

Medical Practice Advisor

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EMR Software – How Quick is your Return on Investment?

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The “return on investment” (ROI) that a practice should expect is an important element to consider in implementing the right EMR system. These factors should be taken into consideration when calculating your ROI.

- **Hard Costs & Returns**
- **Soft Costs & Returns**
- **The ROI Calculation Process**
- **Validating Costs**
- **Total Cost of Ownership**



ROI analysis generally looks at the investment of capital and compares timing of the expected gains (the “returns”) to the cost of the investment, with an effort to improve returns by reductions in costs, increases in expected gains, or acceleration of the timing of when gains may occur.

Hard Costs and Returns

Return on investment calculations should consider “Hard costs and Returns” as well as “Soft costs and Returns” involved in the implementation of electronic medical record systems. “Hard costs” and “hard returns” can be fairly easily determined, as, for example, the actual cost of the hardware used and the actual cost of transcription eliminated.

Soft Costs & Returns

Putting a specific value on the “soft costs” and the “soft returns” could be more difficult. There is no absolute dollar amount that can be placed on the ease of accessing patient records from home (convenience, cost of gasoline to drive to the office, missed dinner, etc.), or picking up a problem that would have been missed without that access (saving patient discomfort, or a lawsuit). For example, prevention of an adverse event from prescribing the wrong medication, and preventing patient injury, suffering, or even death will also likely prevent costs associated with litigation, increased malpractice costs, judgments, etc. But the prevention itself does not generate actual cash for the office, just the avoidance of spending cash.

Example Scenario

A two-physician practice is interested in implementing an electronic medical records system in their practice with two offices. They want to eliminate the problem of faxing records between offices (as when patients go to the “wrong” office) and copying records to send to the hospital. The practice is spending \$40,000 per year for transcription services for the two physicians, and estimates that office staff spends, on average, 6 hours per week faxing, and copying records to send to the hospital and between offices. With staff time costing \$15 per hour (including benefits), the annual costs of the current state can be calculated, and compared to the cost of the practice running with an EMR in place.

In this sample scenario, with the amount of transcription as a significant driver of cost for this practice, the benefit of electronic documentation eliminating transcription is alone sufficient to make EMR acquisition a worthwhile endeavor.

The ROI Calculation Process

The process of calculating a valid ROI for adoption of an electronic medical records system should consist of a "Cost/Benefit Analysis" that includes the number of new patients per provider per unit of time; the cost to create a new chart (the cost of the folder, the stick-on labels for names, year, medical record number, paper forms within the chart, the actual time for a staff member to assemble the chart, the hourly salary (with benefits included) for the staff doing the assemblage); the amount of staff time spent looking for charts (for lab results, phone calls, etc.); and the amount spent on transcription per physician. Any current hardware and network maintenance costs should be factored in.

To forecast the maintenance costs after an EMR is implemented, the on-going costs of network connectivity as well as hardware maintenance costs need to be obtained. Determining the costs of software licensing, training and on-going support/maintenance should be straight forward since the various EMR vendors will provide the numbers.

Validating costs

The practice should validate the costs of expected expenses. Ensuring that there are no forgotten expenses will prevent unwelcome surprises that also change the ROI. Productivity concerns are often mentioned in relation to EMR adoption. Users may require a longer time to record information as the new system is learned. With familiarity, that gives way to either the same time spent, or more likely, less time spent documenting than in the paper world. The decreased per-patient productivity may be manifest by longer working hours rather than fewer patients depending on how the office schedules patients during the first few weeks after going live with your EMR. Time for training may likewise be spent after normal office hours or on a weekend, versus closing the office for a day or two for training and thus affecting productivity. If the practice does choose to close the office, and reduce patient volume for a period of time, the decreased practice revenues should also be included in the overall ROI calculations.

Total Cost of Ownership

The "total cost of ownership" (TCO) is the sum of all the related expenses that will be borne during the expected life of the product, or over the period of time that is being compared. The costs of purchasing or leasing the hardware and software components (with finance costs included), education and training, support and maintenance, data backups maintained off-site must all be included.

It may be surprising to add up all of the costs and things that seem like small items that over the course of several years become significant. When comparing the seemingly low costs of one EMR versus another, higher-priced product, one must ensure that all of the costs are computed equally to get the true TCO. Often, the "teaser" low price of one product isn't always the lowest cost in the long run.

Regardless, the TCO for an EMR still compares very favorably to the staff costs, the real estate costs (for storing all of those paper records), etc.

Conclusions

To understand the financial impact, looking at the return on investment and total cost of ownership provides valuable comparative data to practices. Informed practices require an EMR to keep track of quality measures and deliver optimum care for their patients. As requirements for "meaningful use" are defined with the new HITECH bill(s) in the federal stimulus legislation, use of an EMR has become essential for payments as well.

Example Cost/Benefit Analysis:

This analysis uses industry averages from various sources.

In this scenario, a single doctor medical office sees 30 patients per day and receives 100 phone calls per day. In addition to the physician, there are two clinical assistants and two front office staff. The office is open 240 days a year.

Costs

Software License – EMR/PM license for the staff of five is \$10,000. Productivity loss during the implementation and training period is estimated at another \$10,000.

Hardware –1 Tablet PC for the provider, 4 workstations for the remaining staff and a Server. Tablet PC = \$2,500, Workstation = \$1,000, Server = \$2,000.

Support & Maintenance – Ongoing support costs will be incurred from both an annual support contract with the software vendor for updates and technical support and the increased need of hardware/network support through a local IT representative.

Benefits

Improved Coding – Where down-coding and poor charge capture can both be improved through the EMR’s E&M Coding assistant. A study by Medical Economics magazine estimated that a physician who is regularly down-coding may be losing as much as \$40,000 to \$50,000 annually. A study done by Partners Healthcare System found an increase of 1.5%-5% in overall billing simply through improved charge capture. We will use a conservative improvement rate to factor in a reduction in down-coding, resulting in approx. \$24,000 per year.

Transcription – For offices using a transcription service @ the industry standard of \$300-\$1000 per month. We will use a conservative figure of \$600 per month resulting in an annual savings of \$7200.00

Chart Management - Chart Management costs can be reduced through lower chart creation costs, lower chart storage costs and fewer chart pulls. The cost to create a new chart is estimated at \$7/chart and the cost to pull a chart is \$5 according to industry standards. For this example we will assume that there are 50 chart pulls per day including the 60% average for non-visiting patients. We will use a conservative estimate for the cost of each chart pull @ \$3 and assume that we will only reduce our chart pulls by 40% the first year and not be paperless for 2 years.

Prescription Refills - According to a study done by Journal of Healthcare Information Management, the time spent doing an Rx refill can be reduced from 15 minutes to 3 minutes. At 20 refills per day, that would be savings of 240 minutes per day.

Cost-Benefit Analysis Matrix (Single Provider Office)	Initial Year	2nd Year	3rd Year	4th Year	5th Year	5 Year Total
COSTS						
Software Licensing	\$10,000					
Implementation-Computer & Network Setup	\$2,000			\$1,000		
Hardware - 1 x Tablet PC	\$2,500			\$2,000		
Hardware - 4 x Workstations	\$4,000			\$2,000		
Hardware - Network Server	\$2,000			\$1,000		
Support & Updates - Software	\$1,800	\$2,400	\$2,400	\$2,400	\$2,400	
e-scripts, patient portal subscriptions	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
Support & Maintenance - Hardware	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
Productivity Loss during Implementation & Training	\$10,000					
Total Annual Costs	\$34,300	\$4,400	\$4,400	\$10,400	\$4,400	\$57,900
BENEFITS						
Improved Coding/Charge Capture	\$9,600	\$19,200	\$24,000	\$24,000	\$24,000	
Transcription Savings	\$2,880	\$5,760	\$7,200	\$7,200	\$7,200	
Chart Management	\$7,200	\$14,400	\$36,000	\$36,000	\$36,000	
Prescription Refills	\$5,600	\$11,200	\$14,000	\$14,000	\$14,000	
Total Annual Benefit	\$25,280	\$50,560	\$81,200	\$81,200	\$81,200	\$319,440
NET BENEFIT (COST)	(\$9,020)	\$46,160	\$76,800	\$70,800	\$76,800	\$261,540