The Value of Electronic Health Records in Solo/Small Groups

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Background

- Policy concern about slow pace of EHR adoption, especially in solo/small groups
  - <10 billing providers (MDs, NPs, PAs)
  - Where 70%+ of physicians practice
  - EHR penetration—10 +/- %
- Limited data on EHR value
  - Costs, benefits

What are EHR capabilities?

- Viewing
- Prescribing/ordering
- Messaging internally
- Documenting
  - Templates
- Point of care reminders
  - Prevention/chronic care templates, reminders
- Reporting
  - Lists of patients needing services
  - Provider performance
- E-health
- Assistance for coding for billing

What does "value" of EHRs mean?

- "Value" = benefit/cost
  - Benefits: Efficiency + revenue enhancement + quality improvement (QI) + patient satisfaction
  - Costs: Financial + time cost + risk
- Value can vary by stakeholder

Objectives

- Describe EHR costs, benefits in solo/small group practices
- Identify factors affecting costs, benefits
- Outline implications for policy

Funding: Commonwealth Fund

Methods

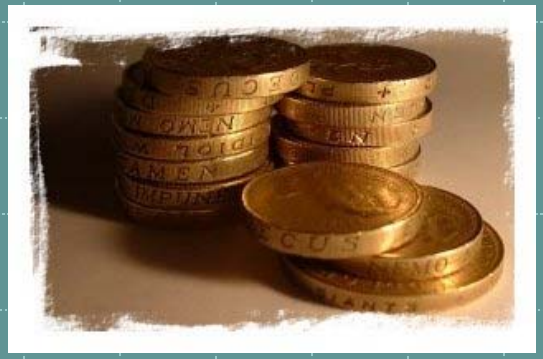
- Cross-sectional qualitative study
  - Good way to study emergent phenomena
- Random sample of 14 MD practices with EHRs
  - Customer lists from 2 vendors (PMSI & A4 HealthSystems)
  - Multiple selection criteria (e.g., years use, primary care)
  - 20% response rate; data from 2004-5
- Multiple methods
  - Semi-structured questionnaire for champions
  - Observation, structured survey for providers, reports
- Processed, analyzed data

Practice characteristics

- 3.3 full-time equivalent (FTE) billing providers
  - 2.5 FTE physicians
  - 0.8 FTE nurse practitioners
  - 1-6 billing provider FTEs
- Used EHRs for 2.2 years on average
- Most: practice management, lab systems interfaces
- Reimbursed fee-for-service

Financial costs are high

- $44,000/FTE provider initial
  - $37,000 to $63,600 for 12 of 14 practices
  - Mostly hardware, software/installation/ training, initial revenue losses due to reduced visits
- $8,500/FTE provider/year in on-going costs
  - Mostly hardware, software/support



EHR costs per FTE billing provider

EXHIBIT 1
Electronic Health Record (EHR) Financial Costs Per Full-Time-Equivalent (FTE) Provider, For Fourteen Solo/Small Group Practices, 2004–05

	Average per FTE provider[a] ($)	Percent of total	Median ($)	Minimum ($)	Maximum ($)
Initial costs	43,826	100.0	45,747	14,462	63,600
Software training, installation	22,038	50.3	22,834	8,475	32,607
Hardware	12,749	29.1	12,492	5,261	23,600
Lost revenues from reduced productivity	7,473	17.1	7,473	0	20,000
Other	1,145	2.6	0	0	9,652
Ongoing costs per provider per year	8,412	100.0	7,231	5,957	11,867
Software maintenance and support	2,439	29.0	2,403	1,200	3,800
Hardware replacement	3,187	37.9	_[b]	_[b]	_[b]
Internal IS staffing/external IS contractors	2,047	24.3	683	0	5,556
Other	739	8.8	586	0	2,742

SOURCE: Authors' study data.

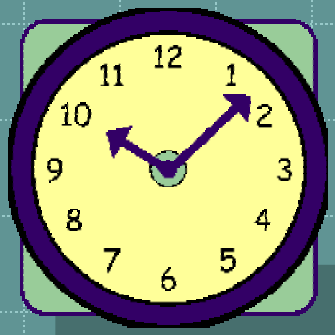
NOTE: IS is information systems.

[a] Average costs per provider were calculated for each practice and then averaged across the fourteen practices.

[b] Average annual hardware replacement costs per provider were estimated for all practices, not by practice.

Initial provider time costs are high

- More time at work for 4 months (average)
  - One month to one year, up to 2 hours per day
- Providers must change basic work processes
  - Change in documenting especially hard
  - Champion had to help make most changes



Financial benefits can be substantial, but vary

- Average benefits: $33k/FTE provider/year
  - $7,000 to $56,000 (14 of 14 practices)
- Efficiency benefits: $16k/FTE provider/year
  - Mostly cuts in medical records, transcription FTEs
  - Some saw more patients
- Up-coding benefits: $17k/FTE provider/year
  - Big shift in CPT coding
  - Wide range: $3,000 to $42,000 (10 of 14 practices)
  - More complete documentation, more thorough visits

Financial gains per FTE billing provider

EXHIBIT 2
Electronic Health Record (EHR) Financial Benefits Per Full-Time-Equivalent (FTE) Provider, For Fourteen Solo/Small Group Practices (Benefits Per Year), 2004–05

				Among practices with benefits		
	Average per FTE provider[a] ($)	Percent of total benefits	No. of practices with benefits	Median ($)	Minimum ($)	Maximum ($)
Total benefits per provider	32,737	100.0	14	38,450	6,600	56,161
Increased coding levels	16,929	51.7	10	21,250	3,040	41,711
Efficiency savings/gains	15,808	48.3	14	14,611	1,000	50,700
Efficiency savings	13,144	40.1	12	12,444	1,000	42,500
Personnel savings (excluding transcription)	6,759	20.6	9	8,333	5,333	30,000
Transaction savings	5,334	16.3	7	10,800	8,500	12,000
Paper supplies savings	1,051	3.2	9	1,000	500	5,333
Efficiency revenue gains from increased visits	2,664	8.1	3	8,200	6,600	22,500

SOURCE: Authors' study data.

[a] Average benefits per provider were calculated for each practice and then averaged across the fourteen practices.

Coding/revenue comparison pre-/post-EHR
Actual practice, simulated for 4000 visits

Visit code	Reimburse-ment	2002 % of Total	2004 % of Total	2002 Revenue	2004 Revenue	Revenue Change
99211	36	0.2%	0.3%	304	469	165
99212	50	5.7%	5.0%	11,313	9,926	-1,387
99213	64	70.6%	39.1%	180,826	100,163	-80,663
99214	95	23.4%	55.1%	88,824	209,217	120,393
99215	163	0.1%	0.5%	799	3,443	2,645
		100.0%	100.0%	$282,066	$323,218	$41,152
# visits =	4000					

Practice #1, simulation for 4000 visits/provider

Preventive, chronic care QI activities limited

- Some “automatic” QI benefits
- Templates widely used for documentation: 13 of 14
  - Even without active reminders, can help improve care

BUT…

- Few practice set reminders at point of care: Only 5
  - Reminders based on criteria, affect all providers
  - Small # preventive activities/chronic care conditions
- Few lists of patients needing services: Only 4
  - Only 2 with systematic follow-up of patients
- Few performance reports: Only 2
  - E.g., HgA1c levels

So what was the value of EHRs?

Good value for practices—but some risks

- Handsome financial payoff for most
  - Pay-back time: 2.5 years (average)
  - Then $23k/FTE provider/year
- Better quality of life for some providers
  - After initial extra time
  - Home access to chart
  - Some went home early (3)
- BUT: Financially risky for some
  - 2 practices: severe billing problems
  - 1 practice: lost _all_ data—no data for weeks!
  - 3 practices: 9+ years to payback costs

What about other practices?

- Practices can gain from:
  - Fee-for-service (up-coding, more visits)
  - Capitation (lower costs, more enrollees)
  - Pay-for-performance + QI
- Large groups can gain from
  - Fee-for-service
  - Capitation--more large groups have them
  - P4P + QI -- more likely to have P4P, systematic QI

  AND may have lower EHR costs (economies of scale)
- Community Health Centers disadvantaged
  - Can't gain from up-coding with flat-rate Medicaid payment
- Other small practices—same benefits as those in sample?

Smaller value for other stakeholders

- CMS/plans/employers: Higher costs for little QI
  - Up-coding costs—equivalent to pay-for-use incentive
- Limited value not surprising—EHR is just a tool
  - Inserted into system with defective reimbursement system
  - Cottage industry: hard to learn and expertise is limited
  - SO: lack of extensive use of measurement /reporting capabilities + process redesign = limited QI
- Future costs could be even higher
  - If EHR used as tool for increased marginal utilization
- There are some ways to increase value

Some policies can increase value for all

- Pay-for-performance (P4P) incentives
  - Focuses attention on QI, more measurement, process redesign
  - Practices would benefit—can better capture, report data, & improve performance with reminders, other tools
- Technical/process redesign support programs
  - Can address learning limitations, lack of in-house expertise
  - Doctors' Office Quality initiatives of CMS QIOs
- Regional Health Info Organizations (RHIOs)
  - Would improve efficiency, quality for EHR users
- Research/product comparisons
  - Would show what "works"

Limitations

- 14 solo/small groups
  - Potentially more successful than average
  - Only primary care
- Early adopter practices
  - Next layer of MD adopters may differ in success
- 2 EHR vendors
  - But not atypical

Summary

- EHR financial costs are high
  - As are time costs
- Substantial financial gains are possible
  - But gains vary, and risks lurk
- Quality gains are limited
- Value: Good for practices, less for payers/employers /patients
- Policies can increase EHR value
  - P4P reimbursement reform
  - Technical/office redesign support programs
  - RHIOs/community-wide data exchange
  - Research on what “works”

Thank you!

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