

Privacy Protection and Technology Diffusion: The Case of Electronic Medical Records

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Policy Motivation: Digitization is Important

Digitization is important: In US

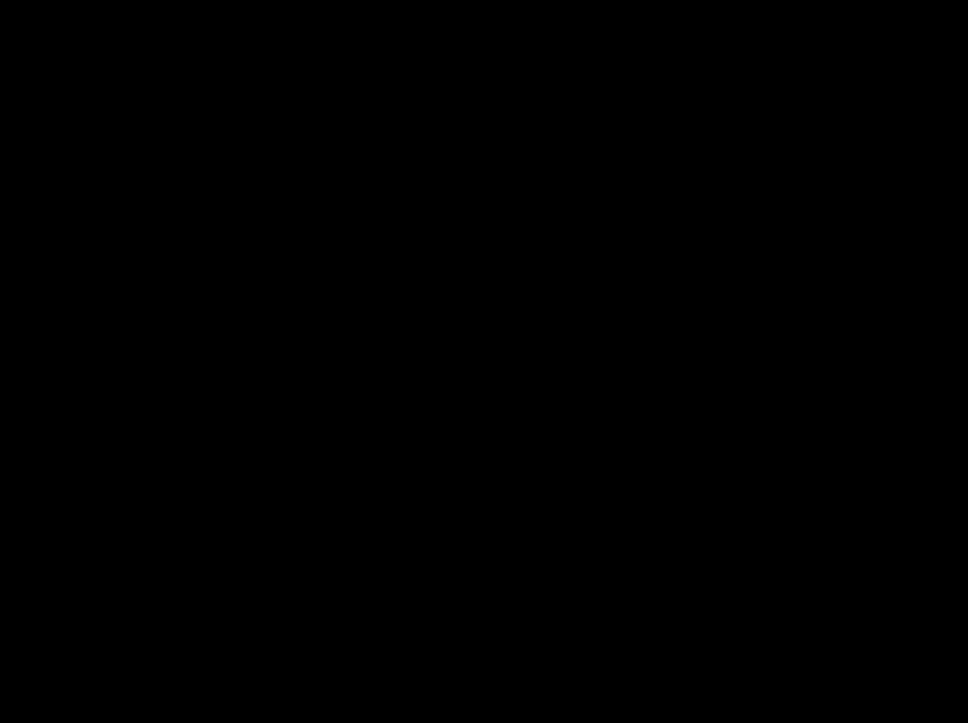
- ▶ 44,000-98,000 deaths/year due to medical errors
- ▶ \$100 billion estimated cost savings a year

Paper kills. Paper records are an utterly irrational national security risk.

-Former House Speaker Newt Gingrich commenting on his book "Saving Lives and Saving Money"

Newt Gingrich and I have disagreed on many issues, including health care, but I agree with....his book "Saving Lives and Saving Money,"

-Hillary Clinton



Data on Technology Adoption

- ▶ Use the HIMSS Dorenfest database (2005 version) which records hospital's software and hardware
- ▶ Match with AHA data for obserardware

Adoption over time

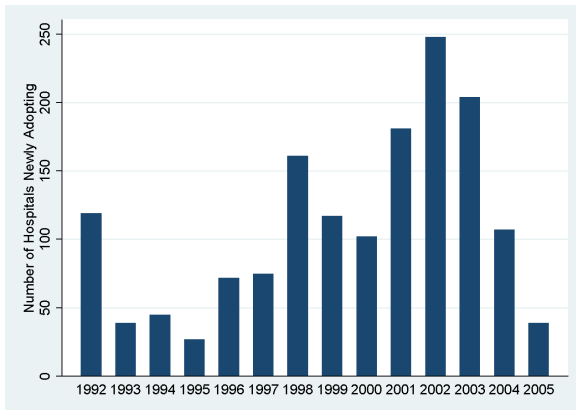


Figure: New Adoptions of EMR by Year

Data on Privacy Laws

- ▶ Surveys of state health privacy statutes by Health Privacy Project at Georgetown University (we examine hospitals)
 - ▶ **Pritts et al (2002)** (also 1999 and 1996)
- ▶ Example: Georgia's state privacy law limits who can look at test results
- ▶ Example: Mass. state privacy law limits flow of information on Psych., Drug/Alcohol-Use, HIV status.

Summary of Adoption Results

- ▶ Find that state privacy laws reduce adoption by 24 percent.
- ▶ With no state privacy law, one hospital's adoption increases another's propensity to adopt by 6%. With state privacy law, negligible effect
- ▶ Panel data shows that privacy laws inhibit responsiveness to compatible installed base

Neonatal Outcomes

Why Healthcare IT may affect neonatal outcomes

- ▶ High-Risk Patients account for 70 % of neonatal deaths
- ▶ 99.5% of “High-Risk” patients give birth in hospitals
- ▶ Wide medical literature: Reliable documentation and accurate monitoring by Maternal-Fetal Medicine department within hospitals is essential for successful outcomes.
 - ▶ Documentation of Blood Pressure/Testing: Pre-Eclampsia, Gestational Diabetes (Walker (2000))
 - ▶ Regular ultrasound allows management of
 - ▶ Placental Abruption, Vasa Previa, Placenta Previa, Cord Complications (Chou et al 2000), (Oyelese et al 1999)
 - ▶ Interuterine-Growth Restriction (Ott 2002)
 - ▶ Twin-Twin Syndrome (Quintero et al 2001)

Summary of Results

- ▶ Adoption of healthcare IT by an additional hospital in a county reduces infant mortality in that county by between 5 and 18 deaths per 100,000 live births.
- ▶ Gains for African-Americans are double those for Whites.
- ▶ Rough cost-effectiveness calculations suggest that healthcare IT is associated with a cost of \$450,140 per infant saved.

Conclusion

- ▶ Contribution: Empirical study documenting how privacy protection is inhibiting network benefits and diffusion of Electronic Medical Records
- ▶ Contribution: Health IT Policy
 - ▶ There are many reasons that privacy laws may be a good thing
 - ▶ However, it is important to confront trade-offs between swift diffusion and protecting patient privacy
- ▶ Broader applicability to other interactive IT applications