E-health: Promise or Peril?

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A realistic look at ROI and medical practice technology

Spend enough time reading industry publications, hanging out in exhibit halls, or talking to vendors, and it's easy to believe that the paperless office has arrived. A bevy of e-health administrative tools promise to slash overhead, boost collections, improve patient safety, and generally revolutionize physician practice. The promised returns on investment (ROI) in these new applications are huge.

It seems safe to assume that practices using lots of technology perform better than practices that don't -- but that assumption may be false. Our visits to medical groups suggest the correlation between success and technology is a loose one. Not every better-performing practice is a heavy technology user -- though some are. In fact, some practices that adopted e-health applications subsequently abandoned them since they did not yield the promised advantages.

It is not enough simply to acquire technology. Practices that do well with technology -- that see promised returns on their investments -- are benefiting from a realistic analysis of how one specific technology will help in their particular practice. They make a rational business decision, not a decision based on hype.

This is not to say that vendors or publications overpromise, necessarily. A certain system may indeed cut costs; the trick is that, in some practices, it may also add costs elsewhere, either because of what the system requires or because the culture of the practice keeps the system from being as effective as it might be. The trick is to calculate return on technological investments for your specific circumstances -- not to assume that what helps one practice will necessarily help another.

One of the biggest problems to watch for is a negative effect on physician productivity. At the end of the day, if a physician sees fewer patients -- and, therefore, submits fewer claims -- the practice will make less money. Yet many products on the market transfer tasks commonly delegated to staff to physicians. For example, a practice with a voice recognition program can save lots in transcription costs, but if its physicians end up spending time reviewing their dictation for misunderstood words instead of seeing another patient, there is a negative financial impact that often exceeds the cost savings generated by the reduction in transcription costs.

Here are two examples of how to perform a business-savvy, individual analysis of return on investment (ROI) for some common applications.

Get the data

First, gather relevant data for your practice -- namely, your costs per physician per hour, costs per staff per hour, average encounters per day, and average revenue per encounter. We’ll take you step by step through measuring ROI using the following data from a hypothetical practice we'll call Family Medicine Associates of Anytown:

- 3 physicians at $100 per hour ($1.67 per minute). One full-time equivalent physician equals 55 hours per week at 46 weeks per year, includes benefits, for total compensation of $253,000.
- 15 staff members at $15 per hour ($ .25 per minute). Includes benefits.
- 90 encounters per day (20,700 per year; 230 working days)
- $100 revenue per encounter

ROI on automated appointment reminders

Let's say Family Medicine Associates of Anytown is considering buying a telephony product that will automatically place calls to patients reminding them to come in at a certain time and date. The vendor has promised the practice it will recover the cost of their investment in the system before the end of the year by reducing the number of no-shows. Indeed, patient no-shows cost practices a good bit of money. If a patient forgets an appointment, the practice, obviously, misses that opportunity for reimbursement. Worse, the practice still has to cover the fixed costs of rent,
electricity, paying the receptionist and so on, whether not nor the patient ever arrives. So the appointment reminder system sounds good, but let's crunch the numbers to make sure. We'll posit that the system costs $5,000 (this is not a real number; substitute the real cost you can get from your vendor). Now, what will the practice need to spend in addition to that, and what will it save, using the system for a year? The practice estimates that a staff member will have to spend 10 minutes a day programming the new system, telling it which patients to call. If staff are paid $.25/minute, that adds up $2.50/day. Over the course of a year, or 230 operating days, staff costs will equal $575/year.

What will the practice save? The practice estimates that every appointment no-show costs them $85: Their fixed costs per visit -- rent, staff, and so on divided by the number of visits -- is $40, and they allocate another $45 to physician income. In other words, 85 percent of the $100 in revenue they were expecting from that appointment is unrecoverable. By reducing the no-shows by just one per day, the practice adds up its total staff and capital costs, then subtracts them from its total financial benefit. In the end, the practice will save $13,975 in the first year with the system, a positive ROI. Assuming there are no ongoing costs from the vendor, the cost savings will be even greater in the future if the system effectively reduces the no-shows.

Notice, however, that if the practice had fewer no-shows, if the cost of the system was higher, or if the system doesn't actually reduce no-shows, the ROI might not be as good. On the other hand, if the practice was already sending out costly reminder postcards to no avail, its total savings by using a more effectual electronic system might be even higher. Again, it's important to weigh the benefit of technology within the context of a specific practice.

ROI on claims scrubbing software

While automated reminder systems have been around for some time, claims scrubbing software is relatively new to most practices. These systems automatically review electronic claims before they are sent out. They check for missing fields, obviously misused modifiers, matching of CPT and ICD-9 codes and the like, and generate a report of errors. That gives staff time to correct the claim before it goes out so that it is less likely to be denied. Payers use the same software to deny claims as they come in the door, helping them hold on to reimbursement longer.

Better, claims scrubbing software can help practices detect consistent under-coding; it helps ensure that physicians get paid for what is documented in the record.

To calculate ROI, our sample practice needs to know not only what the system costs and how much time and expense staff will spend using it, but how much it is losing to the possibility of undercoding. We will (again, hypothetically) posit that the software costs $10,000. The vendor told Family Medicine Associates of Anytown it would take three medical assistants (MAs) about 20 minutes a day to review all the charges (which will be converted to claims as soon as they are checked). Since we know staff is paid $15/hour, we can figure out that the practice's total staff costs will be $3,450: (3 MA's @ $5.00 per day -- 20 minutes x $15 per hr -- for 230 clinic days).

To estimate how many dollars a year the practice is losing to undercoding, compare the practice's coding patterns to national coding patterns for its specialty. If the practice codes fewer level three visits and more level two visits than others across the country, it is likely that its physicians are undercoding. That observation, of course, needs to subsequently be confirmed by a review of supporting documentation -- you can't bill for a level three visit unless the notes support that level -- but using a benchmark helps.

Benchmarks are available at The Centers for Medicare and Medicaid (CMS) Web site (www.cms.hhs.gov) or go to the tools section of www.physicianspractice.com to find the data in an easier-to-use format.

Our fictional practice, Family Medicine Associates, does a comparison of how often it codes annually for established patient visits (CPT codes 99211-99215) and compares its numbers to the national norm (see E&M Bell Curve Comparison). That analysis reveals that the practice is coding fewer level three and level four visits than it probably could.

But how much revenue would the practice gain if claims scrubbing software helped them catch each instance of undercoding? The practice calculates its weighted average revenue per visit -- that is, on average, what it receives per visit across all patients. The practice multiplies the percent of times it uses each code by the average amount, or allowance, it is paid for that code, then adds up the five totals. By then subtracting its total from the total of the national average, it sees how much it is losing to undercoding: $15.90 per visit.

In the final analysis, the practice will invest quite a bit buying the system and supplying staff support for it, but it will more than recoup that cost thanks to more aggressive, and accurate, coding and
billing.
Notice, however, that if the practice was already coding more accurately, its return would be lower, making the system a less viable option. Again, practice specifics determine whether a system pays off or simply adds to overhead.
What is true for automated appointment reminders and claims scrubbing software is equally true for other e-health applications. There is no silver bullet, no guarantee that an application will pay for itself in your practice even if it has in a practice down the street. Evaluate the technology carefully in the context of your practice, and be forewarned about the adverse impact on physician's time.
There is no substitute to understanding the realities of a specific practice situation and analyzing all the costs -- upfront, operational and hidden -- as well as the benefits offered.
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