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Avoiding Common Pitfalls Of EHR Implementation

The groundwork is done and you've selected a vendor for your electronic health record (EHR). Now it's time to begin implementation. While EHRs can dramatically improve office efficiency and quality of care, implementation is not without pitfalls. Effective resource and workflow planning can optimize success while minimizing common problems such as major drops in physician productivity.

Optimize Workflows

Migrating from paper to electronic documentation will affect existing workflow processes. You will probably find that since your workflows evolved over time, there are accumulated inefficiencies and some structures may not make sense. Individual tasks related to referrals, labs, and refills are ingrained in staff, but overall workflows were probably never methodically planned from start to finish.

In addition, since different staff participate in various stages of referral and refill activities, many may only know their individual step, not all of the work steps required from start to finish. When considering changes to any workflow, first identify every step of the process with an eye for rework, delays, and inefficient use of resources. Second, consider the impact on staff. Identify who might be most resistant and consider ways to engage the staff member in process change so that they have buy-in from the start.

While EHRs often have functions meant to improve workflow, simply implementing technology onto dysfunctional processes will not improve your system. Indeed, processes are so inter-related, you will probably find that as you tweak one system, problems or inefficiencies will arise in another. While the EHR improves the efficiency of overall workflows, it may increase the amount of time physicians spend documenting office visits. As Dr. David Brailer, National Health IT Coordinator recently noted, IT systems are often disruptive because they "engineer processes that were never engineered to start with."¹ However, prepare to experience significant frustration if you expect to rely on old behaviors and processes to run a new system. Inadequate workflow planning will slow patient flow and productivity to a crawl when the EHR is launched.

Here's how to start planning for implementation. First, itemize paper flow for high volume activities like processing lab results. You don't need an elaborate flow chart; they're great, but a sequential listing of who

¹ Weier, S. (April 7, 2005). *IT Often Disruptive to Small Practice Culture*. iHealth Beat (<http://www.ihealthbeat.org/>)

does what to complete a process will work just fine. Next, note the steps required to complete the processing lab results in the EHR. Table 1 summarizes workflow to process lab results before and after EHR implementation. Pre-EHR workflow took from one to four days to complete versus one day after implementation. In addition, the total number of steps has been reduced from eight to five. Of course, EHR workflow will vary depending on individual product features and whether you use them, e.g. secure e-mail.

Rather than automate existing inefficiencies into EHR workflow, consider simple improvements to streamline the work. Ask yourself:

- What steps can be removed?
- Is this a task I need to complete myself
- Which (less trained and less costly) staff can complete this task?

Paper	EHR
1. MA receives results-phone, fax, mail 2. MA reconciles that lab results have been received-initials and date on lab report 3. MA attaches results to chart 4. MA gives results with chart to physician 5. Physician reviews results 6. Physician signs off on results-initials and date on lab report 7. Nurse or physician informs patient of results via phone or mail. 8. Medical record staff files results in chart <i>Time to complete: 1-4 days</i>	1. Software interface with lab enables results to automatically populate EHR 2. Physician documents that lab results have been received in EHR 3. Physician reviews results in EHR 4. Physician signs off on results in EHR 5. Normal results form letter is generated from EHR. Patients with abnormal results are called. Secure e-mail is planned that will enable immediate electronic patient communication regarding results. <i>Time to complete: 1 day</i>

For example, are you documenting history of present illness (HPI) and current **medications** in your paper chart? Using protocols, can you delegate EHR order entry for some labs and refills to nursing staff?

Staff at Park Nicollet Clinic in Minnesota listed pre- and post-implementation steps for each high volume activity on either side of an 8 1/2" piece of paper. The process visualized how the EHR impacted an individual's work for a given activity. Designated employee "resistance busters" helped staff adapt to workflow changes.

Manage Vendor Training Resource

A basic orientation to individual EHR functions is best done by vendors. However, costs for training and support can average \$150-\$200/hour--a very expensive proposition, especially for small practices. While some vendor training is essential, utilizing onsite super-users can be a time- and money-saving approach. Super users are internal staff that become proficient at using the EHR and then provide support and training to others. Such onsite capability reduces costs and helps to spread EHR skills. Depending on the size of a group, super-users are typically respected physician leaders, practice managers, and/or a designated EHR project manager

Super users can also be helpful because some vendor training programs focus more on technical specs and less on the practical realities of office workflow. Vendors may not be able to answer your specific workflow questions in a practical way. The result is often confused and frustrated trainees. Ensure that vendor training includes office visit scenarios; this is a more effective skill-building experience for physicians and staff.

Leverage Physician Time

Before implementation, you will need to decide what existing patient information will be entered from paper medical records into the EHR. Data regarding current problem lists, as well as medications, allergies, and immunizations is usually sufficient, assuming the paper chart is pulled for the first 2 or 3 visits and available if needed for 6-12 months after the EHR is launched. Be careful to avoid duplicate paper and electronic documentation as much as possible. Duplicate systems require duplicate work that quickly becomes very complicated and resource intensive.

In some practices, physicians complete the task of so-called “pre-loading” the EHR with clinical information from the paper chart for existing patients. Others have succeeded by using a two pronged approach:

1. Physicians enter data for up to 20 of their “frequent flier” high-utilizer patients to familiarize them with the EHR.
2. Permanent or temporary medical assistants, nursing and even non-clinical staff pre-load data for all other patients.

While you are accountable for reviewing accuracy of entered clinical data, the cost is far less than if you pre-load all patient data into the EHR. In addition, physician workflow bottlenecks at the point of care are reduced.

Be sure to enter data for existing patients as close to patient visit times as possible, ideally the same day. This can be achieved by having designated pre-load staff work in the front office. The average time to complete a pre-load for one patient is about 8-10 minutes.

Make Sure Documentation Enables Data Gathering

Most EHRs provide two ways to enter data: check boxes or so-called pick lists and free text that’s entered via typing (or handwriting on tablet computers). Using pick lists or check boxes instead of entering free text enables extraction of clinical data. Data extraction, such as average HgA1cs for diabetic patients, enables improved monitoring and managing the health of populations of patients. While it’s not a substitute for a disease registry, this data can provide valuable insight into your patient population. It also removes the time-consuming pulling and individual paper charts to gather for payer audits.

Remember, if data is in a box that you click, it can be sorted and extracted. Better data extraction can also impact reimbursement related to pay for performance.

Make the Most of EHR Coding Module

Coding modules help to establish the appropriate evaluation and management codes based on provider visit documentation. EHR coding usually has current diagnosis and procedure codes built-in. A recent study regarding EHR use in small practices, found that increased coding levels accounted for 51 percent (\$16,929) of the annual total financial benefits (\$32,737) of an EHR, with an average initial investment of \$44,000 per provider.² Assuming that your EHR has a robust coding module, taking the time to learn and use it can have a significant effect on financial results. Features include the ability to summarize services provided with procedures, problems and modifiers. The summary can then be assigned to a specific payer and exported to your billing system to create a superbill. Be sure at least one physician, preferably a super-user has thoroughly reviewed your EHR manual's coding module.

After You Implement

Any innovation also brings challenges. Issues to expect after implementation include:

- Workflow bottlenecks are less visible. Paper based system bottlenecks are readily apparent: charts pile up with labs and refills waiting to for physician review, papers waiting to be filed accumulate in medical records. In contrast, EHR workloads regarding lab orders and results, refills, etc. are out of sight as they accumulate electronically in provider and staff workflow modules. Encourage staff to be vigilant about completing EHR workflow tasks.
- Per patient annual visits may fall. Kaiser Permanente and others found that primary care visits dropped 11% two years after implementing an EHR. One study concluded that, "shifting patterns of use suggest reduced numbers of ambulatory care visits that are inappropriate or marginally productive."³
- More ongoing IT support is a fact of life. A group in North Carolina discontinued their contract with a local IT vendor, thinking the EHR would reduce the need for local IT support. They were wrong. The group now spends 25% more for software and hardware support, though having a local vendor is much cheaper than using EHR vendor staff.

To summarize, there are five key ways to avoid common, costly pitfalls of EHR implementation. (See also Table 2.) Before going live with the EHR, (1) reduce costs by shifting some training to in-house super users as well as (2) optimizing workflows to avoid automating existing inefficiencies. At launch, (3) avoid physician bottlenecks by utilizing less expensive personnel for most pre-loading patient clinical information into the EHR. During patient visits, users can (4) optimize productivity by making full use of coding modules as well as (5) using pick-lists to enter information. And remember, while it enables major operational improvements, your EHR will bring its own set of ongoing challenges.

² Miller, R. H., West, C., Martin Brown, T., Sim, I., & Ganchoff, C. (2005). The Value of Electronic Health Records in Solo or Small Group Practices. *Health Affairs*, (24)5, pgs. 1127-1137.

³ Garrido, T., Jamieson, L., Zhou, Y., Wiesenthal, A., Liang, L., Effect of Electronic Health Records in Ambulatory Care: Retrospective, Serial, Cross Sectional Study. *BMJ*. 2005 March 12; 330(7491): 581.

Table 2. Optimize Workflow and Resource Planning				
	Pre-Launch➔	EHR Launch	➔Office Visit Activities	
Activity	Identify and improve workflows to avoid automating inefficiencies. Develop internal "super-users" to help train and assist other staff.	Avoid physician workflow bottlenecks by utilizing less costly personnel to enter existing patient data into EHR.	To enable data extraction use "pick-lists" for documentation instead of entering free text.	Use coding module to optimize positive financial outcomes.

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