

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

**Electronic
charts**



**Imaging
technologies**



**Data
infrastructure**



Staff



Data input devices

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 times 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*



*With **multiple offices and doctors**, our primary concerns were good documentation and accessibility.*

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.

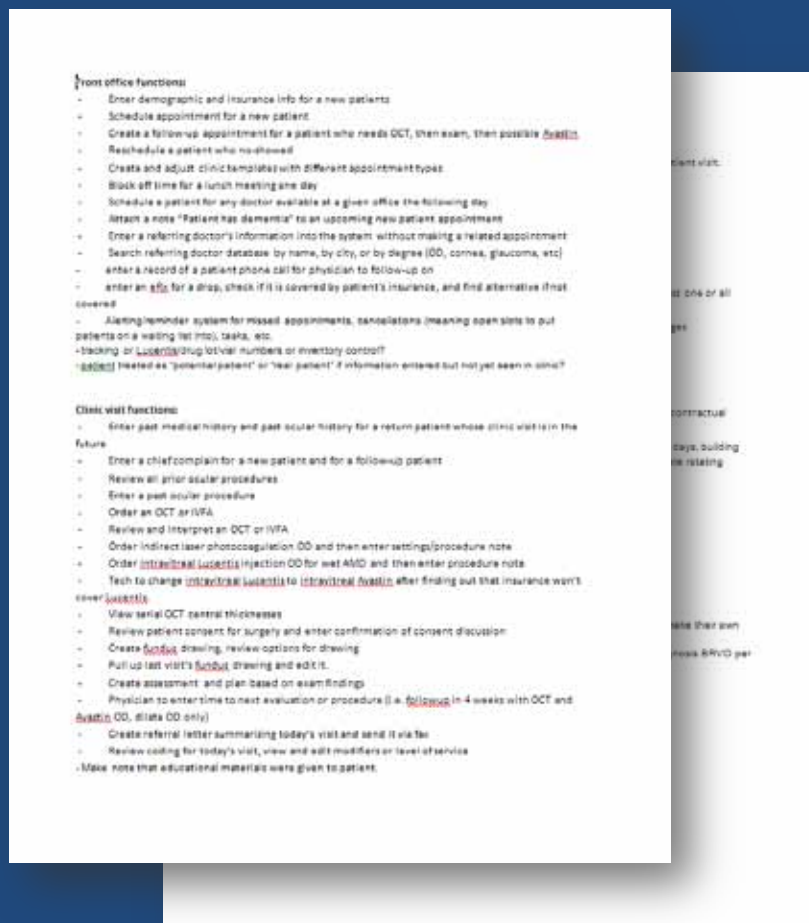
Minimum criteria

- 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

- Ø CompuLink
- Ø GloStream
- Ø Hill NextGen
- Ø ifa
- Ø Integrity
- Ø IO Practiceware
- Ø MD Intellesys
- Ø MD Office
- Ø MedFlow
- Ø NextGen
- Ø VersaSuite
- Ø *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



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

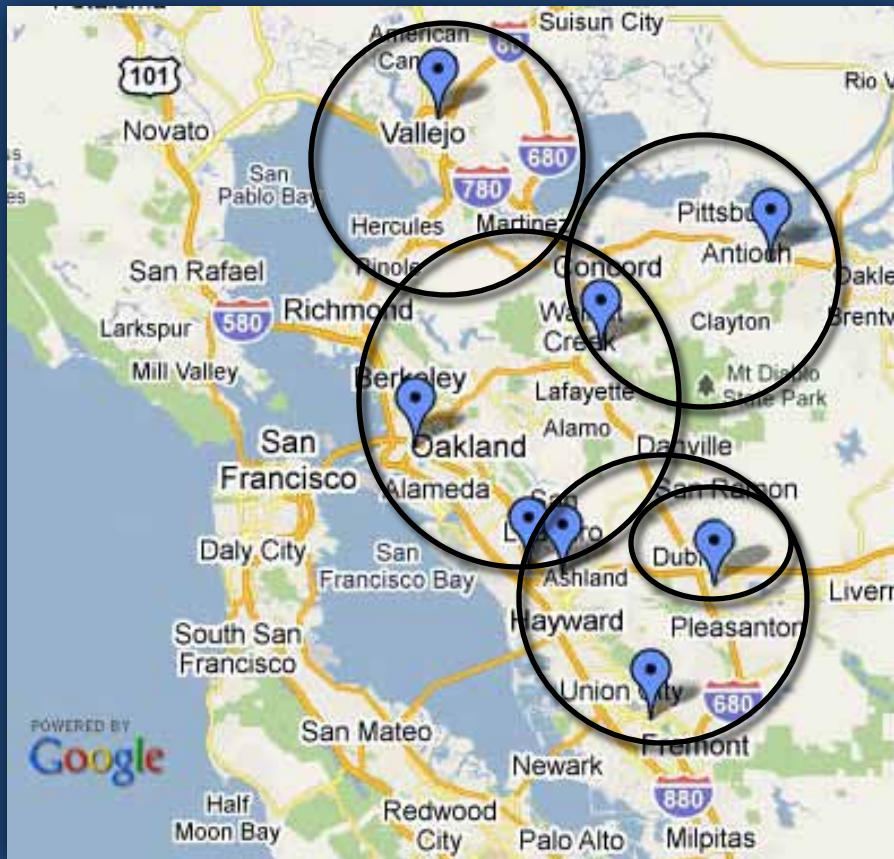
Implementation preparation

- 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



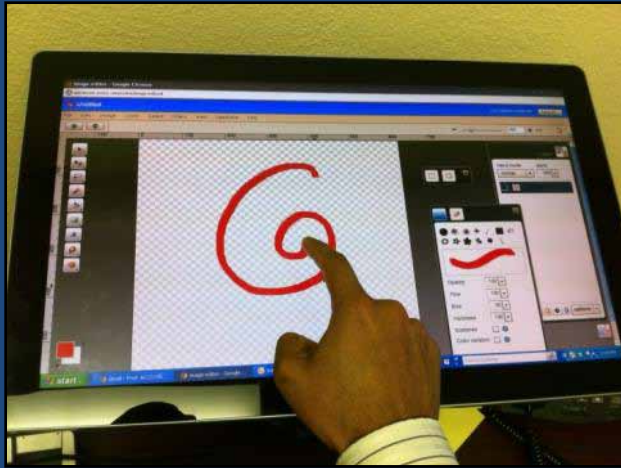
Usability: factors to consider

- *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.