

EMR Training Program Approach

MEDIT 235 Team 4 Capstone Project

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Preface

The content of the project deliverable will be based on one of the suggested topics: a Technology Training and Planning Guide for: New Hires, Physicians and Nurses.

Rather than create a lengthy, static manual for a specific system or a generic set of processes and system capabilities, the team will create a proposal for how to go about creating and maintaining a training program and appropriate supporting materials, tailored to an organization's environment. The material will outline a broad set of user roles and clinical workflow scenarios, and will examine some specific scenarios in more detail in order to illustrate the end deliverables of the proposed approach.

The content will span some of the key capabilities for an EMR system assuming implementation of generally-available modules of EMR systems in the market. It will focus on the perspective of the user completing tasks that help deliver safe and effective care to patients. The introduction of system features will be in non-technical terminology but reinforce the importance of accurate and complete information in fulfilling the mission of the provider organization.

There is a need for a very flexible, dynamic, personalized approach to project and ongoing post-implementation training. In order to continually drive successful utilization of technology adoption, the training approach aims to be flexible, dynamic and personalized. Successful deployment delivers many other benefits across the provider organization. Vendor provided training during implementation may fall short due to generic documentation and ineffective turnover to the teams responsible for ongoing training and support in the production environment. In developing its proposed approach, the team will research best practices for successful HIT rollouts in case study literature.

Capstone Project Setting and Assumptions

The hypothetical setting that Team 4 conceived provides a backdrop for our Capstone project. The team members are the training /support staff at a hospital which already has a computerized accounting system. The board of directors and executives has recently decided to implement a new EMR/EHR system. They are in full support, sponsoring this system and have communicated their vision for the desired future state of the hospital. Project leadership is being assembled, including IT and representatives of the user community. Our team has been tasked to develop an ongoing training program and report back on our recommended approach. The scope of the training is to be related to the clinical workflows and administrative processes supported by the EMR/EHR.

About Rainier Healthcare

Rainier Healthcare is a 126-bed medical center that has been serving communities throughout the surrounding counties for more than 85 years. Rainier and its medical staff of over 100 providers and more than 500 clinical and support staff provide primary-care hospital services, as well as specialty and intensive care services.

Rainier Healthcare	
Facilities	9
Hospital Beds	126
Physician Clinics	8
Planned Number of System users	
Physicians	105
Nurses and Allied Health Professionals	535
Departments	
Inpatient Care	Cardiology, cardiac surgery, orthopedics, trauma, surgery, labor and delivery
Inpatient / Outpatient Care	Endoscopy, chemotherapy, OBGYN, medical imaging and radiology
Outpatient Care	Emergency department, outpatient surgery, walk-in care, family medicine, internal medicine

The selected EMR vendor applications required to support the hospital and physician clinics include pharmacy, lab, radiology, clinical documentation, surgery, intensive care documentation, emergency department, medical records, document imaging, electronic signature, electronic medication administration record, clinical data repository, registration and scheduling. The creations of interfaces of data to and from non-EMR solutions will be required. These interfaces will connect patient's clinical data that will continue to exist in internal disparate systems and allow communication of patient data to other provider organizations. The infrastructure will evolve to support populating data into Personal Health Records systems and to permit Rainier Healthcare to participate in developing regional and national Health Information Exchanges.

Rainier Healthcare

EMR Training Program Approach

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1. Executive Summary

Rainier Healthcare has begun the implementation of an Electronic Medical Record (EMR) system. This is much more than a technology project. The technology components – such as servers, workstations, software, and peripheral devices – do take a great deal of skill and talent to deploy. However, success will only be achieved after clinical processes are changed and people make use of the EMR technology to do their jobs better than they could before. Change management deals with the human side of implementing and ensuring effective adoption of information technology (IT) solutions. Therefore, a substantial investment in the people and process aspects of the project is called for.

Training the users is an essential element of an overall change management program. There is a need for a personalized approach to project team and ongoing post go-live user training in order to drive initial and continual adoption and successful utilization of clinical system functions. Clearly, training is focused directly on preparing people to adapt to the changes that a new system entails.

EMR system transactional training alone is not sufficient. The user community will be prepared to operate the system effectively, reinforced by an understanding of how the system is expected to improve patient outcomes and the mission of Rainier Healthcare. Connecting each user's role with these broader objectives will prepare them to contribute to improving the quality of care and will enhance their job content and satisfaction.

The training program is described in this document. The clinical and systems transformation will be a phased in and the delivery of user training will be synchronized with these phases. The program will adopt accepted best practices such as nominating "super users" in a train-the-trainer approach and gradually phase in more advanced topics. The program will also leverage lessons learned from case studies of successful EMR implementations.

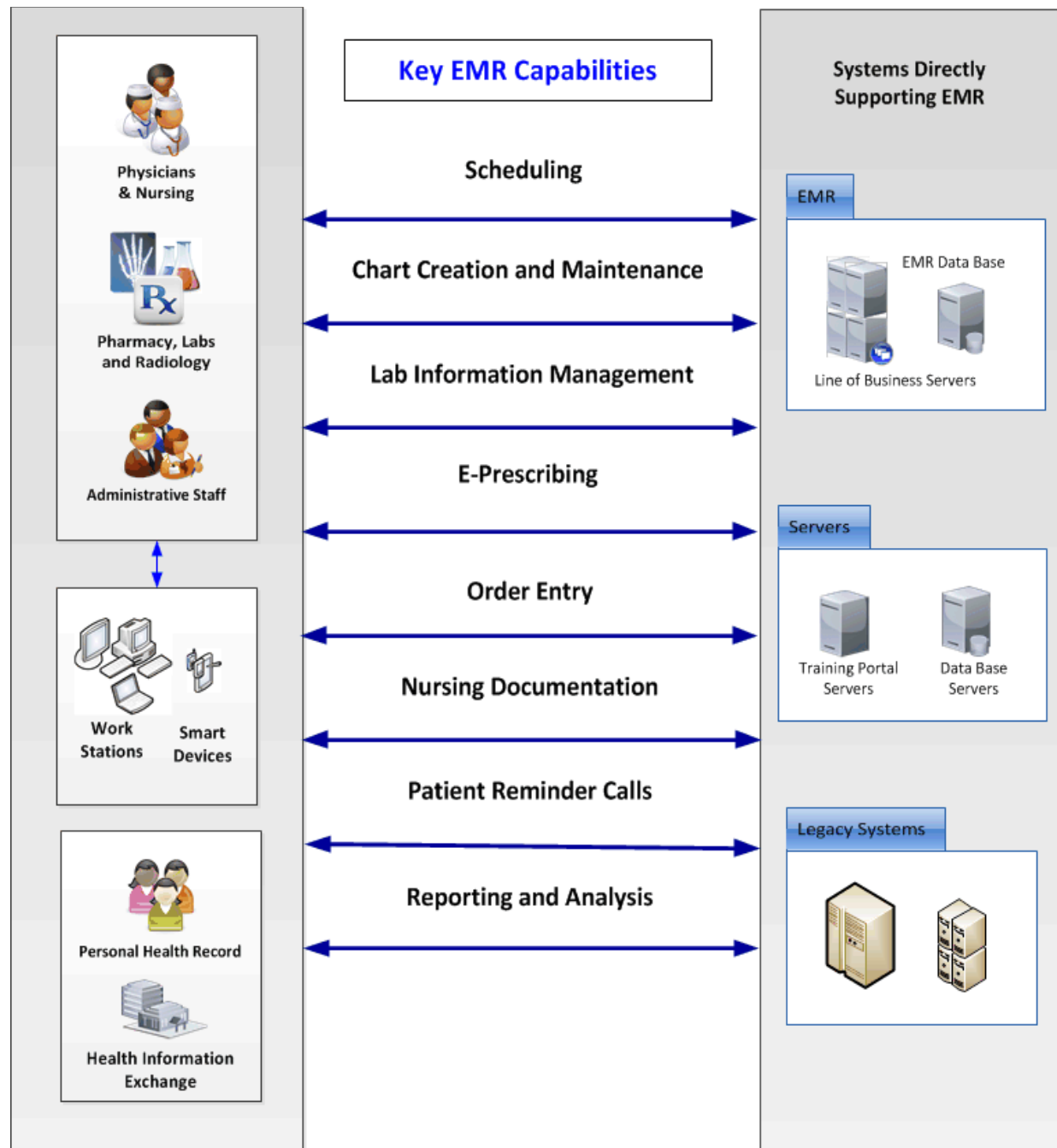
The training team will measure the success of the training program. Competency checklists and surveys of training participants will ensure accountability and continual improvement of the effectiveness of our training materials and delivery methods. Feedback mechanisms and community forums will indicate how well the revised workflows and the use of the system are contributing to users' job success and promote teamwork. The quality and effectiveness of the training program will contribute to the overall ability of the EMR implementation project to achieve the targeted return on investment objectives of this important initiative.

2. EMR Capability Framework

The "Key EMR Capabilities" graphic illustrates the future state of the EMR. Its' features include the scheduling of patients along with timely appointment reminders, chart creation and maintenance including alerts and best practice reminders when making typical test and treatment recommendations, secure, real-time access of relevant patient data across multiple organizations including lab reports, e-prescribing, and radiology results. A data warehouse will be created and maintained providing an accurate, consolidated view of patient data from different points of care and across organizations,

delivering information quickly for decision support. This will enable reporting, analysis and data mining modeling of hidden patterns in large volumes of clinical data.

A training portal will be tied to training systems for staff to view, enroll, and manage upcoming training classes. When the EMR can connect with other hospitals and a Health Information Exchange (HIE), the EMR and connections will be considered an Electronic Health Record (EHR) system. The EHR will be available to all groups involved in the health care process. Rainier Healthcare will also implement the capability to engage its patients by providing interaction with a Personal Health Record (PHR).



3. Hospital Mission, Vision and EMR Objectives

Rainier Healthcare Mission and Vision

Rainier Healthcare's mission is to improve the health of the people and communities we serve, by providing excellent and compassionate primary and specialty healthcare services that meet the quality and cost effective expectations of our patients, physicians, employees and volunteers. Our vision is to provide leadership and achieve excellence in healthcare and wellness promotion while showing respect to our patients, and maintaining the highest standards of ethical behavior.

Rainier Healthcare has undertaken implementation of an EMR system to improve the organization's information infrastructure. The Board of Directors, the Executive Leadership and the Medical Staff firmly believe the goals and objectives of this project are directly aligned with these organization mission and vision statements.

EMR Objectives

"Technology is just a tool to help an organization realize its vision and mission."¹ "One of the hardest things for any organization is to understand that an implementation of this sort is a business initiative, not an IT project."²

The EMR initiative has the following clinical, administrative and patient objectives:

Rainier Healthcare EMR Objectives	
Patient	• Improve continuity of care • Streamline how patients provide personal information and medical history through electronic forms • Allow patients to access health information via a Personal Health Record • Improve patient satisfaction
Clinical	• Access patient information where and when it's needed • Facilitate communicate among providers across healthcare locations • Reduce data entry errors including prescription errors • Monitor and analyze patient data for better decision making
Administrative	• Improve organizational agility based on shared operational information • Comply with privacy and security protocols • Reduce time spent searching for records and documents • Increase operational efficiency by integrating information systems

Rainier Healthcare's mission, vision, and the EMR objectives are important guidelines which serve as reminders of the destination where the organization is going. The training process will help reinforce the guidelines throughout the organization, and serve as a reminder that an installed, working EMR is not the goal in itself, but a milestone in the journey to the real goals related to improved patient care.

Integration Benefits

There is a need for a large scale, industrial strength, repository of information. Currently Rainier Healthcare has a lot of great data, but not a common platform that helps turn that data into knowledge and then into action after that.

Benefits from the EMR implementation will include:

1. Real time access to information, where and when it's needed. The new EMR system takes data from multiple systems; hospital based systems as well as from the physician clinics, and pulls this data together. Individual systems today can't provide the full picture of the current status with any particular patient.
2. Clinical decision support capabilities. Information from EMR systems can aid providers in better decision-making regarding patient diagnosis, test results evaluations, prescriptions and treatment orders.

4. Training Program Core Components

EMR Implementation Training

Training is a key component of change management efforts when implementing any new system. Training is required by those who will be involved in the initial implementation of the EMR so that they will be familiar with the main capabilities to be deployed. Training of end users will be accomplished in preparation of phasing in to the new system, focused on building their skills and confidence to use system capabilities effectively in their role. The goal of training is more than just entering the right data in the right field on the right screen. The goal is to enable users to think logically about how to best use the system to maximize the benefits the system delivers to patients and to the hospital. The training will be considered successful when it teaches people how to do their jobs better and not just how to use the screens and reports.

Post Implementation Training

Ongoing training opportunities will be available. Experienced users will be able to reinforce and advance their learning. New users, whether they are new employees or have been transferred or promoted to a new role, will be able to get up to speed and take advantage of continuous learning opportunities. Training content will be focused on job roles and the type of workflows the job entails. Materials that will be used in training encounters will initially make use of manuals and documentation provided by the vendor. The vendor also provides a limited amount of free training services, which will be used in training the project team and the initial set of users. The hospital training department will also develop customized materials that reflect the documented workflows, consistent with the policies and procedures of the hospital.

Establishing User Buy In

The team members who interact with the physician, nurses and others who will be using the new EMR will be instrumental in setting the tone for the community's attitudes during this initiative. Trainers and hospital leaders will use these interactions to help win the "heart and minds" of the users. The training program will be tailored to the workflow and objectives of each role in each department. The goal is not just simply learning the use of the new system, but to learn how to use it to maximize the effectiveness and efficiency of that group of users.

Emphasis will be placed on the attitude of the users to maximize buy-in. The messages delivered by instructors will be "a combination of selling the benefits of the new system and firmly announcing that the train is leaving the station, whether they like it or not."³

An advanced curriculum will first be developed to prepare "super users". These super users are physicians, nurses, or other employees that Rainier Healthcare will rely on to train other users on an ongoing basis. They are great resources for improving the training program by nurturing each department's unique culture and workflow. They are also the best frontline "on-site support" as they are closest to the process.

The training and support program will employ a feedback loop from general users to maximize buy-in and facilitate future system improvements. Beginning from the first training session, whether a self-guided online or live classroom lesson, there will be avenues for the user to input suggestions on how the training can reflect how they can perform their job better in terms of patient safety, quality of care, and efficiency of workflow.

The training schedule will work around the work schedule of the department to minimize interrupting providers' responsibilities. The super users will be trained first so they can provide coaching, leadership and mentoring of other users. The availability of the training will be continual, meaningfully repetitive, and progressively build upon previous foundations. This will prevent the users from suffering information overload and learning fatigue. Only after users have the opportunity to internalize basic functionalities will they be trained on more advanced features.

4. Training Program Design Concepts

Best Practices for EMR Training Programs

The program design incorporates documented best practices in adult learning and education programs generally and also specific approaches that have contributed to success in EMR implementations. The track record of the healthcare industry in the United States provides valuable examples of practices to model our program after and practices to avoid. In addition, industry research, case studies and the experience of the training team members have been leveraged to build the foundations on which our training program is laid out.

Some of the ideas that will be adopted by the program include the following:

	Best Practices
Users	• System users should be prepared for training by first understanding how their participation is crucial to achieving the objectives of the EMR for patients and for the organization
	• Effective EMR training is organized by role and workflow, not by system features and functions, and approaches will be different for physicians than for nurses and other end users
	• “Super users” should be identified and their role formalized as participants in early training “train the trainer” efforts and ongoing delivery of training, coaching and support to other users
	• Due to the conversion from a paper-based environment to a fully electronic system, some new users will require non-threatening basic personal computer skills training

Environment	• Use a variety of automated and self-study training techniques including computer-based training, videos and reading materials to supplement, but not replace instructor-led and one-on-one sessions
	• Provide for training in a mix of environments that provide dedicated time isolated from job duties as well as opportunities to practice using the system in their actual work setting

Scheduling and Content	• Training schedules need to be flexible, to the extent of supporting on request one-on-one training and offering training on weekends or outside typical business hours
	• Training content should be introduced over a reasonable period of time to avoid information overload and to gradually build from basic concepts to more advanced ones
	• Provide readily available and easy-to-comprehend reference material
	• Proactively plan for delivery of training synchronized with implementation project go lives and post production environments, accommodating: ○ Advanced training ○ Training needed by new users ○ Training on new capabilities resulting from process changes and new system functions

Effectiveness	• Implement approaches to measure success of training goals and ability to make improvements
	• Above all, the time and effort devoted to training caregivers cannot have a negative impact on the ability of the hospital to provide patient services

Case Studies Related to EMR training

Some specific examples of techniques that worked well were gleaned from case studies of the Healthcare Information and Management Systems Society (HIMSS) Nicholas E. Davies Award of Excellence, given in recognition of “excellence in the implementation and value from health information technology.”⁴ The key takeaways from each case study are underlined.

Cincinnati Children's Hospital Medical Center developed a training plan around a three pronged strategy. First, it launched an in house public relations campaign approximately 18 months prior to implementation to “infiltrate and saturate the organization” with information about the computerized order entry and clinical documentation benefits. Second, it devised a system of role based training sessions structured according to user specific content. Finally, it incorporated just in time training, coordinated with staged implementation plans for specified patient care areas. Ongoing support comes from a group of newly hired IS support staff known as the “Blue Coats,” whose aim is to provide 15minute response times to any end user who leaves an IT assistance request on a voice mail message⁵.

Evanston Northwestern Healthcare made what it calls “a massive investment” in training as part of a rapid EHR deployment. The role of trainers was not just to teach software, but also to introduce new workflows and radical new ways of performing jobs. Evanston required that anyone whose job would require them to “touch” the system attained a level of competency that surpassed the vendor's own end user standards. This included physicians, who were required to undergo 16 to 24 hours of training and pass a competency examination. A scaled down version of the training programs remained in place to teach new hires, students, and house staff to use the system and to prepare them for software upgrades and enhancements⁶.

At **Citizens Memorial Healthcare** (CMH), a key to the success of their CPOE implementation was one-on-one training with physicians for each phase with staff skilled in communication and clinical areas. Training was conducted whenever and wherever physicians requested in 30-minute sessions. Follow-up was done during rounds at the hospital. CMH provides a physician resource room on the Medical/Surgical floor with computers for physician use only and privacy in composing notes and ordering online. This room also provides a central location for physicians to interact with support staff. The room was staffed full-time during the implementation and is still staffed for two hours each morning by an IS Specialist or Super user.

Also, CMH launched HealthStream online learning system to provide ongoing education on the new computer system. Any upgrade to the system now requires the re-education of literally hundreds of employees that work in geographically dispersed locations on varied shifts. Orientation for nurses is delivered through a combination of online training courses, classroom training and one-on-one training by application Super users⁷.

Incorporation of Redesigned Workflows

Almost every clinical and administrative process will be impacted by the EMR implementation at Rainier Healthcare. The integration between inpatient and ambulatory departments, as well as between clinical and administrative processes, will require the project team to review and to redesign those processes.

There will be a high degree of interdependencies between the large number of processes and applications that will be implemented together.

The future state vision of the operational EMR environment will rely on automated workflow to manage redesigned processes, executed by hospital personnel with integrated roles and responsibilities. EMR training focused on roles and workflow will show how newly designed or modified processes will be executed by one or many individuals and be supported by information technology.

Workflows are the related tasks and people involved in accomplishing various types of patient encounters. Each encounter type generally has a series of tasks that are performed within the steps before the encounter, at check-in, during treatment, during check out and post-encounter. There is a wide variety of specific combinations of steps that can be connected as a workflow, depending on the type and setting of where the care is provided, and at what step the providers and the patients are within the continuum of care as shown by the table of examples below.

Clinical Care / Settings	Steps in Continuum of Care	Possible Tasks Within Defined Step
• Hospitalization • Emergency room • Intensive care unit • Clinic appointment • Surgery • Cardiac unit • Labor & delivery • Chemotherapy ○ In-patient (short stay) ○ Outpatient • Rehabilitation therapy	• Schedule appointment • Admission • Patient evaluation ○ Initial ○ Daily rounds • Consultation • Bedside procedures • Pre-op/pre-procedure preparation of a patient • Specialized procedures • Transfer or discharge	• Locate patient • Gather data • Evaluate data • Examine patient • Determine next step in patient care • Document findings and decisions • Write progress/nurses' notes • Create clinical orders • Perform procedures as needed • Write prescriptions • Prepare discharge summary

“Clinical Workflow is an established process describing a series of tasks - how they are accomplished, by whom, in what sequence, at what priority - that accomplishes a defined step in an activity in the clinical care of patients.⁸”

There are hundreds of workflows that exist based on the various permutations of the setting, steps and tasks. A significant amount of effort will be devoted during the implementation project to the analysis of the “present state” or “as is” processes, particularly to manage the transition from paper charts to electronic medical records. It is anticipated that a variety of “defects” will be revealed in these existing processes, including redundancies, resource bottlenecks, delays, activities requiring excessive effort and other shortcomings. The redesign of “future state” or “to be” processes will focus on eliminating any wasted effort, improving quality and methods for measuring effectiveness. The full list of workflows to

be analyzed and redefined will be managed by the Organizational Readiness Team, and will be a key input to the training program.

EMR Capabilities Supporting Workflows

Clinical workflows describe sets of tasks, some of which do not involve interaction with the new EMR and others that do. The following table is an inventory of selected capabilities of the EMR which will be accessed as appropriate during workflow execution.

Key EMR Capabilities
• Scheduling • Chart creation and maintenance ○ Vitals signs ○ Chief complaint / problem list ○ Allergies and medications • Admissions/registration • Lab information management • E-signature capture • E-prescribing • Order entry • Nursing documentation • Patient reminder calls • Document scanning & management • Template maintenance and shortcuts • Business Intelligence (reporting and analysis)

The EMR's Workflow management technology provides coordination and assignment of tasks and management of handoffs and information between tasks and participants in the patients' care. It delivers behind-the-scenes automation of process steps, which can promote adoption of best practices designed into the new workflows configured into the EMR.

Assessments of Users' Competencies

Training sessions and content for system users will be organized by role and cover the workflows that each role is involved in during the course of performing their responsibilities. A user involved with many different workflows will potentially utilize several distinct modules and application features of the EMR, and possibly a single feature will be involved in multiple workflows. The team will maintain cross references between roles, workflows and system functions to ensure that training adequately covers the major workflows and features associated with each role.

In order to assess users' progress in gaining comfort and competency with the system capabilities, the team has developed and will maintain competency checklists.

Example of Competency Checklist⁹

Competency Checklist								
Position: _____		Employee Name: _____			Department: _____			
Role: _____								
Method of Instruction Key:		Method of Evaluation Key:		Self-Assessment by Employee			Validation of Competency	
I = Instructor-led Session E = e-Learning Module O = One-on-one training S = Super-user coaching		O = Observation (in clinical setting) T = Written Test V = Verbal Review		Never Done	Needs Review/ Practice	Competency Achieved	Method of Instruction (Use Key)	Date
								Manager
								Evaluation Method (Use Key)
A. Prerequisite computer skills								
Mouse and keyboard								
Basic PC operations								
Browser navigation								
Windows and Office applications								
Etc.								
B. EMR system access								
Signon								
Access authorized modules and functions								
Navigate between screens and applications								
Commonly used buttons and function conventions								
Etc.								
C. Access patient information								
Patient search and select								
View and print basic information								

Competency checklists will be guidelines to keep track of individuals' learning objectives. The training sessions will be organized by scenarios which exercise workflows that include system functions. The competency checklists will be focused on the set of system capabilities the individual is required to master, including basic computer skills, in case the user has not had significant exposure to automated systems in the past. The checklist will allow the employee to enter a self-assessment and a manager to validate competency assessments as part of a broader performance evaluation.

5. Training Delivery Approach

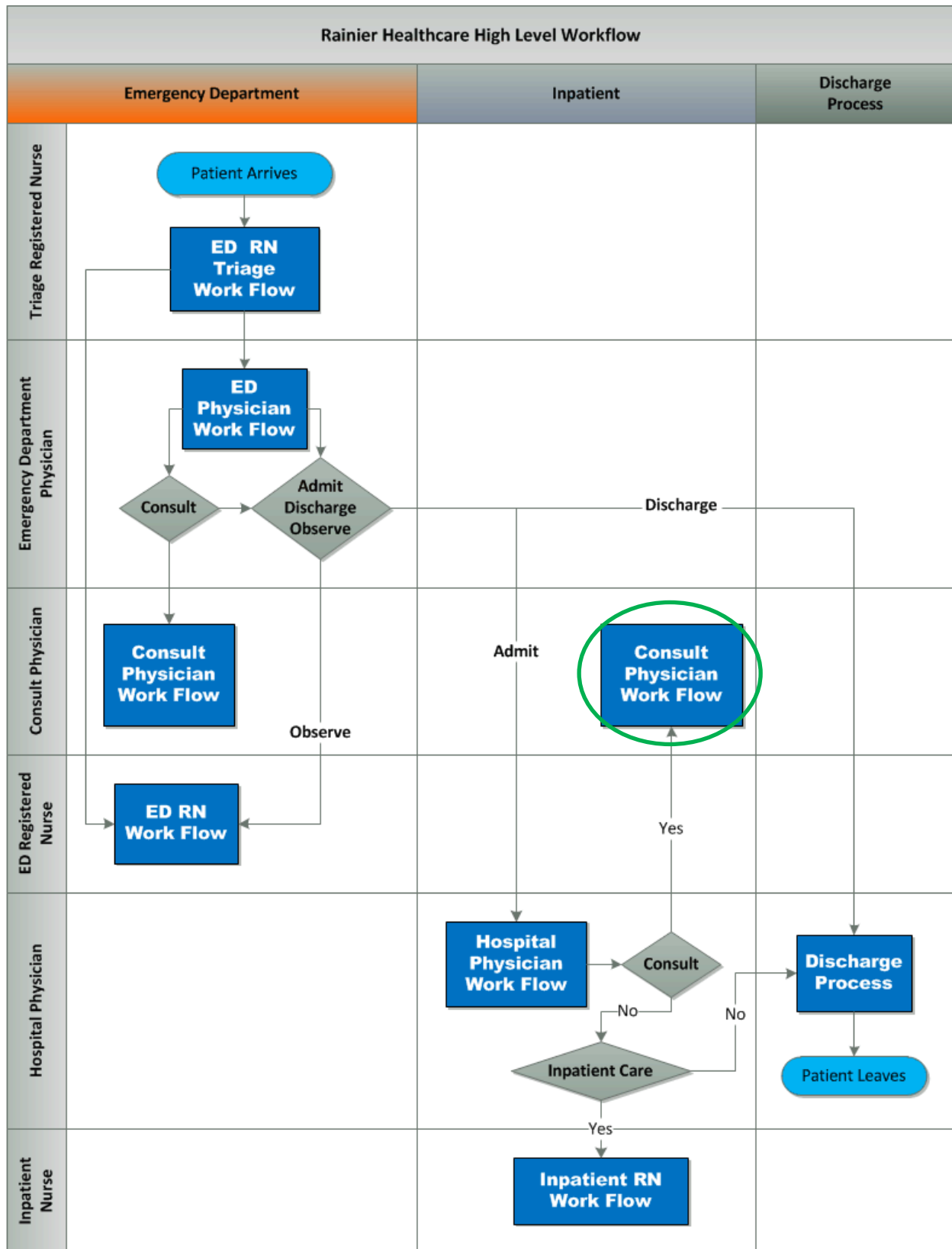
Workflow Scenario Example

How will the EMR integrate and change the way work is done?

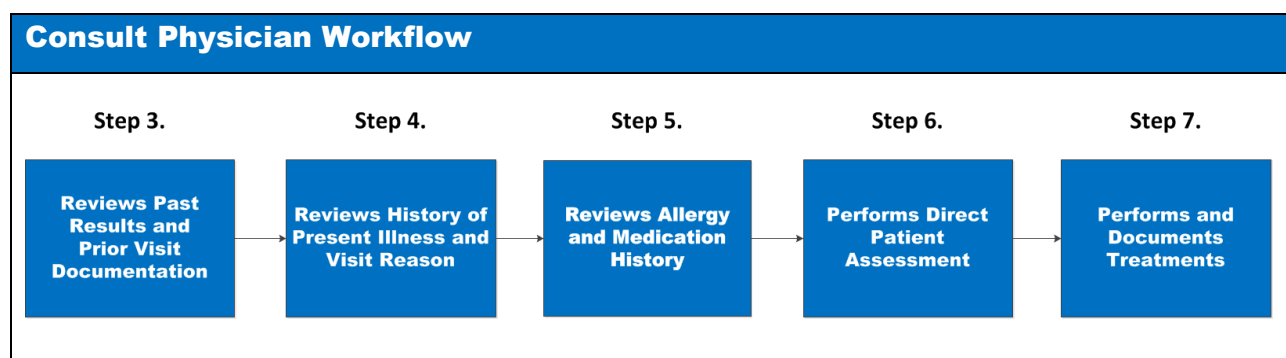
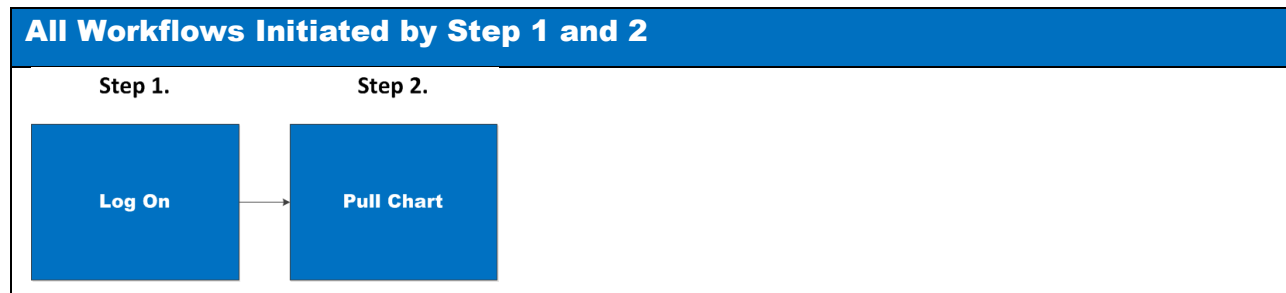
Training will focus on the user's workflow; how users do their jobs. Effective training is about the user role and is workflow based. Users don't need to know every button or feature, the focus is to get them up and running on what they need to do to get their job done. We want users to walk out of class feeling confident they can do their job. If it's relevant and useful for users, then the training is correctly focused.

	Transactional Training	Workflow-Focused Training
Delivery	Covers features and functions	Deliver content relevant to users' job objectives
Focus	System centric	Workflow-based tasks

Hospital Workflow



The subset of the high level workflow to be examined in more detail is the Consulting Physician Workflow circled in the figure above. Specific steps within that workflow are broken out in the diagram below.



Combining Workflow with Patient Progress

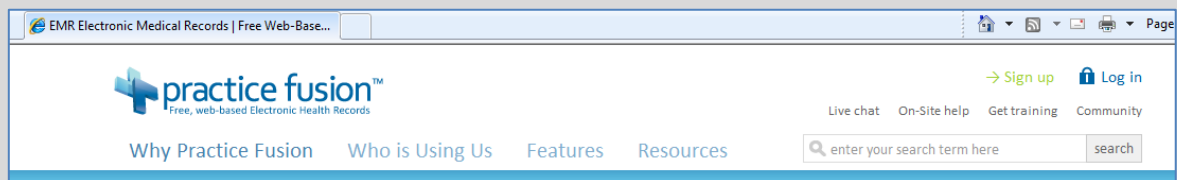
The following is a Physician/Patient Encounter training manual excerpt.

The Patient Scenario	
Current Complaint	65-year-old female was transported to the Emergency Room via ambulance with severe left hip pain after following a fall on the ice.
Past History	Patient suffered a Colles' fracture two years earlier that required a cast. Following this fracture, her orthopedist diagnosed her with moderate osteoporosis on the basis of a dual energy x-ray absorptiometry.
Signs and Symptoms	Patient reported severe left hip pain, rating it as 8 on a scale of 1 to 10. She held her hip in a flexed position and could not tolerate extension. Radiography of the left hip and leg were taken.
Diagnosis	Pathologic fracture in the proximal end of the left femur.
Treatment Recommended	Total hip replacement on the left.

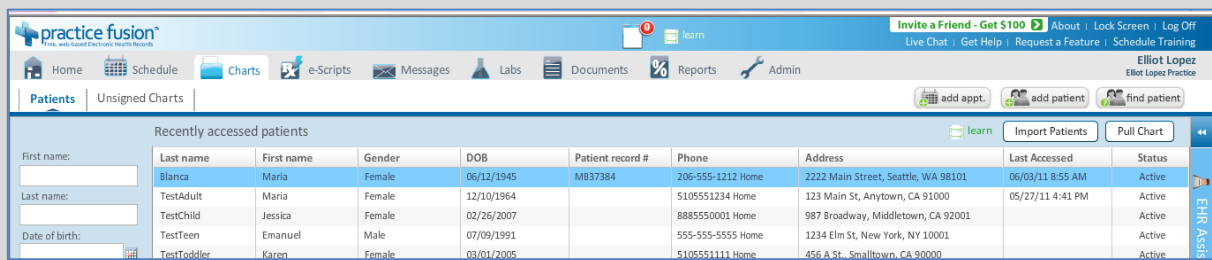
The steps are a series of screen shots illustrating what a Physician may see as they go through the EMR screens during an encounter.

Note: Practice Fusion¹⁰ is a free ad-supported EMR system available online. It is used for the following sample screen shots.

Step 1. Log on to the application with your password. The screens available are based on your role.



Step 2. Locate patient record



Continued on following page...

Begin Consulting Physician Work Flow

Step 3. Review past results and prior visit documentation

Past Medical history

The screenshot shows the 'Past Medical History' form for Maria Blanca, age 74 yrs, DOB: 06/12/1936. The form is part of the Practice Fusion interface, which includes a top navigation bar with links like Home, Schedule, Charts, e-Scripts, Messages, Labs, Documents, Reports, and Admin. A left sidebar contains a menu with options like Patient, Basic, Insurance, Settings, Summary, PMH (highlighted), Dx History, Rx List, Allergies, Adv Directives, Immunizations, Growth, and Events. The main content area is titled 'Past Medical History' and includes sections for Major events, hospitalizations, surgeries; Allergies (free text); Ongoing medical problems; Family medical history; and Preventative care. The 'Major events, hospitalizations, surgeries' section contains a text box with the entry: 'Patient suffered a Colles' fracture two years earlier that required a cast'. The 'Allergies (free text)' section is empty. The 'Ongoing medical problems' section contains a text box with the entry: 'Moderate osteoporosis'. The 'Family medical history' section is empty. The 'Preventative care' section contains a text box with the entry: 'High blood pressure'.

practice fusion[®]
Free, web-based Electronic Health Records

Home Schedule Charts e-Scripts Messages Labs Documents Reports Admin

Patients Unsigned Charts Maria Blanca ✕

Patient Basic Insurance Settings Summary PMH Dx History Rx List Allergies Adv Directives Immunizations Growth Events

Maria Blanca age 74 yrs DOB: 06/12/1936 Print Edit

Past Medical History A A A ABC Spell Check is off

Major events, hospitalizations, surgeries
Patient suffered a Colles' fracture two years earlier that required a cast

Allergies (free text): learn

Ongoing medical problems:
Moderate osteoporosis

Family medical history:

Preventative care:
High blood pressure

Diagnosis History

The screenshot shows the 'Diagnosis History' form for Maria Blanca, age 74 yrs, DOB: 06/12/1936. The form is part of the Practice Fusion interface, which includes a top navigation bar with links like Home, Schedule, Charts, e-Scripts, Messages, Labs, Documents, Reports, and Admin. A left sidebar contains a menu with options like Patient, Basic, Insurance, Settings, Summary, PMH, Dx History (highlighted), Rx List, Allergies, Adv Directives, Immunizations, Growth, and Events. The main content area is titled 'Diagnosis History' and includes sections for Chronic Diagnoses and Acute Diagnoses. The 'Chronic Diagnoses' section contains a table with the following data:

Diagnosis	Start	Stop
401.1 Benign essential hypertension	03/22/2010	

The 'Acute Diagnoses' section contains a table with the following data:

Diagnosis	Start	Stop
813.41 Fracture, closed, colles'	06/15/2009	
V82.81 Screening for osteoporosis	08/20/2009	

The form also includes a 'Print' button and a 'New' button. The 'Rx medications are off' and 'comments are off' status is displayed. The 'learn' link is also present.

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Free, web-based Electronic Health Records

Home Schedule Charts e-Scripts Messages Labs Documents Reports Admin

Patients Unsigned Charts Maria Blanca ✕

Patient Basic Insurance Settings Summary PMH Dx History Rx List Allergies Adv Directives Immunizations Growth Events

Maria Blanca age 74 yrs DOB: 06/12/1936 Print New

Diagnosis History Rx medications are off comments are off learn

Chronic Diagnoses

Diagnosis	Start	Stop
401.1 Benign essential hypertension	03/22/2010	

Acute Diagnoses

Diagnosis	Start	Stop
813.41 Fracture, closed, colles'	06/15/2009	
V82.81 Screening for osteoporosis	08/20/2009	

Step 4. Review history of present visit and visit reason

Practice Fusion - Windows Internet Explorer

https://pfws.practicefusion.com/apps/ehr/

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Home Schedule Charts e-Scripts Messages Labs Documents %

Schedule

Calendar:

May 2011

S M T W T F S

1 2 3 4 5 6 7

8 9 10 11 12 13 14

15 16 17 18 19 20 21

22 23 24 25 26 27 28

29 30 31

This week

Facility:

Elliot Lopez Practice

Providers:

filter

☒ Elliot Lopez

Phys. / MD / DO

NP / PA

Nurse

☒ Linda Williamson

Staff

☒ select all Just me

Daily calendar Weekly calendar Customize schedule

Elliot Lopez Practice: May 29, 2011 - Jun 4, 2011 Type: All events

	Sun, 29 MAY 2011	Mon, 30 MAY 2011	Tue, 31 MAY 2011
7 am	PN Maria Blanca (Urgent Visit) PN Jessica TestChild (Urgent Visit)		
8 am			
9 am			
10 am			
11 am			
12 pm			

7:00 AM
 type: **Urgent Visit**
 provider: **Linda Williamson**
 status: **Pending**
 patient: **Maria Blanca**
 home: **206-555-1212**
 note: **Signs and Symptoms: Patient reported severe left hip pain, rating it as 8 on a scale of 1 to 10. She held her hip in a flexed position and could not tolerate extension. Radiography of the left hip and leg were taken.**

Step 5. Review allergy and medication history

The screenshot shows the Practice Fusion EHR interface. The top navigation bar includes links for Home, Schedule, Charts, e-Scripts, Messages, Labs, Documents, Reports, and Admin. The patient's name, Maria Blanca, is displayed in the top right. The left sidebar contains a menu with options like Patient, Basic, Insurance, Settings, Summary, PMH, Dx History, Rx List (highlighted), Allergies, Adv Directives, Immunizations, Growth, and Events. The main content area displays the Medication List for Maria Blanca, age 74 yrs, DOB: 06/12/1936. The list shows Current Medications and Past Medications. The current medication is Lisinopril oral tablet 10 mg, started on 05/17/2010, with a diagnosis of (401.1) Benign essential hypertension. The past medications section indicates there are no recorded past medications for this patient at this time.

Medication List

Current Medications

Medication	Start	Stop
Lisinopril oral tablet 10 mg	05/17/2010	

Dx diagnosis: (401.1) Benign essential hypertension started on 03/22/2010

Past Medications

There are no recorded past medications for this patient at this time.

Step 6. Perform direct patient assessment

The screenshot shows the Edit Patient Diagnosis form in the Practice Fusion EHR interface. The form is titled "Edit Patient Diagnosis" and displays the patient's information: Maria Blanca, 74 yrs, DOB: 06/12/1936. The diagnosis section shows the code 733.15 and the description "Pathologic fracture of other specified part of femur". The start date is 06/03/2011, and the stop date is empty. The "Acute" checkbox is checked. The comment section contains the text: "Pathologic fracture in the proximal end of the left femur. Treatment recommended: Total hip replacement on the left. Set up appointment for her to see orthopaedic surgeon".

Edit Patient Diagnosis

Patient:

Maria Blanca 74 yrs DOB: 06/12/1936

Diagnosis:

Code: 733.15

Diagnosis: Pathologic fracture of other specified part of femur

Start date: 06/03/2011 Start today

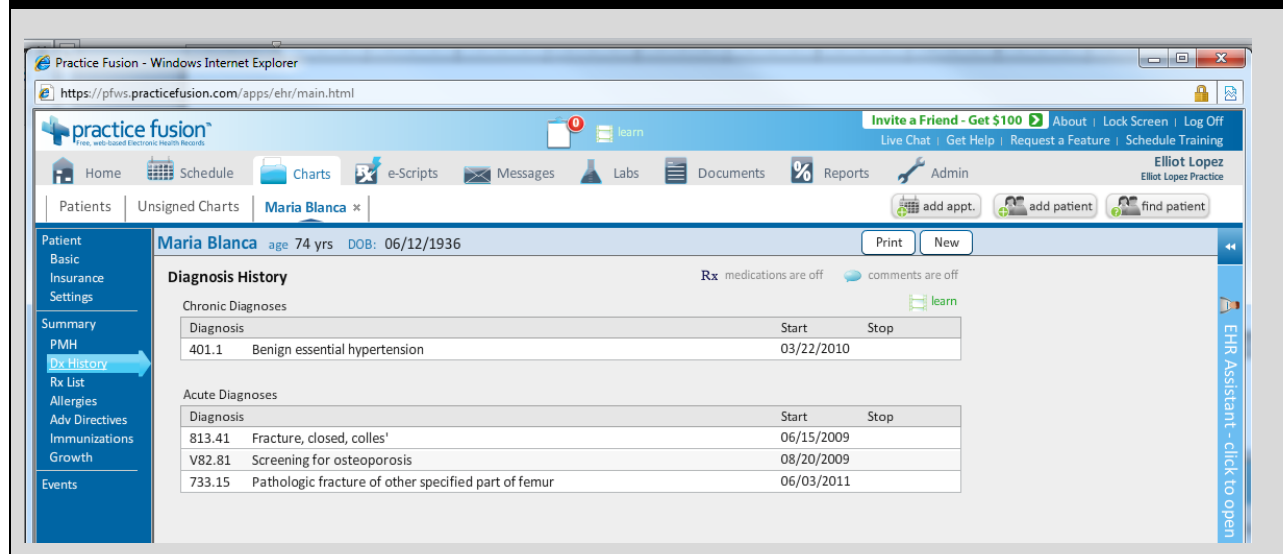
Stop date: Stop today ☒ Acute

Comment:

Pathologic fracture in the proximal end of the left femur.
Treatment recommended: Total hip replacement on the left.
Set up appointment for her to see orthopaedic surgeon

Previous comments on this diagnosis:

Step 7: Perform and document treatments



Training Delivery Methods

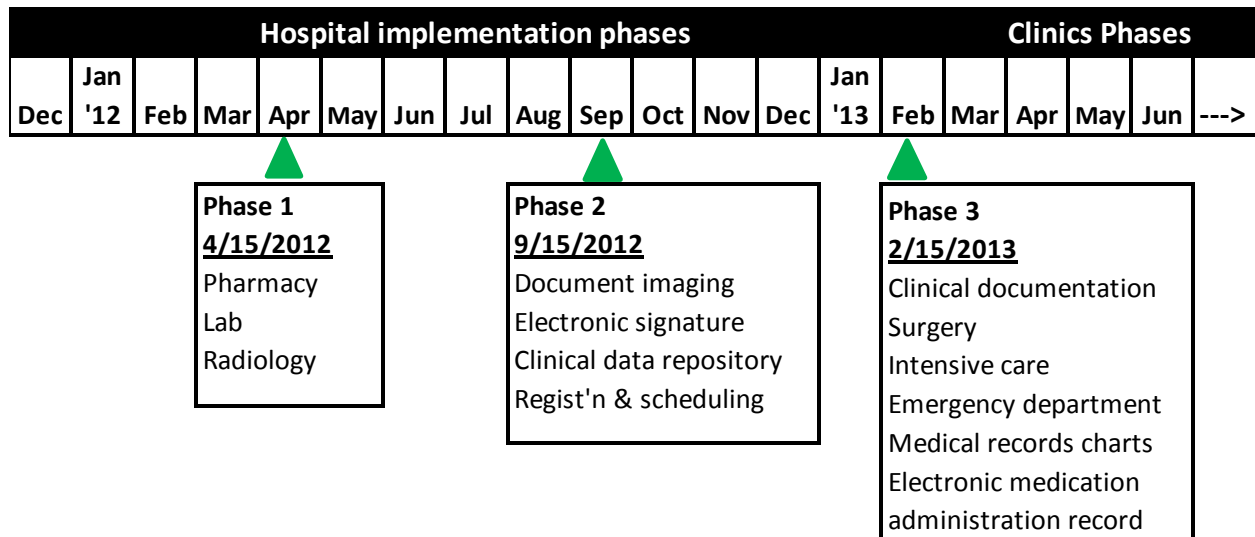
All clinical staff will be required to attend training and demonstrate competency on the EMR functions relevant to their role. Staff will attend training prior to being granted access to the system and as part of any system upgrade. The methods in which instruction will be delivered include:

- Web-based tutorials, most appropriate for higher level, more general concepts
- Instructor-led classroom training workshops, facilitated by clinical subject matter experts as well as training team members with expertise on the EMR functionality to be covered
- One-on-one short training sessions with physicians for each phase of the project led by super users, focused on clinical care and efficient interactions with the EMR applications
- “Just-in-time” refresher workflow and EMR sessions in the time frame very close to the go live milestone for the implementation phase
- On-request support for assistance or clarification during the time frame right after go live
- Training on advanced features and new enhancements in post go live and ongoing timeframes, offered as appropriate in web-based or instructor-led methods

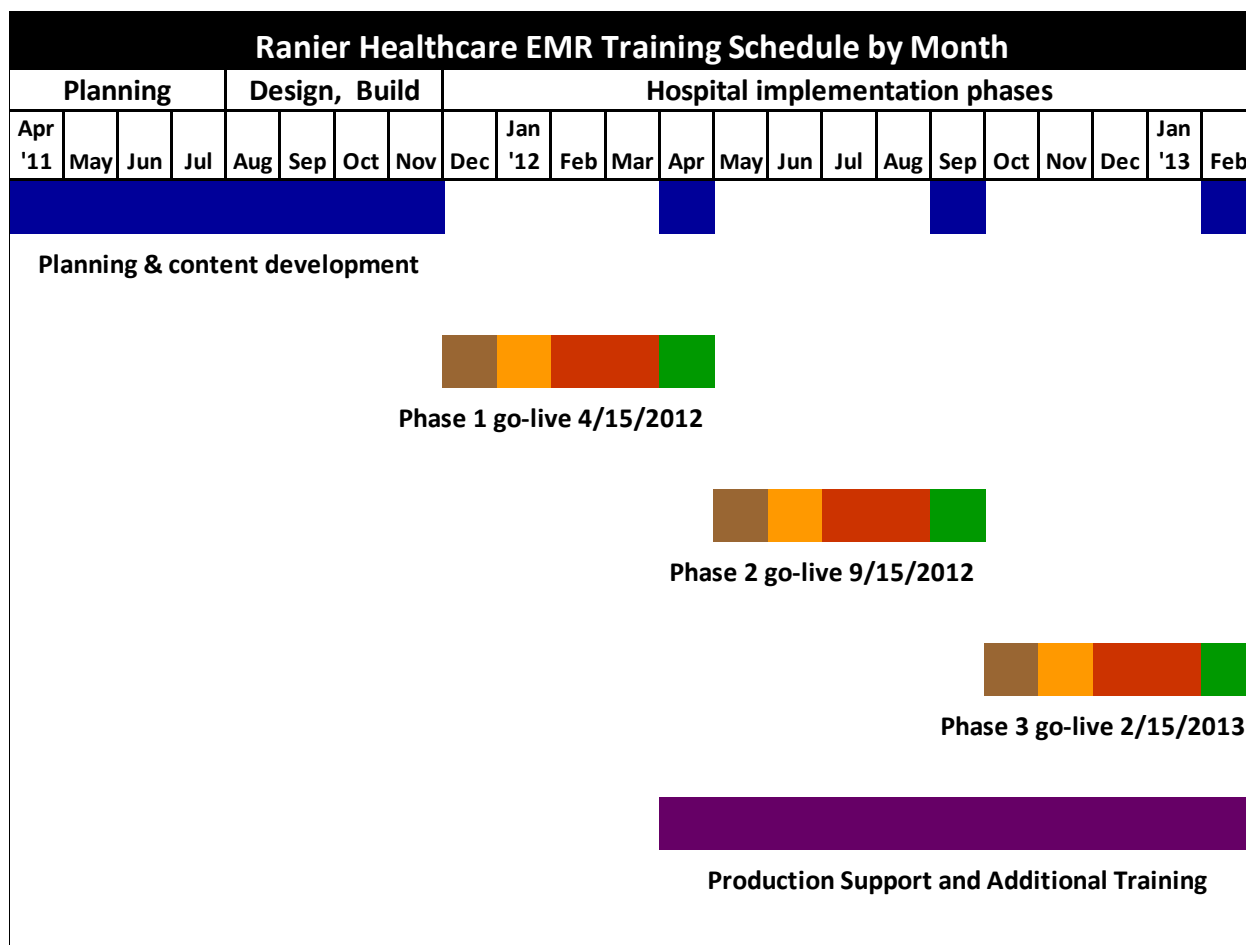
There will be multiple ways that the team will distribute the education materials used in these sessions, as well as user guide documents and “tip sheet” flyers designed to be readily available for quick reference while the user is at a workstation. Posters will be placed in the staff work spaces to provide reinforcement of mission and vision, and reminders where to find more information on the hospital intranet and how to contact the right resources to answer questions.

Timelines to Develop Content and Deliver Training

The working project plan calls for a 3 phased implementation of the EMR within the hospitals, followed by rollout of applications to the physician clinics. The timeline and the scope of the hospital phase go live milestones extends over a fifteen month period after project planning, design and build phases are completed. The physician clinics will be implemented in subsequent phases. It is anticipated that scaled down training approaches for hospital phases will be taken for each clinic.



The delivery of training sessions will be aligned with these go live milestones, with flexibility to adjust if the phasing schedule changes. The timeline below shows the timeline for continued planning of the training program, development of materials and the relative time frame of the types of training delivered associated with a go live milestone.



Activities color key	
	Planning & content development
	Leadership sessions
	User sessions web & instructor
	User instructor-led & practice
	"Just-in-time" training & support
	Production support & add'l training

Training Development and Delivery Personnel Resources

The training department will continue to collaborate with project management to develop more detailed estimates of the resources required over time in order to execute on the plan described in this document. The roles and general level of involvement include the following working assumptions:

Role	Level of Involvement Assumptions
Training Director	1 person, nearly full time throughout the project
Training Manager	1 to 2 people, nearly a full time equivalent throughout the project
Training Analyst	Starting with 2 person in first phase, add 1 person per phase
Technical Application Lead	Multiple individuals, at different points in time, to provide EMR application expertise input and review of training content
Organizational Readiness Team Liaison	1 person part time to coordinate training activities with workflow redesign and testing
Physician and Nursing Subject Matter Experts	Super users with defined responsibilities to be involved in early training sessions and to act as trainers. Number of people and duration of participation will be dependent on phase of implementation

6. User Feedback and User Community Tools

User Feedback and Feedback Loop

Training does not stop at the end of the sessions. Successful user adoption and ownership requires an on-going follow-up and follow-through. Feedback and continued training are absolutely essential. As part of a successful implementation of an EMR initiative, the training team needs feedback from the user community on the success or failure of the training received. This is vital to provide information for continuous improvement of the training program. During the implementation phase, this feedback will provide the instructors and program designers an understanding of the end user experience needed to increase their effectiveness. Such improvements can be immediately enjoyed by the later implementation phases. This also establishes the communication process between the users and their internal support team. Trainee feedback is a great way to evaluate the training program.

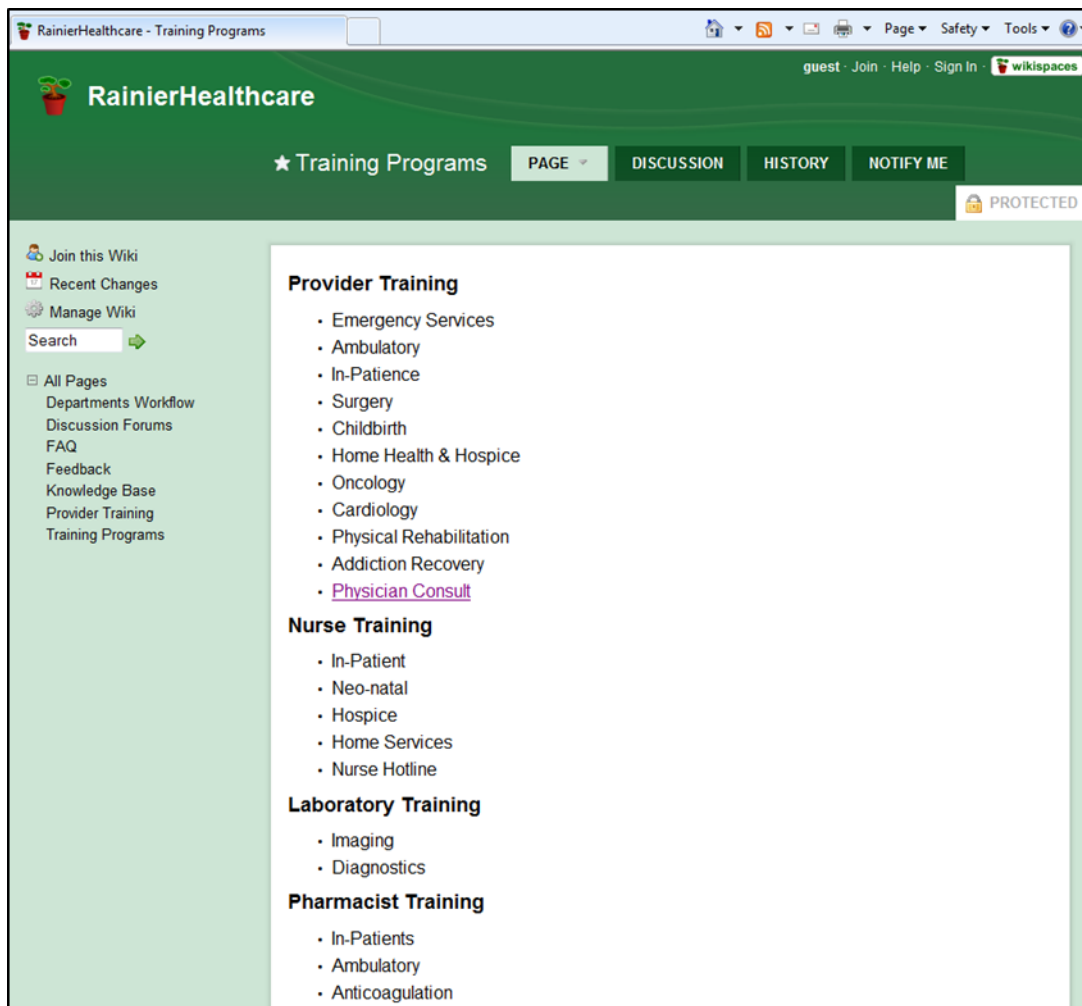
Training Workshop Evaluations

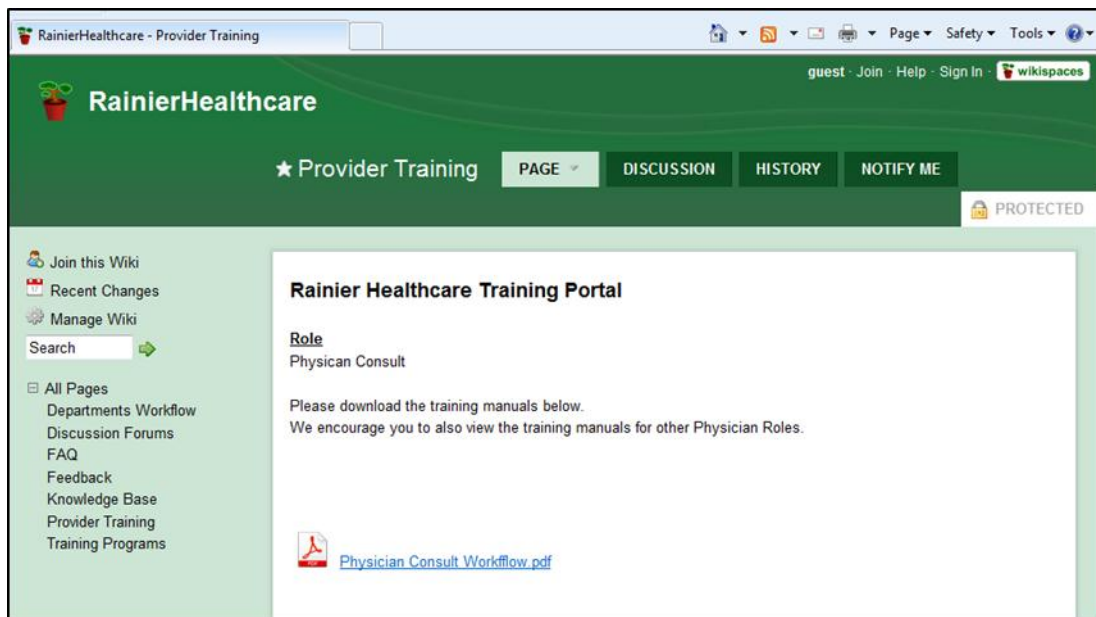
After each training workshop, the trainees will be provided with evaluations to provide information on the effectiveness and appropriateness of the training received. When designing the evaluations, a few things will be kept in mind. First, what is the overall outcome of the workshop expected? Next, what would be considered a successful workshop? Another, what can the entire organization learn or benefit from the workshop? It is important that all trainees are provided with enough time - and are required - to complete the evaluation. Since the project at hand is to convert paper-based medical record keeping system to EMR, it is appropriate to conduct an electronic version of such evaluations. These workshop evaluations will be collected and analyzed by the training design team. Each one-on-one or classroom workshop session should have goal. The evaluations should be designed to allow a qualitative and quantitative measure of meeting such a goal.

Intranet Training & Support Web Site¹¹

This is a repository of useful information. It is an intranet (used within the organization) that a user can go to to get reference material to use the EMR system effectively. It provides many resources that the users can access for support and to supplement the training program. In fact, it should be viewed as part of the on-going training. Almost always, users can only absorb and internalize a percentage of the materials delivered. It is important to provide the users additional detailed information as well as the original training materials and syllabus. It also can host online self-paced continuing education courses for the EMR system. This will provide maximum flexibility to accommodate a range of user competencies and learning speeds.

It can also be a place where departments can provide online mini-training curriculum on workflow changes. It will be constructed as a wiki, which means that the users are creators, contributors and editors of the content of the pages.¹² The content and the use of this wiki can be limitless.





Examples of the healthcare portal intranet and wiki uses include:

- Discussion forums
- Workflows for each department by function and role (e.g. primary care, patient consultation, physician; medication change, pharmacist)
- Frequently-asked-questions (FAQs)
- Additional online training
- Knowledge base
- Upgrade training on new functionality

Discussion Forum

Discussion forum is a general term for online “bulletin board”. Users can post questions and answers. The distinguishing feature of a discussion forum is the monitoring of the forum by subject matter experts (SMEs). The SMEs are either super users or support staff members based on department groups (e.g. oncology), functions (e.g. ordering lab works), or roles (e.g. RN). Not only can the users ask questions or voice their concerns, but the forum also provides a sense of community that will increase buy-in.

Workflow Diagrams

Workflows are the related tasks people do to accomplish an objective. Each encounter type generally has a series of tasks that are performed, specifically designed for the departments and functional groups. Switching from current paper-based routines, or practice patterns, to an EMR system will require fairly significant change in such routines. New routines, or workflows, will be designed and staff members will be trained on them. Use of workflow diagrams is an effective way to communicate the steps involved. Workflows reinforce the use of the EMR system, and graphically illustrate how each

department works. This is especially important in training a new hire. If the department incorporates a new workflow, it can also publish that changed workflow via the wiki.

For example, consider the case when a department manager decides that a modification will be needed in a workflow. She can announce and explain it to the staff during their department meeting and tells them that a workflow diagram is also available on wiki. The diagram will illustrate details of the change and how users will interact with the EMR system to reflect the change.

7. Project Summary and Conclusions

Impact to Healthcare Providers

Change management and training play an essential part in the success of information technology solutions involving end users. The EMR system at Rainier Healthcare will enable providers to deliver better-informed, more efficient and safer diagnostic and therapeutic treatment for patients. EMR directly supports the mission of our healthcare providers to care for individual patients as well as a broader role in improving the health of larger populations of people.

Effective training can help users understand their role, the process workflows they are involved in and their interactions with information technology, including how their work contributes to the success of their department and Rainier Healthcare. More tactically, training helps users understand changes to policies and procedures and how they will do their job in the future. Before using the system in a live production environment, users need to be familiar with the specific type of information they will work with in the system by developing and practicing the skills required for them and the system implementation to be successful and begin to deliver the desired benefits of the implemented EMR.

Next Steps

We anticipate that the training team will be involved from this early point in the implementation project for the duration of the phased go-live implementation activations of various EMR modules across all the departments and facilities within scope. We also will be involved for post-implementation support, advanced training and new user orientation training.

The phased approach means that training for each set of users will also be scheduled in stages around each of the go-live milestones, with a staggered plan for each go-live to support pre-live training, go-live support and post-production reinforcement training and orientation for new users. This means that after the first go-live, the team will simultaneously be supporting different user groups in different levels of maturity of their EMR experience. The management of training resources will need to have the right structure and also a great deal of flexibility to support the key milestones, but also to adapt quickly as the schedule shifts and users' needs change. Team members will need to hone their qualities of perseverance and patience.

Our efforts will have direct implications to how well the hospital achieves the goals and expected return on investment for the EMR implementation.

End Notes

¹ Falkenburg, N.(2004, Dec. 4) Report From the Field: Insights by Community Clinics on Information Technology Adoption. *Community Clinics Initiative*, p.3 Available from <http://www.communityclinics.org/content/article/detail/708>

² Change Management Strategies for an Effective EMR Implementation By Claire McCarthy, C. and Eastman, D. (2010). Change Management Strategies for an Effective EMR Implementation, *Healthcare Information and Management Systems Society*

³ “EMR Success: Training is the Key” article in The Connected Physician, by Robert Lowes, May 7, 2004

⁴ HIMSS Davies Award, Awarding IT: Improving Healthcare, accessed May 1, 2011, <http://www.himss.org/davies/about.asp>

⁵ HIMSS Davies Award, Davies Organizational Award Recipient Manuscripts, Cincinnati Children’s Hospital Medical Center, accessed May 1, 2011, http://www.himss.org/content/files/davies_2003_cincinnati.pdf

⁶ HIMSS Davies Award, Davies Organizational Award Recipient Manuscripts, Evanston Northwestern Healthcare, accessed May 1, 2011, http://www.himss.org/content/files/davies2004_evanston.pdf

⁷ HIMSS Davies Award, Davies Organizational Award Recipient Manuscripts, Citizens Memorial Healthcare, accessed May 1, 2011, http://www.himss.org/content/files/davies/2005/CMH_FULL_APPLICATION.pdf

⁸ Massachusetts Technology Collaborative website, “Essentials of Clinical Workflow Analysis presentation, CPOE University, Course Descriptions, accessed May 28, 2011, http://www.masstech.org/ehealth/CPOE%20University/courses_2009_2010/WFA.pdf

⁹ University of Connecticut Health Center, Department of Nursing, Competency Checklist, accessed June 2, 2011, http://nursing.uchc.edu/Competency_Checklists/index.html

¹⁰ Practice Fusion website, accessed May 30, 2011, www.practicefusion.com

¹¹ Rainier Healthcare website, accessed May 30, 2011, <http://rainierhealthcare.wikispaces.com/Training+Programs>