Selecting an Electronic Health Record System: Step by Step

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Disclosures

• No corporate sponsorship.

• No EHR vendor support or involvement.
Electronic Health Records

**Good reasons to adopt**
- Increase practice efficiency
- Improve chart documentation
- Reduce audit liability
- Increase patient safety
- Reduce practice costs
- Medicare penalties in 2015

**Bad reasons to adopt**
- Incentive money
- Everyone else is doing it
- I can get a good deal right now
- Local hospital uses this system

*E-Rx incentives and EHR incentives are mutually exclusive. E-Rx incentives depend on Medicare volume.*
What if I do nothing?

• *No change* in practice efficiency
• *No change* in practice liability
• *No change* in Medicare payments until 2015
• Software will improve with time
• Providers will probably consolidate
What if I choose the *wrong* EHR?

- Reduced productivity
- Increased practice costs
- No reduction in practice liabilities
- Wasted time and money
- Difficulties regaining possession of data
- Switching back to paper or another system is disruptive
How can an EHR help?

- Increased productivity
- Reduced audit liability
- Reduction of medical errors
- View trends/patterns/comparisons
- Data backup
- Access to charts anytime/anywhere
- Reduced time dictating after hours
**Financial Benefit / Cost**

**Benefits**
- Long-term productivity growth
- Value of decreased liability
- Reduce practice overhead
- Stimulus money

**Costs**
- Short-term productivity drop
- Training fees
- Hardware
- Up-front EHR costs
- Ongoing EHR costs

*Most of the benefits are difficult to quantify.*
*Most of the costs are known or predictable.*
The EHR is part of a **system**

- **Doctors**
- **Patients**
- **Imaging technologies**
- **Staff**
- **Data infrastructure**
- **Data input devices**

**Electronic charts**
The *entire system* must work

- A cloud-based EHR is useless if you lose internet connectivity...
- Complete documentation is useless if default normals reduce accuracy...
- An EHR fails if it causes doctors to retire early or seek psychiatric help...
- Clicking a mouse 5,000 time a day can cause repetitive stress injuries...
Which players should be involved in evaluating EHR systems?

This is NOT a multiple choice question

- Doctors
- Front desk staff
- Technicians and photographers
- Practice administrator(s)
- Billing staff
- Contract consultant/lawyer

We chose 1-2 from each category based on skill and enthusiasm.
Step 1: Identify goals

• **Reduce financial liability** in case of audit
  – Millions of dollars may be at stake
  – Little recourse in event of penalty
• **Improve patient care**: quality and safety
  – Less redundant data entry = fewer mistakes
  – Chart data available in any office or on call
• **Implement fully before Medicare penalty**
  – Identify a realistic timeline starting at the end

*These goals will differ by practice/specialty*
Step 2: Identify threshold for adoption

• All key players must be committed to the process.
  – All doctors, not just the EHR champions

• If no system meets minimum criteria, then no transition to EMR.
Step 3: Identify the team

- Physician champion(s)
- Front desk champion(s)
- Technician champion(s)
- Photographer champion(s)
- Administrator(s)
- Billing staff

**CHAMPIONS**

- Learn quickly
- Understand technology as well as clinical needs
- Ask questions
- Teach others with patience and enthusiasm
Step 4: Evaluate in stages

- **Web demos** for as many products as possible = survey the space.
  - To pass this round: Not horrendously bad.

- **On-site demos** for products that pass the first cut, with in-house evaluation team.
  - To pass this round: No major deal-breakers.

- **Second round of on-site demos** for products that pass the second cut, for all partners.
  - To pass this round: All docs willing to use it.

- **Site visits** for short list of contenders.
  - Decision: adopt or hold off
Minimum criteria

- EHR company must demonstrate an understanding of ophthalmology needs.
- EHR must be installed and working in the offices of comparable practices.
- EHR company must perform demos based on our specifications, not theirs.
- Every part of the EHR must work correctly today.
Minimum criteria

- EHR must create intelligent connections between data:
  - No need for redundant data entry.
  - Links between findings, diagnoses and ICD-9.
- The interface must be intuitive.
- Critical information accessed in 2-3 clicks.
- Typing should be an uncommon input.
- Letter output should be good enough to forego dictation.
Product evaluations

- CompuLink
- GloStream
- Hill NextGen
- ifa
- Integrity
- IO Practiceware
- MD IntelleSys
- MD Office
- MedFlow
- NextGen
- VersaSuite
- And more…

Detailed, uniform criteria for evaluation
Examples of **unacceptable** flaws

- If doctor wants to add to tech’s history, he must erase the entire history and start over.
- Drawings have only one graphical layer.
- Findings mixed up with diagnoses:
  - CME is listed under DR or RVO, not freestanding
- Lack of connection between diagnoses and ICD-9 codes.
Site visits were invaluable

- Staff and doctors at host sites described pros and cons of their systems honestly.
- Hosts recommended changes to the implementation process.
- Different practices use the same software in very different ways.
- Unrelated to EHR evaluation, clinical observation was highly educational.
Interlude: parallel decisions

- **Stand-alone** EHR vs. **integrated** with EPM
  - Best-in-breed versus convenience
  - Integrated may have less robust PM functions
  - Stand-alone may require upgrade of EPM
  - Stand-alone requires investigation of data bridge
Interlude: parallel decisions

- **Cloud-based** EHR vs. **Client-server** EHR
  - Dependence on internet connection vs. local server maintenance
  - Cloud-based requires internet uptime guarantee or redundant connectivity
  - Client-server requires dependable local IT service and more variable costs for maintenance and service
  - Security of data backup versus data possession: do you trust what you cannot see, and do you have it in writing?
## Small EHR companies

### Good
- Willing to customize
- Personal service
- Lower cost (in general)
- More willing to spend time building a data bridge with your EPM

### Bad
- Willing to customize
- May fold if unsuccessful
- May be acquired if successful
- May not have previously built a data bridge with your EPM
Step 5: Final review

- Confirm decision with stakeholders
- Confirm adequate support provided
- Analyze integration with PM system
- Confirm full certification to avoid penalty
- Review contract terms:
  - Cost, data ownership, etc.
  - Independent contract review

We took our contract review to a consulting firm that specializes in EHR contracts.
Integration with practice management software

**HL7 bridge**

- Requires reasonably modern EPM
- Works best if both EHR and EPM vendors cooperate on development

**Additional data bridge?**

- Some useful data may *not* be included in the HL7 bridge
Step 6: Plan implementation

- **Timeline** for preparations
  - Hardware, internet, HL7 bridge

- **Staged rollout** versus all-at-once
  - Start with physician and staff champions
  - Start with slower office(s)

*Unlike EPM implementation, EHR implementation can be rolled out slowly rather than all at once.*
Implementation preparation

• **Upgrade internet connections** to all offices
  – Business level of service from one company
  – Redundant connections
  – Adequate speeds for EHR

• **HL7 data bridge** discussions
  – Review of specific data variables
  – Commitments from both EHR and PM sides

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*MD IntelleSys requires: 2 MB/s down and 1 MB/s up. Comcast Business Cable starts at 12 down and 2 up.*
Implementation preparation

• We are part of a national community
• We can learn from the mistakes of others

- We contacted colleagues who had recently implemented MD IntelleSys.
- We compared notes and learned from each other.
- We are setting up a working group with others who are implementing MD IntelleSys to facilitate ongoing discussion and learning.
Implementation: staged rollout

The challenge: 8 Offices 6 Doctors
Speed of implementation

• Add new office(s) every month after the pilot phase, if all goes smoothly.

• Start each doctor on EHR for only a few patients a day initially.
  – Each doctor will learn MDI at a different pace
  – Each doctor has a unique clinic flow
Speed of implementation

- Rushing is a bad idea...

- **Maximum incentive payment** if complete implementation by Q3 of 2012.
  - Cost of waiting extra 1 year: $\leq 5k/doctor
  - Cost of rushing: More than $5k/doctor...
How much initial exposure is right?

- When a doctor first starts using EHR:
  - Transitioning the entire work day is risky
    - Loss of productivity due to slow pace
    - Physician, staff and patient frustration
  
  - Transitioning too slowly is problematic too
    - Inadequate exposure to build basic skills/comfort
    - Need psychological commitment to new system
Existing patients: Data transition

• **How much data** from the paper chart should be entered into the EHR?
  – New patient note
  – Procedure notes
  – Surgery notes

• Set up a **protocol** for staff to follow

• **Paper charts will remain** for reference during a transition period of at least 6-12 months
Usability: factors to consider

- **Inputs**: mouse, keyboard, finger, stylus
- **Ergonomics**: how does EHR change the exam room?
- **Face time**: how will EHR change doctor positioning and patient eye contact?
- **Scribes**: do you use them / need them?

Watching other docs in action during our **site visits** provided valuable information about usability.
Hardware / ergonomics
Summary

• **Step 1:** Identify goals
• **Step 2:** Identify threshold for adoption
• **Step 3:** Identify the team
• **Step 4:** Evaluate in stages
• **Step 5:** Final review
• **Step 6:** Plan implementation
Summary

- A detailed, systematic approach may reduce the chance of a bad decision.
- Different practices may have different needs and goals:
  - Integration of optical shop or other services
  - Relative frequency and complexity of diagnostics and procedures
  - Different perceived liabilities
  - Differential willingness to invest in new system
  - Potentially different timelines based on valuation
Summary

• **Using a common system** has potential benefits *if* it makes sense for everyone.

• **Sharing what we learn** along the way can only benefit the entire community.

• **We all want to be careful** and thoughtful, without reinventing the wheel.

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