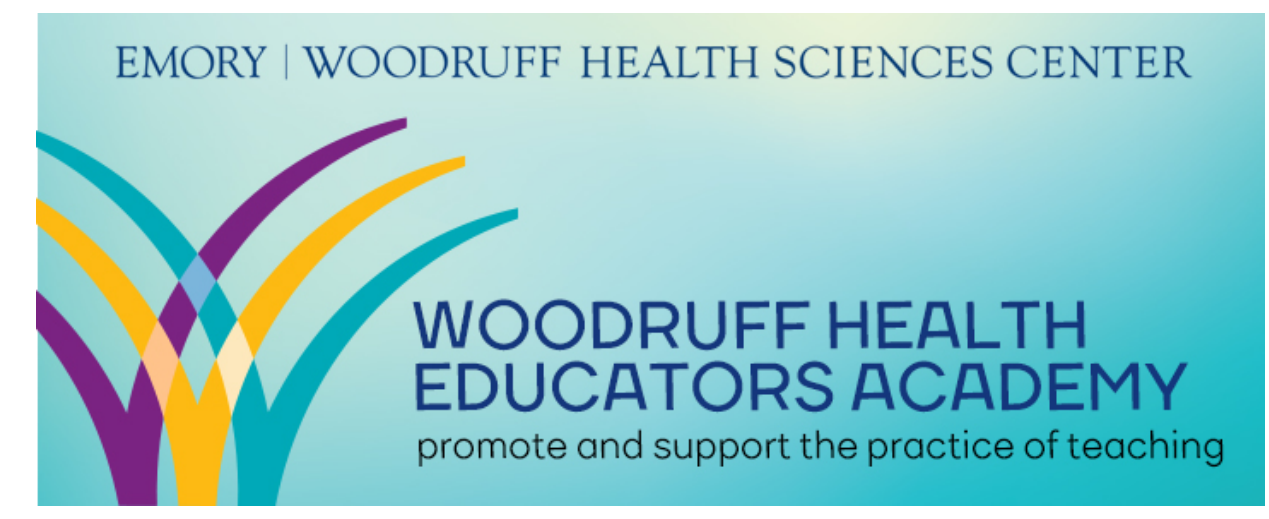


Readying Emory for Radiation Accidents: A Curriculum



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Abstract

Radiation emergencies are potentially catastrophic and may not be immediately obvious. Therefore, an Interdisciplinary Curriculum on Radiation Emergency Management is planned to better educate trainees within Interdisciplinary Curriculum on Radiation Emergency Management .

A half day program would be planned to address concepts related to radiation emergencies covered by the International Atomic Energy Agency (IAEA), Radiation Emergency Assistance Center/Training Site (REAC/TS), Centers for Disease Control (CDC) and Center for Rad/Nuc Training at the Nevada National Security Site (CTOS) under the auspices of the National Nuclear Security Administration. The curriculum will be assessed by pre-test and post-test.

Background & Purpose

Radiation is used in various sectors of society including medicine, various types of industry (i.e. food, drilling, and electricity production, among many others), military, and others. Radiation overexposure can be a life-threatening event or lead to significant morbidity (i.e. radiation sickness, skin burns, infertility, or other more long term sequela such as cataracts and others). The types and degree exposure received drives outcomes.

Almost nothing creates more terror than radiation. It is invisible to touch, taste and smell and most people have unrealistic ideas about radiation. These ideas often come from science fiction movies or television description of radiation disasters. Many physicians also do not understand radiation.

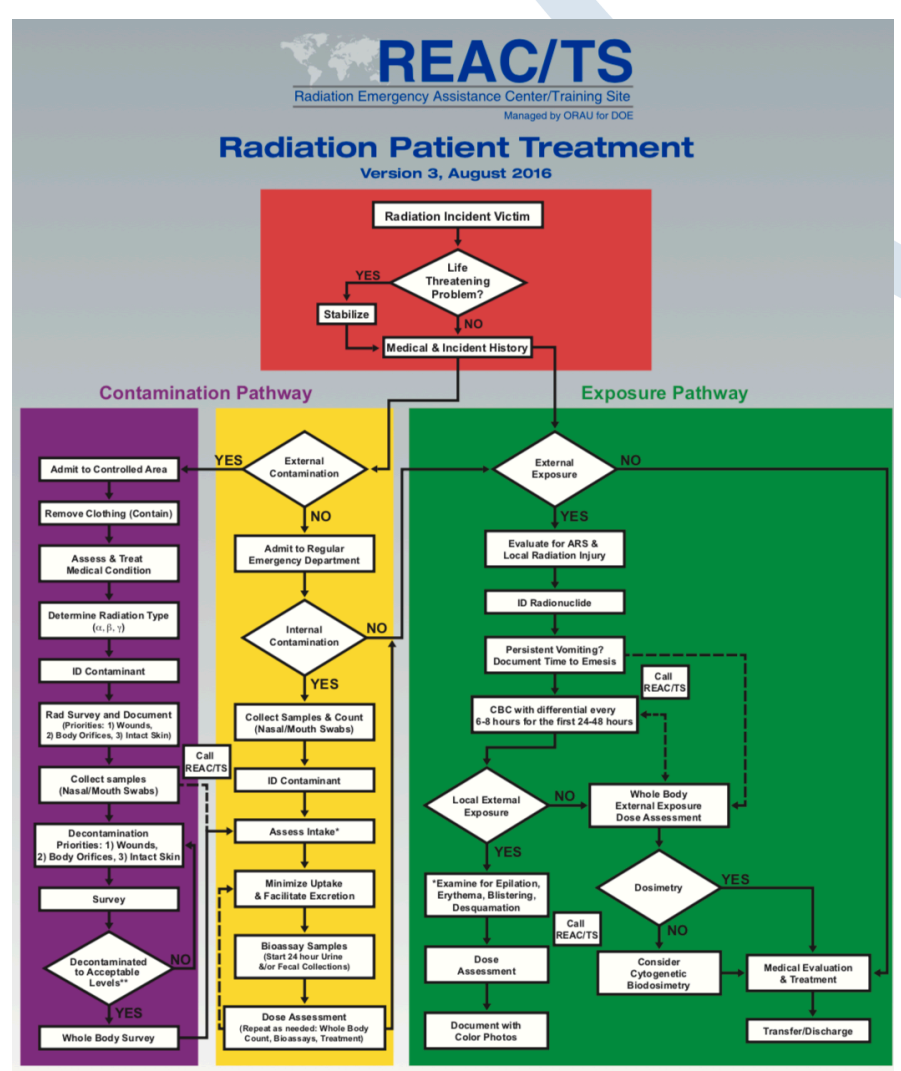
While there are programs available on this topic, many are costly and require time away from work. By working this topic into the curriculum, it will ideally produce practitioners who are ready for possible radiation accidents including but not limited to radiological terror events. Understanding the process of caring for these patients and how to deal with worried well is imperative prior to an event. On the job training during such an event could yield errors in care.

Methods & Progress to Date

An IRB protocol was submitted.
A review of prior course work from REAC/TS, CTOS and available materials from CDC, IAEA was performed.
Target audience was established after careful review of those who have some existing education on radiation and those on the front lines. The target audience will be trainees from nuclear medicine, diagnostic radiology, radiation oncology, emergency medicine and health physics. There has already been outreach to ensure training programs are interested to participate.

- Topics will include:
- Staff Protection and Triage
 - Approach to the Contaminated Patient
 - Decontamination
 - Basics of Internal Dosimetry
 - Medical Countermeasures for Radiation Exposure
 - Radiation Syndromes
 - Approach to the Worried Well
 - Review of Emory Plan
 - Radiation Injury Treatment Network (RITN) Overview

Consent language and course pre- and post-test instruments.
A tentative date for the course has been established with Save the Date information sent to relevant training programs.



Future Plans

- Tentative course date set for March 2020.
- Will obtain consent from trainees participating in the curriculum, administer pre- and post-test.
- Publish curriculum to disseminate information on this important topic.

Current Conclusions

Education on this critical topic will help to prepare Emory for possible radiation emergencies. In addition, it is expected to disseminate trainees who are educated on responding to radiation emergencies and ideally will help them establish a program where they begin their careers.

References

1. Coeytaux K, Bey E, Christensen D, et al. Reported radiation overexposure accidents worldwide, 1980-2013: a systematic review. PLoS One. 2015 Mar 19;10(3):e0118709.
2. Course materials from in person "Advanced Radiation Medicine" course from REAC/TS located in Oak Ridge, TN.
3. Course materials from in person "Introduction to Rad/Nuc WMD Operations for Emergency Medical Services/Health Care" course from CTOS/NNSA/FEMA given in Palm Springs, CA.
4. Resources from the US Department of Health and Human Services, Radiation Emergency Medical Management: <https://www.remm.nlm.gov/training.htm>
5. Compilation of CDC resources: <https://www.cdc.gov/nceh/radiation/emergencies/clinicians.htm>
6. RITN training materials: <https://ritn.net/training/>