STRATEGIC INNOVATIONS FOR AFFORDABLE, SUSTAINABLE HEALTH CARE:

A Model for Health System Reform

Environmental Scan

Electronic Medical Records
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**Electronic Medical Records (EMR)** – An EMR is a computer-based patient medical record. An EMR facilitates access to patient data by clinical staff at any given location; accurate and complete claims processing by insurance companies; building automated checks for drug and allergy interactions; clinical notes; prescriptions; scheduling; sending to and viewing by labs. The term has become expanded to include systems which keep track of other relevant medical information. The practice management system is the medical office functions which support and surround the electronic medical record.\(^1\)

**Note:** The 2009 economic stimulus package (HITECH Act) aims at incenting more physicians to adopt EHR. The *American Recovery and Reinvestment Act of 2009 (ARRA)* promises incentive payments to those who adopt and use “certified EHRs” and, eventually, reduces Medicare payments to those who do not use an EHR. The research evidence on the overall merits of EHR implementation to support care delivery is strong (e.g., improved decision making, reduced medical efforts). However, evidence to support EMRs as a cost savings strategy is mixed. There are several landmark studies and reports (e.g., *The New England Journal of Medicine*, Medical Group Management Association (MGMA), Congress, Blue Cross, and National Research Council) that have clearly refuted the claims of EMR as a cost saving strategy.\(^2,3,4,5,6,7,8\)

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<td><strong>Application Service Provider (ASP) Hosting Strategy</strong></td>
<td>In contrast to the traditional client/server model, the ASP strategy allows providers to save on the upfront costs and hardware requirements of a client/server architecture, and instead make smaller payments over time.</td>
<td>• A review of several provider organizations that adopted the ASP model indicates that the approach does allow for reduced start up costs for EMR hardware, software, network connectivity, and labor.(^9) • The ASP model also allows practices to access new features almost immediately upon release instead vs. increased costs for enhancements as seen in the client/server model. This may become an increasingly important driver as health information exchange (HIE) requirements continue to evolve. • ASP model also allows providers to start off with a hosted service (less cost and risk), then move to an in-house solution over time.(^10) • Key concerns cited for organizations adopting a ASP approach include: vendor stability, reliance on internet</td>
<td>• Model appears viable for most geographical markets. • Model appears suitable for diverse market conditions. • Greatest concern has been in areas where internet connectivity is not strong (e.g., rural markets).(^11) • Dominant purchasers identified include, but may not be limited to: o Independent Physician Associations (IPAs); and o Small to mid-size provider organizations (physicians, small healthcare groups, etc).(^12) • Other: o Relevance to Business Coalitions – o Ability to negotiate vendor-provided service level agreement (SLA); o Ability to minimize the capital investment in EMR;</td>
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\(^1\) Electronic Medical Records (EMR) – An EMR is a computer-based patient medical record. An EMR facilitates access to patient data by clinical staff at any given location; accurate and complete claims processing by insurance companies; building automated checks for drug and allergy interactions; clinical notes; prescriptions; scheduling; sending to and viewing by labs. The term has become expanded to include systems which keep track of other relevant medical information. The practice management system is the medical office functions which support and surround the electronic medical record.

\(^2\) The 2009 economic stimulus package (HITECH Act) aims at incenting more physicians to adopt EHR. The *American Recovery and Reinvestment Act of 2009 (ARRA)* promises incentive payments to those who adopt and use “certified EHRs” and, eventually, reduces Medicare payments to those who do not use an EHR. The research evidence on the overall merits of EHR implementation to support care delivery is strong (e.g., improved decision making, reduced medical efforts).

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\(^4\) The research evidence on the overall merits of EHR implementation to support care delivery is strong (e.g., improved decision making, reduced medical efforts).

\(^5\) However, evidence to support EMRs as a cost savings strategy is mixed.

\(^6\) There are several landmark studies and reports (e.g., *The New England Journal of Medicine*, Medical Group Management Association (MGMA), Congress, Blue Cross, and National Research Council) that have clearly refuted the claims of EMR as a cost saving strategy.

\(^7\) Specifically, the American Recovery and Reinvestment Act (ARRA) of 2009 promises incentive payments to those who adopt and use “certified EHRs” and, eventually, reduces Medicare payments to those who do not use an EHR.

\(^8\) The research evidence on the overall merits of EHR implementation to support care delivery is strong (e.g., improved decision making, reduced medical efforts).

\(^9\) A review of several provider organizations that adopted the ASP model indicates that the approach does allow for reduced start up costs for EMR hardware, software, network connectivity, and labor.

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\(^12\) Dominant purchasers identified include, but may not be limited to:

- Independent Physician Associations (IPAs); and
- Small to mid-size provider organizations (physicians, small healthcare groups, etc).
### Intervention Areas and Case Examples

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| Internet, through a web browser or specialized client software (e.g., VPN). Payment is based on a smaller setup fee and ongoing monthly payments based on usage and/or per provider. | Connectivity, security, and data conversion capabilities.  
- Stronger arguments in favor of ASP approach vs. client server strategy: (1) Higher upfront cost of ownership as a server and software must be purchased upfront; (2) Manual product updates are usually required (not in all cases); (3) Online backup must be purchased as add-on 3rd party software which increases overall IT spend; and (4) Remote access to EMR is limited in functionality and is more complex. | ○ Ability to spread the cost of software, hardware and support over a monthly operating budget; and  
○ Minimizing the need for expensive internal IT personal to maintain a complex EMR system. |
| Other Comments | | |
| | - A key consideration for ASP implementation will be whether the EMR is certified by the Certification Commission for Health Information Technology (CCHIT), which will determine incentives or penalties for EMR “Meaningful Use” by providers.  
- ASP Vendors: eClinicalWorks (eCW), Allscripts, and NextGen. | |
| Other: | | |

**Electronic Medical Records**

- Optimization of the value of EMR implementation by focusing on staffing and workflow changes associated with new technology implementation (e.g., patient charting, clinical decision support, document and image management, reporting). Primary focus is on patient access, workflow efficiency, communication, decision support use, and financial performance.
- EMR and IT-driven clinical transformations to maximize value realization for providers and patients through business process optimization and effective organization change management.
- In general, most of the research evidence consists of before-and-after comparisons of key outcomes measures (e.g., patient wait times, medical errors).
- In 2005, one study estimated industry savings of $81 billion annually, with that number possibly doubling once the data captured by EMRs is fully used in the prevention and management of chronic disease.13
- A survey of 819 users of electronic medical records (EMRs) by the Medical Records Institute found that almost 50% of healthcare organizations were driven to EMRs because they recognized the need to improve clinical processes and workflow efficiency.
- Reported results include:14, 15, 16
  - Reduced clinical costs,  
  - Enhanced quality and access,  
  - Reduced hospitalizations,  
  - Reduced adverse events,  
  - Reduced administrative costs,  
- No data were found to suggest that approach would be limited to specific geographic markets.
- Model appears suitable for diverse market conditions.
- The majority of case examples identified focused on larger hospital systems where there is a greater need to integrate all aspects of the care delivery system — from ambulatory care to the emergency department, to the inpatient setting, to post-acute care providers.
- Dominant purchasers identified include, but may not be limited to:  
  - Physician Group Practices, and  
  - Hospitals (e.g., Acute, Community, Rural, Urban, Ambulatory Care, Long Term Care).  
- Other:  
  - One group identified was a multispecialty group practice with more than 750 physicians and 6,000 staff serving more than 360,000 patients at 41 ambulatory care sites.18, 19

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**Strategic Innovations for Affordable, Sustainable Health Care: A Model for Health System Reform: Environmental Scan**

*Altarum Institute January 2011*
## ELECTRONIC MEDICAL RECORDS

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<td>o Improved care management and coordination of care,</td>
<td>o Relevance to Business Coalitions - Serves as ancillary strategy to maximize EMR investment and contribute to overall cost reductions.</td>
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<td>o Expansion of services, and</td>
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<td>o Modification of practice patterns and behavior.</td>
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<td>Several organizations identified that had implemented EMRs were also engaged in other concurrent transformational programs (e.g., Six Sigma, culture change, physician engagement, Baldrige Review, and ongoing initiatives around quality, patient safety, and cost-effectiveness).(^1)</td>
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<td>It is important to note that industry experts forecast that as many as 100,000 physicians and IPAs will be making decisions on EMR in the next 24 months, as the market reaches the so-called “Tipping Point.” This is largely due to the EMR adoption mandates outlined in the ARRA.</td>
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### Other Comments

- Two large health systems — Sutter Health in Northern California and Presbyterian Healthcare Services in Albuquerque, New Mexico — are taking this approach, using Lean Six Sigma design tools. They are first redesigning processes and workflows to eliminate waste, redundancy, and variation, and then automating these newly improved processes with EMR technology.

- The Marshfield Clinic (Wisconsin) has long used information systems to facilitate care process redesign for patients with chronic illnesses, and the organization expanded its efforts after becoming a participant in the Centers for Medicare and Medicaid Services (CMS) Physician Group Practice Demonstration Project. As a result of these expanded efforts, Marshfield Clinic reports enhanced quality and access to care; reduced hospitalizations, adverse events, and clinical and administrative costs; and earned performance bonuses in both years of the demonstration project.\(^2\), \(^2\)

### HOSPITAL SPONSORED INCENTIVES TO DRIVE PHYSICIAN EMR ADOPTION

A number of provider incentives have been identified to

- Research suggests that there are a number of strategies taken by hospitals to help encourage EMR adoption by physician group practices.

- Factors driving hospital interest in supporting physician EMR adoption include: (1) improving the quality and efficiency of care, and (2) increasing alignment between physicians hospital.

- Hospitals varied in the level and structure of the

- Greatest presence seen in the U.S. Northeast Region - where several hospitals were identified to have initiated small-scale, phased rollouts of subsidized EMRs (e.g., Beth Israel Deaconess Physicians Organization, Children's Hospital Boston, Caritas, Mt. Auburn Hospital, New England Baptist Hospital, Partners Healthcare System, Winchester Hospital).

- Model appears suitable for diverse market conditions.

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<td>help drive EMR adoption at the physician level to include direct financial subsidies, extension of EMR vendor discounts and technical support by hospital IT staff.</td>
<td>85% of the cost of EMR implementation for physician offices. The revised regulations are scheduled to sunset on Dec. 31, 2013, when physicians must assume any ongoing EMR costs.</td>
<td>subsidies and/or IT support services, such as training, technical support, data storage, and enhanced clinical data exchange between hospital IT systems and physician EMRs. - Hospital information technology projects, budget availability and physician interest are among the factors influencing hospital decisions regarding adoption. - Most hospitals are picking ONE system for their employed physicians and then they are going to offer to pay 85% If independent physicians use this ONE system. - Hospitals reported that they anticipate physicians will be more likely to maintain, and even expand, their relationship with the hospital because of the improved efficiency from interoperability with hospital’s EMR system. - According to findings from the Center for Studying Health System Change’s (HSC) 2007 Metropolitan Community site visit, a significant number of hospitals are evaluating strategies to help physicians purchase EMRs but many are proceeding cautiously. - Data from the National Study of Physician Organizations conducted in 2007 revealed that physicians under capitated payments are more likely to adopt EMRs than otherwise similar organizations receiving payment on a fee-for-service (FFS) basis. However, groups with a high percentage of patients enrolled in HMOs are less likely to adopt EMRs than organizations whose patients are mostly enrolled in non-HMO insurance plans.</td>
<td>Data also suggest that larger metropolitan communities might expect to see small-scale, phased rollouts of EMR programs by larger hospitals. Dominant purchasers identified include, but may not be limited to: - Medium - Large hospitals, and - Hospital Systems. Other: - A key incentive for hospitals adopting this strategy is the ability to drive deeper volume discounts if all their doctors are on one EMR system (similar to pharmaceutical/PBM industry). - Relevance to Business Coalitions – Leverage economies of scale, shared service model, minimize scope/cost/risk/complexity of EMR integration with future information exchange initiatives.</td>
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| Other Comments                         | - The Massachusetts General Physicians Organization, working with Massachusetts General Hospital, designed an incentive and communications campaign to encourage doctors to use health information technologies (including a new EHR and electronic radiology ordering system), and to adopt other, department-specific quality and safety measures. The program, which offers rewards of up to $5,000 annually for physicians who meet pre-established goals, led to increased use of these technologies and to other quality and safety improvements.  
- Several hospitals reported providing providers with EMR systems (e.g., eClinicalWorks, GE Centricity)
  - Johnson Memorial (Indiana),
  - Children’s National Medical Center (Washington, DC), and
  - Stamford Hospital (Connecticut). | - The research evidence for this innovation is limited since this is a fairly new strategy in anticipation of widespread EMR adoptions under ARRA and new security provisions under HIPAA. (Note: ARRA provides for greatly increased penalties for security breaches involving personal health information, and these are in effect now).  
- Anticipated results include:
  - Lowered costs, reduced risks, increased efficiency and decreased complexity;  
  - Helps doctors and hospitals share patient records both on site and remotely;  
  - Allows health plans to exchange patient data with doctors and protects online access to medical records; and  
  - Provides organizations with the needed structure, detail and clarity relating to information security tailored to the healthcare industry.  

Note: CSF appears to be a preemptive move in anticipation of a new market for assisting hospitals, clinics and physicians in complying with privacy rules in HIPAA and the HITECH Act; both are part of the federal stimulus package. | - Model appears viable for most geographical markets.  
- Model appears suitable for diverse market conditions.  
- Dominant purchasers include, but may not be limited to:  
  - IPA, Physician Groups, Clinics, Hospitals,  
  - Laboratory, and  
  - Retail Pharmacies.  
- Other:  
  - CSF could be relevant to payor based organizations as well due to the increased need to ensure PHI is protected:  
    - Fee-for-Service plans,  
    - Health Maintenance Organizations (HMO),  
    - Point-of-Service plans (POS), and  
    - Preferred Provider Organizations (PPO). |

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**Adoption of Common Security Frameworks (CSF) to Manage New Security Requirements**

- CSF is a new program to evaluate and certify IT security products and services.  
- CSF is an information security framework that harmonizes the requirements of existing standards and regulations, including federal (HIPAA, HITECH), third party (PCI, COBIT) and government (NIST, FTC).

As of November 2009, new HHS rules under the The Health Insurance Portability and Accountability Act (HIPAA) call for financial penalties ranging from $100 to $50,000 for each violation. HHS also sets a maximum yearly penalty of $1.5 million for all violations of an identical provision.

Under the new rule, a health care organization can no longer avoid penalties for not knowing about a violation unless it fixes the problem within 30 days of identifying it. HHS also calls for “periodic audits” to ensure HIPAA compliance.
### Electronic Medical Records

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<td>Health Information Trust Alliance (HITRUST) is a coalition of more than 50 health care companies. HITRUST includes health providers, insurers, pharmacies, biotech firms, device manufacturers, and technology vendors that established a common security framework designed to be a benchmark for safeguarding the privacy of electronic medical records. The coalition’s plan creates guidelines for addressing the security and regulatory aspects of establishing a broad network for the exchange of electronic health records. HITRUST Common Security Framework (CSF) is a certifiable framework that can be used by any and all organizations that create, access, store or exchange personal health and financial records. HITRUST members include Cisco Systems, CVS Caremark Corporation, Humana Inc., Johnson &amp; Johnson, UnitedHealth Group Inc., and hospital chain HCA, Inc.</td>
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<td>Focuses on providing physicians with the tools required to increase office efficiencies, insurance and patient collections, enhanced workflow productivity and profit.</td>
<td>Research reveals that this is becoming a key differentiator in selecting EMR technology due to its ability to improve the efficiency and profitability of medical practices. Often it is touted as providing “end to end” management of medical practice, patient and production data. Reported results include:</td>
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<td>- Revenues gained through more accurate procedure tracking, resulting in additional reimbursement; - Savings generated by eliminating transcription services; - Labor cost recovery from fewer support staff; and - Increased effectiveness in meeting Federal and State quarterly reporting requirements.</td>
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<td>- According to the CEO of the Healthcare Billing and Management Association, the fact that the Medicare’s Recovery Audit Contractor (RAC) audits are affecting nearly every financial process for healthcare providers. As RAC auditors aim to find irregular claims information, providers need to ensure their systems can appropriately manage and process all financial data.</td>
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<td>Other Comments</td>
<td>Bridge Community Health Clinic in Wausau, Wisconsin partnered with HealthPort to implement HealthPort Practice Management (PM), HealthPort Electronic Medical Record (EMR), and HealthPort Revenue Cycle Management (RCM). Bridge County reported that the combined approach helped the organization move forward in terms of operations, patient care, and finance.</td>
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- No evidence was found to suggest that approach would be limited to specific geographic markets.

- Model appears suitable for diverse market conditions.

- Dominant purchasers identified include, but may not be limited to:
  - The majority (if not all) health care facilities, including IPA, clinics, hospitals.
  - Relevance to Business Coalition
  - Reduced operational costs,
  - Improved management of third party vendors,
  - Improved pricing strategies,
  - Improved diagnostic and service coding,
  - Increased cash flow,
  - Improved business processes, and
  - Improved customer services.
They also indicated that the ability to have these three solutions from a single vendor was an important factor and that disparate vendors and systems added significantly more costs, time and complexity.


END SECTION 3
ALTARUM INSTITUTE integrates objective research and client-centered consulting skills to deliver comprehensive, systems-based solutions that improve health and health care. A nonprofit serving clients in the public and private sectors, Altarum employs more than 350 individuals and is headquartered in Ann Arbor, Michigan with additional offices in the Washington, DC area; Sacramento, California; Atlanta, Georgia; Portland, Maine; and San Antonio, Texas.

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Altarum serves the public good by solving complex systems problems to improve human health, integrating research, technology, analysis, and consulting skills.

**Vision**
Altarum Institute demonstrates and is sought for leadership in identifying, understanding, and solving critical systems issues that impact the health of diverse and changing populations. Altarum is acknowledged as a valued, collaborative, and collegial institute of the utmost competence and integrity.

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