

MARYLAND HIGHER EDUCATION COMMISSION
ACADEMIC PROGRAM PROPOSAL

PROPOSAL FOR:

- NEW INSTRUCTIONAL PROGRAM
 SUBSTANTIAL EXPANSION/MAJOR MODIFICATION
 COOPERATIVE DEGREE PROGRAM
 WITHIN EXISTING RESOURCES or REQUIRING NEW RESOURCES

(For each proposed program, attach a separate cover page. For example, two cover pages would accompany a proposal for a degree program and a certificate program.)

Johns Hopkins University

Institution Submitting Proposal

Spring 2017

Projected Implementation Date

Post-Baccalaureate Certificate

Quality, Patient Safety and Outcomes Research

Award to be Offered

Title of Proposed Program

1214-21

Suggested HEGIS Code

51.2201

Suggested CIP Code

Bloomberg School of Public Health

Department of Proposed Program

Michael Klag, Dean

Name of Department Head

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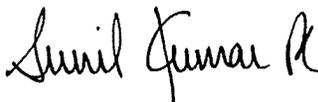
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Signature and Date

9/20/2016

President/Chief Executive Approval

n/a

Date

Date Endorsed/Approved by Governing Board

**The Johns Hopkins University
Bloomberg School of Public Health
Proposal for Substantial Modification to an Existing Certificate Program**

Post-Baccalaureate Certificate in Quality, Patient Safety and Outcomes Research

A. Centrality to institutional mission statement and planning priorities

1. Program description and alignment with mission

The Johns Hopkins University Bloomberg School of Public Health (JHSPH) is pleased to submit a proposal to substantially modify its existing and previously endorsed Post-Baccalaureate Certificate in Quality, Patient Safety and Outcomes Research (HEGIS code 1214-21, CIP code 51.2201) to offer an online option. The Post-Baccalaureate Certificate in Quality, Patient Safety and Outcomes Research has been offered through the Department of Health Policy and Management since the 2011.

The PBC in Quality, Patient Safety and Outcomes Research is designed to provide an opportunity for education and research both to full-time students and to professionals who may not be enrolled in a full time program but are keen to enhance their knowledge and skills in this field. Based on a case study done in 2010, the Department of Health Policy and Management reviewed all avenues of research and teaching within the department. The integrally related areas of Quality, Patient Safety, and Outcomes Research (QPSOR) and Comparative Effectiveness Research (CER) were identified as central focus areas for the department to address. Patient safety and quality of care involve identifying ways to improve care delivery, and the implementation of these methods. Outcomes research focuses on measurement and evaluation, and comparative effectiveness research (now referred to as Patient Centered Outcomes Research within the U.S. federal Government) uses rigorous methodology to compare the effectiveness of available options for treatment or prevention. While the certificate program focuses primarily on quality, safety and outcome assessment, it also includes approaches to evaluate and compare interventions.

The mission of the Johns Hopkins University is to educate its students and cultivate their capacity for life-long learning, to foster independent and original research, and to bring the benefits of discovery to the world. This program is fully consistent with Johns Hopkins' mission. The online certificate program offers the same rigorous educational experience available to other graduate students at the Bloomberg School, as it is based entirely upon the same material and is taught by the same instructors as the existing classroom or online programs. At the same time, it meets the needs of professionals who work full-time and seek a flexible yet comprehensive program independent of geography, work environment, and schedule.

2. Alignment with institutional strategic goals

One of the seven strategic priorities of the Bloomberg School of Public Health is to prepare leaders in public health science and practice to address current and future public health challenges. One of the near-term goals within that priority is to develop a comprehensive suite of contemporary certificate and degree offerings, for full- and part-time students, with flexible formats that respond to public health needs in both the domestic and international markets. It is clear that an online program offers a flexible format and enables this program to more easily reach the international markets cited in this goal.

The Bloomberg School of Public Health's Department of Health Policy and Management's (HPM) initiative seeks to meet the lifelong education needs of working professionals in public health, healthcare management and medicine. HPM offers state-of-the-art courses combined with the convenience, flexibility, and accessibility that make these educational opportunities feasible for working adults.

In recent years, HPM has moved steadily into the field of online education, offering more and more courses online that enable the delivery of certificate programs in an online format. This development meets two needs: (1) it contributes to the convenience and flexibility of existing offerings, by allowing students to take a mix of classroom and online courses, and (2) it opens this educational opportunity to a much larger market, enabling students throughout the country and, indeed, the world to take courses at Johns Hopkins University.

The goal of this initiative is to promote and enhance the quality of education in quality, safety, and outcomes research both nationwide and internationally through the utilization of advanced online educational technologies. The proposed modification to the PBC in Quality, Patient Safety and Outcomes Research will continue to build and draw upon the strengths of existing resources and the expert faculty within the Bloomberg School of Public Health.

B. Adequacy of curriculum design and delivery to related learning outcomes

1. Program outline and requirements

A full course listing, with course titles and descriptions, is provided in Appendix A.

Persons eligible for admission to the certificate program must be enrolled in a master's or doctoral degree program or be a post-doctoral fellow at The Johns Hopkins University Schools of Public Health, Medicine, or Nursing. School of Medicine residents and fellows engaging in outcomes and comparative effectiveness research are also eligible. In addition, the certificate will be offered to non-degree students with at least a baccalaureate degree from an accredited college or university with three years (full-time equivalent) professional experience in a health care related field.

JHSPH master's and doctoral degree students do not need to formally apply to the certificate. However, they must complete a declaration of intent form to inform the faculty sponsors of their interest in the certificate program prior to beginning coursework, in order to receive advice on course selection and the required practicum.

Non-degree students, master's and doctoral students from the Schools of Nursing and Medicine, and Hopkins fellows, residents, and post-doctoral fellows are required to submit an online application through the Bloomberg School's Admissions Office. The application includes official transcripts from all post-secondary schools, a letter of recommendation, a statement of purpose, and a CV. School of Medicine and Nursing students must have written approval from their academic advisors to pursue the certificate. Applications are reviewed by a committee of faculty who determine the admissions decision.

Students are required to complete 21 term credits of coursework, including a 3-credit practicum that provides a hands-on, supervised experience in research or practice related to quality of care, patient safety, and/or outcomes research. The practicum may be conducted in a health care setting or organization or with a team of researchers, subject to approval by the certificate practicum faculty.

All courses must be taken for letter grade and a 2.75 grade point average for the certificate courses is required in order for the certificate to be granted. Requirements must be completed within three years of being accepted into the certificate program. All courses are taught by faculty of the Bloomberg School of Public Health and the School of Medicine.

The listing of the certificate prerequisite courses, required courses and elective courses are given in table 1.

Table 1				
Course Number	Course Title	Credits	Online Term	Onsite Term
Required prerequisites to be completed before starting course work				
	Introduction to Online Learning	0	1,2,3,4,Su	
550.860	Academic and Research Ethics at JHSPH	0	1,2,3,4,Su	
Required Courses				
309.712	Assessing Health Status and Patient Outcomes	3	2	
309.730	Patient Safety and Medical Errors	3	3	
309.864	CQPSOR Practicum	3	3,4	3,4
311.615	Quality of Medical Care	3	1	
312.693	Introduction to Comparative Effectiveness and Outcomes Research	3	1	
Elective Courses: Domain 1: Quality of Care				
221.722	Quality Assurance Management Methods for Developing Countries	4	1	1
309.609	Palliative and Hospice Care: Quality of Care and Health Policy	2		WI
Elective Courses: Domain 2: Patient Safety				
309.600	Evaluating Quality Improvement and Patient Safety Programs	3	1	WI
309.731	Patient Safety in Developing Countries	2		SI
309.732	Human Factors in Patient Safety	3		4
312.678	Introduction to Healthcare Quality and Patient Safety from the Management Perspective	2		2
Elective Courses: Domain 3: Economic Evaluation and Outcomes Research				
313.630	Economic Evaluation I	3		2
OR (please note that students should take either 313.630 or 313.790 but NOT both)				
313.790	Introduction to Economic Evaluation	3	4	
313.631	Economic Evaluation II	3		3
313.632	Economic Evaluation III	3		4
313.793	Extended Exercises in Cost Effectiveness	2		SI
Elective Courses: Domain 4: Health Care Management				
312.600	Managing Health Services Organizations	4	3	
312.601	Fundamentals of Management for Health Care Organizations	3		2
Elective Courses: Domain 5: Public Health Informatics				
309.631	Population Health Informatics	3	2	
OR (please note that students should take either 309.631 or 312.633 but NOT both)				
312.633	Health Management Information Systems	3	3,4	

2. Educational objectives and student learning outcomes

Upon successful completion of the PBC in Quality, Patient Safety and Outcome Research, students will be able to:

- Describe several frameworks and theories for assessing and improving the quality of medical care
- Describe current key policy and programmatic areas in quality of care
- Assess quality of care for a medical condition
- Describe key elements of published quality assessment and improvement studies
- Develop a workable quality improvement and evaluation plan
- Recognize the extent of problems in patient safety in medical care
- Describe the role of various systems and factors in creating safety and in causing errors and adverse events
- Discuss problems and issues in measuring and reporting safety
- Conduct an incident investigation and disclose an adverse event
- Design solutions to improve patient safety
- Examine the ethical, legal, and regulatory implications related to patient safety and incorporate in the day to day practice
- Argue for the importance and challenges of using patient and consumer reported measures in research, clinical practice, and program evaluation
- Compare the different types of instruments available to measure health related quality of life
- Critique the use of commonly used patient reported outcomes in specific applications
- Plan the development of a new questionnaire
- Recognize the role of patient-centered outcomes research in improving health, including its place in the U.S. research portfolio, the importance of stakeholders in the research process, and policy implications related to implementation
- Identify study designs and methodologies unique to patient outcomes research

3. General education requirements

Not applicable

4. Specialized accreditation/certification requirements

Not applicable

5. Contractual agreements with other institutions

Not applicable

C. Critical and compelling regional or statewide need as identified in the State Plan

1. Demand and need for program

The JHSPH Department of Health Policy and Management has offered quality and safety courses since the start of the century. The growth in the demand for quality and patient safety by the healthcare industry in the region, around the country, and the world has made the need for a certificate program like this more apparent.

For busy working professionals, flexibility is very important, as is the ability to continue their education in the face of work demands. Online offering of the certificate courses will create scheduling flexibility and increase course choices for students pursuing the onsite programs. They will also accommodate students who must leave the area due to military deployment or relocation by their employer. Online offerings will give HPM the opportunity to retain students with frequent business travel or job assignment outside of this region, as well as those with personal commitments requiring schedule flexibility. In addition, the online PBC in Quality, Patient Safety, and Outcomes Research will enable JHU to further spread its influence on the education and practice of quality and safety across the nation and around the world. For these reasons, the HPM department identified a need to offer this certificate program in an online format and is committed to the development of such a program.

2. Alignment with Maryland State Plan for Postsecondary Education

The 2013–2017 Maryland State Plan for Postsecondary Education articulates six goals for postsecondary education: 1) quality and effectiveness; 2) access, affordability and completion; 3) diversity; 4) innovation; 5) economic growth and vitality; and 6) data use and distribution. This certificate program addresses five of these goals.

One of JHSPH's goals is to prepare highly trained scientists and healthcare professionals to work in organizations where they can contribute to the public health needs of society. The long-term success of JHSPH programs for working professionals attests to the quality and effectiveness of these programs, thus directly supporting the quality and effectiveness goal (Goal 1) in the State Plan. By leveraging technology in innovative ways to make JHSPH certificate offerings more accessible and interactive, candidates can pursue "anytime, anywhere" learning opportunities. Candidates can undertake course-related activities at a time and a location most convenient to them, allowing them to participate in courses and to complete their program even if their work schedule does not permit regular class attendance or if they move away from the Maryland region, thus supporting the completion goal (Goal 2) and the innovation goal (Goal 4) in the State Plan. Typically, part-time students with full-time jobs who enroll in JHU degree programs represent a broader range of diversity than students in full-time degree programs. In targeting part-time students, this program addresses the diversity goal (Goal 3) in the State Plan. In turn, the program, through the preparation of highly qualified quality and safety healthcare professionals, also contributes to the economic growth and vitality goal (Goal 5) by providing life-long learning to scientists and healthcare professionals so they can maintain the skills they need to succeed in the workforce.

D. Quantifiable and reliable evidence and documentation of market supply and demand in the region and State

1. Market demand

In recent years the demand for healthcare professionals with quality and safety knowledge and expertise has been increasing. The number of requests from students for more online courses, which would give them better access to the program, has also increased.

Pursuing a program like this certificate is a significant way to maintain career viability in a healthcare environment where patient safety, quality of care delivered, and evaluation of outcomes experienced by patients are becoming more and more relevant. Job opportunities for the graduates of this certificate program include expanding their roles in their existing job portfolios or switching to a more specific quality and safety role in healthcare settings. For example, all of the acute care hospitals in Maryland employ professionals who function as “patient safety officers” (official titles may vary).

It is anticipated that students and employers will support the proposed online certificate program more extensively due to lower overall cost and greater convenience.

2. Educational and training needs in the region

There is a growing recognition for the importance of outcomes and comparative effectiveness research. For example, the U.S. federal government allocated \$1.1 billion for comparative effectiveness/patient centered outcomes research in FY 2010 and the FDA established the Center for Education in Comparative Effectiveness Research in Silver Spring, MD. Federal funding was also used to establish an extra-governmental Patient Centered Outcomes Research Institute with an eventual annual budget of \$400-600 million, located in Washington, DC. Johns Hopkins has an array of new and existing research institutes and practice centers related to quality, patient safety, and outcomes research. The certificate training is informed by and contributes to Hopkins centers and institutes, which include the following:

- Center for Surgical Outcomes Research
- Evidence-Based Practice Center (EPC)
- Developing Evidence to Inform Decisions about Effectiveness (DEIDE) Center
- Accelerating Change and Transformation in Organizations and Networks (ACTION) Center, for implementing known effective interventions
- Clinical and Translational Science Award (CTSA) site, that promotes training in clinical research
- Johns Hopkins World Health Organization (WHO) Patient Safety Center
- Johns Hopkins Center for Health Services and Outcomes Research
- Armstrong Institute for Patient Safety and Quality

The increase in the enrollment of master's and doctoral students interested in quality and safety over the past decade is strong evidence that there is a solid and persistent demand for this certificate program to serve regional, national, and global educational needs. Quality and Safety are considered to be two of the core healthcare delivery disciplines and play an important part in the delivery of safe, effective, and efficient patient care.

3. Prospective graduates

No data could be found on the Maryland Higher Education Commission web site regarding the number of professionals receiving such education either through a certificate or a master's programs in healthcare related fields.

During the last four years there have been 25 graduates who completed the certificate. Approximately 10-15 students enrolled annually in the initial years of the certificate, and there is no reason to expect this number to decrease in the foreseeable future. Rather, we estimate this number to grow given the opening of global horizons by the online format.

E. Reasonableness of program duplication

1. Similar programs

To the best of our knowledge, there is no certificate program in quality, patient safety and outcomes research being offered by any of the universities in the geographical area. There are workshops and applied courses offered by the University of Maryland but no similar certificate program is offered.

2. Program justification

To our knowledge, there is no other quality, safety, and outcomes research certificate program offered online in the state of Maryland. In view of the market demand for such a program, the proposed online certificate program clearly meets a currently important need in the region, nationwide and globally.

F. Relevance to Historically Black Institutions (HBIs)

It is not anticipated that the proposed program will have any impact on Historically Black Institutions although we would welcome the participation of students from nearby Howard University and Morgan State University and will actively advertise this program at these sites.

There are no known certificate programs like this JHU program in any of the Historically Black Institutions in Maryland.

G. Evidence of compliance with the Principles of Good Practice

See Appendix B for the evidence that this program complies with the Principles of Good Practice noted above.

The Higher Education Opportunity Act (HEOA) enacted in 2008 requires that an academic institution that offers distance education opportunities to students 1) has a process established to verify that the student who registers is the same student who participates in and completes the offering and receives academic credit for it, 2) has a process established, to verify that student privacy rights are protected, and 3) has a process established that notifies the student at about any additional costs or charges that are associated with verification of student identity. In this graduate program the following actions have been taken to satisfy these requirements: 1) students may only enter the academic website for the online courses they take by providing their unique student ID and password they receive when they are admitted to the programs, 2) all FERPA privacy rights are preserved by limiting access very specifically in the University student information system to only those permitted by law to have access to restricted student information, and 3) there are no additional costs assessed to the student for the measures we use to verify student identity.

H. Adequacy of faculty resources

The Bloomberg School of Public Health's department of Health Policy and Management serves the full-time and part-time graduate education needs of the public health professionals interested in the disciplines of health policy, healthcare management and leadership, quality, safety, and outcomes research in the central Maryland region and beyond. Hence, the department strives to provide exceptional public health education rooted in practice. As a result and by design, the division relies heavily on full-time faculty, and practitioner faculty, many of whom are part-time, with the necessary experience to educate practicing healthcare professionals. All faculty members are highly qualified, distinguished and experienced professionals, virtually all of whom have doctorates in their respective fields of expertise. Each has demonstrated a strong commitment to excellence in teaching. Most are practicing professionals or academicians and researchers in the Bloomberg School of Public Health and School of Medicine. Currently, all faculty members teach online courses. Please see Appendix C for a list of active faculty members, their affiliations, and degrees.

The certificate program will not require additional faculty, staff, facilities, or equipment. No additional laboratory, computer, library, financial, or other resources are needed to implement the certificate program.

I. Adequacy of library resources

The book collections at the Johns Hopkins University number almost two and one-half million volumes, selected to support the studies of all departments and divisions of the University. The William H. Welch Library collects current scholarly information, primarily electronic, which supports the research, clinical, administrative, and educational needs of its clients. The collection covers health, the practice of medicine and related biomedical and allied health care disciplines, public health and related disciplines, nursing, research literature, methodological literature, reviews or state-of-the-art reports, and in-depth, authoritative analyses of areas influencing biomedicine and health care. The library's emphasis is on providing materials at point of need. As a result, the collection includes more than 5000 electronic journals, more than 400 databases, and more than 2000 electronic books. The library has staff members assigned to each department to aid in research and best practices for library services.

The Abraham M. Lilienfeld Library is the primary resource within the School for information in the fields of public health, management science, and the social sciences. The library provides access, via the Johns Hopkins Medical Institution online catalog and specialized bibliographic databases, to information in all areas of interest to the Schools' students and faculty. The total library collection is now approximately 30,000 volumes of books, pamphlets and government reports, with a strong emphasis in epidemiology, infectious diseases, health policy and management, the social aspects of health care, and HIV and the AIDS pandemic.

J. Adequacy of physical facilities, infrastructure and instructional equipment

All courses in the proposed program will be offered online. The program will have no discernible impact on the use of existing facilities and equipment beyond the standard requirements already in place; primarily, faculty office space in an existing university facility location.

K. Adequacy of financial resources with documentation

See Appendix D for detailed financial information.

L. Adequacy of provisions for evaluation of program

As part of the program design and approval process, student learning outcomes and assessments have been aligned with the academic goals of the school and approved by the School's Committee on Academic Standards. All courses are individually evaluated by students at the conclusion of every term by the School. Additionally, feedback regarding the appropriateness of course content in terms of the overall certificate program will be solicited from students at the conclusion of every course. The program committee will meet annually to assess course evaluations and other feedback provided by students, faculty and other stakeholders in the program. Based on these data, the program committee will implement changes to the program (in terms of curriculum content, course delivery mechanisms, etc.) as necessary.

M. Consistency with the State's minority student achievement goals

Any student meeting the admissions requirements can apply to the Certificate in Quality, Patient Safety and Outcomes Research. The program will work to help all accepted students improve their workplace competitiveness and reach their professional goals, an aim consistent with the State's minority student achievement goals.

N. Relationship to low productivity programs identified by the Commission

Not applicable

Appendix A

Course List and Descriptions

Introduction to Online Learning (0 credits) – ONLINE

Introduction to Online Learning (IOL) is a mandatory course that will prepare a learner and his or her computer for taking an online course offered through the Johns Hopkins Bloomberg School of Public Health. Attention is focused on learner responsibilities and communication strategies in online courses. Course instructors do not assume that anyone taking the course is a computer expert, although it is expected that **all** online students have a good, basic understanding of how to operate a computer.

Academic & Research Ethics (0 credits) – ONLINE

Examines academic and research ethics at JHSPH in a series of online interactive modules. Focuses on information about the academic ethics code and responsible conduct of research at the School. Explores issues of academic integrity such as proper ethical conduct and referencing, and discusses violations such as plagiarism and cheating, relative to case studies that illustrate situations faced by students and faculty in the academic setting. Addresses topics that include responsible conduct of research, authorship, data management, data ownership, guidelines for professional conduct, research fraud or scientific misconduct, federal and institutional guidelines related to research using human and animal subjects and ethical issues involving vulnerable subjects in research.

221.722 Quality Assurance Management Methods for Developing Countries (4 credits) – ONLINE

Presents the principles and practice of total quality management methods for health systems in developing countries. Emphasizes integrated district-level health systems management; fostering a genuine team approach in the face of an authoritarian tradition; central importance of community governance; interventions performed according to standards and in an equitable fashion; introducing a measurement-based approach to problem solving, emphasizing analysis of service delivery process and outcome; and developing operational research as an integral component of the management system.

309.600 Evaluating Quality Improvement and Patient Safety Programs (3 credits) - ONLINE

Prepares students to evaluate Quality Improvement/Patient Safety (QI/PS), projects by developing their competencies in the following areas: 1) Critiquing evaluations of QI/PS projects; 2) Designing a robust evaluation of a QI/PS project; and 3) Conducting a small scale qualitative study.

309.609 Palliative and Hospice Care: Quality of Care and Health Policy (2 credits) – ONSITE

Addresses the policy problems related to improving access, quality and cost-effectiveness for palliative and hospice care within the current medical system, using case studies and workshop exercises. Also addresses the challenges and opportunities palliative and hospice care face under health reform. Considers questions such as: what communication strategies can be widely applied to help patients understand and choose care in accordance with their goals and values; how palliative care and hospice services should be delivered by accountable care organizations and medical homes; how palliative care can be integrated into the long-term care environment; and what quality measures should be integrated into performance measurement for all providers of the seriously ill.

309.631 Population Health Informatics (3 credits) – ONLINE

Introduces students to concepts, methods, and issues related to the application of health information technology (HIT) to population health. Emphasizes the population health potential of comprehensive electronic health records (EHRs), personal health records (PHRs), mobile health and telemedicine devices; and consumer focused internet-based tools. Covers the uses of HIT to define and identify populations and sub-populations of interest, describe the health status and needs of populations, improve the health of populations, and evaluate services provided to populations. Emphasizes the use of HIT within both local, regional and federal public health agencies and population-based private health care organizations such as integrated delivery systems and health insurance plans. Lessons are mainly US oriented but are also applicable to other high and middle income countries.

309.712 Assessing Health Status and Patient Outcomes (3 credits) – ONLINE

Provides an understanding of the conceptual basis for measures of health; some of the common measures, their properties, and strengths and weaknesses; and a framework for judging the appropriateness of a particular measure for students' own work.

309.730 Patient Safety and Medical Errors (3 credits) – ONLINE

Provides an introduction to the science of safety, and how it relates to problems with patient safety in health care. Explores the extent and nature of safety problems through discussion of important papers and reports. Uses case as the basis for understanding factors that cause, mitigate, and prevent errors and patient harm. Emphasizes the role of both individuals and systems in improving patient safety. Teaches how to conduct incident investigations, understand advantages and limitations of error reporting, how to disclose bad news, and use models that can be used to improve safety in health care organizations.

309.731 Patient Safety in Developing Countries (2 credits) – ONSITE

Introduces students to the rapidly evolving field of patient safety in developing countries, focusing on health systems improvement. Explains the role of global organizations, national governments, institutions, local communities, and individuals in improving patient safety in developing countries. Reviews key global patient safety resources that can be utilized to enhance patient safety in developing country health systems. Students learn how to utilize a “problem solving paradigm” to patient safety, conduct a patient safety situational analysis, and develop an action plan for patient safety at the institutional level. Explores the use of patient safety partnerships between hospitals as a model for inter-continental collaboration.

309.732 Human Factors in Patient Safety (3 credits) – ONSITE

Prerequisite: 309.730 is strongly recommended, or students must get instructor consent. Provides students with the essential concepts, methods and tools to enable them to design effective patient safety interventions and evaluate their impact.

309.864 Quality, Patient Safety, and Outcomes Research Practicum (3 credits) – Offsite; student chooses practicum site

Prerequisite: At least 3 of the required certificate courses must be taken before registering for the practicum.

Provides students in the Quality, Patient Safety, and Outcomes Research Certificate Program with an integrated experience in quality, patient safety, outcomes research, or a combination of the 3 domains in any one of a wide variety of settings in the health service delivery environment. Students are placed based on their individual goals and interests and the preceptors’ needs. Students join an active work group and are supervised directly or indirectly by the practicum preceptor.

311.615 Quality of Medical Care (3 credits) – ONLINE

Introduces quality issues, including the extent to which customary care for specific health problems improves quality of life and reduces mortality, and quality assessment and assurance performed by caregivers, professional societies, government-sponsored professional review organizations, and government and other third party organizations who pay for care. Provides a basis to judge the effectiveness of quality assessment and assurance activities and to begin to develop programs.

312.600 Managing Health Services Organizations (4 credits) – ONLINE

Presents a framework for understanding and managing health services and health sector organizations. Discusses strategic and organizational management [e.g., health care environment, stakeholders and customers, missions, vision and values, governance, organizational structure and design]; management & performance improvement tools [e.g., budgeting and financial management, logistics, continuous quality improvement, balanced scorecard, logical framework, learning networks and collaborative; management role and functions [e.g., leadership style, employee performance, decision-making, human resource management]

312.601 Fundamentals of Management for Health Care Organization (3 credits) – ONSITE

Discusses how to manage in health care organizations, including management processes, organizational structures, and types of governance and management issues of U.S.-based health care delivery systems. Topics include: introduction to health care systems; managing health care organizations; health care environments, administrative management responsibilities; approaches to performance improvement and financial management concepts.

312.633 Health Management Information Systems (3 credits) – ONLINE

Provides a broad overview of healthcare information systems with emphasis on historical foundations, current issues, and industry pressures pushing modernization and increased sophistication in the use of technology. Major topics include an overview of healthcare use of information technology, medical informatics, public health informatics, information technology infrastructure, ethics in computing, computer security, consumer informatics, clinical software, computing in clinical education, research computing, health information exchange, and the future of healthcare computing.

312.678 Introduction to Healthcare Quality and Patient Safety: A Management Perspective (2 credits) – ONSITE

Introduces students to the latest thinking on healthcare quality and patient safety improvement through didactic sessions, interactive exercises and case studies that have direct relevance for the public health practitioner, healthcare administrator or clinician. Focuses on the specific domains of healthcare quality and patient safety based on the strategies recommended by the Institute of Medicine report "To Err is Human." Examines healthcare quality and patient safety from a strategic viewpoint with the goal of making healthcare administrators into effective decision makers.

312.693 Introduction to Comparative Effectiveness and Outcomes Research (3 credits) - ONLINE

In the last few years, comparative effectiveness research has surged to the forefront of political and academic consciousness in the U.S. This course provides an introduction to the motivation and methods of this rapidly evolving field. Reviews the problems faced by decision makers across the US health care system, and reviews priority topics for investigation. Explains the role of stakeholders, including payers, manufacturers, health care organizations, professional groups, providers and patients. Explains study designs and methods used in effectiveness research, focusing in particular on observational studies, but also on newer trial designs. Addresses the policy implications of this research.

Special Comments: CER is the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat and monitor a clinical condition, or to improve the delivery of care. The purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population levels

313.630 Economic Evaluation I (3 credits) – ONSITE

Prerequisite: Previous coursework in basic microeconomic theory will enable participants to gain deeper understanding of course material. It is recommended that students taking the three-course economic evaluation sequence should be concurrently enrolled in the three-course health economics sequence.

Demand for health services is increasing due to population growth, rising income and expectations, higher demand for care, and new technologies. Because all societies have limited resources, expenditures must be balanced against other needs such as infrastructure, education, and social welfare. Managers face decisions about allocation of funds to different population segments (e.g. young versus elderly) or different types of programs (e.g. prevention versus treatment, acute versus chronic disease), and programs with great benefit for a few versus modest benefit for many (e.g. organ transplant versus cataract surgery). The first in a three course sequence, students secure a solid introduction to the theory, methods, and application of economic evaluation in health care with a specific focus on cost-effectiveness analysis.

313.631 Economic Evaluation II (3 credits) – ONSITE

Prerequisite: Economic Evaluation I (313.630)

Building upon the theoretical concepts taught in Economic Evaluation I, this course will provide advanced content in the areas of decision analysis and cost-effectiveness. Provides advanced content in decision analysis and cost-effectiveness and alternative approaches of modeling research questions for these fields. Approaches include calculation of costs and effectiveness measures using standard modeling methods. Compares outputs as a result of decision tree and Markov modeling and introduces sensitivity analysis. Students participate in group projects to produce a well-thought model on a topic of their own choosing in decision analysis or cost-effectiveness.

313.632 Economic Evaluation III (3 credits) – ONSITE

Prerequisite: Economic Evaluation I (313.630) and Economic Evaluation II (313.631) or permission of the instructor

Third course in the economic evaluation sequence. Examines advanced methods as well as areas of controversy. Modeling methods introduced in Economic Evaluation I and II are further developed with a focus on probabilistic sensitivity analysis. Examines alternatives to conventional cost-effectiveness analysis, including cost-benefit analysis, stated preference methods, and multi-criteria decision analysis. Assesses the role of economic evaluation in national health policy through a case study of a national health insurance system.

313.790 Introduction to Economic Evaluation I (3 credits) – ONLINE

Prepares students to read and interpret cost-effectiveness studies. Introduces the basic economic concepts that are needed in order to understand the recommendations from the United States Panel on Cost Effectiveness in Health and Medicine, such as the distinction between opportunity costs and budgetary costs. Considers review recommendations, particularly as they apply to cost-effectiveness research reports. Discusses the relationship between cost-effectiveness results and other elements of the health care policy decision making process.

313.793 Extended Exercises in Cost Effectiveness (2 credits) – ONSITE

Prerequisite: 313.792

Provides students with experience in seven short exercises that explore a variety of aspects of cost-effectiveness analysis. Students learn how to link all the steps together to complete a full cost-effectiveness analysis from start to finish. During the two day course, students work in Microsoft Excel to setup a workbook that will allow them to complete a cost-effectiveness analysis, manipulate the results to explore multiple possible assumptions, and have the opportunity to share their work in a format that is easily accessible.

Appendix B

Evidence of Compliance with the Principles of Good Practice (as outlined in COMAR 13B02.03.22C)

(a) Curriculum and Instruction

- (i) **A distance education program shall be established and overseen by qualified faculty.**

This is already a well-established onsite program; many of the faculty teaching in the onsite program also serve as online instructors. New instructors are required to meet the same qualifications as those teaching in the traditional onsite program. Online courses are supported by the JHSPH Center for Teaching and Learning (CTL), which offers an array of evidence-based programs and services that support innovative teaching methods that encourage critical thinking skills online.

- (ii) **A program's curriculum shall be coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.**

All courses in the online program are either currently also being offered in the traditional, onsite program or have been taught at least twice face to face before the course was converted for online delivery. All of the School's online courses adhere to CTL's formal course development process with support from experienced instructional designers. Online coursework follows well-established curriculum development standards, tailoring delivery methods, content, and assessments to learning objectives. Randomized empirical research suggests that an online course can be as rigorous, effective, and well received as an onsite version of the same course. Each term the School compares student course evaluations for onsite and online courses; these comparisons consistently yield very similar results.

- (iii) **A program shall result in learning outcomes appropriate to the rigor and breadth of the program.**

The program learning outcomes (competencies) are derived with input from professionals within the discipline, the program faculty, program leadership, and other program stakeholders, and are reviewed by the School's Committee on Academic Standards. The desired program outcomes are identical to those achieved in onsite programs.

- (iv) A program shall provide for appropriate real-time or delayed interaction between faculty and students.**

The PBC in Quality, Patient Safety, and Outcomes Research will be delivered via the School's course delivery and management system—CoursePlus. This platform supports asynchronous interaction between faculty and students. Students and faculty also have the option to participate in optional 'real-time' interaction through weekly web-conference office hours, supported by Adobe Connect, and pre-scheduled LiveTalks.

- (v) Faculty members in appropriate disciplines in collaboration with other institutional personnel shall participate in the design of courses offered through a distance education program.**

The program has established a process for identifying the appropriate faculty to design an online course. All faculty members are selected based on domain expertise, program-related teaching experience and completion of a required online course development training course. Faculty are fully supported by CTL experts.

(b) Role and Mission

- (i) A distance education program shall be consistent with the institution's mission.**

Refer to Section A.1 in the main body of the proposal.

- (ii) Review and approval processes shall ensure the appropriateness of the technology being used to meet a program's objectives.**

All courses offered online are designed in conjunction with CTL and with the support of an instructional designer, multimedia producers, and web specialists. These individuals assist in identifying and recommending the most effective learning technologies for achieving the course learning objectives. The course instructor(s) consults with an instructional designer during the course design process to determine the most effective learning technologies and strategies needed to meet the course learning objectives. The course design goes through multiple reviews by the instructional designer and program directors. Program directors ensure that the course design meets the program's expectations for online courses and that the course learning objectives reflect what the program expects students to achieve after completing the course. The CTL design team continually monitors courses and consults with the instructors to make adjustments, if needed. All new online courses participate in a midterm and end-of-term course evaluation process. Midterm feedback is used to determine if any mid-term adjustments are needed and the end-of-term feedback is used to assess whether further course refinements are needed prior to the next time the course is offered.

(c) Faculty Support

- (i) An institution shall provide for training for faculty who teach with the use of technology in a distance education format, including training in the learning management system and the pedagogy of distance education.**

Online certificate programs are supported by CTL, which offers a number of opportunities and resources for faculty instructors and teaching assistants to become more familiar with online teaching systems and best pedagogical practices. In addition to maintaining an extensive catalog of resources on these topics (an online Teaching Toolkit), CTL regularly offers events, workshops, and one-on-one office hours to introduce and provide updates on the latest advances in teaching technology and pedagogy. In addition to one-on-one guidance from an instructional designer, all faculty participate in an online teaching orientation session.

- (ii) Principles of best practice for teaching in a distance education format shall be developed and maintained by the faculty.**

Prior to teaching their first courses, all new online instructors are required to participate in training that conveys, among other things, principles of best practices in online education.

- (iii) An institution shall provide faculty support services specifically related to teaching through a distance education format.**

JHSPH, through CTL, maintains an innovative course management system and provides faculty support and training for online education through a staff of more than 30 individuals who specialize in instructional design, audio production, technical writing, web development, production management and quality control.

- (d) An institution shall ensure that appropriate learning resources are available to students including appropriate and adequate library services and resources.**

The Johns Hopkins University library system includes The William H. Welch Medical Library in the School of Medicine, the Abraham M. Lilienfeld Library in the School of Public Health, and the Milton S. Eisenhower Library on the Homewood campus. Most periodicals, including more than 13,000 journal subscriptions and multiple databases and catalogs, are available to University Faculty, staff and students online from any location in the world. The interlibrary loan department also makes the research collection of the nation available to faculty and students. The libraries offer a variety of instructional services, including electronic classrooms designed to explain the library resources available for research and scholarship. Students have access to all libraries and library informationists.

(e) Students and Student Services

- (i) A distance education program shall provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

JHSPH maintains numerous web-based resources to inform prospective students on the information they may need as an online student. These resources include: the JHSPH main website www.jhsph.edu; the JHSPH Certificate Programs website (<http://www.jhsph.edu/academics/certificate-programs/>), and the JHSPH online catalog. These resources include detailed programmatic information, academic support services, financial aid, costs, policies, etc. and specific information for online learning. As new online students are admitted and enrolled, they receive timely emails with important information to help them prepare to become an online student. These emails include information on how to create their JHU login account for the course management system, technical requirements, available academic support services, and a required orientation course for new online students.

- (ii) Enrolled students shall have reasonable and adequate access to the range of student services to support their distance education activities.**

JHSPH online students have access to the following academic support services:

Academic advising. Students are assigned an advisor when accepted. Students work individually with the advisor to develop a course of study that meets the requirements of the program and the career goals of the student. The advisor regularly contacts the students to check on progress and answer questions. Courses that deviate from the program plan and have not been approved by an adviser may not count toward degree requirements.

Library services. Students have online access to the William H. Welch Medical Library in the School of Medicine, the Abraham M. Lilienfeld Library in the School of Public Health, and the Milton S. Eisenhower Library on the Homewood campus. The interlibrary loan department allows students access to resources at any other university in the nation. The library also provides easy access to a wide selection of electronic information resources, including the library's online catalog, and numerous electronic abstracting and indexing tools. Many of the databases are accessible remotely. Librarians are available to assist students remotely and the library maintains an extensive web site to take visitors through all its services and materials.

Disability Support Services. The Johns Hopkins University is committed to making all academic programs, support services, and facilities accessible to qualified individuals. Students with disabilities who require reasonable accommodations can contact the JHSPH Disability Services' Senior Director.

Career Services. The Career Services Office at the Bloomberg School of Public Health helps students, alumni, faculty, and staff and employers navigate the world of public health jobs.

Johns Hopkins Student Assistance Program. The Johns Hopkins Student Assistance Program (JHSAP) is a professional counseling service that can assist students with managing problems of daily living. Stress, personal problems, family conflict, and life challenges can affect the academic progress of students. JHSAP focuses on problem solving through short-term counseling. Accessing the service is a simple matter of a phone call to arrange an appointment with a counselor. Online students may call a phone number for consultation and will be directed to the appropriate resource or office. JHSAP services are completely confidential. The program operates under State and Federal confidentiality legislation and is HIPAA compliant.

Transcript Access. Students may view and print unofficial transcripts at any time. Official transcripts will be mailed to students upon completion of the program; additional official transcripts will be mailed upon request of the student at minimal charge.

Student Login IDs. The University issues each student a Johns Hopkins Enterprise ID (JHED ID) and the School issues a JHSPH ID. The JHED ID grants students a JHU email address and secure access to many online services including course registration, bill payment, official grades, library services, and the online learning platform CoursePlus. Students are also issued a JHSPH ID that provides access to the School's intranet (My JHSPH) where students can locate additional resources including research and administrative tools as well as the School's policy and procedures manual.

(iii) Accepted students shall have the background, knowledge, and technical skills needed to undertake a distance education program.

All accepted online students are required to have met the admission requirements stated for the certificate program. New online students are required to complete the "Introduction to Online Learning" course prior to beginning the first online certificate courses. This course covers a broad range of topics on how to be a successful online student such as: online student learning expectations and how to participate in online discussions.

- (iv) Advertising, recruiting, and admissions materials shall clearly and accurately represent the program and the services available.**

All relevant certificate program information is available on the JHSPH web site (<http://www.jhsph.edu/academics/certificate-programs/certificates-for-hopkins-and-non-degree-students/quality-patient-safety-and-outcomes-research.html>).

(f) Commitment to Support

- (i) Policies for faculty evaluation shall include appropriate consideration of teaching and scholarly activities related to distance education programs.**

Faculty who teach online courses are strongly encouraged to participate in one or two professional development opportunities annually to improve their online teaching skills. Teaching online is viewed no differently than teaching onsite for promotion purposes.

- (ii) An institution shall demonstrate a commitment to ongoing support, both financial and technical, and to continuation of a program for a period sufficient to enable students to complete a degree or certificate.**

JHSPH has a commitment to online teaching as demonstrated by the resources of its Center for Teaching and Learning (CTL), which provides course development, instructional, and technical support to new and current faculty. See Appendix D for detailed financial information regarding the proposed program.

(g) Evaluation and Assessment

- (i) An institution shall evaluate a distance education program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.**

Please see Section L of the main body of the proposal.

- (ii) An institution shall demonstrate an evidence-based approach to best online teaching practices.**

The Center for Teaching and Learning continually participates in professional development activities to keep abreast of evidence-based approaches to online teaching practices. These online teaching practices are then incorporated into the new online instructor training sessions.

(iii) An institution shall provide for assessment and documentation of student achievement of learning outcomes in a distance education program.

As part of the online course design process, course assessments are required to be aligned with stated courses learning objectives. The proposed program will incorporate authentic assessments that demonstrate students' application of learned skills. Program faculty have experience with developing individual and collaborative assessments for measuring the acquisition of relevant knowledge and skills through online learning.

Appendix C

Faculty

Name	Terminal Degree	Field	Academic Title/Rank	Status	Courses Taught
Sean Berenholtz	MD	Anesthesiology and Critical Care Medicine, and Health Policy and Management	Professor	Full-time	312.678 – Introduction to Healthcare Quality and Patient Safety: A Management Perspective
Mark Bittle	DrPH	Health Policy and Management	Assistant Professor – Adjunct	Full-time	312.601 - Fundamentals of Management for Health Care Organization
Edward Bunker	MPH	Health Policy and Management	Research Associate	Full-time	309.631 - Population Health Informatics
Gilbert Burnham	MD	International Health	Professor	Full-time	221.722 - Quality Assurance Management Methods for Developing Countries
Dagna Constenla	PhD	International Health	Associate Scientist	Full-time	313.630 - Economic Evaluation I
Greg de Lissovoy	PhD	Health Policy and Management	Associate Professor - Adjunct	Full-time	313.630 - Economic Evaluation I, 313.632 - Economic Evaluation III, 313.793 - Extended Exercises in Cost Effectiveness
Sydney Dy	MD	Health Policy and Management, and Internal Medicine	Associate Professor	Full-time	311.615 - Quality of Medical Care, 309.609 -
Anbrasi Edward	PhD	International Health	Associate Scientist	Full-time	221.722 - Quality Assurance Management Methods for Developing Countries
Cyrus Engineer	DrPH	Health Policy and Management, and International Health	Assistant Professor - Adjunct	Part-time	312.600 - Managing Health Services Organizations
Lilly Engineer	DrPH, MD	Anesthesiology and Critical Care Medicine, and Health Policy and Management	Assistant Professor	Full-time	309.864 - Quality, Patient Safety, and Outcomes Research Practicum
Eric Ford	PhD	Health Policy and Management	Professor	Full-time	312.601 - Fundamentals of Management for Health Care Organizations

Chris Goeschel	ScD	Health Policy and Management	Associate	Part-time	312.678 - Introduction to Healthcare Quality and Patient Safety from the Management Perspective
Ayse Gurses	PhD	Anesthesiology and Critical Care Medicine, and Health Policy and Management	Assistant Professor	Full-time	309.732 - Human Factors in Patient Safety
Hadi Kharrazi	MD, PhD	Health Policy and Management and Computer Science	Assistant Professor	Full-time	309.631 - Population Health Informatics
Jill Marsteller	PhD	Health Policy and Management	Associate Professor	Full-time	309.732 - Human Factors in Patient Safety, 309.600, 312.600 - Managing Health Services Organizations
Michael Minear	MS	Health Policy and Management	Associate	Part-time	312.633 - Health Management Information Systems
Laura Morlock	PhD	Health Policy and Management	Professor and Senior Associate Dean	Full-time	309.730 - Patient Safety and Medical Errors
William Padula	PhD	Health Policy and Management	Assistant Professor	Full-time	313.631 - Economic Evaluation II
Peter Pronovost	MD, PhD	Anesthesiology and Critical Care Medicine, and Health Policy and Management	Professor	Full-time	309.730 - Patient Safety and Medical Errors
Eric Roberts	PhD	Health Policy and Management	Associate	Part-time	313.790 - Introduction to Economic Evaluation
Jodi Segal	MD	Medicine, and Health Policy and Management	Professor	Full-time	312.693 - Introduction to Comparative Effectiveness and Outcomes Research
Jonathan Weiner	DrPH	Health Policy and Management	Professor	Full-time	309.631 - Population Health Informatics
Albert Wu	MD	Health Policy and Management, and Internal Medicine	Professor	Full-time	309.732 - Human Factors in Patient Safety, 309.712, 311.615 - Quality of Medical Care, 309.730 - Patient Safety and Medical Errors, 309.731

Appendix D

Finance Information

TABLE 1: RESOURCES:					
Resource Categories	2017	2018	2019	2020	2021
1. Reallocated Funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	\$232,560	\$278,256	\$392,664	\$446,292	\$503,280
a. Number of F/T Students	2	2	2	2	2
b. Annual Tuition/Fee Rate	\$48,960	\$50,592	\$52,320	\$54,096	\$55,920
c. Total F/T Revenue (a x b)	\$97,920	\$101,184	\$104,640	\$108,192	\$111,840
d. Number of P/T Students	11	14	22	25	28
e. Credit Hour Rate	\$1,020	\$1,054	\$1,091	\$1,127	\$1,165
f. Annual Credit Hour Rate	12	12	12	12	12
g. Total P/T Revenue (d x e x f)	\$134,640	\$177,072	\$288,024	\$338,100	\$391,440
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 – 4)	\$232,560	\$278,256	\$392,664	\$446,292	\$503,280

Resources narrative:

1. Reallocated Funds: The proposed program will be funded by tuition revenue. No reallocated funds will be used for the proposed program.
2. Tuition and Fee Revenue: Tuition is based on the annual tuition rate for full-time and part-time students at the Johns Hopkins Bloomberg School of Public Health (JHSPH). Average enrollment is consistent with enrollment in other JHSPH certificate programs. In addition, hopeful that enrollments increase with online offerings.
3. Grants and Contracts: There are no grants or contracts associated with this program.
4. Other Sources: The program has no other sources of funding.

TABLE 2: EXPENDITURES:					
Expenditure Categories	2017	2018	2019	2020	2021
1. Faculty (b + c below)x(a)	\$136,534	\$143,362	\$150,531	\$310,094	\$319,396
a. # FTE	1	1	1	2	2
b. Total Salary	\$101,513	\$106,589	\$111,919	\$115,277	\$118,735
c. Total Benefits	\$35,021	\$36,773	\$38,612	\$39,770	\$40,963
2. Admin. Staff (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Support Staff (b+c below)	\$8,400	\$8,400	\$16,800	\$16,800	\$25,200
a. # FTE	0	0	0	0	0
b. Total Salary	\$8,400	\$8,400	\$16,800	\$16,800	\$25,200
c. Total Benefits	0	0	0	0	0
4. Equipment	0	0	0	0	0
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	\$58,031	\$60,004	\$62,044	\$64,153	\$66,334
TOTAL (Add 1 – 7)	\$202,965	\$211,766	\$229,375	\$391,047	\$410,930

Expenditures Narrative:

1. Faculty: The faculty salary is based on a total percentage effort put forth on behalf of this program and annual increases to salaries and benefits. Expectations that additional faculty may be needed as enrollment increases.
2. Administrative: No additional administrative staff are needed for this program.
3. Support Staff: This salary covers part-time teaching assistant salaries. The need for additional teaching assistants increases proportionately with the increase in student enrollment.
4. Equipment: Equipment costs are included under "Other Expenses"
5. Library: The current library facility will meet the needs of the program.
6. New or Renovated Space: No new or renovated spaces are needed to support the program.
7. Other Expenses: Additional expenses include cost for the Center for Teaching and Learning (CTL) to develop and maintain online courses. CTL maintenance includes the purchase of new technology or equipment associated with the program. In addition, it includes salary for CTL staff.