

ANALYZING MANUAL VS. ELECTRONIC TIME STUDY METHODS

Cost Report Accuracy and Defensibility –
An Imperative for Critical Access Hospitals



CAH EMERGENCY SERVICES CONDITIONS OF PARTICIPATION

As part of the CMS Conditions of Participation, CAHs are required to provide 24/7 emergency care services through a qualified provider who is immediately available by telephone or radio contact, and available on site, 24 hours per day, within 30 minutes or 60 minutes in areas described in 42 CFR 1395(g)(5). Since CMS requires CAHs to provide 24/7 emergency care services, per 42 CFR 413.70(b)(4)(i), CAHs may obtain reimbursement for certain allowable costs on the CMS cost report. These cost-based reimbursements may include costs for an emergency room provider who is on call but not present on the premises of the CAH involved, is not otherwise furnishing provider services, and is not on call at any other facility. CMS requires that CAHs perform time studies to report provider time allocations to determine reimbursable Part A amounts.

THE PROBLEM WITH OVERSTATING ACTUAL CAH PATIENT CARE TIME

Medicare and the Medicare Administrative Contractors (MAC) continue to audit the accuracy and defensibility of time studies used to determine the cost allocation between the professional and standby components. This often leads to extremely conservative time studies that overstate the amount of professional time spent with each patient, and thus reduce the amount of reimbursements received by CAHs. The following table highlights one hospital's negative financial impact due to overstating the professional time spent with patients.

In the example below, the hospital received \$156k less from Medicare by reporting an average of 38 minutes of professional time as compared with what Stroudwater considers to be the industry benchmark of 20 minutes per patient visit.

Further, the use of certain time study methodologies may inhibit defensibility in the event of an audit. MACs reserve the right to revise time allocations and increase the proportion of unallowable costs if a hospital cannot identify the amount of time spent with a patient.

For these reasons, CAHs must implement systems to ensure both the accuracy and defensibility of time studies used.

	Current (@38 min)	Proposed (@20 min)	Variance
Total Cost	\$3,048,843	\$3,495,690	\$446,847
	<u>\$17,274,567</u>	<u>\$17,274,567</u>	<u>-</u>
Total Charges	0.176493	0.202361	0.025867
Medicare Charges	<u>\$6,035,289</u>	<u>\$6,035,289</u>	<u>-</u>
Medicare Reimbursement	\$1,065,187	\$1,221,304	\$156,117

CONVENTIONAL TIME STUDY METHODS AND THEIR SHORTCOMINGS

Traditionally, CAHs have relied upon manual methods to meet the time study requirements defined in the Medicare Provider Reimbursement Manual (PRM) 15-1, 2313.2.E, to document and appropriately allocate emergency department (ED) clinician professional (Part B) and provider (Part A) cost. These time studies are typically performed monthly, on alternating weeks each month, or two weeks per quarter. Conventional methodologies for capturing and documenting provider standby time include:

1 | CLINICIAN ESTIMATES

This method requires clinicians to remember and document their patient care time. These estimates can be highly inaccurate due to inherent clinician bias, often resulting in an overstatement of patient care time. This is particularly true when clinicians do not fully understand the purpose of the time studies or when they perceive that increased time with patients is correlated with performance evaluations.

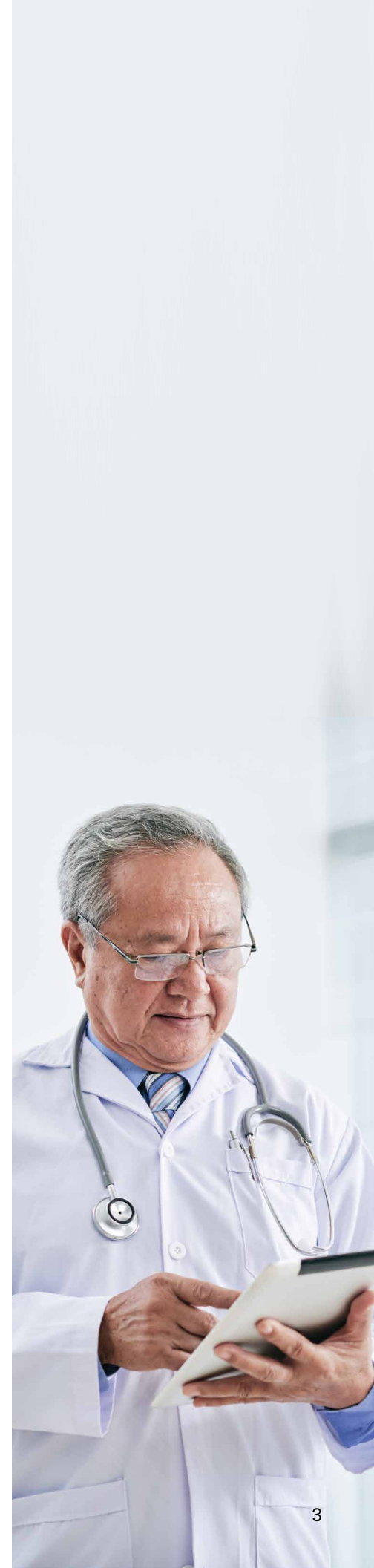
2 | EHR DATA ANALYSIS

This method estimates patient care time based on EHR records. This method often deducts the total amount of time that patients are present in the ED from the total amount of clinician shift time. This can result in a dramatic over-representation of patient care time, to the detriment of reimbursable Part A time, because it assumes that a clinician is providing direct care for the full duration of time that the patient is present in the ED.

3 | TIME AND MOTION STUDIES

In this case, staff or paid outside consultants observe and record clinicians' time as they go about their day. These studies must occur 24 hours a day throughout the time study period and require the observer to record time allocations as either standby time or patient care time. This method is invasive, costly, and often highly inaccurate. Furthermore, documentation time is frequently over-represented, particularly when observers assume that the full time spent in a documentation area or in front of a computer is attributable to patient documentation and review. At many CAHs, clinicians spend significant amounts of time at documentation stations in "standby mode;" therefore, allocating the full time spent in a documentation area to patient care time can result in significant under-reporting of reimbursable time.

The above methodologies have significant shortcomings when it comes to accuracy and defensibility; moreover, they are often costly and labor-intensive.



AUTOMATED ED CLINICIAN TIME STUDIES

For years, CMS has accepted electronic time studies as an alternative to manual time studies; however, until several years ago, few technologies were capable of producing results that were both accurate and compliant.

Conceptually, adopting an electronic approach to replace conventional, manual methods could produce a variety of benefits to a CAH, including:

- 1 | More accurate, defensible data can be collected and constantly analyzed throughout the year rather than extrapolating reimbursable time based on limited snapshots.
- 2 | The burden and effort associated with manual time studies and aggregation of data for the cost report are eliminated.
- 3 | More accurate data can result in additional reimbursement to the hospital.
- 4 | Data from a system that tracks clinician movements and time allocations across departments can provide useful insights about workflow and cost allocation. Data trends could be monitored at the level of individual clinicians, and in some cases, compared across facilities to benchmark and adjust behaviors proactively that may be negatively impacting reimbursement.
- 5 | Additional use cases related to the tracking of people and assets within a CAH could be layered onto a location-based technology platform for added benefit and innovation possibilities.

In 2015, VersaBadge introduced an automated time study technology that was developed specifically to help CAHs report Part A ED standby time more accurately. The system leverages a low-cost, Bluetooth-based real-time location infrastructure that was co-developed with CAHs and is now deployed at more than 100 CAHs across the United States. Industry experts, like Stroudwater Associates, have reviewed the technology and automated time study data and agree that it delivers more accurate results than manual processes. VersaBadge has taken a thoughtful, multifaceted approach that can position hospitals to exceed CMS time study compliance requirements and achieve more accurate, defensible data for the CMS cost report.



We struggled with different versions of time studies for years. It was agony trying to get clinicians to accurately report their time so we tried to leverage EHR data to reduce the administrative burden, but we sacrificed significant reimbursement due to the inaccuracy. We have since invested in an automated time study technology from VersaBadge and are finally able to accurately report reimbursable Part A time in the ED, which has resulted in more than \$100K annually to our bottom line. Now we can visualize patient care time for each provider throughout the year and can also see the breakdown of face-to-face time as compared with time spent doing charting and patient review. These are tremendous insights that we have come to rely upon as an organization.

Scott Barber, CEO Camden General Hospital (TN)



ANALYZING PATIENT CARE TIME

BACKGROUND

The vast amount of time study data collected through electronic time studies presents a unique opportunity to assess the time allocations of clinicians more accurately within the CAH setting relative to manual, often inaccurate, time study methodologies. This information can be beneficial to hospitals in terms of staffing and scheduling optimization, cost allocation, and reimbursement accuracy. Analysis of this data across CAHs has the potential to better equip rural healthcare advocates with the information they need to effectively influence policy on behalf of CAHs.

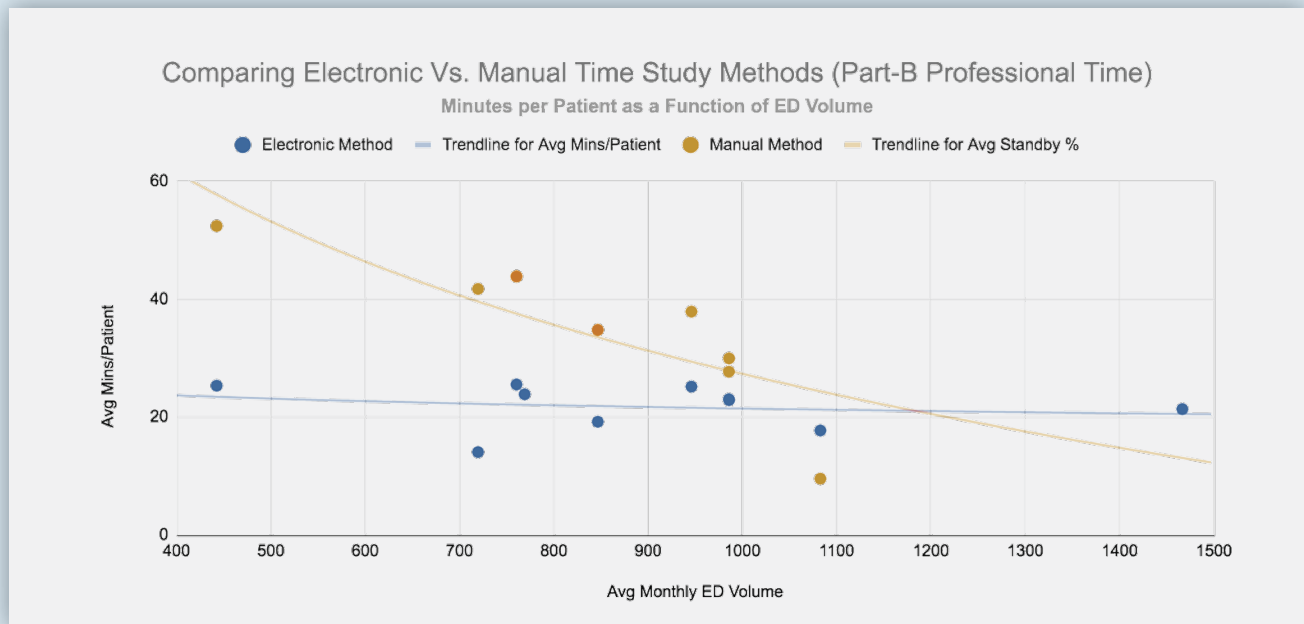
PROCESS & METHODOLOGY

For this study, we analyzed data from a sample set of CAHs that utilize an electronic, automated time study system to record physician time allocations in the Emergency Department. Our purpose was to compare patient care times (minutes per patient) as determined by the system with patient care times that were calculated by those same CAHs while using manual time study methods before they deployed the electronic system. We then compared this data with the industry standard patient care time benchmark of approximately 20 minutes per patient. The below methodology tracks our approach:

- 1** | We reviewed de-identified hospital data collected from CAHs that had implemented the electronic time study system successfully and had been utilizing the system effectively to capture Emergency Department physician time allocations for at least six months. In addition to utilizing the electronic system to capture location-based data, these hospitals also successfully deployed the desktop software component of the system that enables the effective capture and parsing of patient documentation and review time from the overall time in dual-purpose documentation areas. These hospitals are nationally distributed, have varying patient volumes, and are representative of the full sample set of CAHs that met our criteria for analysis at the commencement of this study.
- 2** | Based on the time classifications collected from our sample data set, we were able to determine the percentage of total physician time spent in “direct,” face-to-face patient care areas. We also calculated the time spent performing “indirect” patient care, where physicians could be charting, ordering, or reviewing patients in a dual-purpose documentation area. We then converted those percentages to minutes in a year. The multifaceted technology system enables active documentation time to be parsed from the overall time spent in a dual-purpose documentation area. Direct and indirect patient care time must be accurately calculated and combined to appropriately reflect Part-B professional time.
- 3** | We determined annual ED patient volumes for each site in our sample set.
- 4** | By dividing the annual patient care minutes by the annual ED volume, we were able to calculate the average professional time per patient (“minutes per patient”).

FINDINGS

*Note: Figures are extrapolations that are based on data, projections, and estimates from clients that have been “live” with the electronic time study system for six months or more.



ANNUAL ED PATIENT VOLUMES

Annual patient volumes ranged from 5,316 to 17,604 patients, with an average patient volume of 10,809.

AVERAGE AND STANDARD DEVIATION OF COMBINED FACE-TO-FACE AND DOCUMENTATION TIME

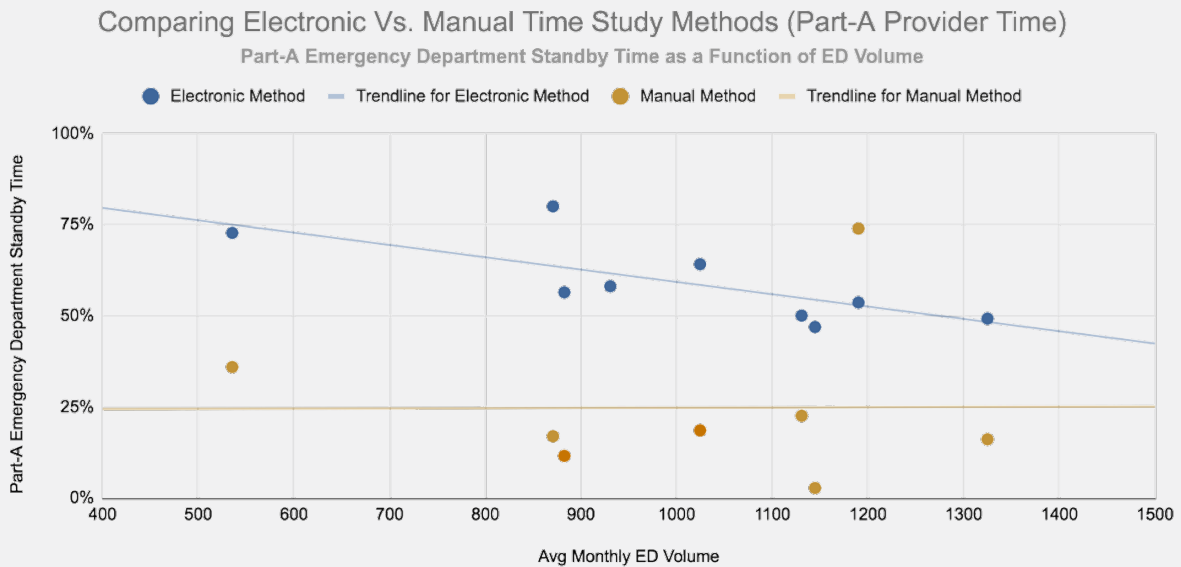
Using electronic time study methods, combined patient care time varied between 14.1 minutes and 25.6 minutes, with an average of 21.8 minutes per patient and a standard deviation of 3.8 minutes across our sample set. Using manual time study methods, the combined patient care time varied between 9.6 minutes and 52.4 minutes, with an average of 29.6 minutes per patient and a standard deviation of 12.9 minutes. The data generated by electronic methods is consistent with what we would expect to see at the various ED volumes. Significant variation in the manual time study data suggests possible compliance and defensibility issues on the low end of the minutes per patient calculations where standby time may be over-represented; meanwhile, the high minutes per patient calculations suggest a significant under-representation of reimbursable standby time.

AVERAGE “DIRECT FACE-TO-FACE PATIENT CARE TIME” PER PATIENT

Using electronic methods, direct face-to-face patient care time varied between 2.7 minutes and 7.7 minutes, with an average of 5.2 minutes per patient across our sample set. In comparison to manual tracking, this granular breakdown of information is not available because manual methods rarely produce data that separate documentation time from direct face-to-face time.

AVERAGE “INDIRECT PATIENT CARE TIME” PER PATIENT

Using electronic methods, indirect patient care time (patient documentation and review time) varied between 11.1 minutes and 21.2 minutes, with an average of 16.6 minutes per patient across our sample set. In comparison to manual tracking, this granular breakdown of information is not available because manual methods rarely produce data that separate documentation time from direct face-to-face time.



AVERAGE PART A ANALYSIS

After deploying the automated time study system, the electronic method resulted in an average Part A standby allocation of 55.9% in the ED across the sample set. Before deploying electronic time studies, manual time studies resulted in an average Part A standby allocation of 24.8% in the ED across the sample set. This is a direct result of the reduction of minutes per patient from an average of 29.6 using manual methods to 21.8 using the electronic system.

Comparing the above graphs helps to visualize the significant inconsistency of manual time studies as compared with the electronic method. With the electronic method, the average minutes per patient calculation dropped by approximately 26% and the Part A standby time percentage more than doubled. Another representation of the improved accuracy of the electronic method is shown by comparing the standard deviation of patient care time, where we observe increased consistency with the electronic method as compared with the manual method.

The financial impact on a CAH that replaces their manual time study method with electronic time studies can be profound. Using the above figures, if a hospital's annual ED spend is \$1.5M and their professional time drops from 29.6 minutes to 21.8 minutes, that is a 26.4% increase in time that is reimbursable on the cost report. At a 40% cost-based mix, that reflects an additional \$158,400 in reimbursement annually to the Emergency Department.

FACTORS THAT INFLUENCE AVERAGE PATIENT CARE TIME

Overall, CAHs are relatively consistent in terms of direct face-to-face patient care time, with an average of 5.2 minutes per patient and a range of 2.7 to 7.7 minutes per patient of direct patient care. As would be expected, we see an inverse relationship between patient volumes and direct patient care minutes per patient. As patient volumes increase, minutes per patient trend downwards.

Inevitably, there are some hospitals and individual clinicians who spend more time with patients. Some variance among providers may be appropriate given the context of individual hospitals and the communities they serve; however, excessive or over-reported direct and indirect patient care time can be costly to a CAH in terms of negative impact on reimbursable standby time.

Where we see the most significant inconsistencies across hospitals is regarding indirect patient care time that typically occurs in documentation areas. Generally speaking, this is the time category where CAHs have the most room for improvement. Implementing more streamlined, standardized documentation processes, and even utilizing scribes, can have significant benefits for CAHs where provider documentation times are excessive.



One of the key benefits of electronic time study technology is that it provides leadership with data at the provider level throughout the year. This visibility promotes more productive communication between leadership and providers so that they may implement changes as appropriate to deliver the best patient care as efficiently as possible.



This system provides us with incredible insight about our reimbursable Part A time in the ED all throughout the year, providing us with the ability to course correct if we see anomalies. The VersaBadge team is incredibly proactive about reviewing reports with us on a monthly basis and that dialogue has enabled us to engage productively with our clinicians to ensure that our data is as compliant and accurate as possible for the cost report.

Holly French, CFO, Newman Regional Health (KS)



The negative financial impact of under-representing reimbursable time is even more poignant to CAHs during the COVID-19 public health emergency, given the financial challenges and depressed ED volumes that many CAHs have experienced.



ELECTRONIC TIME STUDY DATA ANALYSIS DURING COVID-19

Electronic time study data provides us with the unique ability to analyze industry trends and begin to assess impacts associated with events like the COVID-19 pandemic. Looking at time study data collected across several CAHs that share a common technology platform allows us to control for data inconsistencies that may otherwise be present among facilities with varying time study methodologies.

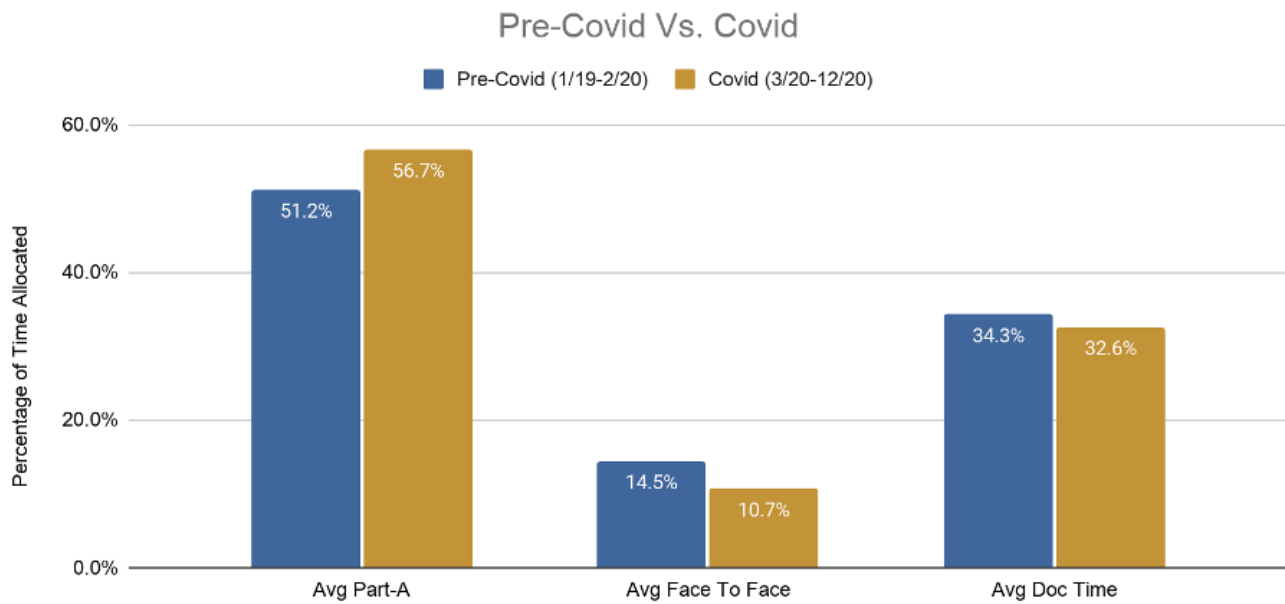


"With the initial onset of COVID, our ED patient volumes plummeted dramatically and have since been highly variable. It has really helped to have a system in place that automatically captures that variability, while also eliminating all effort associated with manual time studies throughout our organization. This has allowed our teams to focus on providing the highest level of care throughout this pandemic, without the unnecessary distraction of manual time studies."

Jon Smith, CFO, Memorial Hospital of Carbon County (WY)



The COVID-19 public health emergency has presented immense challenges to CAHs and the healthcare system more broadly. Aggregated electronic data shows a 21% reduction in face-to-face time, but only a 6% drop in documentation time, despite much lower patient volumes during this period. The lower patient volumes would suggest an even greater reduction in overall patient care time; however, the fact that standby times did not increase as substantially as we would have expected is likely the result of multiple factors. Notably, the patients who did receive care in the ED were typically more ill, requiring more time from providers. Although measures were taken to reduce face-to-face time and minimize exposure, providers often spent more time than usual in a documentation, research, and review mode, particularly in the early phases of the pandemic.



Substantially lower patient revenues with only nominal increases in standby time have compounded the financial challenges for CAH emergency departments. The overall strain on resources further highlights the importance of improving time study accuracy while reducing the associated effort for staff.



As a small critical access hospital in rural Illinois, this collaboration has been a tremendous support to us given the financial challenges of this pandemic. We are more accurately tracking time for reimbursement in the ED, and have expanded to track clinician time for allocation to the RHC/Express Care Clinic. We have badged both ED Providers and RHC clinicians, and finally have confidence that we are compliant and accurate. We are improving the financial health of our hospital while eliminating unnecessary effort.

Greg Starnes, CEO, Sarah Bush Lincoln Fayette County Hospital (IL)



SUMMARY

Industry experts, including Stroudwater, have observed the successful deployment of an electronic tracking system at numerous mutual client hospitals. Stroudwater has analyzed the data collected by the electronic system to gain new insights into the effect of more accurately reporting patient care time on CAHs. Based on the data, we believe that more accurate, defensible data can be produced by electronic time study technologies as compared with conventional, manual methods. Accuracy and compliance of time studies are essential for CAHs to receive appropriate reimbursement, particularly for ED clinician standby time (Part A time on the CMS cost report). This study highlights the benefits of replacing manual time study methods with an electronic system and the potential for improvement in Part A reimbursement accuracy. The data analyzed in this study shows a reduction in average patient care time per visit from 29.6 minutes using manual time study methods to 21.8 minutes using a robust electronic time study system. From engagements with CAHs throughout the country, Stroudwater has reviewed hundreds of cost reports and we know that CAHs are frequently calculating higher per-visit patient care times than those represented in this study. We observe that hospitals with lower patient volumes tend to report higher per-visit patient care times. However, as evidenced by this study, if patient care times can be reduced and reported more accurately while retaining a high quality of care, the positive financial impact to a CAH can be substantial.

A CAH can assess whether there may be an opportunity to achieve additional reimbursement in the ED by calculating average minutes per patient across ED providers. If the CAH is consistently and substantially above the 20-minute per patient standard, they may be able to improve reimbursement through a combination of process refinements and the use of a more accurate electronic time study technology.

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