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The Adoption Gap

HIT in Small Physician Practices

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What is the Adoption Gap?

Lower implementation of HIT
in small physician practices

Practice size & EMR adoption rate

Practice Size	Large (50+)	Small (2-9)	Solo (1)
EMR Adoption	57%	23%	13%

Source: Audet AM, Doty MM, Peugh J, Shamasdin J, Zapert K, Schoenbaum S. Information technologies: when will they make it into physicians' black bags? MedGenMed. 2004 Dec 6;6(4):2.

EHR adoption: Best Survey Results

Setting	Range: Medium or High Quality Surveys	Best Estimates: High Quality Surveys
Hospitals	16% - 59%	None
Ambulatory	17% - 25%	17%
Large Groups	19% - 57%	39%
Solo Provider	12.9% - 13%	13%

Source: Ashish Jha. Health IT Adoption: A Cross-national Comparison. (Seattle: Academy Health Conference, 6/26/06)

Adoption Gap? So What?

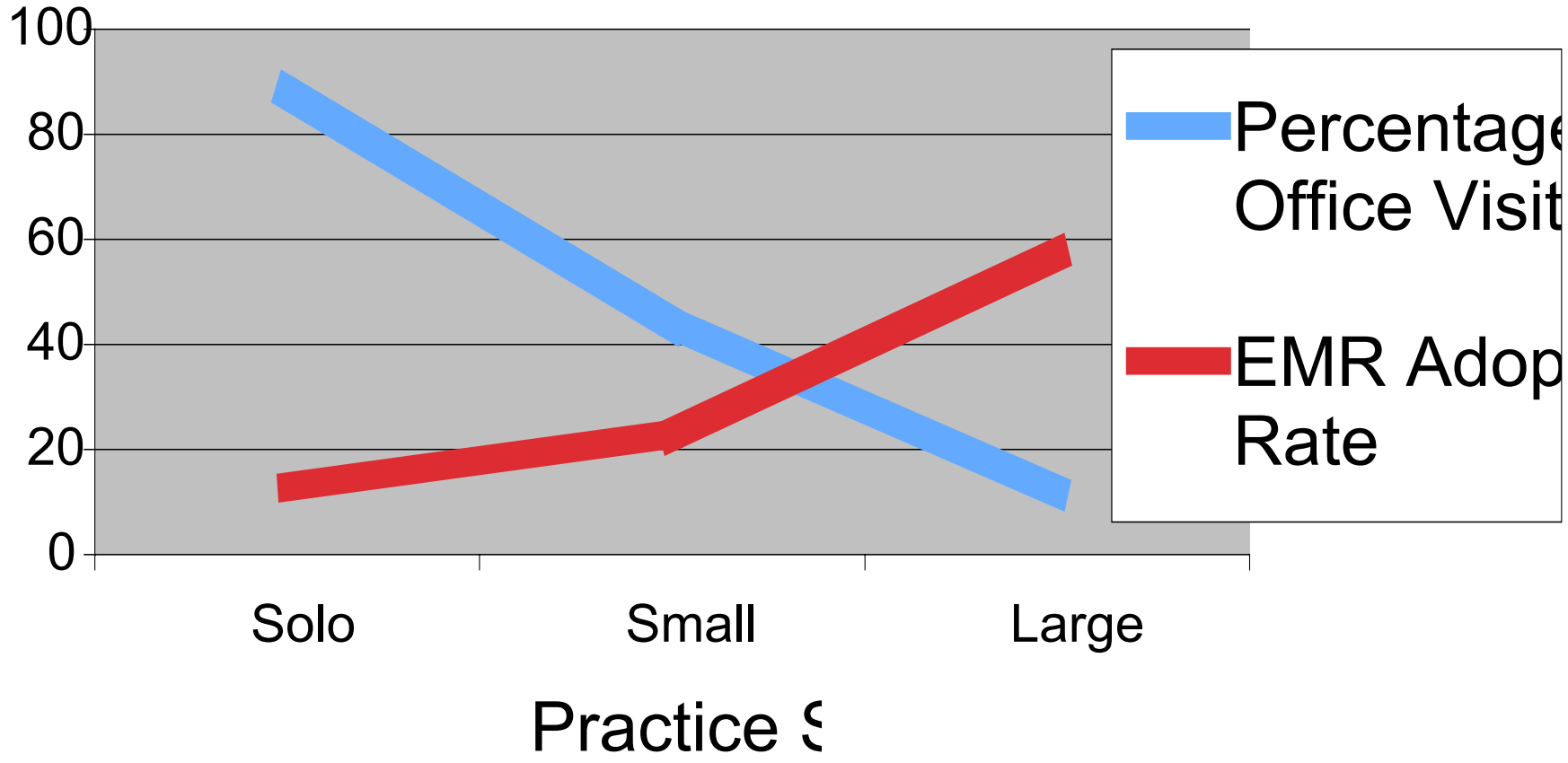
The chances for HIT to improve quality and reduce costs are diminished.

Consider:

- 4 out of every 5 physicians work in small practices[1]
- 88% of all outpatient visits occur in small practices[2]

Sources: 1. Woodwell DA, Cherry DK. National Ambulatory Medical Care Survey: 2002 Summary. Advance Data from Vital and Health Statistics, No. 346. (Hyattsville, MD: National Center for Health Statistics, 2004).
2. American Medical Association. Physician Socioeconomic Statistics, 2000-2002 Edition. (Chicago: AMA, 2001).

Practice Size by EMR Adoption Rate and Perce Office Visits



Source: Audet AM, Doty MM, Peugh J, Shamasdin J, Zapert K, Schoenbaum S. Information technologies: when will they make it into physicians' black bags? MedGenMed. 2004 Dec 6;6(4):2.

Compared to Large Practices…

…Small practices are approximately:

- 5x less likely to email other doctors than large practices
- 4x less likely to receive lab and test results electronically
- 3x less likely to use electronic drug alerts
- 2.5x less likely to use electronic clinical decision supports

Source: Audet AM, Doty MM, Peugh J, Shamasdin J, Zapert K, Schoenbaum S. Information technologies: when will they make it into physicians' black bags? MedGenMed. 2004 Dec 6;6(4):2.

Large Physician Practices

- Larger practices, by virtue of their size, have:
  - More resources: financial, organizational, and human capital
  - More capacity to mitigate risks
  - Thus, greater ability to successfully acquire and integrate information technology

Barriers to Adoption in Small Physician Practices?

- Cost
- Time
- Knowledge
- Workflow Issues

Cost

In a 2003 Commonwealth Fund study, start-up costs was cited as the main barrier to adoption

- However, cost was cited more frequently as the main barrier among small practices

Practice Size	Solo (1+)	Small (2-9)	Large (50+)
% Citing Startup Cost as Barrier	62%	59%	43%

Source: Audet AM, Doty MM, Peugh J, Shamasdin J, Zapert K, Schoenbaum S. Information technologies: when will they make it

Cost (cont.)

- When physicians pay for EMRs, the greatest financial benefits accrue elsewhere in the system (e.g., payers & health plans)
- Under traditional fee for service payment arrangements, physicians do not receive financial gains from HIT benefits due to:
  - Electronic transmission of pharmacy, lab, and test orders
  - Improved use of formulary and generic substitutes
  - Reduction in duplicative imaging and tests

Cost (cont.)

HIT Adoption: per physician cost is much higher for small practices

Evidence: In 2005 Miller et al. studied 14 solo and small primary care practices that had adopted EHRs

1. Total initial EHR cost $43,826/FTE physician
   a. Software, training, installation - $22,038 per FTE provider
   b. Loss of revenue from reduced productivity during workflow transition - $7,473 per FTE provider
   c. Other costs
2. Continued maintenance - $8,412 per FTE physician per year

Source: Miller RH, West C, Brown TM, Sim I, Ganchoff C. The value of electronic health records in solo or small group practices. Health Aff (Millwood). 2005 Sep-Oct;24(5):1127-37.

Cost (cont.)

- In primary care, physician expenses have outpaced compensation for four straight years (from 2001 to 2004)
  - Increased cost of support staff, technology, malpractice
  - Tough payer negotiations, leading to discounted fees
  - Result: lower median total medical revenue after operating expenses per FTE physician
    - For example: 3.9 percent decrease for primary care-only multispecialty practices

Source: http://www.mgma.com/press/CostSurvey-05.cfm

Cost (conclusion)

- Given that total expenses are outpacing compensation, small practices have less capital to invest in new technology
- Especially when new technology is perceived as risky with uncertain returns

Barriers to Adoption

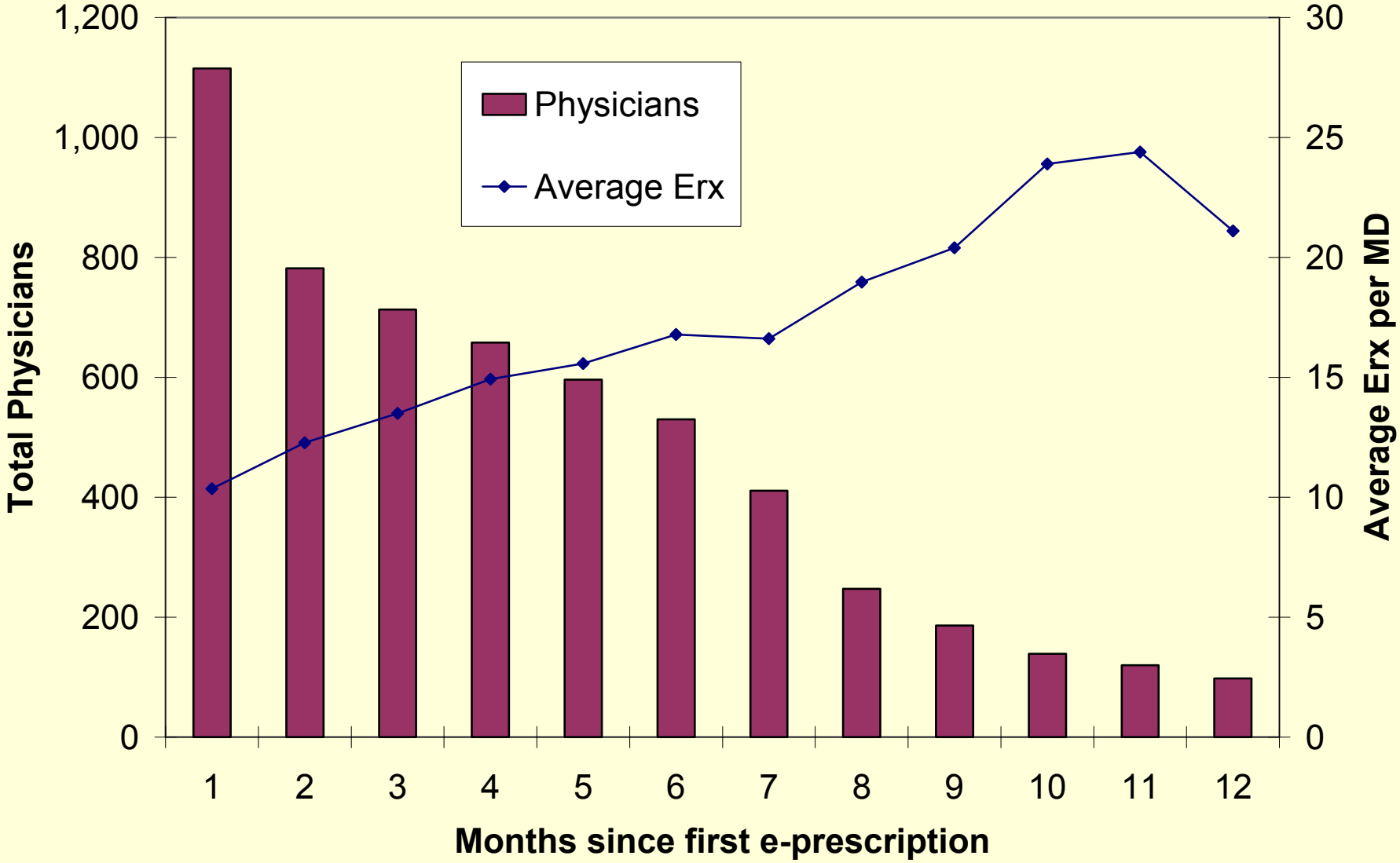
- Cost
- Time
- Knowledge
- Workflow Issues

Time

- Net time savings (short- vs. long-term)
  - Short-term: Longer work hours for an average of four months[1]
  - Long-term: Partners HealthCare System time-motion observational study - EHR modestly faster than paper[2]

1- Miller RH, West C, Brown TM, Sim I, Ganchoff C. The value of electronic health records in solo or small group practices. Health Aff (Millwood). 2005 Sep-Oct;24(5):1127-37.
2- Pizziferri L, Kittler AF, Volk LA, Honour MM, Gupta S, Wang S, Wang T, Lippincott M, Li Q, Bates DW. Primary care physician time utilization before and after implementation of an electronic health record: a time-motion study. J Biomed Inform. 2005 Jun;38(3):176-88.

E-prescribing adoption patterns



Source: Vogeli C. Adoption of electronic prescribing in community-based practices. (Seattle: Academy Health Conference, 2006).

Time (cont.)

- Revising & refining workflow
  - Customization vs. Mass Production
  - Automation vs. Transformation
  - Organization Change Management Office Procedures
- Resolving technical difficulties
  - Internal expert or purchase IT vendor services?

Barriers to Adoption

- Cost
- Time
- Knowledge
- Workflow Issues

Knowledge

- Lack of knowledge in selection of vendors and HIT solutions to match practice needs
  - Many small practices desire “out of the box”, turnkey solutions[1]
- “Showroom syndrome”
  - “Oftentimes we see this showroom syndrome: Providers go to a big [vendor] meeting and they come back with the biggest, brightest, shiniest box…and they think this is going to solve all of their problems. And then they open the box and find out that it doesn’t do what they want it to, because they haven’t really thought about what they needed” - Robert Wah, TRICARE, Department of Defense

Source: Bates DW. Physicians and ambulatory electronic health records. U.S. Health Aff (Millwood). 2005 Sep-Oct;24(5):1180-9.

Barriers to Adoption

- Cost
- Time
- Knowledge
- Workflow Issues

Workflow

- Workflow is the interaction patterns among a practice's staff as they fulfill tasks and produce outcomes using available resources
- HIT must match and support desired workflow for adoption to be successful
- *"Free is not cheap enough"* -Harvey V. Fineberg, IOM President

Source: Health IT and Workflow in Small Physicians' Practice. NIHCM Foundation Questions and Answer Brief. April 2005

Workflow Issues Broadly Defined

- Customization vs. Mass Production
- Automation vs. Transformation
- Organization Change Management

Customization vs. Mass Production

- Heterogeneity of small practice types:
  - Practice specialization/mix of services offered
  - Practice size: number of physicians & staff
  - Practice/Reimbursement models
    - Group/capitation vs. other
  - Local Market Conditions
    - Urban vs. rural, patient demographics, local culture

Customization vs. Mass Production (cont.)

- Heterogeneity makes it difficult to provide standardized recommendations about optimal system design of HIT products & services
- Tension between need for inexpensive, mass retail systems and need to tailor to needs of individual practices

Automation vs. Transformation

- Widespread perception that HIT integration is merely a matter of automating current practices
- IT systems must be redesigned to fulfill goals:
  - Simplification of processes for patients, staff, and providers
  - Improve current workflows
  - Solve privacy concerns
- Quality improvement is not an inevitable consequence of HIT adoption
  - QI must explicitly be built into the adoption process, which includes workflow management

Computer Workflow vs. Actual Workflow (VA experience)

- Elimination of divergence between the process of HIT adoption and actual workflow is an unachievable goal
- IT system design must resemble actual workflow—while improving upon it
- Facilitate computerized expression of actual workload
- Reduce the amount of reconciliation work

Source: Mary Goldstein Lessons from Implementation of an EHR. (Seattle: Academy Health Conference, 2006).

Organizational Change Management

- 35% sabotage rate in HIT implementation
- Unestimated amount of HIT “workarounds” occur
- Successful adoption is more than structuring, designing, or buying a system
- Must be led by cultural change:
  - Strong leadership - “Change Champions”
  - Clear formation of objectives
  - Solve existing organizational and interpersonal problems

Source: Lorenzi NM, Riley RT. Managing change: an overview. J Am Med Inform Assoc. 2000 Mar-Apr;7(2):116-24.

Organizational Change Management (cont.)

- Communication is critical
- Motivate by “killer application” that all clinicians and staff want to use
- Ultimately, establish psychological ownership from all staff
  - Achieve practice-wide “buy-in” to a) the need for change and b) the processes necessary to achieve change
  - Create an “our” system as opposed to “my” system, “your” system, “their” system mentality

Source: Lorenzi NM. Discussion. RHIOs and other HIEs: The Value Proposition (Washington, DC: NIHCM Conference, 5/1/06)

Policy Levers to Facilitate Adoption

- Access to Capital
- Buyer Coalitions
- System Maintenance

Access to Capital

- **Problem**
  - Small physician practices are highly risk-averse given current financial health
- **Policy Response**
  - Provision of low-risk capital critical to greater adoption
    - Zero-interest or revolving loans

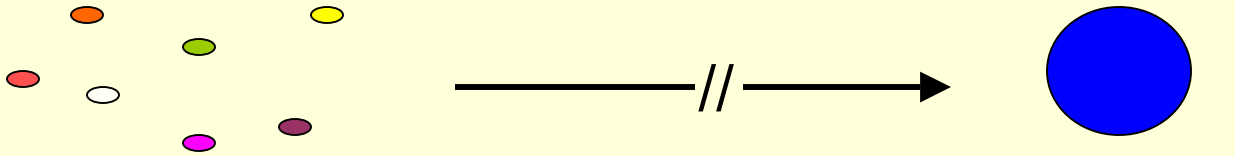
Source: Bates DW. Physicians and ambulatory electronic health records. U.S. Health Aff (Millwood). 2005 Sep-Oct;24(5):1180-9.

Policy Levers to Facilitate Adoption

- Access to Capital
- Buyer Coalitions
- HIT Knowledge Support

Buyer Coalitions

- **Problem**
  - In some regions, especially rural, nearly all providers are in small or solo practices



Solo & Small Practices

Vendors

Barriers

Money

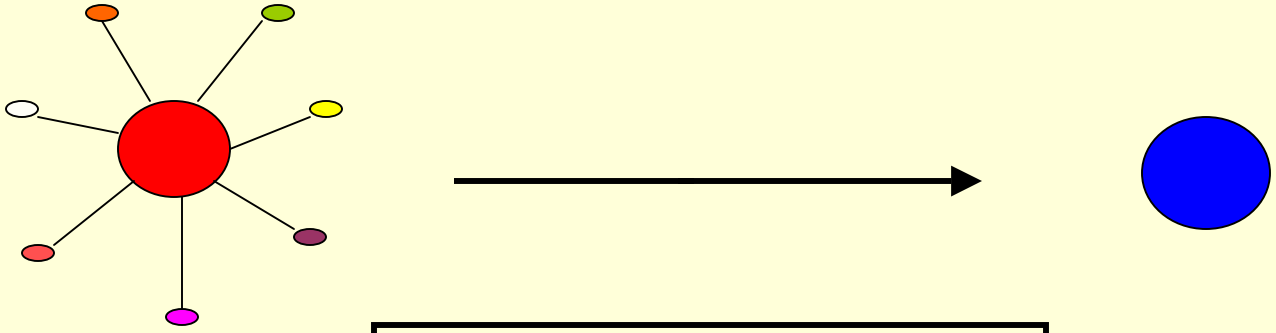
Vendor Selection

Contract Negotiation

Service & Maintenance

Buyer Coalitions (cont.)

- **Policy Response**
  - Allow providers to interact with vendors as larger groups for:



Solo & Small Practices

Facilitators

More competitive pricing

Better vendor selection

Economies of scale for simplified & improved contract negotiation

Better products & services

Vendors

Policy Response (cont.)

- Possible federal/state role in allowing or encouraging the formation of buyer coalitions?
- Creation of national standards (HL7) for:
  - Common language
  - Interoperability
- Limitations on the number of vendors in the marketplace?

Policy Levers to Facilitate Adoption

- Access to Capital
- Buyer Coalitions
- HIT Knowledge Support

HIT Knowledge Support

- Improved objective data
  - Costs
  - Implementation
  - Product comparison
- Improved dissemination of data
  - Accessibility to product information
  - Simple and consumer-friendly
  - Government & privately funded

Physician Attitude

- 2003 Mass physician survey[1]
  - Greater than 80% believe MDs should computerize writing Rx, recording patient summaries and treatment records
  - Yet 50% did not intend to implement such processes
- Similar results found by AAFP survey[2]
  - 81% reported interest in EMR software

1- Massachusetts Medical Society. MMS Survey: Most Doctors Are Slow to Incorporate Technology into Practices. 4 December 2003.
2- Valdes I, Kibbe DC, Tolleson G, Kunik ME, Petersen LA. Barriers to proliferation of electronic medical records. Inform Prim Care. 2004;12(1):3-9.

No simple solution to closing the adoption gap…

Barrier		Possible Solution
Cost	→	Low Risk Capital
Maintenance & Support	→	Buyer Coalitions
Knowledge	→	Better Data, Better Access to Data