Davies Ambulatory Award – Community Health Organization

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- Menu Case Study: Population Management

Executive Summary

HealthNet Women’s Services is comprised of 27 certified nurse-midwives, 10 OB/GYN physicians, and 3 Women’s Health nurse practitioners. In November of 2009 we began an exciting and innovative journey from paper to Electronic Medical Records (EMR) with our first OB clinic location going live on EMR. Initially, our plan was to recreate all paper processes in the EMR and to “Go Live” with only new obstetric visits being recorded electronically. As a result, all current pregnancies at the time of Go Live would remain on paper records, but as each woman delivered her baby, her subsequent medical record charting would be completed in our EMR. The goal of this hybrid model was to ease the transition into electronic charting. However, after three OB implementations, we decided to delay future OB/GYN EMR Go Lives until we could develop a plan to change and standardize our workflows with our EMR across all locations according to our identified best practices. This case study illustrates how the use of health information technology allowed HealthNet to accomplish this standardization with improvements in patient outcomes. Most notably, we increased first trimester entry into prenatal care to 71% and decreased low birth weight deliveries to 6.8%. These changes correspond to a 22% improvement in women accessing care in the first trimester, and the number of low birth weight deliveries decreased 16% from 2011 to 2014.
Background Knowledge

HealthNet, Inc. is a Federally Qualified Health Center (FQHC) and since 1968, the organization has improved the health status of Indianapolis’ inner-city neighborhoods by delivering quality health services. Through 150 licensed providers, HealthNet annually provides affordable health care to more than 59,286 individuals, 65% of whom are Medicaid recipients. In addition, 77% of patients served are under the age of 35 (54% ages 0-17 years, 23% ages 18-34 years).

HealthNet has a network of 8 primary care health centers, 1 OB/GYN care center, 1 pediatric and adolescent care center, 1 maternal fetal medicine center, 6 dental clinics, 97 school-based clinics, a homeless program with 8 shelter clinics, and additional support services. HealthNet’s mission is to improve lives with compassionate health care and support services, regardless of ability to pay. The organization has also been accredited by Joint Commission as an Ambulatory Practice since 1980, and is the only FQHC in Indiana with this distinction.

HealthNet achieved Patient Centered Medical Home (PCMH) designation from the Joint Commission in October 2012 and has successfully attested 98% of its eligible providers for Medicaid Meaningful Use.

Within 6 months of our 1st EMR Go Live, 3 of HealthNet’s 9 OB clinic locations were “live” on eClinicalWorks. However, HealthNet saw an opportunity that would allow our OB/GYN teams to use the EMR to better assist pregnant women in establishing early prenatal care once they have a positive pregnancy test.

Opportunity for Improvement

HealthNet tracks multiple statistics involving prenatal care, including the number of women who receive prenatal care in their first trimester and number of babies who are born with low birth weights. HealthNet’s performance was behind the national averages in both of these areas (see Figure 1) and it saw the opportunity to use its EMR to make gains in these important areas. Thus, HealthNet delayed additional EMR implementations and proceeded with an optimization phase. This allowed us to identify, document, and implement standardized OB/GYN workflows across all centers using our EMR.
We identified during our initial EMR Go Live time frame that HealthNet lacked a standardized process by which women with a positive pregnancy test were scheduled for their new OB patient appointments. In our pre-EMR methodology, these pregnant women were often given paper information regarding available services and then left to initiate efforts to schedule prenatal care on their own (see Figure 2). This workflow sometimes differed between health centers, which made it difficult to execute workflows, audit the workflows, and improve performance.
To improve upon this workflow, HealthNet first had to gain a better understanding of our new EMR and its capabilities. To aide this process, a second Clinical Analyst was added to our EMR Team. This analyst worked with our OB staff and providers to improve coordination of care for our prenatal patients. Our improvement plan included how to uniformly schedule our new pregnant women for prenatal care at the nurse visit when the positive pregnancy results were given to patients. The intent was to ensure that most women entered prenatal care before the end of their first trimester, which we believed would also have a positive impact on our percentage of low birth weight deliveries. Since our hybrid approach proved to not be the best model, we proceeded to change to this standardization using our EMR.

**Design and Implementation**

HealthNet utilizes the Institute for HealthCare Improvement's Model for Improvement when implementing new workflows. We chose to use this when designing our new OB workflow mentioned above. These PDSA Steps include: (a) **Plan** – gather information about the current process at all clinics, identify what functions they could use in the EMR to hardwire the process, and document what they believed to be “best practice” for each area; (b) **Do** – trial the new process at one or more OB clinics; (c) **Study** – evaluate the outcome of each trial; and (d) **Act** –
make changes to the original process based on the outcome of their trial(s) and then implemented the final process at all OB clinics.

In our quest to ensure all HealthNet’s patients with a positive pregnancy test are scheduled for their initial prenatal visit within the first trimester, the OB EMR Clinical Analyst studied current scheduling practices within our PM/EMR. The OB EMR Clinical Analyst then interviewed staff at various clinics to determine how they were scheduling new OB patients. Following this evaluation process, and in collaboration with OB team leads, we created a positive pregnancy EMR template and created a single workflow by which we believe timely scheduling of patients with a positive pregnancy test can be accomplished. The change management process utilized is depicted in Figure 3 below:

Figure 3: Change Management Process for Positive Pregnancy Test Workflow

OB centers that were already live on EMR were trained on the new process, one at time, during a 3-week optimization period. During this time, new workflows included a New OB Scheduling process which was presented and implemented. The EMR Analysts monitored these new workflows while on-site and worked with staff members and providers, as needed, to ensure
proper implementation occurred and that this new process was working as expected. This implementation process went smoothly and was later implemented at all OB clinics during future EMR implementations (see Figure 4).

Figure 4: Design and Implementation of Positive Pregnancy Test Workflow

Ultimately, the goal of this electronic standardization of the OB workflow mentioned above was to increase first trimester entry into prenatal care and decrease low birth weight deliveries to be more in line with national averages of 71% and 8%, respectively. Both of these are considered significant indicators to measuring the process and outcomes of prenatal care.

How Health IT Was Utilized

HealthNet utilized several features of our EMR software when designing this new workflow. These included automated reminders, customizable fields within our Progress Note, and scheduling and reporting tools.

HealthNet developed a Positive Pregnancy Test Template to capture relevant patient historical information from all OB patients with a positive pregnancy. This template also included questions/reminders for staff to schedule patients for their first OB appointment quickly. Staff members have quick access to their favorite templates from the right-chart panel of the progress note. The Positive Pregnancy Test Template is merged from this area and it populates various
sections of the progress note, including HPI and Preventative medicine. Reminders to schedule patient for financial screening appointments are built into the template. All of the historical information gathered from the patient is also documented in the EMR (see Figures 5).

**Figure 5: Merging Positive Pregnancy Test Template**

Replacing paper forms and standardizing the use of the Positive Pregnancy Test Template was a significant factor in getting pregnant women into early prenatal care within two weeks of their positive pregnancy test. **Figure 6** below depicts a progress note where the Positive Pregnancy Test Template was merged to complete documentation of the visit. It shows electronic test results, patient notification, where patient would like to pursue OB care, education provided, prenatal vitamins provided, and follow up appointment scheduled within 2 weeks.
Another successful tool in increasing the number of pregnant women accessing care in the first trimester was the No Show Visit Report. This report was auto-generated and e-mailed to designated staff at each health center. This new technology helped us respond to No Shows Visits for all patients quickly compared to the past. To ensure this report served its purpose, the EMR team created a guideline and educated staff on new No Show EMR follow up and documentation.
Value Derived

HealthNet credits the increased early entry into prenatal care to the standardization of the positive pregnancy test workflow and use of our EMR to make and track prenatal appointments of new OB patients with positive pregnancy tests. The reminders in the Positive Pregnancy Test Template and use of the appointment finder tool helped HealthNet increase early entry into prenatal care. This increase also had a positive impact in our low birth weight outcomes. Specifically, HealthNet increased first trimester entry into prenatal care to 71% and decreased low birth weight deliveries to 6.8%. This relationship can be seen below (see Figures 7 and 8). From 2011 to 2014, these changes corresponded to a 22% improvement in women accessing care in the first trimester, and a 16% decrease in the number of low birth weight deliveries.¹ This same workflow is used today and the template has been updated to meet current OB/medical standards.

Figure 7: 2011-2014 Improvements in Access to Prenatal Care

¹ There was a slight decrease in performance on the number of low birth weight deliveries in 2014 compared to 2013, but data through 2nd quarter 2015 shows improved performance (6.6%). We expect this positive trend to continue through the end of 2015.
Prior to EMR implementation, patient satisfaction with their overall visit was around 4.2 on a 5.0 scale. Even though those results exceeded our goal of 4.0, we believed implementing EMR would improve the overall experience for our patients. The graph below in Figure 9 demonstrates HealthNet performance from 2009-2014 on the overall visit score from patient satisfaction surveys. The question patients are asked to rate is “Overall today's visit was excellent”. Response options with corresponding scores are: Strongly Disagree – 1; Disagree – 2; Neutral – 3; Agree – 4; and Strongly Agree – 5. HealthNet experienced a dramatic increase in overall patient satisfaction after implementing EMR.
Lessons Learned

The most important lesson learned in the implementation of the EMR was that developing written policies and training guidelines was imperative to the success of the implementation. In order to standardize the process among all sites, those involved in the training needed to be working from the same documents. HealthNet developed both a positive pregnancy test policy and a training guideline for the process. They also serve as important reference tools for staff when the training and process implementation is complete.

One obstacle we encountered with this particular workflow was the scheduling tool within the EMR. In an attempt to be more productive with scheduling techniques, we spent considerable time educating ourselves on the EMR scheduling tools, such as blocks and visit rules. We soon realized the scheduling tool was not capable of acknowledging the blocks or rules, consequently creating scheduling issues. At times it would book a new OB appointment on a spot designated for another type of appointment. We decided to look for appointments in the research schedule but made sure to update staff’s EMR settings to ensure schedules were available in their scheduling screen, which made scheduling of new OB appointment much easier.

Months later we attempted to refer all women with a positive pregnancy test to Better Indy Babies (BIBS), a program to help educate women on parenting skills, but were not successful. The volume of positive pregnancy test reports was outside of the scope of what this program could successfully handle. Knowing not all women needed to be referred to BIBS, we decided to work together with our social workers to ease some of the demand. Each of the health centers
has a social worker that providers and staff can reach in person and via Telephone Encounters, (a messaging, documenting and tracking tool within the EMR). The social workers are able to refer and help patients get to specific agencies they need.

The Positive Pregnancy Test Template continues to remind staff to schedule patients for prenatal care as soon as possible and it also captures relevant patient information available to the provider before seeing the patient for the first time. This is a great advantage in our attempt to provide quality care. Along the way we have introduced new workflows around the positive pregnancy tests to assist women in entering care during their first trimester. Some workflows have grown and proven to be successful, others have not. Nevertheless the Positive Pregnancy Test Template has proven to be a very successful EMR implementation.

Financial Considerations

Designed and developed internally by HealthNet’s EMR team and data analyst, the templates and reports were completed with a total cost estimated at less than $3,000. About $15,000 of the data analyst and EMR analyst’s salary and benefits can be contributed to this project. Training of staff and providers on templates changes and reports was provided via e-mail and face-to-face interaction with the EMR staff. Midway along this project, the EMR team implemented a schedule in which analysts would rotate to each location weekly to provide regular on-site support as part of their regular job duties. Training for this project was rolled into that onsite support, and as a result there were no additional costs associated with this training.

In 2011 the Agency for Healthcare Research and Quality (ARHQ) determined that the average cost of low birth weight deliveries is $27,200 (http://www.hcup-us.ahrq.gov/reports/statbriefs/sb163.pdf). The overall decrease in number of low birth weights from 2011 (144) to 2013 (133) was 11 patients. Assuming cost of LBW delivery is $27,200, ROI from 2011 to 2013 is $299,200 potential savings for the government and private payers.