

The Office of the National Coordinator for
Health Information Technology



Component 10:

Health Care Workflow Process Improvement

Component Guide

Health IT Workforce Curriculum Version 4.0/Spring 2016

This material (Comp 10) was developed by Duke University, funded by the Department of Health and Human Services, Office of the National Coordinator for Health Information Technology under Award Number IU240C000024. This material was updated in 2016 by Normandale Community College under Award Number 90WT0003.

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Component Number: 10

Component Title:

Health Care Workflow Process Improvement

Component Description:

Fundamentals of health workflow process analysis and redesign is a necessary component of the complete practice automation and includes topics of process validation and change management.

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 a diagram of processes in the health care 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 health care 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.

Component Files

Each unit within the component includes the following files:

- Lectures (voiceover PowerPoint in .mp4 format); PowerPoint slides (Microsoft PowerPoint format), lecture transcripts (Microsoft Word format); and audio files (.mp3 format) for each lecture.
- Application activities (discussion questions, assignments, or projects) with answer keys.
- Self-assessment questions with answer keys based on identified learning objectives, (except unit 7).

- Some units may also include additional materials as noted in this document.

Component Units with Objectives and Topics

Unit 1: Concepts of Workflow Process Improvement

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 of 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 redesign specialist and contrast it with other roles such as technical support and implementation management
3. Explain how health care process analysis and redesign and meaningful use are related
4. Analyze a health care 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 health care facility might differ depending on the type of facility

Lectures:

- a. Introduction to Health Care Workflows (24:56)
 1. Role of Health Care Workflow Analysis and Redesign Specialist
 2. IOM 6 Quality Areas
 3. Importance of HIT to Health Care - Meaningful Use
- b. Clinical Workflows (11:49)
 1. Common Health Care Processes
 2. Clinical Workflow
 3. Summary: What a Process Analysis and Redesign Specialist Does

Suggested Readings

Institute of Medicine. Crossing the quality chasm: A new health system for the 21st century, [Internet]. 2001. Available from:

http://www.nap.edu/openbook.php?record_id=10027&page=R1

Just Enough Structured Analysis (Chapter 1) [Internet]. Available from:

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/SAD/JESA.pdf>

Just Enough Structured Analysis (Chapter 2) [Internet]. Available from:

<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/SAD/JESA.pdf>

Hood S, McIntosh E. Clinical workflow keys, Eclipsys Practice Newsletter [Internet]. No date. [cited 2010 Aug 4].;2(2) Available from:
<http://www.getvitalized.com/Newsletters/allscripts/v2i2/page1.aspx>

Additional Materials

None

Unit 2: Process Mapping

Description:

In two parts, Fundamentals of Health Workflow Process Analysis and Redesign: Process Mapping Theory and Rationale, Lecture a and Process Mapping Diagramming Tools, Lecture b, covers the background necessary for graphically representing processes. It uses flowcharts and basic flowchart symbols to provide an introduction to graphical process representation, also called process diagramming. Separate units cover complete symbol sets and conventions for different types of process diagrams.

Objectives:

1. Articulate the value of process mapping
2. Describe standard process 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

Lectures:

- a. Theory and Rationale (18:12)
 1. Purpose of graphic process representation
 2. Process diagram vocabulary
- b. Diagramming Tools (14:08)
 1. Identifying process steps
 2. Basic flowchart symbols
 3. Creating a basic flowchart

Suggested Readings

Public Health Informatics Institute. Taking Care of Business: A Collaboration to Define Local Health Department Business Processes. [homepage on the Internet]. 2006 Available from: Public Health Informatics Institute. Web site:
<http://www.phii.org/resources/taking-care-business-second-edition>

Just Enough Structured Analysis (Chapter 9) [Internet]. Available from:
<http://zimmer.csufresno.edu/~sasanr/Teaching-Material/SAD/JESA.pdf>

Wikipedia: Flowchart [Internet]. Available from: <http://en.wikipedia.org/wiki/Flowchart>

Wikipedia: UML [Internet]. Available from:
http://en.wikipedia.org/wiki/Unified_Modeling_Language

UML Resource Page. [Internet]. Object Management Group. Available from. Web site:
<http://www.uml.org/>

Wikipedia: Entity Relationship topic:
http://en.wikipedia.org/wiki/Entity_relationship_diagram

Colligan, L., Anderson, J. E., Potts, H. W. W., Berman J., Does the process map influence the outcome of quality improvement work? A comparison of a sequential flow diagram and a hierarchical task analysis diagram. BMC Health Services Research 2010, 10:7. Available from <http://www.biomedcentral.com/1472-6963/10/7>

Rural Health IT Adoption Toolbox. This website compiles information about Health IT adoption with a focus on rural settings. This is a government website that is sponsored and maintained by the U.S. Department of Health and Human Services (HHS) Health Resources and Services Administration (HRSA).

<https://innovations.ahrq.gov/qualitytools/rural-health-it-adoption-toolbox>

Additional Materials

None

Unit 3: Process Diagrams

Description:

Unit 3 is composed of several lectures, one for each diagramming method. Lecture a, Interpreting and Creating Process Diagrams: Introduction - provides an introduction to these concepts and reviews information from Unit 2, Lecture b. Based on feedback from practitioners, we recommend using two methods (data flow diagrams in Yourdon notation, and flowcharts). In Lecture a, we review the process aspects that each diagram type covers. In separate presentations, we cover each diagram type. For the two recommended methods, the presentation covers concepts and skills from reading and interpreting the diagrams to actually creating them. For the rest of the diagrams, we cover only background, use, and notation, i.e., the presentation prepares the student to read and interpret the diagram but not to create them.

Objectives:

1. Create a process flowchart for a health care system (or system component) using appropriate ISO 5807 symbols and conventions,

2. Create context and data flow diagrams for a health care system (or system component) using appropriate Yourdon 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 an entity relationship diagram in crow's foot notation
6. Read and interpret UML class, activity, and state diagrams

Lectures:

- a. Introduction to Process Diagrams (10:01)
 1. Understand the background of how Entity-Relationship Diagrams (ERDs) are used and maintained, the symbol set used in producing ERDs
- b. Using ISO 5807 Process Diagrams (22:02)
 1. Create a process flowchart for health care system (or system component) using appropriate ISO 5807 symbols and conventions.
 2. Choose the correct scope and detail level for a process flowchart and data flow diagram.
- c. Yourdon Notation for Data Flow (17:00)
 1. Create context and data flow diagrams for a health care system (or system component) using appropriate Yourdon symbols and conventions
 2. Choose the correct scope and detail level for a process flowchart and data flow diagram
- d. Gane-Sarson Notation (11:59)
 1. Read and interpret Gane-Sarson data flow diagram
- e. Entity-Relationship Diagrams (23:16)
 1. Read and interpret an entity relationship diagram in crow's foot notation
- f. Unified Modeling Language (UML) (12:03)
 1. Read and interpret UML class, activity, and state diagrams

Suggested Readings

Wikipedia, Flowchart [Internet]. Available from: <http://en.wikipedia.org/wiki/Flowchart>

Public Health Informatics Institute. Taking Care of Business: A Collaboration to Define Local Health Department Business Processes. [homepage on the Internet]. 2006 Available from: Public Health Informatics Institute. Web site: <http://www.phii.org/resources/taking-care-business-second-edition>

Just Enough Structured Analysis (Chapter 9) [Internet]. Available from: <http://zimmer.csufresno.edu/~sasanr/Teaching-Material/SAD/JESA.pdf>

Wikipedia: UML [Internet]. Available from:
http://en.wikipedia.org/wiki/Unified_Modeling_Language

UML Resource Page. [Internet]. Object Management Group. Available from. Web site:
<http://www.uml.org/>

Wikipedia: Entity Relationship [Internet] Available from:
http://en.wikipedia.org/wiki/Entity_relationship_diagram

Codd, E.F., A relational model of data for large shared databanks. Communications of the ACM, vol 13 no 6. 1970. <http://www.seas.upenn.edu/~zives/03f/cis550/codd.pdf>

Additional Materials

None

Unit 4: Acquiring Clinical Process Knowledge

Description:

In three lectures, this unit covers the concepts and methods for Acquiring Clinical Process Knowledge in the health care setting needed by the health care Workflow Analysis and Redesign Specialist.

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 health care facility
6. Identify the workflow processes that are essential to observe in order to determine how best to streamline the operations in a given health care facility
7. Identify key individuals with whom the Practice Workflow and Information Management Redesign Specialist 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 list of observations, create agenda for 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

Lectures:

- a. Process and Goals for Acquiring Clinical Process Knowledge(15:47)
 1. Identify how the strategic goals and stakeholders for a given health care facility can influence workflow processes in that facility
 2. Compare and contrast different types of knowledge and their impact on organizations
 3. Analyze a health care scenario according to CMMI levels
- b. Identification of Key Workflows and Individuals (11:36)
 1. Create an agenda for an opening meeting to discuss workflow processes in a health care facility
 2. Identify the workflow processes that are likely to be used by a healthcare facility
 3. 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
 4. 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
- c. Common Observations and Challenges (14:27)
 1. 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
 2. Suggest ways to successfully respond to common challenges encountered in knowledge acquisition
 3. Given a practice scenario, choose an appropriate knowledge acquisition method

Suggested Readings

Milton NR. Knowledge acquisition in practice: A step by step guide. 1st ed. London: Springer; 2007.

Wikipedia: Capability Maturity Model [Internet] Available from:
http://en.wikipedia.org/wiki/Capability_Maturity_Model

Additional Materials

None

Unit 5: Process Analysis

Description:

In two lectures, Process Analysis covers the background and methodology for process analysis.

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, and
5. Given results of a process analysis, identify desired EMR functionality.

Lectures:

- a. Necessary Components of Process Analysis (15:04)
 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
- b. Actions to Take from Process Analysis (16:24)
 1. Perform a process analysis for a given clinic scenario
 2. Given results of a process analysis, draft a summary report
 3. Given results of a process analysis, identify desired electronic medical record functionality

Suggested Readings

None

Additional Materials

None

Unit 6: Process Redesign

Description:

This unit, Process Design, consists of 4 lectures and covers the background and methodology for process redesign in the health care facility.

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. Identify 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 and meaningful use objectives to inform a process redesign for a given clinic scenario

Lectures:

- a. Strategies for Optimizing Processes (20:51)
 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
- b. Impact of EHRs and Information Technology (18:30)
 1. Describe how information technology can be used to increase the efficiency of workflow in health care settings
 2. Identify aspects of clinical workflow that are improved by EHR
- c. Steps to Process Redesign (16:15)
 1. 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
 2. Use knowledge of common software functionality and meaningful use objectives to inform a process redesign for a given clinic scenario
- d. The Impact of Meaningful Use on Process Improvement (17:31)
 1. Use knowledge of common software functionality and meaningful use objectives to inform a process redesign for a given clinic scenario

Suggested Readings

Wikipedia: Practice Management Software. [Internet]. Available from http://en.wikipedia.org/wiki/Practice_management_software

Wikipedia: Picture Archival and Communication System. [Internet]. Available from http://en.wikipedia.org/wiki/Picture_archiving_and_communication_system

Wikipedia: Patient Portals. [Internet]. Available from http://en.wikipedia.org/wiki/Patient_portal

Wikipedia: Laboratory Information System. [Internet]. Available from http://en.wikipedia.org/wiki/Lab_information_system

Additional Materials

None

Unit 7: Facilitating Meetings for Implementation Decisions

Description:

In one lecture, this unit covers a method and the associated logistics for conducting meetings in which health care facility decision makers review options for major process and implementation related decisions and make decisions. The purpose of the meetings is to outline the decisions that need to be made, to assure that decision makers have the necessary information for decision making, and to facilitate decision making. This unit provides the student with tools for conducting decision making meetings.

Objectives:

1. Describe major health care facility decisions in process redesign that includes EHR technology
2. Draft an agenda and facilitation plan for a decision making meeting,
3. Prepare a presentation to communicate findings of a workflow analysis or process redesign to health care facility decision makers,
4. Document those decisions that are made and actions identified in a decision making meeting, and
5. Critique a decision making meeting agenda, facilitation plan or scenario to identify problems and how they could have been prevented

Lectures:

- a. Methods for Meeting Facilitation (20:40)
 1. Describe major health care facility decisions in process redesign that includes EHR technology
 2. Draft an agenda and facilitation plan for a decision making meeting,
 3. Prepare a presentation to communicate findings of a workflow analysis or process redesign to health care facility decision makers, and
 4. Document those decisions that are made and actions identified in a decision making meeting
 5. Critique a decision making meeting agenda, facilitation plan or scenario to identify problems and how they could have been prevented

Suggested Readings

Wikipedia: Facilitating Productive Meetings [Internet]. Available from:

[http://en.wikipedia.org/wiki/Facilitation_\(business\)](http://en.wikipedia.org/wiki/Facilitation_(business))

Kabcenell AI, Langley J, Hupke C. Innovations in planned care. IHI Innovation Series white paper. Cambridge, MA: Institute for Health care Improvement; 2006. Available from:

<http://www.ihl.org/sites/search/pages/results.aspx?k=Kabcenell+AI%2C+Langley+J%2C+Hupke+C.+Innovations+in+planned+care.+IHI+Innovation+Series+white+paper.>

Delbecq AL, and Van de Ven AH. A group process model for problem identification and program planning. The Journal of Applied Behavioral Sciences 1971; 7(4): 467-492

Haynes SC. The facilitators perspective on meetings and implications for group support systems design. The Database for Advances in Information Systems. 1999 Sum-Fall; 30, (3,4) [p. 72-90]. doi: [10.1145/344241.344246](https://doi.org/10.1145/344241.344246). Available from: <http://dl.acm.org/citation.cfm?doid=344241.344246>

Additional Materials

None

Unit 8: Quality Improvement Methods

Description:

This unit covers Quality Improvement Methods recommended for use in the Health Care Setting. Many different approaches to quality improvement have been used in the health care arena. The workflow analysts will encounter organizations and people with experience with a multitude of proven methods and fads. Thus, 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 categories of mistakes seen in these methods. It is not intended to teach the student how to use these methods and tools.

Objectives:

1. Describe strategies for quality improvement
2. Describe the role of Leadership in Quality Improvement
3. Describe the local clinic improvement capabilities
4. Describe and recommend tools for quality improvement
5. Compare and contrast the quality improvement methodologies and tools and their appropriate uses in the health care setting

Lectures:

- a. Strategies and Leadership in Quality Improvement (9:54)
 1. Describe strategies for Quality Improvement
 2. Describe the role of Leadership in Quality Improvement
- b. Tools for Quality Improvement (25:49)
 1. Describe strategies for quality improvement
 2. Describe the role of Leadership in Quality Improvement
 3. Describe the local clinic improvement capabilities
 4. Describe and recommend tools for Quality Improvement
 5. Compare and contrast the Quality Improvement methodologies and tools and their appropriate uses in the health care setting

Suggested Readings

Agency for Healthcare Research and Quality (AHRQ). [Internet] Improving healthcare quality fact sheet. Available from: <http://www.ahrq.gov>

Wikipedia: Quality Improvement Topic [Internet] Available from: http://en.wikipedia.org/wiki/Quality_improvement

Califf RM. Translating clinical trials into practice. Texas Heart Institute Journal [Internet] 2006;33(2) 192-196. Available from:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1524693/>

Varkey P, Reller KR, Roger K. Basics of quality improvement in health care. Mayo Clinic Proceedings [Internet]. doi: 10.4065/82.6.735. 2007 Jun; 82(6) 735-739. Available from:

[http://www.mayoclinicproceedings.org/article/S0025-6196\(11\)61194-4/fulltext](http://www.mayoclinicproceedings.org/article/S0025-6196(11)61194-4/fulltext)

Batalden, PB., Davidoff F. What is “quality improvement” and how can it transform healthcare? Qual Saf Health Care.[Internet] 2007;16:2-3 doi:10.1136/qshc.2006.022046 Available from: <http://qshc.bmj.com/content/16/1/2.extract>

Chang RY. Continuous process improvement, Richard Chang Associates. Irvine: CA, 1994.

Ransom SB, Joshi MS, and Nash DB. ed. The healthcare quality book: Vision, strategy, and tools. Health Administration Press: Chicago, AUPHA Press: Washington, 2005.

Additional Materials

None

Unit 9: Leading and Facilitating Change

Description:

This unit, Leading and Facilitating Change, introduces the concepts of change and the impact of such change on the providers and staff within a health care facility. It enhances the understanding that workflow analysts must be sensitive to the human component as they examine and propose modifications in 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. Explain concerns expressed by participants in a process analysis & redesign scenario in terms of common change management concepts.
2. Propose strategies to gain acceptance of changes in work processes.
3. Create and critique a facilitation plan, including appropriate facilitation tools for a given process analysis & redesign scenario, and
4. Given a health care change management scenario, explain outcomes in terms of common change management concepts

Lectures:

- a. Change Management for Workflow Improvement (26:03)
 1. Explain concerns expressed by participants in a process analysis & redesign scenario in terms of common change management concepts.
 2. Propose strategies to gain acceptance of changes in work processes.
 3. Create and critique a facilitation plan, including appropriate facilitation tools for a given process analysis & redesign scenario.
 4. Given a health care change management scenario, explain outcomes in terms of common change management concepts

Suggested Readings

Wikipedia: Change Management [Internet]. Available from:
http://en.wikipedia.org/wiki/Change_management

Chapman A. Change management: organizational and personal change management, process, plans, change management and business development tips [Internet] c2005. 2010. Available from: <http://www.businessballs.com/changemanagement.htm>

Chambers R. Fun with 21's: a sourcebook for workshop facilitators: 21 sets of 21 ways to approach participatory events. [Internet] 2000. Available from http://portals.wi.wur.nl/files/docs/ppme/Chambers_21s_workshops.pdf

Additional Materials

None

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) develop an evaluation plan.

Objectives:

1. Develop a Process Change Implementation Plan for a health care 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

Lectures:

- a. Implementation Techniques (16:42)
 1. Develop a process change implementation plan for a health care facility that includes tasks to be accomplished, responsible parties for 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

Suggested Readings

A systems approach to operational redesign workbook (Appendix A). Massachusetts: Masspro [cited 2010 Aug 4] Masspro, the Medicare Quality Improvement Organization for Massachusetts, under contract to CMS. [p. 71+]. Available free from <http://www.himss.org/doq-it-systems-approach-operational-redesign-workbook-masspro>

Varkey P, Reller KR, Roger K. Basics of quality improvement in health care. Mayo Clinic Proceedings [Internet]. doi: 10.4065/82.6.735. 2007 Jun; 82(6) 735-739. Available from: [http://www.mayoclinicproceedings.org/article/S0025-6196\(11\)61194-4/abstract](http://www.mayoclinicproceedings.org/article/S0025-6196(11)61194-4/abstract)

Batalden, PB., Davidoff F. What is “quality improvement” and how can it transform health care? Qual Saf Health Care.[Internet] 2007;16:2-3
doi:10.1136/qshc.2006.022046 Available from:
<http://qshc.bmj.com/content/16/1/2.extract>

Additional Materials

None

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 control strategies to maintain performance of clinic processes
2. Develop and present a sustainability and continuous improvement plan for a health care setting
3. Work with practice staff to develop a set of plans to keep the practice running (to the extent necessary and practical) if the EHR system fails
4. Work with practice staff to evaluate the new processes as implemented and identify problems and changes that are needed

Lectures:

- a. Design and Development of Strategies for Sustainability (24:36)
 1. Design control strategies to maintain performance of clinic processes
 2. Develop and present a sustainability and continuous improvement plan for a health care setting
- b. Implementing Strategies for Sustainability (11:47)
 1. Work with practice staff to develop a set of plans to keep the practice running (to the extent necessary and practical) if the EHR system fails
 2. Work with practice staff to evaluate the new processes as implemented and identify problems and changes that are needed

Suggested Readings

Melum, MM. How to make CQI work for you - continuous quality improvement of health care. Physician Executive. FindArticles.com. Available from:

http://findarticles.com/p/articles/mi_m0843/is_n6_v17/ai_11647230/

Bennett, L, Slavin, L. Continuous quality improvement: What every health care manager needs to know. [updated 2002 Apr 15] Available from:

<http://www.cwru.edu/med/epidbio/mphp439/CQI.htm>

Developing a contingency plan for ehr downtime and data loss [Internet] Center for Health IT at AAFP. Available from: <http://www.centerforhit.org/online/chit/home/cme-learn/tutorials/networking/network201/contingency.html>

Fahrenheit, CG, Smith, LJ; Tucker, K, Warner, D. Plan B: A practical approach to downtime planning in medical practices. Journal of AHIMA. 2009 Nov-Dec;80:(11) 34-38. Available from:

http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_045486.hcsp?dDocName=bok1_045486

Mohammed, MA, Worthington, P, Woodall, WH. Plotting basic control charts: tutorial notes for health care practitioners. Qual Saf Health Care. 2008 Apr;17(2):137-45.

Erratum in: Qual Saf Health Care. 2009 Feb;18(1):80.

Additional Materials

None

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