



**COURSE NAME:** Telehealth for the Resident Physician

**CREDIT HOURS:** First Year (PGY1): 1 Hour of Overview Education  
Second Year (PGY 2): 4 Hours of Didactic Curriculum  
Third Year (PGY 3): 3 Hours of Experiential Education

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**COURSE DESCRIPTION:** This course provides physician residents with a detailed examination of the use of telehealth processes to transform the provision of healthcare. Through the context of professionalism and changing models of care, residents will explore clinical, research and educational initiatives currently underway across South Carolina. Residents will learn the history and status of telehealth activities; engage with live telehealth learning experiences; understand the use of telehealth to improve healthcare access and population health; explore how team-based and academic/community partnerships can be used to advance care; and embrace the changing models of care resulting from advancing telehealth technologies.

**GOAL:** Residents will explore the role of telehealth in current and future healthcare settings.

**COURSE OBJECTIVES:** Upon completion of the course, the resident will be able to:

1. Explain how the history of telehealth has contributed to the current application of this technology in healthcare.
2. Describe the various types of telehealth modalities and potential clinical implications.

3. Determine how telehealth increases cost efficiency, reduces transportation expenses, improves patient access to specialists and mental health providers, and improves quality of care and communication among providers.
4. Demonstrate the use of three telehealth tools in clinical, research and educational settings.

**CONTENT OUTLINE:**

Module 1: History & Changing Models of Care

Module 2: Access & Population Health

Module 3: Technology: Infrastructure and Applications

Module 4: Legislation & Regulation

Module 5: Team-Based Care & Community Partnerships

**TEACHING STRATEGIES:** Readings, individual postings, and online discovery will be required. Expert faculty from across the MUSC colleges will share their experiences and visions for telehealth. All third year residents (PGY 3) will have the opportunity to take part in at least one experiential learning exercise.

The course website is in Moodle at: <http://moodle.musc.edu> and is listed as Telehealth for the Internal Medicine Resident Physician. Course instructors will be available for assistance with Moodle and all course issues and questions. Residents will be enrolled through MUSC Enrollment Management.

**ASSESSMENT/EVALUATION METHODS:**

This course is graded pass/fail. To pass the course, residents must:

- Complete module assignments; responses to assignments will be evaluated (e.g., “below expectations”; “meets expectations”; “exceeds expectations”). For responses evaluated as “below expectations,” residents will be asked to complete the assignment again. Residents who receive more than four “below expectations” evaluations during the semester will be at risk for failure.
- Participate in online individual postings
- Complete the course evaluation

Professional behavior is expected of residents during all course interactions. It is expected that all residents interact with each other, faculty, staff, and all external constituencies in a professional manner.

If a course instructor finds a resident is acting in an unprofessional manner, the resident will receive a written warning with feedback to improve behavior. If the unprofessional behavior continues, the instructor will inform the course director, who in turn, will notify the resident's associate dean for education or resident affairs for further action.

**PARTICIPATION POLICY:** Class participation is defined as contact with the course for the duration necessary to complete the required modules. If a resident anticipates difficulty with meeting these requirements, the resident needs to contact a course co-director immediately.

**ASSESSMENT/EVALUATION METHODS:** This course includes online assignments which need to be submitted to satisfactorily complete the course. The Course Director will determine the remediation requirements for any resident who fails to or is unable to complete any course requirement. All residents are required to complete the post-course survey assessment.

### **COURSE ACTIVITIES AND ASSIGNMENTS**

Each module in the course will have at least one topic for an online discussion question assignment. Residents are expected to submit a substantive response to each module assignment question. When completing module assignments, refer to required course materials (or when appropriate, your own experiences) – state these explicitly in your responses. The purposes of the online postings are to demonstrate comprehension of the course materials, to promote learning for everyone involved, and for teaching others about the unique perspectives we have as individuals and professionals. It is the responsibility of the resident to communicate with the Course Faculty regarding deadline issues.

When completing module assignments, cite the resources used – provided or external – and state these explicitly in your responses. External resources should be peer-reviewed (i.e., not from Wikipedia).

## First Year (PGY 1): Overview of MUSC Center for Telehealth

### Telehealth Overview

#### Objectives:

1. Understand the technical and process applications that support the provision of telehealth services.
2. Demonstrate the use of standards-based equipment including carts, peripherals and monitoring devices.
3. List three inpatient and outpatient telehealth programs currently being supported across South Carolina.

#### Learning Resources:

1. MUSC Center for Telehealth Learning Commons

**Assignment:** Participate in guided tour and demonstration in MUSC Center for Telehealth Learning Commons.

## Second Year (PGY 2): Course Activities and Assignments

### Course Introduction

#### Objectives:

1. Define telehealth and telemedicine.
2. Describe the use of team-based care to provide telehealth services.
3. Advocate for the expansion of healthcare services through improved access and coordination.

#### Learning Resources:

1. Course Intro Video: IP 717 Faculty members share their vision for this module.
2. Kvedar, J., Coye, M. J., & Everett, W. (2014). Connected Health: A Review of Technologies And Strategies To Improve Patient Care With Telemedicine And Telehealth. *Health Affairs*, 33(2), 194-199. (See Moodle Link)
3. What is Telemedicine? - <http://www.americantelemed.org/about/telehealth-faqs->
4. Telemedicine: The Road to Improved Rural Health Care? - <http://www.youtube.com/watch?v=JstL39NaVvI>

**Assignment:** Course Introduction Online Discussion Forum Post and Pre-Course Survey (Mandatory in Moodle).

**Discussion Question:**

1. As a follow-up to the course introduction resources, discuss three examples of how telehealth applications are affecting patient care.

**Module 1:**

History & Changing Models of Care

**Objectives:**

1. Trace the history of telehealth.
2. Identify areas in clinical, educational and research services where telehealth are being applied.
3. Discuss the concepts of professionalism and efficacy in relationship to telehealth.

**Learning Resources:**

1. Course Videos:
  - a. Dr. Jimmy McElligott presents on the history and growth of telehealth at MUSC [27:38] (Will be Updated)
  - b. Dr. Christine Holmsted shares her story about tele-stroke care in SC [11:54]
2. Weinstein, R. S., Krupinski, E. A., & Doarn, C. R. (2018). Clinical examination component of Telemedicine, Telehealth, mHealth, and connected health medical practices. *Medical Clinics of North America*, 102(3), 533-544.
3. Wade, V. A., Elliott, J. A., & Hiller, J. E. (2014). Clinician acceptance is the key factor for sustainable telehealth services. *Qualitative Health Research*, 1049732314528809.
4. MUSC Pediatric Emergency and Critical Care Telemedicine Program - <https://www.youtube.com/watch?v=TsGigjXAmbl>

**Assignment:** Module 1 Discussion Forum Posting.

**Discussion Question:**

1. Discuss 2-3 current barriers to the adoption of telehealth applications. In your opinion, detail some of the possible solutions.

## **Module 2:**

### **Access & Population Health**

#### **Objectives:**

1. Describe the use of telehealth applications to address healthcare access issues.
2. Discuss the role of telehealth applications in improving population health.

#### **Learning Resources:**

1. Course Videos:
  - a. Dr. Samir Fakhry talks about how telehealth has evolved to provide better access and care [12:25].
  - b. Dr. Hugh Myrick talks about taking tele-mental health services to communities in SC and beyond [9:31]
2. Davidson, T. M., McGillicuddy, J., Mueller, M., Brunner-Jackson, B., Favella, A., Anderson, A., ... & Treiber, F. A. (2015). Evaluation of an mHealth medication regimen self-management program for African American and Hispanic uncontrolled hypertensives. *Journal of Personalized Medicine*, 5(4), 389-405.
3. Green, D. E., Hamory, B. H., Terrell, G. E., & O'Connell, J. (2017). A Case Report: Cornerstone Health Care Reduced the Total Cost of Care Through Population Segmentation and Care Model Redesign. *Population Health Management*, 20(4). doi: 10.1089/pop.2016.0105

**Assignment:** Module 2 Discussion Forum Posting.

#### **Discussion Question:**

1. Telehealth includes new models of care that can assist patients in the communities in which they live. What are the limitations to addressing health issues in a population in a traditional 'go to the doctor model' that home monitoring may resolve?

## **Module 3:**

### **Technology: Infrastructure and Applications**

#### **Objectives:**

1. Discuss the way providers can operate across technology and distance.
2. Identify applications that are best suited for different telehealth environments.

#### **Learning Resources:**

1. Course Videos:

- a. Mr. Michael Haschker provides an overview of the network, hardware and software that help deliver telehealth encounters across South Carolina [22:31]
2. Dorsey, E. R., & Topol, E. J. (2016). State of telehealth. *New England Journal of Medicine*, 375(2), 154-161.
3. Welch, B. M., Marshall, E., Qanungo, S., Aziz, A., Laken, M., Lenert, L., & Obeid, J. (2016). Teleconsent: A novel approach to obtain informed consent for research. *Contemporary Clinical Trials Communications*, 3, 74-79.

**Assignment:** Module 3 Discussion Forum Posting.

**Discussion Question:**

1. Provide 2-3 examples of telehealth network technologies that are being used to provide coordinated care.

**Module 4:**  
Legislation & Regulation

**Objectives:**

1. Compare state telehealth legislation and reimbursement policies with a focus on South Carolina's current legislation.
2. Describe the different business models associated with telehealth.

**Learning Resources:**

1. Course Videos:
  - a. Dr. David McSwain shares how he has helped to grow in-patient, pediatric critical care programs to better care for children in rural communities [4:19]
  - b. Dr. David McSwain talks about how administrative processes, like credentialing and payer parity, continue to affect telehealth adoption [6:56]
2. SC Telehealth Legislation – What you should know...  
<https://www.foley.com/south-carolina-enacts-new-telemedicine-law-what-you-should-know-08-10-2016/>
3. Review the American Telemedicine State Policy Center -  
<http://www.americantelemed.org/main/policy-page/state-policy-resource-center>
4. The Breakdown: Telemedicine Billing & Reimbursement -  
<http://www.youtube.com/watch?v=BteJl6GcLLU>
5. Weinstein, R. S., Lopez, A. M., Joseph, B. A., Erps, K. A., Holcomb, M., Barker, G. P., & Krupinski, E. A. (2013). Telemedicine, Telehealth, and Mobile Health Applications That Work: Opportunities and Barriers. *The American Journal of*

*Medicine*, 127(3), 183–187. doi:10.1016/j.amjmed.2013.09.032

6. Baker-Whitcomb, A., & Harvey, J. (2018). Benefits and Barriers to Telehealth Credentialing by Proxy. *Telemedicine and e-Health*.

**Assignment:** Module 4 Discussion Forum Posting.

**Discussion Questions:**

1. Credentialing by proxy for telehealth also affects the referring hospital. What are some potential concerns for the referring hospital? In your opinion, what are 1-2 ways in which these concerns could be addressed?

**Module 5:**

Team Based Care & Community Partnerships

**Objectives:**

1. Describe examples of interprofessional teams within telehealth settings.
2. Define potential areas of partnership between academic and community providers.

**Learning Resources:**

1. Course Videos:
  - a. Dr. Dee Ford talks about the importance of partnerships with community hospitals and within tele-ICU teams of healthcare providers [6:41]
  - b. Dr. Donna Johnson shares her extensive experience and passion for improving the health of SC expectant mothers and their babies [15:50]
  - c. Dr. James Sterrett shares his experience serving as a tele-preceptor and member of an interprofessional team in his role as a clinical pharmacist [12:15]
2. Cady, R. G., Erickson, M., Lunos, S., Finkelstein, S. M., Looman, W., Celebreeze, M., & Garwick, A. (2015). Meeting the Needs of Children with Medical Complexity Using a Telehealth Advanced Practice Registered Nurse Care Coordination Model. *Maternal and Child Health Journal*, 19(7), 1497–1506. doi:10.1007/s10995-014-1654-1
3. Wang, F., & Wang, J. D. (2017). Telehealth and sustainable improvements to quality of life. *Applied Research in Quality of Life*, 12(1), 173-184.

**Assignments:** Module 5 Discussion Forum Posting.



**Discussion Questions:**

1. Given the potential use of telehealth applications to bring together new healthcare teams, how do you envision using telehealth to better care for patients?

**Second Year (PGY 2): Course Evaluation**

**Assignment:** Complete mandatory final course evaluation – link in Moodle.

**Third Year (PGY 3): Telehealth Experience****Objectives:**

1. Apply telehealth skills in a clinical setting, including but not necessarily limited to remote monitoring of chronic disease.
2. Demonstrate proficiency with telehealth concepts and terms.
3. Engage in an interprofessional team consult.

**Learning Resources:**

1. Course Videos: Telepresenting and Teleconsulting with Dr. McSwain (MyQuest)
2. Focal Areas for Shadowing and Precepted Consults:
  - a. Acute Observation
  - b. Chronic Disease Observation
  - c. E-Visit Consult

**Assignment:** Complete checklist of Telehealth Experiences to include course video review, observations and management of diabetes and hypertension utilizing remotely obtained data.

**HONOR CODE:** Residents are expected to adhere to the campus Honor Code for the course: <http://www.musc.edu/honorcode/> and are to be familiar with and abide by its provisions. The Honor Code Policy applies to all tests, written assignments, project work, and verbal and electronic communication.

**PLAGIARISM STATEMENT:** Plagiarism is a form of academic misconduct and is the use of another person's words or ideas without providing credit to that person. It is the theft of another person's words and ideas to give the impression that you created them. These words and ideas may be from a variety of sources including printed works, speeches, presentations, and/or Internet sites and documents. Appropriate and complete referencing of words and ideas obtained from others is a

requirement in ALL courses. If a work is anonymous, as may be the case with some Internet documents, it still must be fully referenced.

Charges of plagiarism will result if you fail to provide adequate documentation of another person's words or ideas, whether published or unpublished. Additionally, the purchasing of a pre-written paper, having someone else write a paper or complete an assignment for you with or without payment, and submitting another person's work as your own are other examples of plagiarism and will be referred to the University Honor Council.

Plagiarism of a portion of any assignment, either written or verbal, will result in a course failure. Additionally, the faculty member may refer the event to the University Honor Council for further action. Suspension or dismissal from the university is an option provided for by the University's Honor Code for cases of academic misconduct.

If there is any portion of this policy that is unclear to you or that you wish to discuss further, please contact your course faculty member as soon as possible. To not do so indicates that you fully understand the policy.

**ACCOMODATION OF DISABILITIES STATEMENT:** Section 504 of the Rehabilitation Act to 1973 and the Americans with Disabilities Act of 1990 require MUSC to provide academic adjustments or accommodations for residents with documented disabilities. Residents seeking academic adjustments or accommodations must self-identify with the Course Director.