

# Primary Care Practice Facilitation Curriculum

Module 26: An Introduction to Electronic Health  
Records and Meaningful Use



Agency for Healthcare Research and Quality

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# Primary Care Practice Facilitation Curriculum

## Module 26. An Introduction to Electronic Health Records and Meaningful Use

### **Prepared for:**

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The meaningful use program and its financial incentives have been discontinued. Sections of this module related to registering for and attesting to meaningful use have been removed. Practice facilitators will still find the concepts in this module instructive when helping practices use their electronic health records for quality improvement.

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# Module 26. An Introduction to Electronic Health Records and Meaningful Use

## Instructor's Guide

Practice facilitator (PF) competencies addressed in this module:

- Foundational knowledge of primary care environments
- Basic skills in use of information systems

### Time

- Pre-session preparation for learners: 2 hours and 15 minutes
- Session: 50 minutes

### Objectives

After completing this module, learners will be able to:

1. Navigate basic workflows on an electronic health record (EHR).
2. Describe meaningful use and direct a practice to helpful resources for attaining it.
3. Help a practice generate a meaningful use report from their EHR system and validate these data.

### Exercises and Activities To Complete Before and During the Session

**Pre-session preparation.** Ask the learners to review the following information. (2 hours and 15 minutes)

1. Review the content of this module.
2. Become familiar with EHR functions by simulating key workflows on an EHR.
  - a. Learners should reference Figure 26.1 in this module.
  - b. Select three workflows to simulate.
  - c. Learners should be prepared to discuss their experience in learning to do this.

If learners do not have access to an EHR to use in preparing for the session, they can consider practicing on a free or low-cost EHR available online. Practice Fusion<sup>®</sup> and Office Ally<sup>™</sup> are examples of two low-cost or free EHRs that can be accessed online. Other systems such as Epic offer EHR simulators for those who have access to these systems.

**During the session.** Presentation (30 minutes)

1. Present key concepts from this module.

**Discussion.** Ask questions and explore answers with learners. (20 minutes)

1. Describe your experience and what you learned from working on the EHR or EHR simulator in preparation for this session.
2. What is meaningful use?
3. What workflows are typically impacted by EHRs?
4. If you are working with practices now, describe a challenge one of them is facing related to their EHR and quality improvement.

## Module 26.

The need for skills in health information technology (IT) in primary care has never been greater. With the increasing implementation of electronic health records (EHRs) and the use of disease registries to monitor and track patient populations, practice facilitators will need to have a working knowledge of EHRs and how to use them most effectively.

This module will introduce you to EHRs and provide a brief review of some of their most important functionalities. You will need this information to be culturally and technologically competent when you work with your practices. The module will also introduce you to meaningful use requirements for the use of health information technology that have been established by the Federal government, and relevant Federal and state incentive programs available to practices. This module is intended to accompany [Module 27](#) on EHRs and the Patient-Centered Medical Home (PCMH).

**Figure 26.1. Information on certified EHRs**

<https://chpl.healthit.gov/#/search>

### A Brief Overview of EHRs

An electronic health record (EHR) (PCC EHR Solutions, 2014) is an electronic version of a patient's paper record. EHRs offer the advantage of making information about patient care available, in a secure way, to multiple authorized users. Although EHRs vary in content and functionality, they are often designed to include the medical and treatment histories of the patient, as well as the patient's diagnoses, medications, immunization dates, allergies, radiology images, and laboratory and test results, among other information. EHRs have the potential to integrate information from multiple sources and provide a more comprehensive view of patient care although this has proven challenging to achieve in actual practice. EHRs also may provide access to tools like clinical decision support reminders and reports that aid clinicians and teams in delivering care based on the best-available evidence.

EHRs make it possible to share and manage information across multiple providers, labs, specialists, imaging facilities and organizations through health information exchange (HIE) platforms so that information is available to and from all clinicians involved in a patient's care (HealthIT.gov, 2013). However, not all practices have achieved this level of use,

The Office of the National Coordinator of Health Information Technology (ONC) is the Federal entity charged with overseeing implementation of EHRs throughout the U.S. health care system.

## An Introduction to EHRs

As a PF, you need general knowledge about EHRs and the ability to direct your practices to information on certified EHRs, resources for evaluating and planning for implementation of an EHR, and the ability to connect practice members to experts on EHR implementation as appropriate. For practices that are just beginning their journey towards going digital, providing them with basic introductory training on EHRs can be helpful.

Practices face a dizzying array of choices of EHR products. Once they have made a selection, learning how to use their EHR effectively is also a laborious process. As a practice facilitator, you will need to be familiar with various EHR products and how to extract data from them.

Regardless of which EHR a practice selects or is already using, you should immediately determine how the hardware and software will be (are) supported and by whom. If all or a portion of the EHR is supported by the organization that purchased the EHR, the internal IT support person is often the key to leveraging the EHR for project needs. He or she should be the first contact for IT-related questions. This is an important relationship to establish, as this person will also know if the practice needs additional external support.

Many resources are available for both you and your practices on EHR implementation. The Health Resources and Services Administration has compiled a list of tools for health centers and others <https://bphc.hrsa.gov/program-opportunities/health-resources>. These toolboxes provide a compilation of planning, implementation, and evaluation resources to help community health centers, other safety net providers, and ambulatory care providers implement health IT applications.

Another type of resource is the 62 regional extension centers (RECs), which were established to help primary care providers adopt and use EHRs. While these organizations are no longer funded, staff and external consultants to these entities may still be active in your area. Some RECs may have been integrated into health plans; others may have become part of organizations running your local or state health information exchange (HIE). These can be good places to look for technical experts in EHR implementation as well as expertise in accessing data from EHRs. A list of the original RECs is available here: <https://www.healthit.gov/providers-professionals/regional-extension-centers-recs>. Another good resource for supporting EHR implementation is the “Health IT Playbook” guide available from the Health IT.gov website: <https://www.healthit.gov/playbook/>.

### **Figure 26.2. Electronic Health Record (EHR) Software Selection and Purchase**

American Medical Association

<https://edhub.ama-assn.org/steps-forward/module/2702748>

## Some Basic Functions and Elements of EHRs

While EHRs were initially developed to document clinical care, most can perform additional functions that can support good quality care. You should have a working knowledge of what functionalities most systems possess and what functionalities are often missing or ineffective and require add-on software to address. For example, many EHRs lack good patient registries and population or panel management systems. If an EHR does contain these functionalities, they are often clumsy and difficult to use. This section introduces the common basic functions and some more advanced functions that you are likely to encounter in your work with practices.

Common functions of EHRs include (Health Resources and Services Administration, 2014a).

- recording patient demographic and care management data on patient visits.
- clinical decision supports.
- reports required for financial management, quality assurance, chronic disease management, and public health data collection.
- consents, authorizations, and directives.
- interfaces and interoperability required to exchange health information with other clinicians, laboratories, pharmacies, patients, and government disease registries.
- e-prescribing.
- alerts and reminders.
- medication reconciliation.
- commonly used screening tools and checklists.
- commonly used forms for schools, camps, and sports participation.
- patient education.

Some systems might also include integrated practice management support that enables functions like billing, online scheduling, and patient portals.

Examples of some basic elements of EHRs are provided below. This list is not exhaustive and designed to provide a glimpse into EHRs and some of their capabilities.

**Flow sheets.** Flow sheets integrate and organize important patient information into a summary screen and are standard parts of ambulatory EHR systems. They can organize data on vital signs, smoking status, immunizations, referrals, laboratory tests, drug therapy, and diabetes self-management. Flow sheets can also support clinical decision support (CDS) and alerts. The sample flow sheet below combines data display, alerts and reminders, documentation templates, and info-buttons related to diabetes care. They can also include hot links that enable clinicians to leave the flow sheet and go directly to the section of the patient's medical record supporting the needed action (Health Resources and Services Administration, 2014a). Flow sheets can be used to organize patient information, identify gaps in patient care, and suggest actions based on CDS and alerts.



Figure 26.3. Sample flow sheet for comprehensive diabetes visit.

The screenshot shows a 'Diabetes Flowsheet' form for a patient with 'Diabetes Mellitus Diagnosis: DM, uncomplicated, type II, uncontro' and a value of '258.82'. The form is organized into several sections:

- Vital Signs:** Includes fields for Height, Last Measured (10/22/2007), Weight (169.0 lb / 76.82 kg), BMI, BP Goal for DM (130 Syst / 80 Diast), BP Sitting (132 Syst / 84 Diast, Excluded), and Pulse (72). There is an 'Upload Vital Signs' button.
- Smoking:** Fields for Smoker (Yes/No/Former), Counseling (Yes/No/NA), and Pharmacologic (Yes/No/NA).
- Depression Screening:** A checkbox field.
- Monofilament Instructions:** A section for foot care instructions.
- IMMUNIZATIONS:** Lists Influenza (completed 12/09/2008) and Pneumovax (completed 09/03/2009), each with 'Order', 'Completed', and 'Excluded' radio buttons.
- REFERRALS:** Lists various exams like Dental Exam, Diabetes Educator, Dilated Eye Exam (due), Endocrinologist, Foot Examination (due), Funduscopic Photo, and Podiatrist, each with 'Order', 'Completed', and 'Excluded' radio buttons.
- LAB TESTS:** Includes Glucose, Hemoglobin A1c, and Lipid Panel (Total Cholesterol, HDL, LDL, Triglycerides) with dates and status (completed/due). Urine Protein and Creatinine Clearance are also listed as 'due'.
- DRUG THERAPY:** Includes Aspirin Use (active) with options for 'Active', 'Prescribe', and 'Excluded', and checkboxes for 'Aspirin 81 mg PO one daily' and 'Aspirin 325 mg PO one daily'.
- SELF-MANAGEMENT:** Includes 'Patient Education Materials' with questions about patient knowledge and ability, and a 'Self-Management Goals' section.
- Comments:** A text area for additional notes.

Buttons for 'OK' and 'Cancel' are located at the bottom right of the form.

Source: HealthIT.gov, 2014. CDS Starter Kit: Diabetes follow-up care.

<https://www.healthit.gov/sites/default/files/del-3-7-condition-example-diabetes.pdf>

**Templates.** Templates are pre-structured entry forms in EHRs used to capture a standard set of data for specified visits types. Templates organize, present, and capture clinical data within the system. Depending on which EHR the practice is using, information can be entered into templates using a variety of methods including dictation, typing, auto-fill, or drop down menus.

Figure 26.4. Sample documentation template for foot exam.

The screenshot shows a software window titled "Pe Extremity" with a close button in the top right corner. Below the title bar is a grid of system tabs: Constitutional, Head | Face, Eyes, Ears, Nose | Mouth | Throat, Neck | Thyroid, Lymphatic, Breast, Respiratory | Thorax, Cardiovascular, Vascular, Abdomen, Genitourinary, Rectal, Skin | Hair, Back | Spine, Musculoskeletal, Extremities (highlighted), Neurological, and Psychiatric. Below the tabs is a "select all normal" button with a green checkmark. The main content area is titled "Extremities" and contains several sections:

- Pulses:** A sub-tab "Vascular" is selected. There are columns for "Right" and "Left". Under "Dorsalis Pedis", there is a checked checkbox for "Normal" and an empty input field. Under "Posterior Tibial", there is a checked checkbox for "Normal" and an empty input field.
- Edema:** Radio buttons for "No" (selected) and "Yes".
- Cyanosis:** Radio buttons for "No" (selected) and "Yes".
- Ulceration:** Radio buttons for "No" (selected) and "Yes".
- Calf Tenderness:** Radio buttons for "No" (selected) and "Yes".
- Varicosities:** Radio buttons for "No" (selected) and "Yes".
- Amputation:** A checkbox that is unchecked.
- Clubbing:** Radio buttons for "Absent" (selected) and "Present".
- Homans' Sign:** Radio buttons for "No" (selected) and "Yes".
- Monofilament Exam:** Radio buttons for "Normal" (selected) and "Abnormal".

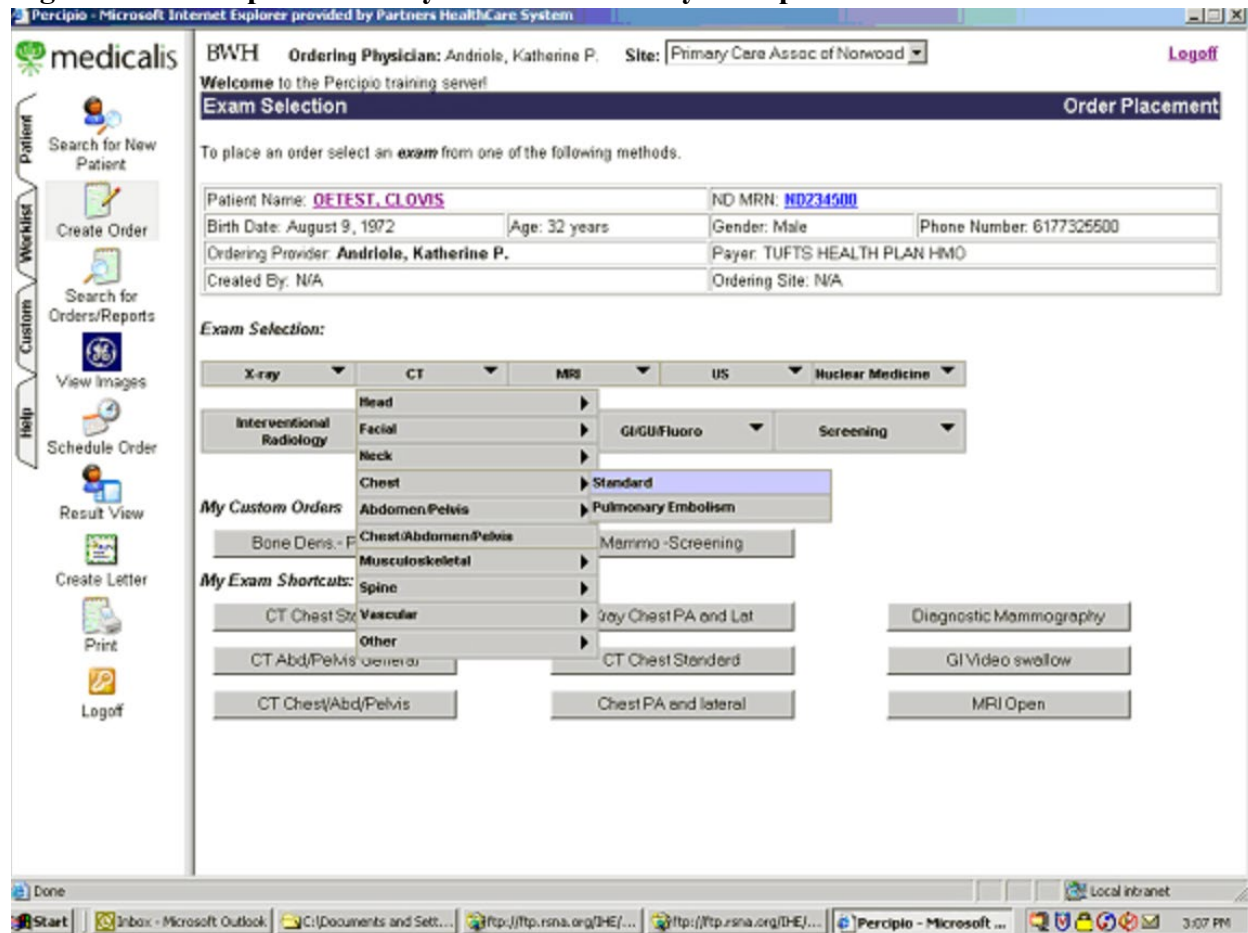
At the bottom of the window is a "Comments" text area and two buttons: "OK" and "CANCEL".

Source: HealthIT.gov, 2014. CDS Starter Kit: Diabetes follow-up care.

<https://www.healthit.gov/sites/default/files/del-3-7-condition-example-diabetes.pdf>. (HealthIT.gov, 2014a)

**Computerized provider order entry.** CPOE systems allow health care providers to directly enter medical orders electronically into EHRs as a replacement for paper, fax, telephone and verbal order methods. CPOE systems allow providers to electronically enter medication orders as well as laboratory, admission, referral, and procedure orders. CPOE systems are frequently integrated with clinical decision support systems that help ensure evidence-based care and improve patient safety with rules to check for drug-drug interactions, allergies, medication contraindications, and dosing. (Agency for Healthcare Research and Quality, February 2014). Figure 26.5 provides an example of a CPOE screen.

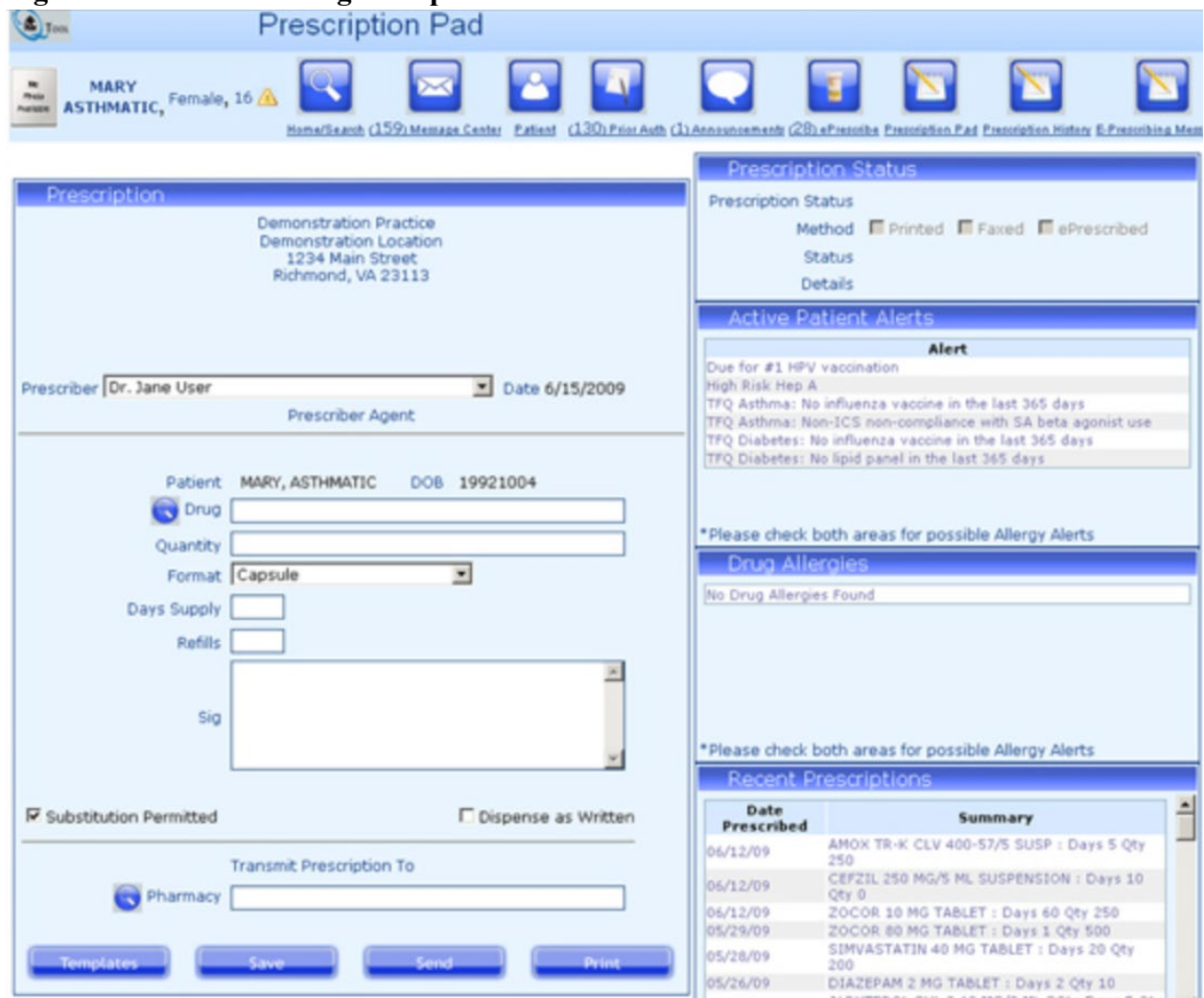
**Figure 26.5. Computerized Physician Order Entry example**



**Source:** Hostetter, 2009. Case Study: Alabama’s Together for Quality Program—Putting Health IT to Work for Medicaid Beneficiaries. (Hostetter, 2014)

**Electronic prescribing.** E-prescribing is the ability for a clinician to send accurate, understandable prescriptions directly to the pharmacy from point-of-care. Research has demonstrated significant reductions in medication errors as a result of e-prescribing. Figure 26.6 provides an example of an e-prescribing screen.

**Figure 26.6. E-Prescribing example**



**Source:** Hostetter, 2009. Case Study: Alabama’s Together for Quality Program—Putting Health IT to Work for Medicaid Beneficiaries. (Hostetter, 2014)

**Reporting.** Understanding the types of reports the practice’s EHR can generate is essential to helping a practice actively manage patients, track operational indicators, and meet meaningful use regulatory and accreditation requirements. Reports typically can be generated at the practice or provider level. However, starting with the practice level report is a good way to identify “red flags” that require further investigation into reports at the level of the individual provider. For example, if compliance with the Stage 1 meaningful use mandate of maintaining an up-to-date problem list for 80 percent of patients is at 60 percent for the practice, the next step should be to assess provider-specific compliance.

These data can be powerful motivators for provider change as providers see how they perform against the practice as a whole and other providers, as well as positive reinforcement for those exceeding expectations. More information on how to help practices with reporting is provided in [Module 28](#).

## Get to Know a Practice's Health IT Systems

One of the first things you will want to do when you start work with a practice, regardless of the goals of the work, is to gather some basic information about its IT infrastructure and the staff supporting it. You will want to know where the practice is in the process of implementing an EHR. (Hsiao & Hing, 2014). Are practice staff planning implementation? Are they in the middle of the process? Did the implementation of the EHR happen some time ago and have practice staff had a chance to adjust to the changes? Are they expecting a system upgrade soon? Implementing EHRs can disrupt patient care, staff productivity, and the patient and staff experience. Upgrades can create stress as well so it is critical to know where the practice is in the process. (Nemeth, Ornstein, Jenkins, Wessell, & Nietert, 2012).

If the practice is already using an EHR, you will need to know what system they are using (including the version) and whether they use other health IT systems such as a registry or a population management system. If the practice uses these other systems, you will need to find out if and how the various systems are integrated. Do they share data electronically? Or does someone in the practice manually enter the data from one system into the other?

You will also need to know who in the practice is most knowledgeable about the EHR and other health IT systems. Practices often have an individual (or in larger practices, multiple individuals) who is designated an EHR “super user.” Super users have typically completed advanced training on the EHR system (or other health IT systems) and may be either a staff member or a clinician. In addition, some practices employ outside consultants to help with IT-related tasks such as maintaining networks, updating software, or designing reports. If the practice you are working with has access to such consultants, you need to get to know them and get them engaged in the work you are doing with the practice.

In addition, you need to identify who in the practice (or which outside consultant) is charged with creating reports, implementing new EHR functions such as clinical decision supports, and creating templates for recording data. For example, what automated and ad hoc reports are run in the practice and who is responsible for creating and running these reports? How often are these reports run? Common reports that practices might run are meaningful use reports, electronic Clinical Quality Measures reports, population health reports, and internal reports to support QI efforts (Donaldson, 1996).

Finally, you will need to know who manages the relationship with the EHR vendor. This individual will be a key resource to you when there is a need for modification or technical assistance from the vendor.

**Table 26.1. Information to collect about a practice's EHR**

- Name and version of EHR system
- When implemented
- Other products like registries that the practice is using
- Name of the super user for the EHR
- Other key people that work with the EHR
- Reports the practice produces regularly
- Person/people in charge of creating the reports
- Method for creating the report (analytics software, internal production, subcontract)
- Technical support hours included in the EHR vendor contract
- Point of contact between practice and vendor
- Users groups for the EHR and related products
- Is there an HIE? What data does it have? Does it push information to the practice or only pull information to a central database that the practice must then log in to in order to get information on their patients?
- Where to get information about care that patients receive outside of the clinic
- How the practices interface with the “primary” or multiple hospitals where patients get care

If your practices have selected EHRs that do not have the full functionality needed to support the PCMH, you will need to help the practice supplement their care management capacity. For example, if their EHRs cannot identify a population of patients due for a chronic care service, the practice will need to maintain registries, much as they would have to do if they did not have EHRs.

A registry is a database of patients with specific diagnoses, conditions, or procedures. While an EHR contains patient-specific information about all patient encounters within a practice, a registry is a subset of the patients in the practice. A registry is generally easier to use for tracking patients' progress and outcomes than an EHR. Although a registry can be a standalone application, it is often populated by an EHR to avoid entering key data items twice. More information on the functionalities of EHRs and their need to support the PCMH is provided in [Module 28](#).

## **EHR Workflows**

Implementing EHRs in a practice produces lots of changes in its operations. Almost every workflow is affected either directly or indirectly. Figure 26.7 provides a list of workflows that are typically affected. As a PF it is helpful to know what these workflows are. You should observe them as you have the opportunity and be available to help your practices improve or optimize these workflows when appropriate.

**Figure 26.7. Workflows commonly affected by EHRs**

- Recording patient demographics.
- Recording vital signs electronically.
- Maintaining up-to-date problem lists.
- Maintaining active medication lists.
- Maintaining active allergy lists.
- Recording smoking status.
- Providing patients with clinical summaries for each office visit.
- E-prescribing.
- Checking for drug-drug and drug-allergy interactions.
- Exchanging electronic information with other sites of care.
- Implementing a decision support rule and tracking compliance with the rule.
- Maintaining systems to protect privacy and security of patient data.
- Reporting clinical quality measures to CMS or States.
- Obtaining signatures on electronically generated forms (school, camp, sports participation)
- Generating lists of patients for QI or outreach.
- Providing electronic health education resources.
- Performing medication reconciliation between care settings.
- Generating summary of care record for referrals and transitions.
- Providing immunization data to regional registries.
- Providing surveillance data to public health agencies.
- Using patient reminders for prevention/chronic care.
- Providing patient access to lab results, problem and medication lists, and allergy information.
- Performing drug formulary check.
- Entering lab results into EHR.
- Scanning incoming documents for integration into the system

Adapted from Bodenheimer T. Personal communication, January 2011.

**Source:** Agency for Healthcare Research and Quality Web page, 2014. Module 17. Electronic Health Records and Meaningful Use. (Knox & Brach, 2013)

## The HITECH Act

An area of special interest to many practices and something you will want to become well versed in is meaningful use. In February 2009, President Obama signed into law the American Recovery and Reinvestment Act (ARRA) as an economic stimulus package providing investment in the Nation's infrastructure, employment, transportation, education, and other fields. (Recovery.gov, 2014). Within ARRA, the Health Information Technology for Economic and Clinical Health (HITECH) Act specifically targets health care by providing the means to structure a paperless national health information network. The HITECH Act provides more than \$40 billion, including:

- \$20+ billion for incentive payments to hospitals and providers
- \$650 million for RECs to help providers adopt health IT
- \$560 million for State governments to lead the development of health information exchanges (HIEs)
- \$4.7 billion for the adoption and use of broadband and telemedicine advancement
- \$500 million for the Social Security Administration and \$85 million for the Indian Health Service

- \$50 million for IT within the Veterans Benefit Administration

The ARRA HIT Policy Committee further proposed “meaningful use” as the key criteria providers (hospitals and eligible providers, known as EPs) must meet to unlock tens of millions of dollars of Federal health care IT subsidies under ARRA. Meaningful use is utilizing EHRs and related technologies to improve quality of care, improve patient safety, and increase efficiency. It includes using technology to more effectively engage patients and their families in their health, and to enable care coordination and population management. (HealthIT.gov, 2014e). Meaningful use also includes the electronic exchange of information and the use of certified EHR technology to submit quality and other measures. (Health Resources and Services Administration, 2014b).

For primary care clinicians, this funding is directly tied to documenting important factors in primary patient care such as smoking status and current medications. Practice facilitators must be familiar with these factors, since EHR funding is tied to meeting meaningful use criteria.

To qualify for Federal incentive dollars, a practice is required to implement an EHR that is certified by the ONC. These standards are intended to establish a certain level of quality and shared functionality across the nation’s health information systems. To be certified by the ONC, an EHR must (HealthIT.gov, 2014c).

- collect and store clinical health data, including medical history, problem lists, and patient demographics
- deliver clinical decision support
- provide a means to run reports on quality of care
- provide a means for exchanging information with other sources (such as lab reports from another organization)
- complete testing and receive certification by the ONC

A list of certified EHRs and the criteria they are required to meet is available at:  
<https://www.healthit.gov/topic/certification-ehrs/certification-health-it>

ONC provides guidance for selecting or upgrading to a certified EHR at:  
<https://www.healthit.gov/topic/safety/selecting-or-upgrading-health-it>.

## **Health Information Exchange**

In addition to meaningful use, the HITECH Act also funds States and communities to support and accelerate the development of effective health information exchange (HIE). Health information exchange enables clinicians and health care staff and patients to access and share patients’ medical information. Electronic HIE can improve the completeness of patients’ records, which improves safety of care, quality of care, and effectiveness of care while also lowering costs.

Examples of two States that have made significant progress in connecting providers electronically can serve as exemplars for the State you work in:



1. The NY eHealth Collaborative (New York eHealth Collaborative, 2014) serves as a model for coordinating all exchange efforts throughout the State of New York. As an increasing number of private practices, nursing homes, clinics, and hospitals implement EHRs, these providers have the option to connect to information hubs in their region of the State for sharing patient data. eHealth then links all the regional nodes to a statewide network that primary care physicians can securely access for complete and accurate information about their patients.
2. The Massachusetts eHealth Institute (MeHI) (Massachusetts eHealth Institute, 2014) at the MassTech Collaborative is improving health care for the Massachusetts population through the use of IT. The institute runs the Massachusetts health information highway (HIway), the statewide HIE for clinical information among a variety of providers, including medical offices, hospitals, laboratories, pharmacies, skilled nursing facilities, and health plans. It also serves as the REC for helping providers achieve meaningful use goals. In addition, the institute works with MassHealth, the State insurance program for low- and moderate-income Massachusetts residents, on the Medicaid EHR Incentive Payment Program. This program supports the goal for all providers to have access to a Federally-certified EHR that communicates with other certified EHRs.

## Incentive Programs

CMS and the Office of the National Coordinator (ONC) have implemented two programs to encourage practices to attain meaningful use. Eligible providers (EPs) who demonstrate attainment of one or more of three stages of meaningful use of certified EHR technology can receive up to \$44,000 from Medicare over 5 consecutive years. Medicaid incentives, which are larger, are paid by the States, and timeframes for applying vary by State. Table 26.2 provides a comparison of the two incentive programs. EPs cannot receive incentives from both programs in the same year. If an EP qualifies for both programs in a single year, they must select one program from which to receive payments.

**Table 26.2. Comparison of EHR incentive programs**

<b>Medicare EHR Incentive Program</b>	<b>Medicaid EHR Incentive Program</b>
Run by CMS.	Run by your State Medicaid agency.
Maximum incentive amount is \$44,000.	Maximum incentive amount is \$63,750.
Payments over 5 consecutive years.	Payments over 6 years; does not have to be consecutive.
Payment adjustments will begin in 2015 for providers who are eligible but decide not to participate.	No Medicaid payment adjustments.
Providers must demonstrate meaningful use every year to receive incentive payments.	In the first year providers can receive an incentive payment for adopting, implementing, or upgrading EHR technology. Providers must demonstrate meaningful use in the remaining years to receive incentive payments.

## Three Stages of Meaningful Use

To obtain incentive funds, EPs must show that they are using their EHRs in a meaningful way for patient care, safety, and quality. The incentive program has three stages. Stage 1 focuses on transferring data to EHRs and being able to share information. Stage 2 focuses on more rigorous health information exchange, sharing information with patients, and activities such as e-prescribing and electronic labs. Stage 3 will focus on achieving patient outcomes. Once an EP is enrolled in stage 1, the timeline is set for proceeding through stage 2 and stage 3 reporting. Figure 26.8 shows the timeline for attestation for the three stages.

**Figure 26.8. Meaningful use timeline based on year started**

1 <sup>st</sup> Year	Stage of Meaningful Use										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
2011	1	1	1	2	2	3	3	TBD	TBD	TBD	TBD
2012		1	1	2	2	3	3	TBD	TBD	TBD	TBD
2013			1	1	2	2	3	3	TBD	TBD	TBD
2014				1	1	2	2	3	3	TBD	TBD
2015					1	1	2	2	3	3	TBD
2016						1	1	2	2	3	3
2017							1	1	2	2	3

**Source:** Centers for Medicare and Medicaid, 2012. Stage 2 Toolkit. [https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage2\\_Toolkit\\_EHR\\_0313.pdf](https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Stage2_Toolkit_EHR_0313.pdf). Reprinted with permission.

More detailed information about each stage is provided below.

**Stage 1.** Stage 1 began in 2011 and remains the starting point for all providers. It consists of transferring data to EHRs and being able to share information, including the capability of producing electronic copies of medical records upon a patient’s request and printing a copy of a visit summary for patients at the end of their visit. The focus is on data gathering and sharing. Stage 1 has the following measures (Table 26.3 has some example measures):

1. A core set of 15 measures that must be met through structured data entry, including patient demographics, computerized physician order entry (CPOE) for medication orders, updated problem/medication/allergy lists, recording of vital signs and smoking status, and a printed visit summary given to the patient after each visit.

2. An additional menu set of 24 measures of which 19 must be met through structured data entry, including patient-specific education resources, medication reconciliation, and patient electronic access.
3. Clinical quality measures to be submitted to the Centers for Medicare & Medicaid Services (CMS), including hypertension management, preventive care and screening measures, and childhood immunization status.

**Table 26.3. Examples of Stage 1 measures**

<b>Meaningful Use Aim</b>	<b>Measure</b>
CPOE used for medication orders.	More than 30% of all unique patients seen by the eligible provider with at least one medication in their medication list have at least one medication order using CPOE
Up-to-date problem list of (current and active) diagnoses	More than 80% of all unique patients of an eligible provider have at least one entry in the EHR or an indication that no problems are known, and this is recorded as structured data.
Prescriptions are transmitted electronically	More than 40% of all (permissible) prescriptions written by the eligible professional are transmitted electronically using certified EHR technology.
Active medication list is maintained and current	More than 80% of unique patients seen by the EP have at least one entry or an indication that the patient is not currently prescribed any medications, recorded as structured data.
Smoking status for patients 13 years or older is recorded	More than 50% of all unique patients who are 13 years or older and seen by an eligible provider have smoking status recorded as structured data.

Adapted from: An Introduction to the Medicare EHR Incentive Program for Eligible Professionals, CMS. Available online at: [https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/EHR\\_Medicare\\_Stg1\\_BegGuide.pdf](https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/EHR_Medicare_Stg1_BegGuide.pdf). Reprinted with permission.

**Stage 2.** Stage 2 (implemented in 2014), includes new standards such as online access for patients to their health information and electronic health information exchange between providers. Stage 2 builds on stage 1 measures, with an emphasis on using clinical decision support (reminders to ensure adherence to evidence-based guidelines) to improve performance on high-priority health conditions. For a detailed overview see:

[https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/downloads/stage2\\_guide\\_eps\\_9\\_23\\_13.pdf](https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/downloads/stage2_guide_eps_9_23_13.pdf).

**Stage 3.** Stage 3 implementation is expected in 2016 and includes demonstrating that the quality of health care has been improved for the population served. Examples of addressing conditions that affect a large proportion of the underserved population include improving outcomes for low birth weight babies and reducing hospital admissions for ambulatory care-sensitive conditions such as diabetes and childhood asthma.

## Helping Practices Attain Meaningful Use

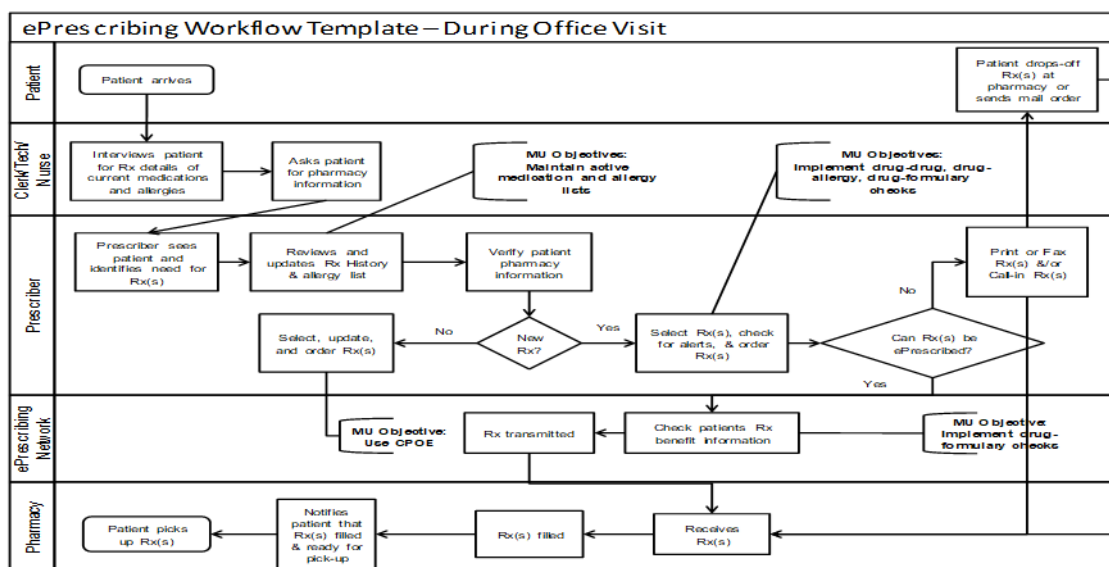
As a PF, you will be in a position to help your practices meaningfully use their EHRs. If the practice is pursuing incentive dollars, you will want to begin this work with the criteria that the practice needs to meet to reach stages 1, 2, and eventually 3 for meaningful use.

A helpful approach to this can be to map “as is” EHR workflow for processes relevant to meaningful use and then create “future” workflows. The ONC’s National Learning Consortium has developed some template EHR workflows that you can use as a starting place with your practices and then modify these key process templates to fit their particular needs.

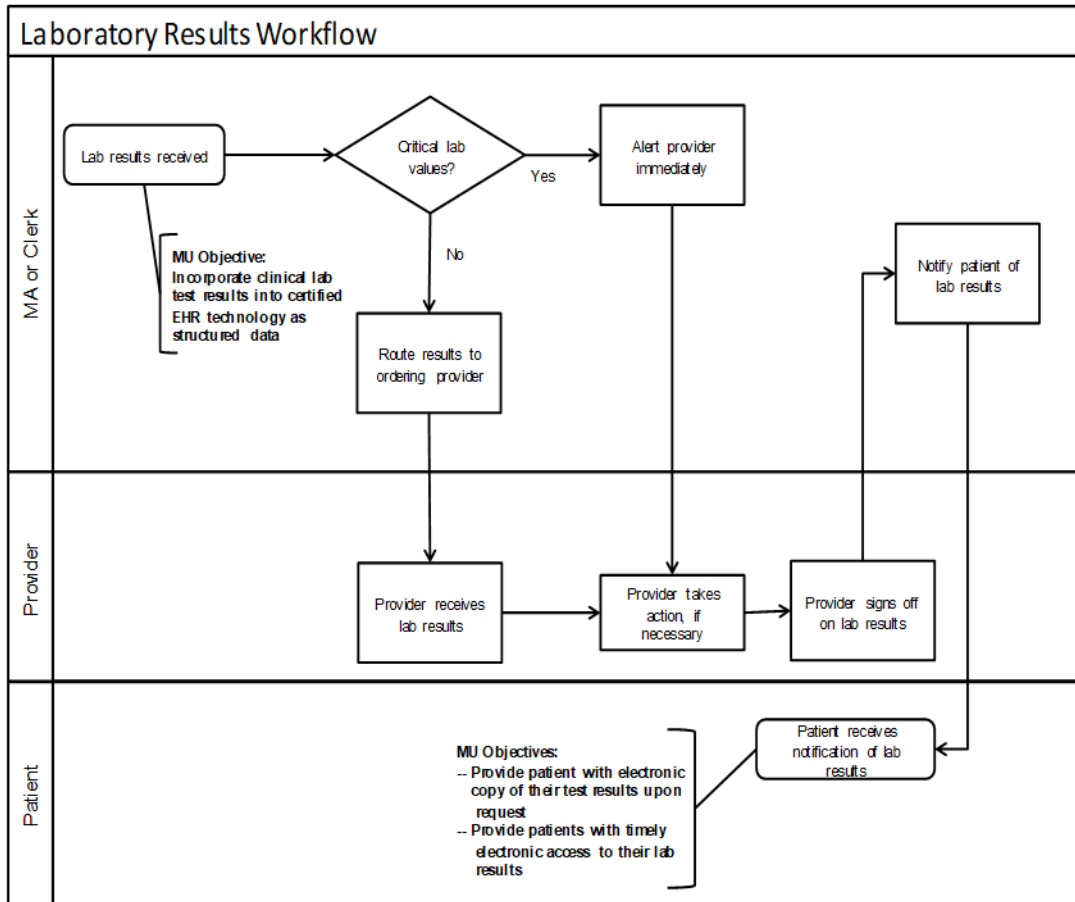
The templates can be accessed online at <https://www.healthit.gov/resource/workflow-redesign-templates>.

The figures below provide a few examples of EHR related templates provided in the document.

**Figure 26.9. Medication prescribing**



**Figure 26.10. Lab results workflow**



Many additional resources for assisting your practices to achieve meaningful use can be found on the National Learning Consortium Web site. You will want to review resources on this site and select those that best fit the needs of your practices.

## Meaningful Use and Quality Improvement

Meaningful use reinforces the concept of meeting patient needs as outlined in the landmark Institute of Medicine study *Crossing the Quality Chasm: A New System for the 21<sup>st</sup> Century* (Institute of Medicine, 2001) care that is safe, efficient, effective, timely, person-centered, and equitable.

The same technology that can qualify providers for meaningful use incentive payments can also serve to implement the Care Model or achieve PCMH status. Table 26.4 displays how various meaningful use criteria and health IT capabilities relate to Care Model and PCMH features.

**Table 26.4. Crosswalk between meaningful use and health IT capabilities and Care Model and PCMH features**

<b>Meaningful Use and Health IT Capability*</b>	<b>Care Model Domains</b>	<b>PCMH Standards</b>
Maintain up-to-date problem lists	Clinical Information Systems	Plan and Manage Care
Generate lists of patients with a specific condition	Delivery System Design	Identify and Manage Patient Populations
Incorporate lab results	Decision Support	Identify and Manage Patient Populations
Participate in HIE	Community Resources	Provide Community Resources
Send reminders	Self-Management Support	Plan and Manage Care
Use clinical decision support	Decision Support	Measure and Improve Performance
Use CPOE for medication, radiology, and laboratory orders	Clinical Information Systems	Plan and Manage Care
Record demographics Provide patient education materials in non-English languages	Self-Management Support	Identify and Manage Patient Populations
Make health information accessible to patients	Informed, Empowered Patient and Family	Provide Self-Care Support

\* Includes proposed stage 3.

## Summary

Today, EHRs are central to the operations and clinical care of almost every practice. As a PF, you will need to be familiar enough with key elements of EHRs to be culturally and technologically competent when working with practices. You will also want to be familiar with and able to guide your practices through the meaningful use attestation process.

## References

- Agency for Healthcare Quality and Research. (February 2014). Computerized Provider Order Entry. *Health Information Technology*. Retrieved December 10, 2014
- American Medical Association. (2014). EHR Selection Considerations. *Health Information Technology*, 8-11.
- Bell, Karen M., & Patterson, W. David. (2014). Understanding EHRs: Common Features and Strategic Approaches for Medicaid/SCHIP. [https://digital.ahrq.gov/sites/default/files/docs/page/understanding\\_ehrs\\_common\\_features\\_and\\_strategic\\_approaches\\_for\\_medicaid\\_schip\\_5.pdf](https://digital.ahrq.gov/sites/default/files/docs/page/understanding_ehrs_common_features_and_strategic_approaches_for_medicaid_schip_5.pdf)
- Centers for Medicare & Medicaid Services. (2014, 02/26/2014 1:44 PM). E-Prescribing. Retrieved December 10, 2014, from <https://www.cms.gov/medicare/e-health/eprescribing>
- Donaldson, Molla, S., Yordy, Karl, D., Lohr, Kathleen, N., & Vanselow, Neal, A. (1996). *Primary Care: America's Health in a New Era*. Washington, D.C.: Institute of Medicine, National Academy Press.
- Halbesleben, Jonathon R. B., Wakefield, Douglas S., Ward, Marcia M., and Crandall, Donald. (Jan 2009). Staff "super users" who train others on clinical information systems help shape positive employee attitudes. (09-RA010, No. 347), 82-96. <https://archive.ahrq.gov/news/newsletters/research-activities/jul09/0709RA26.html>
- Health Resources and Services Administration. (2014a). Common EHR Functions. Accessed December 10, 2014.
- Health Resources and Services Administration. (2014b). What is "Meaningful Use"? Accessed December 10, 2014.
- HealthIT.gov. (2014a). CDS Starter Kit: Diabetes follow-up care. <https://www.healthit.gov/sites/default/files/del-3-7-condition-example-diabetes.pdf>
- HealthIT.gov. (2014b). Certification Programs & Policy. Accessed December 14, 2014
- HealthIT.gov. (2014c). Certified EHR Technology and Certification Process. Retrieved December 10, 2014, from <https://www.healthit.gov/topic/certification-ehrs/about-onc-health-it-certification-program>
- HealthIT.gov. (2014d). Certified Health IT Product List (CHPL). Retrieved December 10, 2014, from <https://chpl.healthit.gov/#/search>
- HealthIT.gov. (2014e). Meaningful Use Definition and Meaningful Use Objectives of EHRs. Accessed December 10, 2014.
- HealthIT.gov. (2014f). Regional Extension Centers (RECs). from <https://www.healthit.gov/topic/regional-extension-centers-recs>
- HealthIT.gov. (2013). What is an electronic health record (EHR)? Retrieved December 10, 2014, from <https://www.healthit.gov/faq/what-electronic-health-record-ehr>

Hostetter, Martha. (2014). Case Study: Alabama's Together for Quality Program--Putting Health IT to Work for Medicaid Beneficiaries. Retrieved December 10, 2014, from <https://www.commonwealthfund.org/publications/newsletter-article/case-study-alabamas-together-quality-program-putting-health-it-work>

Hsiao, C, Jr, & Hing, E. (2014). Use and characteristics of electronic health record systems among office-based physician practices: United States, 2001-2013. *Data Brief*. Hyattsville, MD: National Center for Health Statistics.

Institute of Medicine. (2001). Crossing the Quality Chasm: A New Health System for the 21st Century. 1-8.

Knox, Lyndee, & Brach, Cindy. (2013). Module 17. Electronic Health Records and Meaningful Use. Retrieved October 9, 2014, from <https://www.ahrq.gov/ncepcr/tools/pf-handbook/index.html>

Massachusetts eHealth Institute. (2014). The Massachusetts eHealth Institute - Health Care Technology and Innovation. Retrieved December 10, 2014, from <https://mehi.masstech.org/>

Nemeth, Lynne S., Ornstein, Steven M., Jenkins, Ruth G., Wessell, Andrea M., & Nietert, Paul J. (2012). Implementing and Evaluating Electronic Standing Orders in Primary Care Practice: A PPRNet Study. <https://www.jabfm.org/content/25/5/594.long> doi:10.3122/jabfm.2012.05.110214

New York eHealth Collaborative. (2014). What We Do. Accessed December 10, 2014.

PCC EHR Solutions. (2014). Meaningful Use Measures Report, from <https://learn.pcc.com/help/meaningful-use-measures-report/>

Recovery.gov. (2014). The American Recovery and Reinvestment Act: The Recovery Act. Retrieved December 10, 2014, <https://www.fcc.gov/general/american-recovery-and-reinvestment-act-2009>