

ROI (Return on Investment) for EMR (Electronic Medical Record) Systems

If a study based on 25 years of experience

One of the most talked about and least understood topics in medical office management today is the EMR (electronic medical record). The EMR, as it is defined today, is comprised not only of the traditional patient information kept in the computer i.e. demographics, ICD, claims, billing history and appointment scheduling. Today, it includes all the clinical information that is now kept in the paper file folder, such as medical history, findings, drawings, visual field trend analysis, instrument outputs, prescriptions information and even photographs.

The question is not **if** ophthalmic institutes and practices need to implement a computerized medical record, but **when**. The advent of managed care; reduced reimbursements, capitated environments and utilization limits have hastened the arrival of the computerized medical record. Also, the “proof sources” and documentation required to substantiate treatment and protect the physician make the computerized medical record an absolute requirement, not a luxury. Fee for service will always be with us to some extent, but will be subordinated in capitated or semi capitated environments which will require the automated recording and retrieval of much more clinical information than ever before.

Those institutes and offices that are recording clinical data in computer based record now, will have a decided advantage over entities who are not because they have accumulated the data which is so important in negotiating managed care contracts and proving practice treatment outcomes, an important factor in acceptance to provider panels.

The catalysts for the development of today’s modern EHR are as follows:

Lowered reimbursements. - Because of decreasing reimbursements, practices needed to lower practice costs and/or increase productivity to maintain their profit levels.

The debate over “Health Care Reforms”. - This maelstrom promoted wide speculation on data collection requirements, reimbursements and payer methods among other things (starting with MU Stage 3 and ICD-10 transition).

The proliferation of managed care and the migration from fee for service to capitated or semi-capitated reimbursement environments. - Physicians and administrators need a much more accurate idea of cost per patient, cost per procedure, frequency of presenting problem, utilization patterns and patient demographic in order to bid intelligently for managed care contracts. There is also a need for outcomes analysis so that a provider can compare his/her treatment efficacies with national averages for measurement of excellence.



How does a computerized medical record affect a practice?

The EMR dramatically reduces the handling of paper (pulling and re-filing charts, handling the tapes from auto refractors and lens meters etc.). Some systems do automatic graphic trend analysis of visual acuities and intra ocular pressures that speed up and enhance physician decision-making. Patient throughput is increased due to automated instrument interfaces and rapid data entry methods such as pen/tablets etc. Data moves through the practice not people. An EMR reduces errors in transcription that in turn eliminates re-orders of spectacles or incorrect medication prescriptions. Even the traditional doctor/scribe relationship is enhanced through more efficient computerized transcription of dictated findings. Traditional ophthalmic photography is replaced by instantly available digitized images from retinal cameras, OCTs or video capable slit lamps, thus saving time and money. The sophisticated EMR when used among co-managing practices allows for “real time” video teleconferencing including displays of anterior and posterior segment images, visual fields etc. as well as “electronic mailbox” communications.

Some EMR systems are so “user friendly” that the physicians who swore they would never record their own exam data are doing so, freeing up technicians for other duties. The time and expense of manual creation of letters to colleagues and other required correspondence is eliminated due to simple data merge functions with pre-stored “boiler plate” letters. The computerized medical record, due to its’ ease of use and comprehensive data collection, creates a much more defensible record in cases of litigation.

How ophthalmologists make the transition to a computerized medical record?

Anyone contemplating a computerized medical record should understand that the process is not painful, but it should not be viewed as a “walk in the park” either. There will be changes in office procedures, some resistant staff members, some fairly extensive training and some amount of time where the paper and “paperless” systems are used concurrently.

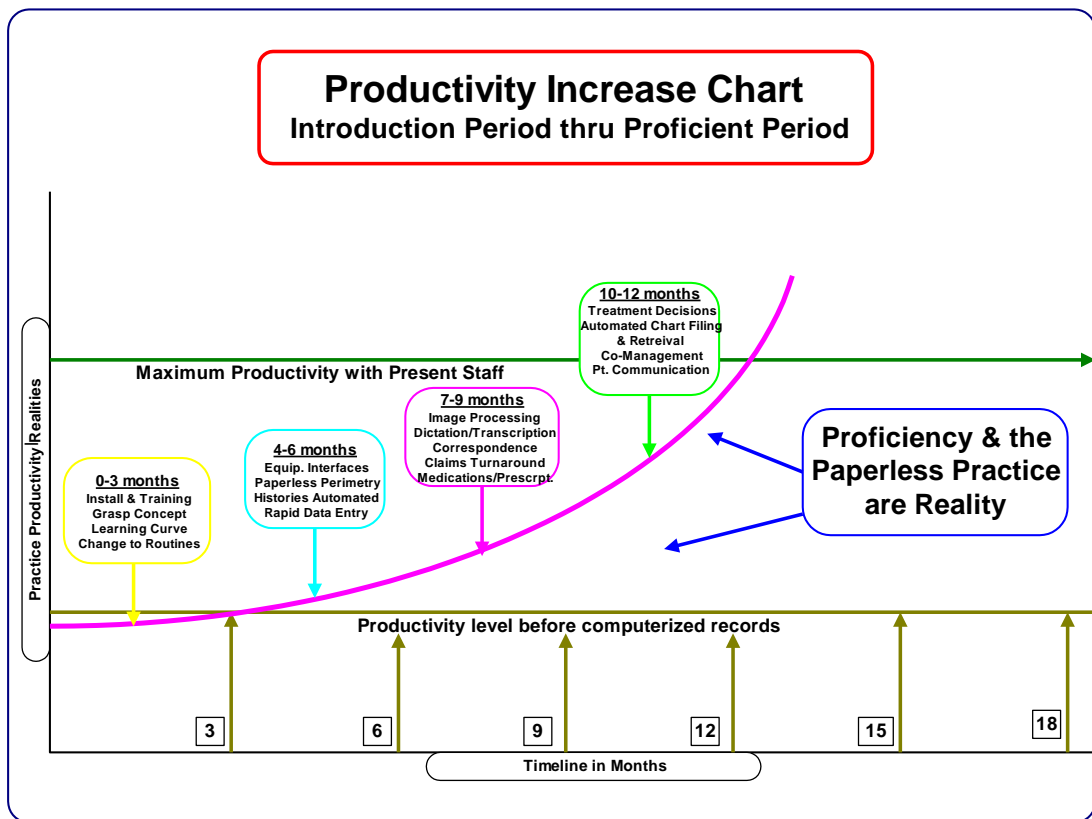
As long as backup routines are followed, which create software duplicates of patient visits, you need not create any more paper than exists presently in your practice. However, until you have created a sufficient level of “visit history” for your active patients, you will need to refer to the paper records from time to time.

Some clinics are very happy with their existing “front office” software and only need to add the medical records capability offered by another system. It is not unusual for these two software systems to co-exist in an office through an “interface”. Typically a short set of software instructions can be written to send patient demographic data from the billing system to the medical records system and then take the diagnostic codes and the procedure codes from the medical records system and send them to the billing system for claims or bill generation. Depending upon the needs of the practice, additional information can be “shared” between the systems.



What happens to practice productivity?

It is normal, that for 6-8 weeks or so after the installation of a computerized medical records system, productivity on the examination side of the practice actually takes a slight drop - somewhere between 10% - 15%. This is because of the learning curve for professional staff and physician of the new method for recording data. Somewhere between the second and third month of use, the productivity levels of physician and staff surpass the levels of the paper-based system. Time saved with the automation of multi-station perimetry, history taking, letter writing and recording of exam data usually represent productivity increases of 15% - 20% overall. In six to nine months, the lessened dependence upon archived paper records combined with the benefits of digitized imaging, reduced claims rejection, faster treatment decisions, automatic forms generation and the problems associated with transcription errors can increase productivity by as much as 35% - 40% overall from the paper based recording and retrieval method.



****Actual results may vary and are dependent upon the practices ability to learn the system**



How does the computerized medical record effect productivity?

<u>Function</u>	<u>Estimated increased productivity (increased speed of data input and/or retrieval or decision making).</u>
Patient Registration	0%
Pulling and filing charts (includ.misplaced charts)	100% (2.5 - 5 minutes vs. instantaneous)
Pre screening (Lens meter, Auto refractor, Tonometry, Perimetry, etc.	10% - 15% - Depending upon the use of an interfaced perimeter and the use of an automated phoropter that is pre-set with auto refractor values.
Input of exam data to the patient record	25% - 50% - This depends upon the present method and the intended computerized method (pen, voice, etc.)
Patient education	0% - 50% - Depending upon present method. The use of computer graphics and digitized images helps greatly.
Medical decision making	0% - 50% - Depends upon practice methods. Computer generated trend graphs for acuities, IOPs, visual fields etc. speed up analysis. Digitized images are delivered immediately which also facilitates decision making.
Dictation & letter	at least 50% - Pre written standard letters which are customized by the automatic insertion of specific patient, colleague and exam data are generated on demand.
Statistical searches and queries, outcomes, cost per patient, frequency of	This functionality is <u>only</u> available using a computerized medical record. It would not be realistic to attempt to capture this data manually.
Doctor / Staff messaging and communications	50% - LAN / WAN messaging, workstation to workstation, eliminates notes, physical movement through the practice.
Coding	Efficiency improvement here depends upon the experience and skills of the existing staff. ifa medical record software offers a linkage, for the potentially chargeable codes.



What kind of equipment is needed and where does it go?

Because the data required for a complete medical record is collected at many places in the practice, and because that data also needs to be accessible in many places, a computer “network” of some type is required. This means that everywhere data is collected or reviewed; there should be a “workstation” of some type.

In a fully functional network utilizing computerized medical records, there are workstations at the front desk, pre-screening room(s), visual field room(s), photography rooms(s), ASC and/or laser room, examination room(s), and perhaps the doctor’s desk. The type of network is dependent upon the data that is input and the output you require.

Who enters the medical record information and how is it done?

Because of the sophistication of some of today’s medical records software systems, anyone in the practice, technicians, administrative staff, scribes or physicians can input data into the system with a minimum of training. This means that in a well planned software acquisition, which includes a variety of data entry methods, there need not be a radical departure from the doctor/scribe or doctor/technician interaction regarding the record, unless one is desired.



Productivity Analysis & Worksheet

Chart Handling	
1.) How many patient visits or charts per day? (5 minutes to locate, deliver, retrieve & refile a chart) (Total people minutes that can be saved with EMR) (Convert mins. to hrs. X # of days practices is open per week) (Total people hours that can be saved with EMR) = _____ hrs	_____ avg <u>x 5 mins.</u> = _____ mins

(Use an average hourly wage of \$17.50 and multiple the total number of hours to get your potential savings) \$ _____ wkly

Dictation & Correcting	
2.) How many letters per day does the doctor dictate? (Average per Patient Record is 3 mins.) (Total "doctor" minutes that can be saved with EMR) (Convert minutes to hours.) (Multiple # Hrs. X # days doctor sees patients per week)	_____ avg <u>x 3 mins.</u> = _____ mins = _____ hrs
(Multiple # of hours X \$100.00 to get your potential savings) \$ _____ wkly (\$100.00 per HR. = \$220K salary / 2200 available hours)	

Transcription	
3.) How many letters per week are transcribed? (National Average \$5.00 per letter for transcription)	_____ avg <u>x \$5.00</u>
(Multiple the # of letters by \$5.00 to get savings with EMR) \$ _____ wkly	

Paperless Perimetry	
4.) How many visual fields are performed and printed per week? (Total time to process & print each exam result)	_____ avg <u>x 6 mins.</u>
(Total time saved in performing perimetry with EMR) _____ mins (Divide the # above by 40 mins. average VF time per patient) (Total number of additional visual fields per week) _____ #VFs (Additional fields performed per week X \$35 per field) \$ _____ wkly	



Productivity Worksheet & Analysis

Digital Photography

5.) How many photographs are taken and developed each week? _____ avg
 (include fundus camera, B-Scan, Slit-lamp Camera)
 (Average material and expense per image is \$1.50) **x \$1.50**
 (Total savings per week with digitally images in the EMR) **\$ _____ wkly**

Additional Patients

Reduced Chair time & Rapid Data Entry

6.) Does your practice use automated LM - AR - NCT - Kera ? Yes _____
 (Patient chair time can be reduced 15% with these
 automated instruments interfaced directly into the EMR)
 (Average time per patient to perform pre-screening tasks) **7-9 mins.**
 (Average time per patient that can be saved with the EMR) **1-1.4 mins.**
 (Multiple the # of patients per day X average time saved)
 (Total time saved in the pre-screening area with the EMR) = _____ mins

7.) Rapid data entry to a medical record can reduce documentation
 time by up to 40%. This saves either the doctor or scribe time.
 (Average time to complete the documentation of a record) **2 - 3 mins.**
 (Multiple the average time X 40% savings with the EMR) **.8 - 1.2 mins.**
 (Multiple # of patients seen X the average time saved)
 (Total time saved in the exam lane documenting with the EMR)
 = _____ mins

8.) Increased patient throughput, effects of #6 combined with #7.
 (Total time saved in the pre-screening area from above # 6) _____ mins
 (Total time saved in documenting from above # 7) + _____ mins
 (Total time saved) = _____ mins
 (Divide "total time saved" by 15 mins average per exam)
 (Total # of new patients that can be seen per day with EMR) = _____ #Pts.
 (Multiple # of new patients X \$30.00 average charge per exam)
 (Total Additional Income with more productivity per day) = \$ _____
 (Multiple add'tl \$ for new patients X # days per week) \$ _____ wkly



Investment Worksheet

1.) Estimated Cost of Investment _____

2.) Average Monthly Support _____

** (Use 1% of software cost per month for support)

Anticipated Savings from Productivity Analysis

1.)Chart Handling _____

2.)Dictation & Correcting _____

3.)Transcription _____

4.)Additional VF _____

5.)Digital Photography _____

6-8.)Increased Patients _____

9.)Other Areas _____

Total Savings Weekly \$ _____

Total Weekly \$\$ X #__ Weeks Practicing per Year

Total Annual Savings \$ _____

Months to pay off Investment _____