INNOVATION AND IMPROVEMENT

Interval Examination: The Ambulatory Long Block

Eric J. Warm, MD

Department of Internal Medicine, University of Cincinnati Academic Health Center, Cincinnati, OH, USA.

KEY WORDS: ambulatory care; quality improvement; medical education.
J Gen Intern Med 25(7):750–2
DOI: 10.1007/s11606-010-1362-5

How can you tell when a system is broken?

Six years ago, I did not ask questions like this. The Accreditation Council for Graduate Medical Education (ACGME) had accredited our residency at the University of Cincinnati for multiple 5-year cycles, we recruited well to our city, and our residents knew how to take care of sick patients. All was well. We hardly noticed that patient satisfaction scores in the clinic were consistently low and that residents rated their ambulatory education at the bottom of the residency experience. What did you expect in a clinic? Was it ever any different?

How can you tell when a system is broken? One way is to only ask questions that validate instead of evaluate. Fortunately for us, Marilyn Gaston, local hero and former director of the Bureau of Primary Health Care, came to town.

> "Tell me about your diabetes care," she said. "How is it?"
> "It's great," I said."How do you know?" she asked.
> "We work really hard at it," I said.
> "How many of your diabetics have an A1C greater than 9? How many have their blood pressure controlled? How many smoke?"

I couldn't answer any of her questions. I left the meeting shaken, but determined to confirm our greatness. To my surprise, I found a small cadre of people around the medical center asking the same questions, and they helped me find the answers. The truth was disturbing. We were not delivering good diabetes care, or any other care that we could measure. We were, in fact, not very good at all.

At about the same time, we had an opening in the faculty portion of our clinic practice. One afternoon I was in the precepting room trying to convince a third year resident to join us. I liked practicing in the clinic, as did my partners. As I detailed all the positives, another resident sat down next to me, listened for a while, and then interrupted.

> "Why," he asked with a sweep of his hand, "would you want to do *this* all day."

Received February 13, 2010
Revised March 30, 2010
Accepted March 31, 2010
Published online April 27, 2010

Another good question. After a few minutes of discussion it became painfully clear that I had forgotten what it was like to be a resident in the clinic. My partners and I saw ambulatory patients within a framework of support and continuity. Therapeutic relationships were our most important tool of care. We loved seeing our patients, and we felt that love returned. Residents saw ambulatory patients in the spaces between inpatient ward work, with poor support or continuity. They arrived with little time for preparation, chaotically dove through the charts, and precepted as fast as they could. The main goal of clinic was to finish up and get back to the wards. For most residents, forming continuous healing relationships in this setting was a fantasy. How could we expect them to feel the same as we did? Was it any wonder the patients were unhappy? Our clinic system made no sense from the perspective of the end users.

We needed help. We joined the Academic Chronic Care Collaborative (ACCC)[1] and found 21 other medical centers struggling with the same issues. We learned about the Chronic Care Model[2,3], the Model for Improvement[4], Plan-Do-Study-Act (PDSA) cycles, and small tests of change. We developed projects, shared ideas, and felt empowered by the process. We came home with the Institute of Medicine's words ringing in our heads: *trying harder will not work—changing care systems will.*[5] After a good deal of data gathering and debate, we decided that to improve education and care in the ambulatory setting we would largely separate outpatient from inpatient training. In 2006, we created the ambulatory long block as part of the ACGME's Educational Innovations Project (EIP).[6,7]

Several major themes have emerged from our redesign. First, we have created a space for residents to focus on healing relationships. The long block occurs from the 17th to the 29th month of residency and is a year-long continuous ambulatory group-practice experience. Long-block residents follow approximately 120–150 patients, average 3 half-days per week in the ambulatory practice, and are required to be responsive to patient needs (by answering messages, refilling medications, etc.) daily. Otherwise long block residents rotate on electives and research experiences with minimal overnight call. The curriculum emphasizes motivational interviewing, shared decision making, and closing the loop. We schedule patients at medically appropriate intervals, not just when the residents' schedule allows. Relationships form not only at the point of care, but also in the time between visits. Residents build trust by answering phone calls and calling with laboratory results in a timely manner. Long block continuity mirrors that found in the faculty practice, and residents have felt greater satisfaction, reward, and sense of relationship from their work.[6] Patient satisfaction scores increase significantly over the course of each long block only to drop immediately after each long block concludes. This is a bittersweet time for us as we recognize the trade-offs we have made—we believe the rising

and falling scores in part represent the formation and then breakage of successful patient-physician relationships.

Secondly, we now provide instruction and support for quality improvement. Our ambulatory center is located adjacent to the main University Hospital and is an urban safety net practice consisting primarily of self-pay, Medicaid, and Medicare patients. The burden of chronic disease is high. For example, approximately 58% of the patients have hypertension and 32% have diabetes. Our measured quality for these conditions and others was lacking, and we had no infrastructure for improvement. After the ACCC meetings, we adopted a disease registry and then were the first practice to use the electronic medical record (EMR) during our hospital-wide rollout. We created weekly team meetings, developed an extensive quality improvement curriculum, and divided the larger practice group into six mini-teams with three to four long block residents and one nurse (RN or LPN) per team. We generate quality data for the team as a whole, the resident mini-teams, and individual physicians. Friendly competition between residents and mini-teams spurs PDSA cycles for improvement. Our diabetes and prevention measures now beat many national benchmarks and are among the best in the city.[6]

Thirdly, we foster a true sense of teamwork within the practice. Long block residents typically begin a practice session by reviewing the EMR and preparing a progress note. During this activity they make a list of the things patients need during the visit and share this information with their nurse during a pre-clinic huddle. Additional support within the practice includes a nurse practitioner, a social worker, a pharmacotherapy clinic, an anticoagulation clinic, multiple faculty preceptors, and an on-site pharmacy and laboratory. Once we began to meet weekly, we discovered that almost any care process requires an interdependence of team members to make the process happen. For example, a planned visit for a diabetic patient requires a data management person to identify the patient, the clerical staff to call and arrange the appointment, the registration staff to verify the insurance, the check-in person to bring the patient back, the nurse to review the patient's flow sheets, the resident to discuss and adjust the medical regimen, the social worker to identify and overcome barriers to care, and the educator to help with diet and lifestyle choices. Changing even small parts of this choreography requires input from multiple team members. During a team meeting it is not unusual for people with six different job descriptions (e.g., resident, nurse, administrator, social worker, pharmacist, and educator) to weigh in on the topic at hand. We try to flatten the hierarchy. There are leaders to be sure, but the team works best when everyone has a say that matters. Our team has become a model within the medical center, and we often host visitors interested in our success.

In addition to the relationship, quality improvement, and teamwork curriculum during the long block year, we also added emphasis on research and scholarship. Residents may spend up to 3 months of elective time on a scholarly project (many use the improvement work as a start), and they must participate in an intensive board review course.

We are now well into our fourth long block. It has become part of our culture. Initially, however, it was a huge risk. We did not know how long it might take to form healing relationships. We did not know if residents and nurses could partner together as we had envisioned, and we did not know how patients (or residency applicants!) would respond to our change. Nevertheless, the key residency faculty, all primary care physicians, felt like a year was a long time, and each of us had developed important professional and patient care relationships over that amount of time. We looked at the patient care outcomes in the clinic and asked ourselves how we could be providing good education if we were delivering poor care. We took the risk.

When we initially presented the plan for long block to the residents, we immediately recognized we could not sell them on the idea of better primary care for better primary care's sake. None of them wanted to do primary care. We quoted statistics showing most internal medicine occurs in the ambulatory setting. We argued that the skills they would get on the long block would be transferable to any type of practice. They didn't buy it. Our initial approach was therefore pragmatic—we told them we didn't want to turn anyone into a primary care physician, but we didn't want anyone turning away from primary care because of a poor training experience. The great selling point for the residents was the incredible flexibility of the year with myriad opportunities for electives and research. Although this has remained an important aspect of the long block, residents in subsequent years have had an increasing appreciation for the relationship, quality improvement, and practice management skills they attain.

We encountered many other challenges that first year. We had no curriculum blueprint to follow, and this resulted in numerous false steps. Residents expressed their unhappiness in any number of ways. Our planning group occasionally panicked, but to our credit, we listened to the residents and made numerous changes to our original plans. For example, we expanded the electives from primarily ambulatory versions to inpatient electives as well. We worked to minimize the conflict between long block clinic sessions and elective consult work. And we moved the quality improvement curriculum from a stand-alone weekly session into the practice team meetings.

Early on, residents imagined the long block would be a time to kick back and relax, but they soon discovered it was the opposite. Learning to see chronically ill patients in time-limited slots involves a steep learning curve. If inpatient medicine is a series of relay sprints where residents pass the baton of responsibility every month, long block care is a marathon with no baton to pass. Residents were not used to this type of responsibility. Add in the quality improvement work, research, and board preparation, and suddenly the year was no vacation. Success on the long block requires residents to be pro-active and self-disciplined. As a resident once said, "On the wards you can always find an afternoon to do nothing, but there are no easy days on the long block." Over the course of the past 4 years we have better prepared residents for the transition, more closely matching expectations to reality.

Faculty responses to the long block reflected two perspectives. Primary care faculty, especially those who precept in the clinic, were mostly positive. The previous ambulatory experience had felt like a 'hobby practice.' The long block felt real. Subspecialty faculty, especially the critical care faculty, were initially quite negative. They felt that the long block was a kind of evolutionary dead end—no one was going into primary care, so what was the point? Early on, frequent scheduling conflicts arose between long block clinic sessions and subspecialty rounding times. This is when the subspecialty gloves came off. Several faculty members told the residents they were wasting their time on the long block, and that our

residency was no longer preparing them for the 'real world.' One prominent attending suggested we sequester all of the ambulatory time for long block residents to 1 week a month, so they could have the other 3 weeks unfettered to do 'real work.' Like many hospital-based subspecialists, he had virtually no experience with long-term ambulatory continuity, nor did he place emphasis on it. We confronted these subspecialists one-on-one and in countless divisional faculty meetings. An important point that we make in all discussions is that the overall amount of inpatient exposure in our current structure is virtually the same as in our old one—we have just placed most elective and ambulatory time in the middle. To date, we have not convinced everyone we are doing the right thing. However, our greatest allies in challenging subspecialty resistance are often the residents themselves. The past 4 years have produced terrific personal, patient care and systems-based results, and some residents now defend and even promote the long block to the subspecialty faculty they encounter.

Before the long block, we had constant turnover in our clinic staff and had difficulty attracting the best applicants to open positions. We attempted to engage the staff and stretch their job descriptions as we identified newer team-based ways to care for patients. However, despite significant team-building efforts, most of the staff was either unwilling or unable to do this. We then made a request to transition from a mostly medical assistant model to an all RN and LPN staff, even though in our cost-neutral environment this meant fewer overall bodies in the practice. We believed a more highly trained staff could do more work with fewer people than a lesser trained staff. When we described our ambulatory team concept and how we expected nurses to lead the mini-teams, the quality of people we attracted increased immensely. Several senior nurses who had spent the majority of their careers in the hospital opted to transfer to our practice. We now have one of the best nursing groups in the medical center and have had no turnover for more than 2½ years.

Our project has had many successes. Before the long block, we did not know what kind of ambulatory care we delivered. Now we track our care closely. Despite the ups and downs, overall patient satisfaction has reached an all time high. We have a significant waiting list to get into the practice, and there is some evidence we have decreased no-show rates.[6] Educationally, we feel we have diminished the ambulatory training-practice gap, providing residents with a set of expectations and responsibilities familiar to any attending physician. Although these are not our stated goals, a few residents have chosen primary care after seriously considering subspecialty training, and many applicants are choosing to visit our program because of the long block. In addition, the close continuous contact of the long block has allowed us to create high-value, multi-source feedback consisting of self, peer, staff, attending, and patient evaluations.[8] Add this to the clinical quality data and in-training/in-house exam testing results, and both residents and the attendings feel we have created the most robust and effective feedback within the residency.

The long block has also been valuable for the faculty members who designed it. We obtained or refined multiple skills sets, from curriculum design, to quality improvement, to team building. We have been asked to participate in numerous local, regional, and national projects, and we have presented our work in multiple venues. Several of us have received significant promotions for our efforts. Despite the struggle and a few moments of uncertainty, we feel it has been worth it.

How much did it all cost? This is a difficult question to answer. The Educational Innovations Project did not come with funding, and most of the key clinical faculty time was paid for with our existing salaries. Much of the infrastructure existed in the clinic before the long block—we just needed to organize differently. Hard costs directly related to the long block included the ACCC, the disease registry, and expansion of the inpatient hospitalist service to allow so many residents to leave the wards at one time. The initial outlay of money was considerable, but this has been tempered by return on investment from hospitalist efficiencies and improved ambulatory clinic billing. We have not been sophisticated enough to directly measure the cost or savings of the improved ambulatory care measures.

How can you tell when a system is broken?

We ask this question a lot now. We still are not perfect. We need to improve our registry functionality, measure and improve more hard outcomes, advance transitions of care, and develop better partnerships with patients and their communities. Although we started our improvement efforts in the clinic, we now recognize significant limitations in the care and education we deliver in the hospital, and we are turning our attention there. The inpatient services are larger and more complex than a single ambulatory practice, but given our experience in the ambulatory setting we feel confident in our skills to affect and manage change. As Goethe said, as quoted by the Institute of Medicine[5], *"Knowing is not enough; we must apply. Willing is not enough; we must do."*

Corresponding Author: *Eric J. Warm, MD; Department of Internal Medicine, University of Cincinnati Academic Health Center, 231 Albert Sabin Way, Cincinnati, OH 45267-0557, USA (e-mail: warmej@ucmail.uc.edu).*

REFERENCES

1. **Stevens DP, Wagner EH.** Transform residency training in chronic illness care—now. Acad Med. 2006;81:685–7.
2. **Bodenheimer T, Wagner EH, Grumbach K.** Improving primary care for patients with chronic illness. JAMA. 2002;288:1775–9.
3. **Bodenheimer T, Wagner EH, Grumbach K.** Improving primary care for patients with chronic illness: The chronic care model, part 2. JAMA. 2002;288:1909–14.
4. **Langley GL, Nolan KM, Nolan TW, et al.** The improvement guide: A practical approach to enhancing organizational performance. San Francisco: Jossey-Bass Publishers; 1996.
5. **Briere R, ed.** Crossing the quality chasm: A new health system for the 21st century. Washington: National Academy Press; 2001.
6. **Warm EJ, Schauer DP, Diers T, et al.** The ambulatory long block: An Accreditation Council for Graduate Medical Education (ACGME) educational innovations project (EIP). J Gen Intern Med. 2008;23:921–6.
7. Residency Review Committee for Internal Medicine. Educational Innovation Project; 2005. Available at: http://www.acgme.org/acWebsite/RRC_140/140_EIPindex.asp. Accessed 3/27, 2010.
8. **Warm EJ, Schauer DP, Revis B, Boex JR.** Multi-source feedback in the ambulatory setting. J Grad Med Educ. In press.