

**Tracking and Analyzing
Health Information Technology
Stakeholders**

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Background

On February 17, 2009 President Obama signed the American Recovery and Reinvestment Act (ARRA) with the purpose of jump starting the economy and creating new jobs. This legislation provided incentives for a wide variety of economic stimulus projects. Among these were significant funds allocated for “beginning to computerize health records to reduce medical errors and save on health-care costs.”

The ARRA incentives for health care providers are related directly to proving a designated level of “meaningful use” of health information technology. The detailed definition of “meaningful use” has been hotly debated, but it basically means utilizing computer records within a Hospital system or a Doctor’s office, and also connecting that record to a Health Information Exchange (HIE) that allows patient data to be shared with other providers. This networking of patient data should ultimately create an Electronic Health Record(EHR) that can be used by providers all over the State (and eventually the Nation.) This goal is understood to be a huge undertaking by the States and providers alike. The first phase of the incentives provided by ARRA was to help States get the infrastructure in place so the providers will have the health exchange networks they need to share data with other providers, and the guidance on how to best meet meaningful use criteria.

A portion of the ARRA stimulus funds became available in the form of grants to those entities that could build and manage the health exchange infrastructure providers needed to meet their meaningful use criteria. In the years prior to ARRA being announced the South Carolina Department of Health and Human Services (SCDHHS) had partnered with the State Office of Research and Statistics (ORS) to develop a Medicaid claims viewer that was further developed into an HIE. This HIE was the only public exchange functioning in the State, so that put SCDHHS and ORS in an ideal place to take the lead on the application for the HIE grant. This exchange network is called SCHIEx and through my role in the

SCDHHS Bureau of Information Technology Services (BITS) I became involved in the overall Health Information Technology (HIT) project.

The first priority for the larger HIT project, and specifically for applying for the HIE grant, was gathering stakeholders from all over the Healthcare Industry of South Carolina. The Agencies and Organizations that planned to lead the push for Health Information Technology wanted input from all corners of the industry to help pull together the vision of what HIT should look like in South Carolina. These stakeholders would include providers, insurers, physicians, universities, vendors, citizens and anyone else who had a hand in any area of healthcare. It was decided the best way to approach this was to hold monthly Summits that were open for the public and specifically promote it within the Healthcare circles of the State. The first of these was held June 16, 2009.

Problem Statement

After the initial HIT Summit in June it became obvious that we needed a way to accurately track the participants. A web-based system for registration was already set up and produced a “flat file” of data that included all the information that would eventually be needed, but we had no way of easily accessing or reporting on that data.

Starting with the second Summit, held on July 26, 2009, I decided to create a database that could track and analyze the data provided when attendees registered. This database would have to be robust enough to create charts and graphs based on organizations types, as well as tracking attendance numbers. My goal for this project was to be able to provide the specific information the HIT committee would need for inclusion in the HIT Strategic Plan and the HIE Grant Application.

Developing the Database

The HIT Summit data existed as a text only file that had to be imported into other programs for analysis and manipulation. I chose Microsoft Access 2007 as the primary tool for a couple of reasons. I'm experienced with the software and feel comfortable using it, but more importantly it would offer the flexibility to export any final reports into standard Microsoft programs (i.e. Word, Excel) that would be easily accessible by anyone interested in the data.

Once the data from the first Summit was imported into Access, I was able to set up the tables and queries so we could use the database itself at the registration table for all future Summits. At the registration table we set up several monitors that faced toward the attendees when they walked up to register. This allowed us to verify any of their information we had gathered previously, and also meant more accurate data entry for the "walk in" registrants who were not in the database since they were literally watching every word we typed on their record.

After each Summit the data would be analyzed again to get rid of any duplicates and typos that could be found. Typically this would include sending attendance reports to a few of the HIT "insiders" in SCDHHS so they could look over the lists and verify the data. Finally, the last stage of the data gathering would include creating the "Organization Type" designation. This was not a data element gathered by the registration process. These designations were set after the fact based on the function of the company or group. After the first Summit, members of the HIT committee decided on what categories to use as the "Organization Type" and then we would apply those to each attendee of the Summits. Accurately categorizing the organizations would often mean using the internet to research a company. Once this last step in the data gathering was done, the data could be analyzed.

Analyzing the Data

There were two main points of interest in the database. One, the basic numbers of who was registered and attended and then the breakdowns on what categories of organizations were represented.

The attendance numbers consisted of a count for each Summit. However, after several of the Summits had taken place, and more data points had been created, it was then possible to look at the numbers across the Summits as a whole. For example, how many total unique attendees were there, how many attendees had been at more than one Summit, how many had been at all Summits?

The organization type breakdowns were the most interesting data to pull and report on. Exporting the data from Access into Excel meant flexible and detailed charts could be created that showed the variety of organizations represented at the Summits. Again, after a few Summits had been held the data expanded and charts comparing participation overall could be shown as well as the specific Summit data.

Table 1. Summit Attendance Data

Summit Date	Attendance	Total Unique
June 16, 2009	110	110
July 26, 2009	133	188
August 27, 2009	147	248
October 1, 2009	128	278
October 29, 2009	146	336
December 10, 2009	104	364
January 13, 2009	113	406

Table 2. Organization Type Data

Organization Type	Attendees
Advocate	1
Association	32
Consulting	25
Electronic Health Record Vendor	17
Hardware Vendor	3
Healthplan	16
HIE Vendor	1
Law Firm	2
Media	2
Non Profit	17
Pharmaceutical Manufacturer	5
Provider	65
Software Vendor	59
State Agency	80
Telecommunications Vendor	1
University/College	70
*Total	396

*The discrepancy in the totals between attendance and organization type can be attributed to those attendees who chose not to disclose the companies they represented, or were simply representing themselves as citizens of South Carolina.

Chart 1. Organizations by Type for January 13, 2010 HIT Summit

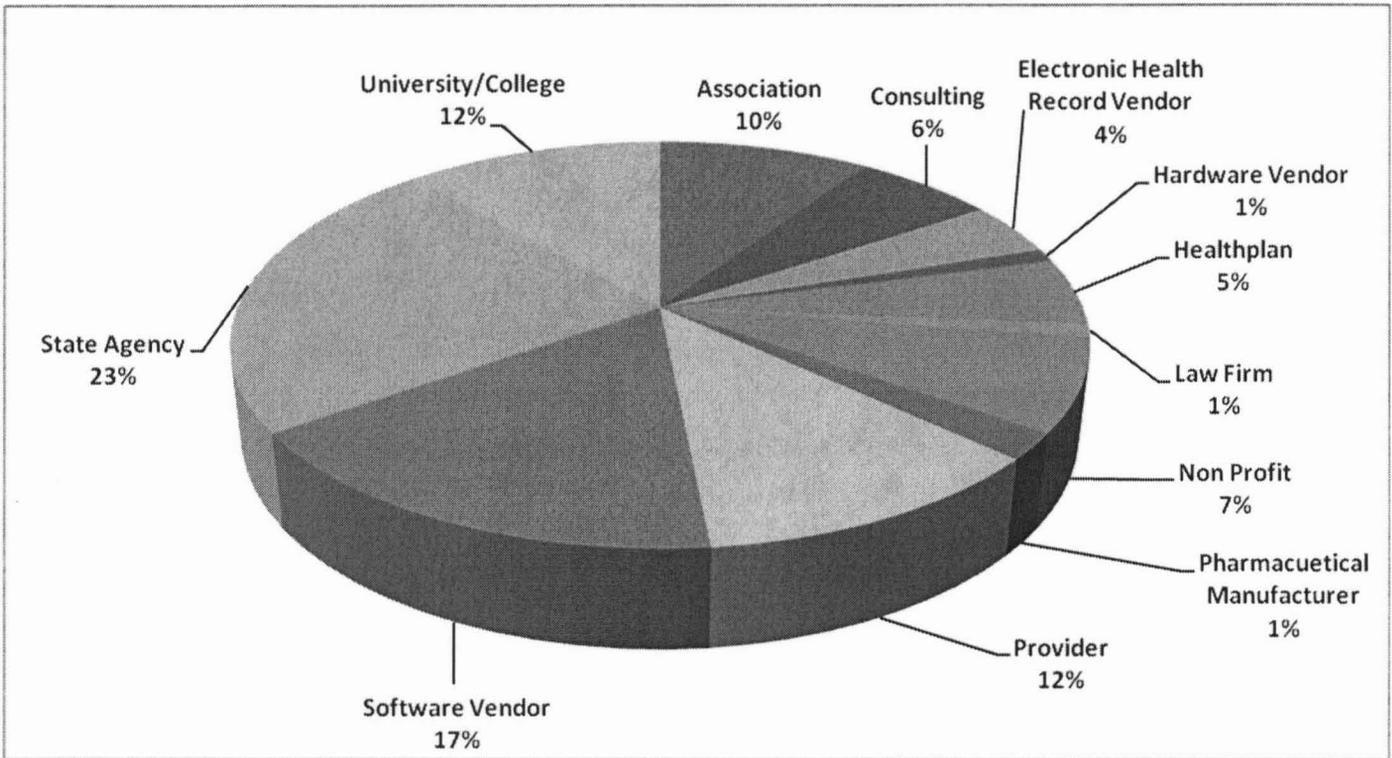
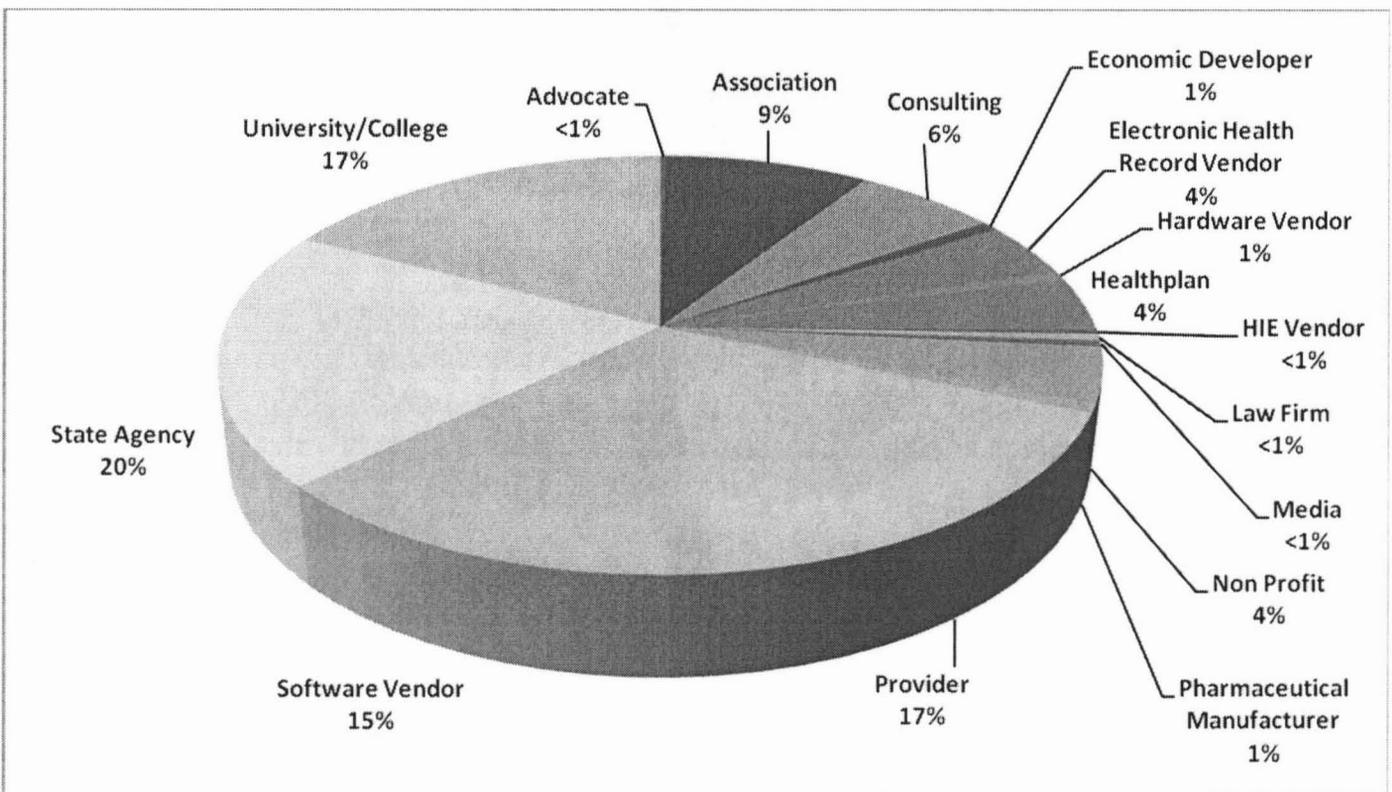


Chart 2. Organizations by Type for All Summits



Implementation and Evaluation

The next step in the process was implementing the data that had been gathered and analyzed. My goal for this project was to produce something that would be of real use to the overall HIT project. Around the time of the December Summit there were two main documents the HIT committee was working on. The HIT Strategic Plan was a roadmap document for how our State would pursue the HIT goals outlined in ARRA. This plan would become a part of the greater HIE Grant Application sent to the Federal Department of Health and Human Services.

The timeframe for this project was primarily determined by the scheduled Summits. As more Summits were held, more data could be accumulated. The next Summit is scheduled for April as the monthly schedule has now been reduced to a quarterly schedule. The cost for implementing the project was essentially man hours since all of the tools used were existing in-house software. The on-line registration proved crucial to both the time and cost as it meant the attendees themselves became a resource, doing the upfront data entry. The only actual data entry by me or my staff was at the Summits themselves when unregistered individuals walked in to register on site.

The largest obstacle for this project is the same for anything dealing with data gathering and analysis: the accuracy of the data. Since the records were being creating by the general public when they registered, there was little quality control that could be done at the data entry point. The only solution for this was verification afterwards which meant more time spent scrubbing the data and also setting up a situation where the attendees could see their own data and let us know if it was accurate. The latter proved the most effective.

A large part of the data verification had to be done outside of my area. Many members of the HIT committee within SCDHHS had been dealing with the organizations and individuals longer and on a more direct level than me so I relied heavily on them to verify specific information. Early in the process I started attending the HIT committee meetings and built working relationships with many of the key people. This proved invaluable later on when things like the "Organization Type" designations had to be made.

Once the database was up and running and the process for registration, attendance and verification had been put into place, it became part of the standard procedure for hosting the Summits. Prior to the Summits the data was used to estimate the attendance numbers for planning space and meals. During the Summits it was used to print ad-hoc reports showing who was attending and who had not shown up. After the Summits it was used to analyze the data in various ways illustrated by the charts in the previous section.

Follow Through

The next Summit is in April and the above methods will continue to be used to track and manage stakeholder participation in the HIT process. Beyond that there are numerous places where data gathering and analysis of provider information will be needed to meet the requirements of the ARRA guidelines. The Summit process has provided us with a good template for getting the stakeholders involved and also given us a good basis for staying connected with them. We have over 400 email contacts for HIT from the Summit database alone. The next step in the HIT grant process is gathering specific data from providers to identify those that are eligible for the ARRA incentives through Medicaid. The beginning of this data

collection process has begun and we're using the same process we did for gathering the Summit data.

Summary

In the end, the HIT Summit database provided immediate feedback and integral data for planning as well as completing the HIE grant application. In addition, it gave SCDHHS a foundation for the future so we can easily communicate with HIT stakeholders in the State.

Involving a wide variety of stakeholders in the HIT process was mandated by ARRA, and certainly emphasized by all those involved here in South Carolina. However, saying everyone is welcome and involved is easy, being able to document it as a fact is much harder. The key result of this project was being able to show quantifiable data that met the requirements of ARRA. The success of the Summits is due to many people, inside and outside of SCDHHS, and for my part I was pleased to be able to show the final results in a way that reflected all the hard work so many different people put in over so many months.

In the future the Summits will continue and more data will be collected and analyzed. My recommendations for the future would be to continue gathering data using the same method, utilizing the attendees themselves as resources for data entry and verification. The phrase "user generated content" has become the buzzword of choice in the realm of new media, similarly I think user generated data entry and verification is an effective method of gathering accurate information in a timely manner.

References

1. **The American Recovery and Reinvestment Act of 2009**, US Government Printing Office Website, <http://www.gpo.gov/fdsys/pkg/PLAW-111publ5/pdf/PLAW-111publ5.pdf>
2. **HIT Summit of South Carolina**, SCDHHS website, <http://training.scdhhs.gov/hit/>
3. **South Carolina Strategic Plan for HIE**, SCDHHS website, <http://training.scdhhs.gov/hit/plans/Strategic%20Plan%20Final%20012710.pdf>