



### Annapolis Internal Medicine

- 9 Physicians
- 4 Nurse Practitioners
- 25,000 Patients
- 60,000 Patient Encounters/Yr.
- Significant admissions to the Anne Arundel Medical Center

### Challenges:

- EMR implementation without practice disruption
- Cost risk to practice

### Solutions:

- Gradual, modular implementation
- Affordable software with flexible payment terms
- Customizable

### Results:

- Elimination of lost correspondence
- Reduction of staff by 3.5 full-time employees
- Four Providers added to practice
- Dramatic reduction in call volumes

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## The Patient Care Manager™ Improving Practice Efficiency, Physician Adoption and Return on Investment

*A Case Study from Annapolis, MD presented at TEPR 2007*

Annapolis Internal Medicine is a 9 physician, 4 nurse practitioner group with approximately 60,000 patient encounters per year. The group was founded by their first doctor in 1974 and their patient population of 25,000 patients comprises a significant number of patients admitted to the Anne Arundel Medical Center, a lone hospital covering a large swath of patients South and East of Baltimore, MD, and Washington, D.C.

For three years, the group reviewed several Electronic Medical Record (EMR) products from very large brand name companies as well as boutique firms providing customized software. This decision was one of the most significant decisions made by the practice since its inception. They were seeing from 175-200 patients per day and slowing down their practice during an EMR implementation would be unacceptable. Furthermore, with offers at a total cost from some companies at approximately \$200,000, a sloppy implementation could actually bankrupt the practice. After approximately 6 months of intense review, using a partnership voting method, the group selected to move forward with the AMCIS Patient Care Manager™ from M.D. Web Solutions; a less expensive and customizable product which could be implemented using a gradual modular method and avoided the pitfalls of EMRs.

Looking back two years after starting the implementation of AMCIS, the benefits to the practice have been numerous. The first major benefit was the gradual approach to implementation, which differed from the single installation approach of most other products and which will be discussed in further detail below. Another major benefit was utilizing the AMCIS Patient Portal so that patients entered their own data, instead of requiring physicians and staff to enter the data. Additional major benefits included a dramatic reduction in call volumes and the elimination of lost correspondences and charts. In the first year of implementation the practice was able to reduce its staff by two full-time employees (FTEs) while adding a physician to the group. ***In two years the practice reduced its staff by 3.5 FTEs while adding 4 providers.***

The patients have gained major benefits as well. There has been a dramatic reduction in waiting times to get responses to questions. In the past a call to a secretary would be written on paper, collected by a staff person, the chart would be pulled and then delivered to the doctor. This could take several hours and to complete the process the chart would need to be re-shelved. This entire process has been eliminated. An additional advantage to patients is that the providers see the question in the patient's own words. Too often in the past, providers were not really sure what the patient's question was until they called the patient. Overall, AMCIS has been able to use technology to shift the locus of control of care back to the patient and their physician.

The modular approach has been instrumental in successfully implementing AMCIS. Modules include:

- Mod 1: Website
- Mod 2: Online Refills, Referrals, Correspondences
- Mod 3: Online Scheduling
- Mod 4: Online or Office Med Hx, PMH, PSH, Allergies, Meds, FHx, SHx, Preventive Hx, ROS
- Mod 5: Integrated Labs, Reports and integrated Faxing
- Mod 6: Online or Office HPI
- Mod 7: Clinically Intelligent PE & A/P and E&M coding

For Annapolis Internal Medicine, implementing one module at a time prevented the staff and less tech-savvy providers from being overwhelmed. The modules are designed from easiest to hardest in difficulty and the learning curve was manageable with each module. Each module presented minimal interruption to daily workflow, whereas one large implementation would have been too much to handle while maintaining the current patient volume. In addition, each module focused on a financially rewarding accomplishment. For example, Modules 1 and 2 reduced patient call volumes and eased paper-shuffling sufficiently to reduce 1 FTE. Module 3 reduced enough call volume to subtract another FTE while hiring another provider. This success lay in sharp contrast with many EMR implementations which require practices to hire more FTEs and reduce patient volume in order to implement an EMR. Not so with the gradual approach.



"I have been using my old dictated notes imported into AMCIS and it is fantastic! I printed them in the CCU on a patient who had been admitted for an MI and put them in her chart for the other doctors. I have also begun to renew old notes to complete new ones. It's great! Thank you!"

**Mike Freedman, MD**

The overriding technical difficulty when implementing EMRs is the challenge of overcoming the Data Entry Barrier. Too often, EMRs force physicians to become data entry persons. As a result, the physicians reject these systems due to the loss of efficiency that they experience. In essence, adding any additional work for already overburdened physicians is simply unacceptable. At the heart of it, an AME should be taking away work, not adding to it. In order to solve this problem, physicians often require that their staff enter all the patient data. This is expensive for the practice and will either reduce patient volume or require that the practice hire more staff or increase staff hours. The AMCIS Patient Care Manager™ (PCM), however, shifts much of the burden of data entry to patients. Patients have the time and the interest to enter the data from their home because they have the time to research the answers to many of the medical history questions. For example, they can call their parent to learn about an inherited disease or grab their bottle of medication off of the shelf to enter the correct information which they do not have at their disposal when in the office filling out forms. Note that patients can share a one-time use password with other doctors or the ER, which makes their medical information available via the web. As a result, the data entry is not just for the practice but also for the patients themselves.

The server housing the patient portal resides in the physician's office and uses 128-bit Secure Socket Layer (SSL) protocols. The same security used by online banks. If the Internet connection to the office is disrupted there is no service interruption for the users in the office. Patients can perform the following functions on the Portal:

Patients create their own user name and passwords to access their medical records.

- All correspondences with staff are stored directly into the PCM. So, as a provider switching from notes to medications to correspondences, there is only a single click.
- Unlike many systems, patients schedule directly into the real-time schedule. There is no back and forth communication about appointment slot availability between staff and patients.
- The Past Medical History entered by patients populates physician notes in prose.
- Once a physician has reviewed an electronic lab result, s/he can send a message, which they have pre-designed, regarding the result to the patient and the patient will see the physician's message and the lab result itself.
- The patient can print or change their one-time use password.
- Additional future features are described in a section below.

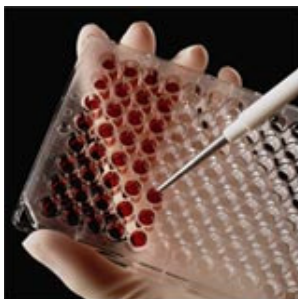
#### ***Statistics on Patient Portal Activity as of May 2007***

In April of 2005, the first patient portal module was implemented allowing patients to send communications to physicians and staff and submit refill and referral requests. In addition, all staff could respond to patients.

Statistics since that time are:

- 10,337 correspondences were generated by patients online; these requests were attributable to the reduction in call volume.
- 3,136 refill requests were generated by patients; Note, that the practice encouraged patients to call their pharmacy first.
- 1,652 referral requests were generated by patients; Note, most referrals were given to patients at check out.

The volumes of activity shown above testify to the integral part the portal plays in the patient's medical care. Often, the question is asked if the incoming correspondences slow down the physicians. In response, the physician users state that there are several reasons why the correspondences actually improve their workflow. For one, correspondences used to require waiting for the chart, writing the message on paper, re-filing the chart and delivering the message back and forth with the operators. If the patient calls again, the process has to be done again. Now, the necessary information is accessible in the electronic chart. Secondly, for medical legal purposes, the patient's own words are in the electronic chart so there is no doubt about what the patient actually said. Lastly, pre-designed messages can be formulated according to best practices with respect to medical legal purposes so there is no concern that the provider might phrase the response in a compromising way; which is more likely to occur when on the phone with a patient - particularly if the doctor is not having a great day.



"My secretary told me a doctor was on the phone about a patient and she left to get the chart. By the time she got back, I had pulled up the last note in AMCIS and was discussing the patient with the doctor. I didn't need the chart; she didn't need to stop her work. This is making us more efficient."

**Robert Peterson, MD**

Beginning in October of 2005, patients could schedule appointments directly on the patient web portal. Note that the large majority of appointments were scheduled at check-out but a significant number of calls to the office were for appointments.

- 3,452 appointments were scheduled by patients online since October 2005.

The PCM is integrated with the Practice Billing System so appointment information flows to the billing system. The system works like an airline ticket reservation. Patient enters their preferred date and desired times of day for an appointment and available slots are presented to the patient.

The patient points-and-clicks and reserves the slot. The slot is now reserved and an operator gets a message from the system asking for confirmation or denial. The slot is reserved for the patient unless it is denied. The group discovered that when the patient schedules the appointment online there are only half as many no shows (4% down to 2%). In addition, the overall no-show rate is down because the PCM emails all patients who have an email address 2 days in advance to remind them of their appointment.

Beginning in April of 2006, patients could enter their past medical history, including allergies, medication list, family history, social history, immunizations and review of systems, on the patient web portal. This medical information automatically populates the provider's documentation.

- 4,524 patients have reviewed their past medical history screens since April of 2006.
- 1,118 patients have entered their past medical history from home since April 2006.

Thus, 25% of the patients who viewed their past medical history from home completed the information. The practice is still contemplating the workflow design to introduce patient kiosks into their office setting. The key factor is how to introduce patients to the system and have them begin the process of entering their past medical history which can take 20-45 minutes without slowing down the practice. In one year, about 4% of the total patient population has completed their information from home and that percentage is expected to rise rapidly once it is accessible to patients in the office.

In summary, the practice has shown irrefutably that eCorrespondences is beneficial. Providers don't have to worry about getting calls from an angry patient who has not gotten a response from them when no message had ever arrived in their inbox from the secretary who took the original call. If a doctor is out of the office, their correspondences are sent to other doctors. All messages have time and date stamps, so all providers are responsible for addressing problems and there is no way to avoid accountability. This has raised the standard of care at the practice. Other major benefits of the patient portal and communication system include:

- 1. Financial:** With the immediate results of a reduction of incoming phone calls and in-office paper shuffling, a reduction in the number of staff was accomplished within a year.
- 2. Increased Efficiency:** Contacting patients could be accomplished via secure email so there was no more phone tag with patients. This was particularly effective for physicians who could send a message with a few clicks using a 'quick content' feature versus calling the patient.
- 3. Improved Accountability:** All patient related correspondences were stored in the patient's file and reviewing what communications took place between which people was very easy.
- 4. Increased Patient Satisfaction:** Rather than wait on hold, patients were able to accomplish their tasks very quickly. Patient feedback regarding the service is very positive.
- 5. Acclimation of Providers to the PCM:** As a first step, the system gets physicians used to integrating the PC into their daily workflow.

Often the following issues are brought up as challenges to be overcome when implementing a Patient Portal. Here is how the practice fared when facing these challenges:

- *Not all patients have internet access or can use the internet:*  
True. In this case though, over 50% of the patient population is over 50 years old and activity was significant.



"Patients are very excited about sharing the EMR with them to review labs, etc. I really like AMCIS. At this point I'm 70% electronic. I love it. I love sending results to patients. I'm very pleased and would not switch to another EMR."

Joe Friend, MD

•*A doctor doesn't want extra work answering questions:*

True. However what the physicians have found is that they are able to save time not having to get on the phone. If however a patient wants more information than a physicians feels is fair, the physicians asks them to schedule an appointment.

•*Patients could mess up the schedule by scheduling online:*

Not in this case. The online appointment feature is designed to only allow the patient to see openings which have been set-up in advance by the practice. Furthermore, all patient scheduled appointments send a notice to an operator who can confirm or decline the appointment electronically.

•*Transitions to new systems are hard:*

Yes, they can be. However, a modular approach allows the transition to be easier.

Several techniques were used to encourage patients to use the portal:

- 1. Answering Machine/Service:** After hearing that they can go to the Patient Portal, many patients will go online and complete their task while waiting on hold.
- 2. Handouts at Checkout:** For example a tri-fold with instructions and explanations of what can be done.
- 3. Appointment Reminder sheets:** These are printed by the PCM and guide patients to the portal.
- 4. Email Appointment Reminders: Reminder and Confirmation emails guide patient to the portal.**
- 5. Web Links:** Links to the Web Portal at the local hospital site and major search engines.

This case study proved the efficacy of the Patient Care Manager™. For many of the reasons cited above, an EMR could not have accomplished many of the benefits garnered by the practice. In conclusion, a PCM is the distinguishing factor in a successful implementation.

