



The Office of the National Coordinator for  
Health Information Technology



# Provider Adoption of Technology:

Favorisant les esprits préparés

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Office of the National Coordinator for Health IT

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# Louis Pasteur 1822-1895



Dans les champs de  
l'observation le  
hasard ne favorise  
que les esprits  
préparés.

Lecture, University of Lille (7 December 1854)

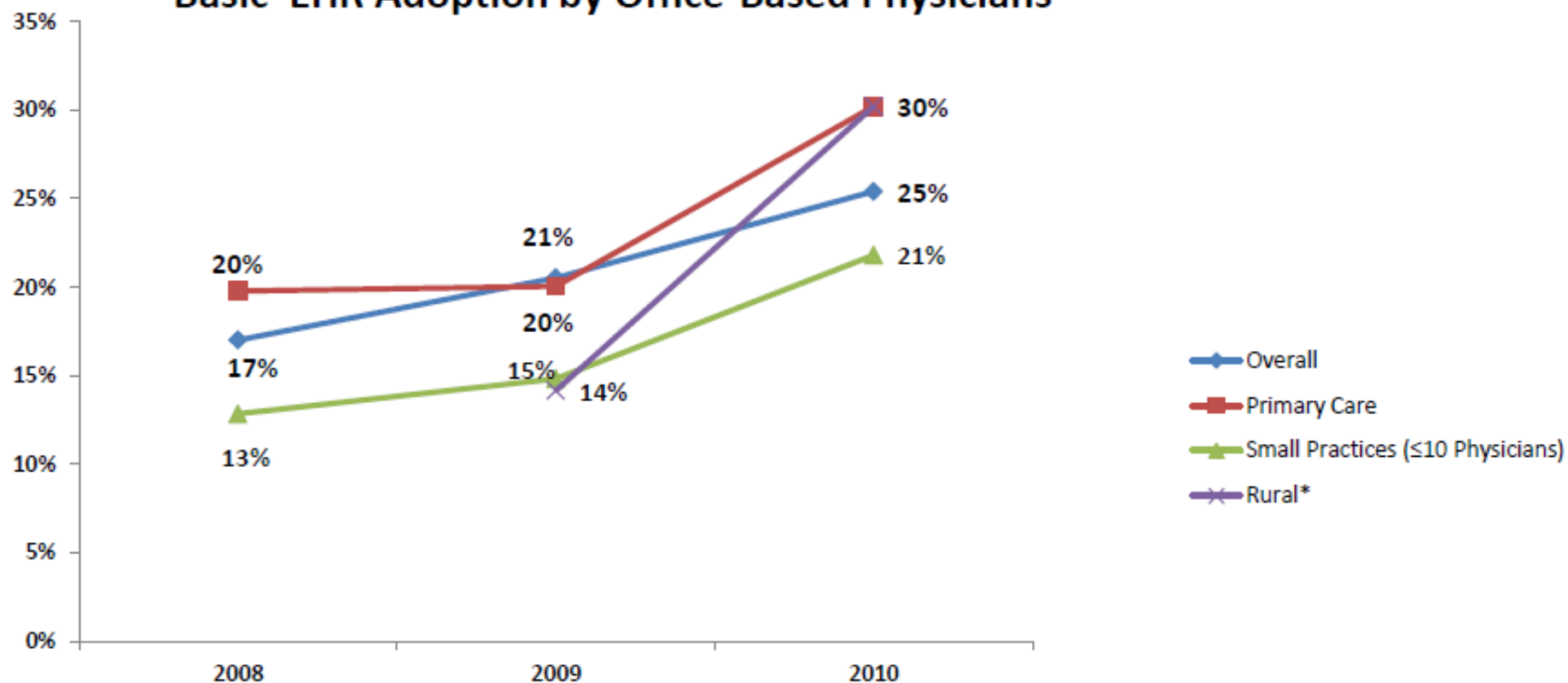
“The word phobic has its place when properly used, but lately it's been declawed by the pompous insistence that most animosity is based upon fear rather than loathing...”

“...I fear snakes. I hate computers.”

David Sedaris  
*Me Talk Pretty One Day*

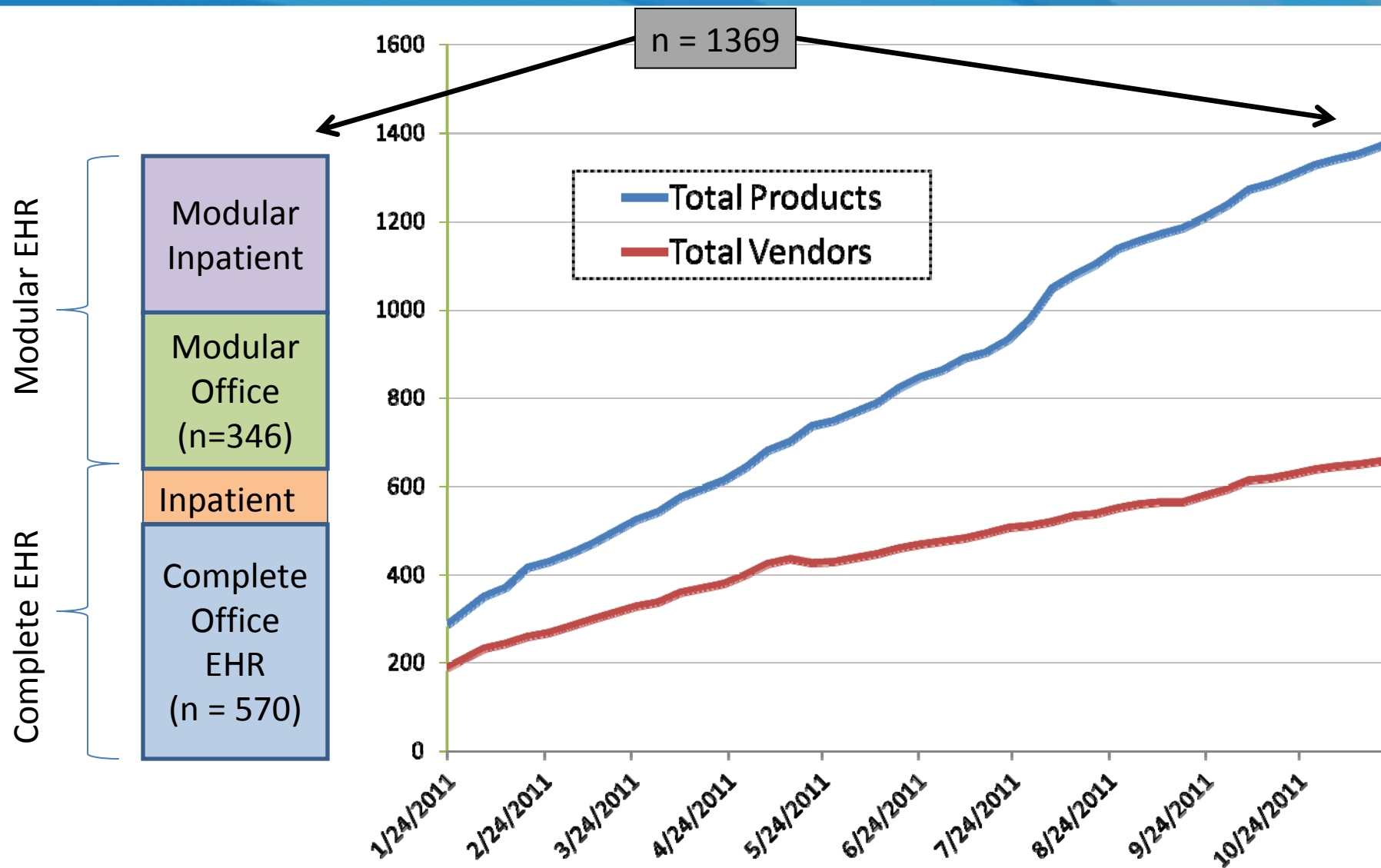
# National Trends

**'Basic' EHR Adoption by Office-Based Physicians**



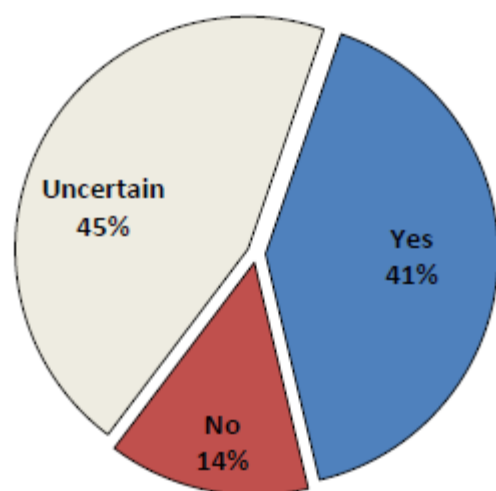
# Certified Health IT Products and Vendor Trends

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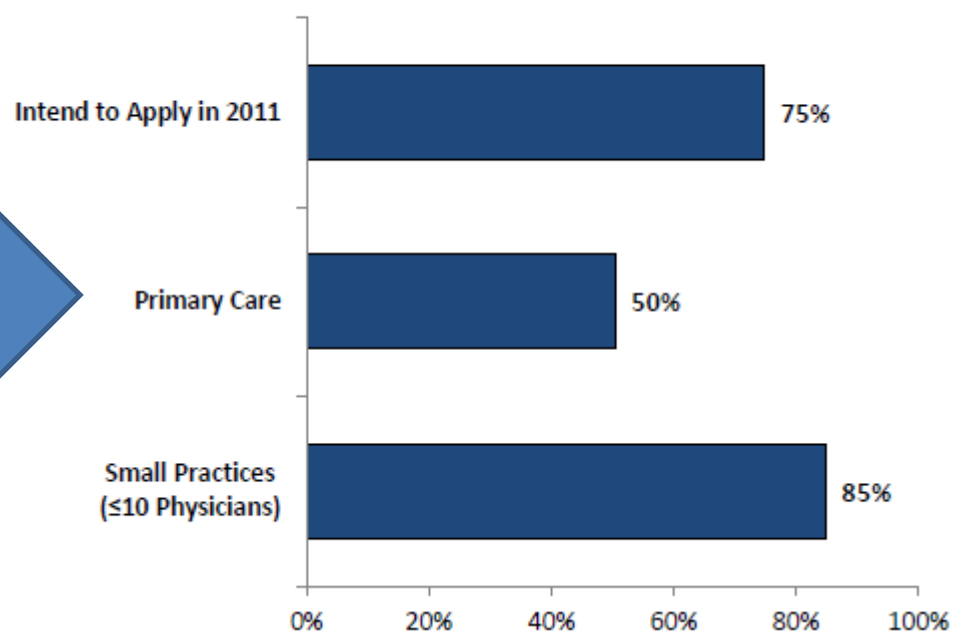


# Physician Meaningful Use Intent

Overall MU Intent for Office-Based Physicians in the Country



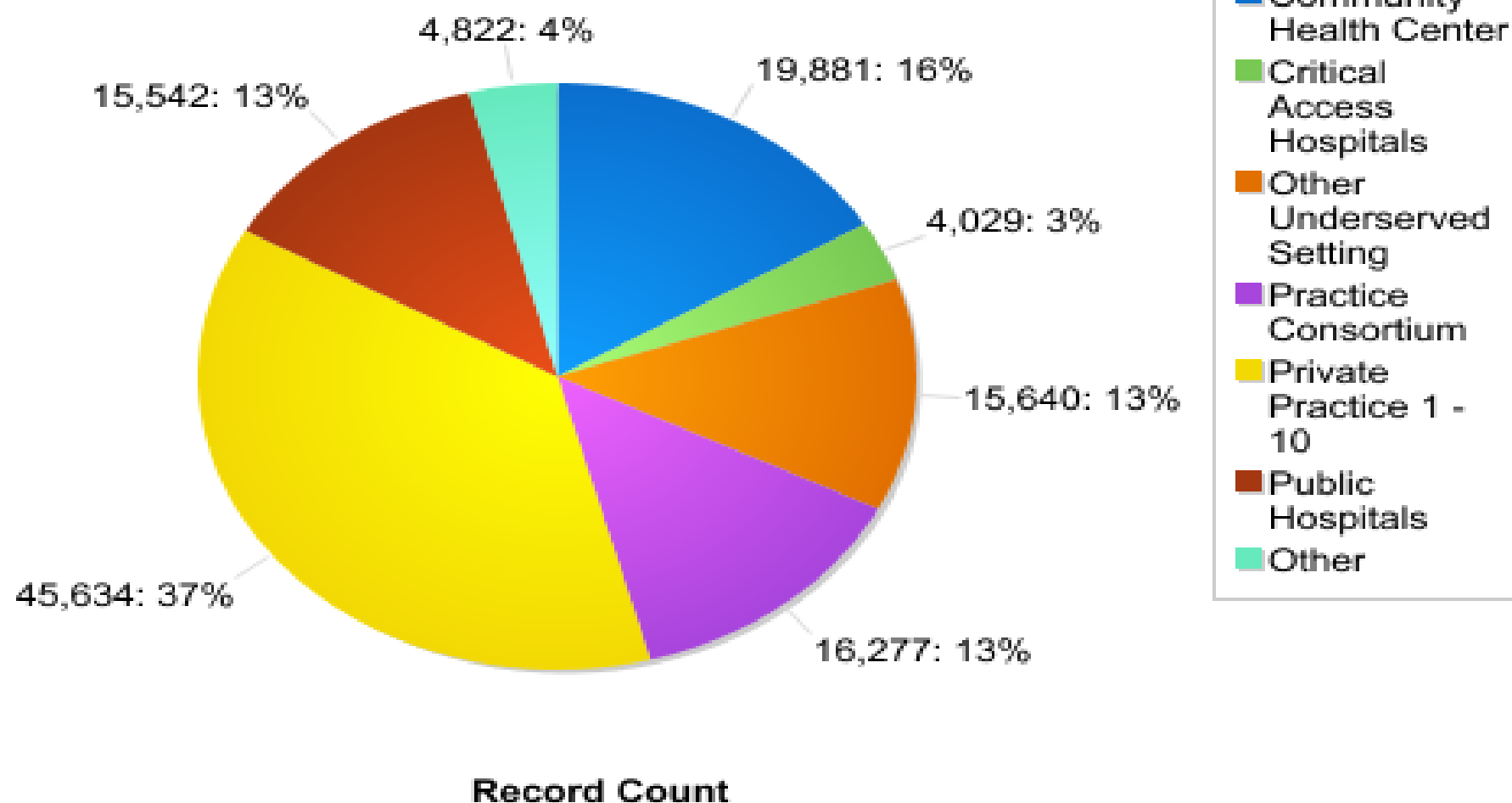
MU Intent for Key Physicians



Source: NAMCS, 2010

# Providers Working with Regional Extension Centers

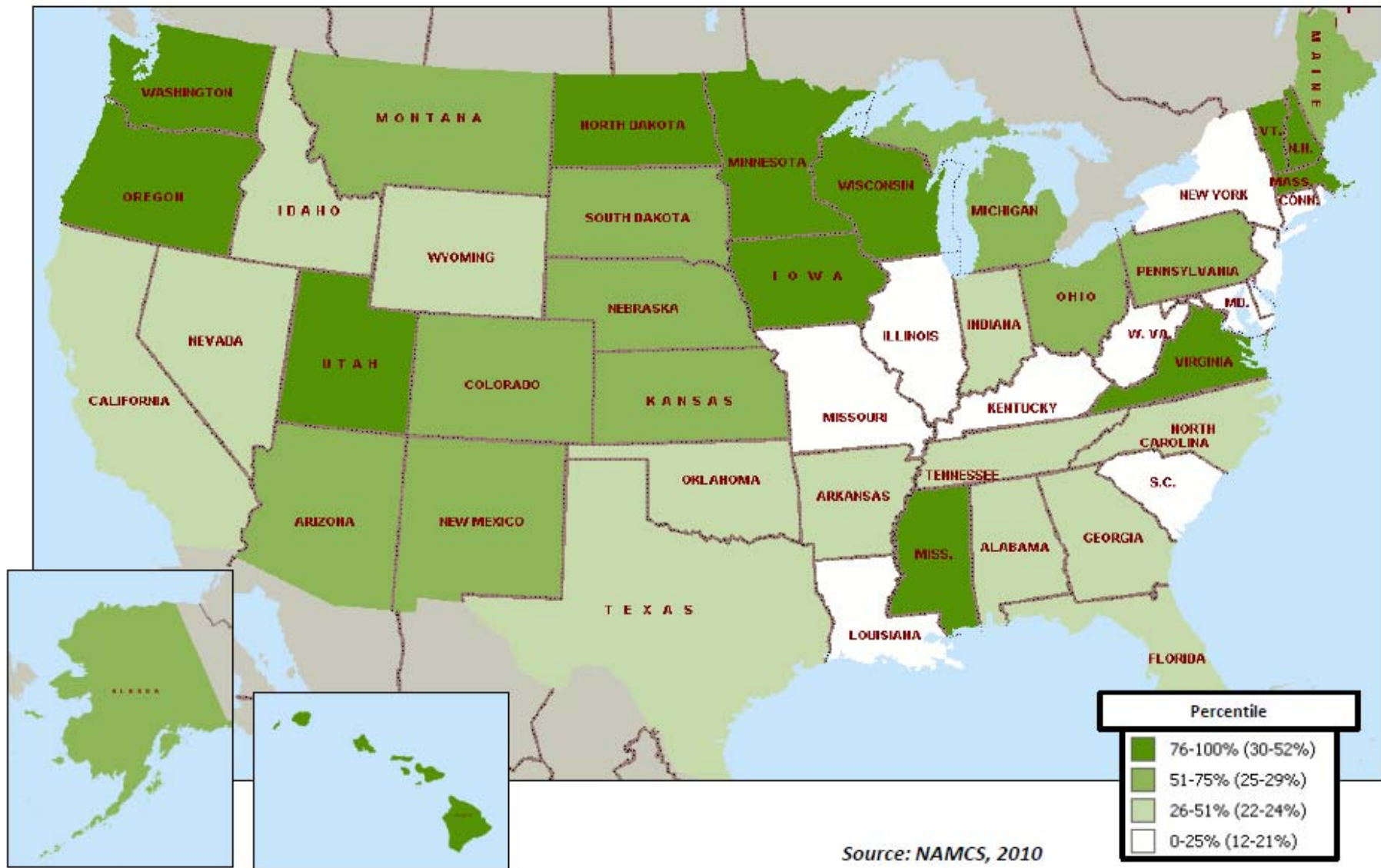
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# Physician EHR Adoption

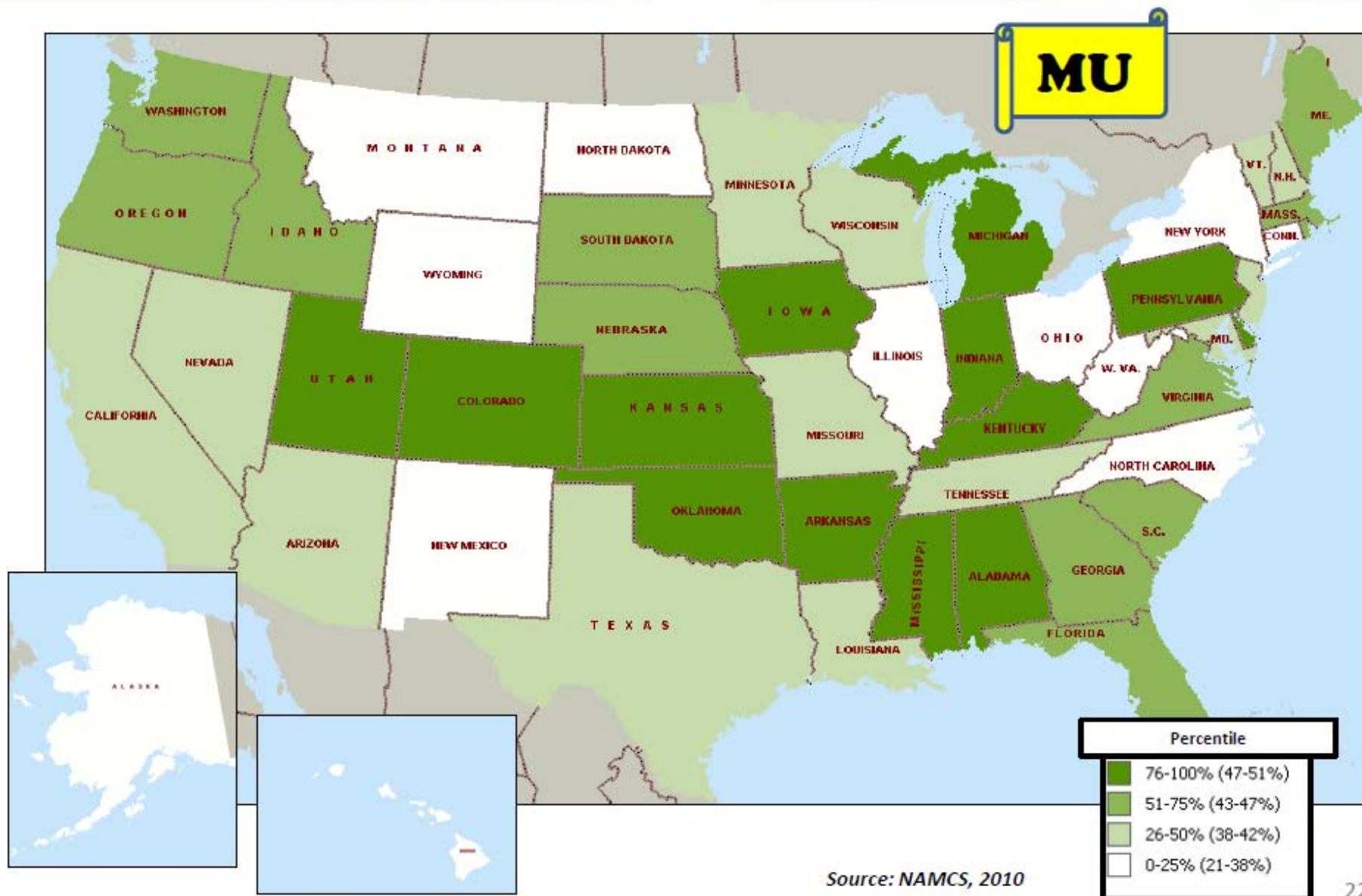
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# Physician Intent to Apply for Meaningful Use

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EHR Adoption

versus



Intent to Apply for  
Meaningful Use  
Incentive

# Hospital EHR Adoption

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*Data Source: AHA Hospital Survey  
Data from 2010*

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# November 8, 1895

If the discharge of a fairly large induction-coil be made to pass through a Crookes tube...

...We soon discover that all bodies are transparent to this agent, though in very different degrees.

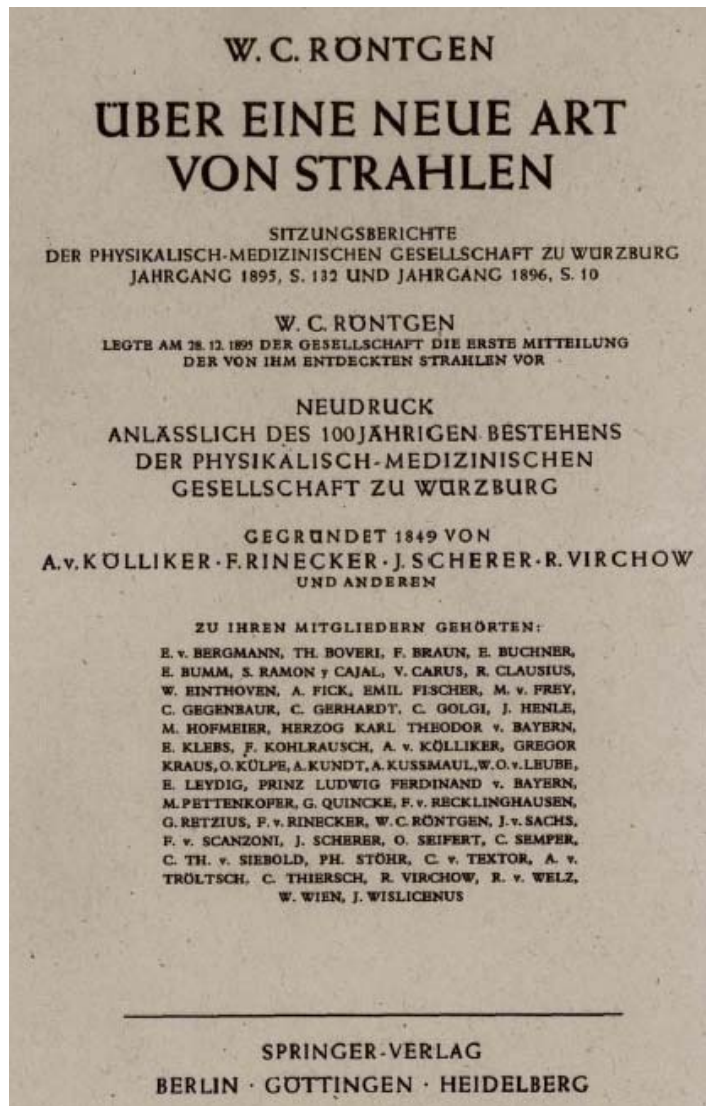
**Wilhelm Conrad Röntgen**

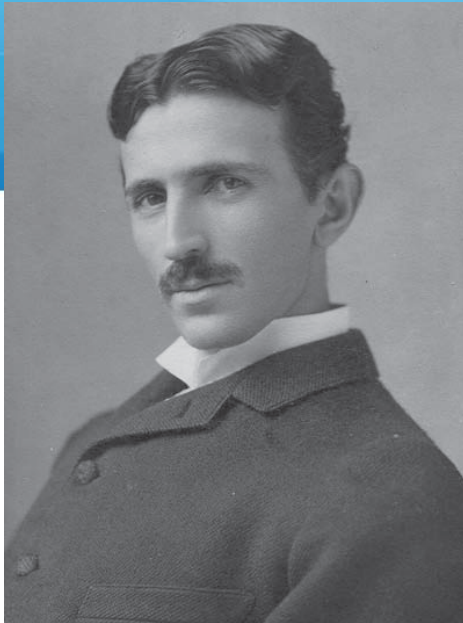




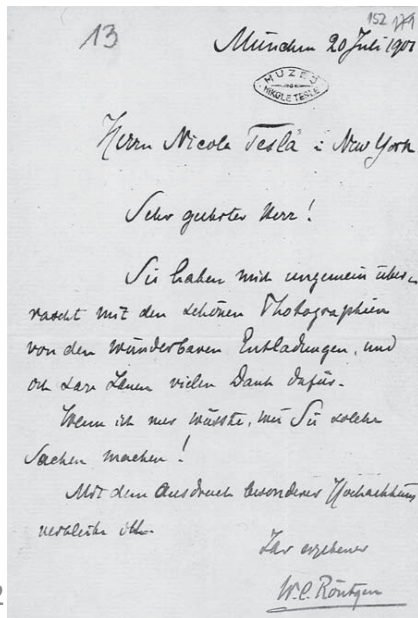
# Wilhelm Conrad Röntgen (1845 – 1923)

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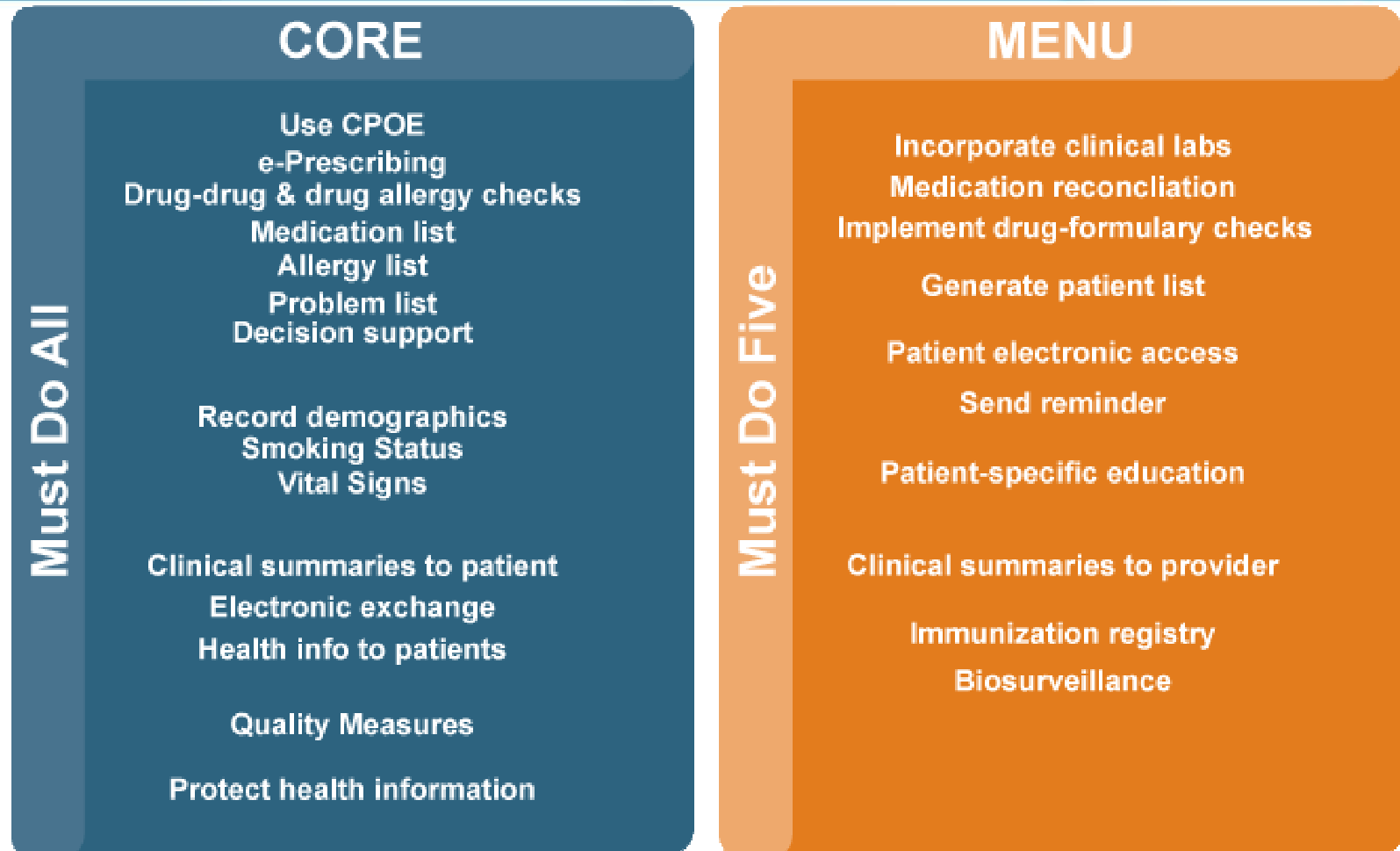


Nikola Tesla



# Stage 1 Meaningful Use Requirements

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Slide courtesy of Steven E. Waldren, MD and Jason Mitchell, MD Center for Health IT  
(AAFP) [www.centerforhit.org/meaningfuluse](http://www.centerforhit.org/meaningfuluse)





# The New England Journal of Medicine

## SPECIAL ARTICLE

## Electronic Health Records and Quality of Diabetes Care

NEJM | August 31, 2011 | Topics: Health IT, Quality of Care

Randall D. Cebul, M.D., Thomas E. Love, Ph.D., Anil K. Jain, M.D., and Christopher J. Hebert, M.D.

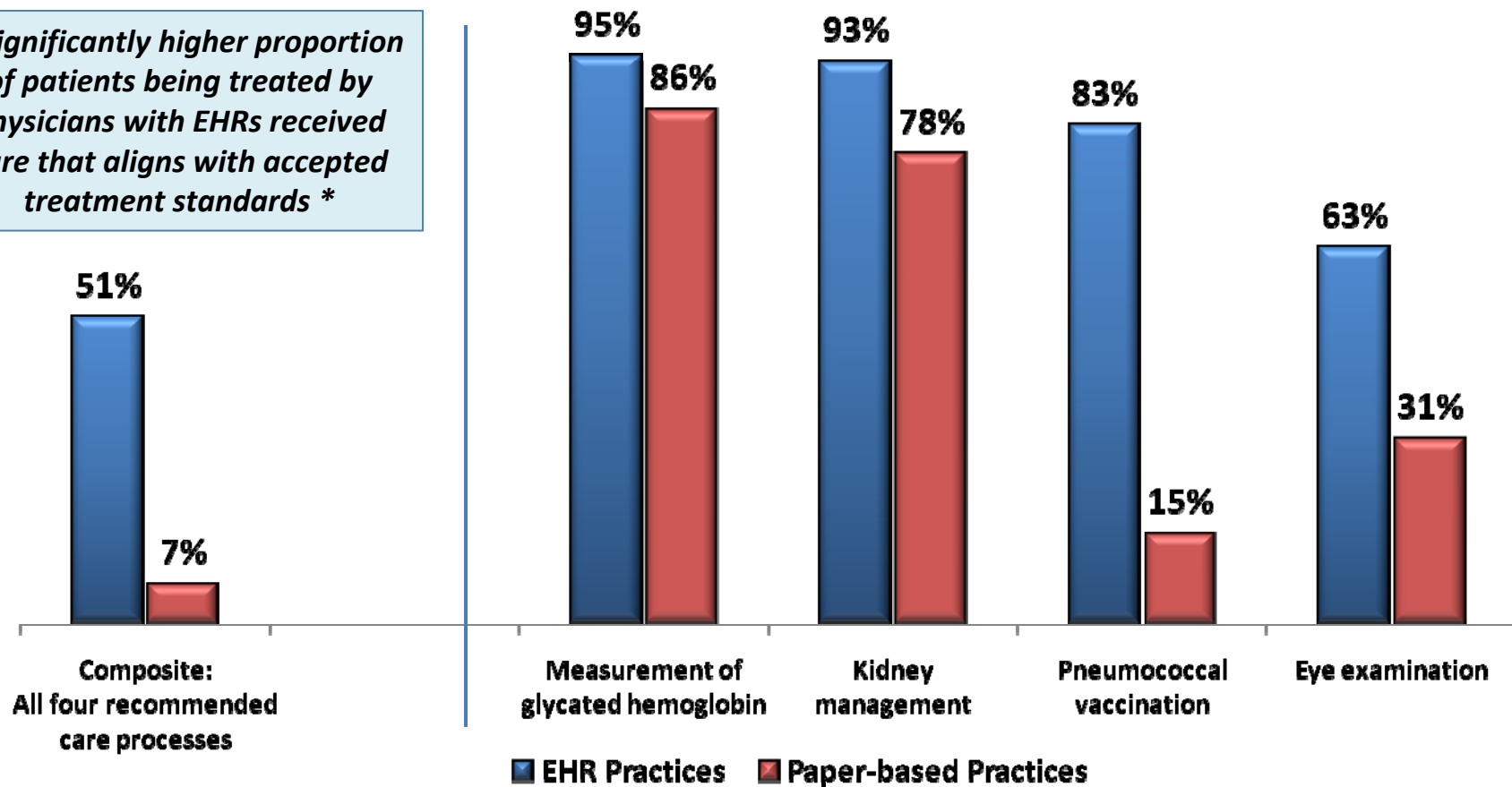
Incentives to increase adoption and meaningful use of electronic health records (EHRs) anticipate a quality-related financial return.<sup>1,2</sup> However, empirical data showing either quality improvement or cost savings from EHR adoption are scarce. Available studies have shown few quality-related advantages of current EHR systems over traditional paper-based medical-record systems.<sup>1-5</sup> Projected cost savings are mostly based on models with largely unsupported assumptions about adherence to and the effect of fully functional EHR systems.<sup>6,7</sup> Data are particularly scarce on EHR adoption by “priority primary care

# Quality of Diabetes Care: EHR vs. Paper Medical Records

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## % of Patients Receiving Care

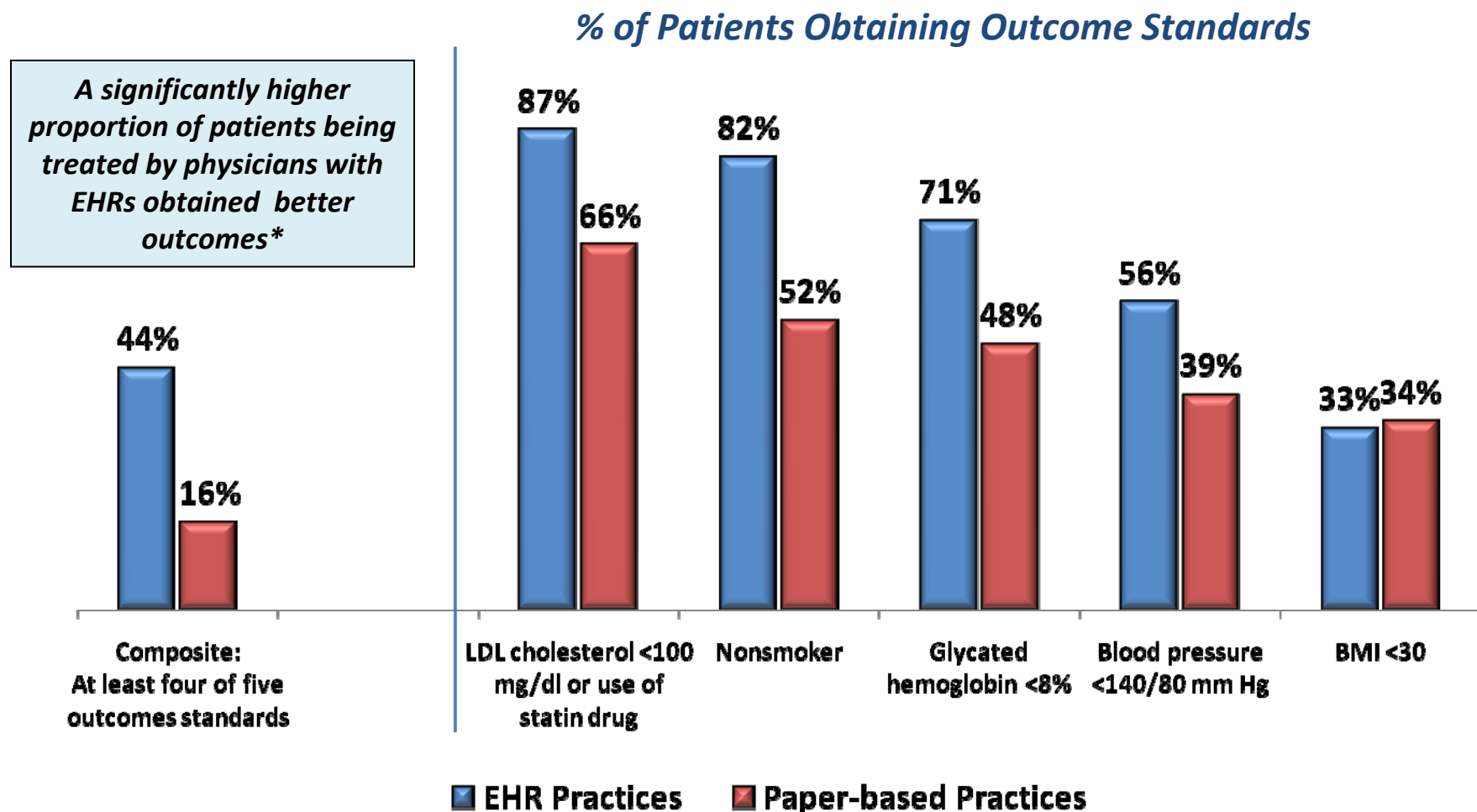
*A significantly higher proportion of patients being treated by physicians with EHRs received care that aligns with accepted treatment standards \**



Source: Cebul, R. D., M.D.; et al. (2011). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine*, 365:825-833. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMsa1102519#t=article>

\* Even after adjusting for patient demographic characteristics and insurance type, differences remain significant;  $p < 0.001$

# Health Outcomes : EHR vs. Paper Medical Records



Source: Cebul, R. D., M.D.; et al. (2011). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine*, 365:825-833. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMsa1102519#t=article>

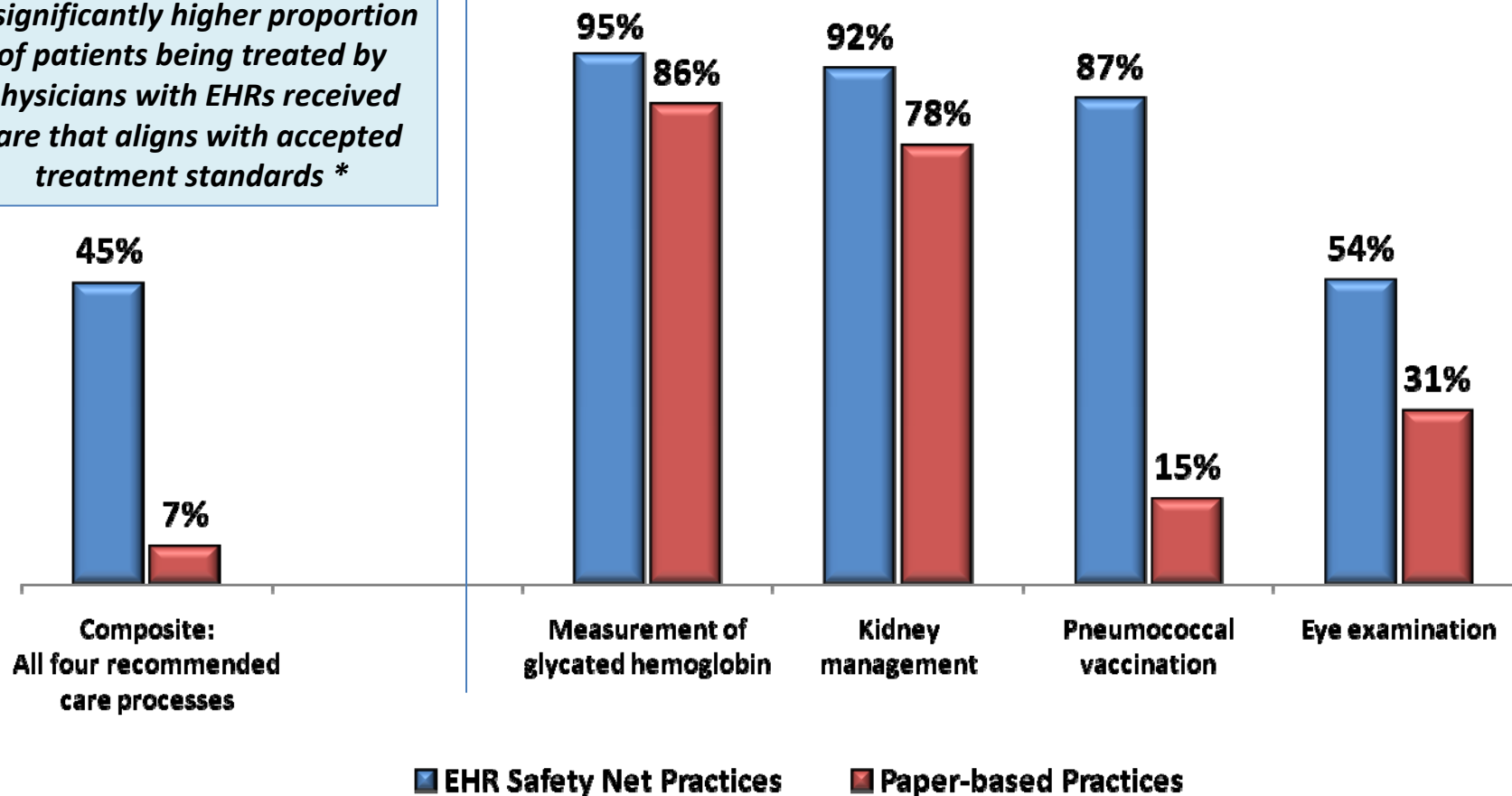
\* Even after adjusting for patient demographic characteristics and insurance type, differences remain significant;  $p < 0.005$

# Quality of Diabetes Care at Safety Net Practices: EHR vs. Paper Medical Records

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## % of Patients Receiving Care

*A significantly higher proportion of patients being treated by physicians with EHRs received care that aligns with accepted treatment standards \**



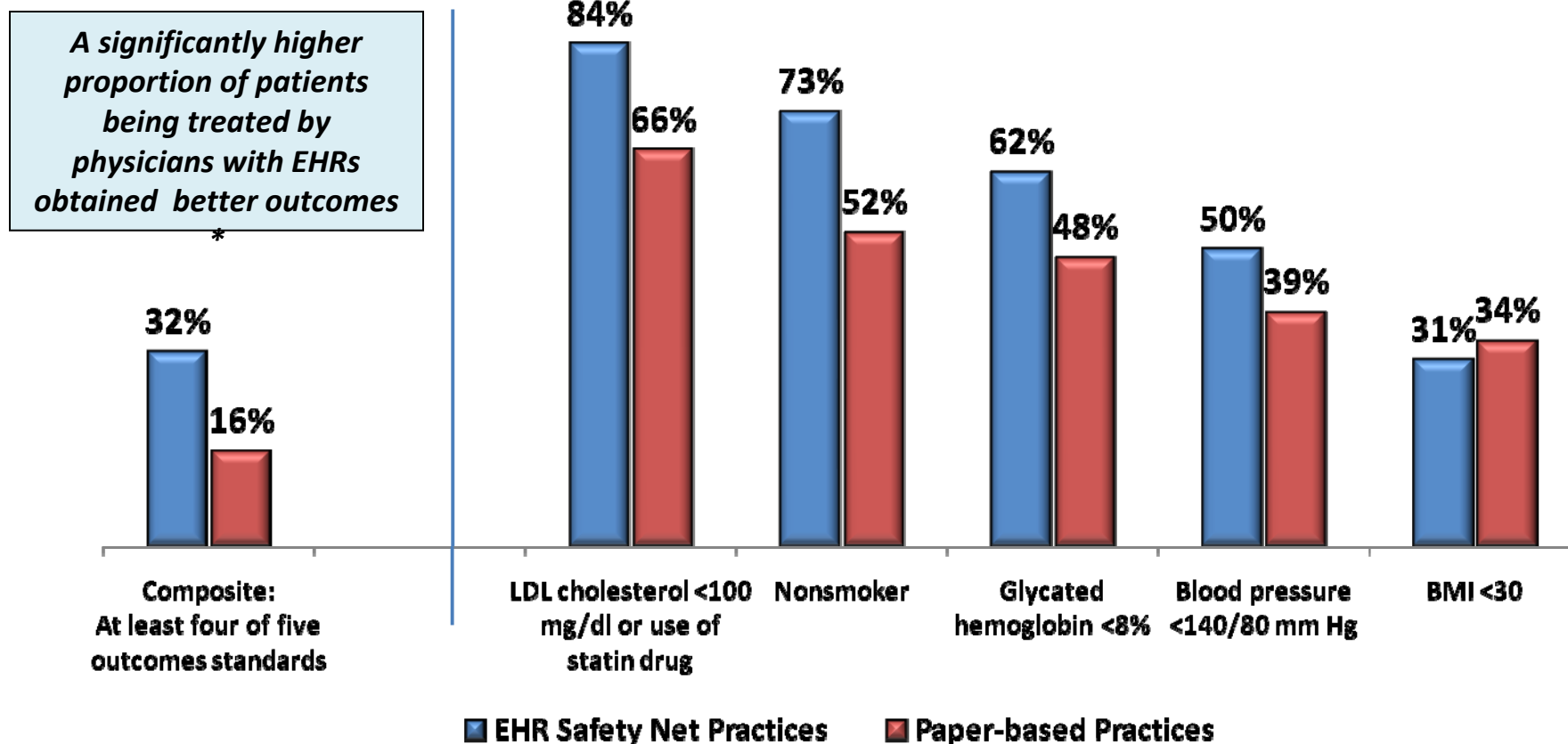
Source: Cebul, R. D., M.D.; et al. (2011). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine*, 365:825-833. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMsa1102519#t=article>

\* Even after adjusting for patient demographic characteristics and insurance type, differences remain significant;  $p < 0.001$

# Health Outcomes at Safety Net Practices: EHR vs. Paper Medical Records

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## *% of Patients Obtaining Outcome Standards*



Source: Cebul, R. D., M.D.; et al. (2011). Electronic Health Records and Quality of Diabetes Care. *New England Journal of Medicine*, 365:825-833. Retrieved from <http://www.nejm.org/doi/full/10.1056/NEJMsa1102519#t=article>

\* Even after adjusting for patient demographic characteristics and insurance type, differences remain significant  $p < 0.002$

# Louis Pasteur 1822-1895



Dans les champs de  
l'observation le hasard  
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Lecture, University of Lille (7 December 1854)



2011 Nov 10;365(19):1758-9. Epub 2011 Nov 2.



# *The* NEW ENGLAND JOURNAL *of* MEDICINE Perspective

## **Evidence-Based Medicine in the EMR Era**

Jennifer Frankovich, M.D., Christopher A. Longhurst, M.D., and Scott M. Sutherland, M.D.

**M**any physicians take great pride in the practice of evidence-based medicine. Modern medical education emphasizes the value of the randomized,

approach, using the data captured in our institution's electronic medical record (EMR) and an innovative research data warehouse. The



# “...in the light of experience as guided by intelligence.”

## Results of Electronic Search of Patient Medical Records (for a Cohort of 98 Pediatric Patients with Lupus) Focused on Risk Factors for Thrombosis Relevant to Our 13-Year-Old Patient with Systemic Lupus Erythematosus.\*

Outcome or Risk Factor	Keywords Used to Conduct Expedited Electronic Search	Prevalence of Thrombosis <i>no./total no (%)</i>	Relative Risk (95% CI)
Outcome — thrombosis	“Thrombus,” “Thrombosis,” “Blood clot”	10/98 (10)	Not applicable
Thrombosis risk factor			
Heavy proteinuria (>2.5 g per deciliter)			
Present at any time	“Nephrosis,” “Nephrotic,” “Proteinuria”	8/36 (22)	7.8 (1.7–50)
Present >60 days	“Urine protein”	7/23 (30)	14.7 (3.3–96)
Pancreatitis	“Pancreatitis,” “Lipase”	5/8 (63)	11.8 (3.8–27)
Antiphospholipid antibodies	“Aspirin”	6/51 (12)	1.0 (0.3–3.7)

**Mark Twain 1835-1910**

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**“A man who carries a cat by the tail learns something he can learn in no other way.”**

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<http://healthit.hhs.gov>