

Examination Blueprint

Clinical Informatics	
Core Content Areas:	Percentage
I. Fundamentals: The basic knowledge that provides clinical informaticians with a common vocabulary and understanding of the environment in which they function.	10%
II. Clinical Decision Making and Care Process Improvement: The knowledge and skills that enable a clinical informatician to implement effective clinical decision making systems and participate in the development of clinical processes that support effective, efficient, safe, timely, equitable, and patient- centered care.	30%
III. Health Information Systems: The knowledge and skills that enable a clinical informatician to participate in the development or selection of an information system for clinicians; prepare clinicians prior to implementation and support them during implementation and ongoing operation of a clinical information system; and evaluate the effectiveness of a system in meeting clinical needs.	40%
IV. Leading and Managing Change: The knowledge and skills that enable clinical informaticians to lead and manage changes associated with implementing clinical information systems and promoting adoption by health professionals.	20%

I. Fundamentals

1.1 Clinical Informatics

- 1.1.1 The discipline of informatics
- 1.1.2 Key informatics concepts, models, and theories
- 1.1.3 Clinical informatics literature
- 1.1.4 International clinical informatics practices
- 1.1.5 Ethics and professionalism
- 1.1.6 Legal and regulatory issues

1.2 The Health System

- 1.2.1 Determinants of individual and population health
- 1.2.2 Primary domains, organizational structures, cultures, and processes
- 1.2.3 The flow of data, information, and knowledge within the health system
- 1.2.4 Policy & regulatory framework
- 1.2.5 Health economics and financing
- 1.2.6 Forces shaping health care delivery
- 1.2.7 Institute of Medicine quality components

II. Clinical Decision Making and Care Process Improvement

2.1 Clinical Decision Support

- 2.1.1 The nature and cognitive aspects of human decision making
- 2.1.2 Decision science
- 2.1.3 Application of clinical decision support
- 2.1.4 Transformation of knowledge into clinical decision support tools
- 2.1.5 Legal, ethical, and regulatory issues
- 2.1.6 Quality and safety issues
- 2.1.7 Supporting decisions for populations of patients

2.2 Evidence-based Patient Care

- 2.2.1 Evidence sources
- 2.2.2 Evidence grading
- 2.2.3 Clinical guidelines
- 2.2.4 Implementation of guidelines as clinical algorithms
- 2.2.5 Information retrieval and analysis

2.3 Clinical Workflow Analysis, Process Redesign, and Quality Improvement

- 2.3.1 Methods of workflow analysis
- 2.3.2 Principles of workflow re-engineering
- 2.3.3 Quality improvement principles and Practices

III. Health Information Systems

3.1 Information Technology Systems

- 3.1.1 Computer Systems
- 3.1.2 Architecture
- 3.1.3 Networks
- 3.1.4 Security
- 3.1.5 Data
- 3.1.6 Technical approaches that enable sharing data

3.2 Human Factors Engineering

- 3.2.1 Models, theories, and practices of human-computer (machine) interaction
- 3.2.2 HCI Evaluation, usability testing, study design and methods
- 3.2.3 Interface design standards and design principles
- 3.2.4 Usability engineering

3.3 Health Information Systems and Applications

- 3.3.1 Types of functions offered by systems
- 3.3.2 Types of settings where systems are used
- 3.3.3 Electronic health/medical records systems as the foundational tool
- 3.3.4 Telemedicine

3.4 Clinical Data Standards

- 3.4.1 Standards development history and current process
- 3.4.2 Data standards and data sharing
- 3.4.3 Transaction standards
- 3.4.4 Messaging standards
- 3.4.5 Nomenclatures, vocabularies, and terminologies
- 3.4.6 Ontologies and taxonomies
- 3.4.7 Interoperability standards

3.5 Information System Lifecycle

- 3.5.1 Institutional governance of clinical information systems
- 3.5.2 Clinical information needs analysis and system selection

- 3.5.3 Clinical information system implementation
- 3.5.4 Clinical information system testing before, during and after implementation
- 3.5.5 Clinical information system maintenance
- 3.5.6 Clinical information system evaluation

IV. Leading and Managing Change

4.1 Leadership Models, Processes, and Practices

- 4.1.1 Dimensions of effective leadership
- 4.1.2 Governance (e.g., processes; responsibility versus authority)
- 4.1.3 Negotiation
- 4.1.4 Conflict management
- 4.1.5 Collaboration
- 4.1.6 Motivation
- 4.1.7 Decision making

4.2 Effective Interdisciplinary Teams

- 4.2.1 Human resources management (e.g., hiring, performance reviews and feedback, professional development, termination)
- 4.2.2 Team productivity and effectiveness (e.g., articulating team goals, defining rules of operation, clarifying individual roles)
- 4.2.3 Group management processes (e.g., nominal group, consensus mapping, Delphi method)
- 4.2.4 Managing meetings
- 4.2.5 Managing group deliberations

4.3 Effective Communications

- 4.3.1 Effective presentations to groups
- 4.3.2 Effective one-on-one communication
- 4.3.3 Writing effectively for various audiences and goals
- 4.3.4 Developing effective communications program to support system implementation

4.4 Project Management

- 4.4.1 Basic principles
- 4.4.2 Identifying resources
- 4.4.3 Resource allocation
- 4.4.4 Project management tools (non- software specific)
- 4.4.5 Informatics project challenges

4.5 Strategic and Financial Planning for Clinical Information Systems

4.5.1 Establishing mission and objectives

4.5.2 Environmental scanning

4.5.3 Strategy formulation

4.5.4 Action planning and strategy implementation

4.5.5 Capital and operating budgeting

4.5.6 Principles of managerial accounting

4.5.7 Evaluation of planning process

4.6 Change Management

4.6.1 Assessment of organizational culture and behavior

4.6.2 Change theories (e.g., precede-proceed, social influence theories, complex adaptive systems)

4.6.3 Change management strategies

4.6.4 Strategies for promoting adoption and effective use of clinical information systems