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Competency based education and training in radiation oncology

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Introduction

As in any field, errors happen in radiation oncology despite our best efforts to prevent them. It is well known, and well documented, that appropriate, adequate training can reduce the likelihood of errors.. The World Health Organization (WHO) published the manual Radiotherapy Risk Profile in 2008 and in this manual it lists competency assessment as one of the top three interventions that is likely to be an effective safety barrier. But what is competence? Competence is the ability to do something successfully and efficiently. Hence, competency based education and training must offer comprehensive training as well as be able to determine whether an individual can successfully complete a task independently and do so in an efficient manner. Radiation oncology is a technology centered specialty that is continuously evolving and requires continued education and training to stay up to date with current technology, improved techniques, and/or to increase efficiency as well as improve overall safety.

Methodology

An online system was setup in order to establish specific training modules and track users' progress throughout their competency development. Various media was used to convey information to users such as text files, presentation slides, and videos. Additionally, certain modules included quizzes based on educational material as well as assigned clinical observations where an individual would be followed and assessed in the clinic for a particular procedure.

To test which media was most effective at communicating information, members of the department of radiation oncology was randomly assigned to 1 of two groups. Each group was assigned a general radiation safety module, where one group's assignment was text/slide based and the other group's assignment was video based. Each group had the same quiz administered after the content was reviewed.

Additionally, brachytherapy modules were given to new medical physics residents with no prior brachytherapy experience. Program compliance and overall assessment was measured and residents were surveyed about the program.

Results

The online system was deployed in the department with various module assignments given to specific groups. Various metrics were measured including program compliance, individual assessment after the program (competence), and survey feedback from users and will also be discussed.

Conclusion

An online competency based education system utilizing multimedia content, along with hands on assessment, is an efficient and effective tool to implement in radiation oncology.

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