



**MCPHS**  
UNIVERSITY

## **Doctoral Capstone Project: Evidence-Based Healthcare**

### **Guidelines**



# Table of Contents

## Introduction

Welcome to the Capstone .....	3
Capstone Curriculum .....	3
Capstone Facilitation .....	5

## Roles and Responsibilities

Student and Committee Roles and Responsibilities .....	5
Table of Roles and Responsibilities of Committee Members .....	7

## Developing and Completing the Capstone Project

Capstone Project Benchmarks .....	10
Capstone Project Important Notes to Consider.....	10
Essential Guidelines for Submitting a Capstone Manuscript .....	11
Guidelines for Approving Capstone Subject Content Experts .....	11
Application for Nomination of Capstone Subject Content Expert .....	12
Approving Capstone Subject Content Expert Form .....	13

## Important Note about this Document

All doctoral programs adhere to University Policies and Procedures as outlined in the University Catalog and Student Handbook. The information contained in this document is to facilitate the capstone experience, and does not supersede any policies or procedures outlined in the University Catalog or Student Handbook.

## Welcome to the Capstone Project

Welcome to the Capstone Project: Evidence-Based Health Care (EBHC). This is an exciting project, which will increase your proficiency in reviewing research literature, principles and theory; and refine your skills in applying evidence-based practice to your profession.

The purpose of the capstone project is to assist you in learning the skills required to thoughtfully question current practices in healthcare through critically searching, reviewing, and appraising research literature; understanding research methodology; promoting research utilization; and participating in the development and implementation of evidence-based outcomes in your area of practice. You will become a leader and a facilitator in the translation of evidence to promote positive healthcare outcomes.

Each student in the Doctor of Health Science (DHS), Doctor of Science in Physician Assistant Studies (DScPAS), Doctor of Healthcare Administration (DHA), and Doctor of Acupuncture and Integrative Health (DAIH) or Doctor of Acupuncture (DAc) programs must complete an evidence-based practice project, which will culminate in a change initiative. This is a rigorous project that encompasses 12 credits of the DHS's 54-credit curriculum, 12 credits of the DHA 54-credit curriculum, 12 credits of the DScPAS' 24-credit curriculum, and 12 credits of the DAIH/DAc curriculum. The capstone project consists of four courses taken consecutively which focus on research methodology and evidence-based practice theory. The capstone curriculum has been designed to incorporate theory into practice throughout the process resulting in a final project. The outcome of the capstone project should have a positive impact on your professional career as it provides evidence of peer reviewed work and enhanced knowledge and critical thinking in analyzing evidence and promoting best practices.

The capstone project can be approached from many perspectives. For example, you may choose to perform a needs assessment; draft a policy manual; evaluate a program; write a research proposal, design a curriculum; write a publishable manuscript; or deliver a workshop or professional presentation. You will determine the final evidence-based practice dissemination product in consultation with the assigned capstone committee. The ultimate goal of the project is to enhance the health of society in some way through improving practice in a specialty area or profession.

## Capstone Curriculum

The capstone project consists of four core content courses to prepare you to develop an individual, evidence-based health project. The four courses in the capstone project are:

1. HSC 815 - Capstone EBHC: Healthcare Research Methods

2. HSC 852 - Capstone EBHC: Question Development and Literature Search
3. HSC 854 - Capstone EBHC: Appraisal of the Evidence
4. HSC 856 - Capstone EBHC: Dissemination Plan

The first course is HSC 815 Healthcare Research Methods. This course will establish the role of the scholar-practitioner in healthcare research; focusing on the research process, scientific methods, and analytical tools required to critically evaluate scientific research and evidence-based practices in healthcare. Additionally, this course will equip students with foundational knowledge to effectively investigate and reflect upon preliminary ideas for the Capstone Evidence-based Healthcare Project.

The purpose of HSC 852 is to explore an evidence-based approach to healthcare and provide the knowledge and skills to formulate questions to seek answers to quality outcome dilemmas. Learning how to perform an effective literature search and review is important in understanding how to translate the evidence. This course will introduce you to the theory and application of an evidence-based approach to healthcare to promote knowledge to action - knowledge translation, also referred to as Translation of Evidence.

The purpose of HSC 854 is to develop skills to critically appraise the literature that was obtained in HSC 852. Critiquing the literature is needed to critically examine published research studies and make a judgment as to the importance of the question and results; validity of its design and methods; interpretation of the findings; and application to practice. The course will include how to use validated tools to assist with the critique of various research studies including: systematic reviews, randomized controlled trials, cohort studies, qualitative research, and practice guidelines. Learning how to critique the research literature is important in understanding how to determine valid literature, translate the evidence, and promote best practices.

HSC 856 completes the capstone project and will incorporate and apply all that has been learned in 815, 852, and 854. The purpose of the course is to examine the literature review and critical appraisals previously completed, and use this information to answer the population, intervention, comparison and outcome (PICO) question through a project. Once the question has been answered, it is important to design a dissemination strategy to share your findings and formulate an evaluation plan to appraise potential outcomes. The end product should result in the translation of evidence to practice.

The final dissemination project should be selected to align with the PICO question and target the appropriate audience. The method for dissemination can be chosen from a wide range of dissemination strategies, for example:

- Research proposal
- Best practices protocol/guidelines
- Policy development
- Workshop or professional presentation

- Needs assessment
- Curriculum development
- Procedure manual
- Scholarly article prepared for publication
- Technology application development
- Community project

## **Capstone Facilitation**

The capstone project is an exciting journey within an inter-professional learning environment. You will identify a particular issue or problem relevant to your professional practice and/or workplace. It is important to select a project that is important to you and manageable in the time allotted for project completion. Commencing in course HSC 852, you will be assigned a committee, which will consist of your capstone coordinator (course instructor) and capstone mentors (two faculty members) who will guide you in decision-making around project topic selection. Many assignments will be shared with your peers to gain alternative perspectives and participate in the peer-review process.

Ongoing facilitation of the project will occur with your committee to guide you through each step of the process. You may also include an external subject matter expert on your committee if you believe this person would strengthen your project and meet the requirements for graduate faculty. Therefore, your capstone committee will consist of four to five members including yourself. An important goal of this project is to assist you in learning the skills required to critically review research and literature, understand the theory of research methodology, and to participate in the development and implementation of evidence-based outcomes in your area of practice. Therefore, receiving guidance from a variety of peers, scholars, and professionals is considered an asset to project work and is integrated throughout the capstone project design.

## **Student and Committee Roles and Responsibilities**

You will be assigned a coordinator (instructor) and two internal committee members (mentors) from MCPHS University faculty to provide guidance and feedback throughout your project. You may identify one additional committee member, an external content expert, who will serve as a peer reviewer of your project. Your committee will provide support and assistance throughout the entirety of the capstone project.

Please see Table 1, which outlines the roles and responsibilities of each of the committee members, the committee consists of:

1. Student
2. Capstone Coordinator (internal MCPHS faculty)
3. Capstone Mentors (two internal MCPHS faculty)
4. Subject Matter Expert (should be external to the university); (this role is optional, and subject to approval)

**Table 1: Roles and Responsibilities of Project Committee**

<b>Table 1: Roles and Responsibilities of Project Committee</b>				
<b>Overall Roles and Responsibilities</b>	<b>Student</b>		<b>Capstone Coordinator</b>	<b>Capstone Mentors</b>
	<ul style="list-style-type: none"> <li>Keep in contact with the capstone coordinator to clarify questions or concerns and to ensure timely and quality progress towards completion.</li> <li>Provide capstone committee and any external committee member with the selected assignments for review in a timely manner.</li> <li>On receiving comments from your committee members, incorporate suggested revisions into the project as appropriate.</li> <li>Successfully complete (with passing grades) all capstone courses.</li> <li>Be engaged with the peer-review process accepting and providing feedback in a professional manner.</li> </ul>		Will grade all assignments in courses and will be the lead in theory review and course management.	Consists of <u>two</u> faculty members that are familiar with the capstone structure and philosophy. Will review selected assignments in HSC 852 and HSC 856 to provide guidance, feedback and support.
<b>Roles and Responsibilities by Course/Milestone</b>				
<b>Course</b>	<b>Milestone</b>	<b>Student</b>	<b>Capstone Coordinator</b>	<b>Capstone Mentors</b>
HSC 815 Healthcare Research Methods	Assignment #4 Problem of Practice Paper	The purpose of this assignment is to analysis a problem of practice. This assignment requires you to analysis a professional practice problem that you have encountered or would like to explore in greater depth.	<ul style="list-style-type: none"> <li>Assess how realistic the topic is and also the premise and support.</li> <li>Provide guidance on the potential of the question and help to revise rationale.</li> </ul>	<ul style="list-style-type: none"> <li>Roles of the Capstone Committee will be discussed, the committee will provide feedback and support commencing in HSC 852.</li> </ul>
HSC 852 Question	Assignment #2 Paper: Literature Review	The purpose of this assignment is to review quality published literature around your topic, which	<ul style="list-style-type: none"> <li>Grade all assignments with constructive feedback.</li> </ul>	<ul style="list-style-type: none"> <li>Review presentation of student's PICO question with rationale.</li> </ul>

Development and Literature Search		will assist in answering the PICO question.	<ul style="list-style-type: none"> <li>Direct students to additional resources as appropriate: Writing Center, Library.</li> <li>Hold live chats to discuss and review theory and progression of projects.</li> </ul>	<ul style="list-style-type: none"> <li>Assess if PICO question is realistic for topic selection and available literature.</li> <li>Provide guidance on revising PICO as needed.</li> </ul>
	Assignment #3 Seminar: Presenting your PICO Question	The purpose of this assignment is to present your PICO question, rationale for topic selection; and how you think addressing this question may improve healthcare.		
<b>Course</b>	<b>Milestone</b>	<b>Student</b>	<b>Capstone Coordinator</b>	<b>Capstone Mentors</b>
<b>HSC 854</b> Appraisal of the Evidence	Assignment #1 Critically appraise three Systematic Reviews	The purpose of this assignment is to critically appraise three Systematic Review articles, which were selected in HSC 852, to answer your PICO/research question.	<ul style="list-style-type: none"> <li>Grade all assignments with constructive feedback.</li> <li>Direct students to additional resources as appropriate: Writing Center, Library.</li> <li>Hold live chats to discuss and review theory and progression of projects.</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>
	Assignment #2 Seminar: Peer-review seminar of two appraised articles	The purpose of this assignment is to critically appraise two articles or documents of your choice which were selected in HSC 852 to answer your PICO/research question.		
	Assignment #3 Critically appraise three RCTs articles	The purpose of this assignment is to critically appraise three Randomized Control Trial articles, which were selected in HSC 852 to answer your PICO/research question.		
<b>Course</b>	<b>Milestone</b>	<b>Student</b>	<b>Capstone Coordinator</b>	<b>Capstone Mentors</b>
<b>HSC 856</b> Dissemination Plan	Assignment #1 Dissemination Plan	The purpose of this assignment is to develop a plan for dissemination of project findings.	<ul style="list-style-type: none"> <li>Grade all assignments with constructive feedback.</li> <li>Direct students to additional resources as appropriate: Writing Center, Library.</li> </ul>	<ul style="list-style-type: none"> <li>Attend and provide constructive feedback on students' presentations.</li> <li>Provide suggestions for where findings could be disseminated.</li> </ul>
	Assignment #3 Final Project:	The purpose of this assignment is to present and disseminate your		

## Capstone Project Guidelines

Version September, 2018 approved

Updated: November 5, 2018; January 15, 2019; May 9, 2019; October 6, 2020; January 4, 2021

	Presentation	findings from the EBHC project using one of the chosen methods from assignment #1.	<ul style="list-style-type: none"><li>• Hold live chats to discuss and review theory and progression of projects.</li></ul>	<ul style="list-style-type: none"><li>• Assist students with potential networking opportunities.</li></ul>
--	--------------	--	---	--

## Developing and Completing the Capstone Project

It is essential that you realize that the capstone project is an evolving project, in the sense that it starts with the first course and continues throughout the completion of the program of study. The DHS, DHA, DScPAS and DAIH/DAC programs prepare their graduates to practice and serve as advanced leaders, educators, researchers, clinicians, and contributors to the health science field. Being well versed in evidence-based healthcare, engaging in practice change and informed decision-making is the foundation of the project and will prepare you for advanced responsibilities within the health system.

Capstone Project Benchmarks	
<b>Step 1</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Start thinking about a PICO question that would be appropriate to address in your field of practice.</li> <li><input type="checkbox"/> Gain an understanding of research methodology</li> <li><input type="checkbox"/> Review committee membership roles and responsibilities as you will be assigned three committee members:               <ul style="list-style-type: none"> <li>• Capstone coordinator (course instructor)</li> <li>• Capstone mentors (two selected from the university)</li> <li>• External subject matter expert (optional)</li> </ul> </li> </ul> <p>If you want to select a subject matter expert this person would serve as a fourth member of your committee. For approval of this external committee member, please have them send to your capstone coordinator:</p> <ul style="list-style-type: none"> <li>• a copy of his or her curriculum vitae or resume</li> <li>• a current email address</li> <li>• current phone number</li> </ul>
<b>Step 2</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Complete PICO question development</li> <li><input type="checkbox"/> Complete literature search</li> </ul>
<b>Step 3</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Complete critical appraisal of the literature reviewed</li> </ul>
<b>Step 4</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Develop a project to disseminate the PICO findings</li> </ul>

### Important Notes to Consider

- The **capstone coordinator** will be responsible for grading all assignments in the courses.
- The **capstone mentors** will be responsible for reviewing the selected assignments (HSC 852 Assignment #3 and HSC 856 Assignment #3). This person will not provide a grade for the assignments but will provide constructive feedback and provide recommendations for improvement.
- The **subject content expert** will be responsible for reviewing the selected assignments (HSC 852 Assignment #3 and HSC 856 Assignment #3). This person will not provide a grade for the assignments but will provide constructive feedback and provide recommendations for improvement.

- Discuss your project with your committee prior to finalizing the dissemination project.
- It is your responsibility to keep your committee members aware of when assignments are due and to send them a copy of the selected assignments for their feedback (this is optional).
- Most assignments will be completed in APA formatting. Please discuss with the capstone coordinator if it is appropriate to complete the final product in an alternative format.
- It is highly recommended you use the MCPHS Writing Center for assistance with grammar and general readability as your committee members (mentors and external committee member) will not provide editing of the project.
- If you do not successfully pass a course with a grade of B or better, you will not move forward to the next course of the capstone, and will need to repeat the failed course.

## Essential Guidelines for Submitting a Capstone Manuscript

If you choose to submit your project for publication, which is highly encouraged, it is important to consider the appropriate authorship. The manuscript will be prepared based upon the author guidelines published in the journal in which you wish to submit. This may include changing the format from APA to the format required by the journal.

### A Note on Authorship

It is important to provide recognition where appropriate; this is an area that can be discussed with your capstone coordinator and mentors.

Suggested order of authorship for Capstone manuscripts is as follows:

1 <sup>st</sup> Author	=	Student
2 <sup>nd</sup> Author	=	Capstone Coordinator
3 <sup>rd</sup> ,4 <sup>th</sup> Author	=	Mentors
5 <sup>th</sup> Author	=	External Committee Member

If you involve others in the research, writing, and publication process of your Capstone Project you may include them as authors. In order for an individual to be considered an author, he or she must meet the qualifications for authorship as outlined by the International Committee of Medical Journal Editors (ICMJE). Please visit the ICMJE website for further information: <http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

## **Guidelines for Approving Capstone Subject Content Experts**

1. The student will notify the Capstone Coordinator of the Subject Content Expert whom they wish to add to their capstone committee.
  - a. A copy of the proposed Subject Content Expert's current CV will be submitted to the Capstone Coordinator for review.
2. The Capstone Coordinator and Program Coordinator or designated faculty will review the CV and qualifications of the proposed Subject Content Expert and determine if they meet the project committee requirements.
3. The proposed Subject Content Expert must have the following qualifications
  - a. Doctoral degree, or equivalent
  - b. Demonstrated knowledge of the topic, or be considered an expert in the area
  - c. Demonstrated experience providing feedback to students, researchers, or previous service on doctoral committee
4. The proposed Subject Content Expert must be available/able to participate in a phone or Skype interview.
5. If proposed Subject Content meets these requirements, the Capstone Coordinator will send the Subject Content Expert an email outlining the roles and responsibilities with a copy to the student and Capstone Mentor.
6. The Capstone Subject Content Expert is required to review the Capstone Project guidelines and agree to the roles and responsibilities as outlined.
7. The Capstone Subject Content Expert's participation is bound by all university policies and expectations and may be terminated at any time.

# Application for Nomination of Capstone Subject Content Expert

**Student Name:** \_\_\_\_\_

**Title of Capstone Project and PICO question**

**Name of Nominated Subject Content Expert:** \_\_\_\_\_

**Current Resume of Nominated Subject Content Expert**      **yes** \_\_\_\_ **no** \_\_\_\_  
(must be included for consideration)

**Contact information**

**Email address:** \_\_\_\_\_

**Phone number:** \_\_\_\_\_

**Rationale for why the nominee is appropriate for the role of Capstone Subject Content Expert (150 - 250 words)**

**Student Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## Approving Capstone Subject Content Expert Form

To evaluate nominated candidate a Review Committee of two faculty will be formed to review the candidate's curriculum vitae/resume based on the established criteria of education, knowledge and experience. A phone interview with nominated Subject Content Expert may be included based on the discretion of the committee.

The Review Committee will consist of the Capstone Coordinator and Program Director or designated faculty who will review the CV and submit final evaluation to the Dean of the School of Healthcare Business for final approval.

**Student Name:** \_\_\_\_\_

**Title of Capstone Project and PICO question**

**Name of Nominated Subject Content Expert:** \_\_\_\_\_

**Current Resume of Nominated Subject Content Expert**      yes \_\_\_\_ no \_\_\_\_

**Email address:** \_\_\_\_\_ **Phone number:** \_\_\_\_\_

Criteria of evaluation	1	3	5	Comments
Doctoral degree, or equivalent				
Demonstrated knowledge of the topic				
Demonstrated experience providing feedback to students				
<b>Total</b>				

Ranking

1 - Does not meet requirements in this area

3 - Partially meets requirements in this area

5 - Fully meets requirements in this area

**Approved nomination as the Subject Content Expert for Capstone Project:** yes \_\_\_\_ no \_\_\_\_

**Review Committee member** \_\_\_\_\_ **Signature** \_\_\_\_\_

**Review Committee member** \_\_\_\_\_ **Signature** \_\_\_\_\_

**Dean of the School of Healthcare Business** \_\_\_\_\_ **Signature** \_\_\_\_\_

**Date** \_\_\_\_\_