**Your Name:  Heather Dorrell**

**Project Title:  Radiation Safety Guide for Patient Care Staff in a Hospital Setting**

**Purpose of Needs Assessment**

The purpose of a Needs Assessment is to determine characteristics of the audience and effectiveness of the current presentation offered by the Radiation Safety Team in order to improve the experience and impact of the future training.

**Summary of the Needs Assessment Process**

During this process, the current slide show deck (Welling & Goode, n.d.) was collected from the Subject Matter Expert, along with an Excel Spreadsheet of who is currently required to take this mandatory training. Data is currently taken on the following items: Completion Status, Completion Date, Company, Job Family and Group, Worker Type, Employment Type, and Assignment Type (self-enrolled or manager/admin enrolled). This data is automatically collected through the program Workday, a cloud-based software that specializes in applications for Human Resources and Financial Management. There is no quantitative data on learner characteristics or evaluation of course effectiveness included in the current training.

**Summary of Needs Assessment Results**

The targeted audience for this training is hospital personnel who work in the vicinity of radiation and require a radiation dosimeter. The target population for this training resides in three different locations: the main hospital, an auxiliary location, and an attached university. Patient care staff will receive this training, including employees, contractors, and contingent workers, including but not limited to resident physicians, physicians, registered nurses, health services employees, contractors, and academic faculty. Students of this course can be assigned this training by a manager or administrator, or they can self-enroll. The level of learner ranges from novice to advanced in need of a refresher course on the topic. The course is currently structured as a digital course uploaded on Workday. Its current form is a PowerPoint slide presentation with 30 slides. The training is self-paced and self-administered. Data is taken on Workday that confirms completion of the course (Health Physicist, personal communication, September 8, 2023).

**Normative Need:** There is a normative need to ensure regulatory compliance, as this training is a requirement of the state’s health department. One of the conditions of the hospital and university’s license and registration requires that all individuals working with, as well as in the vicinity of, licensed material or radiation producing equipment, must have adequate radiation safety training commensurate with their duties (Instructions to workers. 12VAC5-481-2270).

According to the Health Physicist;

“Inadequate training is often cited as a cause for a regulation or policy not being followed. The goal of updating this training is to make it more interesting and engaging, not necessarily to gain some measurable improvement in a metric. Some months are busier than others, and it isn’t reasonable to assume workers who used more X-Ray and got more radiation exposure than their colleagues made some mistakes or didn’t follow best practices.”

He also states that if an employee sites the training as inadequate, the state can issue a citation and a fine to the hospital (Health Physicist, personal communication, September 8, 2023).

**Felt and Expressed Need:** At a recent staff meeting, managers expressed a need for an updated version of the training that included a more accessible digital format, more engaging presentation both digitally and during in-person group training, inclusion of scenario-based learning opportunities, and inclusion of an evaluation and performance component.

Other concerns mentioned were concerning accessibility, including the inclusion of audio and closed captioning to the Workday training, the inclusion of a quick and easy user guide that employees can reference to be kept for personal use.

When looking at instructional design models, it was determined that there is no current evaluation system to gather qualitative and quantitative data on the quality of the training in order to improve or modify it, as needed (Health Physicist, personal communication, September 8, 2023).

The team also expressed concern about the impression this training gives new or novice staff that are not familiar with Radiation Safety. If this training is one of a new employee’s first engagements with the radiation safety team and their expectations, one goal is to impress upon the trainee that we value safety culture. The institutional branding is also not present in the current training (Health Physicist, personal communication, September 8, 2023).

“Most individuals working with x-ray equipment and radioactive materials know the rules following its use. This training is a reminder that those rules are there for their safety. Broad spectrum compliance is a result of a positive safety culture (examples: workers reminding each other to wear dosimeters and lead, like they would other safety gear) (Health Physicist, personal communication, September 8, 2023).

During a recent meeting with the Radiation Safety Team, a few concerns were raised about the current quality of the training.

1. **Accessibility** is a key concern with the current training, considering there is no audio, closed captioning, and Mayer’s Principles of Design have not been incorporated into visuals. There are also no artifacts or study materials to help with information organization or as a guide for future referral.
2. **Appearance** is a key concern for certain members. The institution has recently released new requirements for branding instructional materials, which need to be incorporated into future publications. Design principles for slides have not been updated based on current research or current branding requirements.
3. **Effectiveness** is a key concern for trainers and managers. There are several students taking the course who are novices. The course and material are currently presented in a student-led format. Trainers and managers are interested in providing the appropriate amount of instructional support to all categories of learners regarding radiation safety. More scaffolding and support can be provided digitally to address effectiveness for certain groups of students.
4. **Evaluation** of the effectiveness of the course is not currently present. Data is only taken on whether the course was completed.

This is a required training for many staff. The percentage of novices who are required to take this training is between 80-85%. However, there is no audio, no study guide, and the visuals are reportedly hard to understand. If the quality of this training is not addressed, the felt and expressed needs of a revamping will be unmet. Continuing data collection after implementation will allow stakeholders to modify the training in the future (Health Physicist, personal communication, September 8, 2023).

**Prioritized List of Needs Table**

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| **NEEDS STATEMENT** | **LEARNING NEED** | **ASSOCIATED ISSUES** |
| Target Audience: Hospital personnel who work in the vicinity of radiation and require a radiation dosimeter.  |
| Accessibility: Learners need to have an array of accessibility options in order to absorb the presented material, including audio and visual supports. | Add Audio, Video, Closed Captioning, Assets, Attachments, and Assets | Does the client prefer Microsoft 365 or Articulate?Who will provide Audio and Visual?Training will need to be approved by management. |
| Appearance: The institution has updated appearance requirements that are currently lacking in the visual experience of the training.  | Digital branding fosters employee engagement and loyalty. Employees identify with the presentation. | Using appropriate colors, photographs, videos, and other multimedia components |
| Effectiveness: More scaffolding and support can be provided digitally to address effectiveness for certain groups of students, particularly novices or learners with a disability. | Add Audio, Video, Closed Captioning, Assets, Attachments, and Assets | Does the client prefer Microsoft 365 or Articulate?Who will provide Audio and Visual? |
| Evaluation: Trainers need to know that students engaged with the material and understood its objectives. | A short quiz needs to be added.The LMS tracks who completes the training, which is all that is needed for compliance. | Subject Matter Expert will need to assist with an evaluation that is pertinent for stated goals of the training. |

**Performance Needs and Concerns**

This training is offered to meet two needs:

1. To comply with a state regulation (12VAC5-481-2270) and

2. To increase compliance with other different, but relevant regulations and internal policies meant to enhance safety for workers.

The State does not evaluate a hospital on the quality of a training course used to meet the regulation but requires that the training contains the items cited in the regulation. However, an inspector could determine that the training is inadequate through interviews with staff who have completed it and who have violated regulations described within the training. The worker can claim they were not informed of the requirements.

**Goal Analysis for the Instructional Intervention**

**AIM:**

1. To comply with a state regulation (12VAC5-481-2270) and

2. To increase compliance with other different, but relevant regulations and internal policies meant to enhance safety for workers.

**Set Goals:**

Upon completion, the participant will be able to:

1. Describe and comply with the policy for working near radiation sources (during pregnancy)
2. Identify and use radiation safety resources
3. Identify three basic radiation protection methods
4. Understand their dose limits and the ALARA policy
5. Explain and comply with the proper use of a dosimeter

**Rank-Ordered Goals:**

Not applicable-All goals are to meet a compliance requirement.

**Goal Statement:**

In order to comply with a state regulation (12VAC5-481-2270), increase compliance with other different, but relevant regulations, and enhance safety for workers, employees will be able to meet the five defined goals outlined above.

**Learner Analysis: All information was provided by the Subject Matter Expert.**

Learners are adults who speak English working in a hospital setting with radiation. There are no defining, common attributes beyond this. This is a very diverse group. Workers minimally possess a high school diploma or GED, but the majority have additional technical and/or academic training. Learners can potentially have a disability.

**Contextual Analysis:**

This training is given in a digital format. It is currently a PowerPoint Slide Deck that has been uploaded to Workday.

**References**

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