Curriculum Development Centers Program

Awardee of The Office of the National Coordinator for Health Information Technology

HEALTH IT WORKFORCE CURRICULUM
COMPONENT BLUEPRINT
Version 3.0/Spring 2012

Component Number: 11
Component Name: Configuring Electronic Health Records

Component Description: This component provides a practical experience with a laboratory component (utilizing the VistA for Education program) that will address approaches to assessing, selecting, and configuring EHRs to meet the specific needs of customers and end-users.

Assigned Institution: Oregon Health & Science University
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Workforce Roles:

- Implementation Managers
- Implementation Support Specialist
- Practice Workflow and Information Management Redesign Specialist
- Technical/Software Support

Component Objectives:
At the completion of this component, the student will be able to:

1. Describe the process of migration to an electronic health record (EHR) from the perspectives of organizational strategy, planning, analysis of EHR options, decision-making techniques, training, and implementation strategies.
2. Discuss the migration path from a paper to an electronic health record with an emphasis on organizational strategy to implementation, including meaningful use criteria.

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3. Discuss the importance and use of clinical decision support systems for clinical and administrative use.
4. Given an EHR system, configure the system to achieve features required for meaningful use. The course includes VistA simulation EHR environment lab exercises for:
   a. Patient care clinical workflow
   b. Implementing clinical decision support
   c. Building order sets
   d. Utilizing data entry templates
   e. Health summary and clinical reminder reports
5. Understand clinical workflows from multiple clinician perspectives, and in different clinical settings.
6. Understand concepts of privacy and security as applied to the EHR, including regulatory frameworks, risk management, authentication and authorization, user passwords, and physical security of systems.
7. Describe security issues with mobile and medical devices, and elements of disaster preparedness and disaster recovery.
8. Discuss the migration path from a paper to an electronic health record with an emphasis on organizational strategy to implementation, including meaningful use criteria.

Component Units with Objectives and Topics

Unit 1: Migration to an Electronic Health Record System

Description:
This Unit focuses upon the process of migrating to an Electronic Health Record System, and the Electronic Health Record life cycle.

Objectives:
1. Describe the process of initial planning, including identification of stakeholders, champions, management and implementation teams, and determining appropriate members for a steering committee (Lecture a)
2. Develop a timeline for choosing and implementing an electronic health record, including defining the scope of implementation, budget estimates, and additional critical steps to build a basic strategic plan for implementation (Lecture a, b)
3. Develop functional requirements, including a workflow analysis and a gap analysis, and recognizing when to bring in expertise (Lecture a)
4. Develop and applying criteria for selecting an appropriate vendor for the electronic health record including (Lecture b):
5. Generate an RFI/RFP
6. Select an appropriate system, including utilizing an appropriate ranking model
7. Generate interface requirements

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8. Compare and contrast EHR solutions (e.g. locally hosted versus cloud solutions)
9. Negotiate a contract (Lecture b)
10. Develop a training plan (Lecture b)

Topics/Lectures:
1. Initial planning and project development
2. Developing functional requirements
3. Developing and applying criteria for selecting an appropriate vendor for the electronic health record

Unit 2: Patient Care Clinical Workflow; Multiple Perspectives of Patient Care (VistA Demo)

Description:
This unit introduces the student to patient care clinical workflows from multiple perspectives. A brief lecture introduces the concept of workflows and their relevance to EHR implementation. The lab exercises in this unit focus on the patient, and demonstrate the use of EHRs through the workflows of clinicians and ancillary care providers in the outpatient, inpatient, and emergency department settings. The lecture in this unit compares workflows from a paper and EHR perspective. The focus in this unit is on change management.

Objectives:
1. Register a patient in a VistA simulation EHR environment. (Lab Exercise 1)
2. Enter vitals and chief complaint as a Medical Assistant in a VistA simulation EHR environment. (Lab Exercise 1)
3. Enter a progress note as a Physician in a VistA simulation EHR environment. (Lab Exercise 3)
4. Enter nursing notes and implement physician orders as a Registered Nurse in a VistA simulation EHR environment. (Lab Exercise 2)
5. Understand the importance of clinical workflows in the functioning of EHRs. (Lecture, Lab Exercise 1,2, 3)

Topics/Lectures:

1. Define clinical workflows and discuss how implementing EHR affects workflows with examples
2. Demonstrate EHR use from multiple clinician perspectives, with an emphasis on clinical workflows

Unit 3: Implementing Clinical Decision Support (VistA Demo)

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Description:
This unit discusses implementing clinical decision support, which broadly refers to providing clinicians or patients with computer-generated clinical knowledge and patient related information, intelligently filtered and presented at appropriate times, to enhance patient care. A short lecture is followed by a series of hands-on lab exercises through which students will learn how to configure and use three tools for decision support implemented in the EHR: Alerts or Notifications, Order Checks and Clinical Reminders.

Objectives:
1. Define and discuss clinical decision support (Lecture)
2. Describe, view and create Alerts/Notifications in a VistA simulation EHR environment (Lecture, Lab Exercise 1)
3. Describe, view and create Order Checks in a VistA simulation EHR environment (Lecture, Lab Exercise 2)
4. Describe, view and resolve Reminders in a VistA simulation EHR environment (Lecture, Lab Exercise 3)
5. Discuss the value of these EHR functions as clinical decision support tools (Lecture)

Topics/Lectures:
1. Alerts/Notifications
2. Order Checks
3. Clinical Reminders
4. Use of these elements as Reminders as clinical decision support tools

Unit 4: Building Order Sets (VistA Demo)

Description:
This unit identifies the value of order sets as a quality control/quality improvement mechanism and an efficiency tool in clinical settings. Typically, order sets are created by clinicians with expertise in treatment plans. Through a series of lab exercises, students will learn how to take those treatment plans and implement them into specific order sets within the VistA simulation EHR system.

Objectives:
1. Define and describe an order set (Lecture)
2. Describe the benefits and costs associated with order sets (Lecture)
3. Demonstrate the ability to build a variety of order sets in the VistA simulation EHR environment (Lab Exercises 1-3)

Topics/Lectures:
1. Building order sets
2. Creating and customizing order (menu) screens

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3. Creating laboratory quick orders
4. Creating medication quick orders
5. Combining quick orders in an order set

Unit 5: Creating Data Entry Templates (VistA Demo)

Description:
Templates are important tools in the collection of data manually entered into Electronic Health Record systems. When implemented appropriately, they can help to standardize the data entered into the system, provide controls that ensure the quality of the data captured, and provide data capture efficiencies through effective design and use. This unit provides a brief lecture followed by lab exercises that will provide the student with practical experience creating and using data entry templates

Objectives:
1. Access and use the template editor (Lab Exercise 1)
2. Effectively use the different field controls to promote data quality and efficiency of data entry (Lecture, Lab Exercise 1)
3. Design, create and view Personal and Shared Templates for data entry (Lab Exercise 2 & 3)
4. Describe how the effective use of data entry templates supports quality care, patient safety and efficiency (Lecture)

Topics/Lectures:
1. Appropriate use and benefits of data entry templates
2. Document templates
3. Shared templates
4. Personal templates

Unit 6: Health Summary and Clinical Reminder Reports (VistA Demo)

Description:
The ability to quickly retrieve information from the EHR is a key function. Two reporting tools commonly implemented in EHR systems to support information retrieval are [1] the ability to generate standard reports that provide widely used information and [2] the ability to quickly create *ad hoc* reports to access information to meet more specific needs. In this unit, the student will learn the attributes of quality information and engage in lab exercises creating Health Summary and Clinical Reminder reports - two basic types reports found in the EHR.

Objectives:
1. Design, view and create Health Summary reports in the VistA simulation EHR environment. (Lecture & Lab Exercise 1)

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2. Design, view and create Clinical Reminder reports in the VistA simulation EHR environment. (Lecture & Lab Exercise 2)
3. Design, view and create ad hoc reports. (Lecture & Lab Exercise 1)
4. Describe how quality reporting functions in an EHR supports quality care, patient safety and efficiency. (Lecture)
5. Define the attributes of quality information. (Lecture)

Topics/Lectures:
1. Ad hoc health summary reports
2. User-customized health summary reports
3. Clinical reminder reports
4. Attributes of quality information
5. Benefits of quality reporting from an EHR

Unit 7: Privacy and Security in the US

Description:
This unit introduces the basic concepts of privacy and security and the surrounding regulatory requirements for health information. In addition, the concepts of risk management, authentication methods and malware will be introduced, as well as issues of physical and secondary device security.

Objectives:
1. Compare and contrast the concepts of privacy and security (Lecture a)
2. List the regulatory frameworks for an EHR (Lecture b, c)
3. Describe the concepts and requirements for risk management (Lecture d)
4. Describe authentication, authorization and accounting (Lecture d)
5. Describe passwords and multi-factor authentication and their associated issues (Lecture d)
6. Describe issues with portable devices (Lecture d)
7. Describe elements of disaster preparedness and disaster recovery (Lecture e)
8. Describe issues of physical security (Lecture e)
9. Describe malware concepts (Lecture f)

Topics/Lectures:
1. Privacy and security concepts
2. Regulatory requirements for health information
3. Risk management
4. Authentication, authorization and accounting
5. Portable devices
6. Physical security
7. Malware

Unit 8: Meaningful Use and Implementation

This material was developed by Oregon Health & Science University, funded by the Department of Health and Human Services, Office of the National Coordinator for Health Information Technology under Award Number IU24OC000015.

Description:
This unit describes the meaningful use program of the Health Information Technology for Economic and Clinical Health (HITECH) Act of the American Recovery and Reinvestment Act (ARRA) from the vantage point of the VistA simulation electronic health record (EHR). It discusses eligibility for meaningful use incentive payments and the criteria for achieving those payments in Stage 1 of the program. It shows examples of some of the criteria from within screens of the VistA simulation EHR environment.

Objectives:
1. Describe meaningful use (MU) of health information technology in the context of the Health Information Technology for Economic and Clinical Health (HITECH) Act (Lecture a)
2. Define the criteria for Stage 1 of meaningful use for eligible professionals and eligible hospitals (Lecture a)
3. Demonstrate examples of meaningful use using the VistA Electronic Health Record (EHR) (Lecture b)

Topics/Lectures:
1. Requirements for meaningful use
2. Implementation of meaningful use
3. Core and menu criteria for Stage 1 of meaningful use for eligible professionals and eligible hospitals
4. Examples of meaningful use using the VistA simulation EHR environment

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