Developing Standards & Interoperability for mHealth

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Conflict of Interest Disclosure

Chuck Parker, MS,
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Learning Objectives

• Describe the interoperability initiatives to facilitate the development of mobile technology in healthcare

• Outline the opportunities and challenges in developing standards for mobile health IT

• Outline how to enhance the efficiency and effectiveness of real world ‘big’ data
STEPS™ Benefits Anticipated

• Treatment/Clinical – (Denmark, 3millionlives)
• Prevention & Patient Education (3millionlives)
• Likely that other Value Steps will be realized
  • Ex: savings may be anticipated in the 3millionlives campaign as it has an evidence basis to show cost reductions in certain patient populations

http://www.himss.org/ValueSuite
Approaches to Interoperability Standards Adoption

- Centralized: Denmark
- Regional: UK and others
- Decentralized: US
Denmark’s National Action Plan for Telemedicine

Scope

• Secure collection, transmission, storage of personal health data from patients’ homes to healthcare providers across the country
• Sharing of medical documents & images
• Management of health records, medical appointments, etc.

Objectives

• Ensure end-to-end, plug-and-play connectivity of personal health devices; establish interoperability standards
• Ensure personal health devices & services easy to deploy, secure & convenient for patients & providers
• Reduce acute care stays
• Enable elderly to live home independently
• Develop chronic disease management programs
• Expand use of telemedicine
Denmark: Centralized Approach to Standards Adoption

- Mandated national compliance with interoperability standards (Continua)
- Pros:
  - National healthcare IT conformity supports large-scale population health and creation of cost, operational efficiencies
  - Limited systems integration issues during rollout and subsequent changes in technology
- Cons: limited regional, local influence over standards development; currently fewer choices in devices
UK Dept of Health: 3millionlives (3ML) Campaign

• Based on evidence from the Whole System Demonstrator Programme (6,000+ person telehealth/telecare study)

Goals

• Improve lives of 3ML people with long term conditions, social care needs
• Develop market, remove barriers to delivery (5 yrs)
• Create environment to support uptake
• Public/private cooperation to simplify procurement and commissioning processes for telehealth, telecare at scale
• Put NHS and UK industry at the forefront of telehealth, telecare globally
• Promote benefits of telehealth and telecare services to patients
3ML: Regional Approach to Standards Adoption

- All personal health device providers must comply with CEN ISO/IEEE 11073
- Contracting occurs on a local basis
- NHS Worcestershire County and East Shires Purchasing Organization have voluntarily adopted Continua
- Pros: localities maintain maximal control (device selection, cost)
- Cons: healthcare IT infrastructure likely to require significant integration to achieve end-to-end interoperability at a national scale
Catalonia, Spain: Regional Approach

- Catalonia, Spain
  - Population covered by universal healthcare with a mix of public/private providers
  - Health Ministry funded ICT organization (TicSalut) coordinates standards, integrates health and social welfare systems
  - 100% of hospitals use EHRS; 70% have mobile tools
  - Device integration primarily based on HL7 standards
US: Decentralized Approach

• Standards efforts driven by industry

• August 2013: FDA recognized 25 medical device interoperability standards
  – “Interoperability standards that establish nomenclature, frameworks and medical device specific communications and including system and software lifecycle processes”
  – IEEE/11073 and others
  – Goal: “assist manufacturers who elect to declare conformity with consensus standards to meet certain requirements for medical devices”

• December 2013: FDA announced it will recognize new standards
US: Decentralized Approach, continued

Pros
• Minimizes barriers to innovation
• Encourages cooperation in private sector

Cons
• Creates data silos that delay, complicate attainment of big data
• Confusion in market inhibits investment
Continua’s Approach

• Global industry group
• Focal points
  – Personal connected health
  – Plug-and-play for user-friendliness
  – End-to-end to reduce systems integration needs
    • work with SDOs to refine underlying standards
  – Promote government adoption
Continua’s Approach

Pros
• Optimizes technology investment for adopters
• Lowers consumer barriers
• Minimizes systems integration
• Possibility to advance a global standard set in PCH (ex: ITU)

Cons
• Slows product innovation in the short term
• Requires larger initial investment of time, money
• IP issues complicate universities’ involvement
Opportunities & Challenges for Big Data

Opportunities

• Adopt common standards for PHRs to enable data aggregation, tracking from multiple consumer devices
  – A starting point for big data, especially in decentralized markets
• Agree upon type, definition and format of personal health data relayed from consumer devices to a medical records system
  – Ex: Health Records Network

Challenges

• Retail and home devices need common standards to enable consumer plug and play
• Clinical workflow impact complicates standards adoption
• End-to-end standards adoption
STEPS™ Benefits Review

• Anticipate that centralized and regional approaches will demonstrate more rapid or significant STEPS Values than decentralized approaches due to scale and standards conformity
Questions?

Thank You!

Continua Health Alliance
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