

EHR 101: Myths and Realities

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Outline

- Electronic Health Record (EHR) Overview
- Going “Electronic” – Why?
- Going “Electronic” – Why Not?
- The Road Ahead
- Questions

EHR Overview

Looking to the Future

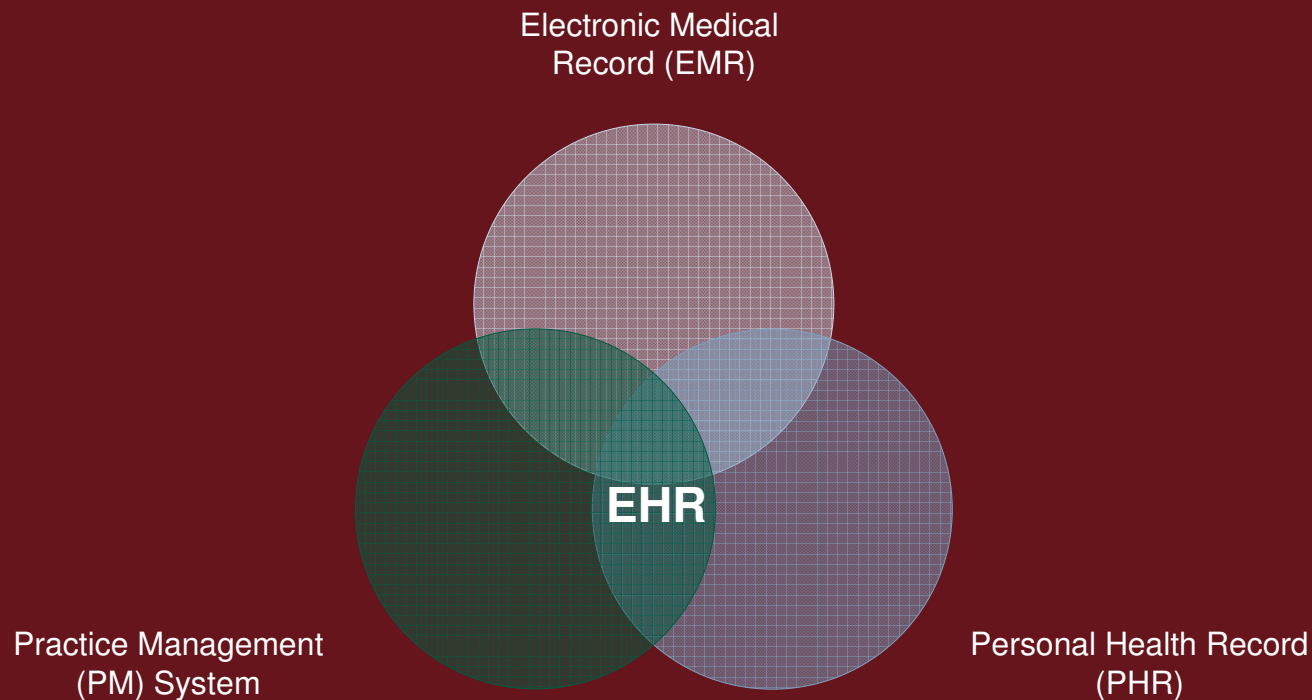
A variety of market forces are shaping how we view the potential of technology, as well as its accessibility.

- Physician and nurse shortage.
- Primary care shortage.
- Reimbursement challenges.
- Increase in hospital employment of physicians.
- Compensation up, productivity down.
- Strains of an aging population.
- Push toward ambulatory care.
- Savvy consumers.
- Increased competition.
- Sophisticated physicians.
- Medical home.
- Vendor negotiations becoming more difficult.
- eClinicalWorks' deal with Wal-Mart.

EHR Overview

Background

The EHR is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting.¹



¹ Healthcare Information and Management Systems Society.

EHR Overview

What is an EMR?

Software Package

- Problem List, Medication List, Allergies
- Family/Social History
- Encounter Documentation Templates/Tools and Documents
- Order Entry and Results Reporting
- Coding Analysis
- Management Reporting
- Decision Support
- Patient Education/Instruction
- Display and Graphing



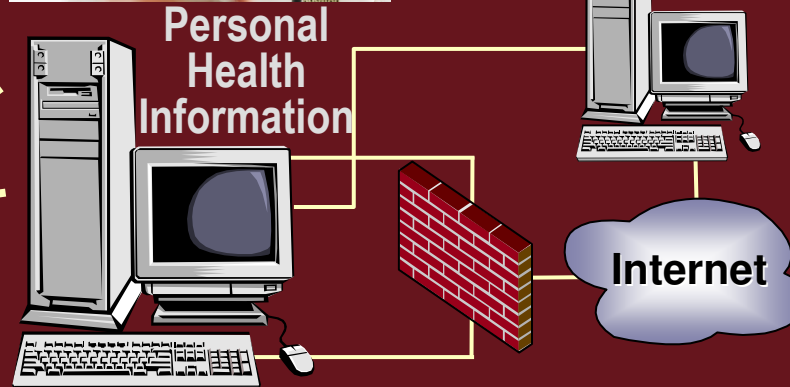
Patient/Provider Portals

- Select Access to Records
- Request Appointments
- Receive Reminders
- Secure Messaging



Interfaces

- Pharmacy
- Transcription
- Laboratory
- Disease Management
- PM System
- Monitoring Equipment
- Document Management (scanning)
- Hospital Systems

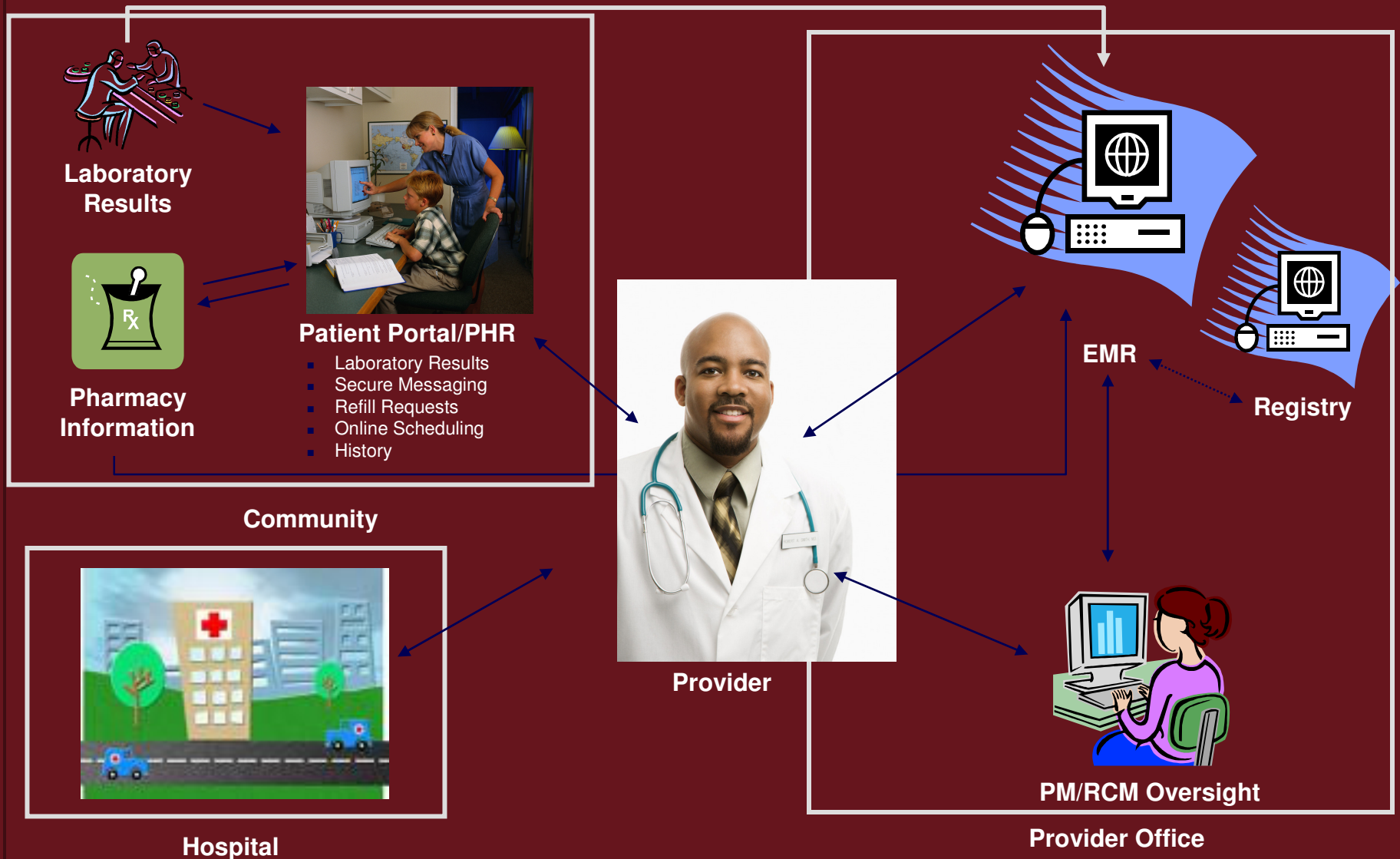


Devices

- Desktop PC
- Laptop
- Tablet PC
- Handheld

EHR Overview

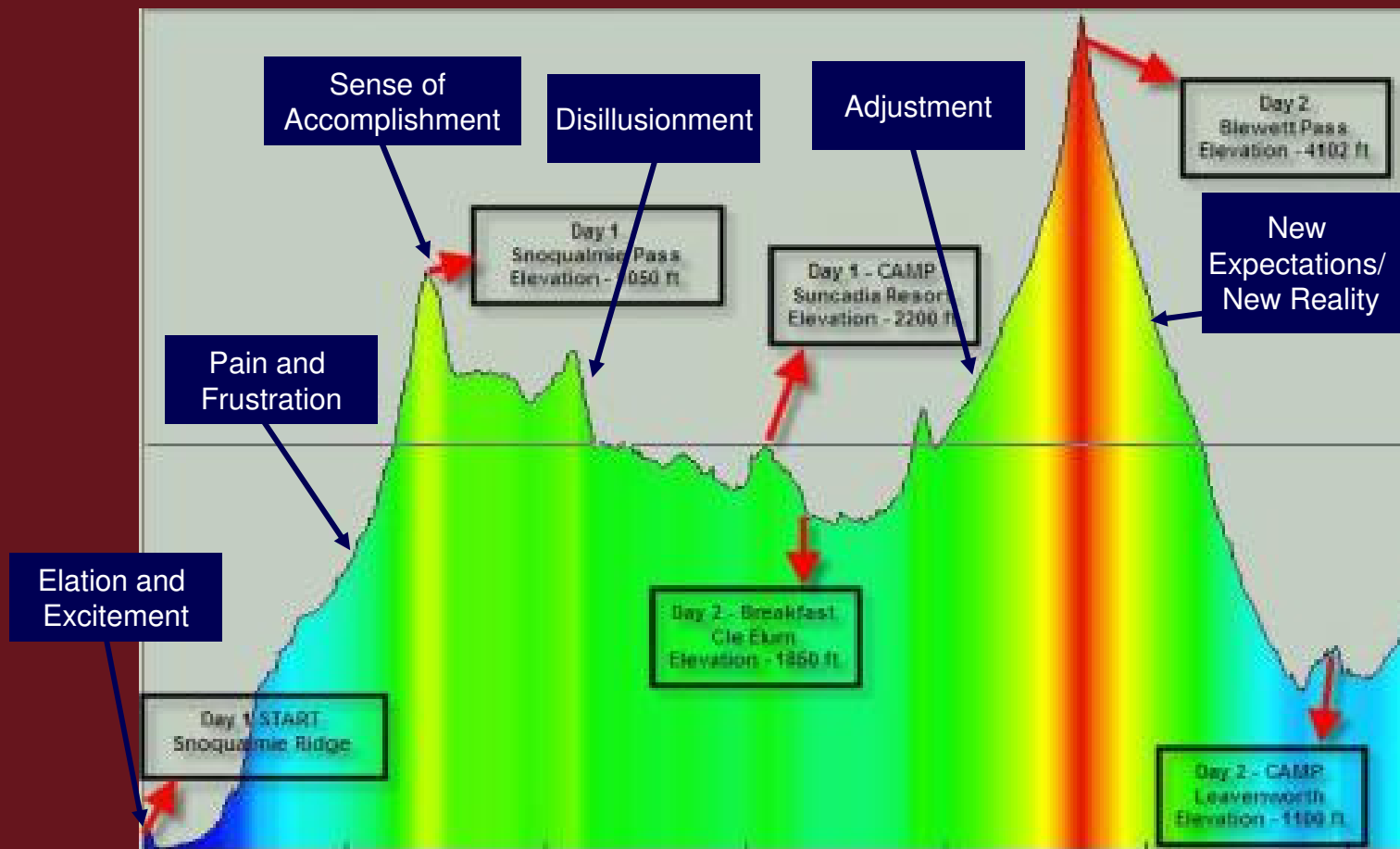
Vision of Physician Adoption



EHR Overview

Adoption Trends

The exploratory days of EHR adoption are over, and the industry is now faced with normal people trying to accomplish heroic feats of automation.



EHR Overview

Myth Versus Reality

| Myth | Reality |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| All information systems are the same. | Features and functions are highly variable. |
| There are benefits (financial and otherwise) to system implementation. | Desired benefits need to be planned, evaluated, and mapped into the implementation to be achieved. Efforts should not be underestimated. |
| Outsourcing is cost-effective. | Outsourcing may create a dependency from which it is difficult to recover. |
| An integrated system is always better than an interfaced system. | Many integrated systems are actually interfaced, or there are gaps in the integration. |
| Vendors provide assistance in system adoption. | Vendors assist in implementing the system but do not necessarily ensure full system adoption. |
| Companies are stable. | The vendor market is volatile. |
| Newer technology is better. | Newer products may not be as feature-rich as established products. |
| IT is not strategic. | Providing IT to practices is the new strategy. |
| An EHR will enable P4P. | Reporting requires discrete data points. |

EHR Overview

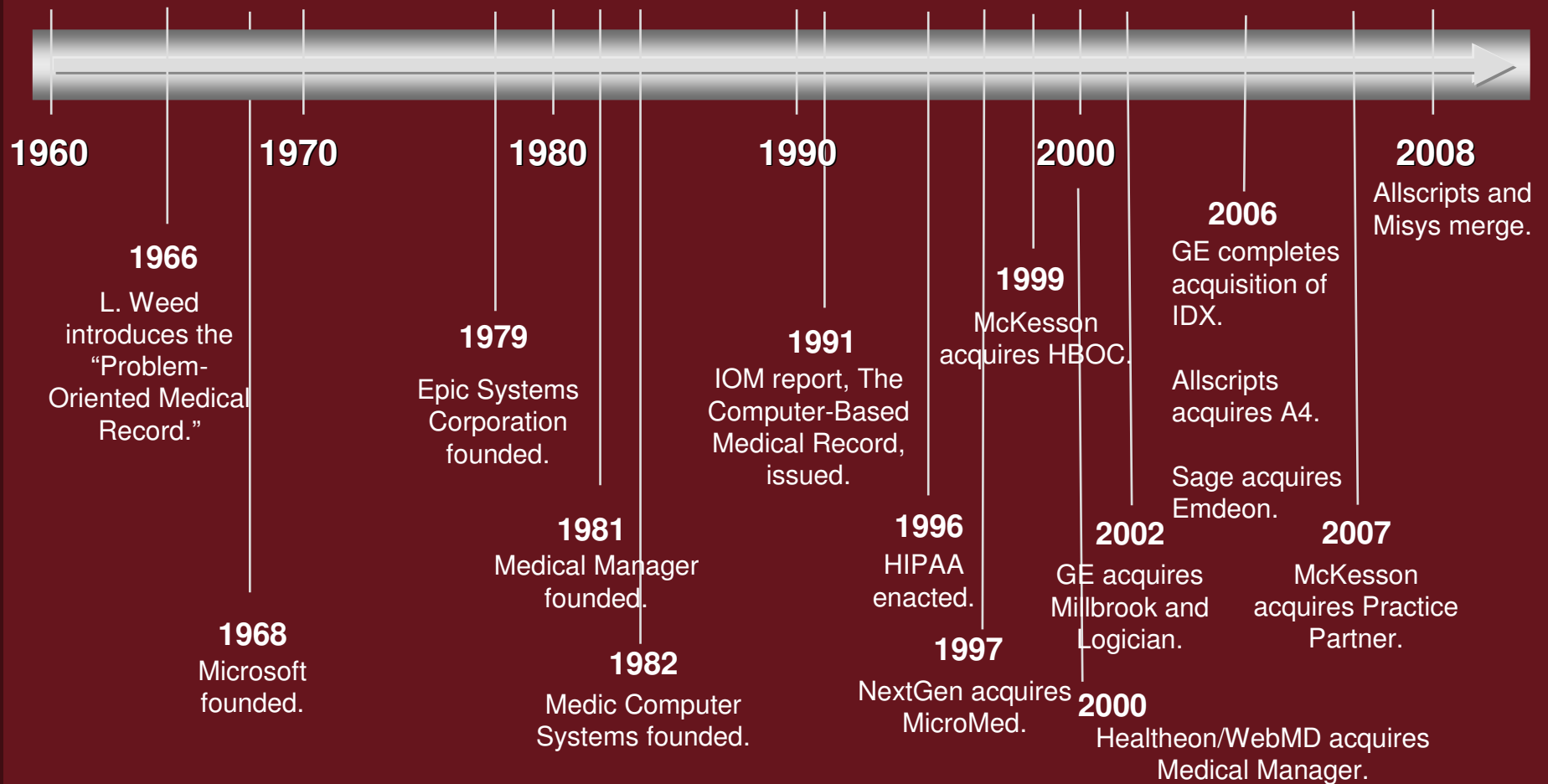
State of the Market

The vendor market will continue to “follow the money”; financial market volatility could dramatically increase vendor consolidation in the coming year and decrease new entrants.

- Defined CCHIT road map and certification.
- Disruptive pricing methodologies.
- Community integration models.
- “Vendor neutrality.”
- Wall Street fluctuations.
- Varying services models.
- Staff recruitment and retention issues.
- Offshore/onshore development models.
- Mega-competition (Google, Microsoft Corporation).

EHR Overview

State of the Market (continued)



EHR Overview

Integrated Versus Best-of-Breed Systems

| | Integrated | Best-of-Breed |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pro | <ul style="list-style-type: none">■ Data entered once, available on both modules.■ Calculations/advice in EMR should occur based on PM data (payor, age, etc.).■ Reporting may encompass both PM and EMR. | <ul style="list-style-type: none">■ Deeper area-specific functionality.<ul style="list-style-type: none">- Charge queues.- EMR templates.■ Dedication to functional development/leadership. |
| Con | <ul style="list-style-type: none">■ Very few systems are actually integrated (most are interfaced).■ Integration process may be disruptive. | <ul style="list-style-type: none">■ Interfaces are expensive (\$10,000 per side).■ Data may not map correctly, resulting in lost functionality or workarounds.■ Very few remaining best-of-breed systems. |

Going “Electronic” – Why?

Legislative Updates and Incentives

Stark and antikickback laws enable hospitals to donate part of the cost of a new EHR system to community physicians.

| | Included (May Be Donated) | Excluded (Provided at Fair Market Value) |
|---------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|
| Electronic Medical Record (EMR) Software Licenses | ✓ | |
| Practice Management (PM) Software Licenses | If integrated. If there is a commitment to implement the EMR. | |
| Hardware | | ✓ |
| Connectivity | May be provided. | |
| Interfaces | May be provided. | Not likely to include interfaces to competing organizations. |
| Staffing Assistance | | No staff for abstracting, scanning, or other practice duties. |
| Training | ✓ | |
| Software Maintenance | ✓ | |
| Help Desk | ✓ | |

Going “Electronic” – Why?

Legislative Updates and Incentives (continued)

The Medicare Improvements for Patients and Providers Act of 2008 established a 5-year program of incentive payments to eligible physicians and clinical providers who are “successful electronic prescribers.”

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|--------------------------------------------------------------------------|------|------|------|------|------|------|
| Percentage Increase (if e-prescribing technology is or has been adopted) | 2.0% | 2.0% | 1.0% | 1.0% | 0.5% | |
| Percentage Decrease (if e-prescribing technology is not adopted) | | | | 1.0% | 1.5% | 2.0% |

Going “Electronic” – Why?

Legislative Updates and Incentives (continued)

The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 is focused on providing financial incentives for EHR adoption.

- The key requirements currently being defined require “meaningful use” of the EHR, which may include:
 - Ordering in the form of physician order entry and e-prescribing.
 - Decision support.
 - Data exchange.
 - Capture and use of quality data.
- Competitive grants may also be awarded to eligible state entities to facilitate the purchase of certified EHR technology and to train personnel, as well as to improve secure electronic exchange of health information.

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017+ |
|--------------------------------------|----------|----------|---------|---------|---------|------|-------|
| Payment per Eligible Physician | \$18,000 | \$12,000 | \$8,000 | \$4,000 | \$2,000 | | |
| Penalty Applied to Medicare Payments | | | | | 1% | 2% | 3% |

Going “Electronic” – Why?

Return On Investment (ROI) Potential

The way in which an EMR is implemented and used, and the functionality available, greatly influences the cost-benefit equation.

| | Provider Hands-On (Full EMR) | Provider Hands-Off (Paper-Reliant) |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | <ul style="list-style-type: none"> ■ Use of the EMR at the point of care by all physicians and clinicians. ■ Scanning/abstracting of key documents by clerical and/or clinical staff. ■ Interfaces with other systems (transcription, e-physician, medical manager, etc.). | <ul style="list-style-type: none"> ■ Nurses and MLPs enter orders and other information into the system (vitals, allergies, etc.). ■ Physicians continue to use dictation/transcription (documents interfaced to EMR). ■ Mini-chart is printed before each visit. ■ Other documents are scanned. |
| Pros | <ul style="list-style-type: none"> ■ Potential reduction in clerical staff and chart storage space over time. ■ Point-of-care cost savings. ■ Reminders/alerts at point of care. | <ul style="list-style-type: none"> ■ May reduce clerical staff and chart storage space over time. ■ Relies on coding benefit via PDA. ■ May transition to physician use later. ■ Has less impact on physician work flow. |
| Cons | <ul style="list-style-type: none"> ■ Requires a change in physician work flow. ■ Affects short-term provider productivity. | <ul style="list-style-type: none"> ■ Cost of printing/destroying documents. ■ Coding not tied to encounter documentation. ■ No point-of-care reminders/alerts. ■ No point-of-care cost savings. |

Going “Electronic” – Why?

ROI Potential (continued)

Specific factors in implementation that affect ROI include:

- Speed of rollout.
- Number of project staff.
- Initial operating efficiency.
- Integrated vs. interfaced systems.
- Activities outsourced to vendors and other third parties.
- Functionality phase-in.
- Provider usage expectations.

Going “Electronic” – Why?

ROI Potential (continued)

Sample benefits from industry literature include:

- Improved provider efficiency/revenue.
 - Reduction in time spent in chart documentation (60% reduction in time).
 - Increase in physician revenue (20% increase in revenue).
 - Increase in the number of patients seen per day (10–15% increase in volume).
 - Reduction in time clinicians spend looking for charts (20–80% reduction in time).
 - Reduced time to write a prescription.
- Enhanced revenue cycle.
 - Reduced service-to-charge entry time (50% reduction in time).
 - Improved revenue because of improved coding (3–15% of practice revenue).
 - Reduction in lost charges (\$2,000–\$3,000 additional revenue per year, per provider, for each 1% reduction in lost charges).
 - Improved patient throughput (20%).

Going “Electronic” – Why?

ROI Potential (continued)

- Reduced medical records staffing and costs.
 - Reduction in number of chart pulls by 50–80%.
 - Reduction in number of chart pulls for medication refills by 80–100%.
 - Chart copying and courier costs reduced by 75%.
 - Reduced supply cost per chart by 33%.
 - Enhanced use of space and additional potential revenue (converted chart storage space to exam or procedure rooms).
- Operational enhancements.
 - Decrease in the provider/support staff FTE ratio (10%).
 - Reduced transcription costs (13–50%).
 - Reduced time spent by staff on referral coordination (15% savings).

Going “Electronic” – Why?

ROI Potential (continued)

- Patient care enhancements.
 - Increased revenue resulting from identification and contact of patients who are overdue for tests and procedures (cited organization identified \$670,000 for mammograms alone).
 - Reduced adverse drug events via warnings at the point of care.
 - More effective drug dosing.
 - Reduction in redundant lab tests (by 11–69%).
 - Alerts on highly abnormal/panic lab result values, reducing median time to respond.
- Other.
 - Reduced malpractice premiums (5–10% per year).

Going “Electronic” – Why?

ROI Potential (continued)

A good ROI can be foiled by:

- Failing to link desired benefits to the implementation plan.
- Failing to give the vendor incentive to assist you in achieving your desired benefits.
- Aspects of the system that do not quite function the way you thought they did.

Going “Electronic” – Why?

Addressing Your Goals and Points of Pain

Common themes that you came up with tonight include:

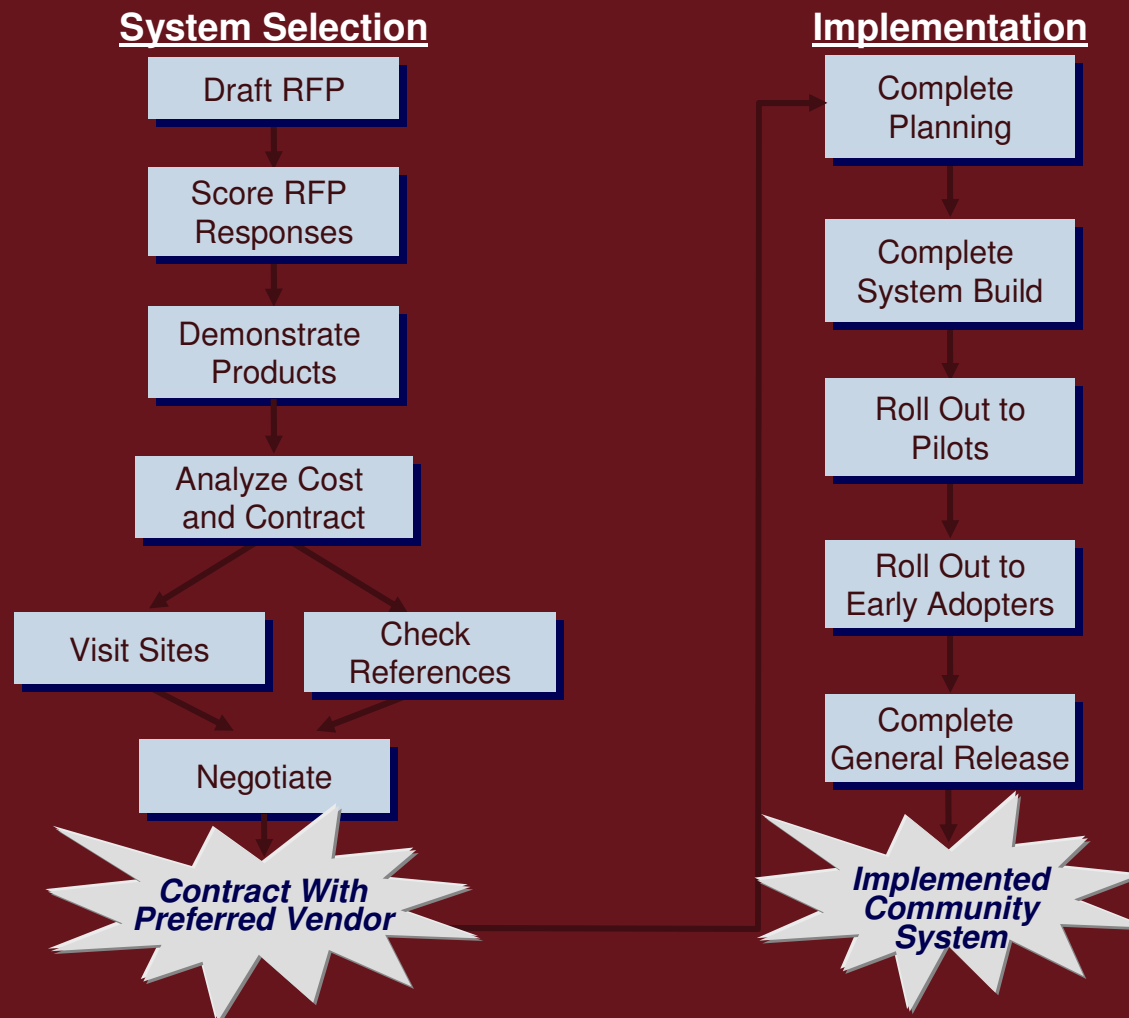
- Points of Pain
 - Staffing – duplicate effort, redundant processes.
 - Paperwork – creating, transporting, updating, etc.
 - Transition.
- Goals
 - Improved coding.
 - Improved documentation.
 - Remote access.
 - Population/disease management.
 - Decision support.
 - Reduce time.
 - Patient communication.
 - Data integration.
 - Hospital support?

Going “Electronic” – Why Not?

The most common reasons that physicians state for hesitating to convert to an EHR include:

- Cost (initial and ongoing).
- Productivity decline.
- Generic AND MEANINGLESS documentation.
- Introduction of a computer into the exam room.
- Privacy concerns.
- Cost (initial and ongoing).
- Quality of system.
- Don't want to invest in “old” technology when the “new stuff” is right around the corner (“beta max”).
- Ability to capture/fit unique patient scenarios (bizarre things).
- Data not organized in the “way we think”.

The Road Ahead



EHR 201: Selection and Implementation

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May 13, 2009

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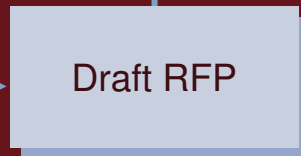
Outline

- Vendor/System Selection
- System Implementation
- Return on Investment (ROI) Potential
- Questions

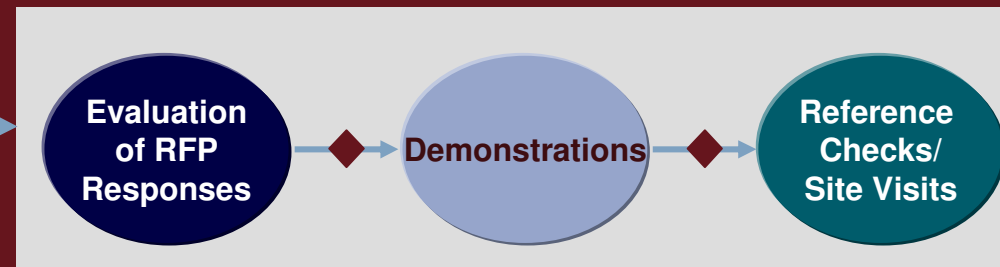
Vendor/System Selection Overview

System selection is a lengthy process that involves evaluating vendors and ultimately negotiating a successful contract.

Draft the RFP and Establish Baseline



Vendor Evaluation



Identify Preferred Vendor

Negotiate Contract

◆ Vendor elimination point.

Vendor/System Selection

Request for Proposal

The initial step in the vendor selection process is often to issue a Request for Proposals (RFP) and evaluate the responses. The RFP may include:

- Corporate qualifications.
- Practice Management (PM) functionality.
- Electronic Medical Record (EMR) functionality.
- Vendor services.
- Product technology and integration.
- Cost proposals.

Vendor/System Selection Demonstrations

Once the RFP responses are evaluated, a subset of the vendors are selected to demonstrate their products. Clinicians and office staff should attend the demonstrations in an effort to:

- Identify impact on work flows.
- Evaluate ease of use.
- Understand depth of content in specialty areas.
- Determine need for customization.
- Evaluate ease of implementation.
- Compare written response to demonstrated functionality.

Vendor/System Selection

Reference Checks and Site Visits

The list of potential vendors may be narrowed again prior to contacting references. Site visits should be performed to confirm the selection of the preferred vendor. These components of the process will help to:

- Evaluate vendor responsiveness.
- Understand level of effort.
- Understand actual costs (implementation and support).
- Understand resource requirements.
- Identify timelines and tasks.

If possible, the vendors should not be present during reference checks and site visits.

Vendor/System Selection *Cost Analysis*

Vendor-direct costs that should be requested and analyzed include:

- Initial purchase costs.
 - Application software licensing.
 - System/operating software.
 - Conversion and interface development.
 - Vendor services.
 - Central hardware.
- Operating Costs (5-year).
 - Application software maintenance.
 - System/operating software maintenance.
 - Interface maintenance.
 - Central hardware maintenance.

Vendor/System Selection

Cost Analysis (continued)

The vendor-direct costs do not include the cost of a practice's networking and end-user devices. This cost is based on a practice's size, computer preference, and availability of existing hardware. The following table is an example of estimated initial costs for a 13-physician practice:

| | Desktop PC Preference | Tablet PC Preference |
|--------------------------------|-----------------------|----------------------|
| Wireless Access Points | \$ 0 | \$ 5,000 |
| Tablet PCs | 0 | 65,000 |
| New Desktop PCs | 28,000 | 28,000 |
| Existing Desktop PCs | 0 | 0 |
| Wintertms | 25,800 | 0 |
| Cabling | 26,950 | 26,950 |
| Hospital Connectivity/Internet | 1,500 | 1,500 |
| Installation | 16,150 | 24,990 |
| TOTAL | \$98,400 | \$151,440 |

NOTE: This does not include a provision for document imaging hardware.

System Implementation

Introduction

A successful implementation requires:

- Widespread buy-in for the acquisition and implementation of an EMR.
 - Basic concept.
 - Specific system.
 - Provider usage expectations.
- Specific project accountability and leadership.
- An appropriate infrastructure (servers, network, connectivity, desktop hardware, etc.) provided by either the clinic or a third party.
- Well-trained individuals who understand clinical operations to implement and support the system.
- Interfaces to key systems (PMS, laboratory, transcription, hospital, etc.) to reduce data entry.
- A strategy to convert from paper-based to electronic charting.
- Understanding of and attention to current work processes and how these will change with use of the EMR.
- Realistic expectations on the part of everyone involved (providers, administration, and staff).

System Implementation

Implementation Phases

The overall time to implement a system will vary significantly based on organizational size, complexity, and goals. Guidelines are shown below.

| Phase | Key Activities | Duration |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Planning | <ul style="list-style-type: none"> ▪ Appoint project team members. ▪ Determine rollout sequence. ▪ Finalize data conversion and interfaces. ▪ Train people responsible for configuring the system. ▪ Establish a baseline of current operations (statistical and process). | 1 to 3 Months |
| Configuration | <ul style="list-style-type: none"> ▪ Set up system files and “look and feel” of configurable screens. ▪ Design future desired work flows and staffing (including IT support). ▪ Develop encounter documentation tools for key visit types, procedures, and the like. ▪ Convert existing data. ▪ Develop interfaces. | 3 to 6 Months |
| Testing | <ul style="list-style-type: none"> ▪ Test the system and processes, as follows: <ul style="list-style-type: none"> - Unit test, testing each component by itself (menus, files, interfaces, converted data). - Integrated test, utilizing full work flows (front to back) including all interfaces. - Stress test, using volumes approximating normal daily use. - Parallel test, validating data from the system against manual operations. | 1 Month |

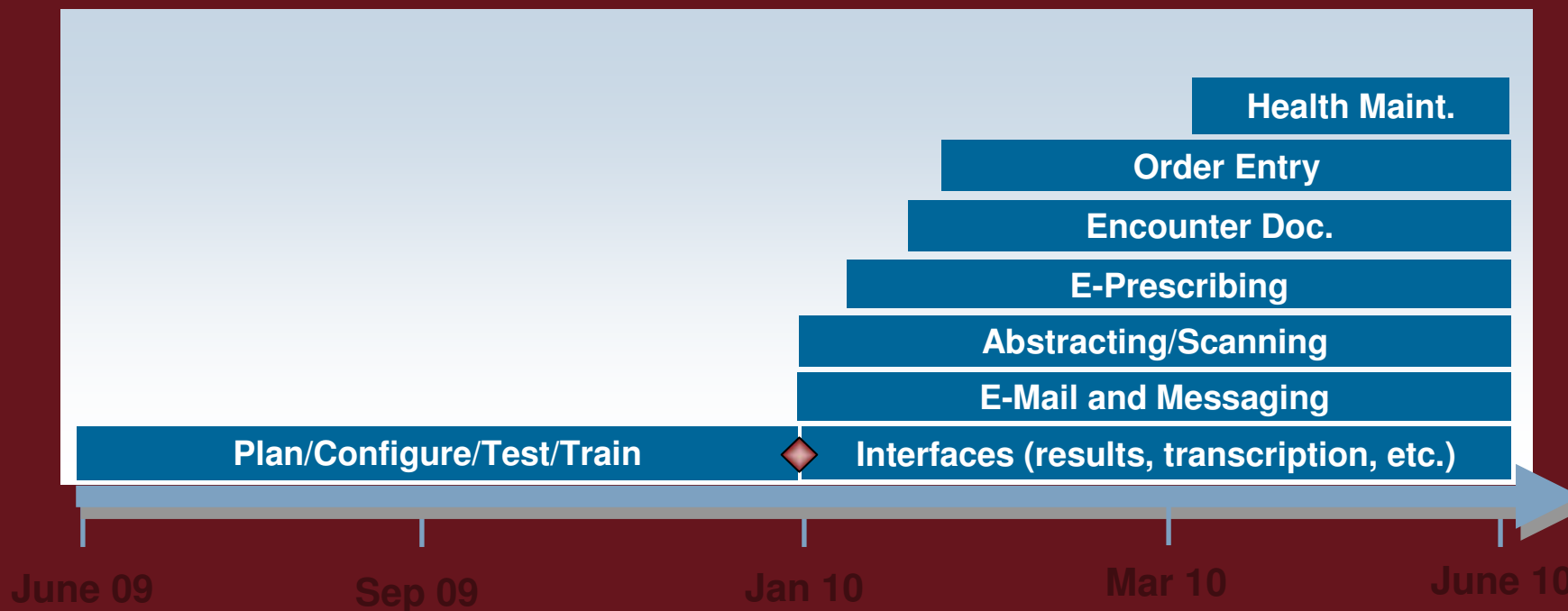
System Implementation

Implementation Phases (continued)

| Phase | Key Activities | Duration |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Training | <ul style="list-style-type: none">▪ Train end users in use of the system as well as revised procedures.▪ Provide generic PC training as well as EMR system training. | 1 Month |
| Go-Live/Rollout | <ul style="list-style-type: none">▪ Create a “production” system environment (while keeping a “testing” or “training” copy of the system).▪ Start loading data into the system for live use (scanning and/or abstracting).▪ Begin using the system with initial providers or at a single site.▪ Resolve any post-live system and/or process issues.▪ Continue rollout to subsequent providers and locations. | 3 Months to Years |

System Implementation *Rollout Approaches*

A clinic can determine the sequence in which it rolls out functionality, sites, providers, and interfaces, as well as the speed with which it “goes paperless.”



System Implementation *Phased Versus “Big Bang”*

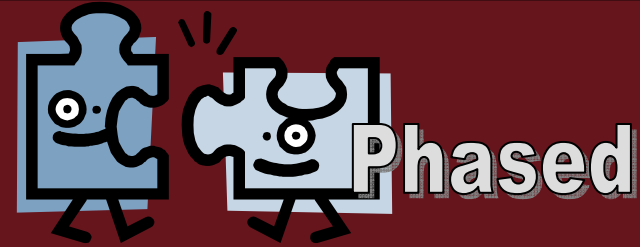


Definition

- All users or specialties at once.
- All locations at once.
- All functionality at once.
- Any combination of the above.

Pros/Cons

- Fastest approach.
- Requires substantial resources and planning.
- May require fixing on the back end.
- Benefits achieved simultaneously.



Definition

- By user or specialty.
- By location.
- By functionality.
- Any combination of the above.

Pros/Cons

- Longer time frame.
- Testing prior to each phase.
- Lower resource requirement but longer duration.
- Modify incrementally; still need to modify after last piece of the implementation.

System Implementation

Information Conversions and Interfaces

Time-consuming initial and ongoing data entry can be minimized if electronic information is available.

Common Conversions

- Demographics
- Historical Lab Data
- Transcription
- Registry Data

Common Interfaces

- PM Data (if separate)
 - Demographics
 - Schedules
 - Charges
- Lab Orders and Results
- Documents/Reports
- Immunizations
- Radiology Images (via link)
- Hospital Information

System Implementation

Chart Retirement

There needs to be a strategy to determine what information will be converted, entered, and scanned as you transition to the EMR.

| Scanned <i>(typically not searchable)</i> | Abstracted <i>(searchable data points)</i> | Validated/Re-Entered |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">■ Recent Office Visits■ Imaging Studies■ Procedure Notes■ Discharge Summaries■ Advance Directives | <ul style="list-style-type: none">■ Allergies■ Immunization History■ Family/Social History■ Surgical History | <ul style="list-style-type: none">■ Problem List■ Medication List |

A practice will need to establish protocols for when a chart is retired (e.g., after the first EMR visit) and what happens to it when it is retired (e.g., off-site storage).

System Implementation

Impact on Provider Productivity

Practices that implemented functionality deeply and quickly with high expectations recovered initial productivity losses more quickly than those that implemented at a slower pace over a longer period of time to reduce overall impact.

- Vendors commonly recommend volume reductions up to 50% during the first two to three weeks of EMR use.
- The following strategies have been used to minimize access issues:
 - Use locums tenens.
 - Re-schedule non-acute visits, e.g., complete physicals.
 - Reduce number of days off if working part-time.
 - Document an increasing proportion of visits in the EMR. For example, use the EMR in the morning and dictate in the afternoon as efficiency is achieved.

ROI Potential *Decrease in Expenses*

Literature and case studies reveal the following opportunities for practices to realize an ROI as a result of implementing an EMR:¹

| Expense | Potential Decrease |
|--------------------------------------------|---------------------------|
| Creation of New Medical Records | 100% |
| Maintenance of Established Medical Records | 100% |
| Chart Copying and Courier Costs | 75% |
| Transcription Costs | Up to 100% |
| Support Staff Labor and Benefits Cost | 10% |

¹ Sources: MGMA, *Journal of Healthcare Information Management*, *ADVANCE for Health Information Executives*, and The Coker Group.

ROI Potential

Increase in Revenue and Efficiency

It is possible that a practice may also see an increase in revenue as a result of improved coding and productivity, for example.

| Item | Potential Increase |
|---------------------------------------------------------------------------------------------|---------------------------------|
| Practice Revenue <i>(due to improved coding, ease of reporting, and better information)</i> | 3% to 15% |
| Patient Visit Volume | 25% to 60% per Day ¹ |

- A less tangible benefit of the EMR is the elimination of any existing filing backlogs and resulting outdated charts.
- It is also possible that medical records storage areas may eventually be converted into exam room space, but this is a long-term goal.
- Another less tangible benefit of implementing an EMR is the increase in providers' efficiency.

¹ Source: Davies Award of Excellence winner case studies and industry literature obtained from the Healthcare Information and Management Systems Society (HIMSS).

Questions?