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# **Health IT Foundations/CAHIMS Preparation Course**

# **Stanford University Open Learning Initiative**

# **Learning Objectives**

*This course was developed through a collaboration between Stanford University Open Learning Initiative, CAST, Bellevue College, and St. Louis Community College*

**Unit 1: Introduction**

**Unit 2: Healthcare Environment**

**Module 3: Healthcare Delivery Organizations**

* Explain the basic characteristics and organization of the US healthcare delivery system. Describe the roles of and customers served by various types of healthcare organizations. Describe the administrative and functional organization of entities that deliver healthcare in the United States in both inpatient and outpatient settings.
* Explain how healthcare organizations interact with each other and with patients to provide appropriate levels of care.
* Describe the services provided to unique populations, including underserved populations. Explain public health and how it has improved healthcare.
* Explain how Healthy People 2020 advances health promotion and disease prevention. Identify current and future trends in the US healthcare delivery system and their potential impact on healthcare organizations and populations served.

**Module 4: Healthcare Payment Systems**

* Describe the history and role of the health insurance industry in financing healthcare in the United States.
* Distinguish between public and private funding for healthcare. Compare and contrast models of healthcare financing in the United States.
* Describe healthcare financing structures, including insurance plans, third-party payers, Medicare, and Medicaid. Explain a typical billing process and the use of coding and code sets.
* Identify different fee-for-service and episode-of-care reimbursement methodologies used by insurers in the claims payment process.
* Describe the main state and federal laws regulating US healthcare insurance organizations and discuss their impact on the healthcare system.
* Analyze factors responsible for escalating healthcare expenditures in the United States. Identify methods of controlling rising medical costs.
* Describe the trends in healthcare financing and their impact on various populations.

**Module 5: Roles of Healthcare Professionals**

* Explain terms used in healthcare and in health professionals' education and training, including clinician, patient, disease, and syndrome.
* Describe the education, training, certification, licensure, and roles of physicians, including those in primary care and other specialties.
* Identify the areas of care of a primary care physician.
* List the different physician subspecialties and the unique area of care each provides. Describe several of the nonclinical roles that physicians assume.
* Describe the education, training, certification, licensure, and roles of nurses, advanced practice nurses, licensed practical nurses, medical assistants, and medication aides. Describe the education, training, certification, licensure, and roles of physician assistants, pharmacists, therapists, and technologists and technicians.
* Describe the education, training, certification, licensure, and roles of paramedics, emergency medical technicians, dental professionals, mental health professionals, and case managers and social workers.
* Describe the changing roles of and interactions between health professionals.
* Describe the primary roles of a health information management professional.
* Identify key elements of an effective job description.
* Describe the primary roles of a health information management professional.

**Module 6: Government Regulation**

* Explain the roles of accreditation entities, regulatory bodies, and professional associations in healthcare in the United States.
* Describe legal aspects of medicine involving the Patient Protection and Affordable Care Act, professional standards in healthcare, and medical malpractice.
* Describe key components of the Health Insurance Portability and Accountability Act (HIPAA) and current issues of patient privacy and security in the United States.
* Describe the provisions of the ARRA HITECH Act relative to meaningful use and regional extension centers.

**Unit 3: Technology Environment**

**Module 7: Health IT Applications**

* Describe the key trends impacting the development of health IT over the past two decades.
* Describe the impact of third-party payers on implementation of HIT systems.
* Describe the impact of developments in public health informatics, bioinformatics, and translational research on healthcare processes and associated ethical concerns.
* Describe ways to keep abreast of new developments in health IT.

**Module 8: Electronic Health and Medical Records**

* Explain the components, types, and functions of information systems and how they are used in the healthcare setting.
* Differentiate an electronic medical record (EMR), an electronic health record (EHR), a computerized patient record (CPR), and a personal health record (PHR).
* Identify attributes and functions of an EHR.
* Describe the systems and network requirements to support effective EHR implementation.
* Explain how the use of an EHR system can affect patient care, safety, efficiency of care practices, and patient outcomes.

**Module 9: Clinical and Financial Applications**

* Describe the purpose, attributes, and functions of specific clinical applications.
* Explain how electronic information applications are currently used in various healthcare settings.
* Identify common barriers to implementation and adoption of healthcare information systems and strategies to overcome these barriers.
* Identify how clinical applications can affect patient care, safety, quality, and efficiency as well as patient outcomes.
* Summarize the administrative, billing, and financial systems in the healthcare environment.
* Describe the strategies used by healthcare organizations to ensure integration of functions.
* Explain the critical elements needed to integrate billing, financial, and clinical systems. Describe the overall flow of data throughout the healthcare organization and the healthcare system.

**Module 10: Consumer Health Informatics**

* Describe and define consumer health informatics.
* Describe the benefits and challenges of consumer health informatics.
* Describe the role of technology in patient engagement in patient-centered care.
* Describe the emergence of personal health records and their implications.
* Describe the ongoing trends occurring in consumer health informatics and in the consumer health information technology market.

**Module 11: Systems Architecture and Components**

* Describe the functions of the main elements of HIT systems architectures and how they interact.
* Describe a computer network and how medical and point-of-care devices fit in the system.
* Describe the advantages and limitations of Web services.
* Describe the general trends in IT infrastructure and architecture in the healthcare environment and how regulations are shaping these trends.

**Module 12: Health Information Exchange and Standards**

* Describe the current standards that are being applied to patient information.
* Describe secure and private techniques for handling patient information.
* Describe the principles and methodologies underlying standards for health data interchange regulations and practices.
* Identify the main elements of meaningful use regulation and its implementation phases and timeline.

**Unit 4: HIMS Analysis and Design**

**Module 13: Clinical Process and Workflow Analysis**

* Describe the purpose of process analysis and redesign in clinical settings.
* Describe the role of a practice workflow and information management redesign specialist.
* Explain how healthcare process analysis and redesign and meaningful use are related. Analyze a healthcare scenario and identify the components of clinical workflow.
* Explain the value of process mapping. Interpret standard process mapping symbols and conventions.
* Analyze an existing workflow process map in terms of the information that could be generated and the sequence of steps that are being communicated.
* Create a process map for a healthcare system (or system component) using correct symbols and conventions.
* Recognize potential impacts of HIT implementation on workflow and of workflow analysis on HIT implementation.

**Module 14: Business, User, and Technical Requirements**

* Describe the technical requirements of healthcare systems, and describe the roles of businesses and users during a healthcare systems analysis.
* Identify stakeholders and present their roles in the requirements development and validation process.
* Identify the roles and responsibilities of analysts during the development and validation of requirements.
* Identify specific formats, standards, and examples of best practices that apply to requirements development and documentation.
* Describe how business and user requirements relate to each other, and identify strategies to resolve conflicts between different stakeholder requirements.

**Module 15: Usability and Human Factors**

* Explain usability and its relationship to HIT systems.
* Explain the impact of HIT usability on user satisfaction, adoption, and workarounds, including error rates and unintended consequences.
* Identify strategies to prevent or address HIT usability obstacles.
* Describe the study of human factors as they apply to usability.
* Explain how cognitive, physical, and organizational ergonomics can be applied to human factors engineering.
* Describe the systems-centered approach to error and patient safety and the different dimensions of the concept of human error.
* Apply methods for measuring mental workload and information overload.
* Describe how human factors analysis can be applied to the study of medical devices. Explain usability as it pertains to EHRs, and describe common challenges.

**Module 16: Systems Analysis, Planning, and Design**

* Describe the purpose of process analysis.
* Describe the concepts of process variations and exceptions.
* Describe process redesign and key processes in a clinical scenario.
* Explain the main elements of a user-centered design approach.
* Describe and compare conceptual models that apply to the design process.
* Describe and compare the three design life cycle models.
* Identify the key elements of readiness assessment.

**Module 17: Project Management**

* Describe the range and characteristics of HIT projects.
* Describe the key elements of project management.
* Describe key documents to manage expectations and define success of a project.
* Identify and describe each component of the project management plan.
* Describe the project planning documents and their importance to the project.
* Identify the roles and responsibilities of a project manager.
* Describe the importance of an organizational approach to IT decision making.
* Identify best practices to support project procurement activities.
* Describe best practices to support project time management activities.
* Describe best practices to support project cost management activities.
* Describe how project quality is assessed.

**Unit 5: HIMS Selection and Acquisition**

**Module 18: System Selection**

* Explain the benefits and constraints of systems/software purchase versus leasing or subscription or in-house development based on specific HIT projects and contexts.
* Describe the role of standards that relate to systems selection, acquisition, and validation phases.
* Describe the main steps and desired outcomes for the systems selection process.
* Interpret user and systems requirements, and evaluate candidate systems and subsystems against these requirements. Describe use cases and relate them to functional requirements.
* Identify the key steps and criteria in the proposal selection process in the context of health IT, including systems compliance to healthcare technology standards.
* Explain the key steps and criteria in the evaluation process, including interoperability with existing systems and need for customization.

**Module 19: System Acquisition**

* Describe the EHR system acquisition planning process.
* Describe how leadership, organization, and management encourage change and prepare users for the EHR system.
* Describe the process for selecting new technology.
* Describe the process for evaluating an EHR system.
* Describe the contract negotiation process.

**Module 20: Interoperability Standards and Certification**

* Describe efforts to improve the safety of EHRs.
* Describe the different facets of and the governing bodies for EHR certification.
* Describe health information exchange benefits, challenges, and approaches.
* Describe data and communication standards that support communication between disparate systems

**Unit 6: HIMS Implementation and Management**

**Module 21: Systems Implementation**

* Describe the roles and characteristics of an effective EHR implementation team.
* Describe the human, system, and organizational factors that influence the effectiveness of an implementation project.
* Describe the challenges, strategies, and approaches to consider for an effective EHR implementation plan.
* Define the steps of the software development life cycle (SDLC) and the purpose and importance of each.
* Describe different models of the SDLC and their key differences.
* Identify key elements of the system testing process. Explain user acceptance testing (UAT).
* Describe the importance of pilot testing and post-implementation processes.

**Module 22: End-User Training and Support**

* Identify what training is and what trainers do.
* Describe the characteristics of adult learners and factors that impact training design and learning outcomes.
* Describe the five phases of the ADDIE model of instructional design.
* Write measurable objectives for a training program.
* Write learning objectives that use Bloom's taxonomy to classify learning from the simplest to most complex.
* Construct a lesson plan using appropriate instructional approaches to the needs analysis.

**Module 23: Systems Monitoring and Maintenance**

* Explain effective processes and procedures for support and maintenance, including upgrades, of HIT systems.
* Explain ways to create fault-tolerant systems.
* Describe effective processes and procedures for system backup and restoration and for system and data decommissioning.

**Unit 7: Privacy and Security**

**Module 24: Privacy, Security Policies, and Compliance**

* Describe the background of the HIPAA legislation.
* Describe the key concepts of information security.
* Describe regulatory requirements for securing electronic health data.
* Describe the major changes in privacy and security requirements as a result of HITECH and the reasons the changes were needed.
* Describe rules relating to public health agencies and protected health information.

**Module 25: IT Security Principles and Strategies**

* Describe common threats to information security.
* Identify process and technological methods to mitigate information security threats. Describe safeguards against common security concerns.
* Describe additional wireless security issues.

**Module 26: Disaster Recovery and Business Continuity**

* Explain the concepts of and requirements for risk management.
* Describe security requirements encountered in the healthcare setting.
* Explain elements of disaster preparation.
* Explain elements of disaster recovery.

**Unit 8: Leadership and Planning**

**Module 27: Leadership and Change Management**

* Compare and contrast the concepts and practices that relate to leadership and management.
* Describe the characteristics and competencies of successful managers and leaders in the HIT environment.
* Explain the importance of change management to the success of HIT system implementations.
* Analyze challenges of leading in a hybrid HIT organization.
* Explain the roles of motivation and group dynamics in successful management of HIT implementation.

**Module 28: Quality Standards**

* Identify the current challenges in healthcare quality.
* Describe quality improvement as a goal of meaningful use.
* Explain the components of the healthcare system that have an impact on quality.
* Explain healthcare quality and quality improvement (QI).
* Analyze the ways that health IT can either help or hinder quality improvement.
* Describe the five major considerations in developing a science of safety in healthcare. Describe the basic concepts of reliability as it relates to healthcare.
* Describe what makes organizations highly reliable.
* Describe how decision support and decision support tools can improve quality of care. Describe the benefits and shortfalls of common types of alerts and clinical reminders. Describe the importance of measuring quality and health IT’s role in quality improvement.
* Describe total quality management.
* Identify the features of a quality culture and approaches for creating a quality culture.

**Module 29: IT Strategic Planning**

* Describe the role of the IT strategic plan and how the plan impacts all aspects of the healthcare organization.
* Explain the general process, key elements, and contributors for the development of an IT strategic plan.
* Describe how the business strategic plan intersects with the IT strategic plan, and the roles of business and IT stakeholders.

**Unit 9: Professionalism and Communication Skills**

**Module 30: Business and Communication Ethics**

* Explain the role of ethics in the healthcare environment.
* Explain how ethics and standards impact the profession of health information technology. Describe how diversity in patient populations and healthcare providers impacts healthcare delivery and communication.
* Explain the elements of project communication planning that contribute to a successful project.

**Module 31: Teams and Team Building**

* Explain the roles of teams in delivering quality healthcare services.
* Describe the characteristics of successful teams.
* Describe guidelines for building and leading teams.
* Analyze team conflict and performance.
* Describe ways that HIT design can support or serve as a barrier to effective communication in teams.
* Describe the roles of teams in healthcare and the application of collaborative tools and techniques.

**Module 32: Professionalism and Customer Service**

* Describe the different components of HIT customer service.
* Explain the use of metrics in HIT customer service.
* Explain strategies for ensuring positive, productive customer service interactions in an HIT environment.
* Identify ways to assist angry or difficult customers in a professional, productive manner. Describe strategies for clear, effective written communication.

Led by Bellevue College, the Health eWorkforce Consortium was formed to elevate Health Information Technology workforce development locally and nationally and provide career paths into this promising field for veterans and others. The nine-college consortium includes Bellevue College, Bellingham Technical College, Clark College, Clover Park Technical College, Northern Virginia Community College, Pierce College, Renton Technical College, Spokane Community College, and Whatcom Community College. The Health Information and Management Systems Society (HIMSS) is also a primary partner.

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