

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

2017  
Projected Implementation Date

Master of Applied Science  
Award to be Offered

Patient Safety and Healthcare Quality  
Title of Proposed Program

Suggested HEGIS Code

51.0701  
Suggested CIP Code

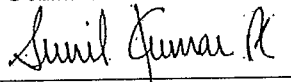
Bloomberg School of Public Health  
Department of Proposed Program

Michael Klag, Dean  
Name of Department Head

Natalie Lopez  
Contact Name

alo@jhu.edu  
Contact E-mail Address

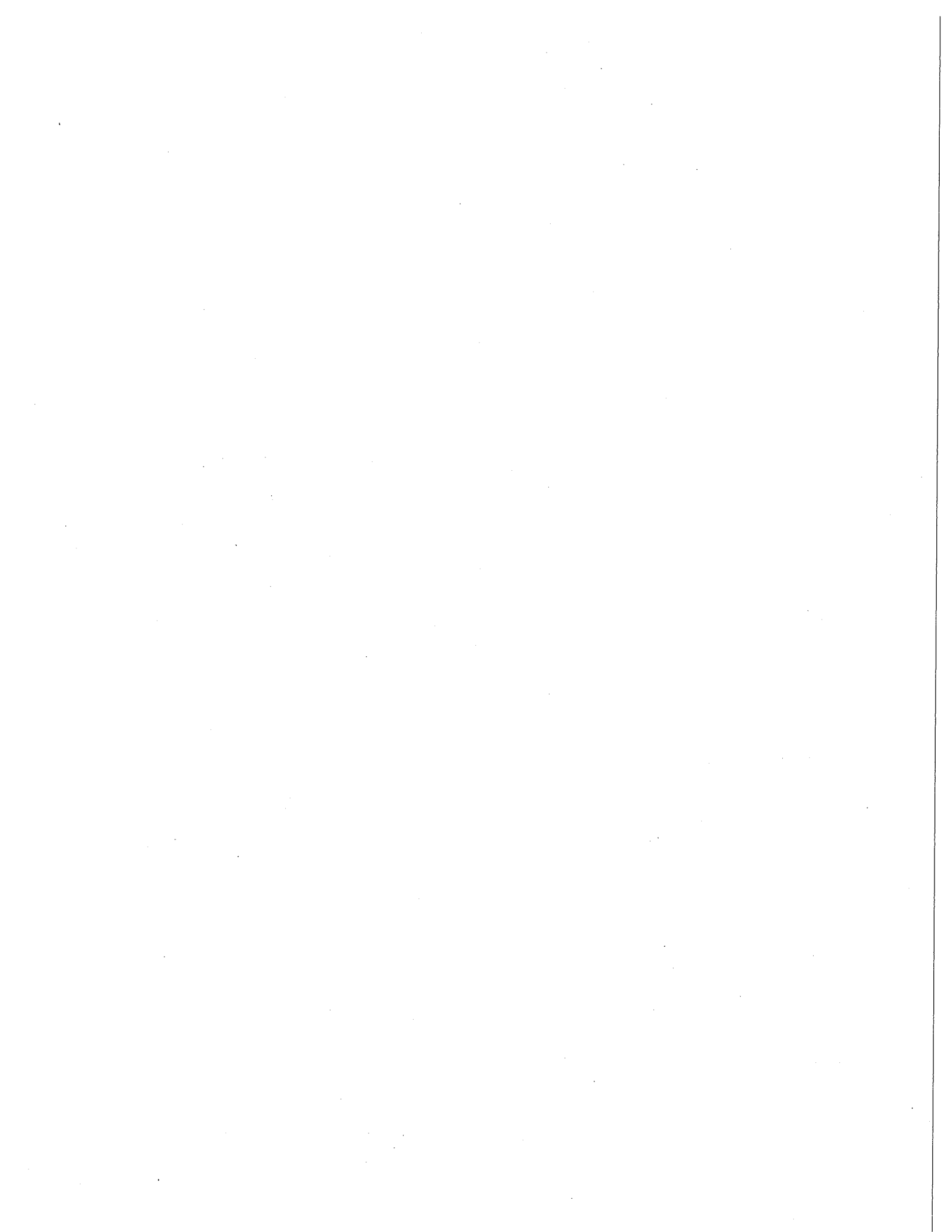
(410) 516-6430  
Contact Phone Number

  
Signature and Date

President/Chief Executive Approval

N/A  
Date

Date Endorsed/Approved by Governing Board



**The Johns Hopkins University  
Bloomberg School of Public Health  
Proposal for New Academic Degree Program**

**Master of Applied Science in Patient Safety and Healthcare Quality**

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**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) proposes the new degree of Master of Applied Science in Patient Safety and Healthcare Quality. Offered by the Online Programs for Applied Learning (OPAL), in collaboration with the Department of Health Policy and Management, the School of Medicine, the School of Nursing and the Armstrong Institute for Patient Safety and Quality, the proposed program will be delivered online and is intended for part-time graduate students.

The Master of Applied Science (MAS) in Patient Safety and Healthcare Quality will provide an opportunity for advanced education. Designed for working professionals interested in a graduate-level degree, participants in this program will develop advanced skills in the transformative mechanisms and evidence-based protocols that reduce preventable patient harm and improve clinical outcomes. The degree will consist of online intensive graduate-level coursework and will culminate in an Integrative Activity.

The proposed program aligns with the missions of both Johns Hopkins University and the Bloomberg School, as described below.

**2. Alignment with institutional strategic goals**

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. The mission of the School is to improve health through discovery, dissemination, and translation of knowledge and the education of a diverse global community of research scientists and public health professionals. The proposed program is consistent with both missions and is well aligned with many of the School's strategic goals:

- *Prepare leaders in public health science and practice to address current and future public health challenges.* It is a goal of the proposed program to provide skills-based education in patient safety and healthcare quality to the global public health workforce. The program competencies focus on preparing experienced professionals with a comprehensive approach to developing systems and strategies to measure and improve patient safety and healthcare quality.

- *Promote, value, and achieve excellence in teaching and learning.* The Bloomberg School aims to combine technology with modern-day pedagogy to retain the same high standards that it incorporates into all of its academic programs.

- *Advance the evidence base for the practice of public health and strengthen local, national, and global partnerships with public health practitioners.* Through the proposed programs, the Bloomberg School will offer advanced training in patient safety and healthcare quality relevant to addressing public health problems. The part-time, online structure of the program will allow the School to reach a global constituency of learners.

The proposed MAS in Patient Safety and Healthcare Quality builds on the strengths of the Bloomberg School, which provides unmatched opportunities for advanced training, focuses on both local and global issues, and prepares students to address public health problems through multidisciplinary approaches that apply the latest scientific knowledge.

The program will provide students with a variety of approaches to developing measurement and evaluation of quality and safety, and leading transformation to patient-centered care delivery. The proposed program incorporates an interdisciplinary approach to understanding and leading improvements in patient safety and healthcare quality. The program will equip students with the necessary competencies required in order to effectively reduce preventable patient harm and improve clinical outcomes. Target audiences include clinicians, especially physicians, and mid-career health organization managers or public administrators.

## **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.

#### *Admissions Requirements*

Admission standards will be as rigorous as those established for other masters' degree and certificate programs at the School. Academic transcripts, TOEFL or IELTS (where applicable), letters of recommendation, and statements of purpose will all be carefully considered in the admissions process. Specifically, persons eligible for admission to the MAS program must: (i) possess a baccalaureate-level degree from an accredited college or university; (ii) submit three letters of recommendation; (iii) submit a statement of purpose that demonstrates compatibility of the applicant's career goals with the educational objectives of the program; (iv) have a minimum of three years of health-related work experience; (v) submit a current résumé or CV that demonstrates previous healthcare accomplishments; and (vi) demonstrate proficiency in English.

### *Program Requirements*

The proposed MAS program requires students to successfully complete 49 credits, including a culminating experience, called the Integrative Activity. The program will consist of required core courses in epidemiology, healthcare quality, measurement, and leadership, as well as professional development workshops and seminars in public health. The program can be completed over a minimum of eight 8-week terms, to a maximum of 4 years.

Most courses must be taken for credit and a letter grade. One required course, Professional Development Workshops, may be taken pass/fail. To maintain satisfactory academic performance and good academic standing, students in this program must maintain a minimum grade point average of 2.75 on a 4.0 scale.

The proposed MAS program will culminate in an Integrative Activity. The goal of the activity is for students to synthesize knowledge and skills obtained through coursework in a final project that demonstrates their mastery of the program competencies. Students will work on a service-learning project that is designed to impact some aspect of patient safety and healthcare quality. Students will assess organizational strategy, design measures for monitoring and assuring improvement, and discuss financial considerations in the form of a final paper.

The OPAL Program Coordinator will track progress and ensure that each student has completed all degree requirements. The OPAL Director will be responsible for writing to the School's Office of Registration and Records to attest to the fulfillment of these requirements for each enrolled student.

## **2. Educational objectives and student learning outcomes**

The year 2000 was the birth of the patient safety movement; its focus: to end preventable harm, improve patient outcomes and experiences in health care. Since then, there has been groundbreaking work and innovation across the continuum of care. Advances in the science of safety have allowed meaningful discoveries that highlight defective processes. Resulting reduction strategies are being implemented that lead to greater efficiency and performance improvement.

The burden of patient safety problem is staggering. For instance:

- One in ten hospitalized people is harmed while receiving care
- Every American will experience a missed or delayed diagnosis at some point in his or her lifetime<sup>1</sup>
- There are at least 1.5 million preventable adverse drug events in the U.S. every year<sup>2</sup>
- More than one in ten hospitalized patients acquire health care associated infections

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<sup>1</sup> 2015 National Academy of Medicine report titled "Improving Diagnosis in Health Care."

<sup>2</sup> <http://www.nationalacademies.org/hmd/Reports/2006/Preventing-Medication-Errors-Quality-Chasm-Series.aspx>

Estimates suggest that costs of unnecessary tests, harm from misdiagnosis and legal payouts exceed \$100 billion per year in the U.S. In other words, inaccurate diagnoses are the most common, catastrophic and costly medical errors. It is a major public health concern.

The MAS in Patient Safety and Healthcare Quality provides students the opportunity to learn from experts and develop advanced skills in leadership, measurement and assessment, and quality improvement to improve healthcare outcomes.

Upon completion of the MAS in Patient Safety and Healthcare Quality, students will be able to:

1. Describe several frameworks and theories for assessing and improving the quality of care
2. Describe current key policy and programmatic areas in quality of care
3. Describe how to assess quality of care for a medical condition
4. Describe key elements of published quality assessment and improvement studies
5. Articulate how to develop a workable quality improvement and evaluation plan
6. Recognize the extent of problems in patient safety in medical care
7. Describe the role of various systems and factors in creating safety and causing errors and adverse events
8. Discuss problems and issues in measuring and reporting safety
9. Demonstrate knowledge of the basics of conducting an incident investigation and disclosing an adverse event
10. Design solutions to improve patient safety
11. Articulate the ethical, legal, and regulatory implications related to patient safety

**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**

A 2013 survey of leaders of local health departments across the U.S. assessed data needs among the public health workforce and asked about the challenges to advancing a public health workforce agenda. Among the top five challenges, respondents identified the need for improved content, structural and delivery mechanisms for distance-based learning.<sup>3</sup>

Online education in patient safety and healthcare quality will provide the public health workforce with the skills to assess needs, and apply the best methods for managing and improving healthcare outcomes. The online format will enable learners to remain in the workforce while obtaining that training.

The MAS in Patient Safety and Healthcare Quality will prepare current and future health practitioners, clinicians, researchers, policymakers, and scholars to take on the measurement of safety and quality, design safer systems, lead organizational and cultural change, and prevent patient harm in an increasingly patient-centered healthcare environment.

Graduates of the MAS in Patient Safety and Healthcare Quality will be equipped to drive the responsible development of new knowledge and new ways of saving lives and improving health to further progress across core disciplines in science and technology, and public health and medicine in Maryland, and beyond. The Maryland workforce is of particular interest given the state's waiver to implement Global Budgets driven by patient-centered measures to promote care improvement.

Over recent years, patient safety and healthcare quality graduate programs have increased slowly in number; however, among existing programs, there has been rapid growth in the number of graduates in the largest programs over the same time period. These data suggest that this proposal serves to fill an existing need in this discipline. More specifically, very few Maryland programs are comparable to the proposed programs.

### **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. The MAS in Patient Safety and Healthcare Quality addresses several of these goals.

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<sup>3</sup> Kaufman NJ, Castrucci BC, Pearsol J, et al. Thinking beyond the silos: Emerging priorities in workforce development for state and local government public health agencies. *J Public Health Management Practice* 2014;20(6):557-565.

The program furthers Goal 2 by providing a fully online, part-time certificate and degree designed for working professionals seeking additional training or credentials. The focus on patient safety and healthcare quality will provide students with skills that are transferable to a multitude of settings. The typical student will take two courses each term and complete the 49-credit degree program in two years. In addition, the program is priced at a competitive level for the emerging online marketplace.

The program supports Goal 3 through a commitment to the fundamental belief that all students, regardless of their backgrounds or personal attributes, should have access to, and feel welcome in, high-quality educational programming. The University regularly evaluates progress towards this goal and the program will maintain policies, practices and services that serve the diverse population of Maryland.

The proposed program is consistent with Goal 4, innovation, which articulates Maryland's aspiration to be "a national leader in the exploration, development, and implementation of creative and diverse education and training opportunities that will align with State goals, increase student engagement, and improve learning outcomes..." The program seeks to reduce costs and improve learning "by transforming the way that instruction is delivered and learning environments are designed." The "new modes of delivery and programmatic initiatives" will serve the State's increasingly diverse student population and advance the State's goal of being a "national and international leader in higher education." By leveraging technology in innovative ways, the School makes patient safety and quality healthcare accessible so that students can pursue "anytime, anywhere" learning opportunities. Students who do not live in the Maryland region will be able to complete the program, thus supporting the State Plan's innovation and completion goals. The program also takes advantage of the leading scientists and practitioners in patient safety and quality at Johns Hopkins.

Additionally, the program, through the preparation of highly qualified hospital and health system clinicians and managers, will contribute 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. Program graduates will stimulate economic growth, innovation, and vitality by supporting a knowledge-based economy and advancing research. The program's advisory board will incorporate feedback from professional organizations and public health stakeholders to ensure that the program is aligned with workforce needs.



## **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 health care services professionals with patient safety and healthcare quality knowledge and expertise has been increasing due to a high growth market fueled by changes to health policy and a growing focus on quality of care. Health care management and administration programs under the 51.0701 CIP code have been growing slowly, with the total number of programs reporting graduates increasing an average of 4% per year from 2010 to 2015, while the total number of program graduates grew an average of 10% per year. During that same period, the average number of graduates per institution has grown an average of 7% each year. Clearly this proposal could fill a need that exists for additional programs in this discipline. The MAS in Patient Safety and Healthcare Quality will provide students with a pathway to career opportunities in academia, policy, clinical, or industry. These and similar employment opportunities are available nationwide.

According to Burning Glass Technologies, a 12-month review of national job posting data related to patient safety and healthcare quality positions revealed that the skills in highest demand are related to patient care, patient safety, occupational health and safety, and treatment planning. Other skills that were important to employers were public health and safety and supervisory skills.

In addition, according to data from the U.S. Bureau of Labor Statistics (2014), by 2024 the market will include more than 900,000 new positions that will require skills in patient safety and healthcare quality. These positions include physicians as well as medical and health services managers, registered nurses, nurse practitioners, medical assistants, as well as other health diagnosing and treating practitioners. Based on current needs and growth projections, the number of graduates with the required skill set will need to continue to grow in order to meet this demand.

### **2. Educational and training needs in the region**

The Bloomberg School of Public Health is responding to the rapidly evolving changes in health care delivery resulting from Federal health care reform efforts and state-wide initiatives such as the Total Patient Revenue system in Maryland. The significant push towards patient-centered healthcare is causing health systems to reduce preventable patient harm and improve clinical outcomes. As such, social determinants of health that have been long recognized by public health practitioners are now becoming critical factors to health care delivery system reform. As a leader in Public Health education, the Bloomberg School determined there is a need to expand the competencies of current health care professionals in the public health domain by integrating these essential competencies with evolving management concepts related to patient safety. Other than the Jefferson School of Population Health, there are few credible programs nation-wide offering such a program to working health care professionals.

### 3. Prospective graduates

The average part-time student admitted for the Fall 2017 term would complete the program in 2019. Twenty-eight students are expected to graduate in 2019, and each year thereafter.

#### E. Reasonableness of program duplication

##### 1. Similar programs

In Maryland, there are four masters-level programs currently approved or endorsed by MHEC under CIP code 51.0701. The programs are offered by Johns Hopkins University, Mount St. Mary's University and Stevenson University.

Table 2: Count of Graduates from Masters Programs under CIP 51.0701 in the state of Maryland

School Name	Program Name	Graduate count by Year				
		2011	2012	2013	2014	2015
Johns Hopkins University (Carey Business School)	Healthcare Management	0	0	0	0	2
Johns Hopkins University (School of Public Health)	Health Policy & Management	40	53	55	66	81
Mount St. Mary's University	Health Administration	0	0	0	25	33
Stevenson University	Healthcare Management	0	0	0	1	1

The MS in Healthcare Management at Johns Hopkins University, Carey Business School is a healthcare administration program offered from the business perspective, with half of the required coursework being foundation courses that are shared with the MBA program and other graduate business degrees. The 36-credit degree can be taken online or onsite in Baltimore or Washington, D.C. as a part-time student, or onsite in Baltimore as a full-time student. Full-time students complete the program in one year and part-time students can finish the program in two years.

The Master of Health Administration (MHA) degree at Johns Hopkins Bloomberg School of Public Health is a two-year, full-time program involving predominantly onsite courses and an 11-month field placement. The program is designed to train future managers and leaders within healthcare provider organizations and consulting firms who are committed to improving the delivery of health services throughout the U.S.

The MHA program at Mount St. Mary's University is a 36-credit program that is delivered onsite in Frederick, MD, through the School of Business. Cohorts of up to 24 students are admitted twice a year and the program takes two years to complete.

The Master of Science in Healthcare Management program at Stevenson University is a fully online, part-time, 36-credit program that offers concentration options for Quality Management and Patient Safety, or Project Management in Healthcare.

Each of the programs identified above address general healthcare management and administration topics – none of them focus on Patient Safety and Healthcare Quality, as no such graduate program currently exists in Maryland. The nearest program offering would be an online master's degree at George Washington University.

This program is targeted to mid-career hospital or healthcare executives and nurse clinicians transitioning into, or taking on more, leadership roles in understanding and controlling patient outcomes through preventative measures. Unlike the programs listed above, this curriculum represents interdisciplinary approach, merging public health expertise with contemporary research in patient safety and healthcare quality, to develop an understanding of, and ability to effectively lead transformation to patient-centered, higher quality healthcare.

## **2. Program justification**

The MAS in Patient Safety and Healthcare Quality will provide concrete training in healthcare quality and safety with particular focus on measurement, evaluation, quality of improvement and the application of related tools in healthcare.

This program represents an interdisciplinary approach to understanding and improving patient outcomes through preventative measures and fostering a culture of patient safety. It is oriented towards clinicians and managers actively engaged in hospital and health systems transformation to patient-centered, higher quality healthcare.

The program will be grounded in real-world challenges and informed by leading edge scholarship, with a diverse faculty of the leading experts in the field and a student body bringing lived experiences to the virtual classroom.

## **F. Relevance to Historically Black Institutions (HBIs)**

An appropriate student for the MAS in Patient Safety and Healthcare Quality would apply after attending and completing a baccalaureate degree at any undergraduate institution, including any of Maryland's Historically Black Institutions. The proposed program would not directly affect the implementation, maintenance, uniqueness, identity or mission of these institutions.

There are no known Masters programs in Patient Safety and Healthcare Quality at 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.

#### **H. Adequacy of faculty resources**

See Appendix C for a representative list of faculty who will teach courses, and advise students, in the proposed program.

Program faculty hold full-time, adjunct or joint appointments at the Bloomberg School or Johns Hopkins School of Medicine. Program faculty have been recognized for their excellence in teaching and have produced leading public health research while continuing to generate path-breaking scholarship.

#### **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 Medical 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 7,200 electronic journals, more than 400 databases, and more than 13,000 e-books. The library has staff members assigned to each department to aid in research and best practices for library services.

#### **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.

The central computing resource for the School, the Office of Information Technology (IT), provides students with reliable computing infrastructure, location, and device independence, and critical software tools. Additionally, an enterprise service desk offers support for faculty, staff, and students. Assistance is provided over various channels, including phone, desktop, and FIPS 140-2 compliant remote-control support. Customer satisfaction is monitored and benchmarked against other higher educational institutions and industries.

No additional facilities, infrastructures or laboratory or computer resources will be required.

#### **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. Student course evaluations, conducted both in the middle and at the end of each term, provide feedback about both courses and faculty. The evaluations include questions addressing the course overall, the instructor and the assessments of learning.

Program level evaluation activities will include an annual assessment of program inputs, processes and outputs to generate a report on program applicants and admitted students, course enrollment, faculty participation, pedagogical innovations and program accomplishments/recognition.

Evaluation of student learning and achievement will focus on the early identification of students' goals/objectives and individualized learning outcomes; students' acquisition of knowledge and skills and the degree to which the program is fostering students' achievement of the degree competencies as demonstrated by each student's electronic learning portfolio. Post-degree professional and academic accomplishments of graduates will also be tracked through Exit and Alumni Surveys that are conducted for all degree programs at the School.

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

Any student meeting the admissions requirements can apply to the MAS program in Patient Safety and Healthcare Quality. 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)**

Introduction to Online Learning (IOL) will prepare a student for taking both online and on-campus courses offered through CoursePlus, a course management system at Johns Hopkins University. The course is designed to give students clear examples of the fundamental design principles for courses across schools at the University: time-boxed, cohort-based, and highly collaborative. Attention is focused on learner responsibilities and communication/collaboration strategies in both online and face-to-face courses. While ensuring that an individual computer and network connection is compatible with the tools used in CoursePlus is an important part of the course, the primary focus is on the digital course experience and not on teaching basic computer and Web browsing skills.

#### **550.860 Academic & Research Ethics (0 credits)**

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.

#### **603.xxx Quality of Medical Care (4 credits)**

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.

#### **600.701 Introduction to Epidemiology (4 credits)**

Introduces principles and methods of epidemiologic investigation of diseases. Illustrates methods by which studies of the distribution and transmission of diseases in populations (including disease outbreaks and epidemics) can contribute to an understanding of etiologic factors and modes of transmission. Covers various study designs, including randomized trials, case-control and cohort studies, as well as risk estimation and causal inference. The course also discusses applications of Epidemiology to solving public health problems, such as identifying sources and strategies for control of disease outbreaks, applying research findings to policy and practice, and program evaluation. Quantitative and analytic methods covered during the course include life tables, disease surveillance, measures of morbidity and mortality, and measures of diagnostic test accuracy.

**600.702 Intermediate Epidemiology (4 credits)**

Expands knowledge beyond introductory level epidemiologic concepts and methods material, using examples from the published literature. Emphasizes interpretation and the ability to critically evaluate issues related to populations/study design, measurement, population comparisons and inference, including: modern cohort study designs; advanced nested designs; novel techniques for exposure assessment; interpretation and utility of measures of impact; sources of bias and methods for their prevention; descriptive and analytical goals for observational study inference; the counterfactual model for defining exchangeability, cause, and confounding; and synthesis of inferences from observational studies as compared with randomized clinical trials.

*Prerequisite: 600.701 Introduction to Epidemiology or equivalent (with instructor permission), 600.711 Public Health Statistics I*

**603.xxx Science of Patient Safety (4 credits)**

Provides an introduction to the science of safety and how it relates to problems with patient safety in health care. Explores the extent, nature and impact of safety problems. Introduces definitions for key concepts including error, adverse event, and harm. Provides a framework for understanding factors that cause, mitigate, and prevent errors and patient harm. Emphasizes the role of both individuals and systems in improving patient safety. Explains the importance of achieving a culture of safety, and the concept of high reliability in health care organizations.

**603.xxx Measurement and Evaluation in Quality and Safety (4 credits)**

Reviews the current efforts to evaluate the many ongoing attempts to improve quality and safety in healthcare settings. Describes conceptual frameworks and theories that underlie quality improvement and patient safety evaluations, including the Logical Framework. Lays out sources of data that can be used and the types of analyses each can support. Compares and contrasts the benefits of quantitative and qualitative data collection. Explores the importance of contextual data in explaining the success and failure of implementing interventions in different settings. Describes designs for evaluation and provides an outline for critiquing evaluations of quality improvement and patient safety projects, for designing a robust evaluation, and for conducting a small scale qualitative study.

*Prerequisite: Quality of Medical Care, Science of Safety*

**603.xxx Measurement Lab in Quality and Safety (2 credits)**

Familiarizes students with different data sources and measurement methods to assess health care quality and patient safety. Data sources include both secondary data, including from administrative claims, medical records, and malpractice claims, and primary data including from cohorts, surveys, direct observation and clinical monitoring. Introduces different methods to measure structure, process and outcome, including both quantitative and qualitative data. Describes methods to analyze these data including techniques related to risk adjustment.

*Prerequisite: Measurement and Evaluation in Quality and Safety*

**603.xxx Quality Improvement Tools (2 credits)**

Describes, demonstrates and trains in the use of key tools to improve quality of care and patient safety, including the Comprehensive Unit-based Safety Program (CUSP), TeamSTEPPS, and Lean Six Sigma. Presents frameworks and strategies for the successful design and implementation of quality improvement interventions, including specific approaches, methods, structures and resources to promote uptake of an intervention. Learners will gain firsthand experience through role-playing, individual and group exercises and simulations with each of the techniques.

*Prerequisite: Quality of Medical Care, Science of Safety*

**603.xxx Infection Surveillance and Control (2 credits)**

Covers key principles, designs, methods and examples of systems for clinical surveillance and public reporting of indicators of healthcare associated infections. Describes the evidence base to support the definitions and development of measures, and the process of developing, testing and selecting them. Explains how surveillance data can be analyzed, presented and used to promote, monitor and sustain evidence-based policies and practices. Reviews problems in the analysis and interpretation of surveillance data. Surveys basic methods to prevent healthcare associated infections and transmission of organisms. Covers common high-risk areas and high-risk procedures in healthcare settings in relation to hospital-acquired infections (HAI), prioritizing of HAI at the facility level, components of HAI prevention bundles, key methods in prevention transmission of infections in healthcare settings, and plans to promote evidence-based among in healthcare staff.

*Prerequisite: Quality of Medical Care, Science of Safety*

**603.xxx Case Studies in Quality and Safety (2 credits)**

Describes case examples of different kinds of health care organizations: a health system in a higher income country, a ministry of health in a higher income country, a health system in a low-to-middle income country, a hospital, a primary care practice, and a long term care facility. Explains for each case the mission and vision related to quality and safety, and the related organizational structures. Describes strategies to assess and improve quality including the measures of structure, process and outcome that are used for quality assessment, and those that are used for external reporting and accountability. Covers efforts related to both hospital and ambulatory care, and population health. Reviews interventions to confront common clinical problems, as well as patient experience, and access to care. Explains methods to evaluate value and allocate resources for the programs.

*Prerequisite: Quality of Medical Care*



### **603.xxx Leadership for Change (3 credits)**

Describes, demonstrates and trains in leadership to support organizational quality and safety, and support transformational change. Covers organizational theory and frameworks for leadership and management. Explains the importance of vision, mission, and strategies for organizations. Explains organizational culture and articulates the role of exploring values and creating a shared vision in developing a culture of patient safety. Explains the roles of top managers, technical leaders and unit managers in safety improvement. Demonstrates the use of analytics. Describes practices to engage leaders and staff to improve patient safety. Presents topics including conflict management, negotiation, transparency, managing transitions, and innovation in health care.

*Prerequisite: Quality of Medical Care, Science of Safety*

### **600.601 Seminars in Public Health (2 credits)**

Senior faculty present public health topics of current interest, such as those related to global health, health promotion and disease prevention, health care delivery systems, environmental issues and the spectrum of factors influencing the health status of populations and communities.

### **600.611 Professional Development Workshops (2 credits)**

Each 2-credit workshop will focus on a specific professional development topic. Students are expected to take several sections of the course, in order to obtain training in a variety of areas (specific OPAL degree requirements will dictate the number of credits required). Workshop topics will include, but not be limited to: presentation of research findings, grant writing, manuscript writing, time management, delivering effective scientific presentations, and leadership.

### **600.711 Public Health Statistics I (4 credits)**

Provides students with a broad overview of Biostatistical methods and concepts used in the public health sciences. Emphasizes the interpretation and conceptual foundations of statistical estimation and inference. Covers summary measures, measures of association, confidence intervals, p-values, and statistical power. The statistical software package R will be introduced in the class and utilized to demonstrate the concepts and methods with data.

### **600.712 Public Health Statistics II (4 credits)**

Employs a conceptual framework to highlight the similarities and differences between linear, logistic, Poisson and Cox Proportional Hazards methods, in terms of usage and the interpretations of results from such models. Provides details for these regression approaches in the "simple" scenario, involving relating an outcome to single predictor. Following this overview of simple regression, explores the use of multiple regression models to compare and contrast confounding and effect modification, produce adjusted and stratum-specific estimates, and allow for better prediction of an outcome via the use of multiple predictors. Students will learn to use the statistical software package R to fit linear, logistic and Poisson regression models.

*Prerequisite: 600.711 Public Health Statistics I*

**603.810 Integrative Activity (4 credits)**

This culminating experience will provide students with the opportunity to synthesize lessons learned via the application of concepts and techniques to: (i) the identification of a patient safety or healthcare quality problem; (ii) investigation of contributing and mitigating factors; (iii) design of a solution, (iv) plan for implementation, and (v) evaluation plan.

**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.**

The proposed program will be supported by the School's Center for Teaching and Learning (CTL), which offers an array of evidence-based programs and services that support innovative teaching methods. JHPSH faculty experts will lead and support the development of online courses. Several program faculty members are experienced in developing and supporting online learning opportunities. New instructors are required to meet the same qualifications as those teaching in the traditional onsite program.

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

All online courses adhere to CTL's 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. As outlined in section L, the electronic portfolio will be used to assess students' achievement of program competencies. 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.

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

The proposed MAS in Patient Safety and Healthcare Quality will be delivered via the School's course delivery and management system—CoursePlus. This platform supports both synchronous and asynchronous interaction between faculty and students. Students and faculty may also participate in "real-time" interaction through web-conference office hours, supported by Adobe Connect, and pre-scheduled synchronous 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.**

Faculty members are selected based on domain expertise, program-related teaching experience and completion of required course development training. Faculty will be 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 midterm 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.**

The proposed program will be supported by CTL, which offers a number of opportunities and resources for faculty instructors and teaching assistants to become more familiar with online teaching and best pedagogical practices. In addition to maintaining an extensive catalog of resources on teaching and learning via 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.

- (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 for online education.

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

The Bloomberg School, 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 on the East Baltimore campus and the Milton S. Eisenhower Library on the Homewood campus. The Welch Library collects current scholarly information that supports the research and educational needs of the Johns Hopkins Medical Institutions as well as the Bloomberg School. Because the library's emphasis is on providing materials at point of need, the collection is primarily in electronic format. The electronic collection includes more than 7,200 electronic journals, more than 400 databases, and more than 13,000 e-books. The WelDoc Service provides access to materials not in the Hopkins collections. The library offers a variety of instructional services, including classes and online tutorials 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.**

The Bloomberg School maintains numerous web-based resources to inform prospective students on the information they may need as an online student. These resources offer 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 technical requirements, available academic support services, and a required orientation course (IOL) 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 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 University's library system provides easy access to a wide selection of electronic information resources, including an 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 helps students, alumni, faculty, 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 contact the service by phone for consultation and are 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 MAS in Patient Safety and Healthcare Quality. New online students are required to complete the Introduction to Online Learning (IOL) course prior to beginning their first online courses. IOL covers a broad range of topics on how to be a successful online student such as learning expectations for online students 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 program information is available on the JHSPH web site. All recruiting information includes the URL for the JHSPH website, which contains information available to prospective and current students. The School's Prospectus and Guidebook are posted online, as are school-wide student handbooks and all program-specific handbooks. The School's website contains links to all student-relevant information including admissions requirements, online application and instructions, online registration, student funding resources and financial aid, and other student support services.

**(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, 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.**

CTL 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 faculty workshops and 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**

<b>Name</b>	<b>Terminal Degree</b>	<b>Field</b>	<b>Academic Title/Rank</b>	<b>Status</b>	<b>Courses Taught</b>
Melanie Curless	RN, MPH, CIC	Infection Control	Infection Control Associate	Part-time	• Infection
Sydney Dy	MD, MSc	Health Policy and Management	Associate Professor	Full-time	• Quality of Medical Care
Stephen Gange	PhD	Epidemiology	Professor	Full-time	• Intermediate Epidemiology
Elizabeth Golub	PhD	Epidemiology	Senior Lecturer	Full-time	• Intermediate Epidemiology
Lisa Maragakis	MD, MPH	Medicine	Associate Professor	Full-time	• Infection
Jill Marsteller	PhD	Health Policy & Management	Associate Professor	Full-time	• Evaluation
Laura Morlock	PhD	Health Policy & Management	Professor	Full-time	• Science of Safety
John McGready	PhD	Biostatistics	Associate Scientist	Full-time	• Public Health Statistics I & II
Peter Pronovost	MD, PhD	Anesthesiology	Professor	Full-time	• Science of Safety
Michael Rosen	PhD	Anesthesiology	Assistant Professor	Full-time	• Leadership
Ian Saldanha	PhD	Epidemiology	Assistant Scientist	Full-time	• Introduction to Epidemiology
Katherine Sutcliffe	PhD	Business	Professor	Full-time	• Leadership
Frances Stillman	EdD	Health, Behavior and Society	Associate Professor	Full-time	• Seminars in Public Health
Claire Twose	MLS	Welch Medical Library	Associate Director, Public Health and Basic Science Informationist Services	Full-time	• Professional Development Workshop

**Appendix D  
Finance Information**

**TABLE 1: RESOURCES:**

<b>Resource Categories</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
1. Reallocated Funds	-	-	-	-	-
2. Tuition/Fee Revenue (c + g below)	-	-	-	-	-
a. Number of F/T Students	-	-	-	-	-
b. Annual Tuition/Fee Rate	-	-	-	-	-
c. Total F/T Revenue (a x b)	-	-	-	-	-
d. Number of P/T Students	35	70	70	70	70
e. Credit Hour Rate	\$1015	\$1046	\$1077	\$1110	\$1143
f. Annual Credit Hour Rate	24	24	24	24	24
g. Total P/T Revenue (d x e x f)	\$852,600	\$1,757,280	\$1,809,360	\$1,864,800	\$1,920,240
3. Grants, Contracts & Other External Sources					
4. Other Sources					
<b>TOTAL (Add 1 – 4)</b>	<b>\$852,600</b>	<b>\$1,757,280</b>	<b>\$1,809,360</b>	<b>\$1,864,800</b>	<b>\$1,920,240</b>

Income:

2d. Expect 35 students to start program each year for a two year program

2e. average credit hours based on MAS curriculum with a Integrative activity into 3rd year

**TABLE 2: EXPENDITURES:**

<b>Expenditure Categories</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
1. Faculty (b + c below)	\$161,400	\$332,484	\$342,459	\$352,732	\$363,314
a. # FTE	1	2	2	2	2
b. Total Salary	\$120,000	\$247,200	\$254,616	\$262,254	\$270,122
c. Total Benefits	\$41,400	\$85,284	\$87,843	\$90,478	\$93,192
2. Admin. Staff (b + c below)	\$64,713	\$66,654	\$68,654	\$70,713	\$72,836
a. # FTE	.5	.5	.5	.5	.5
b. Total Salary	\$48,114	\$49,557	\$51,044	\$52,575	\$54,153
c. Total Benefits	\$16,599	\$17,097	\$17,610	\$18,138	\$18,683
3. Support Staff (b + c below)	\$94,150	\$96,975	\$99,884	\$102,880	\$105,967
a. # FTE	1	1	1	1	1
b. Total Salary	\$70,000	\$72,100	\$74,263	\$76,491	\$78,786
c. Total Benefits	\$24,150	\$24,875	\$25,621	\$26,389	\$27,181
4. Equipment					
5. Library					
6. New or Renovated Space					
7. Other Expenses	\$521,358	\$819,902	\$837,089	\$855,384	\$873,679
<b>TOTAL (Add 1 – 7)</b>	<b>\$841,621</b>	<b>\$1,316,015</b>	<b>\$1,348,085</b>	<b>\$1,381,709</b>	<b>\$1,415,796</b>

## Expense:

1. Faculty Salary for course development and instruction with 34.5% fringe benefits
2. Program Director salary/FB at 50% effort
3. Opal Program Manager and program coordinator salary equivalent to 1 FT staff
7. CTL instructional cost, school based tuition scholarships and advisers to PT students

