

Keeping Pace with Technology in Nuclear Medicine and PET/CT

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Introduction

The field of Nuclear Medicine is changing. Positron Emission Tomography (PET) fused with Computed Tomography (CT) is the future of the Nuclear Medicine profession. As such, new Scope of Practice guidelines from the Society of Nuclear Medicine and Molecular Imaging have been adopted and the Nuclear Medicine Technology Certification Board exam has been adapted to include more PET/CT. As such, based on these new guidelines, surveys from former students, and recent registry scores, the Old Dominion University Nuclear Medicine Technology program needs to be updated to include more PET/CT instruction. This project was completed under the guidance of the ODU Nuclear Medicine Technology Program Director, Dr. Scott Sechrist.

Objectives

The objectives of this project were as follows:

- Develop course outline for PET portion of Instrumentation course
- Design learning objectives for one PET instrumentation lecture
- Create lecture material for one PET Instrumentation learning session
- Ensure PET outline encompasses all information in the current Society of Nuclear Medicine and Molecular Imaging Technologist Scope of Practice
- Ensure PET outline encompasses all information in the PET portion of the Nuclear Medicine Technology Certification Board Components of Preparedness

Methods

Course content was modeled after the learning outcomes and was prepared in the forms of:

- Team Based Learning Activities
- Assessments of Prior Knowledge
- Powerpoint Slides
- Course Outlines

Analysis

In order to enhance this course, I needed to develop a course outline and syllabus, design learning objectives, create lecture content for one Instrumentation lecture session, and ensure all course content meets the current Society of Nuclear Medicine and Molecular Imaging (SNMMI) technologist scope of practice and NMTCB components of preparedness. In order to develop the course outline, I researched the new SNMMI scope of practice and NMTCB components of preparedness and wrote an outline of all the PET/CT topics listed, therefore all topics which needed to be included in the course. Next, I correlated these topics with the location of the content in the program textbooks available to the students. This outline was the guiding force of my course content development. Next, I used this outline to develop the learning objectives and incorporated both into the course syllabus. The course schedule came later once the other professor and I met with Dr. Sechrist to really plan how the course would be restructured to also include PET/CT. Finally, I used both the outline and schedule to create lecture content for the first lecture session and team activity for the second session. Preparing this material was the bulk of the work, as much self-study was required when developing lecture content.

Results

The results of this practicum project were successful. An existing Nuclear Medicine Technology Instrumentation course was adapted to provide more PET/CT instruction. The new syllabus was approved by the ODU Dean for Medical Diagnostic and Translational Sciences. As of March 2018, all new course materials were completed and implemented and are now a part of the program instruction for junior Nuclear Medicine Technology students at Old Dominion University. An extra week of clinical rotations at the Sentara PET/CT mobile unit has been added for the senior students which will begin in June of 2018.

Discussion

Developing course content is time-consuming and intensive involving a significant amount of self-study to provide detailed, accurate, updated course content, even when one practices in the field related to the course. The Master's in Medical and Health Professions Education (MMHPE) program provides a foundation in the science of teaching and learning especially useful for a project such as this - introducing useful tools and techniques for assessing student prior learning, reviewing course content in preparation for revisions, and incorporating team-based activities. The MMHPE program provides perspective on the role of the educator as leader and helps prepare students for career growth in their discipline.

Figure 1. Excerpt from course presentation: PET Instrumentation

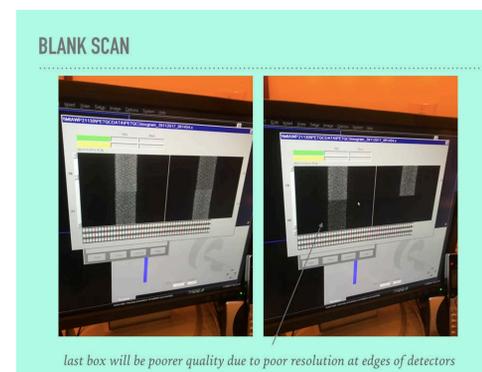
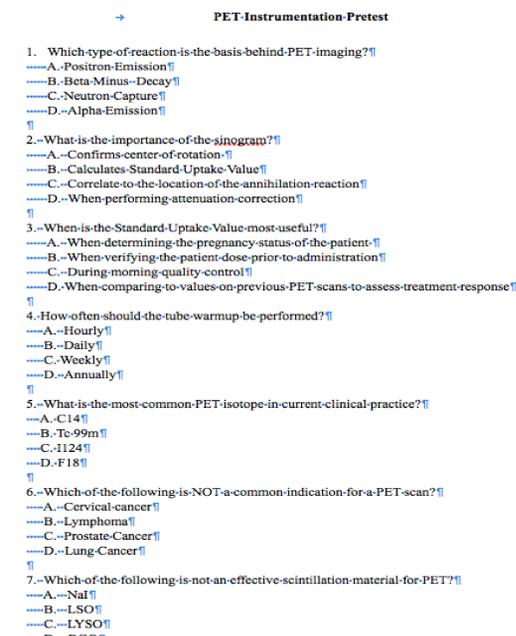


Figure 2. Excerpt from Team Activity: Artifact Identification



Figure 3. Excerpt from Course Pretest



References

1. https://www.nmtcb.org/documents/NMTCB_COPS_2017.pdf
2. <http://snmmi.files.cms-plus.com/docs/hpra/NMT%20SOP%20Clinical%20Performance%20Standards%20-%20FINAL%20approved%20Sep%202016.pdf>

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