Healthcare Informatics

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Graduate Faculty:

Beebe, Sandra N., Clinical Instructor, RDH, Ph.D., Southern Illinois University, 2003.

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The **Master of Health Informatics (MHI)** program is a comprehensive program that prepares students for professional roles in the field of health informatics within the healthcare organizations. To earn the MHI, students must complete:

1. 39 credit hours of the core MHI courses including:
   MHI 510, MHI 511, MHI 515, MHI 525,
   MHI 531, MHI 536, MHI 551, MHI 566,
   MHI 580, MHI 581, MHI 583, MHI 584, and
   MHI 585

In addition to the MHI core courses above, students must successfully complete one of the 6 credit hour options below:

2. MHI 593- Individual Research- 6 credit hours. Culminates in a final scholarly work outlined by the SIUC Graduate School or
3. MHI 595- Graduate Residency- 6 credit hours (300 contact hours) of graduate level internship- completed in healthcare facility based on the student's area of interest on the approval of SIUC.

To facilitate completion of the program, the couse of intruction will consist of 45 semester hours. As part of these 45 semester hours, students will complete an internship or research project. The student internship will specialize in one of the areas of healthcare informatics whereas students can apply coursework to real-world settings. The Residency is a six credit hour experience where one credit hour is equivalent to 50 contact hours for a total of 300 credit hours at the time of successful completion.

Course material covers topics specific to the healthcare field including, but not limited to, healthcare systems, knowledge management, personnel development and oversight, electronic health records, strategic leadership and marketing, legal and ethical foundations, health promotion and evaluation, systems design, modeling, database management, security, privacy, health information exchange, and health economics. Upon completion of the program, students are expected to be equipped to operate effectively in administrative roles in healthcare organizations. Special project assignments, case readings, presentations, and journal article reviews are an integral part of the curriculum.

All students graduating from the MHI program will be required to meet the qualifications of the Graduate School at SIUC. Students will be required to complete a culminating scholarly work which includes a research paper if not completing the Residency option.

Note: Not all healthcare organizations or facilities may act as Residency sites due to the ability to meet achievable objectives of the program and/or Residency course, state-to-state licensure/permissions, and/or upper SIUC administrative approvals.

Courses (MHI)

MHI 510-3 Effective Healthcare Operations. (Same as MHA 510) A course investigating why HCOs function differently than other businesses in terms of operating margins and how improvements can be addressed with properly executed logistics and supply chain control. Addresses the excessive amount of resources spent on the healthcare supply chain in relation to other related expenses, such as physician salaries, and focuses on support systems to modify ineffective operational issues within the constraints of the highly regulated healthcare sector. eCommerce, hospital materials supply, inventory control of medical supplies and controlled substances, vendor collaboration, purchasing, receiving, and total value analysis are explored using PERT/CPM, mathematical programming, and quality controls. Case studies are used to apply techniques to specific healthcare examples.

MHI 511-3 Fundamentals of Health Care Systems. (Same as MHA 511, RAD 511) This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structures of the healthcare system. Students will extensively examine aspects of the complex healthcare system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care.

MHI 515-3 Systems Analysis, Design, and Database Management in Health Care. Students explore methods for designing and managing health care organization databases and their use in computer based information systems. Focus is given on the impact that health care information systems have on administrative functions, data security and integrity, and business processes. Use of relational database management software, network hardware technologies, data modeling, clinical data warehousing and mining are explored, as well as the tools necessary for successful system implementation and human computer interfaces.

MHI 525-3 Health Informatics Applications and Project Management. Course designed to explore the history of health information. Students learn how to integrate the clinical, financial and administrative data needed to resolve managerial and patient care problems. Explores the strengths and limitations of health information systems and principles of computer science. Focus is given on project planning, project management tools. Students will develop a workflow project plan for a health informatics project and conduct biomed simulations.

MHI 531-3 Human Resources in Health Care. (Same as MHA 531, RAD 531) Describes the key human resource functions that play a significant role in the healthcare environment and focuses specifically on how those functions support management initiatives and accreditation and/or regulatory compliance. Extensive review of how the failure to systematically apply effective human resource strategies can result in organizational demise is conducted. Will conduct a human resource audit. Explores the dynamic legal and regulatory environment and carefully examines how legislative changes influence the healthcare organization overall focusing particularly on those functions that are linked to patient satisfaction and balanced scorecards and/or benchmarking of provider performance.

MHI 536-3 Strategic Leadership in Healthcare. (Same as MHA 536, RAD 536) This course provides students with an examination of nature, function, and techniques of administration and supervision in HCOs. Topics include the ever-changing healthcare environment and trends impacting leadership competencies. Specific healthcare factors that influence organizing managing of varying health systems such as hospitals vs. ambulatory care. Focus will be given on the professional bureaucracy that is complex given regulatory issues, political factors, and the era of the informed patient.

MHI 551-3 Legal & Ethical Fundamentals of Health Care. (Same as MHA 551, RAD 551) This course provides students with an analysis of the legal and ethical environment of the healthcare industry. Focused on the healthcare environment, the course closely examines the judicial process pertaining to torts, contracts, antitrust, corporate compliance, access to care, negligence, and professional liability. The nature of ethics in the multi-cultural healthcare environment is examined with analysis of the moral issues in healthcare.

MHI 566-3 Managing Health Information. (Same as MHA 566) A detailed review of the components of an information system as utilized for the capture of health information. Focus is on EHR, HIPAA, and implementation of information systems in healthcare organizations. Classification systems, clinical terminology, and use of health information in terms of operational management and decision making will be explored. Emerging technologies related to the security of health information management are explored.

MHI 575-3 Current Events Seminar in Healthcare. (Same as MHA 575) A seminar course designed to address current issues in the field of healthcare. Students will identify and analyze varying topical issues currently being addressed within the field of healthcare such as legislative changes/mandates, healthcare reform, and governmental oversight, etc. Students will engage in presentations and may participate in discussions with healthcare professionals via a variety of potential classroom methods including, but not limited to, live video conferencing, podcasts, and/or discussion postings, etc. This course uses a synchronous delivery format.

MHI 580-3 Managerial Epidemiology and Evidence Based Management. (Same as MHA 580) Epidemiological principles pertinent to the delivery, management, and marketing of healthcare services. Examines evidence and population based decisions which are critical to effective delivery of patient care. Utilizes evidence based theories to prepare the students to identify management problems and develop related paths of focused inquiry.

MHI 581-3 Health Information Exchange. Addresses issues related to the exchange of clinical data across multiple healthcare environments. Special focus is placed on health IT standards, privacy and security issues specifically related to the protection of patient information. Provides an overview of health information system standards and the types of products available to facilitate the use of data exchanges. Students will work in virtual groups to discuss current trends and challenges, best practices for health information systems, and health information standards pertinent to the field of healthcare.

MHI 583-3 Methods of Medical Informatics. Study of algorithms and programming languages for healthcare informatics purposes. Tailored for the use of non-professional programmers and specifically for the healthcare industry. Provides methods to utilize medical information contained in clinical and research datasets and explores the common computational tasks of medical informatics. Overview of access to data, assessment, nomenclatures, and programming scripts.

MHI 584-3 Consumer Informatics. Course focusing on consumer driven healthcare and their greater access to health information. Explores the health care related information available by federal and state agencies and direct consumer-to-consumer communications. Focus is given to consumer perspectives of their own health and the overall evolution of the patient/physician relationship. Students will explore the impact of technology in patient treatment areas, personalized medicine, assessment methods and tools, as well as, the potential impact of future technology on the delivery of healthcare services.

MHI 585-3 Financial Issues in Healthcare. (Same as MHA 585) A macro-examination of the role of finance in healthcare. Emphasis is not on financial formulas, but rather on the application of financial information within the healthcare sector. Discussion of charge-masters, healthcare payment systems and sources of revenue, profit vs. duty, regulatory issues and profit maximization, provider payments and pricing in capitated-managed care markets, and IDS, etc. Case principles specifically related to the healthcare field are completed. This course uses a synchronous delivery format.

MHI 593-6 Individual Research. (Same as MHA 593, RAD 593) A research course leading to the completion of a research paper that demonstrates the student`s knowledge of research techniques. Research is based on a special project or specific courses related to the field of Healthcare Informatics and in accordance with the policies and guidelines as established by Southern Illinois University Carbondale`s (SIUC) Graduate School. Prerequisite: a grade of C or higher in MHA 551 or MHI 551. Restricted to consent of SAH Academic Advisor.

MHI 595-6 Graduate Residency. (Same as MHA 595, RAD 595) Students initiate and complete University requirements (including MOU) to participate in a graduate residency/internship in a healthcare facility as outlined in course syllabi. Provides students with real-world healthcare exposure in their area of interest. Approval must be obtained by the University, Instructor, and Preceptor, prior to the beginning of the residency. Report logs and performance evals are required. Hours/credit are arranged with instructor. 1 credit hour equals 50 contact hours. Minimum of 300 contact hours are required. Restrictions may apply based on state-to-state regulations and/or University policy. Prerequisite: A grade of C or higher

MHA 551 or MHI 551. Restricted to consent of SAH Academic Advisor.

MHI 601-1 Continuing Enrollment. This course is required to satisfy the Graduate School`s requirement of continuous enrollment and is intended for those students who are enrolled in the program but cannot take a core academic course during a given semester. Restricted to consent of SAH Academic Advisor.