



# MAKING THE CASE FOR ELECTRONIC HEALTH RECORD

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# MAKING THE CASE



- **Why a business case?**
- **What constitutes a business case?**
- **How to construct a business case**
- **How to use a business case**
  - **Case studies**
  - **Panel on business case**

# WHY A BUSINESS CASE?

- Which is the best business case:

A.



- Are you planning to open a tourist destination in a quaint old town?

B.



- Are you *nouveau riche* and want to show off?

C.



- Do you want to get to where you're going inexpensively and don't care about cup holders?

# WHY BUSINESS CASE FOR EHR?

- **To ensure EHR has value for organization**
  - Strategic imperatives
- **To determine the nature of HIT needed**
  - Migration path
- **To manage risk**
  - Readiness assessment
- **To establish expectations for use of EHR**
  - Goal setting
- **To ensure organizational capabilities to deliver results**
  - Cost/benefit analysis and ROI
  - Value proposition
  - Commitment to benefits realization

# STRATEGIC IMPERATIVES

- **Competitive advantage?**
  - **Recruitment and retention?**
  - **Stay independent? Remain viable?**
  - **Expand the size of the organization?**
  - **Form strategic partnerships for patients? With patients?**
  - **Improve quality of life for staff? Reduce hassles?**
  - **\_\_\_\_\_?**
- 
- ***Where do you want to be 2, 5, 10, 25 years from now? What factors will help you get there?***

# MIGRATION PATH

Timeline	Current	Phase I	Phase II	Phase N
Goals				
Applications: - Financial/ Administrative - Operational - Clinical		Registry Document imaging	e-Rx Pharmacy e-MAR	EHR CPOE
Technology - Database - Network & Infrastructure - Interfaces				
Operations - People - Policy - Process				

THERE IS NO  
ONE RIGHT WAY,  
BUT  
DEPENDENCIES  
THAT MUST BE  
ADDRESSED

- **EHR requires software:**
  - In a hospital, this may be multiple components
  - In a clinic, this may be a comprehensive package
- **Most EHR implementations require upgrading hardware, network capabilities, and addressing interoperability**
- **But in all cases,**
  - People must be convinced to use the EHR
  - Policy must establish expectations
  - Processes will be changed

# READINESS ASSESSMENTS



## ○ Organizational culture, management and leadership

- *Is EHR viewed as a requirement by government? Or, a means to achieve strategic imperatives?*
- *Is incumbent vendor driving the migration path? Or, is there a commitment to investing in thorough planning and evaluation?*
- *Are continual process improvement, benchmarking, and managing to budget hallmarks of the organization?*

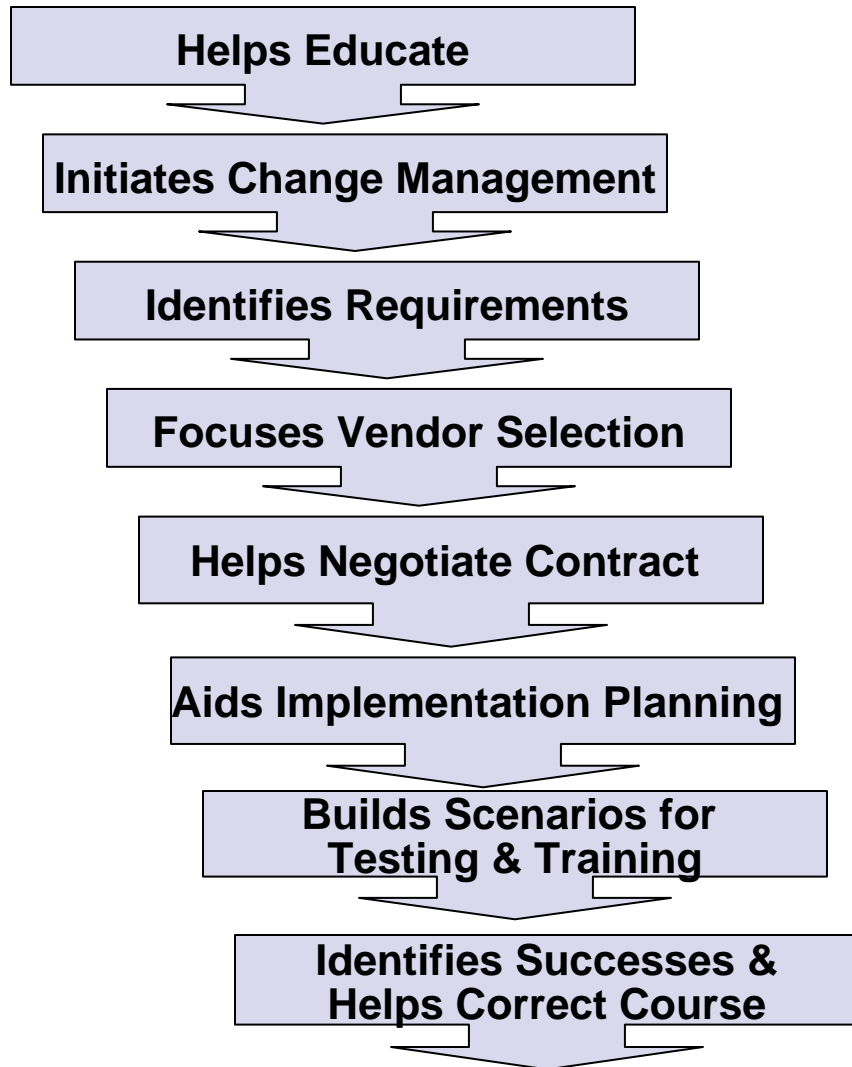
## ○ Operations, finances, budget, ROI

- *Does organization have a clear picture of the total **cost** of ownership and level of **effort** required to achieve EHR?*
- *Is there a commitment to clinical transformation?*
- *Are internal resources available to “do it right?”*

## ○ Technology

- *Are current applications being used 100% effectively?*
- *Is technical infrastructure optimal for a mission-critical system?*

# GOAL SETTING



- **Adaptable** – tailored to size and risk of EHR project
- **Oriented to strategic imperatives**, not to technology
- **Comprehensive** – addresses who, what, why, when, how
- **Understandable** – clearly relevant, logical and, although demanding, simple to complete and evaluate
- **Measurable** – all key aspects can be quantified so achievement can be measured and reported
- **Transparent** – everyone has access, without blame
- **Accountable** – commitments of support for and achievement of benefits are clear

# GOAL SETTING CONVERSATION

- **What are your goals for EHR?**
- **Yes, they can! How will EHR help you do that?**
- **That's right; so, how does the chart get completed?**
- **You shouldn't have to know how to type. Templates will help you capture much of your data through point-and-click.**
- **Yes, the EHR can take your data and translate that into narrative notes for you.**
- **You can still have those notes – special fields are available for you to type in just a few key words for optional information you want to capture.**

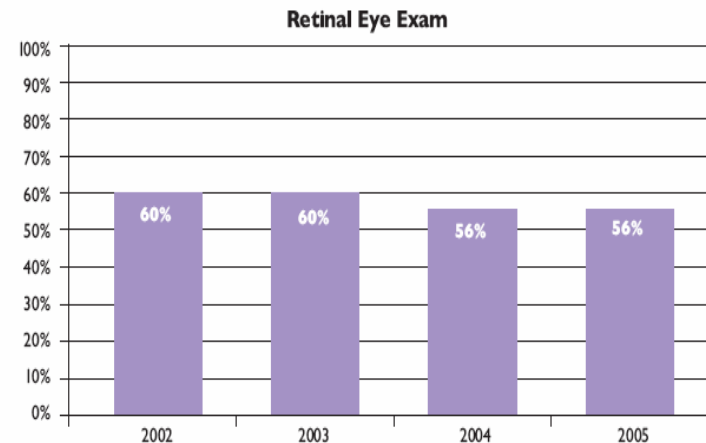


- **I've heard they reduce transcription costs.**
- **Hmmm, I guess we won't be dictating any more?**
- **Ohhh, but I don't know how to type!**
- **But the next time I see the patient, I want to read narrative notes. And yet, I still want discrete data for my reminders and alerts.**
- **But isn't that pretty sterile? How will I make a note to myself to ask my patient about his tomato garden? That seems to calm him down.**
- **So maybe I can reduce transcription costs by as much as 85% - just dictating a very unusual or complex case!**



# BENCHMARK EXAMPLE

Retinal Eye Exam	Weighted Rate	± 95%	Numerator	Denominator (Patients sampled)	Total Eligible
Retinal Eye Exam	55.9%	1.2%	3,960	6,294	52,083

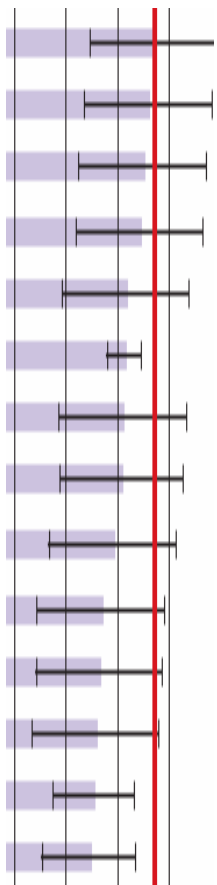


## ○ Current State:

- Retinal eye exam rate is currently low and getting worse!

## ○ Goal:

- Improve performance on Community Measures by 20% within one year of adopting EHR through:
  - Patient entry of health maintenance data
  - Reminders to providers to ask about exams
  - Access to eligible referral network



# COST/BENEFIT ANALYSIS & ROI

- **Hardware**
- **Software**
- **Implementation and training**
- **Maintenance**
- **Support**
- **Additional Costs**
  - Selection expenses
  - Hardware & software in support of network, portal, backup and storage, disaster planning
  - Upgrades, interfaces, subscriptions
  - Attorneys/Consultants for contracting, technical assessment, training
  - Staff upgrades and additions
  - Chart conversion, data conversion
  - Physical site preparation (e.g., data center construction [HVAC], war room, training room, mountings, kiosks)
  - Electrician, cleaners
  - Value of temporary productivity drop (e.g., overtime, lost revenue, locums)
  - Opportunity cost of delays and rework
  - Increased cost of utilities
- **Cost savings**
  - Outsourced services (e.g., transcription, coding, billing, copy service, IT)
  - Clerical attrition
  - Paper supplies
- **Productivity improvements**
  - Overtime reduction
  - Time savings leads to increased number of patients able to be seen
- **Cost avoidance**
  - Warehousing charts
- **Revenue increases**
  - Patient follow up leads to increased number visits
  - Improved coding
  - Reduced lost charges
  - Discounts/incentives for P4P
- **Contribution to profit**
  - Avoid repeat tests
  - Less expensive medications
  - Appropriate referrals
  - Reduced denials

# COST ASSUMPTIONS

Cost Elements	Assumptions	Initial Unit Cost	Qty	Total Initial Cost	Annual Cost Yr <u>1</u>	Annual Cost Yrs <u>2</u> - <u>5</u>	Total Annual Costs
<b>HARDWARE</b>							
Main Server	<i>May be time shared</i>						
Backup Server	<i>May be time shared</i>						
Other Server(s)	<i>Specify purpose(s)</i>						
Storage Devices	<i>Describe</i>						
Storage Media	<i>Describe</i>						
Input Devices	<i>Workstations</i>						
	<i>Other: _____</i>						
Output Devices	<i>Printers</i>						
	<i>Other: _____</i>						
Network Devices	<i>List</i>						
Telecom Devices	<i>List</i>						
Electrical Devices	<i>List</i>						
<b>SOFTWARE</b>							
Operating System	<i>Describe license</i>						
EHR Package	<i>Describe license</i>						
Modules							

- Use a worksheet to sketch out anticipated costs
- Initially, make estimates; then fine-tune as vendor quotes are received
- Distinguish one-time from on-going costs
- Include detailed assumptions

# BENEFITS ESTIMATIONS

Benefits	Current Costs	Migration Path Phases 1 and 2			Migration Path Phases 3 and 4	
		Year _	Year _	Year _	Year _	Year _
Overtime reduction						
<i>Assumptions:</i>						
Outsourcing reduction						
<i>Assumptions:</i>						
Other productivity						
<i>Assumptions:</i>						
Paper chart supplies						
<i>Assumptions:</i>						
Clerical chart costs						
<i>Assumptions:</i>						
Transcription cost						
<i>Assumptions:</i>						

- Use a worksheet to sketch out benefits
- Record your current costs as baseline
- Estimate (conservatively) benefits over time, based on migration path
- Include detailed assumptions

# PAYBACK PERIOD ROI

- Payback period is number of years it takes for cash flow to recover initial cost (e.g., 3.3 years)
- Should be as short as possible, e.g., 2-3 years; generally not more than 5 years

	Initial	Yr <u>1</u>	Yr <u>2</u>	Yr <u>3</u>	Yr <u>4</u>	Yr <u>5</u>	Total
<b>Benefits</b>		\$15,000	\$35,000	\$47,000	\$47,000	\$47,000	\$191,000
<b>Costs</b>	\$115,000	\$3,200	\$4,500	\$4,500	\$4,500	\$4,500	\$136,200
<b>Cash Flow</b>	(\$115,000)	\$11,800	\$30,500	\$42,500	\$42,500	\$42,500	\$54,800
<b>Pay Back</b>		(\$103,200)	(\$72,500)	(\$30,000)	\$12,500	\$55,000	

- **Purpose of ROI calculation**
  - Appreciate benefits
  - Compare projects
  - Identify funding
  - Solicit financing
  - Establish expectations

# CASE STUDY (\$ M)

<u>Cost of EHR</u>	\$11.7	
<u>Benefits</u>	<u>5 Yr Savings</u>	<u>Impact</u>
Medical Records		
Chart pulls/filing	\$ 4.0	Access data from EHR
Summary letters	0.1	Use standard templates
Transcription (revenue)	<u>2.6</u>	Enter data on EHR
Sub total	\$ 6.7	
Charge Vouchers		
Real time process		Document admit & daily activity in EHR
A/R		Structured data entry at POC
Coding		
Sub total	\$ 0.8	
QI/UM - External referrals	\$ 2.1	Use referral decision support
Radiology (& Lab?)	\$ 0.3	Use clinical decision support
Rehab (& Other) Reception/Forms	\$ 0.3	Minimum chart pulls
Research	\$ 0.3	Screen for pts thru structured data entry & alerts
Malpractice premium	\$ 0.2	Use clinical guidelines at POC
Dr. X's productivity factor (e.g., Manage refills)	<u>\$ 1.0</u>	Access/enter data on EHR
TOTAL	\$11.7	

# PATIENT SAFETY INTERVENTIONS

<b>Intervention</b>	<b>Means of Benefit</b>	<b># Events</b>	<b>Effect</b>	<b>Savings*</b>
<i>Lab charge display</i>	<i>Reduces overall lab test costs</i>	<i>700,000 displays</i>	<i>5%</i>	<i>\$1M</i>
<i>Duplicate drug warning</i>	<i>Prevents overdose</i>	<i>100,000 warnings</i>	<i>30% <math>\Delta</math> 30% X</i>	<i>**</i>
<i>Drug-drug interaction</i>	<i>Prevents ADEs</i>	<i>27 ADE</i>	<i>95%</i>	<i>\$160,000</i>
<i>Shift summary</i>	<i>Reduces medical management errors</i>	<i>120 MME</i>	<i>80%</i>	<i>\$500,000</i>

Adopted from Teich et al. Second Annual Davies Recognition Proceedings, CPRI, 1996

\* Based on annual average additional hospital costs to manage ADE, including extended LOS, additional testing and therapeutic measures. Cost does not include detrimental effect to patient or liability hospital may incur.

\*\* Reduction in actual ADEs captured elsewhere in table



# VALUE PROPOSITION

- **Desired outcomes that**
  - Can be quantified, but not in monetary terms
  - Cannot be quantified, but are able to be expressed and appreciated
- **Examples:**
  - Go home every day on time
  - Know I'm giving the best quality of care for my patients
  - Feel less hassled
  - Have a broader pool of qualified candidates from which to recruit

# VALUE OF CLINICAL DECISION SUPPORT (TO HOSPITAL)

Clinical Targets and Results Achieved with Clinical Decision Support		
CDS Method	Clinical Target	Result
Mandatory medication order components & nurse work lists	Medication errors	75% reduction in transcription errors 50% reduction in missed med doses 30% reduction in wrong med or route
Branching logic embedded in order pathways	Vancomycin use	75% reduction in inappropriate use & 50% reduction in vanco resistant enterococcus
Alert screens	Pt confidentiality Drug-allergy interaction Unsigned orders	Minimized confidentiality breaches  85% reduction in unsigned orders
Advice screens	Cardiac injury markers	80% increase in Troponin orders 60% decrease in CK orders for MI
“Inconvenience” pathway	Pharmacy costs	Reduced nono-formulary drug use
Autopage of orders	Decreased delivery time for STAT meds Improved ancillary productivity	40% reduction in turn around time of STAT meds Eliminated need for personnel in RT office to manage workflow
Just-in-time access to electronic knowledgebases	Widespread availability of high quality clinical resources	MicroMedex on all workstations Med Library and MedLine search on all workstations

# BENEFITS REALIZATION

	Cost/Benefit <i>Estimation</i>	<i>Management</i>	Benefits Realization <i>Measurement</i>
When	Before		After
Why	Good investment? Establish expectations		Success? Correct course
What	All costs Benefits portfolio		Quantifiable changes
How	Estimated based on process assessment		Actual based on metrics
CSF	Clear vision Executive support Realistic expectations		Plus . . . Valid metrics Process assessment skills

- You can't manage what you can't measure
- But, you can't measure if you don't manage

# PANEL DISCUSSION

- **Do you believe you estimated the cost of your EHR project fairly accurately?**
  - If yes, what helped you most to do so?
  - If not, what costs exceeded expectations and what would you recommend to those just starting out?
- **Did you develop measurable goals prior to selection?**
  - If so, did you collect baseline data and follow up with a benefits realization study? Was this useful?
  - If not, how are you evaluating the value you are achieving? Is this sufficient for you? Do you think a formal goal setting process may have led to greater success?
- **What was the most important aspect of your overall value proposition? What was the least important or most disappointing result, and are you still working toward that or did its importance diminish in light of other benefits?**



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