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Creating a Governmental Policy Framework for Adoption of an Electronic Health Record

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Abstract. Promotion and support of electronic health records and electronic information exchange through governmental policy development requires a framework that considers cost, benefits, barriers, risks and policies at the statewide level that might accelerate or retard adoption. Recommendations to underpin governmental policy involve financial incentives, technology adoption, legal and regulatory considerations and consumer education.

Keywords. electronic health record, EHR, e-Health, policy

1. Introduction

The United States government has a goal of achieving an electronic health record for most Americans by 2014. A Nationwide Health Information Network is promoted by the U. S. Department of Health and Human Services to "improve patient care and increase administrative efficiency" [1]. It is anticipated that interoperable records will increase accessibility of information important to efficient and effective care. At this time, however, it has been identified that "less than one in five office-based medical practices has adopted electronic health records (EHRs)" [2]. Furthermore, the majority of practices not having an EHR (52 percent) had no plans to implement one in the foreseeable future [2]. Reasons include the cost of implementation [2], resistance to change [3], and legal and regulatory issues [4]. As part of its agenda in 2005, the State of Maryland Legislature created a Governor's Task Force to Study Electronic Health Records [5] and charged it with development of a report to be provided to the legislature in January, 2008. The Task Force worked over a 2 year period beginning in 2006 and included 26 members from the field of health care and health information technology. The process of interdisciplinary involvement and deliberation that was utilized offers a framework for the development and creation of future EHR policy directives.

2. Objectives

The directive of the enabling legislation that created the Task Force was "to study electronic health record systems and the current and potential expansion of their utilization in Maryland, including electronic transfer, e-prescribing, computerized provider order entry (CPOE), school health records, patient safety, and the cost of implementing these functions" [6].

3. Materials and Methods

Three workgroups were established to explore specific activities mandated by the enabling legislation. Members included legislators, physicians, attorneys, dentists, pharmacists, nurses, technology experts, and administrators. The first workgroup

focused on "Electronic Patient Information" including electronic health records (EHRs), and personal health records. The group explored current practices and potential expansion of EHRs and health information exchange, with specific attention to the information available in school health records and the impact on patient safety. The second group concentrated on "Computerized Prescribing" and studied E-prescribing and computerized physician order entry. The third group worked on "Infrastructure Management and Policy Development" with an emphasis on health information exchange. Since many different infrastructure models have been developed to facilitate the transfer of information, this workgroup explored current and emerging models and the related governance and financial organizational issues involved in the expansion of EHR utilization.

The organizing framework for analysis and development of policy recommendations included cost, benefits, barriers and obstacles to development, risks and the potential for unwanted consequences, specific policies at the statewide level that might accelerate or retard organizational development, and how such an organization could be accelerated or blocked by state policy.

4. Results

4.1. Cost and Benefits

Health information technology (HIT) has not occurred rapidly due, in part, to the high costs of EHRs for providers. Costs were found to include the initial capital investment for purchase of software and hardware, staff training, temporary decrease in productivity during system implementation and ongoing maintenance. The Maryland Task Force found that "while a great deal of work has been done to demonstrate the impact of clinical information systems on decision making and the quality of care, little work has been done to demonstrate the impact of HIT on economic outcomes" [6]. It has been noted that "HIT has been stymied by a misalignment of costs and benefits associated with investment in technology, particularly in small and medium-size practices where 80 percent of medicine is practiced" [7]. Hospitals and large health care systems should be able to realize at least a modest return on investment [8]. While providers generally realize that there are benefits associated with quality and patient safety through the use of technology, the current payment regime in health care fails to provide "incentives or reward quality improvements such as reduced medical errors and increased patient safety" [8]. Nevertheless, there were key benefits identified such as the availability of health information across a continuum of care for to support decision making that can promote the quality, safety and efficiency of care and health care delivery processes. Examples include the reduction of medical errors, and enabling the sharing and merging of data from multiple sources.

4.2 Barriers, Obstacles and Risks

Several key barriers were identified including the financial investment required, uncertainty regarding liability and product immaturity. In addition to cost, legal, technology, and consumer trust barriers were identified. Regulatory requirements, accreditation standards and legal rulings underlie concerns on the part of providers that privacy restrictions such as those mandated by the Health Insurance Portability and Accountability Act (HIPAA) of 1996 protecting health information [9] and the Family Educational Rights and Privacy Act (FERPA) protecting school health records [10]

may be violated or that health information technology adoption would add burden and cost to the system. Concerns were expressed for the possibility of legal exposures associated with the disclosure of information or violation of legal standards. For example, there are new issues surrounding the adoption of e-prescribing such as alert systems that may be too easily triggered resulting in providers over-riding them. If the decision support procedures are not followed, a provider could be open to malpractice litigation if an error occurs [6].

The lack of interoperability was identified as a key barrier to technology adoption. Due to the many vendor specific systems and standards, infrastructure frequently lacks the ability to exchange information across different software applications [11]. Much of the software is not robust and requires major modification to support the coordination of care over time. Providers expressed concerns for disruption of workflow and consumers voiced concern regarding the possibility of misuse or inappropriate sharing of medical information.

The Task Force identified EHRs as a tool that may "expand or complicate the workflow for the provider, which in turn could lead to errors and an increased risk of liability" [6]. Likewise, clinical decision support systems were recognized as a means of making "adherence to the standard of care more likely, or make non-adherence more visible" [6].

4.3 Policies and Organizational Impact

The importance of ensuring health data security is critical as EHR policy is considered. While U.S. federal regulations under HIPAA [9] provide specific requirements related to the use and disclosure of health information, the Task Force noted that "exceptions to the law have led to confusion regarding which regulations (federal or state) apply" [6] since HIPAA may supersede state laws. At times, this has led to confusion regarding which regulations should be followed and has generated concerns about violating privacy and security laws resulting in some providers resisting sharing information. There are a myriad of existing federal and state laws addressing collection, monitoring, maintenance and transmission of information creating a complicated environment that poses legal and technologic challenges. In response, the National Governors Association Center for Best Practices created the State Alliance for e-Health in October, 2006. The goal of the initiative is to identify ways to resolve state-level health information technology "issues that affect multiple states and pose challenges to interoperable electronic health information exchange" [12].

5. Discussion

The creation of a framework for governmental policy development specific to EHR and information exchange can provide direction for formation of legislation that promotes technology adoption while safeguarding health information privacy and security. Rather than focusing only on the considerable attributes that EHRs and electronic data exchange can offer future health care delivery, the Task Force concerned itself with an in-depth examination of the potential barriers that must be addressed. This was necessary to successfully formulate constructive policy recommendations to promote the adoption of interoperable e-health information systems. "The United Kingdom, Australia, New Zealand, Denmark and Canada have produced standards agreed upon and mandated by national or private entities; funding via national sources or a mix of private and public funds; and interoperable systems" [13]. As in the U.S., EHR

funding in Great Britain and elsewhere is a challenge and "distributed strategy models" present difficulties in countries such as Germany where hospitals compete for patients. In Europe, EHR implementation between countries is being addressed by Integrating the Healthcare Enterprise (IHE)-Europe [14] using a "foundational set of standards-based integration profiles for information exchange"- potentially instructive for the U.S.

6. Conclusions

Key elements resulted from deliberations of each of the three workgroups of the Maryland Task Force to Study Electronic Health Records based on review of the literature, examination of current State and National policies as appropriate to EHR, interview of interdisciplinary experts in the field and exploration of successes and failures of systems implementation. The groups consolidated their findings into recommendations specific to financial, technological, legal and regulatory, consumer education and school health records [6].

The Task Force concluded that the relationship of HIT costs and benefits must be balanced through a system of payments and subsidies and that HIT adoption should be included in private payer Pay-for-Performance programs. Furthermore it was recognized that incentives should be identified for e-prescribing and funding sources located for EHR adoption. In order to encourage implementation of EHRs, statewide privacy and security policies for health information exchange need to be developed and implemented State-wide while market forces are allowed to drive consumer adoption of personal health records. Legal regulatory statutes need to be reviewed and revised to resolve conflicts in order to enable health information exchange. Finally, to promote the inclusion of school health records in health information exchange, it will be important to resolve differences between State privacy and security laws, and between State and federal laws such as HIPAA, and FERPA. Consumer education through outreach programs will be critical to capturing their support of all e-health initiatives.

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