criteria filters were applied; 6080 of these records were unique provider files, while 140 provider records were included twice in the analysis due to necessary early recredentialing.

The following 2 measures were used to track credentialing productivity:

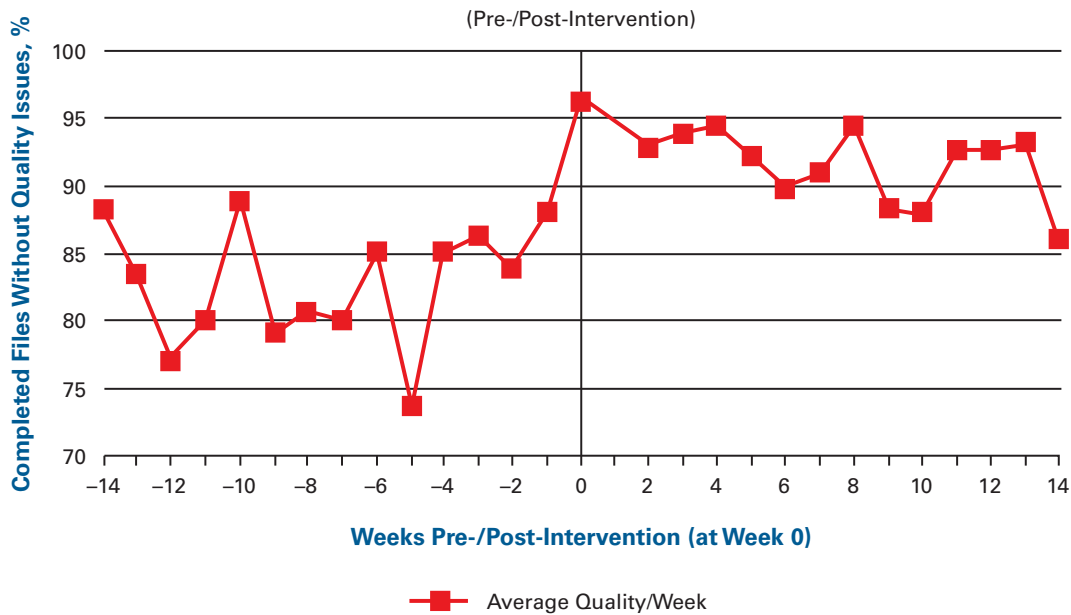
- **Quality:** Average percentage of files meeting quality review standards. Each file was coded as a pass or fail by a quality lead upon review. For analysis, the number of files completed that passed quality review was divided by the number of files completed overall. This was analyzed on a weekly pre-/post-implementation basis to study chronological trends, and on an overall pre-/post-implementation basis to compare pre/post means.
- **File-Processing Time:** Average number of days needed to complete the credentialing process. This variable was measured in calendar days from the day an application was received in the corporate credentialing department to the time a file was deemed as passing the quality review process. For analysis, file processing times were averaged for all files that were deemed complete in the quality review process. This was analyzed on a weekly pre-/post-implementation basis to study chronological trends, and on an overall pre-/post-implementation basis to compare pre/post means.

RESULTS

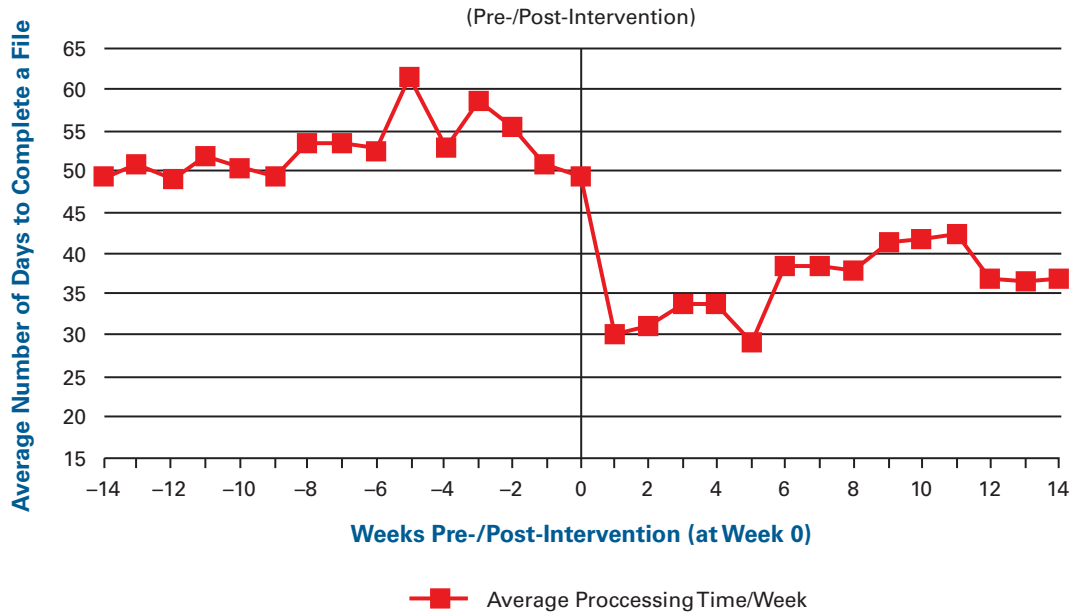
- **Quality:** The proportion of files passing quality review rose from 83% (of 3149 files reviewed) during the 14 weeks pre-implementation to 92% (of 3071 files reviewed) during the 14 weeks post-implementation. During weekly pre-implementation analysis, the lowest score was 74% (of 205 files reviewed) and the highest score was 89% (of 250 files reviewed). During post-implementation analysis, the low score was 86% (of 288 files reviewed) and the high score was 94% (of 284 files reviewed). **Figure 1** shows the weekly analysis trend data.
- **File-Processing Time:** Average file-processing time dropped from an average of 53 calendar days (for 3149 files reviewed) during the 14 weeks pre-implementation to an average of 36 calendar days (for 3071 files

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■ **Figure 1.** Average Weekly Percentage of Files Passing Quality Review



■ **Figure 2.** Average Weekly File Processing Time Scores for All Completed Files



reviewed) during the 14 weeks post-implementation. During pre-implementation as viewed on a weekly basis, the highest score was 62 days (for 205 files reviewed) and the lowest score was 49 days (for 228 files reviewed). During post-implementation as viewed on a weekly basis, the highest score was 43 days (for 256 files reviewed) and the lowest score was 29 days (for 223 files reviewed). **Figure 2** shows the weekly analysis trend data.

DISCUSSION

This study offers provocative, though not definitive, evidence that paperless credentialing improves efficiency. The outcome of greatest interest to business is reduced file-processing time because lags in credentialing can delay provider enrollment, which, in turn, impacts financial outcomes. Provider payment rates are based on contracted and

■ TRENDS FROM THE FIELD ■

credentialed provider status, and each day a file is in the credentialing process results in additionally incurred man-hour expense. Molina's credentialing unit is charged with building and maintaining a provider network that is of sufficient quality and that meets geographical access needs. It is also responsible for ensuring that the cost, efficiency, and expediency of the credentialing process meet business performance requirements. We observed a substantial drop and then a slow increase in file-processing time immediately after paperless implementation, stabilizing several weeks later at a level that was significantly lower (in an operational sense) than the pre-implementation file-processing time. A similar trend was observed in the quality measure, which also showed less week-to-week variability post-implementation due to the increased standardization of documentation that came with the paperless transition. These findings should help allay operational concerns about use of electronic records for credentialing.

The internal validity of additional studies in this area would be improved by a more lengthy observation period and a comparison group. While the quality measure does give a level of confidence in performance improvement—which leads to reduced double work and lowered departmental costs—the use of a pass/fail quality process could be revised to result in a “score per file,” which would allow for analysis of the impact of paperless implementation on quality outcomes in a more complex way. Another supporting variable that would support study outcomes in future studies would be a cost-per-file variable. It was not possible to construct a cost analysis that aligned with the study methodology due to the monthly structure of financial budgets (which did not draw out the distinction between paper-based labor and paperless labor). It would be beneficial in future studies to include a full-cost study based on implementation structure and study methodology. It is worth noting that a chronological file-processing cost analysis was completed for the implementation presented in this study, which was based on monthly financial budget data. This cost assessment removed all costs not directly related to file processing and removed costs for all employees whose production was not included in the study. This assessment showed that the cost per credentialing file for the whole department before any paperless implementation was \$180, versus \$108 after all paperless implementation.

For any organization considering such a transition, it is important to note a few of the operational concerns that may arise during paperless implementation. Any organization considering a full paperless implementation should be vigilant of the impact of introducing fully electronic data. The use of electronic data presents several opportunities for potential

process automation; however, it also increases the reliance on computer systems and there may be new interoperability or contingency planning issues to consider. Molina obtains approximately 65% of its data from standardized and centralized data sources (ie, the Council for Affordable Quality Healthcare). The opportunity to retrieve information in an automated and batch fashion from these sources became a realistic possibility upon implementation of the paperless software, which greatly reduced the hours of manual labor needed to initiate the credentialing process on the front end. This type of work flow reorganization should be considered where data exchange between different sources exists (ie, software programs, data vendors, etc). This is perhaps one of the greatest opportunities in the paperless environment for administrative simplification.

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