

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

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