Calculating the Real Cost of ED Physician Documentation

My Experience With ED Physician Documentation Systems: Rationale for Increased Physician-Patient Interaction and Reduced Documentation Costs

By Stephen M. Miley, M.D. FACEP
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It has been my experience that when hospitals evaluate various ED physician documentation systems the “real” charting costs per year, per provider or per chart are often grossly underestimated. Most often overlooked is the “time” it takes to complete a chart and the cost associated with that “time”. Cost accounting is nothing new but for some reason is rarely utilized in these comparative evaluations.

“Time” in the ER is a very real commodity and has value. The failure to consider the time it takes for a provider to complete the required documentation tasks results in an incomplete and inaccurate picture of the total cost. Increased provider time leads to lower physician productivity, less time with patients and increased physician cost. With the thin margins that currently exist in the healthcare marketplace, lost productivity and efficiency is not acceptable.

I will compare the five-year cost of the most popular charting alternatives: paper, electronic and dictation; and then present a strategy to maximize charting productivity and minimize the cost of “time” in the ED physician charting process.

Assumptions
I work in an ED with an annual census of 30,000 visits. Our department uses a combination of paper T-systems and telephonic dictation and I will draw on that experience. For this analysis I will assume a one-time hardware and installation cost of $50,000 for all electronic charting options. Typical software licenses for EMR’s in ED’s of this size are $400,000 upfront with an 18% per year maintenance fee and an initial contract term of five years. The comparative patient will be a 45-year-old male with a history chest pain who is evaluated and discharged from the ED (99285).

Dictated Chart – Determining a “Real” Cost
While it is very common to find transcribed ED record costs in double digits I will assume a competitive rate of $9.00 per chart. This is solely the cost of transcribing the record of the patient encounter. Only if we include the time to create the dictation and the cost of other actions and processes required to produce a completed dictated chart will we know the approximate “real” charting cost of a dictated/transcribed chart.

For a dictated chart, I will take notes at the bedside while interviewing the patient. This takes about 3 minutes. If I am going to do a multi-part dictation, I have to move to a HIPPA compliant area and begin dictating the record of the encounter. A partial dictation of the H & P takes about 2 minutes but with addendums totals about 5 minutes. My other option is to wait until the patient is discharged to do the entire dictation, which will take about 4 minutes. Next, I have to log into another system to generate Aftercare Instructions. This adds another 3 minutes. When the transcribed chart comes back to
the ED I have to proofread, perhaps correct and sign the chart adding another 2-3 minutes and now the chart is complete. This process has taken about 11 minutes. Using 11 minutes as the average for a dictated chart and assuming an average ED physician is compensated at $150 per hour ($2.50 per minute) the cost of “time” associated with a transcribed chart is $27.50.

The true cost of a dictated chart in this example is $9.00 for transcription and $27.50 for “time”. This generates a total true cost per chart of $36.50.

An ER with 30,000 visits per year would have approximately $1,095,000 per year in costs directly associated with dictated ED physician documentation.

Paper Chart
While the cost for a “paper” chart varies based on vendor and chart characteristics, a typical rate (and the rate where I work) is $1.75 per chart. This is the cost of the paper chart with no accounting for costs associated with “time.”

To chart on paper I must first determine the correct template to use. I briefly interview the patient and then leave the patient’s room to pull the correct template. I then return to the bedside and personalize the chart with one of the patient’s ID labels. This process may take in the area of 1 minute. Back at the bedside I interview the patient and record the information onto the form, a process that usually takes about 4-5 minutes. Once the H & P is completed, I move to the nursing station and hand off the chart to the nurse/chart rack (30 seconds) and then move on to the next patient. Later in the patient encounter I complete the form using another 2-3 minutes. Finally I log into another system to generate Aftercare Instructions, adding another 3 minutes. The total ED physician time in completing a paper chart is approximately 10-12 minutes. Using an average of 11 minutes per chart the “time” cost is $27.50.

The chart then needs to be scanned into the central record system for permanent archiving. This process takes about one minute of nurse time and 2 minutes of clerical time, which adds another $1 to the cost. Finally that paper chart is either stored or destroyed at a cost of $0.75 to $3.

The true cost of a paper chart in this example is $1.75 for the chart plus $27.50 of physician time plus $1.75 for nursing and clerical time plus finished chart disposal/storage costs generating a true cost per chart of $31.00 or more.

An ER with 30,000 visits per year would have approximately $930,000 per year in costs directly associated with paper ED physician documentation.

In this example we do not even attempt to estimate the cost of “time” associated with lost charts (estimated at 1%-2% of all charts) or of time associated with the ER physician “pulling” the wrong template at the start of the encounter based on incorrect or incomplete information initially gathered from the patient, or “time” and costs associated with the consequences of illegible handwriting or poor quality scanned copies.
**Traditional Electronic Charting**
In the case of traditional electronic charting and using the assumptions listed above, the individual patient chart will equal the initial software license fee of $400,000 plus the annual maintenance fee of 18% ($72,000) plus the $50,000 for hardware and installation. This equals a total cost of $810,000 over 5 years. At 30,000 visits per year over 5 years the base cost per chart is $5.40.

Assuming the same 5 minutes to gather information from the patient and make notes, I would then need to move to a PC work station, log on to the legacy system for each patient encounter (to satisfy HIPPA requirements) adding another minute and then conservatively take 8 to 10 minutes to record his encounter. Finally I would need to complete ACI for another minute.

The total physician “time” in this example of an EMR environment is 15-17 minutes. Using an average of 16 minutes the “time” cost is $40.00. This is in addition to the base chart cost of $5.40, for a total true cost of $45.40.

The 30,000 annual visits have an EMR cost of $1,362,000 per year.

**Lightning Charts**

*Lighning* Charts is priced on a per chart basis at $4.00 a chart. Significantly, there is no software license or annual maintenance fee. Upgrades are free and as new versions of the LCED physician documentation module are released all existing clients will be automatically upgraded. There is also the cost of approximately $50,000 for hardware and installation.

As with our previous examples, physician information gathering and documentation at the bedside takes 4-5 minutes. Additional time spent on the chart through disposition adds another 1-2 minutes. Completing the ACI adds virtually no time as the appropriate chief complaint driven ACI is already selected for the chart and only has to be accepted or modified.

The total time for LCED is 6-7 minutes. Assuming the higher number of 7 minutes the physician time cost is $17.50 per chart.

Adding the chart cost of $4.00 and the hardware/installation cost of $0.33 ($50,000/150,000) results in a true cost of $21.83 per chart or $654,900 per year.

**Comparative Costs**

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<td>Dictation</td>
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Key Observations
In the ER “time” is the key commodity while clinical skill by the physician is the key requirement. Generally, they exist in proportion. The more time the physician spends with the patient the better the opportunity for a successful clinical outcome.

Strategies to “create” time in the ED will result in better care and will be cost effective to the benefit of the hospital, the patient and the physician. Quality emergency medicine and effective cost control in ED charting are not mutually exclusive.

ED physicians see on average about 2 patients an hour. Reviewing the data presented to date, charting times by modality suggest the following absolute amount of time spent charting per hour as follows:

- Dictation  - 11 minutes
- Paper – 11 minutes
- Electronic – 32 minutes
- Lightning Charts – 7 minutes

If charting times by modality are expressed as a percent of a work hour then charting efficiency is in the order of:

- Dictation - 22 minutes or 37% of an hour.
- Paper – 22 minutes or 37% of an hour.
- Electronic – 32 minutes or 53% of an hour.
- Lightning Charts – 14 minutes or 23% of an hour.

Implementation of strategies in the ED that increase physician/patient interaction will result in better outcomes. The only meaningful way to increase the amount of physician/patient interaction is to reduce the single biggest consumer of ER physician time during a typical hour: encounter documentation. Using Lightning Charts will significantly decrease the time that this requirement consumes of the ED physician’s working hour.

Charting “Time” Reduction Means Better Patient Care
In each of the above examples significant extra time is needed beyond the actual action of charting. An ED physician that can chart at the bedside while taking information directly from the patient and then move on to the next patient without returning to a work station to document the encounter or having to interact with other staff regarding the chart will likely have better patient satisfaction scores and better outcomes. Valuable “time” is being stripped from the documentation process and turned directly into better care.

Electronic bedside charting that can reduce charting time to approximately 6-7 minutes per patient on average should be the goal. This “time” investment over an average load
of 2 patients hour would reduce time spent on charting to 14 minutes or 23% of an hour. This is a significant improvement over all of the other existing documentation options.

The ED physician documentation system that consumes the least “time” will be the most cost effective and provide the best care to patients. Adding bedside use capability for less cost and the choice is obvious and compelling.

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Links
http://www.lightningcharts.com
http://www.lightningcharts.com/request-demo.html