

A Sustainable Training Strategy for Improving Health Care Following a Catastrophic Radiological or Nuclear Incident

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Abbreviations:

AFRRRI: Armed Forces Radiobiology Research Institute
ASTRO: American Society for Radiation Oncology
CME: continuing medical education
DMAT: Disaster Medical Assistance Team
DOE: Department of Energy

Abstract

The detonation of a nuclear device in a US city would be catastrophic. Enormous loss of life and injuries would characterize an incident with profound human, political, social, and economic implications. Nevertheless, most responders have not received sufficient training about ionizing radiation, principles of radiation safety, or managing, diagnosing, and treating radiation-related injuries and illnesses. Members throughout the health care delivery system, including medical first responders, hospital first receivers, and health care institution support personnel such as janitors, hospital administrators, and security personnel, lack radiation-related training. This lack of knowledge can lead to failure of these groups to respond appropriately after a nuclear detonation or other major radiation incident and limit the effectiveness of the medical response and recovery effort. Efficacy of the response can be improved by getting each group the information it needs to do its job. This paper proposes a sustainable training strategy for spreading curricula throughout the necessary communities. It classifies the members of the health care delivery system into four tiers and identifies tasks for each tier and the radiation-relevant knowledge needed to perform these tasks. By providing education through additional modules to existing training structures, connecting radioactive contamination control to daily professional practices, and augmenting these systems with just-in-time training, the strategy creates a sustainable mechanism for giving members of the health care community improved ability to respond during a radiological or nuclear crisis, reducing fatalities, mitigating injuries, and improving the resiliency of the community.

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Introduction

Headlines regularly remind medical communities about the possibility of catastrophic events; consider the 9/11 terrorist attacks and more recent Boston bombings. The detonation of a nuclear device in a US city would be a catastrophic event unlike any other.

EMT: Emergency Medical Technician
FEMA: Federal Emergency Management Agency
HHS: U.S. Department of Health and Human Services
IND: Improvised Nuclear Device
ORISE: Oak Ridge Institute for Science and Education
REAC/TS: Radiation Emergency Assistance Center/Training Site
REMM: Radiation Emergency Medical Management

SME: Subject Matter Expert
UASI: Urban Area Security Initiative

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