Curriculum Development Centers Program

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

HEALTH IT WORKFORCE CURRICULUM
COMPONENT BLUEPRINT
Version 2.0/Spring 2011

Component Number: 10

Component Name: Fundamentals of Health Workflow Process Analysis & Redesign

Component Description (from FOA): Fundamentals of health workflow process analysis and redesign as a necessary component of complete practice automation; includes topics of process validation and change management.

This entire Component is estimated to require 20 total contact/instructional hours plus 40-60 additional hours of independent or team work, depending on the learning activities and assessments used within each unit.

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Workforce Roles:
Health IT Roles to Which this Content Applies:

- Practice workflow and information management redesign specialist
- Clinician/practitioner consultants
- Implementation support specialists

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

1. Identify the elements involved in providing patient care within a complex health care setting that must be taken into consideration when examining and proposing changes in workflow processes.
2. Create diagram of processes in the healthcare setting that support workflow analysis and re-design.
3. Critically analyze the workflow processes in a selected health care setting to determine their effectiveness from the perspective of those being served (i.e., patients), those providing the services (i.e., professional and non-professional staff), and the organization's leadership (i.e., decision makers).
4. Propose ways in which quality improvement methods, tools and health IT can be applied within a healthcare setting to improve workflow processes.
5. Suggest approaches that would ensure the success of workflow re-design from development and presentation of the implementation plan, to facilitation of decision making meetings, implementation of the changes, evaluation of the new processes, sustainability of new workflow processes, and continuous quality improvement efforts to achieve meaningful use.
6. Apply to these activities an understanding of health IT, meaningful use, and the challenges practice settings will encounter in achieving meaningful use.

Each Learning Unit is estimated to require 1-4 contact (or instructional) hours and an additional 3-12 hours of independent or team work on the part of the student.

Unit: 10 – 1, Concepts of Processes and Process Analysis
Unit: 10 – 2, Process Representation
Unit: 10 – 3, Interpreting and Creating Process Diagrams
Unit: 10 – 4, Acquiring Clinical Process Knowledge
Unit: 10 – 5, Process Analysis
Unit: 10 – 6, Process Re-design
Unit: 10 – 7, Facilitating Optimization Decisions
Unit: 10 – 8, Quality Improvement Methods
Unit: 10 – 9, Leading and Facilitating Change
Unit: 10 – 10, Process Change Implementation and Evaluation
Unit: 10 – 11, Maintaining and Enhancing the Improvements

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Component Units with Objectives and Topics

Description:
This unit focuses on the six aims for health care process improvement. In this unit students are helped to understand the concepts of systems, systems thinking and health care processes. Such understanding provides a foundation for the study if clinical process analysis and redesign.

Objectives:
1. Describe the purpose for process analysis and redesign in the clinical setting.
2. Describe the role of a workflow process analyst and redesign specialist and contrast it with other roles such as technical support and implementation management.
3. Explain how health process analysis and redesign and meaningful use are related.
4. Analyze a healthcare scenario and identify the components of clinical workflow.
5. Given a scenario of a health care analysis and redesign, analyze the responsibilities of each participant in the process and how the roles complement or overlap with one another.
6. Describe how the workflow processes used by a healthcare facility might differ depending on the type of facility.

Topics:
- Role of Health Care Workflow Analysis and Redesign Specialist
  - Definitions
  - Healthcare Roles and Responsibilities
- IOM 6 Quality Areas
- Importance of HIT to Health Care - Meaningful Use
- The Clinical Setting
- Common Health Care Processes
- Clinical Workflow
- Summary: What a Process Analysis and Redesign Specialist Does

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Unit 2: Process Representation

Description:
This unit prepares students to graphically represent a workflow process that reflects accepted standards for such representation.

Objectives:
1. Articulate the value of process mapping.
2. Describe standard processing mapping symbols and conventions.
3. Analyze an existing workflow process chart in terms of the information that could be generated and the sequence of steps that are being communicated.
4. Choose the correct scope and detail level for a process map.
5. Choose an appropriate process mapping methodology.
6. Create a process map for a health care system (or system component) using correct symbols and conventions.

Topics:
- Purpose of graphic process representation
- Process diagram vocabulary
- Identifying process steps
- Basic flowchart symbols
- Creating a basic flowchart
- Process representation concepts
  - Models, templates and abstracts
  - Data flow versus process steps
- Aspects of processes that we might need to model
- Selecting the right diagram type

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Unit 3: Interpreting and Creating Process Diagrams

Description:
This unit prepares students to **read, interpret, and create**:

1. Flowcharts using ISO 5807 and common quality improvement symbols, and
2. Data flow diagrams in Yourdon notation.

This unit prepares students to **read and interpret**:

3. Data flow diagrams in Gane-Sarson notation,
4. Class, Activity and State diagrams in UML notation, and
5. Entity-relationship diagrams in crow's foot notation.

Objectives:

1. Create context and data flow diagrams for a health care system (or system component) using appropriate Yourdon symbols and conventions.
2. Create a process flowchart for a health care system (or system component) using appropriate ISO 5807 symbols and conventions.
3. Choose the correct scope and detail level for a process flowchart and data flow diagram.
4. Read and interpret Gane-Sarson data flow diagram.
5. Read and interpret UML class, activity, and state diagrams.
6. Read and interpret an entity relationship diagram in crow's foot notation.

Topics:

- Methods and notations for diagramming processes
- Process Features
- ISO 5807 Flow Charting
- Yourdon Data Flow Diagrams
- Gane-Sarson
- Unified Modeling Language (UML)
- E-R diagram

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Unit 4: Acquiring Clinical Process Knowledge

Description:
This unit prepares the student for conducting initial contact and with a health care facility, assessing the facilities readiness for change and using group methods for the purpose of process analysis and redesign.

Objectives:
1. Identify how the strategic goals and stakeholders for a given health care facility can influence workflow processes in that facility.
2. Create an agenda for an opening meeting to discuss workflow processes in a health care facility, in light of that facility's strategic goals and stakeholders.
3. Compare and contrast different types of knowledge and their impact on organizations.
4. Analyze a health care scenario according to CMMI levels.
5. Identify the workflow processes that are likely to be used by a healthcare facility.
6. Identify the workflow processes that are essential to document and analyze in order to determine how best to streamline the operations in a given health care facility.
7. Identify key individuals with whom the analyst should meet or observe in order to gain an understanding of the nature and complexity of their work.
8. Given a process observation scenario, formulate the questions that would facilitate a productive discussion of the workflow of information, activities and roles within that facility.
9. Suggest ways to successfully respond to common challenges encountered in knowledge acquisition.
10. Given a practice scenario, choose an appropriate knowledge acquisition method.
11. Given a process analysis scenario including a list of observations, create an agenda for a visit closing meeting and an initial meeting report.
12. Given a set of diagrams and observations from an information gathering meeting draft a summary report.

Topics:
- Knowledge acquisition concepts
- Acquiring knowledge about the practice
- Acquiring process Knowledge
  - Identifying Practice Processes
  - Information gathering methods
    - Interviews
    - Observation
    - Studying existing documents (SOPs, process diagrams)

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        - Group processes
    - Documenting the information
        - Process diagrams (Unit 2 and 3)
        - Visit Report
- Initiating a relationship with a practice
- Overcoming Barriers

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Unit 5: Process Analysis

Description:
This unit focuses on the optimization of health care workflows and how the Practice Workflow and Information Management Redesign Specialist can help health care facilities achieve and sustain such optimization.

Objectives:
1. Describe the purpose of Process Analysis.
2. Describe skills and knowledge necessary for Process Analysis.
3. Perform a process analysis for a given clinic scenario.
4. Given results of a process analysis draft a summary report.
5. Given results of a process analysis identify desired electronic medical record functionality.

Topics:
- Objectives of Process Analysis
- Process Analysis skills and knowledge
- Steps for Process Analysis
- Clinical Practice Processes
- Process Variations and Exceptions
- Identifying EHR functionality from Process Analysis

Unit 6: Process Redesign

Description:
This unit focuses on the redesign and automation of health care workflows and how the Practice Workflow and Information Management Redesign Specialist can help health care facilities make clinical health care processes safer, more efficient and more effective.

Objectives:
1. Identify the factors that optimize workflow processes in health care settings.
2. Describe how information technology can be used to increase the efficiency of workflow in health care settings.
3. ID aspects of clinical workflow that are improved by EHR.
4. Propose ways in which the workflow processes in health care settings can be re-designed to ensure patient safety and increase efficiency in such settings.
5. Use knowledge of common software functionality to inform a process redesign for a given clinic scenario.

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Topics:
- Objectives, Skills and Knowledge for Process Redesign
- Human-centered Design Framework applied to Process Redesign
- Common process problems
- Solutions to process problems
- Matching common clinic system functionality to solve process problems

Unit 7: Facilitating Optimization Decisions

Description:
Coordinating a process optimization meeting and using appropriate group methods to discuss and make decisions on inefficiencies and opportunities for streamlining manual and computer-aided processes. This unit will prepare students to present and review process analysis and optimization findings with health care facility decision makers, and to facilitate decisions on actions to be taken.

Objectives:
1. Complete a process analysis that includes recommendations for achieving and sustaining optimization in workflow processes.
2. Prepare a presentation for health care institution decision makers to communicate findings of a workflow process analysis and proposes a facilitation plan that would assist those decision makers in moving toward optimization of workflow processes.
3. Critique optimization meeting scenarios for their effectiveness and comprehensiveness

Topics:
- Coordinating a decision making meeting
- Using appropriate group methods to discuss and make decisions on inefficiencies
- Identifying opportunities for streamlining manual and computer-aided processes, and the
- Transition from analysis and redesign to implementation planning, and we will also give examples of the plan content.

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Unit 8: Quality Improvement Methods

Description:
Different approaches to quality improvement have been used in health care settings. Because workflow analysts will encounter organizations and people that have experience with a multitude of proven methods and fads, an awareness of the history, methods and tools of quality improvement is critical. This Unit introduces students to these elements of QI, as well as quality reporting.

Objectives:
1. Explain how quality improvement methods can be used effectively in health care settings.
2. Compare/Contrast various quality improvement methodologies and tools and understand where they can be appropriately used in the health care setting.
3. Recommend quality improvement tools/methods that would be most effective in various health care scenarios.
4. Explain how evidence-based health care practices contribute to quality improvement goals in a health care setting.

Topics:
- Foundations of Quality Improvement
- Methods for Quality Improvement
- Tools for performing quality improvement
- A culture of Quality Improvement
- Mistakes in Quality Improvement

Unit 9: Leading and Facilitating Change

Description:
This Unit introduces students to the concept of change, the diffusion of innovation, and the impact of such change on the providers within a health care facility. It enhances their understanding that workflow analysts must be sensitive to the human component as they examine and propose modifications in workflow processes. This Unit prepares the student to recognize and address common change management problems, and to work with individuals and groups to facilitate change.

Objectives:
1. Explore how concerns expressed by participants in a process analysis meeting can facilitate or serve as a barrier to changes in workflow processes that are proposed.

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2. Propose strategies a workflow analyst can use to enhance acceptance of changes in workflow processes he/she may propose.
3. Critique a facilitation plan that has been developed to advance changes in workflow processes in a health care facility regarding its expected effectiveness.
4. Critique the ways in which workflow process changes have been managed in selected health care facilities.

Topics:

- Change Management concepts
- Tools for Facilitating change
- Facilitation Planning

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Unit 10: Process Change Implementation and Evaluation

Description:
This Unit focuses on helping students develop skills needed to implement and evaluate the effectiveness of changes designed to improve workflow processes and the quality of care in health care facility. This Unit prepares the student to implement a process change by covering three key skill sets: 1) develop a process change plan (implementation plan), 2) communicate a process change plan, and 3) to develop an evaluation plan.

Objectives:
1. Develop a Process Change Implementation Plan for a healthcare facility that includes tasks to be accomplished, responsible parties for various tasks, a timeline, and the human and material resources needed.
2. Identify management tracking and measurement opportunities for the process change.
3. Outline elements of an evaluation plan that will help determine the success of a workflow process change implemented in a health care facility.
4. Describe how the workflow analyst can help a health care facility continually improve its workflow processes, based on results of ongoing evaluations.

Topics:
- Common process changes
- Implementation plan components
- Communication for implementation
- Common implementation problems
- Evaluating the new process

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Unit 11: Maintaining and Enhancing the Improvements

Description:
This Unit focuses on helping the student develop the skills to recognize and access changes that can be maintained, develop alternative processes and methods needed to keep the practice running if the EHR system fails and apply to these activities an understanding of health IT, meaningful use, and the challenges practice settings will encounter in achieving, sustaining and enhancing meaningful use.

Objectives:
1. Design processes and information flows that will help sustain and continually facilitate quality improvement and reporting processes in a health care facility, particularly if the EHR system fails.
2. Prepare a presentation for health care facility decision makers related to sustainability and continuous quality improvement within their setting.
3. Develop a set of plans to keep the practice running if the EHR system fails.
4. Propose a plan where the workflow analyst collaborates with practice staff to (a) continually evaluate new workflow processes that are implemented, (b) identify problems that arise and changes needed to address those problems, and (c) develop plans to make recommended changes.

Topics:
- Continuous Quality Improvement (CQI)
- Process Control
- Business Continuity Plan
    - Natural Disasters
    - Pandemic
    - Computer Systems Downtime

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