Using Measured Learning Outcomes to Ensure Efficacy in Instructor Led Training

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1. Background
Measuring learning outcomes is both a necessity and a challenge. Training courses are developed with the intent to teach certain information or skills but fail to directly measure whether or not those skills or information are learned by course participants. A failure to define and measure learning outcomes creates many courses which cannot be evaluated for their efficacy.

At the Colorado University (CU) Cancer Center, the Operations Learning and Development team conducts three Instructor-Led Trainings for research staff as part of the onboarding process. These courses were created to teach topics of Adverse Events, Data Quality, and Informed Consent, but lacked clearly defined learning outcomes and a method for assessing their achievement. An opportunity was identified to establish learning outcomes and collect data on the efficacy of the courses.

2. Goals
The main objective in establishing and measuring learning outcomes is to create a system where course efficacy can be evaluated and improved. Collecting this data informs instructors if research staff members are learning the skills and information necessary to be successful in their roles.

3. Solutions and Methods
Development of course content was supported by trends in auditing and monitoring which identify common errors and mistakes observed in oncology trials. Learning outcomes were established based on course content to highlight information learners should take away from each course. Use of data-informed learning outcomes provides measures that both teach needed information and work to prevent commonly recurring issues.

After establishing the training learning outcomes, pre- and post-course quizzes were created to measure the learner's baseline knowledge, and then post-course knowledge. These quizzes provide direct data on whether learning outcomes are being met in the courses.

4. Outcomes
Data demonstrates that 54 of the 137 staff members improved their score, and 20 maintained a perfect score in their pre- and post-course assessments. Eleven participants did not see a change in their scores, while only 4 saw a decline in their scores from their pre-course assessment.

5. Learned and Future Directions
One challenge identified in the collection of this data was that 48 out of 137, or 35 percent of participants did not complete both the pre- and post-course quizzes, meaning no usable data was collected in those instances. In response to this, pre- and post-course quizzes, which were initially sent via email, were incorporated at the beginning and end of the live courses and completion rates have already begun to improve.

As we move into the future, we will begin to collect additional data on staff experience (which may impact their baseline knowledge), as well as looking more specifically at questions missed, and a clear plan to evaluate learning outcomes and update them when needed.

Figure

ILT Pre and Post Quiz comparisons as a Measurement of Course Efficacy