
Roswell Pediatric Center

Primary Care Davies Award

Identifiers

1. Submitter: **Nancy R. Babbitt CMPE, Administrator**
2. Practice Name: **Roswell Pediatric Center, P.C.**
3. Three Practice Locations
Alpharetta Office
3400-C Old Milton Parkway, Suite 545
Alpharetta, Georgia 30005
Crabapple Office
12385 Crabapple Road, Suite 100
Alpharetta, Georgia 30004
Cumming Office
110 North Corners Parkway
Cumming, Georgia 30040
4. Telephone: Alpharetta Office: 770-751-0800
Crabapple Office: 770-343-8759
Cumming Office: 770-888-2882
Nancy R. Babbitt: 404-247-8663
5. Primary Fax: 770-751-7198
5. E-Mail: babbittnc@aol.com
Website: roswellpediatrics.com
6. Number of Physicians in Practice, FTEs: 9
7. Number of FTEs: Nurse Practitioner's 5.5
Clinical Staff 22.6
Support Staff 36.9
8. Annual number of patient encounters:
Annual Visits (combined total for 3 sites) 82,000
Nurse Triage Calls per day 300
9. Names of the members of the EHR Implementation Team (who will be considered authors of the application): Nancy R. Babbitt CMPE, Administrator

Organization

Dr. Fredric Flax started Roswell Pediatric Center, P.C. in 1978. We have nine board-certified pediatricians and seven nurse practitioners that specialize in the care of infants, children, and adolescents. We strive to provide the highest quality medical care for children while promoting optimal physical and mental development. Our goal is to help parents feel comfortable using their “parental instincts,” along with our expertise and guidance, during times of health and sickness.

We are 50% HMO contracts, which includes 20% capitation, 35% PPO contracts, 10% Medicaid, and 5% Private Pay. We serve a patient population in the suburbs of North Atlanta. We have a mix of patients from all social and cultural backgrounds.

I have been with the practice for fifteen years, as the Practice Administrator. We have a great management team who work well with the practitioners and staff. Our managing partner works with me on the day-to-day decisions. We have an executive committee, which meets with me monthly along with a monthly partner’s meeting. The best thing about Roswell Pediatrics as you will see in our story, is our staff, starting with the owners. They make decisions based on what is the “right or fair thing to do,” taking into account fiscal responsibility. This sets a great example and tone for the rest of the decisions made in our practice by all employees. In 2000, our practice was awarded the Medical Group Management Association’s “Most Successful Practices Award” based on high benchmarks in many patient care and administrative categories.

RPC is located at three independent sites. We have two sites in Alpharetta and one in Cumming.

The first Alpharetta office is located at 3400-C Old Milton Parkway. This site is 7,000 square feet and offers a patient care area, which includes twelve patient exam rooms, one hearing and vision screening room, one emergency room, one laboratory facility and one procedure/exam room.

The second Alpharetta office is located at 12385 Crabapple Road This site is 5,500 square feet and has a patient care area, which accommodates nine patient exam rooms, one hearing and vision screening room, one emergency room, and one laboratory facility.

The Cumming office is located at 110 North Corners Parkway. This site is 7,000 square feet and includes thirteen patient exam rooms, one emergency room, one laboratory, one hearing and screening room and one procedure room.

Management: **Business Objectives**

At our company’s annual strategic planning retreat in December 2000, we identified our practice’s strengths and weaknesses. As a result, the following areas were targeted for improvement: universal access to the chart, quality of documentation, intra-office communication, workflow, and forms and referrals processing.

At this point the topic of EHR selection came to the table, and with 100% upfront physician acceptance, the decision was made to search and find the EHR of choice. The search was long, albeit complete and difficult, yet we feel very successful. A committee of three physicians and myself screened the available EHR vendors who had pediatric experience and who didn’t have proprietary AR/Billing software that you would have to buy. We wanted a “best of breed” EHR product whose company was willing and able to develop an interface with our current billing software (Promed), owned by Vitalworks. We attended the MGMA’s national convention in 2000 and the TEPR convention in 2001 to visit the exhibit halls – and we slowly learned a lot. We developed a list of problems that we wanted the EHR to solve and asked each vendor to show us how they solved them.

After considering what we learned and what was available we wanted the following key elements in our EHR: Progress Notes, Point Of Care - Coding and Charge Capture, Physician Order Entry, Prescription Writing, and Medical Document Imaging. We also had several key selection factors: Staff Acceptance, Functionality, Flexibility, Scalability, Integration Capability, Company History and Support Availability, Cost, and Return On Investment.

Below are a few of the specifics:

1. Physician office staff efficiency would be improved by:
 - a. Reducing or eliminating chart pulls.
 - b. More efficient and timely medical record filing.
2. Physician office profitability would be improved by:
 - a. Documenting and charging appropriate coding levels for visits.
 - b. Capturing lost revenue by improving charge capture.
 - c. Decreasing claim denial rate.
3. The overall level of patient care would increase by:
 - a. Streamlining communication to improve workflow, including turnaround time for triage calls, prescription refills, and form and referral processing.
 - b. Providing instructional and educational drug & disease state information sheets.
 - c. Provide universal, simultaneous access to the chart.
 - d. Improve the quality of our documentation, including legibility.
4. Clinical research would be supported by the increased availability of client data.

In the end, we chose NMS Medical Systems, EHR software (NMS). It was very “Intuitive” to use. The electronic chart looks like an office chart and is very easy to navigate. It was “Customizable” – meaning their “medical authors” studied our ways of seeing patients both in the exam rooms and at the front desk. From these observations and hours of discussions with our group, the EHR was customized to work for us. Finally, we found it to be “Efficient” – easy to produce letters, immunizations records, growth charts, and referrals, in addition to allowing capturing charges and billing appropriately.

We purchased the system in August 2001 and told them that we wanted to be live by flu season in November. We accomplished a tremendous, or as one consultant warned us, an impossible feat, considering that over 80 employees, at three locations were fully trained and using the new EMR in 100% of office visits eleven weeks after we bought the system and just eight weeks after we started the formal implementation process. Our system has enabled us to turn our weaknesses into strengths, and run a more profitable business as well. We have also found that an EHR can provide the tools and resources, to assist with clinical decision-making and facilitate proactive disease management.

Project Organization

NMS sent a client services manager and a project manager to our office to begin the official planning phase. We set up a team of superusers that included our original search team, and several other key staff members. Dr. Landis, our managing partner, was the project Executive Sponsor, and Administrative Lead. The Clinical Lead was Dr. Silverman. Dr. Salzberg was the Technical Lead, and I was the Project Manager and the Implementation Lead.

This superuser team oversaw most of the input to NMS during the planning and implementation process. The actual time the physicians spent in downloading information and reviewing documents given to us by NMS was only a few hours a week and was generally handled by superuser physicians on their days off. We developed teams of staff members to work with each Team Leader. This was very important to develop “buy-in” from the staff, boost morale, and spread out the workload and accountability.

The planning phase lasted about three weeks. I was worried about how we could get all of this work done in eight weeks. We had to order and install the hardware, build the interface with our Practice Management system, and customize the program for our clinical needs.

The first week was spent developing our “project charter.” During that time we discussed very specific details about our practice and our implementation of the EMR. We discussed our expectations. We discussed in detail the scope of the project, the various phases, and the timelines. The result was a 51-page project charter that fully outlined our objectives and responsibilities as well as NMS responsibilities.

The project charter served as the guiding force of the entire process. It was a *huge* part of our success because it put all of us, on the same page. We knew what was coming, what our roles were, and what to expect from the overall process. We even knew the risks involved and how to avoid those risks. The project charter was a key reason we went live on our targeted date.

The project charter defined roles and created an understanding between all project stakeholders about each role and its responsibilities. The process of creating the charter required us to establish our expectations at the beginning of the project, a point that was an important factor leading to a successful implementation that met all of our objectives

It was interesting to me that during the planning phase NMS also talked about what could go wrong and introduced a risk management plan. They cautioned us about “scope creep” or changing the agreed to requirements of the project scope after the project starts. I was impressed with their methodical approach to discussing each area of the project, what needed to happen, and what could go wrong.

We signed the project charter on September 24, 2001 and officially moved into the Implementation of our EMR.

Project Team Structure	
Roswell Pediatric Center	NMS
Executive Sponsor	Client Services Manager
Project Manager	Account Executive
Implementation Lead	Senior Project Manager
Implementation Clinical Lead	Implementation Project Manager
Implementation Administrative Lead	Implementation Medical Knowledge Author
Implementation Technical Lead	Implementation Clinical Trainer
	Engineering Services Specialist

Implementation EHR System

Our providers encompass a wide range of computer experience and knowledge; as a result it became apparent to us early in our investigation that to ensure user buy-in and a smooth implementation process we had to consider the intuitiveness of the product. We found that NMS met this need in its three-screen approach to data entry; virtually all documentation for an entire patient encounter is captured on only three screens. With this functionality we felt that even our least experienced user would be able to navigate the NMS system without difficulty.

Capturing client data is accomplished through a point-and-click method, which is based on a template driven system. Templates were developed through the combined efforts of our clinical team and the NMS Medical Knowledge team. These templates were customized to match our specific workflow and office patterns. As a result, we were able to implement templates that captured the information necessary to provide not only optimal patient care but also information necessary in guiding a healthy business organization.

In addition to the ability to capture patient data, it was felt equally important to be able to easily retrieve and reformat this data. Patient data is readily available for assimilation into reports, letters, forms, graphs, etc. Each data point is viewed as independent and is therefore accessible. This functionality allows for the ability to retrieve and reformat client data in virtually any form whether over a single client record or the entire client population.

In today's fast-paced health care environment, decision support is essential to quality patient care. We have the ability to access all patient data; we are able to customize decision support to meet our specific needs. For example, wellness checking is based on both our clinic and national guidelines. In accordance with those guidelines, visit outlines suggest tests, procedures, immunizations, etc. When a client record is entered, established wellness rules are automatically assessed and recommendations are generated. These recommendations appear on the summary screen. For additional support, our customized visit outlines suggest diagnoses based on current ICD-9-CM, local medical review policy guidelines, procedures and other services based on the current CPT index, provide suggestions for medications and alerts for allergy and drug interactions based on the national drug data file provided by First DataBank, and assist with E&M coding.

Coding decision support was of particular interest. Providers are ultimately responsible for charges, yet in the complex world of billing requirements, it is nearly impossible to understand all of the intricacies. We have many coding decision support features. These include but are not limited to an E/M calculator tool, warnings and reminders about Medical Necessity requirements, instructions for proper use of modifiers, and other miscellaneous correct coding initiatives. Providers use these tools at the point of care to improve their compliance with coding standards. This ultimately results in fewer rejected claims and decreases administrative time spent on reconciliation.

Our workflow has improved by our ability to communicate more efficiently and share data between users. NMS software provides communication capability through the use of high priority alerts, bold text and sticky notes. Sticky notes can be placed throughout the chart or on top of the chart, which allows the provider access to information prior to entering the chart. A large part of the communication process is achieved through the provider desktop, which permits providers the ability to assess workflow, by quickly viewing the desktop the user is able to identify those patients waiting to be seen, the time they arrived, the reason for the visit, who has seen them prior to you and the time the chart was held for you. The provider desktop also allows for the ability to access the status of those tasks you have delegated. Multiple users have the ability to be in the same chart at the same time. This feature allows immediate access to real time client information, by way of a new data alert.

NMS EHR technology offers an architecture that uses industry standard technologies for reliability, flexibility, and openness. There are several server services, which underlie the functionality of the NMS EHR. All of these services have been built with Java Technology to run on any dedicated server class hardware. NMS's interfacing technology, built on J2EE standards, communicates with our UNIX practice management application, and our document management, and imaging program, IMPACT M.D.

Avoiding duplicate entry of demographic or billing information was a critical part of the project. We also wanted to take advantage of automated charge capture functionality, with physician order entry generating appropriate charge details. On the front end, the practice management system communicates demographic and insurance information to the other products. On the back end, the EHR communicates billing information into the practice management system.

To effectively research our hardware options, we used outside IT consultants, EPIC IT, to help. We had to determine whether to hardwire each workstation, especially in exam rooms, or to use wireless. When we decided to hardwire, computer locations in the exam rooms became very important to the physicians.

Convenience at the point of care was significant, but physicians did not want their backs to the patients while entering data. We explored workstations with “moving arms” on walls, but some of the arms cost more than the actual workstation. We debated spending the money on a wireless keyboard and mouse for some or all of the workstations, but decided to wait, hoping prices would come down.

I ordered hardware for 105 workstations, 55 of which would be in exam rooms. We also purchased 15-inch flat screen monitors as well as servers and laser printers. We upgraded some existing cabling and also installed new cabling, and we upgraded our network to handle the increased workflow at an appropriate speed. The hardware ordering process alone took more than five weeks.

We put two computers on rolling carts in case of technical problems at an exam room workstation, stationing one in the procedure / exam room and the other in our emergency room. If we experience difficulty at an exam room workstation, we can wheel in a mobile workstation, change printer assignments and keep our practitioners moving smoothly until our IT staff resolves the problem.

System Implementation

The implementation methodology was divided into five phases: planning, familiarization, configuration & verification, deployment and evaluation. The project charter detailed a strategic plan for each phase.

During the implementation phase we worked closely with the NMS team to identify the project objectives such as phasing and time scales, success criteria, risk assessment, risk management, project approach, roles and responsibilities, project communication and system management. To accomplish everything in eight weeks, we had to order and install hardware, build the interface with our practice management system and customize the EHR for our clinical needs. Once planning was complete we were ready to shift into familiarization.

Familiarization (Week 1)

After signing the project charter, we kicked off the project. Part of the success of our implementation was because we educated our physicians on what was required of everyone—physicians, nurses, and administrative staff—to get the job done. We had commitment from the physicians to attend all scheduled meetings and to stay current with our requests to review customizations in a timely manner. Since our timetable was aggressive, this buy-in at the outset was critical to keep the implementation process moving.

NMS's team initiated a discovery process with checklists detailing exactly what they needed from us to configure the EHR. They observed and gathered data, including examples of our existing paper methods. Three key areas needed input: customization of medical knowledge, workflow, and technical information specific to our practice.

Configuration and Verification (Weeks 2 Through 6)

The NMS team customized visit outlines, care paths, order sets, reports and document templates. They met every two weeks with Dr. Silverman, our clinical lead, and his team to build our medical knowledge. Together, we customized more than 90 visit templates, each with a reason for visit as well as links to suggested medications, procedures, educational handouts, and diagnosis and billing codes. We customized the chart's summary screen to contain the information that physicians wanted to see when they first open the chart, plus wellness reminders. Also, we developed templates for the phone triage nurses and timetables for our most common send-out tests, decided on educational handouts and added our referring physician list.

During this time we developed the interface with the practice management system. NMS interface team came to our office and sat with our billing staff. They charted the workflow of our billing information, from the time the appointment was made to the data entry of the information off of the superbill after the patient had been seen. NMS then developed a separate project charter for the billing interface part of the project. It outlined the specifics of the interface project, including testing.

Simultaneously, we had a weekly conference call with all of the team leaders and NMS to monitor and discuss progress of all aspects of the project.

When we approved the final version, NMS tested for four days to ensure the programming was correct and truly matched our needs. We were ready to deploy.

Deployment (Weeks 7 and 8)

We developed a system to enter patient history into the EHR. The physicians developed a critical data checklist with detailed instructions for non-clinical staff to enter data. We decided to pull charts daily for patients scheduled for checkups the next day and used temporary staff to enter their histories. During the first visit, the practitioner would review data entered into the EHR and sign off on the paper chart.

Before formal training, we asked everyone to familiarize himself with the program by spending two 30-minute sessions on different days practicing on a demo version of the EHR. The week before we went live, NMS provided two hours of formal training to everyone, including temporary employees. We set up six workstations in a conference room training environment and trained more than 80 staff members without limiting our patient schedules. We were ready to use the new system on November 13, 2001!

Go-Live

In pediatrics, Monday is a horrible day to start any project, so we went live on a Tuesday. NMS maintained 18 staff members at our three office locations during go live week to provide support. Each practitioner had a one-on-one trainer. We had one trainer assigned to each group of triage nurses and to each front desk. In addition we had a project manager at each location.

To avoid increased pressure on our staff, we phased-in utilization, using the EHR for 30 percent of visits, or every third patient, on the first day, 50 percent the second day, 75 percent the third day and 100 percent by the week's end. On Day One we exceeded our goal of 30% EHR documentation, by actually achieving a 50% rate of documentation. Practitioners and staff even developed a competition to see who could use the system more. By the end of the second day, we were close to 100 percent.

Current State

We have been on our EHR for almost two years and we love it. The access to data has improved every part of our practice. To maintain the EHR's clinical technology we have one staff member, our Supervisor of Information Technology, who spends 40 % of her time working on clinical upgrades and necessary changes. The rest of the her time she oversees the everyday functioning of 105 computers, 5 servers, networking between offices and 20 VPN remote systems. In addition, she is responsible for educating staff members, and resolves other program related issues. We also employ the services of an outside IT group, approximately 10 hours a week to resolve technical issues and provide preventive upkeep and backup verification.

Value Success In Meeting Objectives

As previously stated, we believed that the implementation of an EHR would improve the quality of patient care, and have found this to be true. We have experienced the following successes:

- a. Efficient reallocation of staff by streamlining communication to improve workflow, including turnaround time for triage calls, prescription refills, one hour to 20 minutes and more efficient form and referral processing.
- b. Significantly reduced chart pulls, within 180 days.
- c. Parents and patients love the system. We have access to their data! We are known in the community as the practice with an EHR.
- d. Staff turnover has decreased.
- c. Decreased claim denial rate.
- d. Improved charge capture by 18%, through improved charge capture, coding, and documentation.
- e. Chart reviews are very short and efficient, and we score very high on all checklists.

Cost and Benefits Offsetting Costs

We will pay \$53,700 per full-time clinician over five years for our EHR. That breaks down to about \$900 per clinician per month. This includes the software maintenance, other software programs, ongoing IT expenses, clinical upgrades, etc. The good news is we have more than offset these expenses.

We have already realized a positive return-on-investment (ROI). Prior to implementing our EHR, the results of our chart audit revealed that 18.33% of the procedures performed at the point of care escaped documentation on the paper super bill. This converted to an estimated \$143,570 loss of revenue. 1.67% of our visits were never submitted for reimbursement, totaling an estimated loss of \$115,933.

Inconsistent charge capture for eligible CPT codes such as venipuncture, collection and handling, is a problem at many practices. Our ability to link appropriate CPT codes with the proper procedures, we are now able to accurately capture these charges at the point of care. The table below shows some of our drastic results.

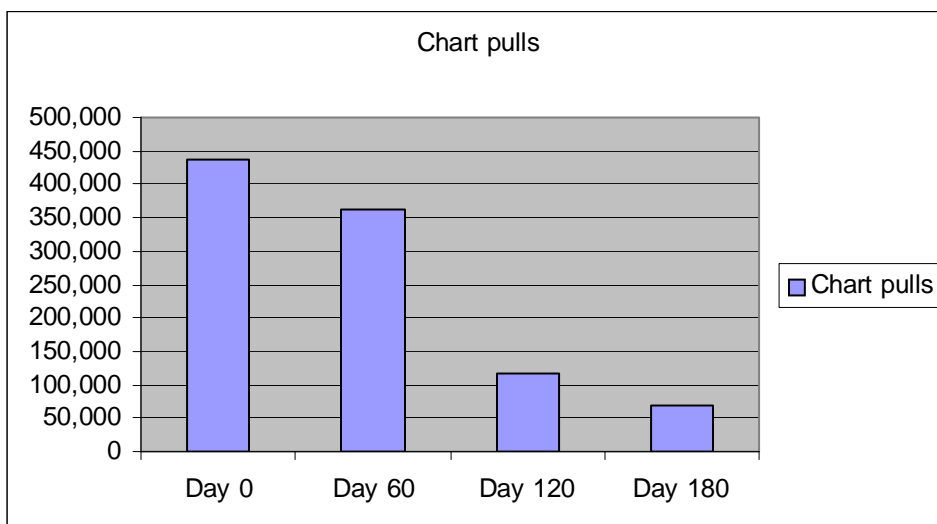
Procedure	# in 2001	# in 2002
Venipuncture	353	9324
Handling Fee	968	1734
Medical Management	1	34

We have also been able to increase revenue through the reduction in the number of rejected claims. We have Medical Necessity guidelines, and can select more specific ICD codes at the time of the encounter. Our billing staff no longer has to spend time keying in codes or trying to interpret illegible handwriting, thus reducing necessary rework. Which all results in decreased costs through reduced time to process charge tickets, and reduced time to process rejected claims. Decreased costs have also been realized as a result of administrative process improvement seen in:

- Chart pulls
- Turn-around time for telephone messages and Rx refills
- Medical records updates, Forms processing and filing
- Referral authorizations
- Chart pulls and file related activities estimated at 3-5 minutes per document resulted in a savings of 7.2 FTE's after 180 days.

Reduction in Chart Pulls with NMS EHR				
Reason for Chart Pull	Prior to NMS (Actual Annual)	After 60 Days (Estimated Annual)	After 120 Days (Estimated Annual)	After 180 Days (Estimated Annual)
Patient Visit	82,000	82,000	82,000	47,560
Telephone Contact	78,000 (300/day)	8,000	7,200	6,000
Medical Record Update	271,340 (1,359/day)	271,340	27,134	13,567
Referral	4,800 (400/month)	2,000	1,000	400
Total Chart Pulls	436,140	363,340	117,334	67,527
FTE Allocation	13.00	10.40	8.20	5.80

The combined chart pulls for Roswell's three locations were reduced from approximately 440,000 per year to approximately 60,000 within 180 days after implementation.



We have seen a significant reduction in our printing costs. As a direct result of the EHR implementation we have seen a positive cash flow.

Lessons Learned

Implementation of an EHR, integrated with a Practice Management system, can have significant impact on return on investment. In addition to improved quality of documentation and other workflow related benefits, it is important for practices considering the purchase of an EHR to also consider the potential economic benefits of a charges interface.

In addition, RPC knew that staff acceptance and ease of use were as important as the economic costs associated with the purchase and implementation of an EHR. When you're evaluating EHR's, realize that the physical layout of computer screens may affect usability. You can tell that programmers developed some systems; they have 20 or 30 icons across the top of the screen and a toolbar setup. It would take a couple of months to get up to speed so you'd understand where to go next in the workflow. Make sure your providers will use the system.

One main factor that highly contributed to our implementation success was the project charter that outlined every detail and everybody's responsibility. The project charter provided us a clear understanding of what to expect and when to expect it.

Hindsight

We considered economic benefits secondary to the primary goals of improving intra-office workflow, communication, and patient care. If the magnitude of the return on investment for improved charge capture had been recognized, our decision to purchase an EHR would have been undertaken much sooner.

One hardware decision we would make differently from the start is to buy uninterruptible power supply (UPS) capability for workstations in clinical areas instead of plain surge protectors. If we were to lose power while a practitioner was documenting in a chart, we would lose the information on that workstation. After a few months on the system and several power blips, we purchased and installed 15-minute UPS for the clinical workstations. Now, if we lose power, practitioners have time to finish the session on their workstations, and save it to the main server. Have a back up plan to go to paper, incase the system goes down, or you lose power.

During implementation we worked closely with our IT firm and bought the hardware. In hindsight the better approach would have been to lease the hardware because you have greater flexibility when the need to add, change, or upgrade the system becomes necessary, also hardware prices tend to come down with time.

When negotiating contracts and maintenance agreements, never assume. Get specifics and define the details. Involve your attorney and an experienced EHR consultant.

Even though we learned the system quickly, we did tend to run almost an hour behind schedule for the first few weeks. We probably expected too much of ourselves and should have given ourselves more time to adjust.

Our EHR installation is a success story. Staff and vendor alike dedicated substantial behind-the-scenes effort to planning, analysis and organization, and these were critical components of our success.