



The
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Information
Technology

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Electronic Health Records:

A core technology for medicine

Kansas City University of Medical &
Biosciences 2005 Winter CME Seminar

Steven E. Waldren, MD, MS
December 17, 2005

www.centerforhit.org

Overview



 The Current National HIT Landscape

 Electronic Health Records

◆ What

◆ Why

◆ How

Federal Government HIT Strategy



National Strategic
Framework

All Americans with an
EHR by 2010

National Health
Information
Network

Dept. of Health & Human Services
(Sec. Michael Leavitt)

Office of the National
Coordinator of HIT
(Dr. David Brailer)

American Health Information Community

EHR
Certification




Standards
Harmonization

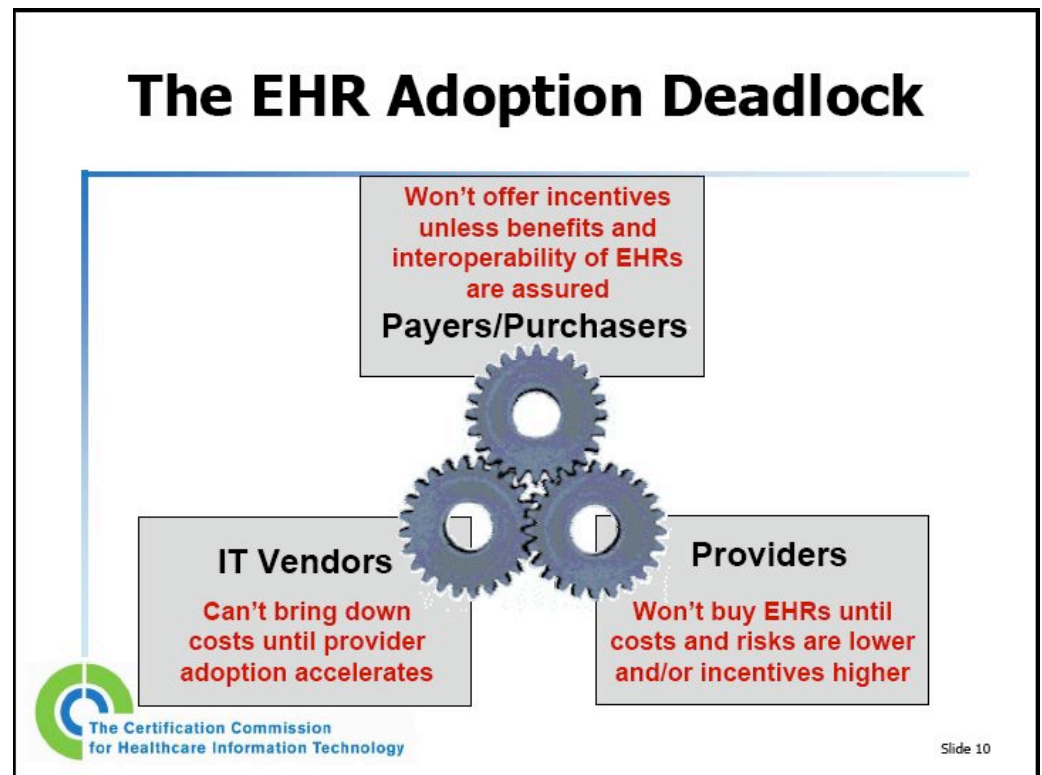
Privacy &
Security
Harmonization

NHIN
Prototypes

Certification Commission for Health Information Technology (CCHIT)



-  Independent organization to provide certification of EHRs
 - ◆ Physicians (AAFP; ACP)
 - ◆ Health Plans
 - ◆ Vendors
-  Certification criteria planned to be incremental
-  Areas of certification
 - ◆ Functionality
 - ◆ Security
 - ◆ Interoperability



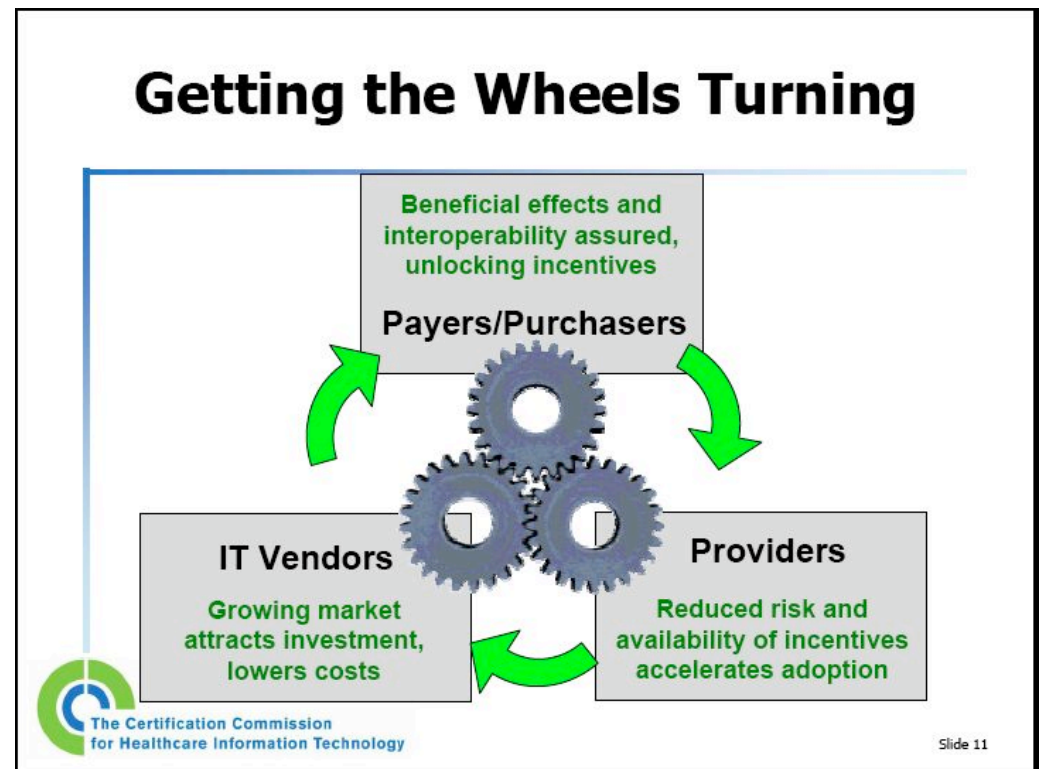
Source: Mark Leavitt Presentation for CCHIT Town-hall Meetings

<http://www.cchit.org/>

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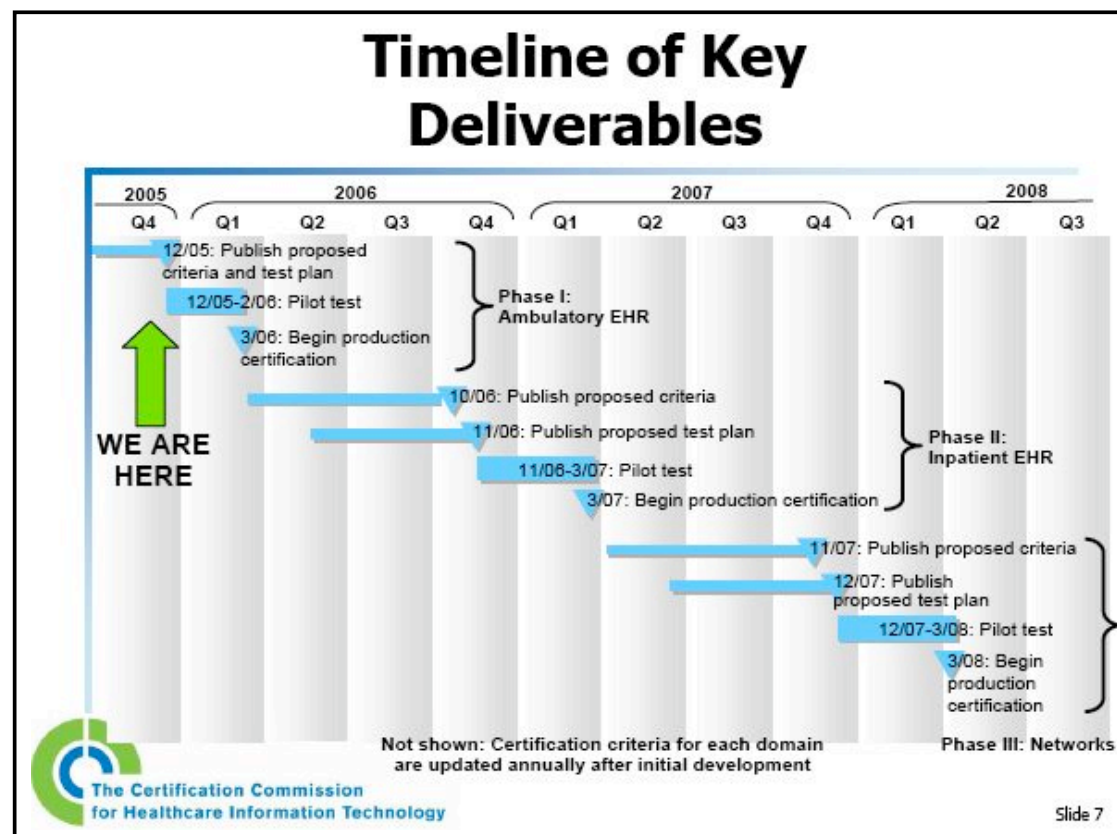
Source: Mark Leavitt Presentation for CCHIT Town-hall Meetings

<http://www.cchit.org/>

CCHIT Timeline



-  Pilot Testing Jan 06
-  Production Testing March 06
-  Scale-up and capacity to be determined
-  Non-EHR HIT solutions to tested



Source: Mark Leavitt Presentation for CCHIT Town-hall Meetings





Electronic Health Records

What?



EHR Definitions

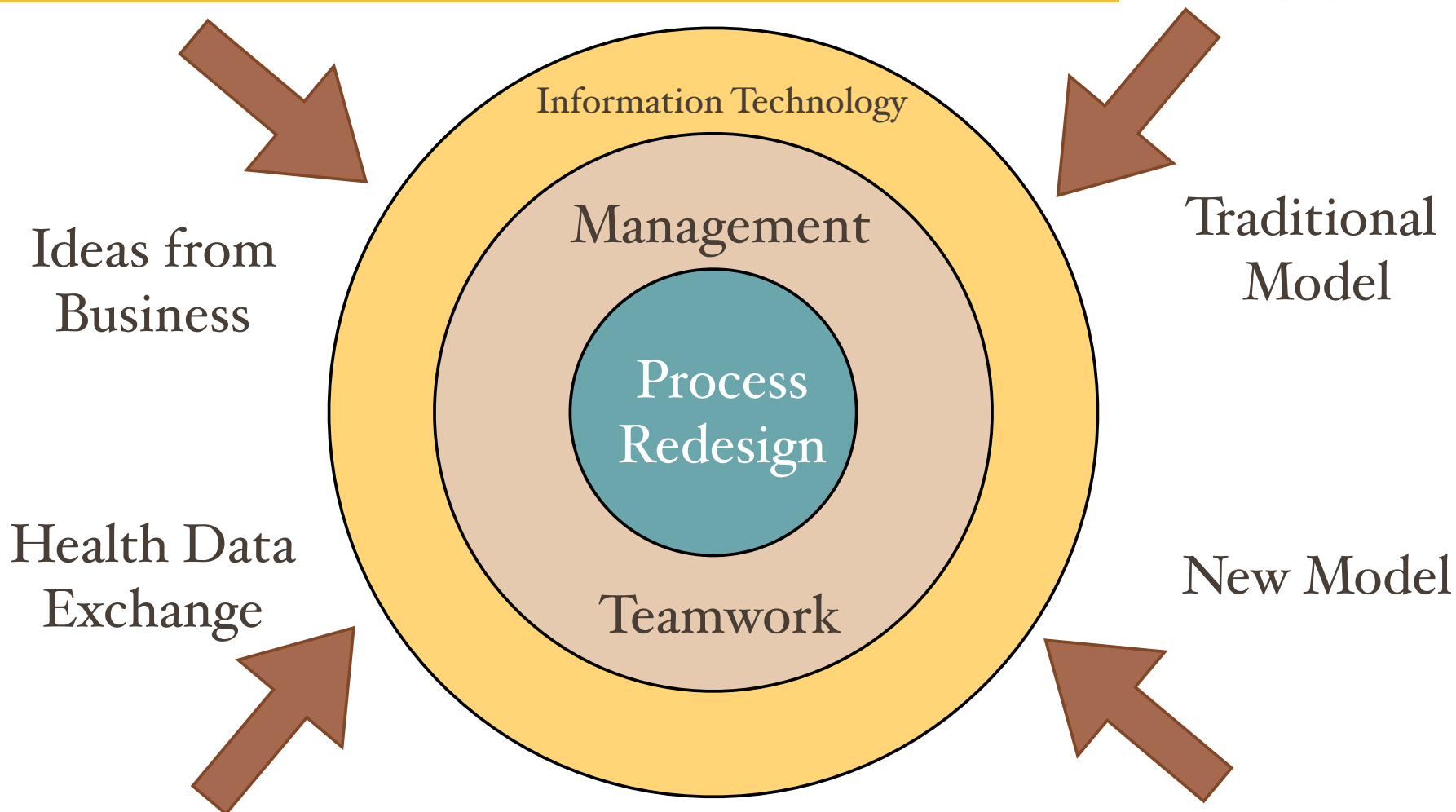


-  Key Capabilities - IOM Report
-  HL7 EHR-S
-  HIMSS Definitional Standard
-  Many more

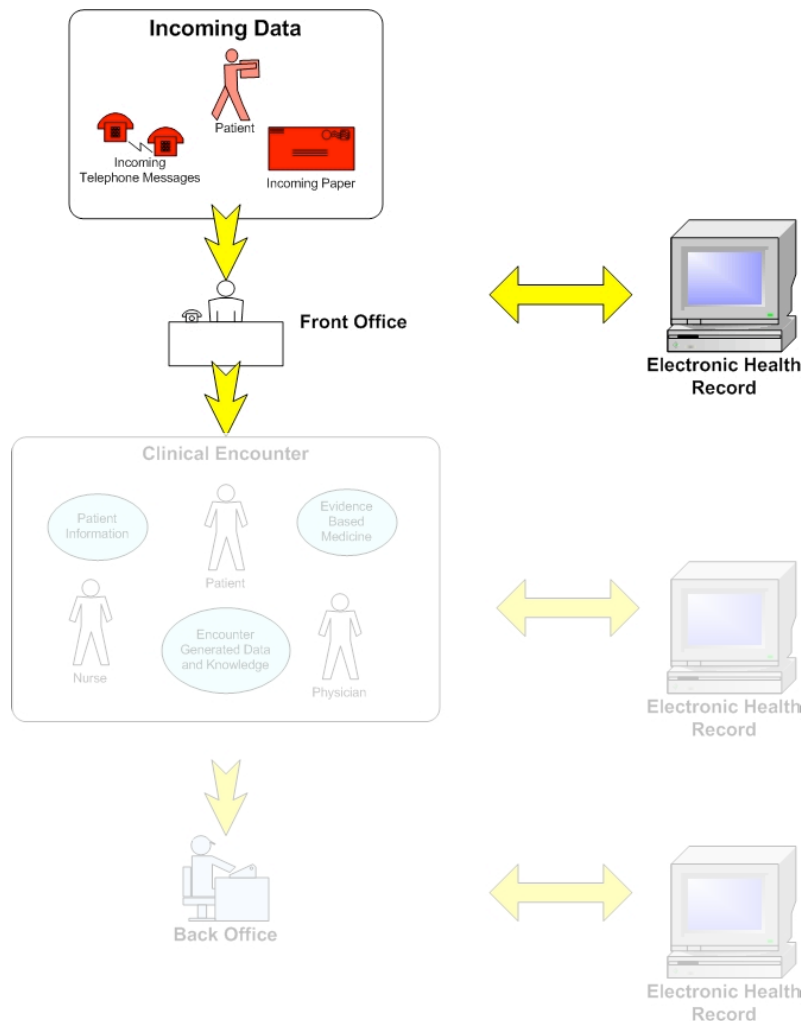
My Working Definition:

A set of products and services that provide an integrated solution, including clinical and business applications, to automate a clinical practice for the purpose of increasing efficiency, quality, and safety

New Office Paradigm

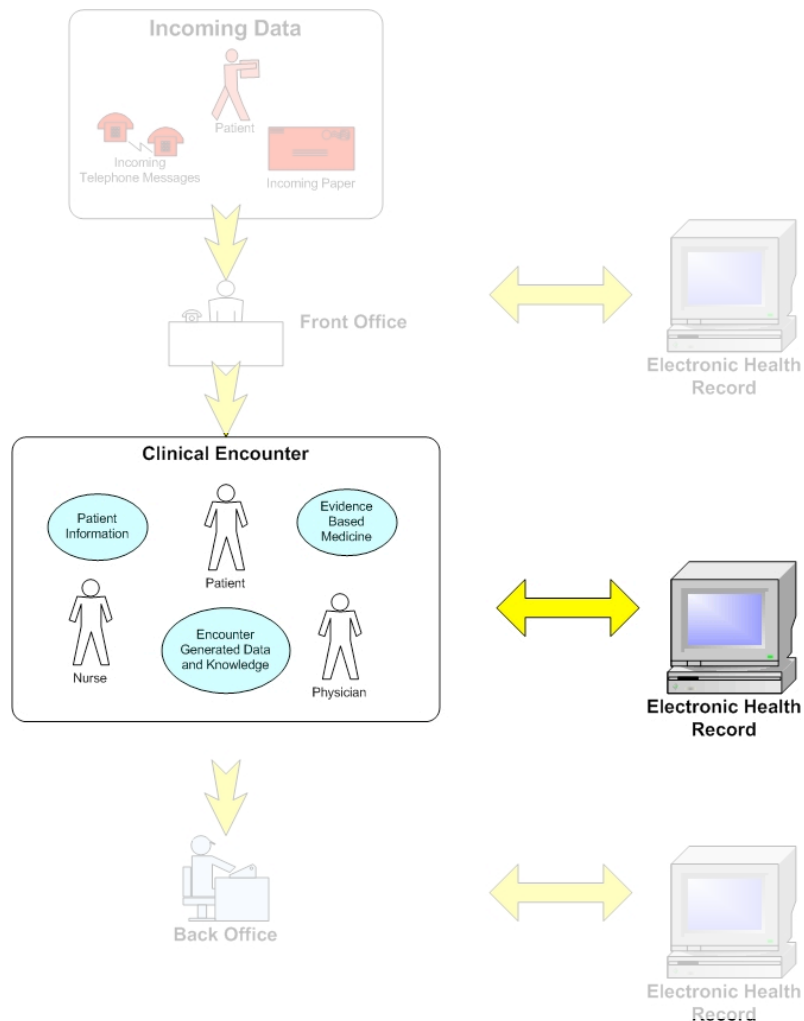


EHR Functionality: “Front office”



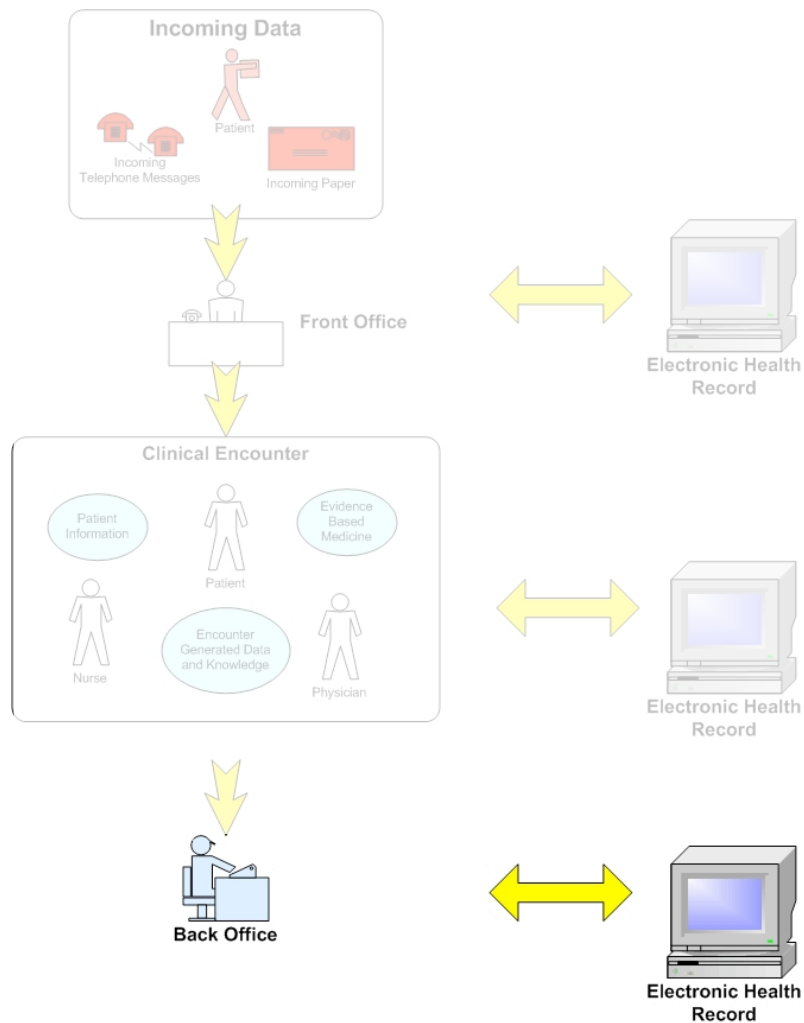
- Patient Portal
- Document Management
Scanning & Faxing
- Messaging
- Interfaces to Lab, Hospital,
Pharmacy
- Scheduling & Appt. Reminders
- Patient arrival notification
- Integration with the Clinical and
Billing functions

EHR Functionality: “Clinical Encounter”



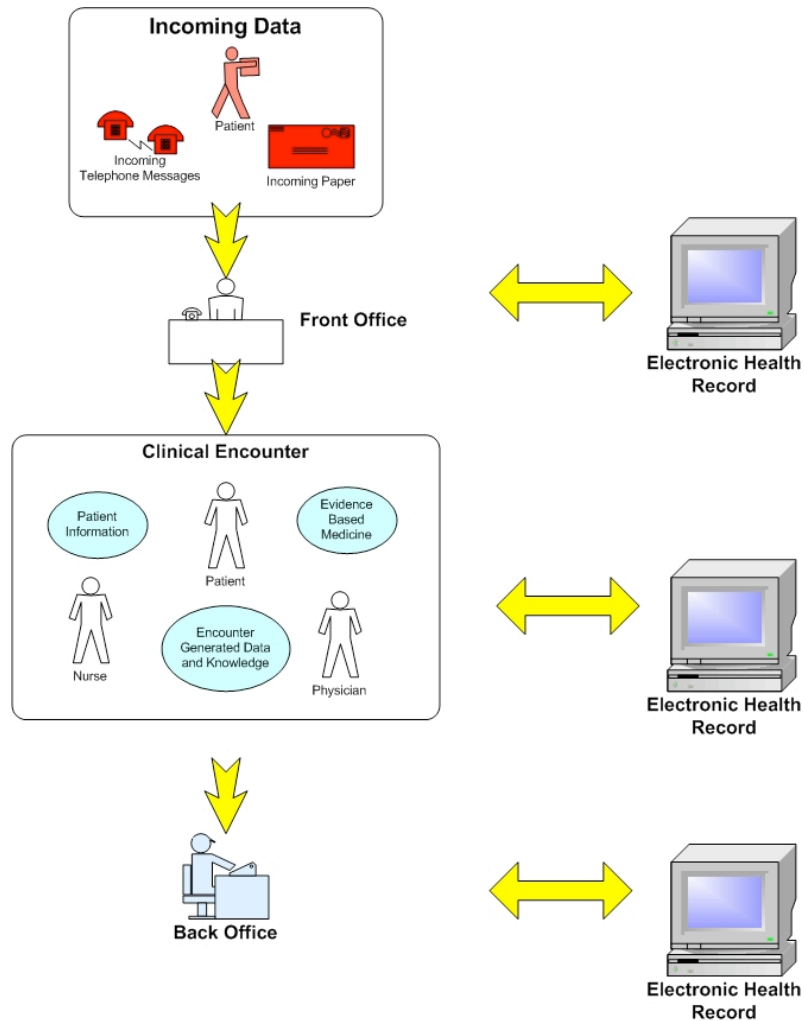
- Data Entry: Templates, Voice Recog., Tablet PC, Patient Data Entry, Device Connectivity
- Chart Review
- Clinical References & Guidelines
- Decision Support
- Workflow support between nurse and physician
- Patient Education Handouts
- Final Note appearance and letter generation
- Charge Capture & Coding Support

EHR Functionality: “Back office”

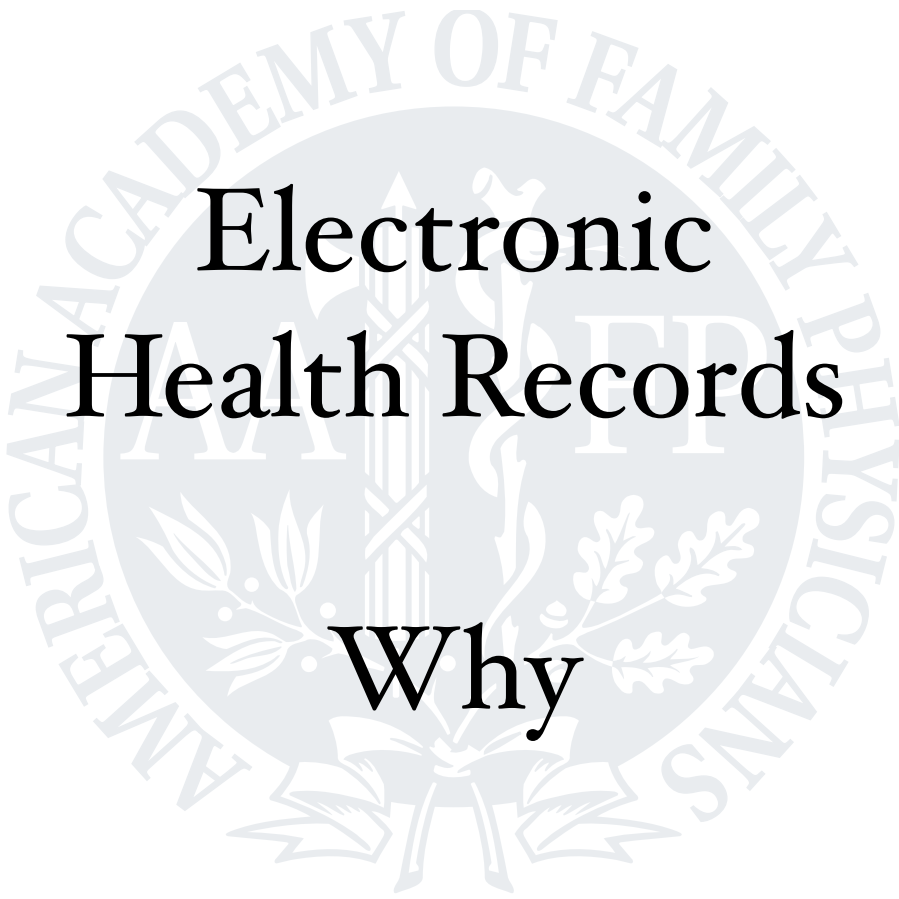


- Integration with physician documentation: Scheduling F/U appt., sending out bill
- Claims scrubbing
- Quality reporting
- Population Management

EHR Functionality: IT Specific



- Security
 - Confidentiality
 - Integrity
 - Availability
- Standards
- Remote Access
- Latency / Response time
- Customization
- Universal Policies & Flexibility
- Reporting tools
- Controlled Vocabularies
- Usability
- Support



Electronic Health Records

Why



Benefits of EHR and Practice Automation



Potential Productivity and Financial Improvement

- * Fewer chart pulls
- * Improved efficiency of handling telephone messages and medication refills
- * Improved billing
- * Reduced transcription cost
- * Increased formulary compliance and accurate prescription leading to fewer pharmacy call backs
- * Improved coding of visits

Job Satisfaction Improvement

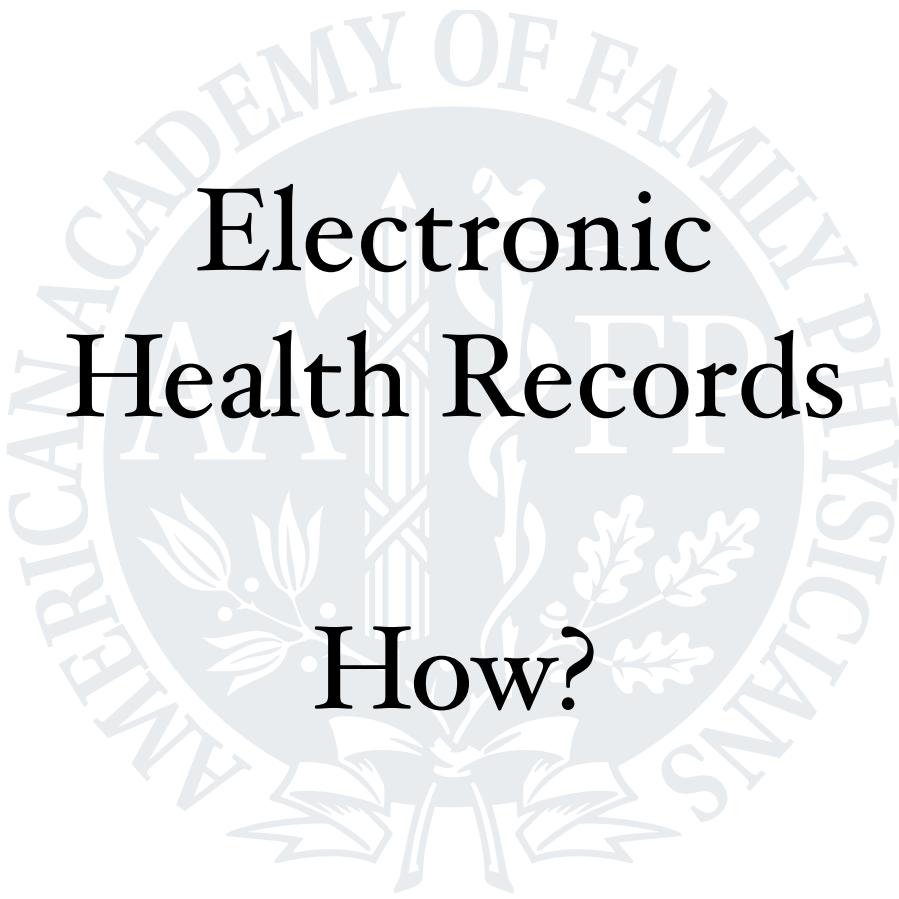
- * Fewer repetitive, tedious tasks
- * Less "chart chasing"
- * Improved intra-office communication
- * Access to patient information anywhere
- * Easier compliance with regulations
- * Demonstrable high-quality care

Quality of Care Improvement

- * Easier preventive care leading to increased preventive care services
- * Point-of-care decision support
- * Rapid and remote access to patient information
- * Easier chronic disease management
- * Integration of evidence-based clinical guidelines

Customer Satisfaction Improvement

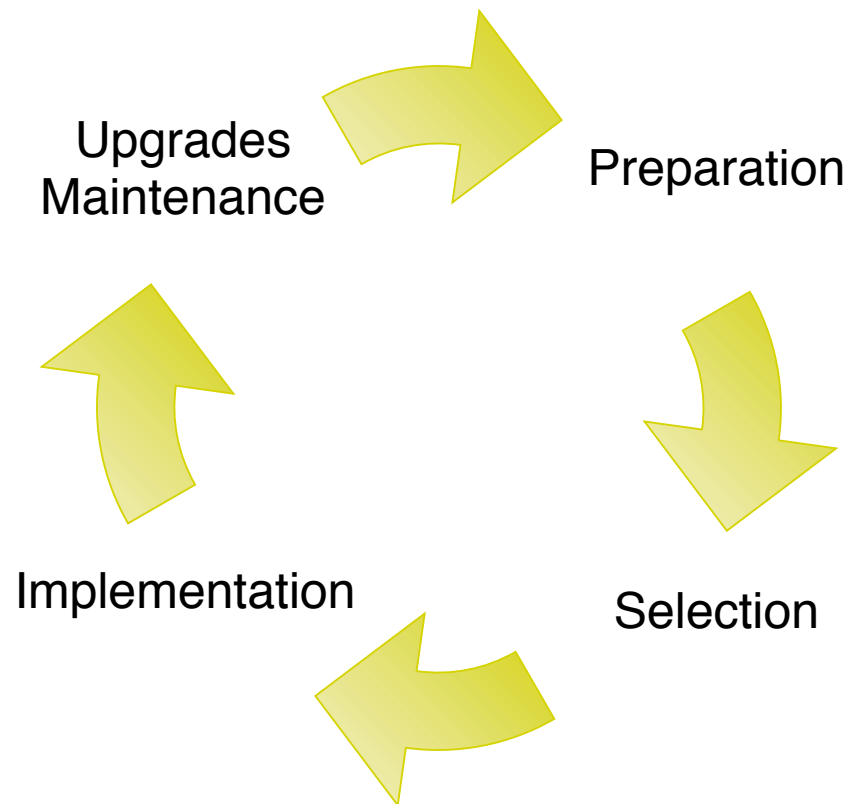
- * Quick access to their records
- * Reduced turn-around time for telephone messages and medication refills
- * A more efficient office leads to improved patient access to physicians
- * Improved continuity of care (fewer visits without the chart)
- * Improved delivery of patient education materials



Electronic Health Records How?



Skilled execution: understanding the HIT adoption cycle and barriers to it

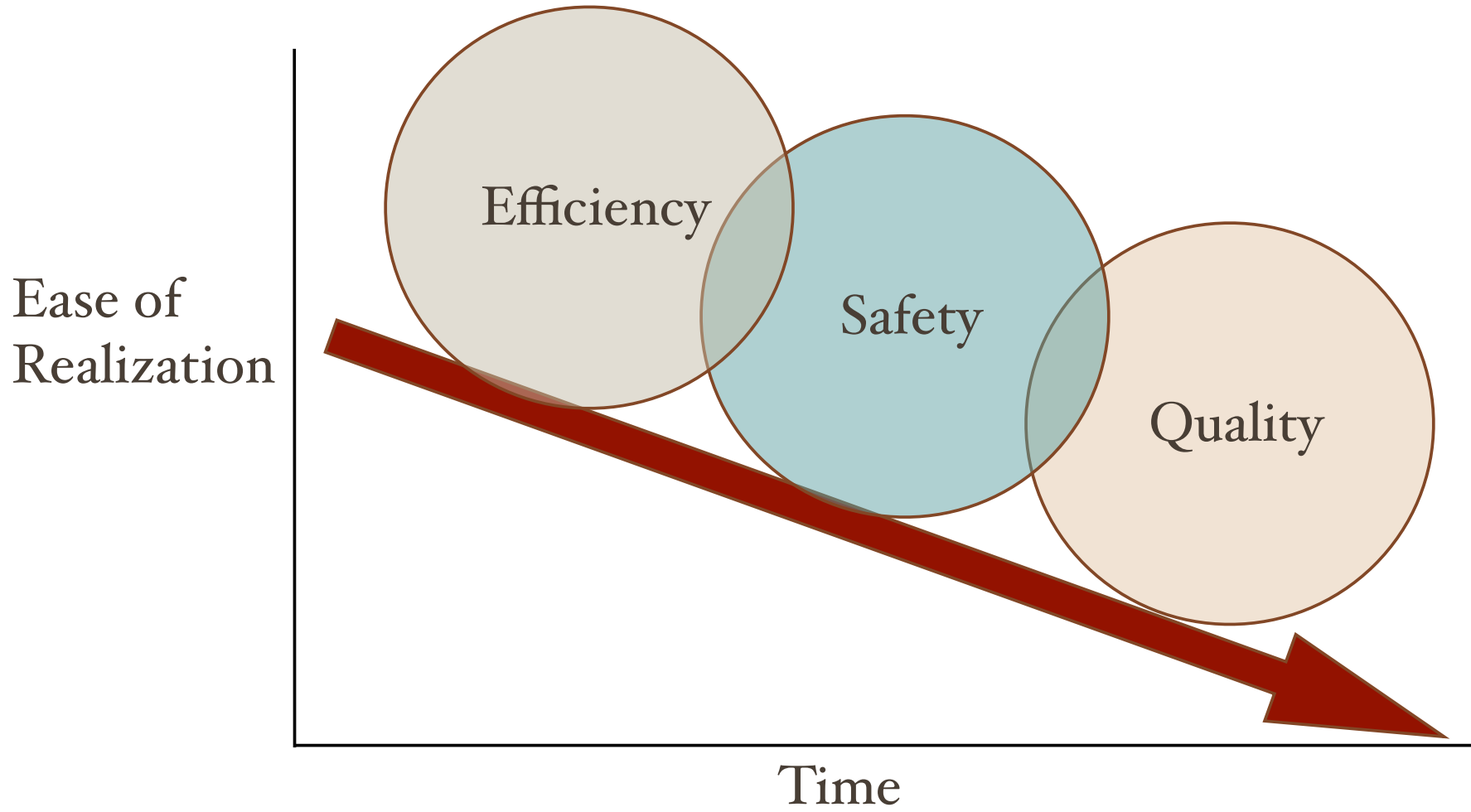


Preparation

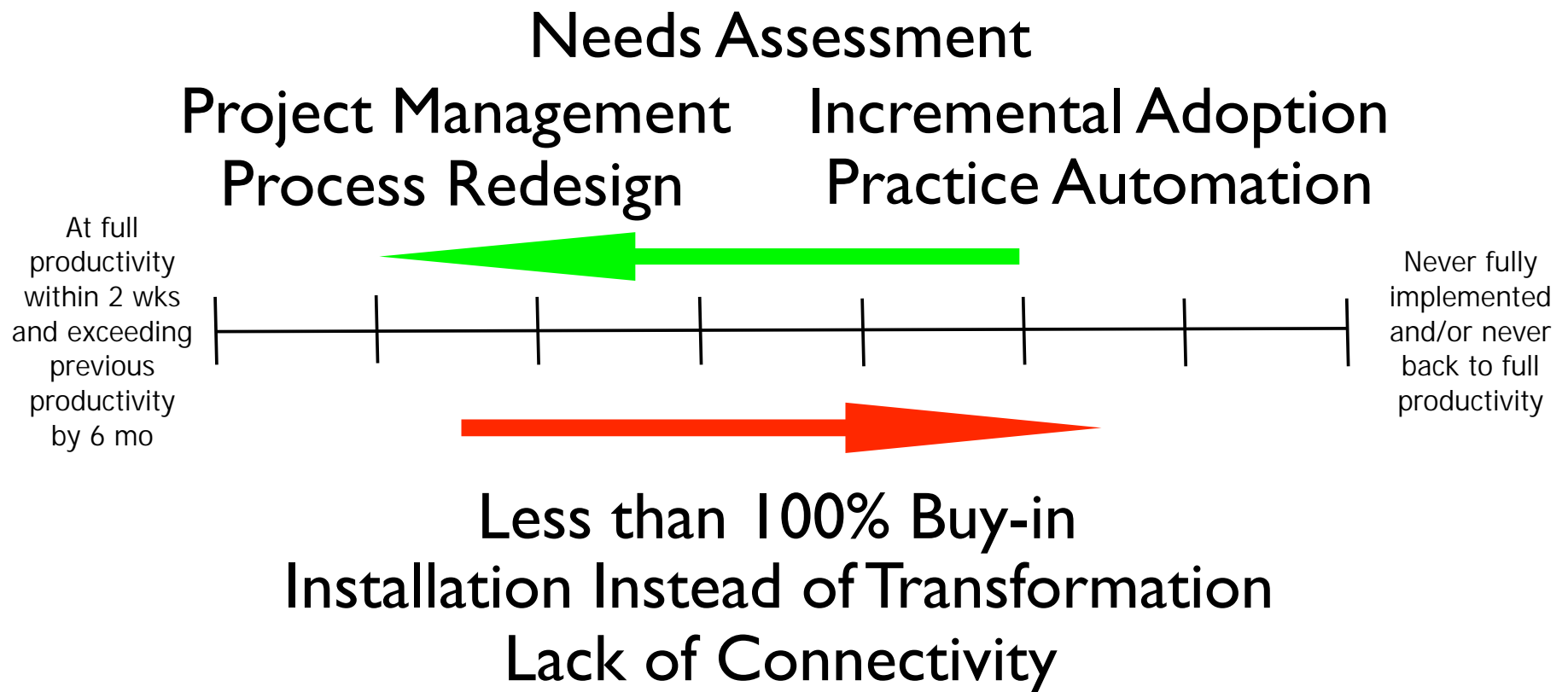


- 🔍 Planning and Project Management
- 🔍 Organizing existing data
- 🔍 Work with receiving institutions to send electronic data instead of paper
- 🔍 Look for easy, early wins

Timing benefits and getting them to flow downhill, by design



What AAFP members are learning about successful selection and implementation



Selection

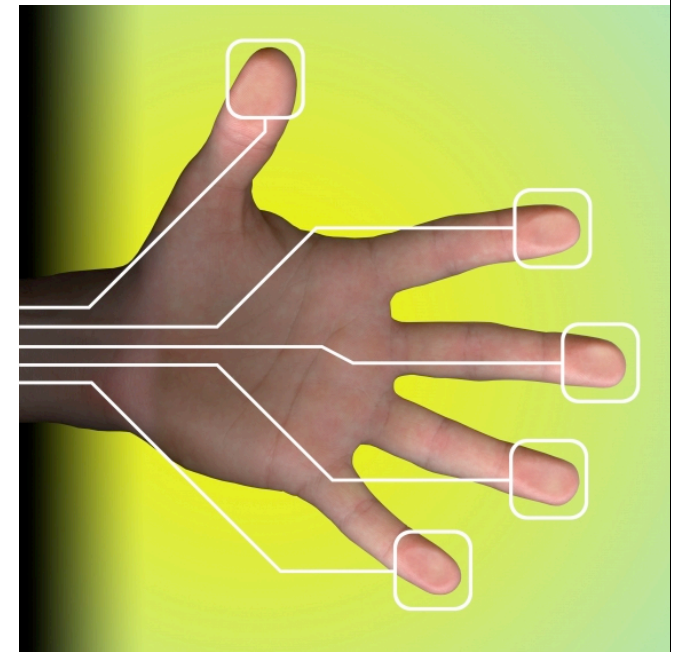


- 🎧 Needs Assessment
 - Clinical - Business - Technology
- 🎧 Understanding features and functions
- 🎧 Understanding HIT standards

What to look for in an EHR?



- Has the set of functions you need for your practice
- Good usability: esp. with repetitive and complex tasks
- Good support
- Stable Company: User base; Product updates
- Help with transformation of your practice



eHealth Initiative EHR Master Quotation Guide[®]

Tool to help with
final selection, pricing, and contracting of EHRs

<http://www.centerforhit.org/x1391.xml>

Guide Contents



- Vendor Software** - this section includes costs related to the basic and optional modules of an EHR product, licenses and alternative service provider (ASP) user fees
- Interfaces** - software which allows connection and communication to labs, pharmacies and other entities
- Third Party Software** - this can be software for components of the EHR provided by other companies such as patient education materials, drug interactions and general system software (e.g., database or operating system software)
- Conversion Services** - costs of vendor to convert existing paper or electronic data to the EHR system
- Implementation Services** - vendor services such as planning or readiness assessments, EHR & interface installations, project testing and project management
- Training Services** - cost of customer training components from vendor
- Data Recovery Services** - vendor services to back up data offsite and recover data
- Annual Support & Maintenance** - costs of the components of annual support based on varying levels of service support
- Financing Alternatives** - costs of buy or lease options and terms of payment
- Terms** - schedule of payments

Guide Section Contents



For each section of the Master Quotation, there are:

- ◆ Red flags - issues of concern.
- ◆ Frequently Asked Questions (FAQ's) - common questions and answers related to the master quotation.
- ◆ Glossary of terms.

<http://www.centerforhit.org/x1391.xml>

Third Party Software

EHR Specific

Vendor: In the spaces below, indicate whether these functions are included in the above quote. If not, identify if they are available and the additional fees to access those functions.

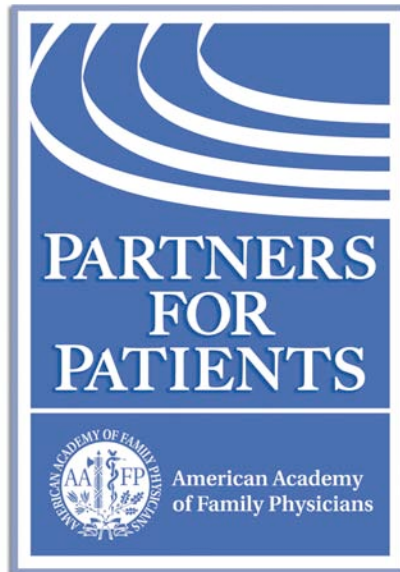
Option	Included in Base Price Above (Yes/No)	Available for Additional Fee (Yes/No)	Annual Cost (In addition to the Quote from Table X)	Comment Reference
Patient Education				
Drug Interaction				
Drug/allergy				
Drug/diagnosis				
ICD9 data base				
CPT4 data base				
SNOMED or SNOMED CT				
HCPCS database				
Voice recognition				
Insurance plan and/or PBM formularies				
Best Practices / National Guidelines				

Comment: Note in the space below any clarifications related to the identified option, the product's ability to support it and any additional fees that will apply.

<http://www.centerforhit.org/x1391.xml>

Sample Section

Partners for Patients 2005 EHR Market Survey



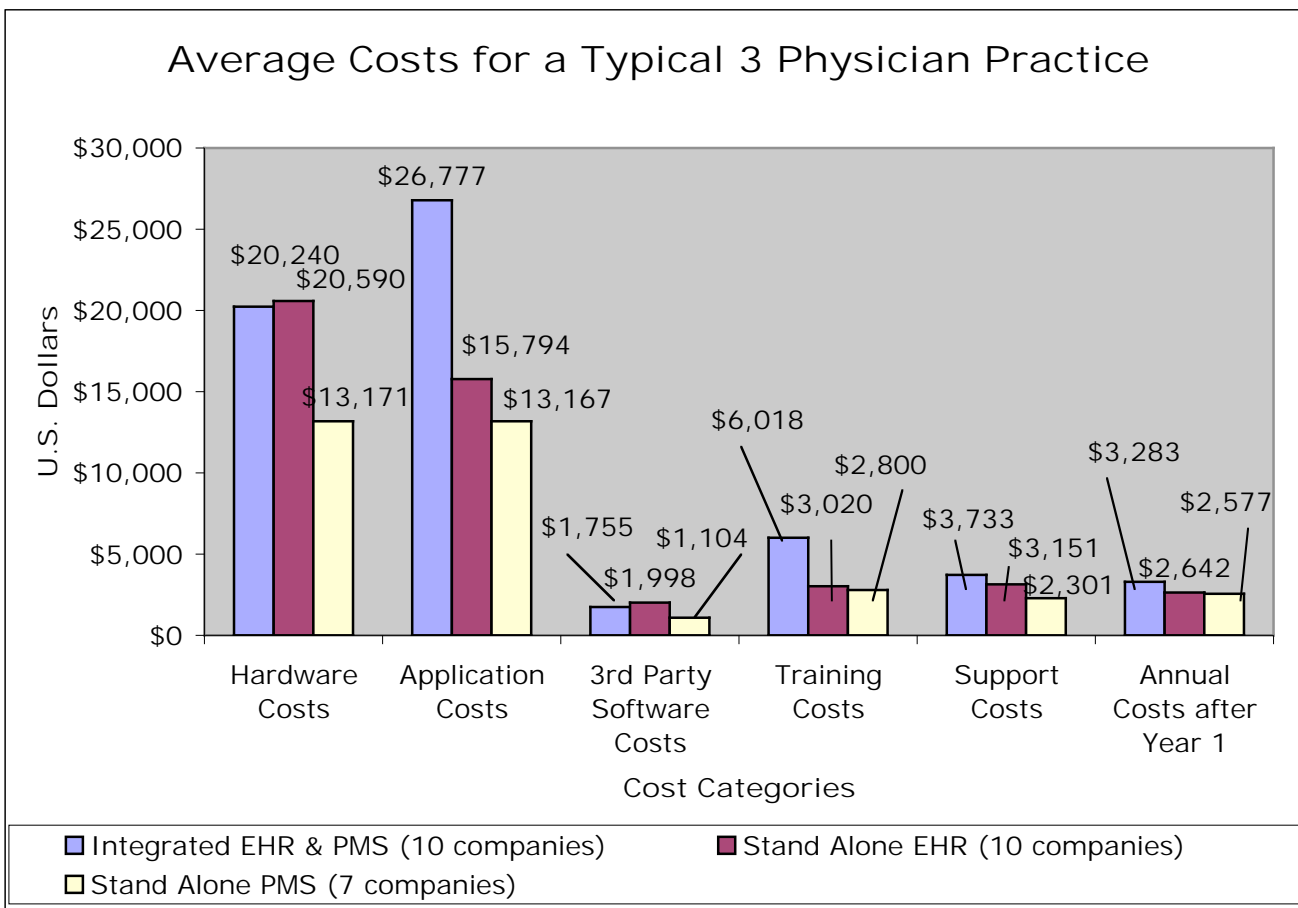
Full Report Available here:

<http://www.centerforhit.org/x983.xml>

Current Pricing for HIT in Small and Medium Size Medical Practices



Average Costs for a Typical 3 Physician Practice



Source: AAFP/CHiT Partners for Patients Vendor Survey, findings, May 2005 <http://www.centerforhit.org/x983.xml>

Current Pricing for HIT in Small and Medium Size Medical Practices (typical 3 physician practice)



	Average total cost	Cost per physician per year (over 3 years)	Cost range
Integrated EHR	\$65,088	\$7,232	\$3,000 - \$134,750
Stand alone EHR	\$49,837	\$5,537	\$3,000 - \$128,000
Stand alone PMS	\$37,697	\$4,188	\$3,000 - \$97,000

Source: AAFP/CHiT Partners for Patients Vendor Survey, findings, May 2005 <http://www.centerforhit.org/x983.xml>

Small Practice's EHR Toolbox



Very Important



Peers

- AAFP EMR list
- EMRUpdate.com *(not AAFP sponsored)*
- “Find a doctor in a practice like mine”



EHR Reviews

- Physician Product Reviewer (centerforhit.org)
- Consultant reports (Klas, AC Group)

Very Important



Quality Improvement methods

- AAFP Quality Initiative (www.aafp.org/quality.xml)
- Institute for Healthcare Improvement (www.ihp.org)



EHR

Very Important

Very Important

Very Important



Site Visits, Site Visits, Site Visits



Health-IT Standards



A “Standards Stack”



Repository Standards

Messaging & Exchange Protocols





Content Standards

Controlled Terminologies

Standard Data Types and Storage

ASTM Continuity of Care Record, CCR Standard



-  A core data set of the most relevant current and past information about a patient's health status and healthcare treatment
-  Prepared by a practitioner at the conclusion of a healthcare encounter
-  Enables the next practitioner to readily access such information
-  Patient focused



Data Objects in a CCR

Header
Patient
To
From
Purpose
Date

Body	
Adv. Directive	Medical Equip
Alerts	Plan of Care
Encounters	Problems
Family Hx	Providers
Func. Status	Results
Insurance	Social Hx
Immunizations	Support
Medications	Vital Signs

Footer
Actors
Comments
Signatures

Continuity of Care Record

Date Created: Sat Sep 24, 2005 at 12:05 PM UTC
From: Dr. Peter Primary (Primary Care Provider)
 CCR Physician Group
 Solventus CCR Generation Tool V1.0
To: Dr. Myron Mitral (Consulting Provider)
Purpose: Request For Consult

Patient Demographics

Name	Date of Birth	Gender	Identification Numbers	Address / Phone
Jane B Hernandez	Jan 16, 1968	Female	SSN: 888-88-8888	Home: 758 Las Olas Dr. Fort Lauderdale, FL33011

Alerts

Type	Date	Code	Description	Reaction	Source
Allergy	Initial Occurrence: Jan 15, 1970	245 (FDB Allergy)	Penicillins	Rash/Eruption - Severe	Dr. John Gray
Allergy	Initial Occurrence: Mar 29, 2005	305 (FDB Allergy)	Sulfa (Sulfonamides)	Fever - Moderate	Dr. Peter Primary
Allergy	Initial Occurrence: 2 years ago	152 (e-MDs Allergy)	Ragweed	Congestion - Mild	Dr. John Gray

Advance Directives

Type	Date	Description	Status	Source
CPR Status	Recorded Date: Jul 01, 2005	Cardioversion Only	Current and Verified	Dr. Peter Primary
Antibiotic Status	Recorded Date: Jul 06, 2005	Antibiotics Only	Current and Verified	Dr. Peter Primary

Problems

Type	Date	Code	Description	Status	Source
Diagnosis	Onset: Apr 01, 1999	402.11 (ICD9-CM)	Congestive Heart Failure	Active	Dr. Peter Primary
Diagnosis	Onset: Mar 01, 1984	250.02 (ICD9-CM)	Diabetes Mellitus	Active	Dr. Peter Primary
Diagnosis	Onset: Aug 08, 1990	403.10 (ICD9-CM)	Hypertension	Active	Dr. Peter Primary
Diagnosis	Onset: Jan 25, 2003	410.80 (ICD9-CM)	Myocardial Infarction	Active	Dr. Peter Primary

Procedures

Type	Date	Code	Description	Location	Substance	Method	Position	Site	Status	Source
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The original purpose of the CCR



Exchange of the core data needed for transfer of patient care from clinician to clinician to improve continuity of care and patient safety

The other potential uses of the CCR



Direct
Transfer to
patient



Exchange
with
PHRs



Data
Aggregation



Questions?



<http://www.centerforhit.org/>

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