Electronic Health Record
Implementation Issues and Strategies

Margret Amatayakul,
RHIA, CHPS, CPHIT, CPEHR, FHIMSS

Steven S. Lazarus, PhD,
CPHIT, CPEHR, FHIMSS

The HIT Symposium at MIT, July 18, 2006
Margret A

Margret\A Consulting, LLC
Strategies for the digital future of healthcare information

- Information management and systems consultant, focusing on electronic health records and their value proposition
- Adjunct faculty, College of St. Scholastica; former positions with CPRI, AHIMA, Univ. of Ill., IEEI
- Active participant in standards development, HIMSS BOD
- Speaker and author (numerous books and articles on EHR and HIPAA; HIMSS Book of the Year 2006; ASHPE Awards)

- Strategic IT planning
- Compliance assessments
- Work flow redesign
- Project management and oversight
- ROI/benefits realization
- Training and education
- Vendor selection
- Product/ market analysis

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
Steve Lazarus

Boundary Information Group

Strategies for workflow, productivity, quality and patient satisfaction improvement through health care information

- Business process consultant focusing on electronic health records, and electronic transactions between organizations
- Former positions with MGMA, University of Denver, Dartmouth College; advisor to national associations
- BOD and Past Chair, Workgroup for Electronic Data Interchange (WEDI)
- Speaker and author (books on HIPAA Security and EHR; HIMSS Book of the Year 2006)
- Strategic IT business process planning
- ROI/benefits realization
- Project management and oversight
- Workflow redesign
- Education and training
- Vendor selection and enhanced use of vendor products
- Facilitate collaborations among organizations to share/exchange health care information
Agenda

☐ EHR Half Life:
  - Importance of Getting to Adoption
  - Planning is Key to Success

☐ Implementation Strategies:
  - Who Does What, When?

☐ Change Management Strategies:
  - Achieving EHR Goals
Electronic Health Record Implementation Issues and Strategies

EHR Half Life

The HIT Symposium at MIT, July 18, 2006
The Sad Story

Center for Information Technology Leadership, “The Value of Computerized Provider Order Entry in Ambulatory Settings,” 2003, Executive Preview
Why Is Adoption So Difficult?

- It’s not the product,
- It’s . . .
- Planning
- Communicating
- Engaging
- Change management
- Process improvement
- Overcoming resistance
- Building trust
- Designing it right
- Being flexible
- Being forthright
- Testing
- Training
- Nurturing
- Rewarding

Unpublished increased mortality after implementation of a commercially sold computerized physician order entry system

Yung Y. Hua, MD, Joseph A. Carcillo, MD, Sheshkar T. Venkataraman, MD, Robert S.B. Clark, MD, R. Scott Watson, MD, MPB, Trong C. Nguyen, MD, Hulya Bayir, MD, and Richard A. Orr, MD

Post-publication Peer Review (P³R)
The issue with CPOE is usually not in the software, but in the process change that is required to successfully implement such a complex system. These challenges were well documented in the article . . . But rather than conclude that work process and infrastructure issues must be completely understood, investigated, and resolved prior to implementation, the authors conclude that hospitals should monitor mortality rates after CPOE implementation.

Don Levick, M.D., MBA President Medical Staff Physician Liaison Information Services Lehigh Valley Hospital
EHR Definition

- **System** that . . .
  - Collects data from **multiple sources**
    - Ideally organized in a data repository
    - Ideally integrated across continuum
  - **Is used by clinicians as the primary source of information at the point of care**
    - Ideally with minimal document management and optimal structured data
    - Ideally also supporting the legal medical record
  - **Provides evidence-based decision support**
    - Ideally clinically and professionally context-sensitive
“Point of Care”

- Human-computer interfaces
- Work flow
- Customizable screens
- Ergonomics
- Value proposition
- Communication strategies
“Decision Support”

- **Active**
  - Reminders
  - Alerts

- **Passive**
  - Structured data entry templates
  - Order sets
  - External resources

---

Document rationale for overriding alert?

Yes, metadata exists to identify that a rule fired so a reason for overriding the rule should also be available.

No, CDS is no different than referencing a textbook, which is rarely documented.

---

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
“System”

- **Hardware**
  - Computers, workstations, printers, other devices

- **Software**
  - Programs that provide instructions for how the computers should work

- **People**
  - Users, administrators, technicians, vendors, etc.

- **Policies**
  - How the system will be used, what benefits are to be achieved

- **Processes**
  - Procedures, screen designs, report layouts, workflow changes, etc.
Many are saying, . . .

- Just like “What vendor do I buy from?” should not be your first selection question, “Just do it and I’ll use it” should not be your users’ attitude
- The amount of value gained is directly proportional to the level of effort spent in planning
- There is no perfect system, but proper planning can produce good results
- The element of change in people, policies, and processes is enormous and must be managed well
Electronic Health Record
Implementation Issues and Strategies

Implementation Strategies

The HIT Symposium at MIT, July 18, 2006
Planning for Implementation

- Starts prior to selection
- With setting goals for EHR
- Goals should be:
  - Specific to results
  - Measurable
  - Measured
  - Celebrated

Helps Educate

Initiates Change Management

Used in Performance-based RFP

Focuses Due Diligence

Helps Negotiate Contract Terms & Implementation Plan

Builds Scenarios for Testing & Training

Identifies Successes & Helps Correct Course If Needed
<table>
<thead>
<tr>
<th>Visit Specific Processes</th>
<th>EHR Impact Function</th>
<th>Benefits</th>
<th>Metrics</th>
<th>Expectations/Goals</th>
</tr>
</thead>
</table>
| **1. Pre-Visit**        | - Patient portal for scheduling visit  
- Automated self history & symptom assessment  
- ASC X12N 270/271  
- Paperless  | - Context-specific scheduling of diagnostics studies prior to visit  
- Check eligibility  
- Reduce/eliminate filing  | # FTE scheduling  
# FTE pulling/filing charts and loose sheets  
$ in collections  
# days in A/R  
# FTE prepping charts  
Patient satisfaction  | - Reduce clerical staff 75% through attrition  
- Check eligibility on 95% of patients, reducing A/R days by 5 & cutting bad debt by 50%  
- Increase patient satisfaction survey scores by 3% |
| **2. Check in**         | - Workflow  
- Wait times calculated  | - Reduce wait time  
- See more patients  
- Increase revenue  | # minutes wait time  
# patient visits/hour/physician  
$ average revenue/patient  | |
| **3. Patient intake**   | - Documentation of vitals, HPI, etc.  
- Check on health maintenance  
- Patient preparation  | - Context-specific template-based charting  
- Health maintenance reminders  | - Compliance with health maintenance  | # records identifying flu shot status  
# DM foot exams  |
| **4. Review chart**     | - Review results (incl. images)  
- Review past encounter data  
- Review other provider & patient-supplied data  | - Integrated provider EHR and patient PHR  
- Inter-disciplinary, multi-media, and remote access  
- Continuum of care  |  | - Obtain flu shot data from 100% of patients & provide flu shots to 98% of patients |
| **5. Clinical documentation** | - Validate history data  
- Record physical exam  
- Document encounter notes  |  |  |  |
| **6. Care planning**    | - Develop care plan consistent with guidelines  |  |  |  |
Preparation

☐ Prior to selection, begin
  ■ Process mapping (e.g., workflow, forms and reports inventories, process improvements, standardize procedures)
  ■ Clinical transformation (e.g., standardize documentation, introduce practice guidelines, establish benefits expectations, identify metrics, revise policies)
  ■ Use of electronic systems (e.g., e-mail, results access, electronic drug lookup)

☐ Prior to contract signing
  ■ Outline high level implementation plan, especially turnover strategy, paper-chart conversion plan, standards adherence, payment schedule tied to milestones
  ■ Computer skills training, device evaluation, third-party support, staff recruitment, job descriptions
After Contract Signing

- Organize implementation teams
- Vendor introductions
- Receive documentation from vendor

Plan
- Review contract with vendor, including requirements specifications, project goals and benefits metrics, implementation plan
- Finalize turnover strategy (i.e., deployment/rollout), training plan, testing plan
- Determine any pre-requisite projects
### Who Carries the Weight?

<table>
<thead>
<tr>
<th>Vendor Responsibilities</th>
<th>Organization Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Provide, install, and configure hardware*</td>
<td>- Manage project</td>
</tr>
<tr>
<td>- Provide and install software</td>
<td>- Coordinate all vendors</td>
</tr>
<tr>
<td>- Build master files and tables*</td>
<td>- Make decisions</td>
</tr>
<tr>
<td>- Write interfaces</td>
<td>- Identify process changes</td>
</tr>
<tr>
<td>- Make custom modifications*</td>
<td>- Buy, install, and configure hardware*</td>
</tr>
<tr>
<td>- Unit test software*</td>
<td>- Build master files and tables*</td>
</tr>
<tr>
<td>- Convert data*</td>
<td>- Establish preferences</td>
</tr>
<tr>
<td>- Train super users*</td>
<td>- Define custom needs</td>
</tr>
<tr>
<td>- Support go live*</td>
<td>- Manage interface development</td>
</tr>
<tr>
<td>- Manage themselves</td>
<td>- Convert charts</td>
</tr>
<tr>
<td>* Or not!</td>
<td>- Test system and interfaces*</td>
</tr>
</tbody>
</table>

"Provide, install, and configure hardware*",
"Provide and install software",
"Build master files and tables*",
"Write interfaces",
"Make custom modifications*",
"Unit test software*",
"Convert data*",
"Train super users*",
"Support go live*",
"Manage themselves"

- Adopt system
- Realize benefits
- Ensure system kept current
Project Documentation

- Communication plan
- Project plan
- Budget
- Issues log
- Change control
- Meeting agendas and minutes

- User manuals
- Training manuals
- Technical diagrams
  - Information model
  - Data models
  - Data dictionaries
- Worksheets for table building
- Use case scenarios for testing
- Process maps
- Facility layouts & movement diagrams
Electronic Health Record
Implementation Issues and Strategies

Change Management Strategies

The HIT Symposium at MIT, July 18, 2006
Change Management Theory

Recognize Scope of Change

Identify Specific Causes of Change

Understand Organizational Culture
Identify Change Strategies

Tactics

Reactions

Implement Change

Unfreeze Change Refreeze

Continuously Monitor

Change Leaders

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
Scope of Change

- Technology
- Protocol
- Policy and procedure
- Personal vigilance

Adverse Event
Causes of Change

Force Field Analysis

Driving Forces
- Reduce cost
- Competitive standing
- Improve quality/patient safety
- Improve productivity
- Increase revenue
- Reduce hassles
- Improve satisfaction

Restraining Forces
- Lack of incentives
- Interoperability issues
- Lack of agreement
- Lack of understanding
- Financial issues
- Loss of control
- Mistrust
- Skills issues

National
Organizational
Professional
/Personal
Healthcare Culture

- Tensions are created by dual governance of administrative and clinical leadership
- Care teams are comprised of knowledge workers:
  - Highly educated
  - Trained to work autonomously
  - But in a very well-defined hierarchy
- Norms of denial, blame, cover-up regarding stress, fatigue, and errors
- Typical organizational structures often do not work

Leadership Styles

- Dictator
- Parent
- Developer
- Enabler
- Collaborator
- Partner
- Visionary

- Adoption-based
- Norm-based
- Incentive-based
- Sanction-based
# Change Strategies

<table>
<thead>
<tr>
<th>Technique</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Common Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education &amp; communication</td>
<td>After being convinced, people often assist</td>
<td>Costs time &amp; money</td>
<td>When knowledge would alleviate fears due to lack information</td>
</tr>
<tr>
<td>Participation &amp; involvement</td>
<td>People become supportive when involved</td>
<td>Time costs; disillusionment if ideas not followed</td>
<td>When change initiators need information &amp; especially if resistance is high</td>
</tr>
<tr>
<td>Facilitation</td>
<td>Enhances success of change</td>
<td>Costs time &amp; money for support materials &amp; training</td>
<td>When people lack skills or tools to be effective following change</td>
</tr>
<tr>
<td>Emotional support</td>
<td>Low cost; helps individuals</td>
<td>May not remedy organization issue</td>
<td>When people have personal anxiety about change</td>
</tr>
<tr>
<td>Incentives</td>
<td>Can “head off” major resistance</td>
<td>Expensive; can encourage resistance</td>
<td>When key people will resist change unless they benefit</td>
</tr>
<tr>
<td>Manipulation &amp; co-optation</td>
<td>Works rapidly without substantial cost</td>
<td>Unethical &amp; destroys trust</td>
<td>When change is essential and other techniques ineffective</td>
</tr>
<tr>
<td>Coercion</td>
<td>Fast</td>
<td>Increases resentment</td>
<td>When change must occur quickly &amp; initiators have more power than resisters</td>
</tr>
</tbody>
</table>

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
Five Rights of EHR

☐ Right clinical data
☐ Right presentation
☐ Right decision
☐ Right work processes
☐ Right outcomes
Right Data

Information Model

Data Model

Data Dictionary (Metadata)

Presenting problem

High blood pressure

Data Quality

Controlled Vocabulary

Retrieval & Reports

Metadata
- Name of entry
- Table in which entry occurs
- Physical name in database
- Synonyms
- Definition
- Reference
- Source of data
- Derivations
- Valid values
- Conditionality
- Default
- Lexicon
- Relationship
- Access restrictions
- Process rules
Ultimate goal:

Capture clinically specific data
Once at the point of care, and
Derive information there from for
Every other legitimate use
Right Decision

- Use case scenarios for testing
- Physicians are legally obligated to practice in accordance with the standard of care

EHR System Functional Model, Draft Standard for Trial Use

<table>
<thead>
<tr>
<th>Provider</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Success Scenario: Receive appropriate D-D, D-L, D-A, D-W, and D-Dose</td>
<td>CPOE with interface from ADT, Problem List, Medication List, Allergy Documentation, Laboratory, Pharmacy, and Referral systems</td>
</tr>
<tr>
<td>Secondary Success Scenario: Retrieve list of patients who may be pregnant, become pregnant, or nursing to advise them of birth defect warning</td>
<td>Data mining capability</td>
</tr>
</tbody>
</table>

---

**Basic Flow:**
1. Provider enters order for Paxil
2. D-D contraindication alert if patient taking MAOIs or thioridazine
3. D-L alert if patient has severe renal or hepatic impairment
4. D-A alert if patient has a hypersensitivity to paroxetine (active ingredient in Paxil) or any inactive ingredients
5. D-W (obtain psych consult reminder) if patient is at risk for suicide
6. D-dose recalculation for starting dose in pediatric patients

**Extensions (for alternative flows):**
2-a: Alert with respect to MAOIs or thioridazine includes
   1. Cancels order
   2. Requests to see detailed SPL
   3. Selects alternative antidepressant
   4. Overrides alert and retains for Paxil

2-b: Override presents list of potential rationales required for order to be accepted
   1. Selects rationale
   2. Cancels order

**Secondary Flow:**
1. Request system to search for all patients for whom Paxil was ordered AND who are women between 12 and 50 years old...
2. Produce mailing labels of all patients on report

Sources: WebMD Article 112/11604, RxList (www.rxlist.com) Accessed 02-04-06
Right Processes
## Right Outcomes

<table>
<thead>
<tr>
<th>Clinical Processes</th>
<th>Intervention</th>
<th>Purpose</th>
<th>Metrics</th>
<th>Goals</th>
<th>Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient intake and documentation of vitals, chief complaint</td>
<td>Context-specific template-based charting</td>
<td>- Match skills to task for productivity</td>
<td># missed entries on audit</td>
<td>&lt; 1 missed entry for every 5 patients</td>
<td>&lt; 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Patient satisfaction through fewer repetitive questions &amp; procedures</td>
<td># procedures repeated via process mapping</td>
<td>0 unjustified repeats on quarterly mapping</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>% satisfaction on survey</td>
<td>98% score</td>
<td>97%</td>
</tr>
<tr>
<td>Diabetes management</td>
<td>- Proactive F/U</td>
<td>- Quality care</td>
<td>A1c</td>
<td>&lt; 6.5</td>
<td>&lt; 7.0</td>
</tr>
<tr>
<td></td>
<td>- EHR prompts</td>
<td>- P4P goals</td>
<td>SBP</td>
<td>&lt;130</td>
<td>&lt;150</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T. Chol</td>
<td>&lt;175</td>
<td>&lt;180</td>
</tr>
</tbody>
</table>
# Right Migration Path

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Current</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goals</strong></td>
<td></td>
<td>E-MAR or BC-MAR?</td>
<td>BC-MAR with CPOE?</td>
<td>BC-MAR before CPOE?</td>
</tr>
<tr>
<td><strong>Applications:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Financial/Administrative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Operational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Clinical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td></td>
<td>Bandwidth for portal, PACS?</td>
<td>Full redundancy for EHR?</td>
<td></td>
</tr>
<tr>
<td>- Database</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Network &amp; Infrastructure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Interfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operations</strong></td>
<td></td>
<td>Does lab generate:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- People</td>
<td></td>
<td>- Discrete data for D-L?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Policy</td>
<td></td>
<td>- Print file for legal medical record?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Copyright © 2006, Margret\'A Consulting, LLC and Boundary Information Group
Migration Strategies for Hospitals

“Paperless”

EDMS
EMAR
CPOE
Bridge

“Digital”

CDR
Docs
PACS
POC
BCMAR
CPOE
CDSS

“EMR”

EDMS
EMAR
CPOE

“EHR”

PACS
POC
BCMAR
CPOE
CDSS

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
Tools for Physician Practices

- Chart conversion =
  - Making data in paper charts accessible/usable in EHR
  - Examples: Last two visit notes are available in EHR; most recent hospital discharge summary is accessible through EHR; medication record can be processed by EHR

- Data conversion =
  - Making data already in electronic form in one system available to another system in electronic form
  - Examples: demographic data in practice management system is copied to EHR

- Transition strategy =
  - Determining sequence of go-live for users, potentially based on components of EHR or all of EHR
  - Example: All sites will go live first on results retrieval; then site A will go live on EHR documentation, then site B, etc.
## Chart Conversion Plan

<table>
<thead>
<tr>
<th>1. Current Chart Content</th>
<th>2. Source:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand-written</td>
<td>Internal</td>
</tr>
<tr>
<td>Dictated</td>
<td>Hospital</td>
</tr>
<tr>
<td>Faxed</td>
<td>Lab</td>
</tr>
<tr>
<td>E-mail</td>
<td>Etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Current Format:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand-written</td>
</tr>
<tr>
<td>Dictated</td>
</tr>
<tr>
<td>Faxed</td>
</tr>
<tr>
<td>E-mail</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. EHR Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic (Can be imaged)</td>
</tr>
<tr>
<td>Digital (Needs to be discrete)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Backfill Period of Time Consider:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revisits</td>
</tr>
<tr>
<td>Reporting</td>
</tr>
<tr>
<td>Referrals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. How:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In advance</td>
</tr>
<tr>
<td>Just-in-time</td>
</tr>
<tr>
<td>Concurrent with visit</td>
</tr>
<tr>
<td>After-the-fact</td>
</tr>
</tbody>
</table>

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
# Transition Strategy

<table>
<thead>
<tr>
<th>What Component</th>
<th>Who</th>
<th>Strategy:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Site</td>
<td>▪ Trade</td>
</tr>
<tr>
<td></td>
<td>Providers</td>
<td>▪ Ease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Slow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Decrease</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Extend</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adoption Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 1 week</td>
</tr>
<tr>
<td>+ 2 weeks</td>
</tr>
<tr>
<td>+ 1 month</td>
</tr>
<tr>
<td>+ 3 months</td>
</tr>
</tbody>
</table>

- Providers “**trade**” reduced patient load with one another until all on EHR
- Providers “**ease**” into EHR by using it just for the number of patients they are comfortable with, increasing number each day
- Select “**slow**” time to implement
- “**Decrease**” number of patients seen for short period of time
- “**Extend**” clinic hours so same number of patients can be seen in longer periods of time
## Interoperability Issue

<table>
<thead>
<tr>
<th>Method</th>
<th>Interoperability Achieved?</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated:</td>
<td>Mostly</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>- Developed from the same source code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Components work seamlessly together</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interfaced:</td>
<td>Barely</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>- Requires middleware (Message format standards, e.g., HL7, NCPDP, X12) for exchange of data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connected:</td>
<td>Differently</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>- Communications are XML-based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Secure Web portal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In Summary, No Small Task!

Assess
- Landscape
  - Why EHR
  - What is EHR
  - Marketing Forces
  - Local EHR Activity
  - Overcoming Barriers
  - Myths & Realities
  - Tales from the Field
- Communication Plan
- EHR Education
- Readiness
  - Attitudes & Beliefs
  - Computer Skills
  - Financial
  - I.T. System Inventory
  - I.T. Staffing
- Assessment Plan

Plan
- Organize
  - Project Management
  - Steering Committee
  - Job Descriptions
  - Documentation
  - Migration Path
  - Timeline/Goals
  - Applications
  - Technology
  - Operations
  - Change Management
    - Strategy
    - Process Mapping
  - Requirements Specs
    - Business Case
    - Benefits Expectations
    - Functional Reqsmts
    - Technical Reqsmts
    - Standards Reqsmts
    - Chart Conversion
- Timeline/Goals
- Change Management
- Process Mapping
- Requirements Specs

Select
- Code of Conduct
- Understand Marketplace
- Request for Proposal
- Due Diligence
- Vendor of Choice
- Contracting
- Approval to Buy
- Financing

Implement
- Issues Management
- Implementation Plan
- Turnover Strategy
- Training Strategy
- Test Planning
- Functional
  - Process Improvement
  - Guidelines
  - Vocabulary
  - Core Data Sets
- Install
  - Hardware
  - Software
  - Network
  - Storage

Maintain
- Patches
- Upgrades
- User Preferences
- Hardware Upgrade & Maintenance
- CDSS Maintenance

Improve
- Benefits Realization
- Return on Investment
- Provider & Patient Satisfaction
- Quality Outcomes
- Patient Safety
- External Reporting
  - National Repository
  - Pay for Performance
  - Disease Registries
  - LHIO, RHIO, NHIN

Copyright © 2006, Margret\A Consulting, LLC and Boundary Information Group
Critical Success Factors

- Identify and engage all key stakeholder groups, especially clinicians
- Train leadership in multidisciplinary common body of knowledge
- Utilize formal project management discipline
- Conduct process mapping and workflow analysis to determine and carry out future state changes
- Focus on achieving goals that align with organizational imperatives
- Measure results, correct course as necessary, celebrate achievement of benefits
References & Resources

www.hcpro.com

https://catalog.ama-assn.org

www.ahima.org

www.mgma.org
Contact Information

☐ Margret Amatayakul, RHIA, CHPS, FHIMSS
Margret\A Consulting, LLC
Schaumburg, IL
MargretCPR@aol.com
www.margret-a.com

☐ Steven S. Lazarus, PhD, FHIMSS
Boundary Information Group
Denver, CO
SSLazarus@aol.com
www.boundary.net

☐ Health IT Certification
www.HealthITCertification.com