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Darwin Revisited: Lessons Learned fromA Decade-long Evolution of a State-wide RHIO

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Abstract

Regional Health Information Organizations (RHIOs) in rural areas promise improved health care for many underserved populations. However, implementation in rural areas faces many challenges. One of the most rural states in the United States is in the process of creating a second comprehensive health information network and offers an opportunity to look at success factors for implementation of rural RHIOs. Methods: Documentation was reviewed and summarized and a core group of Vermont Information Technology Leaders (VITL, Inc.) were interviewed to ascertained lessons learned in the development of Vermont's RHIO. Results: Lessons were grouped into five major categories: early planning, organization, education and marketing, technology, and financial sustainability. Conclusion: There are a number of commonalities about all RHIOs but also a number of differences predicated on location. RHIOs must remain dynamic and learn from others in order to survive.

Keywords:

community networks; computer communication networks; medical records systems, computerized

Introduction

The development of the RHIOs in rural areas could make a major impact on health care in these traditionally underserved areas. However, there are major obstacles to implementation. The capital investment required to create a health information exchange and income to operate it are more difficult to acquire in a rural environment. The low density of providers in rural areas precludes ready distribution of costs.[1]

Other factors hindering implementation of HIT in rural areas include lack of health care professionals with HIT or medical informatics training to assist in the selection of appropriate systems and foster confidence among end users and lack of wide-spread access to high-speed networking infrastructure. The Stark legislation targeting elimination of perceived kickbacks and current IRS laws have hindered rural adoption of HIT.

Vermont, arguably the most rural state in the United States, is in the process of creating its second RHIO and offers a unque testbed to identify facilitators and obstacles for RHIO development. These issues and the organizational strategies for responding to them have resulted in the formulation of a set of guiding principles or lessons learned that could assist others in the planning of small local or much larger area RHIOs. While all RHIOs are unique, they also share certain general problems and solutions. It is this set of problems and solutions, many of which are common to both iterations of Vermont's health care network, that could contribute to future RHIO development in rural areas.

Methods

To understand the issues we reviewed documents and presentations created during the development of VTMEDNET[2] and from VITL (Vermont Information Technology Leaders, Inc.), the core development group of the current statewide RHIO[3], in order to identify parallels between the two efforts.

In addition, we completed structured interviews with three of the key leaders of VITL and the Chief Information Officers (CIOs) of two of the state's twelve hospitals who had been active in the creation of VITL. All of those interviewed were part of VITL from its inception.

Results

There are major parallels between the creation of VTMEDNET and VITL and these alone offer some lessons that could be used in beginning the process for establishing a RHIO. However, the lessons learned from the interviews and documents pertaining to VITL take understanding the development process and the success factors to a new level.

Both network iterations began with a dedicated core group of visionaries who identified key stakeholders and tried to

garner buy-in from the groups or at least their representatives. Both sought to ascertain the one project that would meet the greatest need and have the greatest impact in terms of getting support from the participants. Both started small and grew in increments. Similarities continued, but the more mature RHIO concept presented some obstacles and offered some opportunities not present in the earlier network.

Data control is critical to today's health care environment. The need to feel that data is protected extends beyond protecting patient confidentiality. Regardless of the level of cooperation, some degree of competition exists among health care organizations when catchment areas overlap. This is magnified when those catchment areas cross state boundaries.

The solution to data control will vary among RHIOs. Some prefer a totally distributed and linked model; some prefer a centralized data repository. However, many chose a federated model that incorporates both accessing discrete data from hospital and health care institutions while ownership remains within the organization and storing other forms of data in a central repository.

Learning from others is critical to understanding issues, however, structuring the administration of the RHIO is virtually always local and problematic. This is some ways mimics the question of data control. With RHIOs, there are a large number of key stakeholders, all wanting some level of decision-making authority. Two lessons gleaned from the earliest beginnings of VITL were the need to have detailed Bylaws laying out the membership of the board and the process of making decisions and the need to have one or more attorneys on retainer.

Very early in the planning stages, a needs assessment of the key stakeholders should be undertaken. This serves two purposes. First, it identifies the initial pilot project that could have the greatest impact in demonstrating the value of the RHIO. Secondly, it can serve as a tool to educate those who will be actively involved in the process of creating and supporting the RHIO.

Education of key stakeholders is vital to sustainability. Healthcare providers need to understand the value of the RHIO and why they should be willing to alter their workflow and pay for its use. Patients need to be educated about how the RHIO will improve patient safety and the steps being taken to insure privacy. Legislators, payers, and private industry managers need to be educated about how the network has the potential to improve the quality of care and reduce costs. Education is a marketing tool for sustainability.

While most people implementing such systems state that the technology is not the problem, VITL found that this was not entirely true. Interoperability among hospital systems, all in various stages of implementation, would prove challenging so the vendor selected needed to provide a high level scalable and sustainable system architecture that would handle HIE.

The decision to begin with a pilot project and only two hospitals has enabled the technology issues to be resolved, thus avoiding costly missteps and mitigating some of the issues encountered over wider areas with fewer providers. Another lesson learned from others but proving invaluable was the need to understand and address workflow issues to insure that the providers at the point of care have the least disruption to their work, thus achieving greater system use.

Finally, the inability of a fledgling RHIO to address financial issues and sustainability has been one of the major contributors to RHIO failures. VITL is exploring several financial models as part of its requirement to create a Vermont Health Information Technology Plan. Most agree that the state of Vermont needs to have a major financial stake in the development and maintenance of the network and treat it as a community utility, although difficult in a rural state with limited financial resources. However, there is also a role for payers and business to play in its sustainability as they will be major beneficiaries.

Conclusion

Health information exchange fostered by the creation of RHIOs holds the promise to improve the quality of care and reduce health care costs, particularly in rural areas. However, regional health information organizations are challenging to establish. They are composed of different healthcare organizations with sometimes differing and even conflicting missions. While the goals of RHIOs are virtually all the same, the obstacles and opportunities in their creation can differ depending on their localities.

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