

HIMSS Davies Award Application

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Number of Physicians: 3

Number of FTEs: 3 nurses, 3 front office, 1 collections

Disclosures: *Dr. Crow serves as medical director for Final Support, a GE VAR and physician champion for GE's Centricity EMR. He also serves as President of the Centricity Healthcare User Group*

Annual Patient Encounters: 10,000

EHR Implementation Team:
Christopher Crow MD
Sander Gothard MD
Dawn Sanchez LVN
Finnye LaTour

The Organization

Family Medical Specialists of Texas (FMS) is a three physician practice in Plano, Texas. It is a traditional family practice in a suburban community. It was founded in 2001 by Christopher Crow MD, MBA and Sander Gothard MD. The EHR was implemented in 2003. In 2005 Matthew Weyenberg MD joined the group. Later this year, FMS will move into its own building and add at least four other local primary care physicians.

Management

The mission of FMS has always been to provide unsurpassed customer service and clinical quality. We have a great understanding of what patients value most – Access, Convenience and Communication. We deliver these through the efforts of our caring motivated physicians and employees as well as the heavy utilization of information technology.

After being in practice for two years, we knew we needed better tools to achieve our mission. There was no efficient way of measuring our clinical quality and we had no clinical decision support at the point of care. Further, the practice was growing, yet we were becoming less efficient. The office was not providing the level of service that the patients had come to expect. The decision was made in 2003 to move to an EHR. The initial objective was to improve business and clinical efficiencies in order to restore all areas of customer satisfaction including access, convenience and communication.

The project was led by Dr. Crow. FMS has never had an office manager. It is run by the physicians. Each staff member is considered a mini-manager. At the time of implementation there were five employees, two LVNs and three in the front office. All were considered part of the EHR team. The EHR vendor also supplied a project manager for the implementation. Nevertheless, Dr. Crow held himself accountable for the project's success. He and the project manager from the vendor assigned resources as needed if available.

FMS does a lot of preventive care and management of chronic diseases such as diabetes, hypertension and hyperlipidemia. This fact definitely influenced our final EHR selection. We needed an EHR that would help us track preventive care as well as provide us with point of care reminders and clinical decision support for chronic diseases. We wanted to be able to use clinical protocols so all our staff could become more involved raising our clinical quality. We also hoped to have tools that organized information and provided education in a way that helped patients better understand their health.

Another immediate objective was to improve the physicians' and employees' job satisfaction or as we call it, our "happiness quotient". Happiness means different things to different people but mostly comes from the following areas - personal, professional and financial. The hope was to be able to spend more time outside the office and limit overtime. We all wanted to feel more accurate, efficient and productive in our daily

tasks. We also had a strong belief that an EHR implemented properly would provide a legitimate return on investment.

Implementation

Family Medical Specialists chose GE's Centricity PM/EHR, now called Centricity Physician Office. Of note, Dr. Crow and to some extent Dr. Gothard had used this software a couple years prior in their residency training. One of the LVNs also had prior experience with it at her former practice. This software offers many features including tremendous workflow capabilities, clinical decision support, clinical protocols, and patient education. The EHR can be accessed by anyone with privileges at any time and concurrently with others. Data entry can be achieved through templates, typing, touch screens or voice dictation. Through HL-7 it has the ability to interface with almost anything. We utilize two lab interfaces as well as interfaces with an EKG, PFT, vital sign machine, secure messaging, electronic faxing, and a patient portal. It also interfaces with the practice management side for demographics, appointments and CPOE. Our practice utilizes Final Support, a value added reseller, for our software support. We outsource our network and hardware support to another company, PracticeTech. They monitor our network remotely and are onsite one day a week for scheduled maintenance and ongoing projects. Dr. Weyenberg acts as our EHR and IT liaison to these vendors. The physicians and staff set the priorities for new projects based on opportunities to enhance our customer service and clinical quality.

In a small office the details of an implementation plan are rarely documented or regularly tract. However, we did have an overriding timetable and goal of what needed to be accomplished. Dr. Crow was finishing his MBA in May, 2003. His wife was expecting their first child a few months later in September. Everything had to be done in-between. The first item was to change to the Centricity Practice Management system in the month of June. The next task was to set up all interfaces, train the physicians and staff, and implement the entire Centricity EHR in **six weeks** by mid-August. With an expected go live date of August 15, this would give the practice a month to come up the steepest part of the learning curve during the slowest time of the year for patients and before the arrival of Dr. Crow's new addition to his family.

Our approach was rather simple. We followed the vendor's advice and promised to never be a bottleneck to the process. Almost everything was done after hours and on weekends so not to disrupt patient care. Dr. Crow alone spent over 130 hours in less than six weeks outside of normal practice time working on the project. (See Appendix 1) His prior experience with the software was very helpful. With such a small amount of people and positive physician leadership the training and implementation went as smooth as reasonable possible. We went live on August 13 with the Big Bang approach. The sole reason for this approach was because the vendor suggested it given our timeline.

From the moment FMS began researching EHRs to all the way through implementation and beyond, the physicians spent a lot of time on managing staff expectations and addressing their fear of change. As the leaders of the practice, the physicians' attitude

towards the EHR was always positive. The practice also benefited greatly from the LVN with prior experience with Centricity. She did a lot of behind the scene grassroots evangelism to help demystify the EHR to other staff. We included all the staff in every workflow discussion from the beginning. Their input turned out to be invaluable time and time again as well as improve their buy in to the EHR. They were able to see for themselves how inefficient and sometimes dangerous our current processes were. Further, they could easily see how the EHR would offer vast improvements in accomplishing their daily tasks and providing better customer service.

The governance of the project was very simple. Everyone in the office was included. Consensus was always the goal. We solicited advice from the vendor when facing difficult decisions. We never had any strong points of contention. The EHR vendor placed a project manager to keep us on track and guide us through the process. They provided technical support to set up, install and test the system and interfaces. All the software, hardware and network support was purchased through a bank loan financed over 4 years. We hired a network consultant to install the hardware and network. Hardware selection was a big decision. We went back and forth on thick clients in each room versus tablets. The final decision came down to customer service. We chose thick clients in the exam room with flat panel monitors. While patients wait for physicians in exam rooms, there is a great opportunity to market, educate and entertain them. Therefore, we run videos while they wait. For example, when children are in the room, we play Thomas the Train, Baby Einstein and the like. This is a much better experience for families. Of note, we have had no need for exam room hardware replacement due to damage since inception. Another example is that every new patient watches a video about our website and how to sign up to the patient portal to access online services.

Given the small number of employees, most planning and implementation responsibilities were handled by Dr. Crow. He held others accountable to make sure the implementation timeline was followed. Clinical content proved to be the most difficult task of implementation. Centricity has a large user base and lots of shared clinical content was available at that time. This is how we chose to start. We did not want to spend any more money for customized content and no one in the office had the ability to do it on their own. There was also a third party that wrote content for Centricity that was not purchased at the time of implementation. It was purchased one year later.

We based training around workflows. Training was generally done with all staff after hours or over lunch in our office. It was done all together because in a small office basically all common workflows involve all members of the staff. The project manager was often there. We would map out our current workflows, then spend time looking at ways it could be done in the EHR. Once a new workflow was decided it was documented and we practiced with test patients until everyone felt comfortable. Dr. Crow, the LVN and the project manager from GE all served as support for users with difficulties.

Transitioning to an EHR is definitely an art. It was a very dynamic process for us. We did two things several months before. First, in order to limit patient inconvenience, we did not schedule follow ups in August if possible. Secondly, we planned for a 20% drop

in revenue for two months. Both ended up being very appropriate. Starting in early July we began to develop our plan to transition our paper records into the EHR. The initial plan was to transfer it all. After a short discussion with our project manager regarding time, resources and cost of this path, we quickly changed our minds. The physicians began to realize that at least 95% of what was in the paper chart was not needed going forward. We then developed a form that hoped to capture the other 5%. The plan was for the staff to retract this information from the paper chart and to then enter into the EHR. This included clinical lists such as problems, medicines, family history, allergies and certain lab, imaging and consult reports. After a few days of this plan, it was scratched due to the realization that non clinical staff could not decipher what was pertinent clinical information. Further, we realized we had not kept our records updated well enough to have accurate information entered. Therefore, we determined the most accurate and efficient way was for it to be the responsibility of the physician. Even before Go Live, we began entering pertinent clinical information and scanning in appropriate documents of patients we had seen that day. At Go Live the physicians started preloading information on patients the night before they were to be seen. However, this quickly proved to be problematic in many instances because the information we had in the paper chart was either incorrect or outdated. So this left us with what we continue to do even now which is “just in time” entry at the point of care. Charts are pulled for a single patient visit, then marked for archive and removed from the medical record cabinets. After two years and three thousand paper charts archived, we had a company bulk scan the charts onto a disc and then loaded on our servers. They are very rarely referenced today.

In general, our implementation went very well, but there are a few things we might do different next time. For one, we would give ourselves more time. The short timeline caused a lot of stress and fatigue. We did go live with all functionality but given more time, a staged approach would have been more appropriate. The Big Bang approach puts a lot of pressure on users to master a large amount of features and information at one time. Staging would have flattened the learning curve and especially helped the stress level of some of the slower users. As described previously, we initially wasted a lot of time on preloading bad information. However, once we went to our current system of “just in time”, we really progressed.

There were many areas of success. As referenced earlier, we did hit our very aggressive timeline. We also minimized patient inconvenience by having a lighter schedule in the month of August. This allowed our staff time to come up the learning curve without looking rushed with patients. Since the doctors were preloading information at the point of care, they learned the product much faster that would have been expected. Another great success was the buy in by the staff. This was evidenced by no turnover during this time or shortly after as well as their many positive comments. We feel this was due to their constant involvement in the process, respect for their feelings and input as well as our promoting the change and setting appropriate expectations. In the end it took us four to six weeks to catch back up to a normal schedule, which was well within our financial plan.

Implementation really never ends for practices like ours. We continue to try to be on the frontier of Healthcare IT for the small office. FMS is recognized locally and nationally as one of the most advanced users of EHRs. We utilize automated confirmation and recall systems for patients. We have integrated secure messaging into the EHR to communicate with patients, consultants and anyone else needing a patients medical information. We have a patient portal on our website that allows patients to refill their prescriptions, make appointments, request a referral, change demographics, or ask a billing question. Patient utilization of these features helps us lower our phone volume and batch non urgent tasks with asynchronous communication. In fact, nearly 10% of our appointments are now made online. For a nominal annual fee, patients can email their physician and view a portion of their chart online. Prescriptions are refilled in seconds and can be electronically sent at the point of care so they will be ready when the patient goes to pick them up. This alone saves the practice about sixty telephone calls a day. Lab and imaging reports are sent securely through email or voicemail within twenty four hours based on patient preference. This saves another thirty calls a day. Thus, patients are getting responses and information faster and more complete than ever before.

Clinically, devices such as EKGs, PFTs and vital signs are now automated which shaves a minute or two off each task. This frees up more nurse time for other patients with needs. We also have clinical protocols that pop up anytime a chart is opened. This allows **all** staff to remind patients of important clinical reminders anytime they contact our practice. It also allows for the nurses to act based while the patients are in the office before they are even seen by the physician. The EHR also has clinical decision support at the point of care for prevention and diseases where there is evidence based medicine. Furthermore, there are key clinical values on the summary page of every patients chart to be evaluated at every patient encounter. Values can be easily graphed for trending or to visually educate the patient. Templates and order sets for common diseases are utilized when appropriate by the nursing staff prior to the physician seeing the patient. This allows the nurse to play a larger role in the clinical care team and has increased their understanding of common diseases. This allows the physician to spend less time documenting the visit and more time with patients.

We are able to harvest clinical data not only through our EHR but through a consortium of Centricity users. GE's Centricity EMR comes with a software program called Medical Quality Improvement Consortium (MQIC). MQIC resides on an extra server in our office and it de-identifies the patients in our practice and subsequently uploads clinical data to GE's central MQIC database. This data is then compared to millions of other patient records. It uses guidelines from NCQA and DOQ-IT to provide benchmarks and comparison for many evidence based measures for diseases and preventive care. We can measure ourselves individually, as a practice or against the consortium. We can then identify those patients who are not reaching the standards of care and contact them proactively.

Value

The value of the EMR to our practice has far exceeded our expectations. It has been a dramatic practice and life changing event for FMS, its staff and physicians. The objectives listed earlier were to improve business efficiency, customer service, clinical quality, staff and physician satisfaction, and achieve a financial return on investment. We accomplished all of these as well as change the culture of our practice.

Business Efficiency

There are many areas where the EHR allowed us to improve our business efficiency. Multiple process improvements were made and a new appreciation for workflow allows us to continue to make further enhancements. The best metric to demonstrate this is our ratio of staff to providers. The national average for primary care is about five to one. We have seven staff for three providers. We also provide a much better service and see more patients than before. This was accomplished by analyzing the workflows of our most common tasks in the office and automating them as much as possible through the EMR. There are several examples of this.

Just having the medical charts in electronic format rather than paper goes a long way. Pulling charts, finding charts and waiting on charts are no longer a reality. The ability for everyone to be in the same chart at the same time and it always being available, especially remotely, has greatly enhanced our efficiency.

Prescription refills is one of the most common workflows in any physician's office. Benchmark data shows that this process often can take more than a day and cost several dollars for each refill. We now electronically send all our prescriptions. Whether the request comes by phone, fax, email or while the patient is in the office, it is forwarded to the physician who reviews it and sends it on electronically to the local pharmacy or PBM. This process takes seconds. We usually have patients refills done within an hour of them requesting them because the physician can quickly disposition them as soon as they come up in-between patients. The physician quickly reviews the chart and often catches things that the patient needs. This improves their quality of care and often revenue for the office. The physician is taking about as much time as he was in the paper world on refills but no one else has to be part of the workflow now. The limited number of "pass offs" limit the errors tremendously. This one workflow saves us at least fifty calls per doctor per day and now refilling a prescription costs us pennies.

The workflow for labs has been another huge efficiency gain. We now order the labs electronically in the EMR. For common things such as annual exams and diabetic visits, our nurses follow the protocol for these. The results come back electronically unsigned into the patients chart and on the ordering doctors desktop that night. The results are then sent by the physician via secure email or secure voicemail to the patients. Same as with the refill workflow, the physician is still doing the same amount of work but there are no others involved. This essentially cut out our patient calls about labs due to the results coming directly from the physician and within a day. The workflow for labs is very similar to what we do for imaging studies as well.

We have also been able to automate our confirmation of appointments and recall reminders. This used to be a manual task that took a lot of staff time and was often not done during busy days. We now automatically recall patients with chronic diseases such as diabetes, heart disease and depression as well as for their scheduled preventive care. On a monthly basis we run reports to see which patients have not responded to these and send them a follow up email or phone call. This process has allowed us to not only increase our revenue but improve our clinical quality measures. Automating our confirmation of appointments has dropped our no show rate to below 5% and pays for itself with one extra patient visit a month.

The physicians at FMS have always done their own coding. With the EMR, they are able to continue to do this and often quicker with the formation of order sets for common visits such as well child checks, diabetes, etc. Once click may order multiple CPT codes. Linking them to diagnosis codes, adding modifiers or units is a very simple process as well. However, the greatest strides have come from no longer having someone enter those CPT codes manually. When a patient checks out, the services provided are already in and can be compared to their allowed benefits so their portion of the bill can be collected. This has had tremendous financial ramifications. For example, we no longer need a person to do the data entry. That saves not only money but also eliminates the data entry errors that can and do occur. Our collections at the time of service have also gone way up and become much more accurate because the orders are in before the patient checks out.

Customer Service

Improved customer service was another objective for implementing an EMR. Clearly, becoming more efficient in the processes described above helped accomplish this. We did not have any formal customer service surveys prior to the EMR, but we are happy with the results since. For the last year we sample about fifty patients a quarter on various aspects of our practice. We are consistently rated excellent in over 90% of their responses. We have **never** had a negative response to “Would you refer a friend or family member to this practice”.

We also have plenty of other areas that evidence improved customer service. As mentioned above, our turnaround time for reports is less than a day and within hours for triage calls and refills. Every day our patients tell us how much they appreciate this. Two years ago we added secure messaging and online services that interface with our EHR. The software is from a company called Kryptiq. It has been instrumental in providing another means of access for patients. They now can interact with our offices at all hours of the day from anywhere in the world. We have about twenty five hundred patients signed up for our online services and about two hundred subscribe to our \$50 annual fee to email their physician. If we are away from our computers, the emails are routed to our blackberries.

Another item that has helped improve our business efficiency and customer service is having remote access to our EHR. From home or anywhere in the world that has the internet, we can access our EHR and take care of patient issues more quickly. This also

improves our physician lifestyle, because they do not have to be in the office for common tasks such as triage calls and refills.

We feel we have significantly addressed what matters most to patients. We have always been an open access clinic. However, with the addition of online services, they can now interact after hours. The communication they receive about their health is more timely and accurate than ever before. Further, the automated services and improved workflows the EHR provides have helped maximize the convenience of our office for patients.

Clinical Quality

The ultimate metric for FMS was to eventually improve clinical quality. We have definitely done this and continue to improve. Like many EHRs, ours allows us to check for drug to drug and drug to disease interactions. Further, we know we have cut down on errors due to no handwriting. The EHR has also helped us manage drug recalls in less than a day through the reporting module.

The Holy Grail has been the ability to actually measure ourselves clinically on evidence based medicine for preventive care and disease states. All physicians generally think that they deliver above average care. The fact of the matter is that cannot be true. There is no way to truly know in the predominantly paper world how one is performing clinically. This has changed that for us. The MQIC database described above during our implementation allows us to compare ourselves to others that use EMR and against national benchmarks from NCQA and DOQ-IT. After about eighteen months on the EHR, we began to be able to report meaningful clinical reports. We were very humbled with what we found. Our blood pressure control was below average as well as eye screening for diabetics and colon cancer screening. Because of this information, we were able to change our processes to improve our quality. First, just simple awareness helped our physicians do better with blood pressure and encourage eye and colon screening. We also organized our clinical care team to incorporate everyone and create prompts for them to act on. These two items alone helped make our blood pressures above average in less than a year. We also raised our colon and eye screens from 30% to 60%, which meets national standards. We wanted to exceed this and have since added some things to make this happen. We now have an automated machine to do eye exams in our office and are now approaching 80% for screening eyes of diabetics annually. To enhance colon screening, we have electronically connected with the local gastroenterologists to automatically send patient information to them on patients that need colon screens. They then take the initiative to follow up.

The power of this information makes the physicians feel much more satisfied in their patient care. It also enhances our ability to market our practice and has led to better success negotiating insurance contracts on at least one occasion. Having a tool that can quantifiably measure clinical care is the endgame in our opinion. The information this provides has definitely improved the clinical quality of care we provide our patients and will only continue to get better. Attached is our most recent quality report (Appendix 2)

Intangibles

There are two other distinct areas that the EHR helped improve. One is employee and physician satisfaction. The other is the change in our practice's culture. The former was one of our objectives. The latter was a very significant and pleasant surprise.

We have no true metrics around employee satisfaction, however we do know that we have had very little turnover since. Our employees also regularly tell us and others that they could never go back to work in a practice that did not have an EHR. We actually look forward to the hour or two a year when our system is down for upgrades to remind our staff that the grass is definitely not greener somewhere else. Our employees also tell us how much more productive and accurate they feel using the EHR. They worry much less about potential errors. They also recognize they are gaining new skills that will make them more marketable in the future.

Physician satisfaction has also been improved. We feel more productive. We know we are providing better care. Our efficiency gains allow us to finish on time and be able to have more time with family. We are also better off financially than we have ever been. All of these have dramatically increased our "happiness quotient".

The culture change in our office has been dramatic. Our staff is now keenly aware of the importance of workflow and process improvement. Our monthly meetings focus on this and how we can more efficiently care for our patients. This has allowed our staff to go from being scared of change to embracing change. We went from your average small two doctor family practice to a nationally known organization with physicians and staff that are recognized as experts in EHRs and healthcare IT. We have site visits on a weekly basis. Most come from Texas, but quite a few come from all over the country. Dr. Crow speaks nationally on EHRs and HIT. Last year he was the physician advisor for HIT for the state of Texas and he will be presenting to Congress this May. Last year, FMS was recognized as "Practice of the Year" by **Physicians Practice**, America's leading Journal for Practice Management. All of this was never on our radar screen when we began implementation.

Financial

We have attached a skinny return on investment for the first two years. (Appendix 3) It shows a payback period of about eighteen months. It cost us about one hundred thousand dollars to implement plus approximately twenty thousand dollars in lost revenue during the initial slowdown. Savings have come in multiple areas and new revenue has been found as well. Overall, we now estimate that our physicians make 60K to 80K more per year due to the EHR. This helps place them well over the 90th percentile for their specialty at a very early age.

The most significant savings are due to less employee staff costs. As mentioned previously our staff ratio is about half the national average. No paper charts and transcription costs also provide savings.

New revenue has come from multiple places. Our coding improvements now add about 25K per doctor annually. Our automation of service entry has brought an unknown amount of dollars back that were being lost through data entry errors. Our protocols and recall system has allowed us to provide more services than before. These are all services recommended by evidence based medicine. We also are doing more clinical research trials than before because of our ability to search our database.

Lessons Learned

We think that our success was due to several factors. The most important of which was the leadership and involvement of the physicians. They committed the time and money necessary to get it done right. This meant slowing down the practice and making sure everyone received enough time and resources to be trained. Further, they managed the expectations of the employees in a way that changed the culture of our practice for the better. The only things we would have done differently were to add more time to the project, stage the implementation, purchase the customized clinical content at the onset and to preload information “just in time” from the start.

Advice for others

(Dr. Crow speaks on this topic frequently. One of his presentations is attached to hopefully aid others considering EHR implementation)

There are several preliminary questions that any organization needs to answer before purchasing an HER. First and foremost, they must have a physician champion. They also need to have a good understanding of what they want the EHR to do for them. Identifying who and what the obstacles will be is always important to ascertain as well. Having a realistic timeline of when you want to purchase and implement is also good to know from the onset.

Once some of these questions are answered, narrowing the search is important. There are so many vendors and it can get very confusing. There are many lists available that rank EHRs. CCHIT now has a group of certified EHRs. Make sure an EHR is appropriate for your size and specialty. Lean on your colleagues who have EHRs for information. To better compare EHRs, prepare Request for Proposals from the vendors. Finally, make sure the EHRs you consider have good geographic representation in your area.

Demos are a common step in the purchase process. For all demos, have the vendors use your own clinical scenarios that are common in your clinic. Try to do all the demos over a short period of time, but give each two to three hours to present. Remember to evaluate the product, not the salesperson. Finally, make sure the physicians that will be using the product are in attendance.

Site visits are also a critical step in selecting an EHR. Try to find a similar practice to visit. Insist on the some of the physicians going. Talk to all staff members to get their opinions. Make sure you get to observe it in action.

There are many other considerations to take when purchasing an EHR. First, make sure the software you are buying is from a stable company. There is a lot of competition and consolidation in the marketplace currently and many EHRs will not be in existence in a few years. Interfaces are critical to the success of EHRs. Make sure this is not only a capability of the software, but the company can show live evidence of it. Software support is always important and should never be overlooked. However, hardware and network support is just as critical if not more. What type of devices will be used and how to not hurt the patient/physician interaction are key areas to address. Realize that customization can be a double edged sword. Once the product is used regularly “as is”, one may find that further customization is not needed. The time, resources and cost to customize must also be considered. Furthermore, if customization results in operational variance from physician to physician, you may have made your organization *less* efficient. Too much variance may also make it difficult to measure clinical quality.

Cost is always everyone’s biggest consideration. Our view is this is one of the biggest decisions in the life of a practice. It is not a place to skimp. Furthermore, it is an asset on the balance sheet and should deliver a return.

Once a purchase is made, the fun is just beginning. Actually implementing the EHR is the critical step. We have mentioned several tips in the sections above but will list some again here. There has to be a physician champion. Realistic expectations have to be communicated early and continuously. All areas of the organization should have input and the EHR team should meet regularly. The EHR team should become an expert in workflows. Make sure your EHR team decides in advance how decisions will be made. Your organization should plan well in advance for the slowdown in the practice at Go Live. This planning is not only financially, but how patients are scheduled. Give ample time for training of staff and physicians. Finally, implementation really never ends. Strive for continuous improvement post Go Live.

FMS has been and continues to be involved either directly or indirectly in many EHR implementations. There seem to be three constants that are in every successful implementation. Conversely, not doing any one of these is usually the reason why an implementation fails. The first is physician involvement and commitment. The second is allotting enough time for training and implementation planning. The final one is slowing down the practice initially.

Conclusion

FMS has had tremendous success in the six years since its inception. We attribute this to the desire of the physicians and the staff to not only meet the clinical needs of our patients but really focusing on providing value through unsurpassed customer service. As heavily evidenced throughout this essay, the EHR is the main tool that allows us to accomplish this. Furthermore, with the newfound clinical measurements, we think we are just scratching the service on a new and improved delivery of quality healthcare.

Appendix 1 – Implementation timesheet

TOPIC	Hours	INFO
Research	6	Reviewed about 10
Demos	8	6 different ehers
Site Visits	8	6 site visits
Reference calls	4	15 reference calls
Discussion	5	PT, Gothard, final support
Total	31	

TOPIC	DATE	HOURS	INFO
Initial information, goals	30-Jun	1.5	Conf call with Susan
Scope/planning project	7-Jul	1.5	Conf call with Susan/Marcus/PT
Kick-off meeting	9-Jul	1	Information gathering
Kick-off meeting	9-Jul	2	Meeting with Susan
Key Decisions	10-Jul	2	Conf call with Susan
Key Decisions	10-Jul	2	Worksheets
Key Decisions	11-Jul	3	Worksheets
Planning and Implementation	12-Jul	5	Worksheets
Key Decisions	13-Jul	1.5	Worksheets
Learning Logician	13-Jul	2.5	Demo
Key Decisions	14-Jul	2	Conf call with Susan
Clinical Content	14-Jul	1	Reviewing documents
Key Decisions	15-Jul	1.5	Key Decisions
Privileges	15-Jul	2	Conf call with Susan
Hardware	15-Jul	0.5	Configuring w/ PT
Preload	15-Jul	0.5	Discussion
Privileges, preload	16-Jul	1.5	Conf call with Susan
Server, loading logician, scanning	16-Jul	1	Conf call (PT, Marcus)
Planning and Implementation	16-Jul	1	Conf call (Susan)
Planning and Implementation	16-Jul	2	Reading, organizing
Planning and Implementation	18-Jul	5	Worksheets
Planning and Implementation	21-Jul	1.5	Conf call with Susan
Orders	21-Jul	4	Worksheets
Practice Tech install	21-Jul	1	Discussion
Scanning solution	22-Jul	1.5	ImpactMD presentation and docutrak
Orders	23-Jul	1	Conf call with Susan
Install Logician	23-Jul	2.5	Work with Marcus
Linklogic training	24-Jul	1	Marcus in office
Setup Logician	24-Jul	4	Susan in office
Setup Logician	24-Jul	2	Setup databases
Clinical content, set up	28-Jul	0.5	Conf call with Susan
Linklogic	28-Jul	0.5	Training on demo
Clinical Content	28-Jul	2.5	Reviewing logician and knowledge bank
Clinical Content	29-Jul	1.5	Logician and Knowledge bank
Linklogic	29-Jul	1	Trouble shooting w/ Marcus
Clinical Content	29-Jul	2	Review Knowledge bank and CCC
Linklogic	30-Jul	1	Training demo
Preload	30-Jul	1	Creating workflow

Training staff	30-Jul	4	Logician in your clinic, preload, Susan here
Docutrak	30-Jul	0.5	Setup, training
Clinical Content	30-Jul	5	Downloading, reviewing, organizing
Clinical Content	31-Jul	6	Reviewing, downloading, organizing
Visit Manager	1-Aug	1	demo, training
Clinical Content	1-Aug	2	Reviewing, organizing form components
Clinical Content	2-Aug	3.5	Reviewing, organizing form components
			Making document templates, encounter forms
Clinical Content	3-Aug	5	
Orders	3-Aug	0.5	Reading
Orders	4-Aug	1	Conf call w/ Susan
Orders	4-Aug	1	Setup
Orders	5-Aug	2.5	Setup
Linklogic	5-Aug	0.5	Conf call w/ Marcus
Protocols	5-Aug	1	Setup
Orders, Flowsheet, Protocol	5-Aug	1.5	Conf call w/ Susan
Protocols	5-Aug	1.5	Set up
Clinical content	5-Aug	1	Organizing
Protocols	6-Aug	0.5	Set up
Linklogic	6-Aug	1	Maintenance of labs
Workflows, set up	6-Aug	3.5	Susan in office
Workflow (flags, phone)	7-Aug	4	Office staff training w/ Susan
Workflow	7-Aug	1	Meeting with Susan
Workflow (encounters)	8-Aug	4	Office staff training w/ Susan
Set up for Go Live	8-Aug	1	Meeting with Susan
Flowsheets	11-Aug	4	Set up
Orders, custom	11-Aug	1	Set up
Orders	12-Aug	4	Training, link
Go live	13-Aug	8	
	Total	138	

Appendix 2 – Q1 2007 Clinical Quality for FMS

3/31/2007

Diabetes Measures	Crow	Gothard	Berg	FMS	PrimCare
Diabetes Patients	64	44	11	109	69,100
HbA1c > 9.0 % (Goal <20%)	17%	25%	0%	16%	18%
HbA1c < 7.0 % (Goal >40%)	59%	50%	45%	60%	50%
BP < 140/90 (Goal 65%)	88%	84%	100%	86%	68%
BP < 130/80 (Goal 35%)	61%	52%	36%	55%	36%
Eye Exam (Goal 60%)	81%	57%	27%	65%	21%
Smoke status / advice (Goal 80%)	94%	95%	91%	96%	72%
Lipid Profile (Goal 85%)	92%	95%	91%	94%	88%
LDL < 130 (Goal 63%)	92%	93%	91%	94%	82%
LDL < 100 (Goal 36%)	84%	86%	64%	86%	67%
Nephro assess (Goal 80%)	91%	93%	100%	95%	66%
Foot Exam (Goal 80%)	88%	86%	100%	92%	35%
Total Points (Goal 60)	80	60	70	80	45
Preventive Care	Crow	Gothard	Berg	FMS	PrimCare
Patients w/ Chronic Illness (DM, CAD, HF, HTN)	261	206	102	559	291,227
% Of Visits w/ BP (PC-1)	97%	96%	95%	96%	79%
% Women Aged 50-69 w/ mammogram	69%	70%	56%	65%	36%
% Aged >= 50 Screened for colon ca	59%	54%	52%	52%	40%
% Aged >= 50 w/ flu vaccine	25%	40%	24%	29%	37%
% Aged >= 65 w/ Pneumococcal Vaccine	65%	89%	67%	74%	52%
% With LDL (PC-9)	85%	77%	60%	78%	67%
% Of Those With LDL With Last < 130	79%	80%	75%	77%	78%
% With Smoking Status (PC-11)	91%	99%	95%	94%	80%
% Of Smokers With Cessation Intervention	89%	100%	100%	91%	55%

Appendix 3 – Return on Investment

		Year 1	Year 2	
Return on Investment				
Savings			Savings	
1 employee		\$40,000	2 employees	\$80,000
Transcription		\$10,000	Transcriptions	\$10,000
Chart materials		\$5,000	Chart materials	\$5,000
Less billing errors		?	Less billing errors	?
Revenue			Revenue	
Better E/M coding		\$15,000	Better E/M coding	\$25,000
			Increase volume (1-2 pts/doc)	\$30,000
Savings plus Revenue		\$70,000	Savings plus Revenue	\$150,000
Expenses			Expenses	
License (2 physicians)		\$18,000	Network support	\$5,000
Annual Software Support		\$5,000	Annual Software Support	\$5,000
Training and implementation		\$50,000	Misc upgrades, hardware needs	\$2,000
Hardware with installation		\$30,000		
Initial slowdown (3-4 months)		\$20,000		
Total		\$123,000	Total	\$12,000
Gain/loss		-\$53,000	Gain/loss	\$138,000
			Cumulative	\$85,000