Adoption of Health IT among those that serve the poor: Implications for disparities in care

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Outline

- Motivation
- New national survey of EHR adoption
- Quality in hospitals that serve the poor
- Do EHRs make a difference?

Motivation

- Care for poor, minorities highly concentrated
- Concerns that HIT efforts may worsen disparities
  - Worries about the emergence of a "digital divide"
- Few empirical data
  - Prior studies focused *solely* on outpatient care
  - Results mixed
    - No relationship: DesRoches *NEJM*; Jha JECP
    - Worse access: Hing et al, JCPUS
- No data on hospitals that serve the poor

EHR Adoption in U.S. Hospitals

- New survey of all acute-care hospitals in the U.S.
- Asked about presence/absence of key clinical functions
- "EHR" definition based on expert panel process

Defining Hospitals that Serve the Poor

- No gold standard or direct measure
- Used Disproportionate Share Hospital (DSH) Index
  - Standard metric used by federal government
- Alternative approaches abound
  - Medicaid proportion
  - Public hospitals

Hospital Characteristics by DHS Index

	Highest DSH Quartile	Lowest DSH Quartile
Patient Population (Mean)		
Proportion of Medicare	40%	53%
Proportion of Medicaid	27%	9%
Proportion Black	18%	4%
Proportion Hispanic	4%	0.6%

**All P-values <0.001*

Jha AK et al *Health Affairs* 2009

Hospital Characteristics by DHS Index

		Highest DSH Quartile (%)	Lowest DSH Quartile (%)
Hospital Size	Small	29	39
	Medium	51	55
	Large	20	5
Teaching Hospital		15	3
Profit status	For-Profit	24	14
	Private non-profit	50	74
	Public	26	12

**All P-values <0.001*

Jha AK et al *Health Affairs* 2009

Adoption of key functions by DSH Index

Clinical Functionality	Highest DSH Quartile (%)	Lowest DSH Quartile (%)
Electronic Clinical Documentation		
Medication Lists	62	74
Physician Notes	26	33
Discharge Summaries	60	69
Advanced Directives	40	53

*all differences statistically signficant

Jha AK et al *Health Affairs* 2009

Adoption of key functions by DSH Index

Clinical Functionality	Highest DSH Quartile (%)	Lowest DSH Quartile (%)
Results Viewing		
Diagnostic Test Images	44	57
Diagnostic Test Results	63	71
Radiology Images	77	85

*all differences statistically signficant

Jha AK et al *Health Affairs* 2009

Adoption of key functions by DSH Index

Clinical Functionality	Highest DSH Quartile (%)	Lowest DSH Quartile (%)
Decision Support		
Clinical Reminders	35	40
Drug-Lab Interaction Alerts*	49	54
Computerized Order Entry		
Prescribing Medications	29	32
EHR		
Comprehensive or Basic	**9.7%**	**11.5%**

*Difference statistically signficant

Jha AK et al *Health Affairs* 2009

DSH Index & Quality

	Quality of Care	
	Estimate	P-value
Acute MI	-0.5%	<0.001
CHF	-1.0%	<0.001
Pneumonia	-0.9%	<0.001
Surgical Care	-1.5%	<0.001

Jha et al, *Health Affairs,* 2009

DSH Index & Quality

	No EHR		EHR		Interaction p-value
	Estimate	P-value	Estimate	P-value	
AMI	-0.7%	<0.001	0.7%	0.01	0.02
CHF	-0.5%	0.038	0.5%	0.39	0.35
Pneumonia	-0.6%	<0.001	0.6%	0.06	0.04
Surgical Care	-1.0%	<0.001	0.3%	0.48	0.05

Jha et al, *Health Affairs,* 2009

Summary

- Modest difference in adoption of HIT based on proportion of poor patient
- Hospitals that care for more poor patients have lower adoption levels for each function
  - Despite being large, urban, teaching hospitals

Summary

- Higher DSH Index associated with worse quality
  - One cause of disparities in care
- EHR adoption seems to eliminate disparities based on DSH Index
  - May be an early adopter effect
- Tracking this group will be a priority
  - EHRs may be an important equalizer