

Challenges in Hospital Roll Outs of Comprehensive EHR Systems

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Background

- **U.S. healthcare system at a cross-road**
 - High costs, variable quality major challenges
- **Paper-based records part of the problem**
 - Lead to inefficiencies, duplications, and errors
- **Electronic records holds promise**
 - Numerous studies showing better quality
 - Some models suggest savings of up to \$100B

Background

- **No good data on EHR adoption in U.S. hospitals**
 - Prior studies report rates from 5% to 57%
- **Previous estimates mired with challenges:**
 - Unclear or poor definitions of EHRs
 - Non-random samples
 - Poor response rate
- **Having accurate data critical for policy**
 - Allows for establishment of baseline
 - Allows for tracking over time

Research Questions

- What proportion of U.S. hospitals have an EHR?
- What factors are associated with higher adoption levels?
- What do hospitals see as barriers and facilitators to EHR adoption?

Survey development

- **Development of a new survey instrument**
 - Synthesis of prior surveys
 - Expert input
- **Focused on adoption of clinical functionalities**
 - Implementation of 32 clinical functionalities
 - Physician notes
 - Computerized Physician Order Entry
 - Lab results
 - Etc.
 - Where functionalities are implemented

Survey Administration

- **All acute care AHA member hospitals**
 - Mailed and electronic survey with phone follow-up
 - Fielded between March to September, 2008
- **EHR definition by an expert panel**
 - National experts in HIT, policy, and research
 - Modified Delphi process to achieve consensus

Results

■ Responses from 3,049 hospitals

- Response rate 63.1%

■ Comprehensive EHR:

- Adoption of 24 key clinical functionalities across all major clinical units

■ Basic EHR:

- Adoption of 10 key clinical functionalities in at least one clinical unit
 - Medication lists
 - Problem lists
 - Physician notes
 - CPOE for medications
 - Etc.

Nationwide EHR Adoption

	Comprehensive EHR	Basic EHR
Among non-Federal U.S. acute care hospitals	1.5%	7.6%

EHR Adoption - Functionalities

	Fully Implemented Across All Units	Fully Implemented in At Least One Unit
Clinical Documentation	%	%
Patient Demographics	78	7
Physician Notes	13	15
Medication Lists	45	17
Results Viewing		
Lab Reports	76	7
Computerized POE		
Medications	18	11

Adoption by hospital characteristics

Characteristic		Comprehensive EHR	Basic EHR	No EHR
Size	Small	1.2%	4.9%	93.9%
	Medium	1.7%	8.1%	90.2%
	Large	2.6%	15.9%	81.5%

P-value <0.001

Adoption by hospital characteristics

Characteristic	Comprehensive EHR	Basic EHR	No EHR
For-profit	1.3%	5.2%	93.5%
Private non-profit	1.5%	8.4%	90.1%
Public non-profit	1.7%	5.8%	92.4%

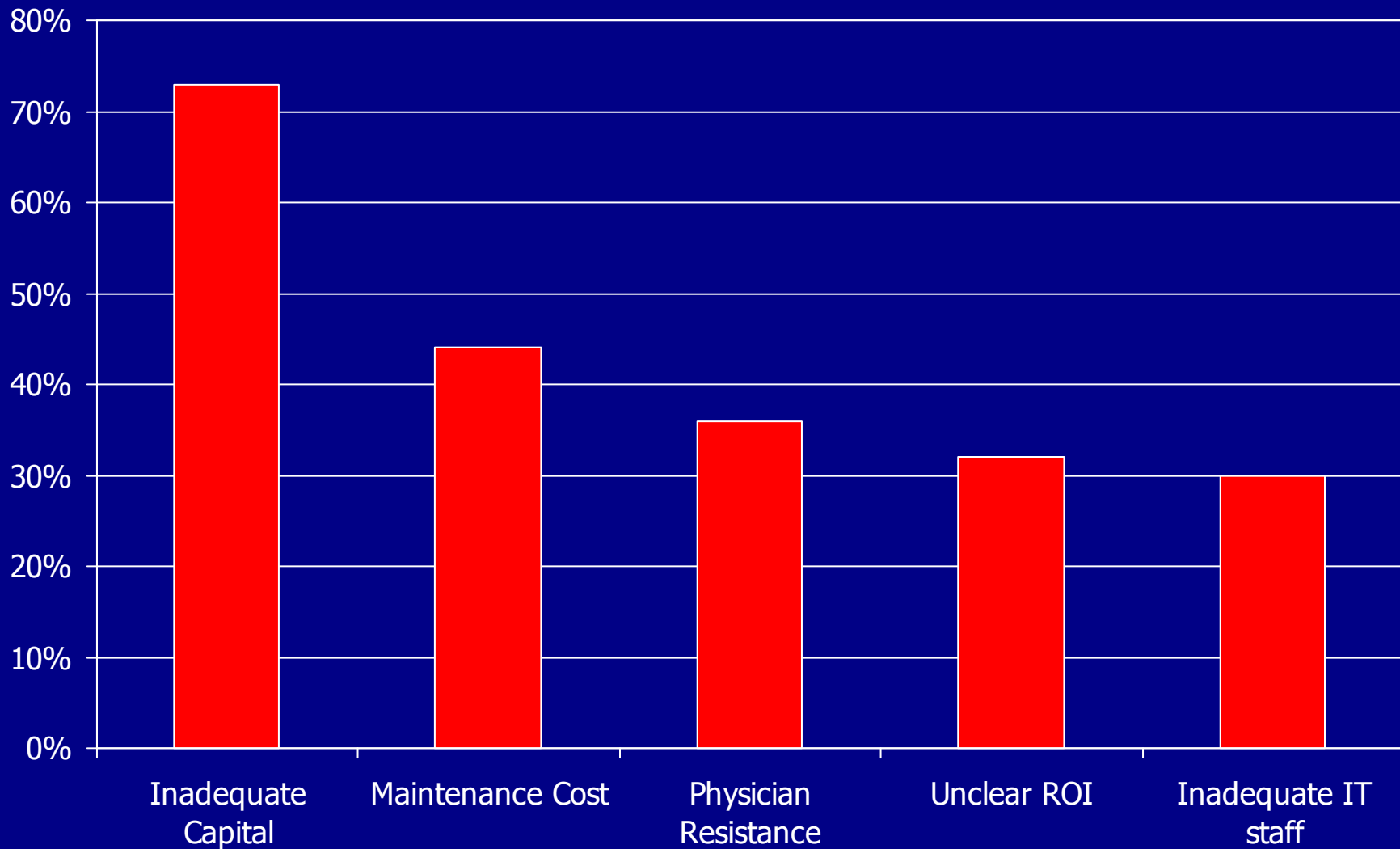
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Adoption by hospital characteristics

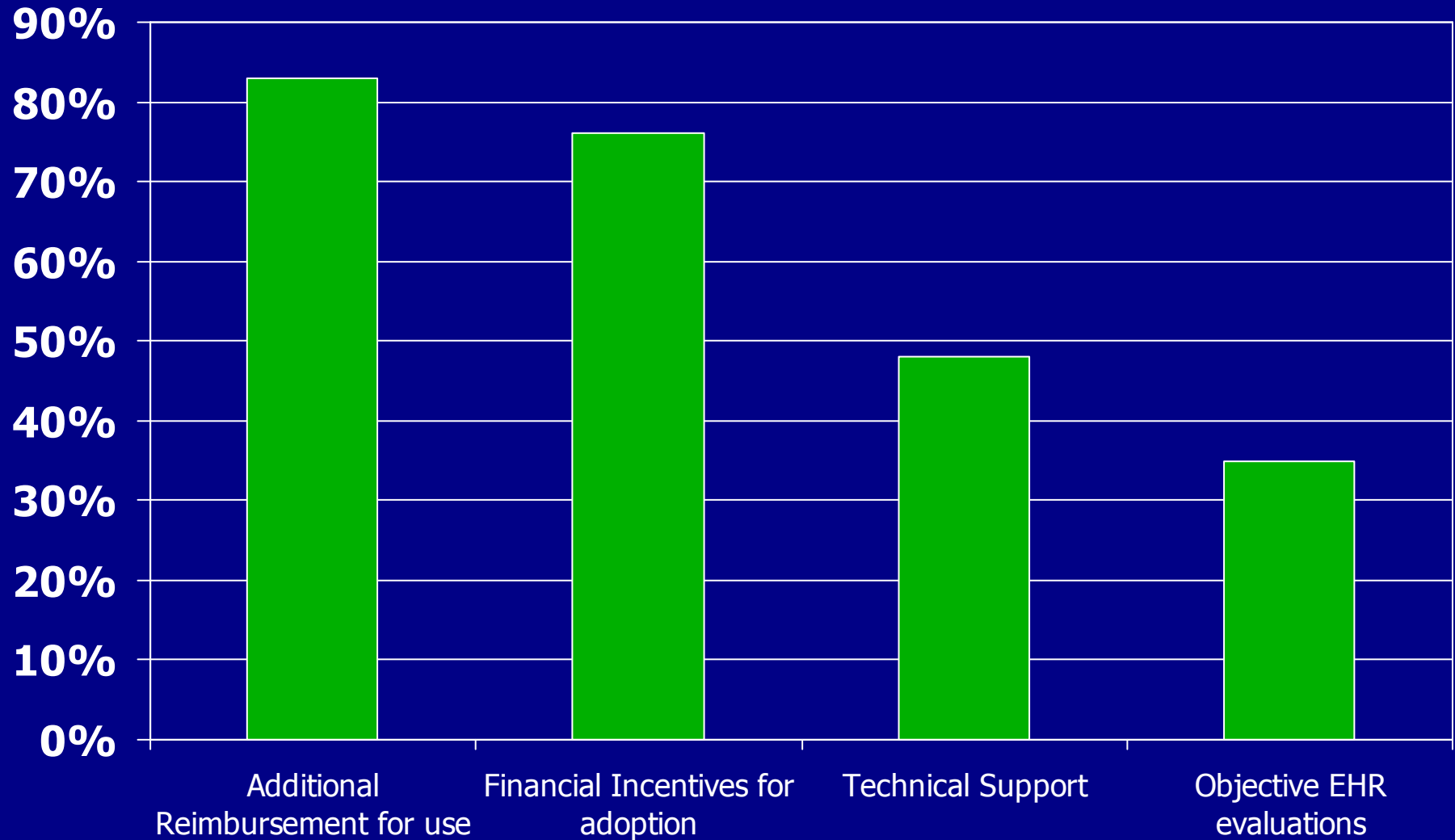
Characteristic	Comprehensive EHR	Basic EHR	No EHR
Major Teaching	2.6%	18.5%	78.9%
Minor Teaching	2.4%	10.6%	87.0%
Non-Teaching	1.3%	5.6%	93.1%

P-value <0.001

Barriers to adoption



Facilitators of EHR adoption



Summary

- **Low levels of EHR adoption in U.S. hospitals**
 - Less than 10% of U.S. hospitals have an EHR
 - CPOE, physician notes are main barrier
- **Many hospitals have key functions in place**
 - Good place to start
- **However, improving care will require:**
 - Advanced features such as widespread CPOE, decision support

Limitations

- Non-response bias
- Definitions of “EHR” are novel
 - No other definitions have greater acceptance
- Distinctions between “have” and “use”

Implications

- **Few hospitals have an EHR**
 - Very early on the path to a “wired” healthcare system
- **Cost is a major barrier**
 - Physician resistance, lack of IT staff also important
- **Stimulus spending of \$30B a good start**
 - Will get many hospitals over the hump
 - Will likely be inadequate for many others
- **Hard road ahead to achieving the President’s vision of near-universal use by 2014**

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