Challenges to integrating technology in healthcare settings

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Emerging Models of Health Services Delivery

The *timely* exchange of critical client level data or information underlies evidence-based healthcare. That data/information is collected by technology and healthcare providers.

Timely data exchange/sharing (shared decision-making) is essential to support:

- Patient Centered Medical Home (PCMH)
  
  http://pcmh.ahrq.gov/

- Accountable Care Organization (ACO)
  
  http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html
Information Exchange in Healthcare

E.g. 2013/14 data Emergency Room/Department admissions (Medicaid only)

- 75% of patients (n=4500) visited Emergency Rooms TEN times or more have:
  - Multiple chronic conditions (~3.5 conditions)
  - Charlson* comorbidity index of >3.5 as opposed to a score of 1 for those making a single ER/ED visit
  - Mental health and substance use issues (70%)

*http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3677715/
Transition of Care (ToC)

The movement of a patient from one setting of care (hospital, ambulatory primary care practice, ambulatory specialty care practice, long term care, home health, rehabilitation facility) to another.

Care coordination (CC)
“...deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient’s care to facilitate the appropriate delivery of health care services.”

Agency for Healthcare Research and Quality
Why data/information exchange?

- A sharper focus on “Outcomes”
- Risk profiling - clinical data essential (Population health management)
- Avoid duplication of tests/procedures
- Present on Admission Indicators
- Medication history and reconciliation
Modes of Data Exchanges

Traditional e.g., faxes, paper files

Electronic e.g. portals, HIPPA compliant wireless messages

Health Information Exchange
Exchange of CCDAs - structured formatted data amongst healthcare providers
Beneficiaries of data exchange

- **Patients**: Safety - think of duplication of X-rays; med history checks, or flu/tetanus shots; Redundant paper forms.
- **Healthcare Providers**: Prescriptions - Drug-to-drug interactions; knowledge of comorbidities; ER visit history; Better tracking for waste and fraud; Informatics.
- **Insurers**: Healthcare delivery costs reduced and improved efficiencies. Facilitate greater innovation.
Technology

- Electronic Health Records - incentivized 8500 providers/hospitals across the state - $800m; Associated with *Meaningful Use Measures*

  EHRs and EMRs now available in most health care settings; source of structured, formatted data from healthcare settings

- Invested $28m in Health Information Exchanges (HIE) to set up a federated model based on 16 HIEs initially but now down to about 6
  
  Very limited data exchange
Data exchange - Reality

- Managed Care Organizations Survey conducted May 2015
  - access to prescription history (26%)
  - access to clinical data (21%)
  - facilitate sharing of clinical data among your providers (16%)
  - receive ADT (admission, discharge and transfer) feeds (26%)
  - participation in HIE (negligible)
Challenges to Information Exchange-I

Grouped into three sets of factors:

I. Organizations
   - leadership and vision
   - incentives and costs (competitive environment)
   - processes - physical to work flow
   - policies and protocols (governance)
   - Informatics and analytical capabilities
Challenges to Information Exchange-II

II. Standards - technical issues
  o interoperability standards
  o interfaces
  o market driven factors
Challenges to Information Exchange-III

III. People

- human capital development
- cultural - changes in behavior needed to integrate technology into work flow
- patient engagement
Key Conclusions and Take-Aways

- Challenges remain in integrating technology and healthcare.
- The paradigm shift to an information based healthcare is incomplete.
- Transitions are rocky – a vision, persistence and patience are key ingredients.
- More effort need to put into outreach and training – human capital development.
- Patient engagement is a key factor.
- Keep an eye on Medicare, which will serve all of us.
Questions

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