

## **Radiation Event Medical Management: Teaching Biodosimetry to Responders**

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Most professional healthcare responders are unfamiliar not only with the concept of biodosimetry but also with the most basic principles of radiation medicine needed to respond to potential mass casualty radiation events. In addition, because both training time and resources are limited, most responders elect to focus their attention on activities which they perceive to be less complex, more likely to be used, and less clinically futile.

The US Department of Health and Human Services, Office of the Assistant Secretary of Preparedness and Response recognized the importance of making it easier for healthcare responders to understand radiation events, basic aspects of radiation medicine including biodosimetry, and guidelines for caring for victims of unplanned radiation events. To assist in both training and response activities, the department commissioned a web portal, Radiation Event Medical Management (REMM: <http://remm.nlm.gov>), which was launched by Secretary Michael Leavitt in March 2007. Since then, it has been used extensively for individual training and during formal exercises inside and outside the US.

The web portal provides (1) algorithm-style, evidence-based, guidance about clinical diagnosis and treatment during mass casualty radiological and nuclear events; (2) just-in-time, peer-reviewed, usable information supported by sufficient background material and context to make complex diagnosis and management issues understandable to those *without* formal Radiation Medicine expertise; (3) a zip-file of complete web portal files downloadable in advance so the site would be available offline, without an internet connection; (4) a concise collection of the printable, key documents that can be taken into the field during an event; (5) a frame work for medical teams and individuals to initiate rad/nuc planning and training, and (6) an extensive bibliography of key, peer-reviewed and official guidance documents relevant to radiological and nuclear responses. REMM undergoes regular content updates and new features are continually added.

REMM explains biodosimetry in a way users can understand quickly and easily. Simple, fast, interactive tools allow users to input vomiting, lymphocyte count, and the dicentric chromosome assay results to estimate dose in order to triage/manage patients exposed to radiation. Biodosimetry tools are derived from published, peer-reviewed sources.

Until faster, better methods of biodosimetry are developed, validated, and deployed widely, first responders and receivers will need to use existing biodosimetry tools in immediate and later response activities after potential unplanned mass casualty radiation exposures, such as those from terrorist or other large scale radiation events. These tools must be accessible, easy to use, and understandable by all healthcare professionals expected to participate in the response. A poster displaying key features of REMM will be presented, and a laptop version of the entire site will also be available.