RAND HEALTH

Can Information Technology Transform Health Care?

The RAND Study of Potential Costs and Benefits of Electronic Medical Record Systems

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RAND
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Bottom Line

- **At 90% adoption, potential EMR-S-enabled savings high (~$77B/yr health care efficiency savings**
- **Costs are modest relative to savings (~$10B/yr)**
- **Potential health and safety benefits also large and could double the savings**
- **Government should act now**

What Is an Electronic Medical Record System?

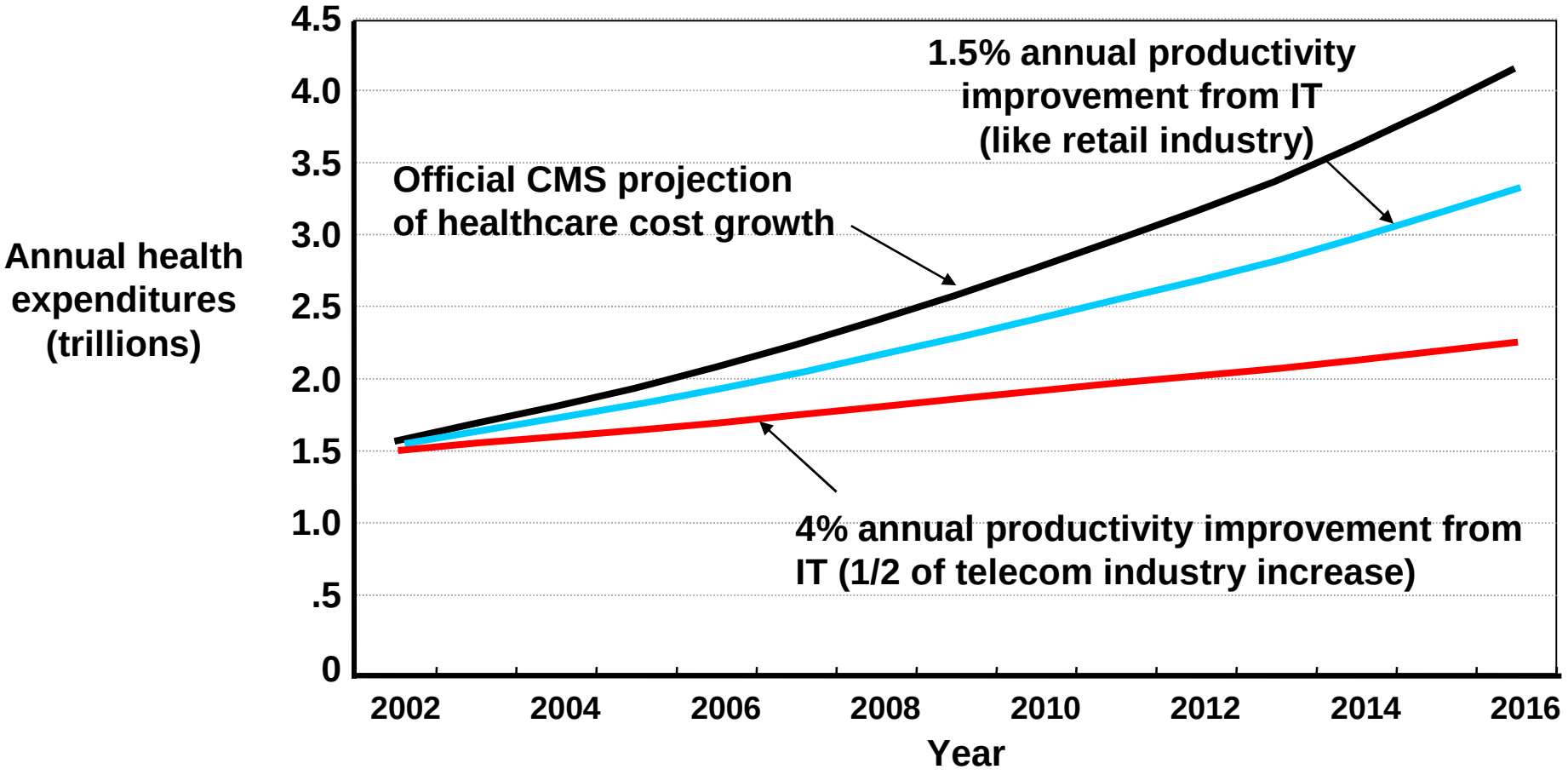
- **EMR -- replaces the paper medical record**

- **EMR-S adds functions:**
  - **Clinical decision support**
  - **Patient tracking and reminders**
  - **Personal health records**
  - **Computerized physician order entry**
  - **Regional health information networks**

- **EMR, in some form, now in only 20-25% of hospitals and10-15% of physicians' offices**

What If EMR-S Transformed Health Care as IT Has Done in Telecoms?

Cumulative Savings of $5.2–$12.2 Trillion over 15 Years



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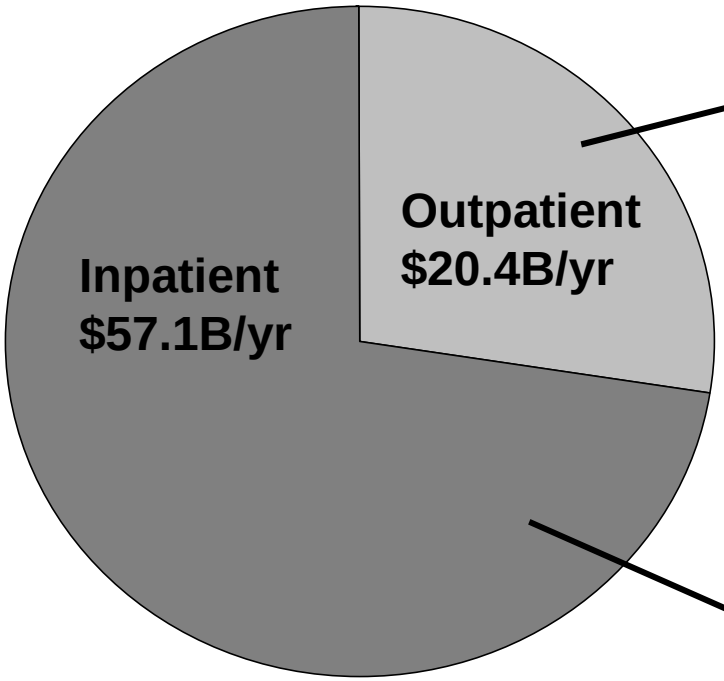
The RAND Study of EMR-S

- **Very limited published evidence of EMR-S benefits**
- **RAND study developed computer models to estimate potential benefits, assuming**
  - **Widespread adoption (90%)**
  - **Interoperability (across providers)**
  - **Related health care process changes, for example:**
    - **Team care for chronic disease**
    - **Restructured hospital and physician office workflow**

Major Conclusions

- **At 90% adoption, potential EMR-S enabled savings high (~$77B/yr health care efficiency savings)**

Data Suggest Potential Efficiency Savings of ~$77B/yr After 90% Adoption



- Drug utilization
- Lab and radiology utilization
- Chart administration
- .
- .
- .

- Length of stay
- Nursing administrative time
- Medical records administration
- .
- .
- .

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. . . Costs Are Modest Compared to Potential Savings

	Total cost (15 years)
Hospitals	97.4
Physician offices	17.2
Connectivity	6.0
Total	$120.6B

	Total savings (15 years)
Hospitals	468.5
Physician offices	159.0
Total	$627.5B

Major Conclusions

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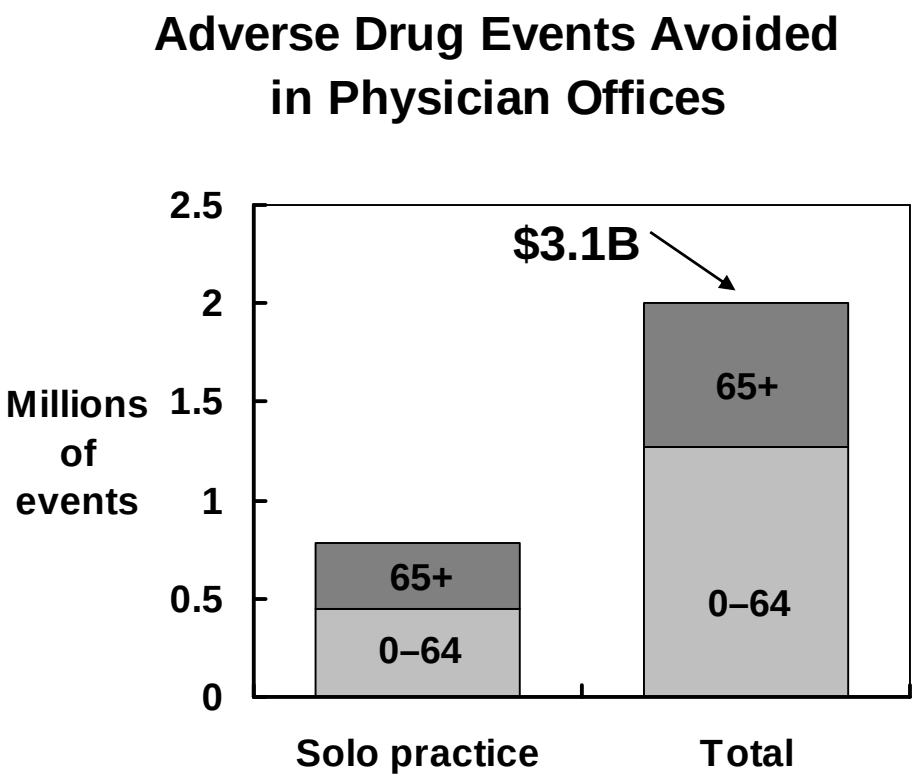
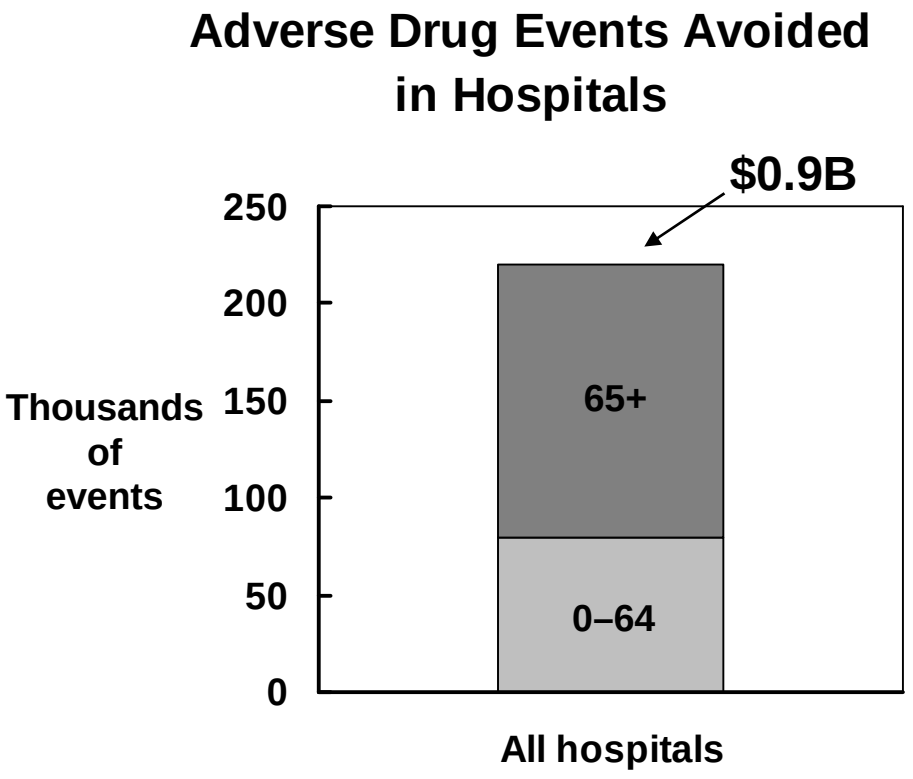
- **Potential safety and health benefits also large and could <u>double</u> the savings**
  - **Safety benefits include:**
    - **Fewer errors from illegible handwriting**
    - **Reduced adverse events from dosage, drug-drug interaction, allergies**

Significant Savings from Increased Safety -- Medicare Share ~40%





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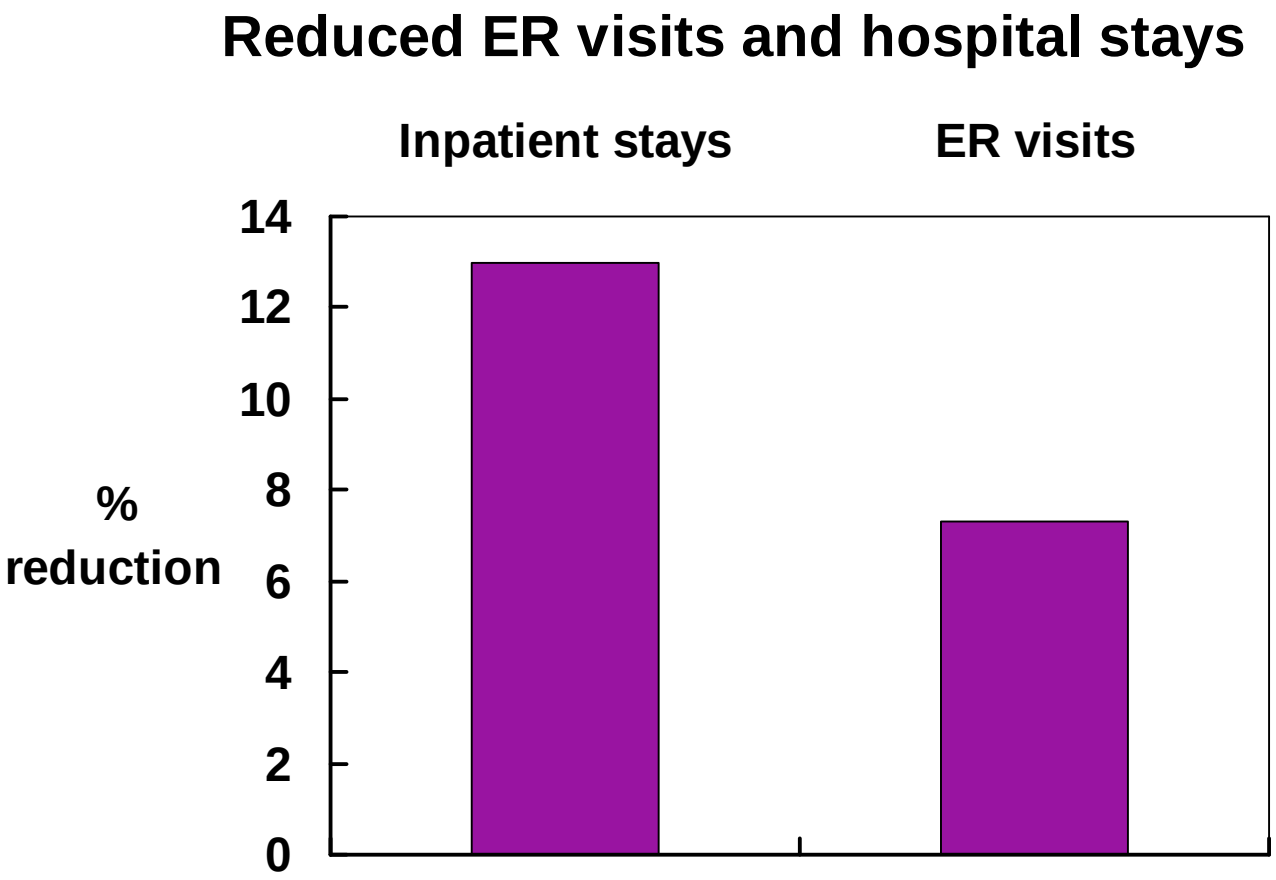
  - **Health benefits include:**
    - **Better delivery of preventive care**
    - **Better management of chronic diseases**

EMR-S Can Promote Prevention with Guidelines, Reminders, and Outreach

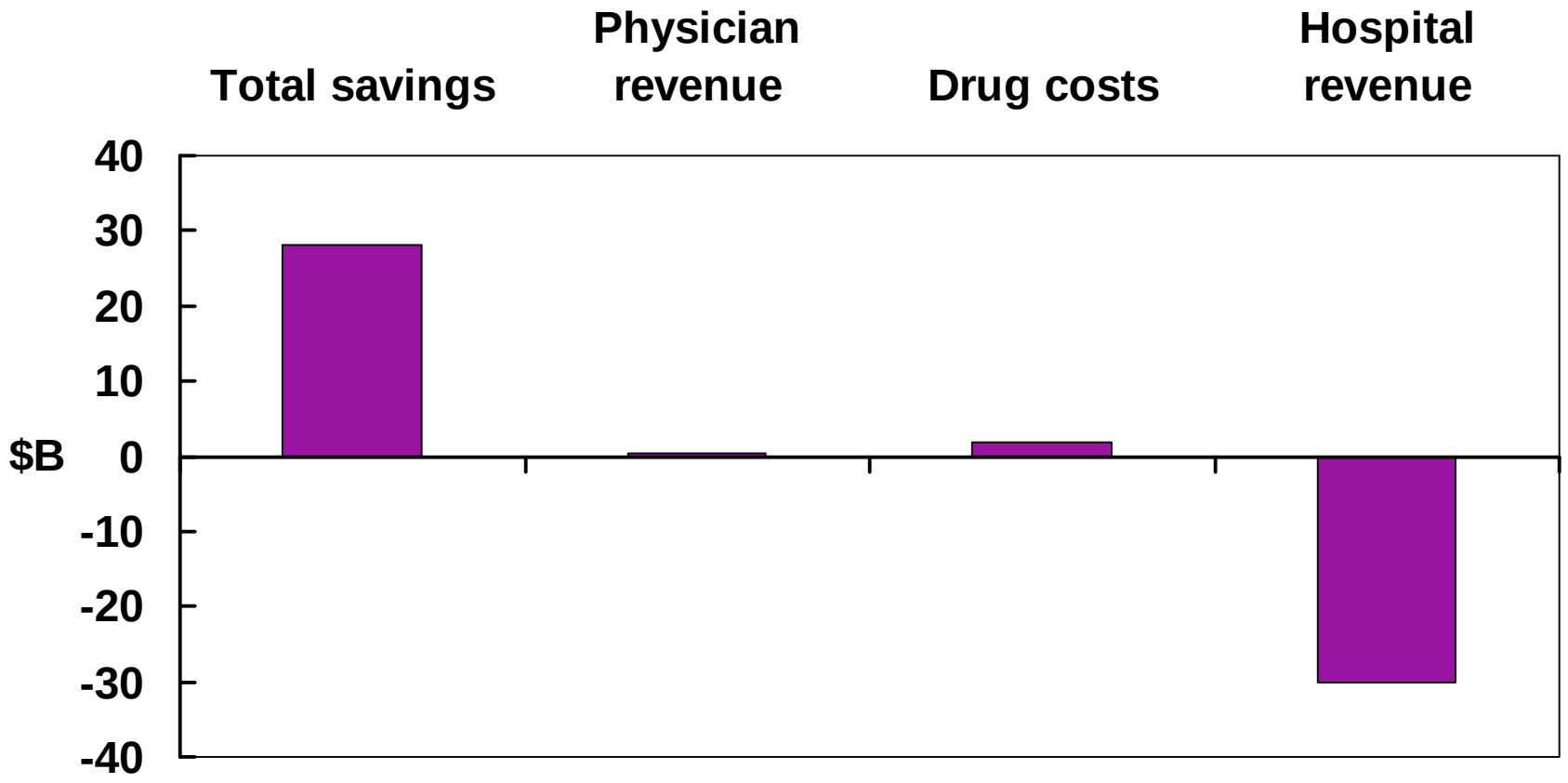
	Target population	% Population not now compliant	Cost/yr for 100% compliance	Health benefits with 100% compliance
Breast cancer screening	Women 40 and older	30%	$1.5B	50K cancers detected early, 4K fewer deaths/yr
Colorectal cancer screening	50 and older	66%	$4.0B	23.5K fewer deaths
Influenza vaccination	65 and older	37%	$0.2B	7.5K fewer deaths/yr
Pneumococcal vaccination	65 and older	47%	–$0.1B	21K fewer deaths/yr

Better Disease Management Can Reduce Acute Episodes

Upper Bound:
Assumes 100% participation in management of emphysema, asthma, CHF, and diabetes.



Net Result Is a Savings but Hospitals Lose Revenue



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Why Should the Government Intervene?

- ***EMR-S enabled changes could moderate unsustainable health care cost growth and improve quality***
- ***The market is not working well***
- ***The government is the largest employer and health care payer***
- ***Incentives will be most effective now***
  - **Opportunity to steer adoption toward standardized, interoperable systems**
  - **High leverage from pay-for-use incentives**