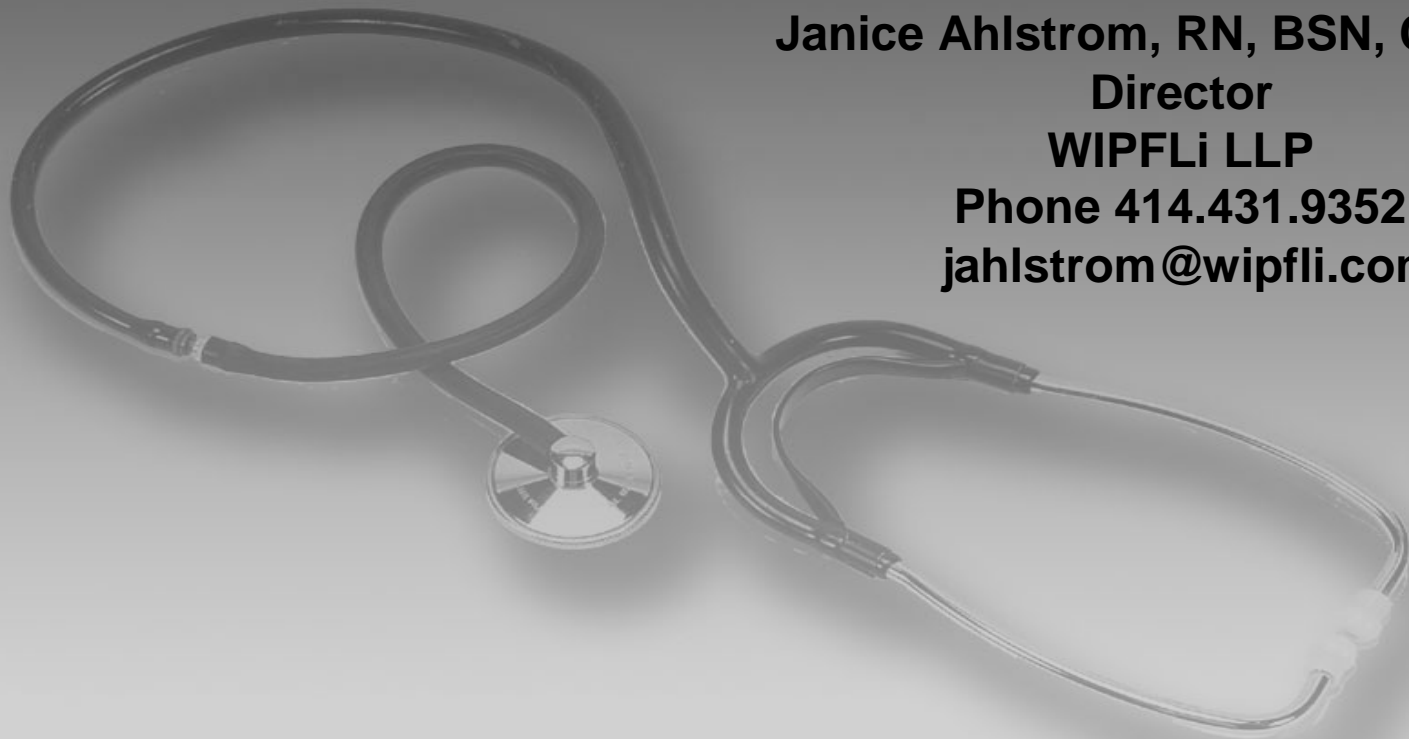


# **The Implementation Phase: How to role out your HIT investment**

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- **Review key phases of the systems development life cycle (EMR or other technology implementations)**
- **Identify strategies and success factors for the key phases of implementation**
- **Discuss common obstacles in implementation and how to avoid them**
- **Share lessons learned from implementations**

- **Organizational readiness assessment**
- **Clinician adoption approach**
- **Defined requirements/business processes**
- **Vendor selection**
- **Project planning**
- **System design and configuration**
- **Testing**
- **Training approach, material development and execution**
- **Project implementation and go-live support**
- **Maintenance and support**

## Ask Yourself:

- Is your organization aligned on the following axes to support EMR adoption?
  - ✓ Organizational
  - ✓ Cultural
  - ✓ Leadership
  - ✓ Strategic
- How will the EMR affect practitioners, office support staff, and overall clinical workflow?
- What will be the impact on patients, consulting practitioners, and others that interact with the practice?
- Is there support for this initiative and what are some strategies to ensure clinician buy-in?
- Do you have funds allocated for this effort?
- What is your culture? Are you able to readily accept change?



- **Business Alignment:** Do EMR initiatives align with the business priorities of the organization?
- **Organizational Capacity:** Does the organization have the capacity (staffing, focus, change tolerance) to implement the initiative?
- **Infrastructure:** Is the current Information Technology (IT) infrastructure capable of supporting the EMR initiative? Are there dependencies on current systems (e.g. legacy systems (practice management or scheduling) or workflow dependencies?
- **Technology Adoption:** What is your users' comfort level with using any type of technology?
- **Preparedness:** Do you have a disaster recovery plans/contingency plans for data storage, restoration, etc.?

## Be Honest with Yourself



**The success of your implementation and the overall planning of the project will be dependent on your ability to answer key questions during organizational assessment:**

### **Process**

- Do you have processes that need to be fixed prior to EMR implementation? Do you have measurable workflow efficiency goals?

### **Conflict**

- How fast do you resolve conflicts? Is it only on ad hoc basis or do you have a well-developed resolution process that is efficient and timely?

### **Barriers**

- There is no doubt that EMR can bring benefits, but you are NOT a statistic---what would be *your* major barriers to implementation?

### **Quality Integration**

- Do you currently have a quality improvement model that would incorporate this project?

### **Physician Leadership**

- Do you have key physician leaders on board?

## **“What do I need, what do I want?”**

In order to identify and evaluate appropriate solutions, you must have an understanding of what your needs and wants are. Functions and features or sexy technology are irrelevant if they have no bearing on the problems or goals you are trying to address.

## **“What do I already have?”**

In a perfect world, you get to start with a clean slate and no baggage to carry along. Often times, however, we aren't afforded the opportunity to start from scratch. Existing investments in hardware or software or skills may have to be leveraged because the investment capital simply isn't available to throw out existing assets.

## **“What can I get?”**

There is usually more than one category of solution to a problem, and frequently more than one choice within a solution category. Identifying and prioritizing requirements and constraints helps to narrow the seemingly endless number of choices.



### **“What will it cost, who will do it, how will it be done, and how long will it take?”**

The major reason for going through the selection process is to get a better handle on the costs, the players, the process and the timeframes involved in the implementation. It should not always be a foregone conclusion that just because the solution is identified, it's worth making the investment. It's important to remember that the technology solution is only a part of the total cost involved in an implementation project. Expenses related to people (training, external resource utilization) and processes (process design or process improvement) can often times cost more than the technology itself.

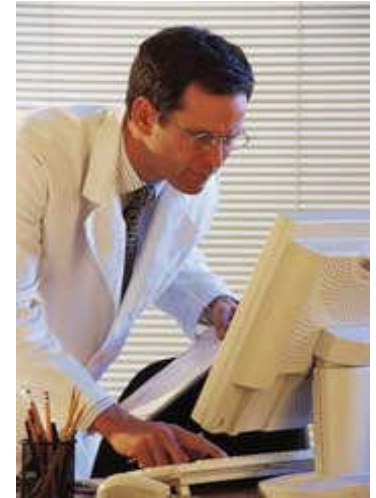
### **“What am I going to get for this investment?”**

The other major reason for going through a selection process is to make sure there is justification for making the investment. In other words, define your criteria for success, define how you will measure and monitor it, and then perform the measurement. If you don't define ahead of time what you are expecting to get in return for the investment, how will you know it was worthwhile? You should consider as well, what is the cost of doing business in healthcare.

- Educate physicians and extenders on the benefits of EMR early on:
  - ✓ Create a value add approach.
  - ✓ Will the EMR provide physicians with more convenience, save some time (fewer callbacks, faster turnaround time, etc.)
  - ✓ Bring in more revenue (improved billing and coding and/or through the reduction in the malpractice and liability costs)
- Provide real-life data or examples of EMR benefits in order to obtain buy-in
- Involve key clinicians at every step of the process:
  - ✓ Definition of requirements
  - ✓ Vendor selection
  - ✓ Analysis of workflows
  - ✓ Project planning and timeline setting
  - ✓ System design, configuration, testing
  - ✓ Training, go-live support and post implementation



- Provide clinicians with tangible incentives to participate in the projects
  - ✓ Financial rewards and awards
  - ✓ CPE credit
  - ✓ Contractual obligation
- Recruit well respected and motivated physician champions
- Develop strategies to offset or to compensate physicians for the learning curve
- Involve clinician champions early on in the process and keep them updated
- Continuously obtain clinician feedback AND devise strategies to address concerns, resolve problems, and effectively communicate changes



## Don't Fall into These Traps:



- Spending time on the strategy for clinician engagement and adoption, and then never monitoring or carrying out the plan
- This is *NOT* a one-step plan—it's a reiterative process
- Don't stereotype your physicians when you receive negative feedback about the process or the system—acknowledge, evaluate, and resolve it
- Pick effective communication strategies to notify physicians of changes and major milestones—no one should be out of the loop
- Have an affective change management process—if concerns arise, it should not take ages for people to make decisions and implement changes
- Don't underutilize other office team members—involve nurses, office managers, and other personnel in the decision making and problem resolution

### Understand the Users' Needs

- Understand and define how you do business
- Define requirements by documenting the processes (flow charts) and obtaining feedback from key physicians and office management
- Shadow and interview each level of user (nurse, physicians by specialty, extenders, support staff)
- Identify requirements (features) that are “must have” and those that are lower priority items
  - ✓ What functionality is mandatory for your EMR?
- Document the list of potential concerns (efficiency, work redesign, unfamiliarity with technology use, etc)

## Understand the Users' Needs

- Evaluate factors critical to obtaining highest satisfaction and return on investment:
  - ✓ Do you spend too much time trying to get a hold of patients, because you don't have ready access to needed information?
  - ✓ Are provider notes too hard to decipher? Does the same goes for scripts?
  - ✓ Do decision support tools matter to your practice?
  - ✓ Is patient e-mail or Web access to your practice important?
  - ✓ Do lab reports take forever to get into chart?



### Key Considerations:

- Ease of use - from the physician perspective - speed of entry and ease of use are the most important
- Integration of data
- Features and functionality that meet user requirements
- Will the potential vendor be able to integrate any EMR components that are already in place?
- Assessment of **Total** cost of ownership over the life of EMR contract (hardware, software, training, implementation services, future software and hardware upgrades, and support personnel to manage the project)
- Vendor support—will they be there for you (days on site for implementation, training and customization)?
- Reputation –what have they done in the past 5-10 years?
- Company’s viability—will they be there for you tomorrow?
- Will the vendor continue to develop and to improve on current functionality (% of in-house program development)?
- Certification and optimization with hardware

### Success Factors

- Negotiate contracts based on the **TOTAL** cost of ownership - often times negotiations focus on the initial cost of hardware and software, when it is often the implementation fees and ongoing annual maintenance costs that constitute the greatest expense
  - ✓ Know that implementation costs are generally 3x the cost of initial hardware and software expenditures
  - ✓ Current literature estimates the average cost of EMR implementation per physician to be \$25-30K/provider

#### Per provider system costs

- Software - \$1,600
- Implementation \$3,400
- Support and Maintenance \$1,500
- Hardware \$6,650
- Sub Total – \$13,100 per provider

These estimates do not include “induced costs” reflecting temporary productivity loss of \$11,200 and **total cost per provider is \$25,300**

### Success Factors

- Establish face-to-face communication with key vendor players
- Review of contracts from technical, medical, and legal perspectives prior to execution
- Obtain buy-in by introducing practice leadership and key stakeholders to the terms of the contract
  - ✓ Escalation procedure
  - ✓ Penalty fees
  - ✓ Vendor expectations
- MS Project implementation plan completed and part of the final contract
- Identify all data conversion and interfaces requirements prior to contract execution

### Success Factors

- Conduct an RFI (request for information) and RFP (request for proposal) to get to know the vendors
- Check references and conduct site visits with similar sized practices
- Find technology that supports the way you work
- Schedule product demos based on documented demonstration scenarios of your workflow or desired workflow.....don't let the vendor drive the demonstration
- Take your time looking and deciding, talk to colleagues
- Use a scoring tool that weighs your defined requirements and other desired functions.....provides an objective score

# Vendors: Who Holds the Industry Reputation ?

- The Certification Commission for Healthcare Information Technology (CCHIT)
  - ✓ In July 2006 CCHIT announced 22 ambulatory electronic health-record products that received its seal of approval.
  - ✓ "This seal of certification removes a significant barrier to widespread adoption of electronic health records. It gives healthcare providers peace of mind to know they are purchasing a product that is functional and interoperable and will bring higher quality, safer care to patients,"  
-HHS Secretary Mike Leavitt.
- **Best in KLAS Surveys – KLAS Enterprises of Utah**
  - ✓ This organization independently monitors healthcare software and consulting vendors to offer honest and impartial opinion (ratings) to healthcare providers [www.healthcomputing.com](http://www.healthcomputing.com)



## CCHIT Certification Recipients for 2006

Allscripts Healthcare Solutions (HealthMatics Electronic Health Record 2006)  
Allscripts Healthcare Solutions (TouchWorks Electronic Health Record 10.1.1)  
Cerner Corp. (PowerChart 2005.02)  
Companion Technologies Corp. (Companion EMR v8.5)  
eClinicalWorks (eClinicalWorks Version 7.0 Release 2)  
Emdeon Practice Services (Intergy EHR v3.00)  
e-MDs (e-MDs Solution Series 6.1)  
Epic Systems Corp. (EpicCare Ambulatory EMR Spring 2006)  
GE Healthcare (Centricity EMR 2005 Version 6.0)  
JMJ Technologies (EncounterPRO EHR 5.0)  
McKesson Corp. (Horizon Ambulatory Care Version 9.4)  
MCS-Medical Communication Systems (mMD.Net EHR 9.0.9)  
MedcomSoft (Record 2006 (V 3.0))  
Medical Informatics Engineering (WebChart 4.23)  
Misys Healthcare Systems (Misys EMR 8.0)  
NextGen Healthcare Information Systems (NextGen EMR 5.3)  
Nightingale Informatix Corp. (myNightingale Physician Workstation 5.1)  
Practice Partner (Patient Records 9)  
Community Computer Service (MEDENT 16)  
LSS Data Systems (Medical Practice Management (MPM) Client/Server 5.5 Service Release 2.1)  
iMedica Patient Relationship Manager (iMedica Corp 5.1)  
Praxis Electronic Medical Records (Infor-Med 3.4)

## Additional Vendor Resources

Resource	Offered By	Description
Ambulatory EHR Selector	HIMSS <a href="http://www.ehrselector.com/emrtoolkits/ASP/Default.asp">http://www.ehrselector.com/emrtoolkits/ASP/Default.asp</a>	This online tool includes comparative information on products from 30 vendors. The tool allows physicians to select the features they want in an EHR, matches them with a product and allows product comparisons.
AC Group EHR Survey	AC Group Inc. <a href="http://www.acgroup.org">www.acgroup.org</a>	This annual survey ranks top EHR applications by functionality and provides basic cost information.
EHR Product Reviews	American Academy of Family Practice's Center for Health Information Technology <a href="http://www.centerforhit.org">www.centerforhit.org</a>	These reviews are written by the Academy members who currently use an EHR in their office. Reviewers are asked to rate products using a five-point scale on quality, price, support, ease of use, and impact on productivity. The reviews do not evaluate each product's features and functions, and are available only to AAFP members.
MGMA Buyer's Guide	Medical Group Management Association <a href="http://www.mgma.org/marketplace">www.mgma.org/marketplace</a>	Information systems and services vendors are listed, but no evaluations provided.
EMRs: A Buyer's Guide for Small Physician Practices	California HealthCare Foundation <a href="http://www.chcf.org">www.chcf.org</a>	This 20-page publication provides guidelines for evaluating EHRs, with a particular focus on practices of nine or fewer physicians.
HMT Online Resource Guide	Health Management Technology <a href="http://www.healthmgtech.com">www.healthmgtech.com</a>	This online tool allows users to search for products and services from more than 1,000 healthcare IT vendors, by typing in company or category/subjects, or alphabetically
Physicians EHR	<a href="http://www.physiciansehr.com">www.physiciansehr.com</a>	Lists information about more than 200 vendors and includes a forum for discussing the pros and cons of different solutions.
Service to help physicians select EMRs	Physicians Electronic Health Record Coalition (PEHRC)	Formed in 2004 by 14 medical organization to assist physicians, particularly those in small- and medium-size practices.

Source: Charles Kilo & Mark Leavitt: Medical Practice Transformation with Information Technology

- **Project Charter**
  - ✓ Define scope – how many providers, clinics, functionality, etc.
  - ✓ Document project objectives – define the measures of success
  - ✓ Document deliverables – process flows (current and future state), interface specifications, baseline measures for performance measurement, etc.
  - ✓ Define the implementation timeline - decide phases and sequencing
  - ✓ Define project team members - yours, vendor, and consultants
  - ✓ Define project governance - authorizations: define responsibility for sign-offs
  - ✓ Define project risk management plan – what are the perceived risks and develop/implement plans to mitigate
  - ✓ Document project costs in dollars and effort (your staff, vendor, consultants, chart abstraction, etc...)
- **Project Plan**
  - ✓ Milestones - hardware acquisition, installation, network configuration, software installation, system design, system configuration, data conversion, interface design, interface build, testing, training and go-lives
  - ✓ Project plan as a part of the contract with the vendor
- **Communications Plan**
  - ✓ Delineate the format, responsibility, distribution, frequency and the intended yield
- **Project Status Reporting**
  - ✓ Delineate the format, responsibility, distribution, frequency

### **Do:**

- **Adhere to user-friendly as a mantra in setting up the look and feel of the system**
- **Configure the system based on your current workflows and future “ideal but realistic scenarios”**
- **Account for the “uniques”--specialty specific workflows/needs, outliers, etc. Is your system fluid and customizable enough that it would not impede a practitioner from taking care of his/her patients?**
- **Use experienced clinical staff to convert current data to electronic format**
- **Develop interfaces—if you have to type in your lab results—you are defeating the purpose of *ELECTRONIC* health record**
- **Involve as many clinicians in configuration decision making as possible, this will lead to buy-in**
- **Document the rationale behind workflow and configuration decisions**
- **Use evidence-based medicine as your guide to maximizing the quality of care aspect**

### **Don't:**

- **Expect that if you approach everything as cookie-cutter, that your physicians will love using the system**
- **Assume that if your IT/project team has tested the system, this is enough—involve physicians and nurses in validating the configured content...user acceptance**
- **Rely on the opinions of a few—the majority may not appreciate their views at the go-live**
- **Base configuration decisions just on the opinions of IT and clinicians—involve stakeholders such as legal, etc.**
- **Assume that everything that you have configured is intuitive (unless the clinicians validating the content can easily navigate it with minimal instruction)**



## How Do You Do Testing Right?

Make sure that your testing plans hit all of the following parameters:

- 1. Unit test—testing each component by itself (files, interfaces, links, etc.)**
- 2. Integrated test—walk through your complete workflows including all interfaces**
- 3. Stress test—test the system at the capacity that you predict for normal daily use**
- 4. Parallel test- validating data against manual operations (i.e. paper medical records, encounter forms, etc.)**

**\*Be diligent in testing converted data, involve clinicians, you can never test enough....**



**The most successful way to train clinicians is through hands-on approach, which gives them the ability to explore the system**

- **Prior to the development of training materials, assess your users comfort level with computers - do they have basic computing skills? Do you need to offer Windows training or computer basics?**
- **Training materials should include a lot of screenshots of the system**
- **Simplify—too many options on how to perform the same function may be overwhelming and confusing**
- **Be flexible and available—train physicians based on their availability and provide a lot of one-on-one help (or smaller class sizes)**
- **Use real-life clinical and workflow scenarios in your training**
- **Develop competencies surrounding implementation phases**
- **Utilize nurses and other medical office staff to assist users who are having difficulties (Superusers)**
- **Provide training assistance prior to go-live—”dress rehearsals”**
- **Develop a strategy for on-going training for new employees and those that need refreshers or are having issues**
- **Involve Help Desk staff in training and go-live support**

- Don't allow too much time before training and go-live without refreshers or assistance
- Don't assume that all of your users are at the same competency level—develop a training strategy and materials that encompass various levels (beginner, intermediary, advanced)
- Don't assume that a one-time in-class session is sufficient for the go-live
- Ensure that training content is tailored to the particular specialty and/or workflow(s)
- Utilize your trainers (Super Users) and Help Desk staff as part of go-live support; they are your subject matter experts and have developed relationships with end-users from training
- Continue to collect training feedback throughout the training program and incorporate it into the go-live planning
- Make sure that you have enough system content built and tested, so you can have a successful training program



## Implementation—How to Make It Happen?

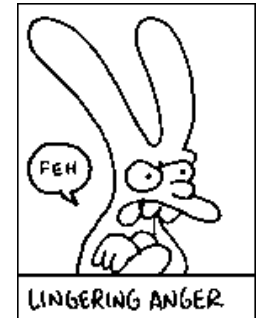
- Ambulatory EMRs are almost never implemented in a “big bang” fashion
  - ✓ Most organizations utilize a phasing approach based on functionality, providers, related entities, or facilities/workflow implementation
- Maximum benefit is obtained once **all** providers are using the system at the point of care
- Integrating data from other systems (transcription or lab) can provide a base of information that makes the system **useful at the onset** of implementation
- Abstracting information from paper charts—make sure that it’s done by people with clinical experience and is **validated** prior to go-live by those who are familiar with patients’ clinical history and treatments
- Ensure that you have sufficient go-live support (in person and over the phone)
- Build in additional time/productivity expectations for your users’ learning curve



I'M STRESSED  
AND I WANT TO  
BREAK SOMETHING

## Implementation—How to Make It Happen?

- Document all of implementation issues, concerns and changes that need to be made (prioritize, do certain things require immediate changes?)
- Ensure that you have downtime procedures and processes (Are you planning to revert to paper, if certain applications are down? Do you have reports developed and automatic printing set up to ensure that patient care is not negatively impacted?)
- Ensure vendor presence prior and during implementation
- Ensure effective and expedient channels of communication for implementation updates
- Highlight implementation successes and acknowledge areas for improvement
- Ensure that you provide sufficient support post the actual implementation period, correct timing of Help Desk turnover
- Ensure that high priority issues from the previous phase go-live have been corrected and communicated prior to subsequent implementations



- **The work never stops: maintenance incorporates**
  - ✓ On-going support of users
  - ✓ Upgrades
  - ✓ Issue resolution of any problems
- **This is your opportunity to continue to improve the system**
  - ✓ Involve Super Users in periodic team meetings
- **Continue communication with vendors on upcoming functionality and solution development for on-going problems**





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