Stories of Success: Chinese Community Health Care Association
Executive Summary

Title: CCHCA’s approach to improving care, increasing coordination and reducing enterprise wide costs by implementing a “Searchable” Health Information Exchange.

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2012 National Patient Safety Goals: Improve The Safety of Using Medications

National Priorities Partnership: Remove Waste and Achieve Effective, Affordable Care

Partnership for Patients Goals: Adverse Drug Events

Health Information Technology: CPOE, CDSS, EHR, eRx, HIE

Meaningful Use Goals: Improve Quality, Safety, Efficiency and Reduce Health Disparities, Improve Care Coordination

At Chinese Community Health Care Association, we were often challenged with finding the best ways to coordinate and improve care between our many 36 ambulatory care offices. After studying our options, we took the initiative in implementing an HIE for the most accurate communication of clinical information possible between our practices. This advancement also enabled us to search a patient’s complete medical history with clinical intelligence for key words. Looking toward the future, we knew we would need to find the best innovative technological solutions in order to continue and expand data sharing between different organizations.

We were able to meet the goals of many different organizations by implementing this searchable health information exchange. One of the benefits is the improvement in the safety of a patient’s medication usage. By creating an enterprise wide sharing of medication usage, our providers have been able to effectively work together to get patients on medication regiments in cooperation with each other. Working together in this manner helps reduce adverse drug events by ensuring a holistic approach to medication compliance and partnerships which significantly improves the care and satisfaction of our patients.

We have been able to remove waste and excesses in our system by ensuring that every provider on a patient’s care team is aware of all recent tests and care provided, thereby eliminating extra visits, tests and procedures. The HIE System efficiently helps reduce costs to the patients, providers and health plans by ensuring effective coordinated care and helps ensure the well being of our patients.

We were also able to improve upon usage of CPOE, CDSS, EHR, eRx and HIE in trying to meet measures in Meaningful Use. A lot of measures in MU are designed around numbers, but sometimes numbers don’t explain the narrative of the story, such as how 80% of a patients medications need to be sent electronically and how it really improves the quality of patient care and the overall safety for our patients.

We have been impressed and gratified with the successes of having a searchable HIE. It has enabled us to better meet the needs of our patients, increase the communications between our providers, and meet new clinical improvement measures.
Stories of Success: Chinese Community Health Care Association
Success Story

1. **Title:** CCHCA’s approach to improving care, increasing coordination and reducing enterprise wide costs by implementing a “Searchable” Health Information Exchange.

2. **Background Knowledge:** Chinese Community Health Care Association is a Non Profit IPA serving the Chinese community of San Francisco. We focus on providing culturally competent managed care to more than 30,000 underserved safety net patients who are often overlooked by mainstream medicine and technology.

3. **Local Problem Being Addressed:** The ability to share health information is often considered a luxury as opposed to being a necessity. This is a fundamental flaw in the mindset of many organizations providing healthcare. Most healthcare organizations without a functioning health information exchange are unable to efficiently and effectively coordinate the care of their patients across a provider care team or network. It is common for medical groups, solo practitioners and hospital systems to lack the necessary interfaces and infrastructure to properly communicate in real time or implement a system that would allow them to do so. Even organizations that have taken the important steps to enable health information exchanges have often noted there is far too much information to be able to successfully find the data they are particularly looking for, especially at the point of care. Within our own IPA, providers were re-ordering tests that had recently been done, prescribing duplicate medications and seeing patients for the same reasons another Provider had just seen them for. While this sounds absurd, it is not a situation unique to us, but more than common for all healthcare organizations. All of these problems are even more inconvenient for patients and can pose a risk to their health. Patients should have the right to expect that providers within the same IPA or Medical Group are a team and should have access to their entire health history. No patient wants to fill out a similar medication history or family history document multiple times, and providers don’t want to enter the same data twice. Overall, patient care is not where it could be and should be. When all relevant medical history is not available at point of care, patient and provider costs are increased and more work has to be completed. Satisfaction among patients and providers within a non-integrated system is naturally lower.

4. **Intended Improvement:** By implementing a “searchable” health information exchange, we proposed to improve the safety of prescribing medications by ensuring that providers had the necessary tools to check for all possible allergies and contraindications across our EHR. The vastly improved communication among a patient’s care team allows for seamless integration of clinical history, which has lead to improved quality, safety, efficiency and the overall coordination of care. We have enhanced and improved the experiences of our patients when they visit a “connected” office. We’ve not only integrated the clinical data, we’ve done so in a manner that doesn’t require physicians to log in to a separate system. This has allowed
the data to be conveniently accessible at a point in the visit where it is actionable.

There was a large push from many of our specialist providers to have access to our primary care notes. After many discussions with organizational leadership and the impending data sharing requirements of Meaningful Use, we decided that it was time to act on implementing and supporting this type of initiative as quickly and painlessly as possible.

5. Planning and Implementing the Intervention: It was recognized internally at CCHCA that the amount of duplicate medications, duplicate tests and extra office visits for the same patient problems was growing, and we needed to improve. Of greater importance than improving office workflows, it was specifically noted that we needed to increase the availability of PHI to providers at the point of care to ensure that our patients are given the best medical services possible. When deciding to implement Searchable HIE functionality within CCHCA’s EHR system, there were many steps involved in ensuring the successful approval and implementation of the project. First, there had to be a recognized need from providers, which is necessary to get any HIT project started. Once some of our providers were on board with the idea, it was then their responsibility to educate and inform their colleagues regarding the benefits of implementing the system. According to Dr. Gustin Ho, the first Provider on our EHR and President of the CCHCA Board of Directors, “We recognized there were areas for improvement and could use technology to help bridge gaps and improve the level of care for our patients. I felt it necessary to involve my colleagues in these discussions to build a consensus on the right ways to handle the use of our HIT solutions for improving patient care”. The Information Technology team did the same with other providers and administration to make sure the entire organization was ready to take on such projects. Once there was organizational consensus from all parties, it was necessary to begin planning out the implementation. This included educating our offices of the responsibilities they had in regards to having access to an HIE, educating patients on how an HIE affects them, and also educating IT staff on how to properly support an HIE platform. We were able to successfully enable the functionality for NextGen’s Enterprise Chart and Apixio’s Search. We have since seen an increased level of interest in our system from other providers as news of our success has spread. Once the providers realized the ease of use and the great benefits to their patients, it created greater interest in the latest health care technologies.

In addition to giving access to the system to our providers within their offices, the use of Apixio’s technology also made secure web access to the charts a possibility. This access was especially helpful to physicians while doing hospital rounds, and created increased awareness about our system and its capabilities to the Radiology and Emergency Departments at our local hospital. Since the implementation of this part of the system, we have now provided ‘read only’ access to the ambulatory care records of our patients to both
Radiology and the ED. We are also now in the beginning phases of enabling those departments to contribute patient information directly back to Apixio’s web portal. By doing so, those hospital departments will be able to share their notes with our ambulatory care providers.

6. HIT Dimensions Utilized: At CCHCA, we have utilized two types of technology to achieve our goals. We first implemented NextGen’s EHR software and its built in HIE functionality called Enterprise Chart. We then implemented Apixio. Enterprise Chart enables the automatic sharing of data between different practices. Though not labeled as an HIE, Enterprise Chart provides the ability to share information across practices in the same Enterprise. This sharing of data is very comparable to the goal of a traditional HIE. The second piece of technology that we used was from a new startup in Silicon Valley called Apixio. Apixio indexed our medical records to make them searchable and available at the point of care. Not only does Apixio make searching the text of our data faster, they also apply optical character recognition to our scanned documents as well, making the entire history of scanned charts easily searchable and accessible. Applying both NextGen and Apixio together in the same workflow has become a staple to our providers in supplying quality care to our patients.

CCHCA has been pioneering new technologies in healthcare with a very significant rollout of NextGen’s application suite across our IPA. Over the past four years and in to the foreseeable future, we will expand upon the broad base of providers that we service and will attempt to get as many providers connected to our enterprise wide EHR. We followed the standard Project Management Triangle protocols during the implementation of NextGen’s Enterprise Chart and Apixio’s Search, which can be seen in Graph 4.

The implementation of NextGen at CCHCA was piloted for the first year with select providers. After continued success, provider enrollment has steadily increased over the subsequent three years, leading to a backlog of providers requesting to join our system. The Apixio application is in the final pilot stages, but has been enabled for the entire enterprise and is currently in production.

7. Value Derived Outcomes: By enabling these new functionalities, we have seen many instances of improvement in regards to the use and benefits of our system. We have improved the accuracy of our patient medication lists by removing duplicate medications and forming partnerships amongst providers caring for the same patients. As you can see in Graph 3, the amount of duplicate medications in our system has been successfully reduced by over 80% since enabling our searchable HIE. We have also improved upon the accuracy of our problem lists for each patient being seen by multiple providers by over 25%. Ensuring accuracy in our
problem lists ultimately leads to less patient visits and tests ordered as the data within our system provides a more complete view of the patient history while making medical decisions and ordering tests. Providers are better able to see that a test has already been completed and are less likely to duplicate the same order. While data driven results have yet to be 100% conclusive in regards to the decrease in duplicate orders between a patients care team, Dr. Gustin Ho said “Since enabling our HIE, many of the lab tests that I would have normally ordered have already been recently done by other providers, which I can now see in our system. By accessing these lab tests and results, I am able to save my patients time, effort, money and without a doubt, frustration. This not only improves patient care, but also increases satisfaction”. Not only have we removed duplicates, but by bringing together internists and specialists with one system, we have been able to drill down to the most accurate diagnosis codes to ensure our patients are being cared for with the best available information. We created an HIE between our ambulatory care providers and we have also expanded upon the system to now allow access to our data from the Emergency Department and Radiology Department which further enhances the reach of our newly connected system.

The ability for the ED physicians to have up to date clinical information at the point of care has been met with significant eagerness. Knowing a patient’s medication history, allergies, and past care, allows providers to make split second decisions in emergency situations. Since implementing the search engine within our records, we have seen an increased usage of searches month by month as providers learn and understand the benefits of such a system. When we implemented Apixio’s Search functionality back in August 2011, only a few providers took advantage of it by searching for specifics of patient health information. In Graph 2, you can see the usage of Apixio’s Search has increased significantly each month, getting us up to 40+ searches weekly. We expect to reduce duplicate ambulatory visits, significantly decrease hospital re-admissions and ensure better medication compliance over the course of the next few years.

Another outcome that was unexpected but welcomed was the national recognition we received from Dr. Farzad Mostashari, Chair of the ONC, in regards to the innovative applications including our IPA’s HIE and “Google like search”. He was impressed by the possibilities, even for groups as small as ours. Dr. Mostashari used CCHCA and one of its providers, Dr. Gustin Ho, during his presentations at HIMSS Keynote 2012, TedMed 2011, Health 2.0, NextGen UGM and many other conferences.

8. Barriers/Challenges Faced: While the healthcare community has the best of intentions to supply our unique population with the best care possible, there are still issues that have to be addressed. Within any automated exchange of patient health information, there is a significant concern in regards to the safety, security and confidentiality of a patient record. There is also
Concern about the potentially questionable business ethics of having new access to a patient and his or her demographics. Patients, though they expect a natural level of care coordination, are often concerned that their information is too readily available to providers and staff whom they might not see for clinical purposes, or perhaps they do not want a specific provider to have access to their chart. Providers are concerned about the increased availability of what they consider to be “private” notes that belong to their office and are also concerned about the ability of other providers to “poach” patients from their practice. We were able to solve these problems with a very common sense approach. Patients, prior to the enabling of our automated sharing, had the ability to opt their record out of the health information exchange. We then gave each office an example of language they could include in their HIPAA Privacy and Disclosures sign off form to educate and inform the patients of what a health information exchange is and the benefits of such a system. Providers also have the ability to opt out certain patients with the simple click of a button. While this approach already works natively well within our EHR, we also had to come up with a solution for our web-based access. The web-based access permission structure is driven by what is available in EHR and anytime a provider searches for a specific patient, they must check a box (one time only per patient) that states they are a member of the patient’s care team and have a clinical reason for accessing and searching their chart. As such, we are able to audit any user’s access of any patient’s record at any given time to ensure that all laws and regulations are followed. With this type of auditing, corrective action can take place immediately if a violation is discovered.

9. Financial Considerations: CCHCA is one of the few IPA’s that have dedicated significant resources to its HIT projects. We have recognized these projects as a cost of doing business in supplying the best care possible to our safety net patient population. We have also found that there are multiple grant opportunities and government programs that can assist in purchasing and implementing these systems and can help to augment staffing needs. CCHCA applied for and was approved as a Service Partner under our Regional Extension Center CalHipso and has received funds that helped us hire and train new staff. We also were awarded a grant from Blue Shield of California in regards to forming an ACO. Currently, grants and funding account for 45% of our 2012 HIT budget.

10. Summary/Conclusions: At CCHCA, we have learned that having an HIE is not a luxury, but a necessary part of taking care of patients. In the age of technology and its true integration of healthcare, many entities are nervous to take steps within their organization to implement such a system and are concerned with the possible negative ramifications. We faced the same fears and had the same concerns as everyone else, but our organization saw the true benefit and identified the need of these systems and has made them come to fruition.
Graph 1
The next graph represents the beginning states of co-managing patient care between our Providers. We expect these numbers to increase over the life of and maturation of our HIE.
Graph 2
The below graph represents the number of searches performed by providers since the original implementation of Apixio’s search solution and our integrated use of their system with NextGen’s Enterprise Chart.
**Graph 3**

The below graphs represent the number of unique patients with duplicate medications and how it has steadily decreased since the inception of enterprise chart and the addition of new providers. The second graph represents the overall decrease of duplicate medications within our system.

**Unique Patients With Duplicate Medications**

**Number of Duplicate Medications**
Graph 4
The below graph represents the Triangle Project Method that CCHCA uses in regards to implementing new systems and processes in regards to HIT.
Stories of Success!
Leveraging HIT, Improving Quality & Safety

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