

Radiation Risk Communication Using an In-house Non-code App Solution

Lalitha Kurada, Ph.D.¹, William F. Blakely, Ph.D.², Brandon M. Wiggins³, David L. Bolduc, Ph.D.²

¹*Henry M. Jackson Foundation, Rockville, MD*

²*Armed Forces Radiobiology Research Institute, Uniformed Services University of the Health Sciences, Bethesda, MD;* ³*Naval Research Enterprise Internship Program, Washington, DC*

The Armed Forces Radiobiology Research Institute (AFRRI) Radiation Biodosimetry Research Group aims to develop biodosimetry tools that support military operations in radiation-risk environments. To address gaps in radiation-risk understanding and reduce psychological barriers during deployments, AFRRI created the Radiation Risk Communication Card (RRCC), a decision support tool for triage and communication. Efforts to create this tool were driven due to limited knowledge regarding radiation risks among military personnel and the general public. Our working hypothesis was that a cost-effective military RRCC app could be developed from AFRRI's RRCC. To implement the RRCC, we explored an in-house, no-code development approach using Drupal 11. This open-source platform was selected for its security compliance, modular design, and ability to generate Progressive Web Apps compatible with both web and mobile devices. Key Drupal modules included Admin Toolbar, Paragraphs, CKEditor Accordion, IMCE, and others to support dynamic content and usability. A functional prototype RRCC app has been built using Drupal and MariaDB (an open-source relational database management system), via a host called XAMPP (a free and open-source cross-platform web server solution stack package). This framework supports future integration with military systems, collaborative updates, and scalable deployment. The RRCC app will serve as a cost-effective triage and radiation risk communication tool, enhancing preparedness and decision-making during radiological events.

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