Electronic Health Record Optimization: Strategies for Thriving

Strategies to help health care organizations maximize the benefits and minimize the burdens of the EHR

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How will this module help me optimize the EHR for my practice?

1. Describes 8 steps to implement within your practice
2. Identifies leadership, system, and individual strategies to increase success with EHR use
3. Reinforces the role of teamwork in optimally using the EHR
4. Demonstrates how to leverage EHR-use data to optimize workflows and task distribution
Introduction

Electronic health records (EHRs) have profoundly changed the practice of medicine and are often perceived as both a blessing and a burden by the clinicians who use them. Decisions made in the design, regulation, implementation, and individual use of the EHR contribute to its benefits and challenges. In this module, we present strategies that health care delivery organizations can deploy to maximize the benefits and minimize the burdens of EHR use, along with case vignettes from organizations that have made progress in optimizing their EHR.

Eight STEPS to optimize EHR use in your practice

1. Align leadership and clinician EHR users
2. Optimize hardware and built-environment solutions
3. Optimize software solutions
4. Reduce the burden of order entry and documentation
5. Optimize teamwork
6. Optimize provider use of the EHR
7. Optimize information flow throughout the health system
8. Leverage EHR-use data
Align leadership and clinician EHR users

EHR implementation is most successful when leadership and end users are working together toward the same goal. The following organizational strategies can be helpful:

1.1 Institute shared accountability, wherein institutional leaders share in accountability for multiple organizational goals, rather than having accountability siloed to only their particular domain. Read more about Creating the Organizational Foundation for Joy in Medicine and the Joy in Medicine CEO Consortium blog post in Health Affairs.

Q&A

Why is shared accountability valuable?

When individual leaders and practicing clinicians within an organization have different goals, a harmful “us vs. them” dynamic can develop between those charged with creating organizational policy and implementing the EHR, and those charged with using the EHR. This harmful dynamic can be minimized by intentional organizational actions to align values and goals.

It can be helpful to create opportunities for clinicians and leaders to work toward shared values and goals that are impacted by the EHR implementation, such as optimizing patient experience, patient safety, quality, access and financial viability.

What are some measures for shared accountability?

In a shared accountability framework, the annual performance review of the Chief Executive Officer (CEO), Chief Medical Information Officer (CMIO), Chief Medical Officer (CMO), Chief Compliance Officer and other leaders might be driven, at least in part, by the overall satisfaction/burnout scores of the workforce. It might even be influenced by Work After Work scores. Other overall organizational goals may also be included, such as productivity, patient satisfaction, retention, and recruitment.

How is shared accountability helpful?

Shared accountability protects an organization against suboptimization around a single value at the expense of other organizational values.

When Chief Compliance Officers are responsible, in part, for the ability of clinicians to be productive and to find meaning in their work, decisions will be made differently than when their only responsibility is to protect the organization from an audit failure.

Can you give an example of an organization that implemented shared accountability?

At Atrius Health, the CEO asks his board to hold him accountable for the satisfaction scores of his workforce. He in turn holds his executive leadership accountable for these measures. Because of this, the team saw the need to deploy a “SWAT Team” to reduce clinician dissatisfaction with the implementation and use of their EHR.

The SWAT Team is a high-touch training program at the practice level. Designed and led by the leadership of Internal Medicine and IT, Atrius Health implemented the SWAT Team and several other strategies to optimize the EHR. They lead service line-initiated EHR optimization, such as inbox reduction strategies, annual wellness documentation, and refill automations.

1.2 Regularly measure overall clinician satisfaction/burnout, as well as satisfaction specific to EHR use.
What tools are available to measure overall clinician satisfaction?

There are several validated tools available, including the Mini-Z Burnout Assessment, Well-being Index (WBI), and Maslach Burnout Inventory (MBI).

What tools are available to measure clinician satisfaction with their EHR?

The Mini-Z Burnout Assessment asks specific questions related to EHR burden and includes these responses into the aggregate scoring for the Mini-Z, as well as the subscale for work pace and EHR burden.

1. Include EHR-use metrics on the organization's data dashboard (see 8 below).

2. Consider time trade-offs: if new work will be required of clinicians, then consider what existing work can be made more efficient, delegated or eliminated.

I am working several hours more each day, several years after our EHR was implemented. Is that unusual?

Many physicians have found that tasks that previously required a few seconds to accomplish, such as verbally requesting a test or checking off desired labs on a checklist, now take several minutes in the EHR. In addition, work previously done by receptionists, medical records clerks, clinical support staff and others has often been shifted to the physician following the implementation of an EHR.

It is important to be honest and transparent about time. Expecting that the workday will be lengthened to accommodate new or slower work can be counterproductive to an organization's long-term goals of quality, satisfaction, recruitment and retention.

3. Include practicing physicians and other health professionals in all decisions regarding implementation, training and metrics.

What type of clinician should we include on our EHR committees?

While it may intuitively seem reasonable to invite clinicians who are “computer experts” to lead health IT implementation and optimization efforts, some organizations have found it best to also include “master clinicians.” This allows the focus of the institution to remain squarely on supporting excellent clinical care and prevents policy tilting toward those clinicians. Respected clinicians are also much more likely to gain support from colleagues for the improvements they implement.

Some organizations have found it useful to engage clinicians who struggle with EHR use who can help them understand the optimal interface for the majority of clinicians.

4. Train and support a core team of clinician informaticists.

How can clinician informaticists help?

A clinician informaticist, who is not necessarily responsible for achieving the narrow goal of implementing an EHR, but is involved in realizing the larger vision of improving and transforming care using an EHR, can help bridge the clinical and technical worlds.

The clinician informaticist, for example, can work in collaboration with master clinicians to assess common workflows and consider whether current or emerging software solutions exist to improve the workflow.
or achieve a better result via a new process. This could include: evaluating protocols and software to automate medication renewals; auto-scheduling of follow-up visits; self-scheduling and reminders via a portal; auto-delivery of results to patients and use of a portal, kiosk or other software to capture patient-recorded history.

1.5 Value the users’ training time and be sure it continues after go-live.

Q&A

When should we schedule training—during the workday or after hours?

Some organizations find it best to provide continued training during the workday rather than after office hours.

Providing workday training (with explicit forgiveness of productivity goals) also signals to providers that such work is important. At-the-elbow support when a change is made or opportunity for optimization is identified can be worth the effort. Sending tip sheets or email updates only works if clinicians have the time and mental energy to read them.

Who should we include in training?

The clerical and clinical support staff need to learn optimal use of the EHR along with guided introduction on new upgrades and functionality. This provides an opportunity to optimize the team approach to documentation and to have clear handoffs.

For example, Atrius Health found it useful to engage their medical secretaries, medical assistants (MAs), nurses, advanced practice clinicians and physicians in training for use of the EHR in provision of Annual Wellness Visits.

2 Optimize hardware and built-environment solutions

Many institutions struggle after implementing an EHR because of an inadequate investment in hardware or optimization of the physical workspace. Examples of changes that can improve patient care, workflow and save 15-30 minutes of time per staff person per day include:

- Implementing flow stations where clinical support staff and physicians are seated side-by-side
- Installing widescreen monitors (e.g., 24 inches)
- Having networked printers in every exam room
- Optimizing the user sign-in process with technology such as radiofrequency identification (e.g., badge readers)

Q&A

How does co-location of team members save time?

The MA or nurse can turn to the physician and, in real-time, convey information or ask questions. This eliminates the need for time-consuming electronic messaging. HealthPartners in Minneapolis has found that co-location saves 30 minutes of physician time per day.

2.1 Optimize exam rooms for team documentation and information sharing
Q&A

How can exam rooms be optimized for collaborative visits?

Exam rooms can be designed with space for an additional staff person who helps with team documentation. The design may include a place for side-by-side seating of the physician and assistant, or space for utilizing stand-up mobile computer stations.

How can exam rooms be designed for information sharing among the team and with the patient?

Exam rooms can be designed to include semi-circular desks that allow face-to-face interactions between the patient and the physician, while still maintaining access to the computer screen. An alternative might be strategically mounted wall screens.

Optimize software solutions

Having certain functions integrated within the EHR can improve workflow and efficiency, for example:

- **Physician e-prescribing of controlled substances** instead of printing prescriptions, if allowed by state law.
- **Capturing patient photos**, facilitating recognition of the patient and their story on opening the record. The clerical staff can capture the photo at arrival or check-in. In some applications, patients are able to update their own photos, using kiosks or a mobile patient portal.
- **Using the after-visit summary** that is given to patients to record patient education.

Q&A

First, I document the visit in the EHR and then I must re-document much of this into the after-visit summary for the patient. How can I avoid this re-work?

Some clinicians populate the entire Assessment and Plan while in the exam room using speech recognition, allowing the patient to hear the plan as it is written. The output can then be directed both to the after-visit summary and the physician's progress note.

One tip with speech recognition is to look at the patient and not the screen and change the tense from third person to second person. This allows synchronizing both verbal and written advice, thus saving time and reinforcing the take-home messages.

- **Implementing “Open Notes”** so that the patient has access to the entire note, precluding the need to repeat instructions in an after-visit summary.
- **Optimize EHR use and configuration** to filter large amounts of information for the particular task and user.

What are some examples of optimizing EHR configuration?

There are many examples to consider:

- Some EHRs can be configured to simplify and collate disease-specific metrics to reduce “searching” through the chart.
- Some EHRs can be used for problem-based charting, so sequential plans can be viewed easily over months, for one disease.
- Graphical flow sheets can be used to combine vitals, labs, patient-reported outcomes and medications all in one view.
- Chart filters can be deployed to focus on specific parts of the patient chart to reduce scrolling.
• Use of APSO notes (replacing SOAP notes) puts ASSESSMENTS and PLANS at the top of the note to reduce scrolling.
• Linking to “my last progress note” can reduce searching and bring up continuity concerns from last visit.
• Other options include the use of the Health Maintenance module and assigning tasks to other team members and other departments (e.g., gynecology, gastrointestinal, pediatrics, medical specialties).

Can states' Prescription Drug Monitoring Programs (PDMPs) be integrated into my EHR so that I can check controlled substance history without leaving the chart?

Several organizations, such as the University of Colorado and MedStar Health – the DC-Maryland region – have integrated their state’s PDMP within their EHR, enhancing efficiency and precluding the need to sign in and out of multiple programs. Achieving this level of integration is not without challenges: it requires local programming and can be vulnerable if the state changes its PDMP vendor.

Each state's PDMP is different, which may result in additional software/hardware changes and costs to support PDMP integration into your EHR. You should first consult with your EHR vendor and ask to see a demonstration of the EHR with an integrated PDMP.

Reduce the burden of order entry and documentation

Clerical burden associated with EHR use is one of the most significant drivers of professional dissatisfaction and burnout among physicians. Physicians spend nearly two hours on EHR and deskwork for every one hour of direct face time with patients. On top of this, physicians typically take one to two hours of inbox and documentation work home every night.\textsuperscript{2,3}

Solutions to consider include:

4.1 Team order entry
• Use paper checklists for communicating physician-ordered tests to clerical staff, who then key these orders into the EHR.
• Use standing orders for common tests and immunizations, allowing clinical support staff to close care gaps without additional, redundant data entry work on the part of the physician.
How can we implement standing orders without generating an actual order for the physician to sign?

Some organizations have defined standing orders as organizational policies rather than an EHR function. For example, Atrius Health has a policy to centrally “order” influenza vaccines by protocol. The nurses document per the standing order listed in the organization’s flu vaccine policy, but no longer manually enter the actual “standing order” in their EHR. Making organizational changes such as this are key to removing unnecessary double work, double documentation and note bloat.

Are other team members allowed to enter orders? We thought this was not allowed under Meaningful Use rules.

In 2017, the requirement for Computerized Provider Order Entry (CPOE) was eliminated from the Medicare EHR incentive program.

CPOE objectives remain in the Medicaid EHR incentive program. Within this program, “any licensed health care provider or a medical staff person who is a credentialed medical assistant or is credentialed to and performs the duties equivalent to a credentialed medical assistant can enter orders in the medical record, per state, local and professional guidelines.”

Our compliance officer tells us that physicians must enter all orders and billing codes. Is this accurate?

While the physician is responsible for making the clinical diagnosis and selecting the level of service, there is no requirement that the physician physically enter the billing and diagnosis codes into the computer.

Please see the Question above regarding entering orders.

How much physician time is saved by team order entry per day?

Available evidence suggests that team order entry directly saves 30-60 minutes per day. Completing all of the orders for a patient can take two to five minutes per patient. An organization can use EHR-audit data to calculate the amount of time spent by physicians on order entry.

Team order entry also saves time indirectly by facilitating the implementation of pre-visit laboratory testing. Labs and other tests performed before the visit eliminate the need for inbox review and post-visit results reporting, saving another hour or more per day.  

4.2 Team documentation

Organizations that have implemented team documentation have found increased satisfaction for patients, staff and physicians; most have also found that this improves their financial bottom line.

How does having another team member in the room with the physician save time required for information gathering during the visit?

If additional information is needed during the course of the patient visit, such as the results of a previous imaging study or the patient’s prior medication use history, the MA or nurse can find that information and verbally communicate it or pull it up for the physician’s review. Physicians don’t need to break their interaction with their patients or break their concentration to hunt for this information.
How does having another team member in the room with the physician save time on visit note documentation and other administrative tasks?

A time-motion study\textsuperscript{2} found that physicians spend over one-third of their time in the exam room with patients doing computer tasks. Most of this can be eliminated with in-room teamwork.

I've heard that the MA or nurse must sign in and out of clinical and clerical roles. Is this true?

The Joint Commission has explicitly stated, “There is no Joint Commission requirement stating that a licensed or certified professional signs in and out between clerical and clinical work.”\textsuperscript{5} To the best of our knowledge, there are no CMS requirements for team members to sign in and out of roles.

What other forms of documentation assistance are available?

Other forms of assistance include:

- Dictation to transcriptionist
- Speech recognition software
- Hybrid speech recognition-transcriptionist approach

We work with medical students. Does the faculty have to re-document any Evaluation and Management (E/M) service documentation entered by the medical student for Medicare patients?

No. CMS published a clarification “to allow teaching physicians to verify in the medical record any student documentation of billable [E/M] services, rather than re-documenting the work.”\textsuperscript{6,7}

4.3 Dictation to transcriptionist

Q&A

Isn't dictation to a transcriptionist too costly?

While many EHRs were implemented with the expectation that costs for transcriptionist services would be reduced, it is possible that the costs of reduced productivity and access to care when physicians are responsible for data entry, either manually or via voice recognition software, outweigh the cost of transcriptionist services.

In addition, there are hidden costs associated with a poorly configured or difficult to decipher notes, including greater time needed to develop situational awareness and a greater chance for errors.

4.4 Speech recognition software

Q&A

Will speech recognition software save time?

Speech recognition software has received mixed reviews, with some finding it a time-saver compared with typing and others finding it more time consuming, and thus ultimately more costlier, than dictation to a transcriptionist.

Potential challenges of speech recognition software to consider:

- Additional time required for clinicians to proofread and edit the output errors.
- Difficulty in subsequently reading documentation that contains errors that were not caught by the clinician at the time of data entry.
• Difficulty in reading text that has not been formatted for ease of review.

Some organizations take a hybrid approach. In this model, the clinician dictates into a speech recognition software program, and the output is then edited and formatted for readability by a transcriptionist.

What about using mobile devices with speech recognition software?

Some organizations have found that this can add flexibility, mobility and improved functionality to the documentation process.

Our notes are long and difficult to read. It is hard to find the few nuggets of useful information in a colleague's lengthy note. Is all of this information helpful?

There are a few topics to consider:

• Documentation templates, auto-text, and smart phrases are often used to streamline the documentation process. There may be circumstances where such boilerplate text is useful, but organizations may want to reconsider the value to patient care such text output provides. Organizations and physicians should also be cautious to verify auto-populated data to avoid documentation and other errors that could increase liability.

• A longer note is not necessarily better, more defensible, or more compliant than a shorter note. Longer notes composed primarily of generic text and tick-box documentation can contribute to a hazardous care environment by adding to the cognitive work of sorting through the note for important information, and by conditioning clinicians to engage with patients in a more generic fashion.

• Some EHRs include features that allow a user to collapse or hide sections that may not add to the clinical history, for example, text added to a note for regulatory or billing purposes.

A combination of narrative and coded data is optimal. Whatever documentation model is chosen, it is important that it captures both the patient's story and discrete (coded) data. A delicate balance by thoughtful clinicians is vital.

Why is narrative data important?

Narrative data tells the story of the patient. Patient stories help us and our colleagues understand the struggle, the challenges, the suffering and the disease burden for a particular patient. Over-designing the EHR to emphasize clicks and checklists obliterates the patient's story and makes it more difficult to customize care to the individual patient.

Why is coded data important?

Coded, discrete data is fundamental to spotting patterns, running reports, improving quality, improving consistency and removing gaps in care. Some health IT experts predict that artificial intelligence and natural language parsing will reduce the need for clinicians to create coded data.

Optimize teamwork

It is seldom the safest, most efficient, or best business model that assigns new work created by EHR implementation to the physician. Sharing EHR tasks across a well-trained team allows multiple individuals to contribute to the effort and preserves physician resources for work for which they are uniquely trained—medical decision making and relationship building.
5.1 Inbox management: An unmanageable inbox is a safety hazard for patient care, as well as a driver of physician burnout, reduction of clinic hours, or exit from the practice.8

Q&A

I frequently receive copies of tests ordered by another physician that I do not need to review. Is there a way to turn this feature off?

Some organizations have significantly reduced physician time on inbox work by turning off automatic notifications of test results ordered by other providers, hospital reports and other indirect communications.

At the University of Colorado, the primary design principle is single delivery of test results (i.e., delivery of the test results to a single team) for 2 reasons:

1. To decrease message volume,
2. To avoid diffusion of responsibility (and increasing the risk that no one responds to a test result, because it is assumed someone else will respond)

Adding a colleague as a test result recipient just to be friendly is strongly discouraged unless there is a specific action requested.

Our physicians routinely have 50-100 inbox messages per day. What are some other ways that we can reduce this volume of work?

Consider the following strategies to support this work:

- **Empower teamwork:** Empower a nurse or MA, rather than the physician, to be the first responder to the inbox, passing on to the physician only the minority of messages that require the physician’s engagement, and accomplishing this via the more efficient format of verbal messaging.

- **Use standing orders:** Clinical support staff can renew medications by standard protocols, precluding the need to route renewal requests through the physician. Synchronized, bundled renewals of stable chronic medications will relieve a large amount of the prescription renewal burden for the team.

- **Verbal messaging:** In-person communication between physician and staff can significantly reduce the volume of inbox messages and save time. This can be facilitated by co-location or by setting aside 5-10 minutes at the start or end of each session for the nurse or MA to go over messages with the physician.

- **Analyze high-volume tasks:** use team huddles or regular meetings to strengthen the team culture and agree to eliminate or use alternate methods to communicate.

- **Revise the information flow between specialties and primary care:** Review the automated feeds from hospitals and emergency rooms, as well as other sources of inbox items, with the goal of eliminating waste and duplication and increasing the value of the inbox content. Then delegate inbox responsibilities within the local team.

- **Evaluate the source of inbox messages.** If many inbox messages represent contacts from patients requesting test results, consider this an opportunity to improve processes. For example, pre-visit lab testing allows the patient to receive lab results in person at the visit and obviates the need for the patient to contact the practice for results.

5.2 Medication reconciliation can be performed by a pharmacy technician, pharmacist, MA, or nurse before the physician sees patients.
Q&A

When can we start medication reconciliation?

Some organizations find it effective to do this via a phone call one or two days before the patient’s appointment.

Can we engage our patients in medication reconciliation at check-in?

Yes. The receptionist can print the patient’s medication list at check-in and ask the patient to update it while in the waiting room or exam room. It is often easier for a patient to review their medicines listed on a piece of paper while staff is viewing the same list on the computer screen.

Patient-initiated medication reconciliation can also be done electronically from a kiosk or with a hand-held tablet in the waiting area, or via the patient portal in advance of the visit.

Is there any requirement that only the physician perform medication reconciliation?

No. CMS regulations provide that an “Eligible Professional” can perform medication reconciliation for Medicare patients. The Joint Commission standards do not specify who can perform medication reconciliation, and “expects that the clinician performing this process is qualified, competent, and working within their licensure or scope of practice and in accordance with applicable laws and regulations.” To the best of our knowledge, there are no CMS regulations that prohibit MAs or nurses from performing medication reconciliation.

A summary of scope of practice laws for MAs by state can be found here.

Should every provider perform comprehensive medication reconciliation at each patient visit?

Some organizations recognize the risk inherent in a provider reconciling medications with which they are not familiar. In these settings, a provider reconciles the medications for which they are responsible and acknowledges (but does not modify) the other medications.

5.3 Patient portals can improve the efficiency of results reporting and other communication with the patient. The portal can be managed by the clinical support staff, who are empowered to communicate with patients and research patient questions before involving the physician.

Q&A

Should all patient messages go directly to the physician? Our physicians are already overwhelmed with inbox work and are concerned that use of the patient portal will increase their inbox work.

It is inefficient to designate the physician as the first responder to the patient portal. For greater efficiency, a staff person, such as a nurse or MA, can review messages, manage them by protocol, research as needed and then review in person those messages that require the physician’s input.

We’ve had some patients write lengthy portal messages, covering multiple issues, and these can be difficult to sort out. How can we handle this?

Consider some of these suggestions for managing lengthy portal messages:

- Some organizations have found it useful to limit the length of the patient’s inbound communication to encourage proper use of the portal and to direct more extensive discussion to a more appropriate encounter (e.g., phone or in-person visit). Others have found that it is better not to apply a word limit.
- In the words of one physician, “If a patient writes ‘please read these 12 websites and let me know what you think,’ my response is ‘You are very thoughtful about your care! Please bring the most useful pages
to our next visit so we can discuss this complicated issue in person." Directing patients to science-based websites that often end in .edu, .org, or .gov may be helpful.

- Review the length of time that a message can remain active in the portal. Patients sometimes use old messages to start a new conversation, which can cause confusion as the message header does not convey the most recent content.

Some of our patients are not interested in using the portal. Is there anything we can do to increase engagement?

Consider the following suggestions to increase engagement:

- Make it easy. Some clinics routinely help patients enroll in the patient portal during check-in or check-out. For example, at the Ambulatory Practice of the Future at the Massachusetts General Hospital, automatic kiosks for check-in have freed up time for the receptionist to help patients enroll in the patient portal. The staff have found that sometimes it just takes a little extra encouragement and assistance—it takes just 30 seconds to sign up for the portal. For patients who may initially feel reluctant, a few words from their provider can help them develop a better sense of how helpful it is to both them and their care team.
- In some practices, a clinician or assistant will close the EHR and log into the portal sign up page while in the exam room. The staff person leaves the room and lets the patient complete the sign-up process on the spot.
- Other organizations have built functionality within the EHR such that a team member clicks a button while with a patient that sends the patient a text message prompting them to sign up right then.
- Ask teams to tell their patients that portal use is preferred and will allow the team to respond to their needs more efficiently.
- Engage family members. In many EHRs, a patient may designate a proxy so that family members have access to the portal and can help coordinate a patient's care. It can be useful to set up a standardized process during check-in or check-out where a patient can designate a family member as a proxy.
- Recognize that the portal is not for everyone. Some patients will not want to use it.

5.4 Update the rooming protocols.

- Empower clinical support staff by expanding their roles in medication reconciliation, agenda setting, care gap closure and quality metric documentation (see Expanded Rooming and Discharge module).
- Modify the rooming protocol so that the patient is not automatically put on the exam table, but in a chair adjacent to the desk to facilitate face-to-face conversation.

5.5 Print select information for each visit.

- In an electronic environment, there are still uses for paper. The goal is to provide efficient and excellent patient care, not to be completely paperless.
- Some physicians find it useful for the clerical or clinical support staff to print out a few key sources of information, such as the medication list and/or last problem list for each visit. This supports their efficiency and reduces the cognitive workload of medical decision making.

Q&A

How can the printed medication list be helpful?

A print copy of the medication list for use in the exam room allows for quick review and re-review while speaking with the patient or considering other data fields in the EHR.

How can the printed last progress note be helpful?

A print copy of the last progress note can lead to less back and forth between screens when in the room with the patient. It also facilitates a connection between the current visit and the prior visit.
Are the paper checklists or questionnaires scanned into the chart?

No, checklists and patient questionnaires are used in order to be more efficient, decreasing the work of the staff and increasing the engagement of the patient, but do not need to be scanned into the record.

Are there other examples of printed information that improves workflow?

Consider these printed documents that can improve workflow:

- PHQ-9: Some organizations ask patients who are receiving anti-depressants to complete a PHQ-9 at each visit while in the waiting or exam room.
- Pain questionnaire: Patients can be asked to diagram and characterize pain on paper.
- Vaccine information statement (VIS): This can be given to patients due for vaccines upon check-in, allowing patients time to read about the immunizations that will be recommended.

Optimize user skills with the EHR

EHRs are powerful tools that take some time and training to master. Users learn best hands-on, so at-the-elbow support at the time of a major change in software is useful. Users also learn best from their peers and within the context of their own particular team.

Q&A

How can we facilitate peer-to-peer learning?

Consider these options for peer-to-peer learning:

- Include a time to share tips and tricks at each department meeting
- Conduct training by physicians for physicians in the optimal use of the EHR, often segmented by specialty (i.e., internists training other internists, surgeons training other surgeons). A general surgeon can train multiple other types of surgeons, and an internist can train multiple subspecialties within internal medicine.

How can we facilitate learning within the practice team?

It can be helpful to train the practice unit as a whole in a new EHR functionality or workflow. In this way, the clerical staff, MAs, nurses and physicians can work out the physical and virtual workflows, handoffs, communication pathways and distribution of tasks.
How can we identify users most in need of intensive training?

Some organizations use EHR-use data to identify clinicians who would benefit from intensive training.

Such training might involve learning how to create a patient overview report, use the auto-correct dictionary, customize smartphrases, use reminders, and use the Social History field to track something personal about a patient.

Optimize information flow throughout the health system

Some organizations have begun to rethink how information flows throughout the entire health system. Rather than assuming it is preferable or safer to send all information to all potentially relevant parties, these organizations recognize the value of parsimonious information sharing.

Information overload contributes to cognitive workloads, work after work, and a hazardous environment for medical decision making. Not every element of care needs to flow through the EHR, and not every element of care in the EHR needs to be performed by the physician.

Q&A

What are some examples of reducing information flow that organizations have instituted?

Consider some of the following examples to implement in your practice:

- Send test results only to the ordering physician, and do not routinely send to all other physicians involved in the patient’s care or to the primary care physician. Sending test results to multiple physicians creates confusion and ambiguity about responsibility for responding to the result. It also clutters the inbox with results for which the receiving physician may not have the knowledge or responsibility for responding. More is not always better here.
- Not all referral notes are of clinical utility to the other physicians involved in the patient’s care. Some organizations therefore do not routinely send all referral notes back to the referring physician. These organizations let these notes be proactively pulled rather than reflexively pushed.
- The practice of sending all hospital test results and daily notes to ambulatory physicians can create confusion about responsibility and contributes to unmanageable information overload. Some organizations choose not to routinely send all inpatient data to ambulatory physicians involved in that patient’s care.
- Some EHRs allow the physician to individually turn on or off notification of tests other physicians have ordered on a mutual patient.

Leverage EHR-use data

Measure EHR-use data and track these metrics on the institution’s data dashboard. Many EHRs provide access to EHR-use data, such as Lights On Network® in Cerner or Provider Efficiency Profile or Signal in Epic. Other EHR vendors may offer EHR-use data as well. EHR-use metrics include:

- **Work after Work**: identifying the hours the physician is logged into the EHR on nights, weekends and while on vacation.
- **Click Counts**: clicks per task or clicks per day. Atrius Health has found that using a widescreen view saves over 300,000 clicks per day within their organization.
- **Teamwork**: percentage of total keystrokes for a patient visit that are performed by the physician. A lower score here is generally optimal.
We just turned on our EHR's EHR-use data. How can we use it?

This data can be used at a high level to understand where clinical resources are being directed. For example, an organization can identify the amount of time physicians in their organization are doing inbox and documentation work during their personal time, and then develop organizational countermeasures to reduce this time.

The data can also be used to identify individuals who are especially efficient, from whom others can learn; alternatively, the data can identify those in need of assistance and for whom increased staffing, training or both may be prudent.

Why measure “Work After Work”?

This measure highlights one of the main work–life balance issues associated with EHR use. It is also referred to as “Pajama Time” and indicates work often done at night.

An organization that minimizes Work After Work will very likely have lower burnout rates, which is associated with higher patient safety and satisfaction, better care quality, and better financial success. Data illustrating minimal Work After Work in an organization can be influential in workforce recruitment and retention.

How can “Click Counts” be used?

This measure can guide local changes, such as badge login in place of keyboard login, or identification of optimal pathways for high-volume tasks.

Inadequate usability is a key criticism of the EHR, and this metric is an objective measure that can drive improvements at the local, institutional and vendor levels.

How can the “Teamwork” measure be used?

This measure can be used to track the impact of workflow innovations such as team documentation, team order entry and expanded rooming and discharge protocols.

Below is an example of Work after Work data for three physicians in the same specialty.10

Figure 1. Physician A has one hour of Work after Work for every one hour of scheduled patient time.
Figure 2. Physician B has 0.25 hour of Work after Work for every one hour of scheduled patient time.

Figure 3. Physician C has 1.5 hours of Work after Work for every one hour of scheduled patient time.

The department chair or clinic manager who reviews this data may choose to “go and see” each of these physicians in action, identifying best practices that can be more widely shared, and the potential for utilizing peer mentors in optimal EHR use.
Conclusion

EHRs can be powerful tools for improving patient care, practice efficiency and professional satisfaction. Achieving these goals requires effort, beginning at the leadership level. A safer, more effective and more rewarding care environment can be created by intentional organizational and individual efforts to leverage the power of the EHR while preserving the time and cognitive focus for relationship building and complex medical decision making.

STEPS in Practice

Optimizing and Using the EHR in Auburndale, MA: A Case Study

In 2015, Steve Strongwater joined Atrius Health as CEO and one of his top strategic priorities was to restore “joy to the practice of medicine”. This initiative focused on improving the well-being and professional fulfillment of the clinicians and staff. One of the major drivers of dissatisfaction among clinicians was the onerous EHR, so the Atrius IT department was called on to help reduce burnout and improve overall satisfaction.

The IT department collaborated with internal medicine leadership and began planning a “SWAT” intervention. The SWAT team consisted of a cross-section of roles, including trainers as well as technical analysts. This collaboration resulted in a multi-faceted plan, which consolidated isolated efforts and combined them with a standard IT package of services and configurations. The full plan is comprised of a 5-component intervention directed at reducing clinician burnout and improving satisfaction associated with the use of the EHR. The intervention was tested and refined through multiple pilot phases at several practices, and is now in widespread implementation across the health system.

The Intervention

The plan started by focusing on improving the performance of the devices that staff rely on at their workstations, such as computers and printers. IT performed an evaluation of network capacity, which improved the performance of the workstation devices through hardware replacement that focused on standardization across the practice.

Widescreen view deployment

Using the widescreen view setting in the EHR allows for more information to appear on a single screen, which reduces cognitive workload, time, and clicks. Prior to the SWAT intervention, only 10% of clinicians adopted the widescreen view, due in large part to the differences in monitor size between clinician offices and exam rooms. Widescreen view is optimal for the 24-inch monitor; when used on a smaller monitor, it can have a different appearance, which presented challenges as the clinicians were switching between the 24-inch monitor in their office and smaller monitors in the exam rooms. As a result, all monitors smaller than 24 inches were replaced throughout the clinics. The hardware standardization was complemented by elbow-to-elbow support and comprehensive training for each clinician, which resulted in significant adoption of the widescreen view. As a result, the EHR vendor estimates that this change resulted 1500 less clicks per day per provider.
Provider efficiency program

Atrius Health is a participant in their EHR vendor’s beta provider efficiency program. This program approximates an efficiency score based on the provider's workload and system usage in relation to their peers. This assessment helps identify areas of inefficiency within the EHR and where additional support and/or training could be helpful. The assessment also provides insight into exactly how each provider utilizes the EHR. Data available in this tool includes time spent in the system (inclusive of after-hours and weekends) and areas for distribution of work amongst their team. Paired with onsite observation allowed the SWAT team to focus on areas of inefficiency with each clinician, and create an individualized training plan.

Workflow assessment

The workflow assessment was completed through multiple pilot phases at separate clinical practices. The SWAT team observed significant workflow variations across the practices and worked with clinical leaders to determine where standardized processes had the potential to improve efficiency.

Electronic prescribing of controlled substances (EPCS)

Two-factor authentication enabled clinicians to e-prescribe controlled substances, which can save a significant amount of time for clinicians. This functionality eliminates the need to print the script on tamper proof paper, thus removing the need for the patient to visit the practice to obtain the paper script. This is a quick win for clinicians, and also considerably increases patient satisfaction. (Please refer to your state regulations, as this may not be permissible in every state.)

Clinical leadership and operation leadership engagement

Collaboration between IT staff and clinical and operational leadership allowed Atrius to create a “morale booster”, and avoid relationship silos that can develop and contribute to adversarial interactions across departments. Most importantly, IT leadership considered this an IT-facilitated project, not an IT-led project, which was another significant key to the success of these interventions.

Success

A significant key to success has been the speed at which the “IT bundle” can be deployed for a department. This included hardware (e.g. widescreen monitors), wifi optimization, and enabling electronic prescribing. The use of multiple pilot locations and departments allowed the IT team to gather data from a cross-section of the practices and decrease the amount of time required on site in a clinical unit. For example, there was less variation between the sites than originally anticipated, so the SWAT team was able to modify what was originally planned as a 6-week intervention to 2 weeks through lessons learned at the pilot locations. This quick turnaround allows for minimal interruption to the practice and rapid improvement of the work-life balance for physicians and staff.

Results

The number of clinicians using the more efficient widescreen view increased from 14% to 68%. Implementing electronic prescribing of controlled substances through dual-factor authentication resulted in more than $100,000 in savings in tamper proof across the system.

Atrius Health has seen a statistically significant increase in clinician efficiency scores (from 4.3 to 4.5) from the interventions, indicating that clinicians are spending less time in the EHR and more time with their patients and on their personal lives. In fact, one physician noted, “All weekend, my kids kept asking me ‘don't you have work to do?’ My kids will be sending you a thank you card.”

To assess whether the SWAT intervention made a qualitative impact to the internal medicine department, the 3-question survey below was distributed to the clinicians after SWAT:

- The SWAT team was beneficial to me personally.
- The SWAT team was beneficial to my Internal Medicine department.
- The SWAT team experience increased my “Joy” of practicing medicine at Atrius Health.
Clinicians have overwhelmingly reported positive benefits from the SWAT team implementation. 80% of the providers reported that it was beneficial to them personally, and 50% reported an increase in joy following these interventions. In the words of a clinician involved in one of these rapid interventions, “The SWAT team was patient and receptive, and responded quickly to our requests. The widescreen helped with visits and the team learning built collegiality. This increased my joy of practice.”

Optimizing and Using the EHR in Oakland, CA: A Case Study

The implementation of the Electronic Health Record (EHR) forever altered the dynamics between patients and physicians.

Simply put, the relationship was no longer a binary doctor-patient relationship but a triangle: a doctor-patient-systems relationship, with the EHR becoming a cumbersome third wheel compared to the more elegant, but ineffective, piece of charting paper.

Kaiser Permanente, Southern California Permanente Medical Group (SCPMG), is at the leading edge of the EHR wave and is distinguished as having among the best systems. But, to an individual practitioner, the strain was showing up in service surveys that showed this new system rated among the highest, if not the highest, stressor on the physician’s practice. This stress conflicts not only with the quadruple aim but also with SCPMG’s goal of systematically and intentionally creating a culture of wellness.

In short, doctors were having relationship problems with this system, known internally as KP HealthConnect, and the relationship was impacting the physician/patient relationship as well as the providers’ wellness, and joy.

As a result, Dr. Ed Ellison, the CEO, and Dr. Todd Sachs, the COO, sponsored a group of expert physicians, trainers, and support staff to create a program called Kaiser Permanente HealthConnect Essentials (KP HCE), a course designed to maximize the effectiveness of our greatest resource: the physician. The elements were to address the following, with a focus on restoring time back to the physicians:

- Give physicians the skills necessary to achieve efficiencies at each and every system interaction with a realization of up to an hour of time back per day.
- Break/Prevent silos of expertise, allowing best practices to easily spread across specialties and across centers by incorporation into the regional Essentials program.
- Improve the quality, efficiency, readability, and clinical accuracy of documentation.
- Send a clear message that the organization supports their physicians and their wellness.

In the design process, the new KPHC Essentials team decided that the following foundational issues would need to be addressed at each step:

- Utilizing only peer-based training. This is, after all, relationship training, and physicians are more likely to retain information taught by people they know or trust.
- Providing protected time, away from the clinic schedule to either learn skills for new physicians or break maladaptive imprints from legacy users of the system.
- Having passionate, expert peer-level champions who are a resource at every step
- Making available a real-time question/response tool
- Distributing follow-up surveys to get feedback from participants

Results:
In just 3 years, 4068 physicians have completed KP HealthConnect Essentials, and the program has been expanded to include Advanced Practice Providers (PAs, NPs, Midwives), in large part due to a survey of the first 1690 physicians who attended the Adult Primary Care, Medical Specialties, and Pediatric Essentials since the program began. When asked the following questions, responses have been outstanding:
The training I received today has equipped me with critical skills that I can use in my daily operations.  98.9% Agreed

Today was a productive use of my time.  99% Agreed

Do you think your documentation will improve by what you have learned here?  97% Agreed

The results are remarkable and seem to be sustaining as the program matures with exit surveys of participants giving similar reviews. In addition to the positive responses above, 81.5% of the physicians feel that they will save 4-5 minutes per hour in new efficiencies after the Essentials course, which equates to 32 - 40 minutes in an 8 hour day. Assuming a 5 day/40 hour workweek = 160 - 200 minutes per week. In 52 weeks, this represents 138 - 173 hours, or almost 3.5 – 4.3 weeks, per year in time saved.

While the survey responses and time-savings calculations may not be representative of the whole tale, the stories, anecdotes, and letters from the physicians tell the complete story. The following are a sampling of unedited feedback responses from anonymous physicians who completed an Essentials course:

“I had already cashed out my retirement funds. After only two days of Essentials, I now feel like I have another 10 years work left in me!”

“This course is a true action to improve our lives and reduce physician burnout. Letting us get through our day earlier due to the automation and efficiency taught in this course allows us to go home on time and actually use the gym, and do the things that we have not been doing when we get burned out. So thank you so much to those whom make this course possible. Might be a life saver for one or two of us.”

“I think physicians should come every 2-3 years because just like the art of learning medicine, there is an art of learning the computer. This will help save burn out. Thank you so very much!”

“Today was really great. I really was dreading coming to this conference but have really learned so much. Time passes so quickly.”

“Well organized with a high spirited teaching staff. As a Wellness Champion, I really liked the little extra touches like yoga, healthy food and stretching with our ergonomics staff.”

“I have been at Kaiser now for 6 years and feel I was the type of person who was already documenting pretty well in HC. I was also very efficient and able to close all my charts prior to leaving work. For these reasons, I have been reluctant to attend this course, but decided to give it a try. I have felt these last 3 days have been "essential" to my daily practice and so happy I attended. I liked every part of the course.”

“SCPMG spends a lot of money on physician wellness and trying to prevent physician burnout. Of all the programs they have, I think this is the most effective. Being efficient in the office reduces stress on the provider, creates a positive atmosphere and ultimately makes for happier patients. Every provider should experience this.”

“The faculty staff was AMAZING. The information and time to work on the taught material was invaluable BUT the course content, format and faculty made it even more invaluable. I cannot express how much this is needed-especially in a time we need to work more efficiently and prevent burn out.”

“This course was significantly better than I anticipated. I did not think that I would find it interesting or all that useful–I did it because my colleagues endorsed it. I was wrong, they did a great job keeping it interesting and I think it will help me deliver better care going forward. Thank you for supporting it.”

These types of sentiments are shared by the majority of physicians who provide feedback, with over 99% of the physician participants saying that they would recommend the course to a colleague, which is a primary reason
the program continues to have wait lists to attend. If a physician's clinic colleagues recommends the course and suggests to "just go", many do. And 99% are glad they did.

As a result, leadership continues to endorse this organizational intervention in the form of systems-based relationship therapy and believes that this program is a vital component in their physicians' journey towards wellness.

Optimizing and Using the EHR in Rochester, MN: A Case Study

Jose Ortiz, Jr., MD is an orthopaedic surgeon at Mayo Clinic Health System in Eau Claire, Wisconsin, who uses real-time dictation to document patient visits. Dr. Ortiz was initially introduced to dictation in residency when one of the attending physicians he worked with used this method of documentation. He would obtain a history, complete a physical exam, perform patient education, and answer all questions; then, dictate the visit in the exam room with the patient present. Dr. Ortiz took this experience with him and adopted it in his own practice.

When Dr. Ortiz first started practicing, he would carry portable phones with him from room to room in order to dictate. Later, he moved on to a dictaphone, and as technology advanced, he moved to a mobile device. Currently, he uses voice recognition software to dictate directly into the desktop computer in the exam room. He uses "real-time" dictation; this technique has greatly improved his efficiency by allowing him to see the patient and dictate at the same time. Dr. Ortiz says, "Real-time dictation has revolutionized my time. I frequently leave about 15 to 30 minutes after my last patient and do not stay after to dictate, nor do I dictate from home". In addition, he has not made any appointment time adjustments.

By seeing the patient and dictating simultaneously, he is able to collect information and document it in real-time. This is an example of a typical patient visit workflow:

1. Dr. Ortiz knocks on the door, enters the exam room, and introduces himself to the patient.
2. The reason for the visit is discussed with the patient.
3. Dr. Ortiz introduces and explains the dictation process to the patient and then proceeds to document the reason for the visit while maintaining contact with the patient to ensure accuracy.
4. He documents any pertinent past medical history, family history, social history, current medications, and allergies.
5. A thorough physical examination is performed, and upon the conclusion, he dictates the exam into the note. Sometimes, he will even let the application run and while examining the patient, dictate aloud so that he is examining and documenting information into the note simultaneously.
6. He continues, dictating the impression, and pauses to discuss the impression with the patient.
7. Dr. Ortiz performs patient education, answers any questions, and then develops and discusses the treatment plan with the patient.
8. Finally, he will slowly dictate recommendations into the note in a manner by which he is reemphasizing to the patient key parts of the treatment plan.

Dr. Ortiz has found this approach to be very beneficial. When he is done seeing the patient, he is also done with the dictation. By dictating in front of the patient, it ensures that the note is accurate and emphasizes the care plan to the patient.

Dr. Ortiz has had such success with real-time dictation that he has discussed the approach with some of his colleagues. They have expressed concern about dictating in front of the patient; however, patients have access to their electronic health record, so there is nothing that can be documented that the patient won't be able to see. In fact, Dr. Ortiz has found that using real-time dictation provides the opportunity to stop and clarify anything that might seem offensive to the patient at the time of the visit, eliminating any surprises if the patient reads the note later.

In his practice, many patients comment on how nice it is to hear what Dr. Ortiz has to say, live and in person. Ironically, it is the older patients who appreciate it the most. An important result of live dictation has been the patient's ability to correct him. He says, "Patients stop me to correct me with either a date or the side, right vs. left, or to clear up a detail I misspeak". Patients often praise this way of dictating, and have expressed the wish
that all of their physicians did it this way. Dr. Ortiz currently has the second highest satisfaction scores in the department, which he attributes to this method of dictation and its impact on the patient experience.

Dr. Ortiz has had many colleagues that say this method would not be possible in their clinics. However, he challenges them to give it a try. Those who have tried real-time dictation have found great success with it.

Many of his colleagues are intimidated at first and think they are too busy to do this, but later find it is a time saver. They soon realize that they are actually working in parallel. For example, instead of verbally reviewing the history with the patient to ensure it is correct, dictate it! Dr. Ortiz explains, “The patient listens, adds commentaries, or corrects you – but then you are done reviewing it, and it’s in the record.”

### Optimizing and Using the EHR in Winston-Salem, NC: A Case Study

**Optimizing the Patient Portal**

Novant Health is a 2300 provider organization in the Southeast, serving communities in Virginia, North and South Carolina, and Georgia. Over the past few years, Novant Health has rapidly ramped up its use of the patient portal. Users went from 0 in 2012, to over 815,000 users in early 2018, and over two-thirds of their primary care patients use the patient portal.

**How did they do this? And what did they learn?**

Lauren Miller, project manager for MyChart at Novant Health, attributes their success in engaging patients with the portal to a 3-pronged approach:

1. **Created a pre-login experience for patients**
   Novant Health intentionally created value for patients on the landing page of the portal. Before patients log in, they have the opportunity to accomplish a number of tasks. Patients can find a provider, schedule an appointment with a provider, complete pre-registration tasks, and access patient education materials.

2. **Created a post-login experience for patients**
   Once patients are logged in, they have 3 ways of interacting with their care team.

   - **E-visits.** Patients can schedule e-visits for the evaluation of 12 conditions, such as symptoms of a urinary tract infection or an upper respiratory infection. The patient is asked a series of templated questions, which are forwarded to a nurse, who reviews and forwards to the patient’s provider. The provider may provide advice, prescribe medication, or recommend that the patient schedule an in-person visit if needed. These visits often supplement in-person visits.

   - **Video visits.** Novant Health also utilizes video visits. The optimal use case for these visits is for follow-up care that does not require any type of physical examination, such as medication follow-up visits. Virtual visits are expected to replace some in-person visits in the future.

   - **Informal advice.** The most common way patients currently interact with their care team via the patient portal is for informal advice, similar to care that has traditionally been provided via phone calls. This asynchronous contact can be more efficient than phone calls, for both the patient as well as for the care team. Novant has found that this type of patient portal usage decreases the volume of phone calls to the practice. This not only contributes to more efficient care for their portal users, but by freeing up the phones, also helps those patients who have not yet adopted e-communication.

3. **Aligned patient portal usage with other organizational goals**
   The patient portal is also used to support population health. For example, care coordinators send patients reminders in the event that there are any care gaps, such as overdue mammograms or colonoscopies. Patients can also receive help scheduling these services through the portal. In this way, care coordinators also learn if patients received these services elsewhere and can update Novant Health’s records. Additionally, all new team members are oriented to the use of the patient portal in the flow of care during the onboarding process and all providers have specific metrics by which they are assessed, including the number of MyChart users in their panel.
Lessons learned

A patient's physician and care team can be powerful ambassadors for the patient portal. Encouraging providers to send direct messages to their patients via the portal and helping patients sign up for the portal at the time of their in-person visit has increased usage.

Keith Griffin, an internist and CMIO for the medical group, explains, “Early on we turned on direct scheduling in MyChart, and made it an expectation that all PCPs would have a set number of openings at the beginning of the day. This has worked remarkably well.” In addition, he emphasizes the importance of the patient experience. “We realized that we needed to give the patient as full of an experience as possible, rather than just using the portal for communicating lab results. Patients aren't going to gravitate to it as much if there are fewer features. We want patients to think of this as their preferred method of contact with the clinic, rather than the phone.”

Novant Health is enthusiastic about adding additional functionality to the patient portal. For example, they recently built pre-visit questionnaires that align with their EHR templates for Medicare Annual Wellness Visits and well-child visits. This allows patients to begin to record their health status and symptoms while in their own home, and saves data entry time for the clinical staff at the time of the in-person visit.

Dr. Griffin adds, “We are always looking for ways to improve the overall patient experience and consider that truly transformative for our care delivery model.”

Optimizing and Using the EHR in Aurora, CO: A Case Study

UCHealth EHR SPRINT Program

University of Colorado Health is a large, integrated health system made up of 7 hospitals and 4000 physicians serving the state of Colorado. After an employee satisfaction survey revealed high levels of provider dissatisfaction, much of which was attributed to the electronic health record (EHR), UCHealth initiated the SPRINT program. SPRINT is an IT-focused program designed to address physician burnout and create EHR efficiencies through observation, re-training, fixing known tech issues, and deploying new tools.

To ensure the program's success, both the IT and operational leadership made firm commitments to the program and reallocated current resources to support it. This is reflecting in SPRINT team's mission statement: “We improve physician and team wellness and effectiveness through extraordinary relationships and innovative tools.” Together, they created the SPRINT team comprised of 1 project manager, 1 physician informaticist lead, 1 RN informaticist, 1 EPIC ambulatory analyst lead, 3-4 EPIC ambulatory analysts, 1 lead trainer, and 2-3 additional trainers. The team also included multiple ad hoc members including drop-in provider informaticists, a medication reconciliation team, and billers and coders as needed. Leadership collectively identifies clinics to participate in the program based on the effectiveness of their clinical dyad structure and their preparedness to engage with the SPRINT team.

Once a clinic is selected, the SPRINT program follows this flow:

Pre-SPRINT: The SPRINT team leads meet with the chosen clinic’s leadership at 90, 60 and 30 days pre-sprint to plan and prepare. They follow pre-set agendas to ensure that the program remains consistent and reliable.

Kick-Off Meeting: This 2-hour meeting signals Day 1 of the sprint. The program is introduced to clinic staff and providers and the SPRINT team provides a lesson on personalization of the EHR in the computer training lab. Providers are able to make updates to their screens in real-time, so they all start the sprint on the same page.

SPRINT: The length of each sprint depends on the clinic size and varies from 1-4 weeks. The entire SPRINT team is present for the full length of the sprint in a conference room co-located in the clinic. During this stage, they are:

1. Building new EHR tools
2. Fixing issues that are broken
3. Discussing and optimizing clinic workflows
4. Training providers and staff
They also send out daily email tips with corresponding 5-7 minute videos each business day of the sprint.

IT and operational leadership hold daily huddles to discuss what is going well, what’s not working, and how they can help each other continue the momentum. The SPRINT team uses this time to have fun, celebrate successes, as well as to model effective teamwork, communication, and collaboration.

**Wrap Up Meeting:** This 2-hour meeting is held on the final day of the sprint and reviews the new workflows, technology, and/or EHR functionality introduced to the clinic. These changes are also summarized with instructions and provided to the clinic both on paper and electronically.

Metrics and data also play an important role in the SPRINT program. The team tracks how many “touches” or training sessions they do with providers. They track the number of “break-fix” issues and “new build” issues that surface. Additionally, all clinic staff members are given an EHR satisfaction survey pre-SPRINT and an EHR satisfaction and SPRINT satisfaction survey post-SPRINT. This helps to assess the impact of specific interventions (e.g. introduction of dictation support or new smartphrases) and the overall SPRINT program.

The SPRINT program has been successful so far. EHR satisfaction has increased for both providers and staff and the SPRINT program ratings are favorable. One physician leader commented that “The Epic sprint provided a great opportunity to not only help us with Epic, but provided a great way to evaluate our clinic workflows. It was great to have providers from other clinics with other perspectives evaluate how we do things and provide ideas for improvement… probably will save me about 30 minutes a day in charting and placing orders alone.”

The SPRINT team continues to actively initiate sprints all weeks of the year except during holidays and EHR upgrades. Their calendar of proposed clinics extends out 12-18 months and includes both community and academic practices. Because of their geographical reach, potential expansion to the ED and inpatient setting, and interest in the program, they plan to ask for the resources for a 2nd team in the next fiscal year. In addition to expanding the program, they are also working on defining 1 key metric that will measure this effort over time. Some potential options include ongoing burnout assessments or tracking the net promoter score for the SPRINT program itself. The team is also working with Epic on a new web-based application to measure 4 areas of provider efficiency. This tool will then be used to hone in on specific trouble areas for given clinics and their providers.

UCHealth has some tips for other organizations considering EHR optimization projects:

- Engage as many clinical leaders as possible (including physician departmental leaders, sub-specialty leaders, and clinical super-users) to increase the likelihood of success. Have a team in place to further support those clinical champions with communication and engagement activities.
- Track metrics and share successes across your organization or practice. This can help gain clinician buy-in and/or secure funding for additional resources.
- Focus on clinic-specific optimization vs. making one-off changes for individual users. This is a more efficient use of time and resources.
- Take care of your team and have fun! Set limits on hours of trainer availability and the number of new build items. It is easy to lose good trainers and analysts to burnout, so make sure they have the work-life balance you’re working to create for your providers!

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**Learning Objectives:**
At the end of this activity, you will be able to:

1. Identify leadership, system, and individual strategies to optimize EHR use
2. Explain the importance of teamwork in implementing and using the EHR in your practice
3. Describe how your practice can leverage EHR data to improve overall workflows
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References

5. The Joint Commission. (2016). Letter to Dr. Rohack and Dr. Sinsky.

