Purpose: Training in clinical dosimetry is an important component of radiation therapy, dosimetry, and medical physics training programs. Based on our in-house treatment planning system, PLanUNC, we are developing and assessing a web-based dosimetry teaching tool to augment existing training programs.

Methods: We surveyed radiation therapy program directors to assess the need for clinical dosimetry training tools. Based on survey results, we are developing a web-based dosimetry-training tool consisting of 10 modules containing didactic content based on the ASRT curriculum, student assessment, and hands-on treatment planning exercises. External content specialists reviewed the self-paced modules for accuracy and content validity. Two external dosimetry students were observed as they completed three sections, and were interviewed in-depth to evaluate the modules. This qualitative analysis combined features of usability testing with formative evaluation of instructional products. We revised the modules based on these data. Our next phase, quantitative evaluation, will assess the effectiveness of the modules, the quality of the interactivity and the degree of student engagement when completing the modules.

Results: Sixty-four percent of program directors indicated they had insufficient local resources for dosimetry training, and over 90% indicated interest in web-based training tools as teaching supplements. External evaluators indicated module content was appropriate and accurate. Students indicated the modules were easy to use with clear and understandable content. They were engaged when using the modules and motivated by the interactive components. They placed value on the exercises and the feedback they received.

Conclusions: Inter-institutional evaluation improves the quality and generalizability of instructional modules. Carefully designed online learning modules are viewed as effective teaching tools by dosimetry students. The clinical dosimetry teaching tool will be made accessible to therapy and dosimetry training programs worldwide.

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