

# Population Health Research Collaborations between Federal and Private Health Care Systems: VA and HMORN

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CENTER FOR  
APPLIED HEALTH RESEARCH



Baylor Scott & White  
HEALTH



# Poll Question #1

- What is your primary research role?
  - Student, trainee, or fellow
  - Research Coordinator/Assistant or Project Manager
  - Data analyst/Programmer or Statistician
  - Investigator
  - Manager, policy-maker, or other non-research VA stakeholder

# Population Health

- Population health research requires data that represents the population of interest well
  - Define population
  - Assess quality of data with respect to that population
- For surveys, this means having a Good List and a good sampling strategy
- For archival data approaches, this means having a lot of data on a lot of people whom you can characterize well

# Population Health Research

- Many aliases:
  - Outcomes Research
  - Health Services Research
  - Big Data

# Poll Question #2

- Are you a population health researcher?
  - Yes, population health makes up the bulk of my research and I am experienced in it
  - Yes, I am developing this type of research in my portfolio or I am new to it
  - I didn't know I was, but now I think I am
  - No, but I would like to be
  - No

# Systems of Care, Sources of Data

- Federal: Veterans Health Administration
  - Payer-provider
  - Caters to the sickest & poorest with veteran status
  - Taxpayer funded
- Federal: CMS
  - Payer
  - Caters to the elderly / disabled or poor (Medicare/Medicaid)
  - Taxpayer funded
- Private Not-For-Profit, Pre-PPACA
  - Payer or Payer-provider
  - Caters to the working well or elderly / disabled (Medicare)
  - May serve the poor (Medicaid)
- Private Not-For-Profit, Post-PPACA
  - ?

# Systems of Care from Data Point Of View (Feasibility of the Research)

- Federal: Veterans Health Administration
  - System-wide data
- Federal: CMS
  - System-wide data
- Private Not-For-Profit
  - Proprietary, single-site data
  - K-P: a singular case

# Translation from Federal to Private Not-For-Profit Setting

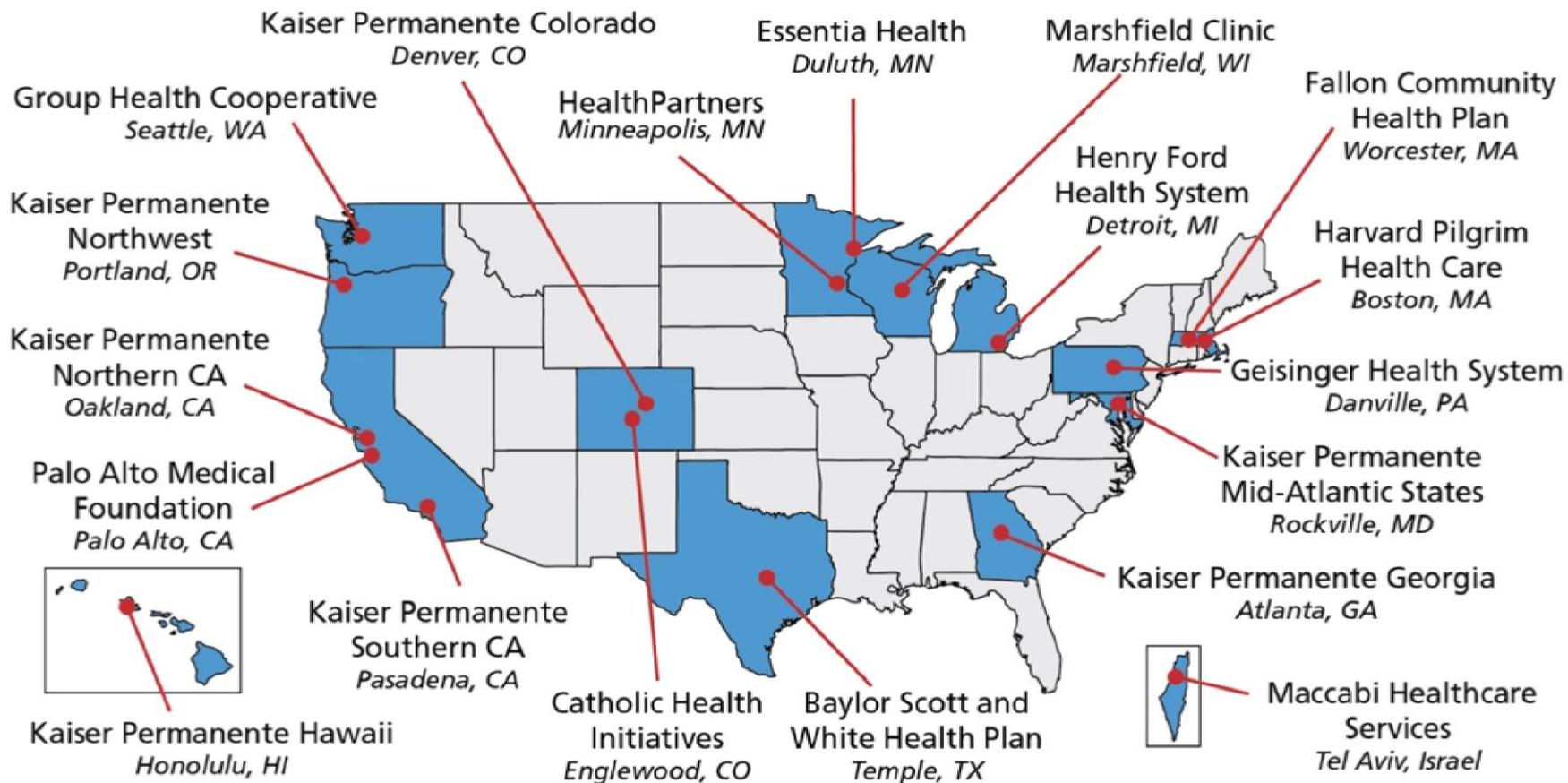
- HMO Research Network (HMORN; soon to be HCSRN) seeks to do with non-federal payer-provider systems what VA does with its national datasets
- HCSRN is comprised of private corporations...

# Translation from Federal to Private Not-For-Profit Setting

- Know how to herd cats?



# HMO Research Network Members



# Poll Question #3

- How much do you know about the HMORN (soon to be renamed HCSRN)?
  - Never heard of it before
  - I've read about it
  - I've attended the HMORN Annual Meeting / plan to attend the HCSRN Annual Meeting in 2016
  - I have colleagues in HMORN / have discussed collaborating with HMORN
  - I've worked with HMORN sites

HCSRN = Health Care Systems Research Network

# HMO (soon: Health Care Systems) Research Network

- HMORN (HCSRN) is a consortium of 19 integrated provider-payer health care systems
- 16 million lives (+ CHI not in VDW)
- Data from 2000-forward
- Virtual Data Warehouse (“VDW”)
  - Claims data
  - EMR data
  - What makes it virtual

# HMO (soon: Health Care Systems) Research Network

- How to Use It
  - <http://hmoresearchnetwork.org>
  - “Collaboration”
  - Downloadable list of Investigators
  - Online fillable inquiry form
- “Can I just have the data?” - No

# Barriers in Private Enterprise Settings

- The data look a lot like VA data -- CPT codes, ICD9 diagnosis codes, National Drug Index fields
- Data stewards are diverse, not coordinated
- For some sites, certain tables not created because no standard data flow
  - E.g., labs, vitals (height-weight-blood pressure), deaths
- Requesting data can incur cost at some sites
  - E.g., labs, deaths in Texas (non-hospital)
- Sites vary in type of payer-provider integration therefore discussions of the denominator are constant

# Why We Need to Collaborate

- Veterans Choice Act (VCA) – distance criterion
- Women's Health – referrals out, coordination of care
- Three current QI / Operations Projects
  - Bollinger survey of rural veterans in Texas and their understanding of PPACA and VCA and VA benefits (funded by VHA Office of Rural Health)
  - Alison Lohman qualitative ACA study: focus groups regarding impact on healthcare decision-making (5 VAs, 3 states)
  - Kristin Mattocks VCA project: interviews with finance, fee-basis, women's program manager, providers, COS, others (12 VAs)

# Other Benefits to Cross-System Collaboration

- Comparative effectiveness and/or translational work
- Improved collaboration and learning
- Greater generalizability of research findings
- Within HMORN, many investigators already have VA partnership or other connection
- Investigators move from VA to private settings and back

# Infectious Disease projects at the Central Texas VA and Baylor Scott & White

- pilot project: PI = Chetan Jinadatha [Xenex]
- VA merit in progress: PI = John Zeber [HSRD IIR-12-347]

“He who cures a disease may be the skillfullest, but he who prevents it is the safest physician”

- Thomas Fuller

*Tardiora sunt remedia quam mala*

“Remedies are slower in their operation than disease”

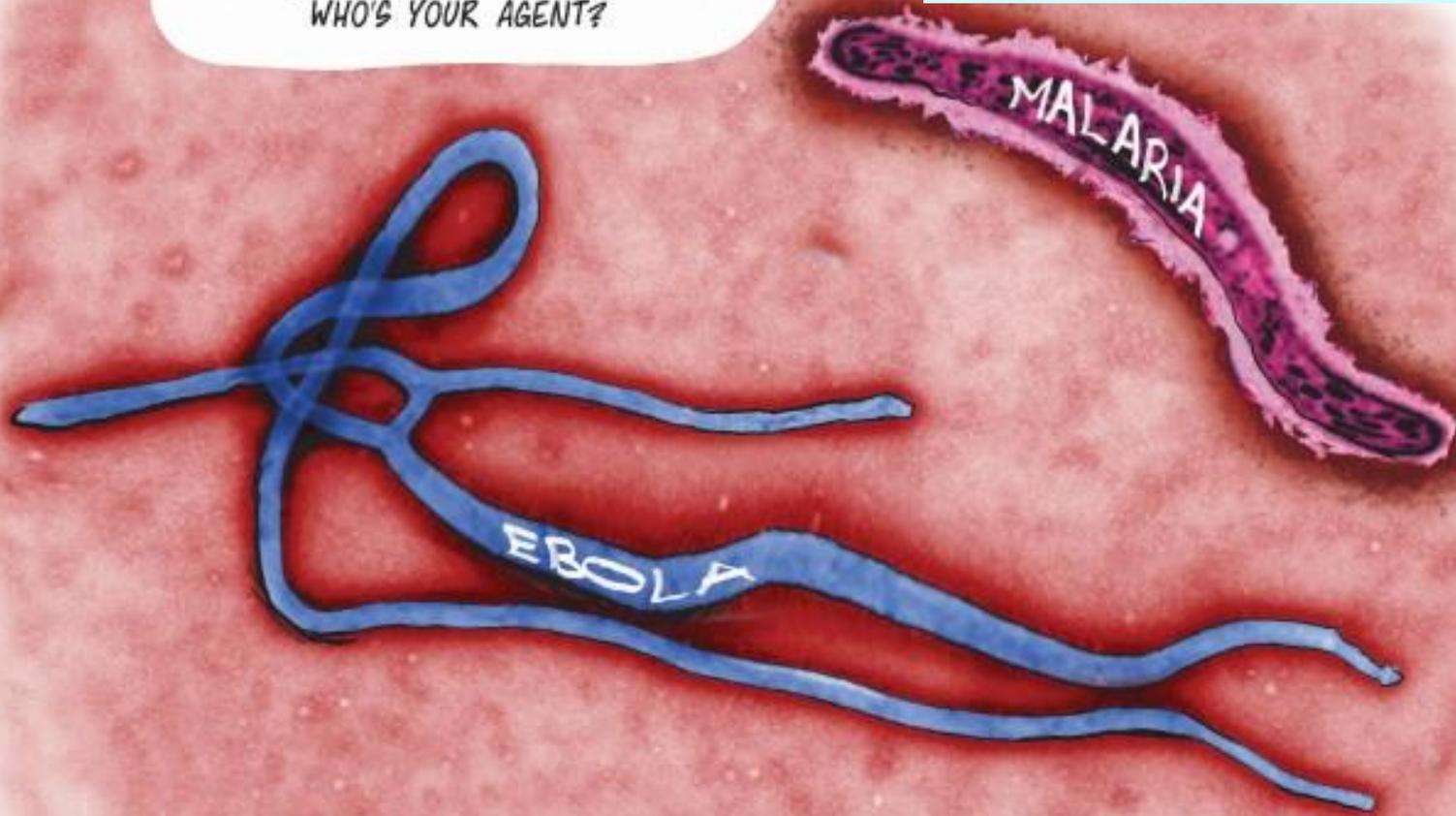
- Publius Cornelius Tacitus (55 - 117)

# Introduction

- Healthcare associated infections (HAI) affect 1.7 million patients, 100,000 deaths annually
- Preventive strategies are only partially effective
- HAI transmitted healthcare workers → patients; antibiotic-resistant organisms compounds problem
- Interventions have included hydrogen peroxide and earlier UV cleaning devices
- Time requirements and practicality limit benefits of those options
- Patients and doctors move from system to system

\* replace “Malaria” with MRSA, pneumonia, *C. difficile*, many other infections ...

I KILL 1.5 MILLION PEOPLE A YEAR  
AND I STILL CAN'T GET YOUR PRESS.  
WHO'S YOUR AGENT?



These are infectious disease researchers?



This definitely is ...



# Pulsed-Xenon Ultraviolet Devices (PX-UV): 2nd Generation UV Devices

- Many approaches to hospital disinfection
  - Various manual cleaning solutions
  - Hydrogen peroxide mist
  - Ultraviolet rays
- First generation UV effective but slow
- Device improvements = better feasibility, safety, and outcomes
- 10-15" per room vs >45"



# Pilot Study findings:

- Single site: microbial colony count in 20 rooms, PRE and POST disinfection
- Samples from 5 high-touch room surfaces
- MRSA and bacterial heterotrophic plate counts (HPC)
- Compared to manual cleaning only
- Adjusted for baseline count differences, Poisson regression

- 98% vs 76% reduction for HPC; 99% vs 91% for MRSA  
[IIR= 7.0 - 12.9]
- majority of difference in post-cleaning colonies was due to high residual counts on toilet seats
- Other observations: time effort, cost effect (?)
- Conclusion: devices are efficacious in lab setting, but more important is HAI impact ...

Jinadatha C, Quezada R, Huber TW, Williams JB, Zeber JE, Copeland LA. (2014). "Evaluation of a pulsed-xenon ultraviolet room disinfection device for impact on contamination levels of methicillin-resistant staphylococcus aureus". *BMC Infectious Diseases*, 14:187

# Larger VA Multisite Study

- Implementation trial, not a true RCT
- Devices purchased by our VISN, supporting a new ID clinical practice
- Aims (1-yr PRE vs 2-year POST):
  - Increase lab analysis (n~100): MRSA, *C. diff*, HPC and Carbapenem resistant-gram negative rods
  - clinical effectiveness of PX-UV system in acute care discharged patient rooms on overall incidence rates of HAI
  - economic evaluation including cost-effectiveness and budget impact analysis of implementation of PX-UV system
- We invited Baylor Scott & White; too expensive

# Status and Preliminary Findings

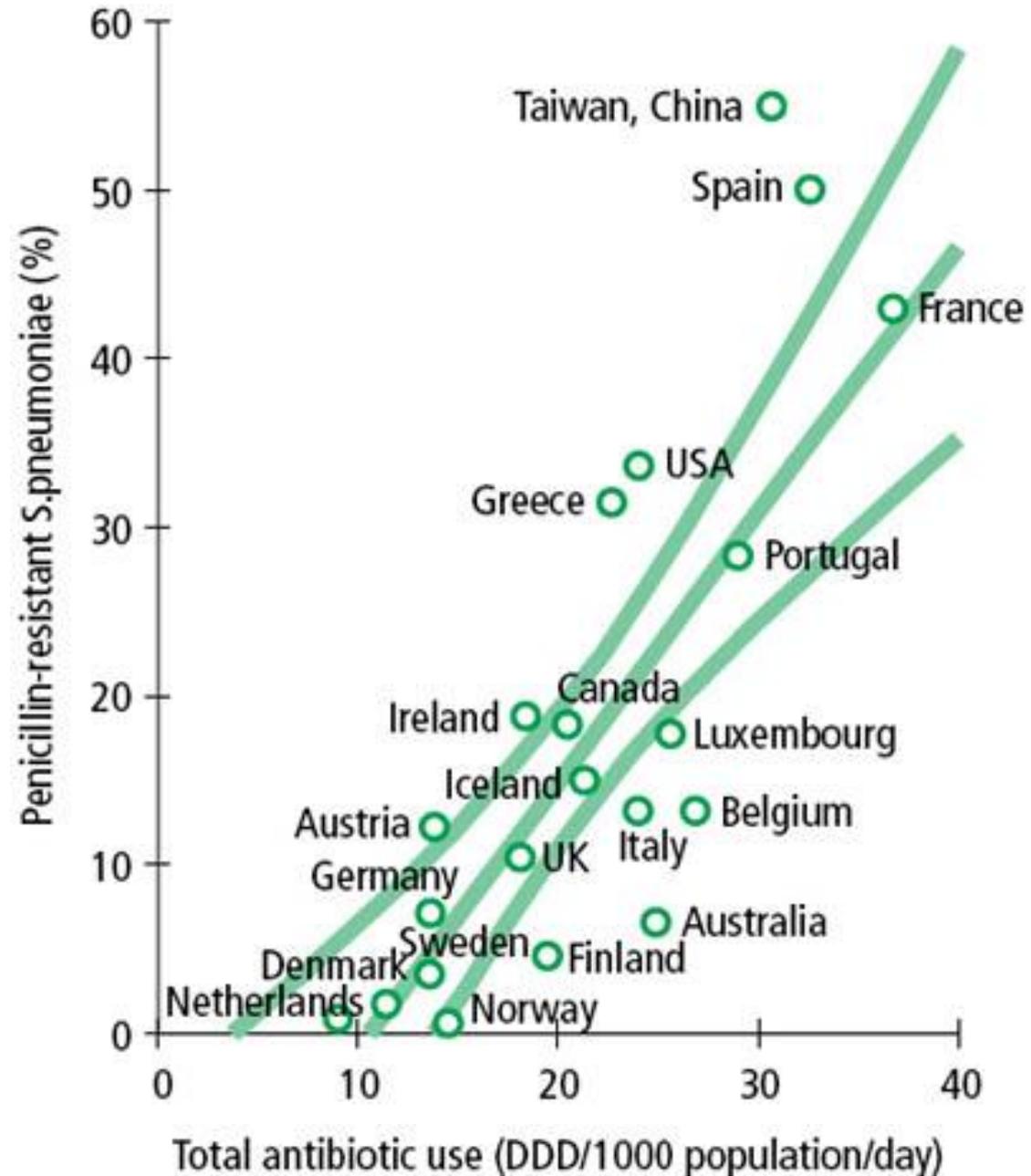
- Lab samples: approximately same reduction as pilot
- Infection rates: data collected, analysis in progress – anecdotal suggestion of 40-50% reduction
- Cost: collecting data on LOS, Rx, outpatient follow-up, cleaning time, other observations
- \*\* Lessons: low device use, clinical barriers, room turnover pressure
- Competing effects (hand washing, antibiotics, etc.)
- Next step: study implementation barriers, other factors re: “what really works”

# Other VA and Baylor Scott & White projects

- Lab studies:
  - PX-UV effect without manual cleaning \*
  - genotyping of specific microbes (in press)
  - microbial resistance to PX-UV ... nope
  - varying device use periods
- Copper-infused surfaces in ICU rooms (VA)
- OR air disinfection trial (BSW)

\* Jinadatha C, Villamaria FC, Copeland LA, Ganachari-Mallappa N, Brown DS, Liao I, Stock EM, Zeber JE. "Can pulsed xenon ultraviolet disinfect aerobic bacteria in the absence of manual disinfection?" in press, *American Journal of Infection Control*

# Concerns over Excessive Antibiotic Use



Source: Albrich WC, Monnet DL and Harbarth S, Emerg Infect Dis.; 2004; 10(3):514-7

# Baylor Scott & White efforts

- Overall antibiotic stewardship: clinical pharmacist works with primary care re: Rx recommendation
- Klebsiella study (2014) – antimicrobial combination therapy effective (lower LOS, mortality)
  - minocycline + amikacin, minocycline + colistin
- Major hand washing efforts (weekly emails)
- Selective patient isolation precautions
- Carbapenemase-resistant infections ↓75%

# Others efforts in development

- Considering no-touch disinfection devices ... initial costs currently prohibitive
- \*\* UV air disinfection in operating suites to target surgical site infections (Aerobiotix)
  - 2 devices rotating in four ORs for 18-months
  - impact on mortality, LOS, readmission
- Veterinary medicine partnership is exploring MRSA transmission via animal contact
- New Texas A&M interdisciplinary ID consortium
- Monitoring results of VA studies!!

# Lessons / Ongoing Concerns

- HAI remain a major problem across health systems
- Pragmatic clinical efforts paired with insightful research can target significant health issues
- Balance priorities with feasible interventions
- Must involve multiple stakeholders: clinical leadership, housekeeping, patients, researchers
- Spur practical hygiene programs, educational training, creative advances to combat HAI
- Future efforts should spotlight implementation barriers and translational progress
- Private systems learn from federal, and vice-versa



“The patient in the next bed is highly contagious. Thank god for these curtains”

# VA National Women's Practice Based Research Network (PBRN) – Susan Frayne, MD

- Expanded from original 4 sites to now >40
- ACA and VCA projects
- Initial PBRN study: Non-VA Utilization(unfunded)
- Current **Mattocks maternity care coordination** (13 sites)
- Copeland merit in development (depression and women's health)
- \*\* importance of understanding where (and why) women veterans seek care
  - case example: Central Texas VA and BSW: 1 mile apart

# Ongoing & Completed Projects

- Sun et al 2014 (VA-NAMCS-BSW–HFHS)
- Failed Delay-to-VA proposal: lesson of research cost
- Scherrer (VA-BSW-HFHS)
- QUERI RISOME on mental health care use of VA patients enrolled in Mental Health Research Network (MHRN) health care systems

# Removing Barriers

- Amy Kilbourne, of VHA QUERI, actively promotes VA-HCSRN collaborations
- Greg Simon, of Group Health Cooperative in Seattle, PI of the Mental Health Research Network, actively encourages collaboration with VA partners (<http://mhresearchnetwork.org>)
  - Seeking the “\$100,000 RCT”
  - Keynote speaker at HSR&D/QUERI National Meeting this July 8-10, 2015
- Brian Mittman, of CIPRS, PCORI, Kaiser-Permanente, and VA Greater LA, actively encourages collaboration with HCSRN partners

# Removing Barriers

- Funding – a primary barrier – can be overcome through volunteerism and biting the bullet as well as creative leveraging of funded effort
- Evolution of health care systems and their data may lessen barriers (e.g., HITECH, Meaningful Use, VA/DoD EMR's)
- Social and political pressures favor easier coordination of care, which means sharing EMR data
- Cloud solutions may obviate the need to share identifiers such as Beneficiary ID Numbers

# Questions / Comments ?

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