

Module 8 - Case Study and Assignment

Case Study:

You live in rural area in Midwest-USA, population less than 100,000. Since you are a prominent healthcare leader, a year and a half ago, you were asked to serve as a member of the board of directors of RCHIE (pronounced “ree-chee”), the Rural Health Information Exchange (and so were each of your classmates). RCHIE is a not-for-profit organization whose board was carefully chosen to include representatives from the various stakeholder organizations across the rural healthcare market. Therefore, as a member of RCHIE’s board, you represent one of the following:

- A rural hospital/health system
- A small hospital
- A big national health plan (a.k.a. insurance company, payor)
- A small local health plan
- A local health department
- The state medical assoc. (representing physicians in private practice)
- Acme Basket Weavers, Inc. (Regional largest employer)

An email has just popped up in your inbox from RCHIE’s executive director with the subject line, “Good news and bad news.” You and the rest of the board have been waiting expectantly to hear from your State Health Department and the federal government about proposals (<https://www.ruralhealthinfo.org/topics/health-information-technology/funding>) to support rural HIE programs. RCHIE staff and selected members of the board spend hundreds of hours preparing a grant application the next few months and the last few board meetings have covered little else. It is the hope that RCHIE will receive a grant to fund the building of the infrastructure for a planned rural health information exchange. Thus far, RCHIE is merely a group of local healthcare leaders that have been meeting to plan for the creation of what they hope will be the not-for-profit health information exchange that operates between the hospitals, labs, physicians, and payers in the Midwest rural communities.

RCHIE’s board has been meeting for over a year. It took several weeks just to get the hospitals and health plans to put up some funds to get started with planning. Eventually, enough money was raised to hire a consultant, Mr. Wilbur Fancipantz, (who came from far away and wore very nice suits) to lead the planning effort. The planning effort took several months and culminated in the creation of the “Rural Health Information Exchange Road Map” which all the board members had endorsed upon its completion. The planning process was well-run and credible but not without a significant amount of wrangling (to put it politely). At first, the payers were taking jabs and the hospitals and the physicians were taking jabs and the payers....public health was whining about being under-funded and Acme kept saying things like “if we ran our business the way you run yours ...” and so on. Slowly but surely, through the skillful facilitation of Mr. Fancipantz and the gradual insight of the board (after all, they are pretty smart folks), a shared understanding was achieved. The board concluded that a HIE in the rural community could have value for each of their organizations but that a functioning, financially sustainable HIE could only be achieved by collaboration. This collaboration would require a level of trust and open discussion between organizations with differing incentives and priorities – some which were used to slugging it out with each other in a competitive rural healthcare market. In the end, the RCHIE Road Map

was finished, and while many difficult compromises were made, the board members felt a degree of pride and personal belief in the plan.

So, back to your email ... With no small degree of curiosity you double-click the message and begin reading. Ugh...the federal government in addition to the state has called for proposals; yet the funding if awarded is only half the needed \$6 million. RCHIE's executive director recommends that the group apply for funding but is convening an emergency meeting of the board to decide how the Road Map can be modified to accommodate the potential funding and to decide on which funding to pursue. Since the glib and calming Mr. Fancipantz is on safari in Africa with the money he made from RCHIE, the director is concerned that this is going to be a heated and intense meeting. To help reach a conclusion without a riot breaking out, she has requested that you, and all the other board members, submit their recommendation to her in advance of the meeting. She will then summarize the board's collective feedback in advance of the big meeting.

Below is information to help you formulate your recommendation. In your recommendation, be sure to include:

- What services you recommend implementing and/or expanding?
- How this will be accomplished with the reduction in grant funding?
- An explanation of the rationale behind your recommendation in terms of the benefits, costs, and obstacles associated with the various services
- Your view of how RCHIE will be financially self-sustaining in the long-run.

The vision of RCHIE

"To improve the quality, safety and efficiency of healthcare in and around the local communities by ensuring that complete and accurate clinical data is securely available to clinicians and other healthcare stakeholders wherever and whenever it is needed to achieve the "highest quality patient care possible"

The RCHIE Road Map

The RCHIE Road Map was formulated on the assumption that the state funding would be the source of \$6 million, but now the state funding is offering max half of the money needed. The core content of the Road Map, as originally written, is summarized here:

There is an infrastructure that must be built to support the broad spectrum of functions that it was agreed RHIE would provide. This infrastructure:

- is expected to cost \$2 million to build
- is expected to cost \$285,000 per year to operate is comprised of stuff like:
 - HL7 interfaces (including FHIR) to 50-plus different information systems within 10 different organizations including hospitals, labs, imaging centers,
 - health plans, and public health
 - Labor and software necessary to "map" the data from the 50 interfaces to common standards so that data from different organizations can be
 - compared, trended, and/or analyzed together
 - Data center hosting and management fees for the necessary servers, storage, and Internet connectivity

- Administrative costs necessary to create and operate the infrastructure

The Road Map calls for the creation of the infrastructure described above as the foundation and the implementation of the following services:

1. Clinical Information Repository Services -- A community-wide repository containing data pertaining to all citizens of the neighboring communities that will allow physicians to view clinical information (history and physical, lab and radiology results, allergies, recent hospitalizations, trended lab results, radiology images, etc) aggregated from ALL major data sources across the health systems. This repository functionality can be implemented for all inpatient settings for \$1 million, all Emergency Departments for \$500,000, or all ambulatory settings (outpatient clinics and physician practices) for \$1.75 million. The ongoing costs in each case are 20% of the initial implementation cost (\$250k, \$175k, and \$300k respectively). Therefore, it can be available in all settings for \$3 million -- assuming the infrastructure (described above) is already in place – and operated for \$600,000 per year. Though all stakeholders are convinced this availability of clinical information at the point of care would be good for safety, quality, and cost, it is unclear who would be willing to pay for this service. Therefore, RCHIE does not believe it could generate any revenue via the repository. This is problematic and contentious for the board because virtually everyone believes the repository is the right thing to do.
2. ePrescribing Services – A service which would enable physicians to send prescriptions from a web-based application directly to pharmacies. The application would include a knowledge base of drug-drug, drug-lab, and drug-disease interactions and would leverage clinical data from the infrastructure to enable these features. Consequently, ePrescribing would require that the full infrastructure (described in #1 above) be in place. It would require \$500,000 to implement, but because the payors believe it would save money through better conformance to medication formularies and generic prescribing, they are willing to pay RCHIE \$100,000 over and above costs for this service. Some board members cautioned that there were many workflow issues, both at the physician practice and the pharmacy, which would confound any attempt to implement ePrescribing. Others were adamant that due to the huge costs associated with prescription drugs and the research related to medical errors, the improved safety and reduced costs promised by ePrescribing were a “no-brainer”.
3. Clinical Messaging Services – A service that would deliver all labs and radiology results, as well as other clinical documents, to all participating physicians via a web-based portal. The service would be free to all physicians but hospitals, labs, and radiology centers would pay for the service. Since clinical messaging does not require the full infrastructure (described in #1 above), it could be implemented for \$1 million and would generate \$100,000 per year for RCHIE over and above its costs. The infrastructure investment of \$1 million necessary for clinical messaging would create half of the \$2 million infrastructure presumed by the complete road map. The proponents of clinical messaging argue that it reduces physician frustration by unifying results delivery into a single source and lays the ground work for future HIE services by funding a portion of the infrastructure and accumulating clinical data for a repository. However, while they don't openly admit it, the Big City Medical Center (BCMC), the largest hospital system in the nearest town mostly accepting patients from rural areas when care can't be provided locally, is not in favor of clinical messaging because they have worked hard to create a physician portal

to deliver (only their) results to physicians and transitioning to a community-wide clinical messaging solution means abandoning that investment. Some believe BCMC will succumb to pressure from physicians if other hospitals and labs implement clinical messaging.

4. Clinical Quality/Pay-for-Value Administration Services – A service that aggregates and analyzes data, and reports on agreed upon clinical quality measures. The service would be based on measures calculated from both clinical and claims data and provide information to physicians and health plans that can be used to improve the quality of care and ultimately save money. The health plans would share their savings with physicians who performed well based on the measures. Because this service provides administrative and data analysis the health plans would have to perform themselves anyway, and because the inclusion of RCHIEs clinical data makes pay-for-performance programs more “palatable” to physicians, the health plans are willing to pay for this service. RCHIE estimates it will cost \$500,000 to implement this service but that it can generate \$175,000 per year over and above its costs. The clinical quality service requires that the full infrastructure described in #1 be in place.

Promised Benefits of HIE Services

As you would expect, there were passionate and spirited debates between different stakeholders regarding what services would deliver what benefits and, conversely, what “promised” benefits would never materialize. The payers favored services that they believed would produce economic efficiencies. The clinics, hospitals and physicians were wary of services that appeared to have the potential to negatively impact their reimbursement. In general, everyone philosophically supported ideas and services that appeared to benefit public health or the healthcare system as a whole (sometimes secretly envisioning how they could spin their participation into a positive marketing message for their organization) but no one volunteered to pay for these. [The service offerings above have the potential for many benefits not specifically discussed in the case. “Board members” are encouraged to support their recommendations with references to potential benefits not mentioned here calling from their own experience or other resources.]

Other sources of funding

Some RCHIE board members have suggested that since the various stakeholders (all organizations represented on the board) each will see a degree of benefit from the successful creation and operation of RCHIE, that each organization should be assessed an annual membership fee to help defray the cost of creating and operating the infrastructure. Not surprisingly, since this suggestion was offered by the representative from the big national health plan, a heated discussion ensued that ended only when the board agreed that, if this funding mechanism were ever pursued, the fees would be proportional to some metric of the organizations ability to pay. It was agreed that Municipal government, including public health, would pay nothing since the deputy mayor insisted that they could only pay a fee by raising taxes and that was simply out of the question (as luck would have it, it was an election year and members of the press were present at the publicly open board meeting). If (and only if) the group could agree on a fee structure, it was considered reasonable that RCHIE might be able to generate between \$150,000 and \$200,000 per year through these fees. However, if even one or two organizations refused to pay, then the whole concept of membership fees could unravel.

About 6 months ago, RCHIE was approached by a local manufacturer of implantable medical devices, AZER Biomedical (AZB). AZB told the RCHIE board that if it ever built a repository of clinical data covering

at least 2 million lives, AZB would like to buy access to that data and would be willing to pay \$300,000 per year. While RCHIE's attorneys assured the board this could be done legally if (and only if) all appropriate permissions were obtained and written into data use agreements, several on the board were squeamish about the idea. Others were intrigued and tantalized by the potential value of "secondary uses" of the data. Both sides were happy that this issue could be deferred to a future discussion.

As a board member, you are free to propose in your recommendation any other creative funding mechanisms including the federal ones (<https://www.ruralhealthinfo.org/topics/health-information-technology/funding>) you feel are plausible. Of course, the other board members retain their right to make fun of any really ludicrous ideas (bake sales have pretty much been ruled out as the health department pointed out it would require a bureaucratic permit application process).

Assignment:

Your assignment is to formulate your recommendations to accommodate for the reduced state and federal funding. Support your position with information from the readings, things you know from personal experience, or other information you find from other sources (there is plenty of information about these information technologies on the internet.) Use APA format for all resources.

Readings

This is the Health Information Exchange case study for this week's class. Before reading the case, it will be helpful to read the accompanying articles:

Menachemi, N., Rahurkar, S., Harle, C.A., & Vest, J.R. (2018). [The benefits of health information exchange: An updated systematic review](#). *Journal of the American Medical Informatics Association: JAMIA*, 25(9), 1259-1265. doi:10.1093/jamia/ocy035 doi:

Review the active call for grant proposals at <https://www.ruralhealthinfo.org/topics/health-information-technology/funding> (Links to an external site.)

The following articles are recommended to answer the assignment questions:

Abdelhamid, M., Gaia, J., & Sanders, G.L. (2017). [Putting the focus back on the patient: How privacy concerns affect personal health information sharing intentions](#).  *Journal of Medical Internet Research*, 19(9), e169. doi:10.2196/jmir.6877

Stephanie, F.L., & Sharma, R.S. (2016). [Health on a cloud: Modeling digital flows in an E-health ecosystem](#).  *Journal of Advances in Management Sciences & Information Systems*, 2, 1-20. <http://dx.doi.org/10.6000/2371-1647.2016.02.01>