THE FEASIBILITY OF THE NATIONWIDE HEALTH INFORMATION NETWORK

Tyler Godby, Christian Gomes, Jazmine Valle, Alberto Coustasse,
Introduction

• The NHIN and RHIOs are a new but important concepts
• Definitions are not firm at this time
• Public input is being sought by the Office of the National Coordinator for Health Information Technology (ONCHIT)
NHIN

The NHIN is the technology, standards, and governance that could connect all HIEs & RHIOs.
WVHIN: The Economy & Power of a Central Hub

- Hospital Owned Physician Practices
- Nursing Homes
- Other HIE Initiatives
- Clinic Group
- Independent Lab and Imaging Center
- Physician Network
- Independent Physician
- Physician
- Physician
- Clinics
- Hospital
- Surgi-Centers
- Health System
- Personal Health Record (PHR)
- Medicaid
- pharmacies
- Public Health & Immunization Registries
Networks
RHIO

- Regional Healthcare Information Organizations (RHIO)
  - A collaborative, consumer-centric organization focused on facilitating the coordination of existing and proposed e-health initiatives within a region, state, or other designated local area.
Nationwide Health Information Network

• Set of standards, services, and policies that enable the secure exchange of health information over the Internet
• Intent is to securely link regional and state HIEs
• Direct Project
• CONNECT Open Source Solution
Introduction

- NHIN has been used by various organizations with:
  - Electronic Health Records (EHR)
  - Personal Health Records
  - Health information Exchanges
  - Government departments (Ex: public health department)
Relationship of Health Informatics to Donabedian’s Healthcare Quality Framework

**Structure**
- Providers
- Organization
- Facilities
- Patient populations

**Process**
- Patient–provider interaction

**Outcome**
- Disease-specific statistics
- Predictive analytics
- Health status/QoL
- Satisfaction
- Cost

HIS Networks, Connectivity, HIE, RHIO

EHRs, EMRs, PHRs

Quality Analysis and Reporting

Purpose

• The main purpose of this study was to analyze the feasibility of a U.S. NHIN by exploring and determining the benefits of and assessing the barriers to its implementation.
Results

- Features that come together to build NHIN include:
  - Exchange:
    - 300,000 Clinical users [goal].
    - estimated 3,000 providers
  - 65 million people involved
  - 1 million records have been shared
- Direct Project:
  - 200 participants with 50 different organizations [20 federal agencies so far]
Results

• Benefits of NHIN Utilization
  • Increased quality of care
  ✔ In 2013, 210,000 Americans died from preventable medical errors.
  ✔ Adverse drug Events have been reduced be HIE
  ✔ In a 2014 study, EMR was shown to help decrease medical Errors
  ✔ Central line- associated blood stream infections dropped form 2.6 per 1,000 line days to 0.7 per 1,000 line days
Results

• Benefits of NHIN Utilization

• Increased communication

✓ 82% of patients who used electronic based communication through NHIN stated the experience was satisfying

✓ 95% of these patients said email was more efficient than a telephone call

40% stated it was less intimidating for them to ask questions, and 40% said they would pay a fee-per-email.
Results

• Benefits of NHIN Utilization

  • Cost savings

  ✔ NHIN implementation using various systems in primary care resulted in a positive financial return on investment. A cost savings of $86,400 per primary care provider over a period of 5 years.

  ✔ Physicians who use commercially available EHR systems save $5.14 per patient per month

  ✔ 4.1% price decline in overall expense among specialty physicians who used an EHR system.
Results

• Barriers to NHIN Implementation
• Uncertain cost associated with implementation
  ▶ $156 billion initial capital investment needed to achieve NHIN
  ▶ $48 billion in annual costs for continuing operation of NHIN
  ▶ 25 months required for RHIOs to reach a level of operations where ROI > $0
  ▶ 60% of operating RHIOs reported a lack of funding as a barrier to development
Results

• Barriers to NHIN Implementation
  • Interoperability concerns
    ✓ Distributed (institution-centric) vs. Centralized (patient-centric) models
    ✓ Non-standard language used in health information technology
    ✓ Inconsistencies in clinical documentation techniques used by healthcare personnel
Discussion

• The implementation of NHIN would increase the quality of care by providers.
• The impact of e-prescribing
  • Legible handwriting
• The impact of EHR system
  ✓ Power of a patient’s medical history [i.e. Stroke at ER]
  ✓ The implementation of NHIN would increase communication among physicians and patients
Discussion

• The implementation of NHIN creates cost savings for organizations
  ✓ $86,400 in ROI is saved over 5 years per physician using and EHR system
  ✓ HIE applications make this possible by:
    ✓ Records of test that have previously been ran
    ✓ Notes entry feature of EHR
Discussion

- Variances in state that have larger HIE’s have taken on new characteristics
  - This has helped lead the way for solid groundwork with the identity authentication, addressing, and secure rooting for the states that are smaller and are not able to acquire the technology for themselves.

- Resistance to change

- Meaningful Use
Conclusion

- The utilization of NHIN has the capability to generate opportunities for cost savings after investment for implementation, increase in quality of patient care, and increase in patient-provider communication.
- Nevertheless, barriers to NHIN implementation and utilization still remain throughout the healthcare industry, the main one being concerns about interoperability.
Questions?