



Office of the
Vice President for Academic Affairs
and Provost
Colcock Hall
179 Ashley Avenue
MSC 002
Charleston SC 29425-0020

Tel 843 792 3031
Fax 843 792 5110
www.musc.edu

October 22, 2012

Ms. Renea Eshleman
Acting Director
Academic Affairs and Licensing
South Carolina Commission on Higher Education
1122 Lady Street, Suite 300
Columbia, South Carolina 29201

Dear Ms. Eshleman:

Please find enclosed a program planning summary for the proposed, *"Master of Science in Health Informatics –with Thesis Option"* Program.

If you have any questions, please do not hesitate to contact us directly.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark S. Sothmann", written over a horizontal line.

Mark S. Sothmann, Ph.D.
Vice President for Academic Affairs and Provost


MSS/jss

MEDICAL UNIVERSITY OF SOUTH CAROLINA
College of Health Professions
Department of Healthcare Leadership and Management

Proposed New Program:

Master of Science in Health Informatics (with Thesis Option)

Submitted: October 15, 2012


Ray Greenberg, MD, PhD
President
Medical University of South Carolina

10/18/12
Date

Program Contact Name and Contact Information:

Karen A. Wager, DBA
Professor, Department of Healthcare Leadership and Management
Associate Dean for Student Affairs
College of Health Professions
151 Rutledge Avenue, Suite A321
Charleston, SC 29425
843.792.4492
wagerka@musc.edu

Classification

Program Title:	Master of Science in Health Informatics
Option:	Thesis option
Level of Degree:	Master's
Proposed Date of Implementation:	Fall 2013
Qualifies for Palmetto or LIFE Scholarships:	No
Delivery Mode:	Blended instruction

Justification of Need for the Proposed Program

In response to the increasing demand for educated and skilled professionals in health care information technology and data analytics, the College of Health Professions at the Medical University of South Carolina proposes to offer a 45-credit hour Master of Science in Health Informatics, designed primarily for working health care professionals. This degree will ensure that graduates are prepared (1) to select, implement, use, and evaluate health care information systems such as electronic health records (EHRs) and data management and analytic systems; (2) to lead organizational efforts in health IT; and (3) to apply data analytical skills to transform patient care and the care delivery process.

The United States is in the midst of its largest health IT investment ever as the majority of health care organizations are in the throes of implementing or upgrading their EHR systems. Driven largely by the influx of federal incentive dollars available through the Health Information Technology for Economic and Clinical Health Information (HITECH) Act of 2009, eligible hospitals and physician practices seek not only to adopt EHR systems but to demonstrate "meaningful use,"¹ indicating that providers have achieved certain thresholds and quality indicators.² Providers who fail to achieve meaningful use by 2015 will experience a reduction in Medicare payments. Furthermore, with impending changes in reimbursement, a shift from fee-for-service to fees determined by outcomes/quality, health care providers must have the tools to easily capture, analyze, and act on patient- and population-level health information. Individuals trained in health informatics with strong leadership and data analytical skills are critical to the success of these health care organizations³.

Relationship of the Proposed Program to Existing Programs at the Proposing Institution:

The Department of Healthcare Management and Leadership (DHLM) at MUSC is ideally suited to offer this master's degree program. The Department currently offers a Master in Health Administration program in two formats, residential and executive, and a Doctoral program in Health Administration and Leadership, delivered in an executive format and online. Currently, no health informatics degree program exists at MUSC. This new initiative will be physically housed in DHLM, directed by expert faculty who teach in the College of Health Professions. Dr. Abby Kazley, Associate Professor, has conducted extensive research on the impact of health IT on quality, safety and efficiency. Dr. Karen Wager, Professor, is author of a nationally recognized leading textbook in health informatics and has broad experience in the evaluation of HIT implementation. Dr. Kit Simpson, Professor, has worked extensively with health care provider organizations on data analytics with archival clinical databases.

In addition to these faculty, health informatics faculty experts across MUSC have been involved in the proposal and the curriculum design, including Dr. Jihad Obeid, Associate Professor and SmartState⁴ Endowed Chair for Biomedical Informatics; and Dr. Robert Warren, Professor and Chief Medical Information Officer. Drs. Obeid and Warren have expressed interest in teaching in the program.

¹ Centers for Medicare and Medicaid Services (CMS), EHR Incentive Programs; Accessed online at <https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html?redirect=/EHRIncentivePrograms/>

² CMS EHR Meaningful Use Criteria, Accessed online at https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html

³ Hersh, W. (2010). The health information technology workforce: Estimations of demands and a framework for requirements. *Applied Clinical Informatics*, 197-212.

⁴ SmartState Endowed Chairs are renowned scientists and engineers who lead centers for excellence and economic development in South Carolina (more at <http://smartstatesc.org/>).

With the faculty talent currently at MUSC in the area of health informatics and health care leadership, coupled with our plans to hire a new program director, we are well positioned to offer a high quality educational program. MUSC has also showed commitment to the academic program with the establishment of a new Biomedical Informatics Center in August of 2012 with plans to recruit more faculty in this field to bolster the research and educational missions in Informatics. Hires will include a nationally renowned Center Director to fill a vacant SmartState Endowed Chair position in Informatics.

MUSC is also ideally suited to offer a high quality graduate program because of our close connections with MUSC Medical Center, the maturity of health IT use and experience at MUSC, the strength of our faculty, and our long successful history of offering educational programs in an executive format. Furthermore, MUSC is the only Clinical and Translation Science Award (CTSA) recipient in South Carolina and health informatics is *central* to the educational mission of CTSA. The success of MUSC's CTSA is heavily reliant on our creating a solid health informatics educational program. We intend to seek program accreditation from the Commission on Accreditation for Health Informatics and Information Management (CAHIIM) Education.

Assessment of Extent to Which the Proposed Program Duplicates Existing Programs in the State:

The College of Hospitality, Retail and Sport Management at the University of South Carolina recently started a master's degree in health information technology (HIT). Although the new program at USC has some similarity to our proposed MS in Health Informatics, several key differences exist. Our proposed program targets *working health care professionals* and/or those with *experience in information systems*. The new program at USC has as its admission criteria students with any undergraduate degree. Our goal is to prepare graduates who may assume leadership roles in planning, selecting, implementing, and evaluating clinical information systems, and who possess strong data mining and data analytical skills. Health care leaders need graduates who cannot only implement EHR-type systems effectively but are skilled in analyzing data from clinical data warehouses to optimize patient care and reduce costs. The proposed program at USC appears to have the system implementation component, but does not focus on clinical data analytics and comparative effectiveness research. It is also housed in a non-health related college (Hospitality, Retail and Sport Management). The projected demand for graduates is great enough in this state to support both degree programs, each with its unique focus.

Except for the proposed master's program in HIT at USC, the only existing health information management related programs in the state are at the associate and undergraduate levels. These programs have a different student target market and prepare individuals for different roles in health information management.

Program Demand and Productivity

The proposed MS in Health Informatics will be delivered using a combination of online and on-campus sessions, tailored to meet the unique needs of busy working health care professionals. The program will include a thesis option. We expect an enrollment of 15 students in the first cohort with an increase to 25 by year four. We anticipate enrolling the first cohort of students in the fall 2013 and graduating the first students in spring 2015. By year four, approximately 20-22 students will graduate from the program annually.

Employment Opportunities for Graduates

Graduates of the program will assume positions as data analytics officers, clinical system analysts, health IT project managers, and chief medical/nursing information officers in hospitals, physician practices, and other health care settings. We conducted a market analysis survey of major hospitals in South Carolina with responding hospitals ranging in size from 90 to 1200 beds. Based on a ratio of staff to hospital beds, we found a reported statewide need of at least 415 new certificate-trained and 71 master's degree trained healthcare informatics specialists in South Carolina within the next two years alone. National reports indicate a high demand for health information professionals at all levels. A recent national survey found that 70% of health insurers, 48% of hospitals, and 39% of pharmaceutical/life sciences plan to increase hiring of health informatics professionals over the next several years⁵. Although the Bureau of Labor Statistics does not currently report on

⁵ Needles in a Haystack—Seeking Knowledge with Clinical Informatics, PwC Health Research Institute, February 2012.

health informatics as a designated profession, it predicts employment in computer systems design and related services will grow by 48% by 2018. Concurrently, health care jobs will grow by four million, accounting for 26% of all jobs in the US economy⁶. Chief information officers indicate their biggest barrier to implementing EHRs is a shortage of IT staff, including those with clinical expertise. Hersh and Wright estimate over 40,000 health informatics professionals are needed nationally^{7 8} Using Hersh’s methodology and extrapolating by state, we calculate between 1,100 and 2,800 full time equivalent health IT professionals are currently needed in SC hospitals alone, not including other types of health care organizations. This range of need accounts for varying levels of HIT use in hospitals and is likely to increase to the higher end as more organizations adopt advanced EHR systems. Organizations particularly demand individuals skilled in data analytics in order effectively manage patient care and populations of patients in a cost-effective manner⁴.

Curriculum

Year 1	Year 2
<p><i>Fall Semester, Year 1</i></p> <ul style="list-style-type: none"> • Health Care Delivery Systems (3) • Introduction to Health Care Information Systems (3) • Data Organization, Process and Networks (3) <p><i>Spring Semester, Year 1</i></p> <ul style="list-style-type: none"> • Health Care Management and Leadership (3) • Health Care Data—Content, Standards and Knowledge Discovery (3) • Applied Statistical Methods for Decision Making in Health Care (3) <p><i>Summer Semester, Year 1</i></p> <ul style="list-style-type: none"> • Systems Analysis and Design (3) • Ethical, Legal and Regulatory Issues in Health Informatics (3) • Seminar in Health Informatics (3) 	<p><i>Fall Semester, Year 2</i></p> <ul style="list-style-type: none"> • Data Management and Data Analytics (3) • Strategy Management for Healthcare Systems (3) • Project Management (3) <p><i>Spring Semester, Year 2</i></p> <ul style="list-style-type: none"> • Advanced Health Information Technology (3) • Practicum/Field Project (3) • Elective (3 SH)—from approved listing; or thesis option <p><i>Research Option—</i></p> <ul style="list-style-type: none"> • Research Methods in Health Informatics (1) • Thesis (2)

Articulation and Inter-institutional Cooperation

Faculty from the College of Charleston’s Master in Computing and Information Sciences have indicated they are interested in teaching two courses in the program on a contractual basis.

Estimated Cost of Program

Faculty salaries and benefits	\$237,836
Staff support	\$31,803
Student recruitment	\$17,750
Supplies and materials	\$5,000
Other	\$5,000
Total	\$297,389

⁶ Bureau of Labor Statistics, Accessed online http://www.bls.gov/news.release/archives/ecopro_12102009.pdf

⁷ Hersh, W. and Wright, A. (2008). Characterizing the health information technology workforce: Analysis from the HIMSS Analytics Database.

⁸ Hersh, W. (2010). The health information technology workforce: Estimations of demands and a framework for requirements. *Applied Clinical Informatics*, 197-212.