

Case Study:



Charges in Hand™ Solution at a Physician Group Practice in a Hospital Environment

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EXECUTIVE SUMMARY

Meaningful automation of point-of-care work processes in physician practices, where the physician is the pivotal decision maker, have often fallen secondary to that of other business practices. Charge capture, where the physician must accurately document the care provided during a patient encounter in order to properly bill insurance companies, is one such process with significant revenue implications for the practice. MedAptus, an information technology company deploying point-of-care solutions, is working with the hospitalist physicians of a large medical group practice to automate and streamline its charge capture process. The practice implemented the MedAptus' Charges In Hand™ mobile coding solution as the centerpiece of their strategy. The MedAptus solution uses hand held input tools, integration strategies and operational process changes to capture charge data during the encounter and seamlessly transmit the data to the practice billing system. Working with four of the hospitalist physicians who practice at a large hospital in the Boston metropolitan area, the medical group compared data from a two-month period prior to the MedAptus charge capture implementation with data from a two-month period after the charge capture project was implemented.

The study results indicated that an increase of 47.5% in the ratio of encounters captured by the physicians using the MedAptus solution. This increased encounter capture resulted in an estimated increase of \$35,055 in gross charges captured over the two-month period.

In addition, the study indicated that there was a 40.9% decrease in the time lag from the date of service to entry of charges in the billing system. The MedAptus solution greatly enhanced the workflow process required to correctly code the encounters and the time necessary to present these encounters to the billing system for processing.

The study results clearly indicate that the MedAptus automated charge capture solution can significantly affect a physician practice's revenue opportunities, compliance with billing regulations and overall data quality. While it is understood that there are additional areas of potential financial gain and data quality enhancement, which will be the subject of subsequent investigation, this study supports the concept that placing superior technology in the physician's hands at the point-of-care to capture charge information, can provide a quick and significant financial return.

BACKGROUND

As medical practices continue to experience trends of declining reimbursement and increasing costs, they have increasingly sought to more effectively manage their patient care revenue cycle. Much of these efforts have focused on improvements in the “front-end” of the process with the goals of capturing all information required to submit a “clean” medical claim that will meet payor requirements for timely payment. To accomplish this, many practices have developed process controls and invested in tools that alert them when charges are missing for a patient who was seen, or when coding or other information required for payment is incomplete or inaccurate.

An example of a front-end process, and one that has significant impact on the revenue flow for the practice, is charge capture. Charge capture refers to the process of accurately documenting and classifying clinical activities performed by physicians and other healthcare professionals, that serves as the basis for what is billed to the insurance companies. It is a complex and time-consuming process that an active physician may perform 30 or more times each day. The ramifications of inaccurate or incomplete charge capture are profound and significant: lost billings, denied claims, protracted reimbursement cycles, excess administrative costs and potential prosecution under Medicare fraud and abuse statutes.

While significant progress has been made in the management of the revenue cycle for care provided in scheduled outpatient settings, management of the revenue cycle for inpatient services has generally remained outside of the scope of these initiatives. When physicians provide care outside of the walls of the facilities controlled by their group, the business processes that support the revenue cycle are generally left behind.

- The management and tracking of patient lists and encounters has remained a manual paper-based process. Consequently practices have no effective way to measure whether they have captured charges for all patients seen.
- The practices are reliant on the physician to monitor the manual collection and tracking of patient and encounter data.
- Although hospital clinical staff and resources in the hospital support physicians, they lack the administrative support present in the facilities controlled by their practice.
- The reliance on paper coupled with the distance from the billing office.
- The practices are solely reliant on the physicians to remember to capture charges for all patients seen and to bring those paper slips back to the office for processing.

The cumbersome nature of this process, coupled with a lack of data to measure performance, lead to a series of problems. Those typically experienced by practices include the following:

- Significant lag in the time from date of service to the capture and billing for services rendered;
- Failure to capture charges for all services provided. Although most groups acknowledge this problem, few are able to measure or estimate its magnitude;
- The reliance on the physicians for manual data capture often results in incomplete and/or inaccurate information.

Implementing systems that allow practices to extend the management and process controls to services delivered outside of the walls of their facilities presents a largely untapped opportunity for revenue improvement.

HOSPITALIST PRACTICE

MedAptus was contracted to work with a non-profit, multi-specialty, medical group practice, with fourteen locations in and around Greater Boston. Like most medical practices, this group was looking for opportunities to improve their revenue cycle in response to increasing financial and regulatory pressures. The care provided by the hospitalist physicians was identified as such an area of opportunity. The activities of these physicians remained outside the scope of the tools and processes that had been established to manage the capture of revenue for care provided at the practice owned facilities. Their strategy included a plan to automate the process by which they document inpatient charges through the implementation of the MedAptus solution. The initial implementation of the system did not include the automated transmission (interface) of charges to their practice billing system. This capability will be added at a later point in the implementation process. MedAptus played an integral role in this process change through the implementation of the MedAptus Charges in Hand™ mobile coding solution.

Manual Operational Flow

Prior to implementation of the MedAptus solution, physicians would begin their day by printing out a list of the inpatients assigned to their group. All patients admitted to the service of these physicians were seen at least one time each day.

In addition to this daily list, each physician would carry a stack of pre-printed index cards on which they were to record the services delivered to patients. They would create one card for each patient and were supposed to submit the card to the administrative staff either when the patient was discharged or when the physician was scheduled to “go off service.” The index cards are periodically batched and sent to a central office for entry.

These index cards included a list of the most common procedures performed by the physicians. Physicians would manually write in the diagnosis description and rely on the practice staff to select the associated diagnosis code. The responsibility for ensuring the cards were completed and submitted rested entirely with the physicians. In practice, the physicians would typically complete the index cards at the conclusion of the patient stay and would rely on memory for which patients they had seen on each day.

Once the cards were submitted, the cards were reviewed by practice staff and entered in the billing system. The charge entry staff was responsible for contacting the physician regarding any questions about the content of the charge slip that could affect sending a clean claim to the insurance company (e.g., could not determine proper diagnosis code based on physician note). Charge entry staff had received on the job training in coding protocols but were not certified coders.

Charge Slip Structure and Data Input

The charge slip played a significant role in the pre-MedAptus operational process. It was the primary communication mechanism between the physician and charge entry staff. In addition, the structure of the charge slip played a role in how the clinician documented the visit data. The form contained the diagnostic and procedure codes most often used by the physicians in the practice. Space was allowed to document and record up to four diagnoses. However, the charge slip did not afford any mechanism to encourage or facilitate physicians linking each procedure code to a specific diagnosis. A medically justifiable primary diagnosis, and a clear linkage between a procedure and a diagnosis are requirements for a claim to be paid. The manual, paper form could have an impact on claims submission, but the very structure of the charge slip could also affect the accuracy of the coded information submitted.

THE MEDAPTUS SOLUTION

MedAptus, Inc. is a healthcare information technology company that deploys a variety of point of care solutions, bridging the gap between where the care is being delivered and where the information resides. Recognizing the potential loss of data and the significant role the clinician needs to play in the process, MedAptus has focused its initial point of care solution on the charge capture process by developing its Charges In Hand™ mobile coding solution.

Charges In Hand™ Mobile Coding Solution

The Charges In Hand™ mobile coding solution is a software solution, operating on an off-the-shelf, handheld computer device that is used by clinicians to enter encounter data at the point-of-care. The system consists of a handheld computer and application server, connected by a cradle or a wireless network, which work together to eliminate traditional paper recording and manual entry of data. The solution includes data integration with practice registration and scheduling systems so that patient specific demographic, schedule information and hospital census data is available to the physician at the time of the patient encounter. Charges completed by the physician are synchronized to the server where they can be transferred by interface to the practice billing system or printed for manual entry.

As a software solution, it is designed to enable a sound operational work process by enhancing the provider workflow and contributing to revenue enhancement. The physician synchronizes the handheld device to obtain patient census and scheduling data. At the completion of the patient encounter, with the visit results fresh in his/her mind, the physician documents the services provided using standard diagnostic and procedure codes. The power of the software assists the clinician by providing him/her with a complete set of codes from which to choose, an E&M coding wizard to step the clinician through a decision making process, and a complete set of Medicare rules (see Table 1 below). Charges entered by physicians are examined for appropriateness against these rule sets and immediately flagged for review and modification as necessary. Completed encounter data is wirelessly transmitted to the application server where it can be reviewed again, and if necessary, edited before being transmitted to the billing system.

Table 1. Types of Edits on Handheld

Correct Coding Initiative (CCI) Edits	Local Medical Review Policies (LMRP)	Medicare Edits
Allowable combinations of CPT-4 (procedure) codes	LMRPs relate to linked CPT-4 and ICD-9 (diagnosis) codes	General and Relational edits
Flags for unbundling of comprehensive, component and mutually exclusive codes	Flags when diagnosis code does not medically justify procedure code	Checks against sex and age specific procedures
Over 193,000 unique CCI edits	Average of 700,000 per carrier	Over 50,000 Medicare Edits

Using the MedAptus solution, this practice was able to significantly change and improve the charge capture process and performance for the hospitalist physicians.

Charges in Physician Experience with Use of MedAptus

The physicians now begin their day by synchronizing their handheld device to receive updates to the inpatient census for which they are responsible. This synchronization also submits any completed charges to the server where it can be reviewed and entered in the billing system using Workflow Manager (the web component of the application).

The patient list indicates the patient name, location in the facility, and date of admission and includes a history of the services provided to the patient during the course of the hospital stay. The physician may also view the patients assigned to other physicians in their group to facilitate cross coverage.

Now, instead of documenting care when the patient is discharged, the physicians document and synchronize patient encounters on a daily basis. Visual queues on the screen indicate when no charge has yet been completed for a given patient.

Additionally, the physicians now indicate the patient diagnosis by selecting the specific code or codes that are most appropriate and no longer rely on the practice staff to interpret their handwritten description.

Changes in Practice Managers Experience with Use of MedAptus

The practice managers now have a real-time view into the inpatient charge capture process that allows them to monitor performance and ensure charges are captured for all patients seen. Prior to the MedAptus implementation, the practice managers had no systematic means of tracking which patients were under the care of their physicians. Consequently they had no means of measuring whether charges were captured for all inpatients under their care.

Using the Workflow Manager component of the MedAptus solution, the practice created a list of the patients under the care of their physicians. By comparing this list of patients with the charges synchronized by the physicians, Workflow Manager generates a list of the patients for whom charges are missing on each day of the inpatient admission. This list allows the practice to now measure their performance, and identify and resolve lost revenue opportunities.

Each morning, the practice staff log-on to the Workflow Manager to review synchronized charges and identify any patients from prior days for whom charges have not been submitted. When physicians are reminded to complete missing charges, they simply navigate to the patient, add the charge and go on with their work. The next time the physician synchronizes, that missing charge is automatically submitted to Workflow Manager.

Additionally, the implementation of the MedAptus solution resulted in a significant reduction in the delay from the date of service to the entry of the charge in the billing system, subsequent claim submission and receipt of payment. The most significant factor in the area of improvement was the transition to a process where the physicians complete and synchronize

charges daily. This process was also improved by the fact that the practice staff no longer needed to wait for completed index cards to be transported from the hospital to their office. Once synchronized, the charges were immediately available for review and entry.

STUDY BACKGROUND

Among the goals of this initiative was to begin the process of measuring performance and establishing expectations of the performance levels they could and should achieve. The first step in measuring performance was to conduct an analysis of the revenue cycle improvements associated with the implementation of the MedAptus solution. This study compared data from a two-month period prior to use of MedAptus (April and May 2002) with data for the first two-month period following the implementation of MedAptus (September 23, 2002 through November 22, 2002). Using data extracted from the practice billing system and the MedAptus database, coupled with paper copies of the hospital census reports, the study sought to measure two key areas of performance:

- Improvement in the capture of charges for inpatient services
- Reduction in time to the capture and entry of charges

The methodology employed for the measurement of each of these areas is described below

Measurement of Improvement in Capture of Charges for Inpatient Services

Although the practice had historically lacked a system for tracking their performance in this area, paper copies of the hospital inpatient census reports enabled them to determine the number of patients they should have seen. Using these reports the practice determined the number of inpatient days associated with the patients under their care during the prior to MedAptus implementation period. For example:

- If there were 10 inpatients under the care of the hospitalist physicians each day for a 10 day period, this would represent 100 inpatient days (10 days times 10 patients per day)
- Since it was the practice of these physicians to provide care to these patients on each day during the course of an admission, they should expect to capture 100 charges during that time

To compare the charge capture performance during the two time periods, the practice calculated the total charges captured as a percentage of the total inpatient days.

Reduction in Time Lag from Date of Service to Capture and Entry of Charges

To facilitate this area of measurement, the practice extracted physician-specific data from the practice management system and calculated the average days lag from the date a service was rendered to the date of entry in the billing system. The data for the prior to implementation period was compared to that of the post-implementation period.

BENEFITS REALIZATION

The study examined the impact of the MedAptus solution in improving capture of charges for inpatient services and the reduction in time to the capture and entry of charges. It is understood that there are additional areas of potential financial gains, such as physician time savings, reduced claims denials and/or edits, filing limit write-offs due to billing delays, and administrative cost reductions related to claim denial processing and manual charge entry. All of these issues will be examined in subsequent studies.

Improvement in Capture of Charges

The analysis of the inpatient charge capture performance revealed a significant improvement following the implementation of the MedAptus solution for the capture and tracking of services rendered.

- During the period prior to the MedAptus implementation, the hospitalists captured charges for only 46 % of the inpatient days;
- During the period following the implementation of MedAptus, this percentage improved to a capture of charges for over 93% of the inpatient days;
- This increase resulted in an estimated increase of \$35,055 in gross charges captured over the two-month period.

The data supporting these results are presented in more detail below.

Key data from the study:

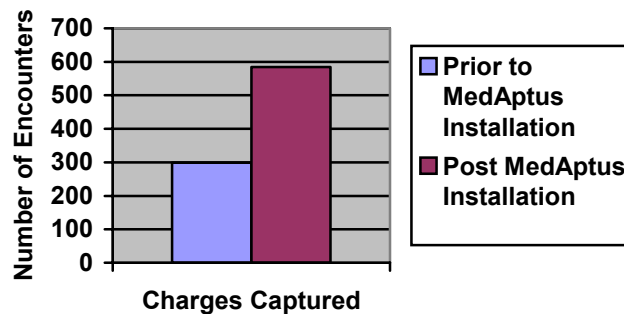
During the months of April and May 2002, charges were captured for 46 percent of inpatient days.

- There were 646 inpatient days for the patients under the care of the hospitalists during this period.
- Charges were captured and billed for 299 of these inpatient days representing approximately \$36,777 in gross charges.

During the two-month period from September 23 through November 22, 2002 charges were captured in the MedAptus system for 93 percent of inpatient days.

- There were 623 inpatient days for the patients under the care of the hospitalists during this period.
- Charges were captured and billed for 584 inpatient day charges captured by Physicians using MedAptus Charges In Hand™ representing approximately \$71,832 in gross charges.

Encounters Captured



A comparison of these two-month periods reveals the following:

- An increase of 285 encounters captured. On an annualized basis this would result in an additional 1,710 encounters captured, or 428 per physician.
- An estimated increase of \$35,055 in gross charges captured. On an annualized basis this would result in an additional \$210,330 in gross charges, or \$52,583 per physician.

A comparison of results standardized to the inpatient days for the period prior to the introduction of MedAptus into the process reveals the following:

- An increase of 306 encounters captured
- An annualized increase of 1,836 encounters captured, or 459 encounters per physician
- An estimated increase of \$37,638 in gross charges captured.
- An annualized addition of \$225,828 in gross charges, or \$56,457 per physician.

Though not a formal component of the commissioned study, the researchers also found that charges may be lost under the manual process for reasons including physicians not completing a charge slip, charge slips being lost during the coding and documenting process, incomplete and/or inaccurate charge slips sent back for physician completion, which remained incomplete. Regardless of the reasons, the loss of charges has a significant cumulative and negative effect over time.

The study indicates that the MedAptus solution clearly can effect a positive change by capturing data at the point of service. Electronic data transfer eliminates manual handoffs of a paper form, thereby eliminating the possibility of lost charge slips. The ease-of-use of the software in the study allowed physicians to enter data quickly and while the visit information was fresh in their minds, eliminating delays and errors. As commented by the physicians, the robust functionality, including the E&M wizard, coding rules, real time edit flags and customizable

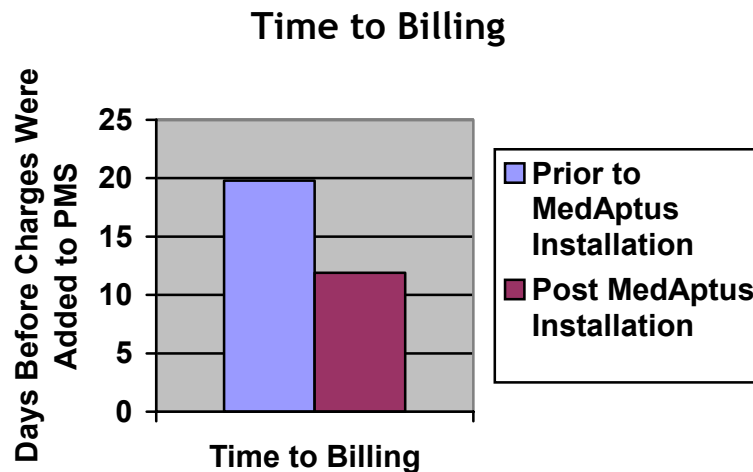
physician coding profiles increased the likelihood of complete charge entry at the point-of-service, eliminating send backs for incomplete information.

Reduction in Time to Charge Capture and Entry

The study indicated that there was a 40.9% decrease in the amount of time that it takes for charges to enter the billing system. The MedAptus solution greatly enhanced the workflow speed to correctly code and prepare the encounters for entry into the billing system.

During the two-month period prior to MedAptus, the average time from date-of-service to entry of charges in the Billing system was 19.8 days.

During the two-month period following implementation of MedAptus, the average time from date-of-service to entry of charges in the Billing system was 11.9 days. It should be noted that on average, the physicians synchronized charges within 24 hours, after which the practice staff required approximately 11 days to enter those charges in the billing system. These delays were attributable to unrelated staff workflow and resource constraints. Once these issues are resolved, the practice should expect to realize an additional reduction in the days to billing by up to 10-11 days. The establishment of an interface would similarly reduce the days to billing by 10-11 days.



Charge entry may be slowed for a variety of reasons during a paper-based process, including delayed delivery of paper charge slips from physicians to the billing staff, misplaced charge slips that need to be found and billing staff inappropriately prioritizing data entry. Once again, the study indicates that the MedAptus solution clearly can effect a positive change by capturing data at the point of service. Electronic data transfer eliminates manual handoffs of a paper form, thereby decreasing the possibility of a slowed charge capture process. The reporting capabilities and charge tracking abilities of the MedAptus solution greatly increase not only the speed of the charge entry workflow, but the accuracy and compliance activities as well. These factors provide a direct benefit in improving the cash flow of the practice.

CONCLUSION

The MedAptus Charges In Hand™ solution implemented in this hospital-based practice has been shown to be a significant improvement over the practice's paper-based charge ticket process. The practice saw revenue and cash flow improvements by entering data at the point of care and then entering that data directly to the billing system and reducing the possibility of lost paper charges. The future addition of an interface solution with the billing system will greatly enhance the results that have already been seen by the practice.