SHR adoption vectors research

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**Vector category**

*Notes on the category*

* Vector related to the adoption of health records
  + How vector can be addressed

**Government**

* The certified EHR is EHR technology that meets the technological capability, functionality, and security requirements adopted by the DHHS
* ONC (office of the national coordinator for health information technology) promotion of EHR adoption
* Promotion of federal plans to improve health IT
  + Producing research reports that detail health IT issues (for example: ONC’s report to congress on health information blocking, 2011 health IT and patient safety report, 2014 FDA safety and innovation act health IT report to congress)
* National health IT standards
  + Incorporating content/vocab standards for structured recording of health information, such as with CCDA (common clinical data set), C-CDA (consolidated clinical document architecture)
* Federal certification
* Level of flexibility for developers in future health IT development
* Incentive programs (stage 3 meaningful use required starting 2018. Incentive program launched 2011)
  + Incentives must maximize the market desire to create necessary improvements to health IT
* EHR adoption incentives for mental health professionals
  + Give authority to medicare and medicaid programs for providing financial incentives for EHR adoption in the mental health field
* EHR adoption incentives for long term care professionals
  + Give authority to medicare and medicaid programs for providing financial incentives for EHR adoption for long term care professionals
* Variation in state and federal privacy laws
  + Lots of states have their own laws related to protecting health information in addition to HIPAA. These state-by-state regulations target different populations, health conditions, health organizations. Differing state law content causes confusion among exchange partners. A more robust national standard should be implemented

**Overall healthcare field**

* Shift from fee for service to value based care models
  + Shift federal, state, and commercial payment policies so that value based care makes more financial sense for providers. This will indirectly increase demand for interoperability, as value based care involves higher degrees of communication and collaboration between care providers.
* Availability of alternative payment models
  + Improve other payment models that reward quality over quantity
* Adoption of meaningful use by care providers
  + Reducing the number of objectives to support alignment with stage 3 would increase rate and ease of adoption
  + Modifying “patient action” measures in stage 2 allows providers more flexibility as they implement new workflows
* Health IT across care continuum
  + ONC’s health IT certification program should be made more accessible to all types of health IT that support a variety of care/practice settings

**Hospitals**

* EHR ability to record clinician notes
* Cost of adopting EHRs
* Time spent training staff in using EHRs
* Selecting an EHR
* Cost of sharing information
  + 25% of private acute care hospitals identified that sending/receiving/finding patient health information from other care settings costed them additional money. This should be reduced (more detail needed here).
* Health IT market transparency
  + Allow health IT product/services costs and limitations to be clear so that hospitals can effectively compare and contrast them
* Technology “lock in”
  + Allow providers greater freedom in switching health IT products/services. This is a two-fold benefit, one, the care providers can switch products/services as improved health IT solutions get developed, two, it will force health IT developers to improve technologies and compete to create more advanced, less expensive products/services

**Small/rural hospitals**

*High homogeneity and low diversity of stakeholders. Less internal decision making in how to implement EHRs. Usually left up to the vendor.*

* Effort of adoption
  + Small hospitals have less diverse stakeholders and have trouble attracting advanced IT staff. More reliance on vendors standard approaches to adopting/implementing EHRs
  + Improve implementation guidance

**Teaching hospitals**

*High heterogeneity compared to non-teaching hospitals because they deliver more complex care. Typically early EHR adopters.*

**Health IT field**

* Interaction with ancillary clinical systems
  + Consideration of EHR relationship to other electronic functions (lab, radiology, barcoding for closed-loop medication administration, clinical documentation like physician/nursing notes, clinical decision support)
* Interoperability
  + Difficulty in integrating shared information EHRs should be addressed
* Shared information
  + EHR information should allow clinicians to view shared information instead of having them leave regular workflows to receive/view data
* Health IT transparency
  + Lack of transparency and reliable information about health IT products/services is a barrier to interoperability. It reduces competition in the marketplace
* Private business interests (information blocking)
  + Information blocking is when entities interfere with the exchange or use of health information. Work with federal government (ONC, congress) to enact policies that reduce information blocking of health information
  + Allow avenues for stakeholders to report information blocking (such as through the health IT complaint form)
  + Current law does not directly prohibit information blocking (except for some circumstances, via HIPAA). Federal and state law offer little protection against information blocking. More laws should be made that prohibit information blocking

**EHR**

* Accessibility and exchange of data
  + Enhance ability to data export
  + Increase API integration capabilities

**Vendors**

* Obtaining EHR certification

**Physicians**

* Perceived ability to deliver high-quality patient care
* Level of control over the content of work
* Time spent learning how to use EHR
* Privacy and security
* Matching EHR with clinical workflows
* Time spent doing data entry
  + More basic tasks could be done by clerks and transcriptionists
* Interference during face-to-face patient care
* Number of electronic messages and alerts
  + Keep messages and alerts at a minimum
* Ability to exchange health information to outside providers
  + Allow the digital exchange of health information, instead of fax

**Patients**

* Privacy and security
  + EHR is capable of exchanging sensitive health information via the data segmentation for privacy (DS4P) criteria
* Safety in functional use
  + Improvement in the UI via user-centered design principles reduce rate of mistakes
* Data transparency
* Data accessibility

**BRAIN DUMP VECTORS (not based on any references)**

* Disease epidemic spreads among population → symptoms and data values are similar for the disease inflicted patients → forces standardization of EHR as it increases efficiency in treatment as similar data values can be easily communicated
* Destruction of private insurance → single system allows development of a standardized EHR system
* US veterans lose respect among general public → VA hospital system declines and loses relevancy even further → VA system is abolished and veterans are moved to the larger hospital system → increased consolidation of EHRs as one major is abolished
* High-profile figure dies in an ED situation due to data interoperability issues such as providers failing to collect essential information from ancillary services related to situation at hand (political? Actor? Most effective would be a high profile figure related to the health IT space, or well known political figure that the public loves. More love the better) → increase public awareness of EHR interoperability issues and need of adoption of better EHR tools
* Virus wipes out a major hospital systems data and patient data cannot be retrieved anywhere else because it was all insulated in one area and no copies exist
* Nothing in health IT is done → one EHR gains monopoly and charges exorbitant money for the exchange of data between providers → public outrage → gains attention of political figures who must address the problem or face public scrutiny
* Natural disaster (flood, hurricane, fire) wipes out a major hospital systems data and patient data cannot be retrieved anywhere else because it was all insulated in one area and no copies exist
* Another country develops a vastly superior universal EHR system → roll out to many countries worldwide → US has no choice but to adopt or create an even better EHR system
* Public starts caring more about mental health because of media, movies, etc → increases adoption of EHR within the mental health space
* Employee hacks millions of patients information and releases them because the system was too easy to breach → development of robust, secure EHRs
* People elected to congress who are more passionate about health IT
* Promote health IT field to high schoolers, college students
* Health care cost containment
* Tree virus, paper eating caterpillars wipes out all the trees → world paper supply drops drastically → cannot use paper in the hospital due to supply → forcible adoption of EHR
* New generation of kids don’t know how to write on paper because they were raised on keywords → easier for the next generation to use EHRs → forces increased adoption of EHRs
* Decreased full time job possibilities means people need to move all the time → health record needs to move along with them if it’s going to be of any use
* Increased globalization or immigration → health record needs to move along with them if it’s going to be of any use
* Increased need to gather more vectors on a patient → paper EHRs obsolete because it just takes too much time to record everything
* Lobbying blows fire codes way out of proportion → no one’s allowed to own paper → forcible adoption of EHR
* Graphite supply in the world drastically reduces → forcible adoption of EHR due to lack of writing utensils
* A virus causes society to become blind → only way to store health information is to use voice UI → everyone uses EHRs
* Increased globalization causes languages to be mixed everywhere so EHRs are needed to translate on the fly

ADDITIONAL NOTES:

* There are a small amount of physicians refusing to adopt EHRs (~9% in 2013 survey). Often found in small/isolated practices.
* Primary care physicians have the highest rate of adoption for any EHR (certified + basic. 79%). Solo practitioners the least (64% using any type of EHR). community health centers have highest adoption rate for EHR, but lower rates for certified + basic EHRs.
* Adoption rates of basic EHRs by facility: 2011 → 2015
  + Critical access hospitals: 20% → 80%
  + Rural hospitals: 22% → 80%
  + Small hospitals: 22% → 81%
  + Children’s hospitals: 10% → 55%
  + General medicine hospitals: 12% → 84%
  + Psychiatric hospitals: 7% → 15%
* ONC (office of the national coordinator for for health information technology) is shifting effort to interoperability of health information and health IT support care delivery system reform. It used to be focused in hospital adoption of EHRs.
* HITECH act in 2009 = huge growth in health IT use for those eligible for EHR incentive programs
* Federal Health IT strategic plan: 2015 - 2020.
* Long term care providers lag in EHR adoption despite being one of the demographics that most needs to exchange health information with other providers to ensure continuity of care
* 10% of hospitals do not typically share data with outside providers

QUESTIONS:

* Difference between certified EHR vs basic EHR?
  + Basic EHR is if a hospital implements the following computerized functions in at least one clinical unit in the hospital: electronically maintain patient demographic info, physician notes, nursing assessments, patient problem lists, patient medication list, discharge summaries, electronically view lab reports, radiological reports, diagnostic test results, electronically order medications.
  + Certified EHR follows EHR requirements put out by HHS which qualifies it for meaningful use incentive payments.
* Why do psychiatric hospitals have such low EHR adoption rates?
  + Medicare and medicaid programs have no authority to provide financial incentives for psychiatric hospitals to adopt EHRs. Also applies to community mental health centers, residential and outpatient mental health and substance use disorder treatment clinics, and non-physician mental health professionals.

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