

## The Rewarding Challenge of Measuring Readiness to Deploy

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Estimating individual readiness of military and civilian nursing personnel for deployment to austere environments challenges the best of us. Despite decades of conflicts, crises, and disasters around the world, measuring individual readiness for deployment remains elusive. However difficult, quantifying individual readiness is critical to provide commanders and leaders with information to drive education, training, and preparation. It is simply not enough to focus on immunizations, wills, and equipment issue. Readiness is exceedingly more complex, as we have learned from candid input by those who have deployed.

After clarifying the concept of readiness, measuring readiness was the next step. Both were undertaken with funding support from the congressionally sponsored Tri-Service Nursing Research Program.<sup>1</sup> This editorial summarizes a long-term program of science: the investigator-constructed instrument itself, called the Readiness Estimate and Deployability Index (READI); lessons learned from testing; and future applications.<sup>2</sup>

### THE READINESS ESTIMATE AND DEPLOYABILITY INDEX

Readiness instrument development requires patience, willingness to adapt to new technologies, and responsiveness to emerging health threats that need to be included. The result was the development, testing, administration, and eventual translation of the READI.<sup>2</sup> Initially developed in 1997,<sup>3</sup> the READI has taken these many years for scientists to modify and test respective versions for Army, Navy, and Air Force components; civilian nurses; and Canadian Defense Force nurses. Recently, the READI has been translated into Korean<sup>4</sup> and Japanese.<sup>5</sup> The Japanese versions<sup>5</sup> may be viewed inside the READI website<sup>2</sup> at the tab titled “Take the READI surveys.”<sup>2</sup>

The importance of a clear conceptual base to guide instrument development became evident. Flannery’s<sup>6</sup> Model of Stress-Resistance, originally developed for treatment of victims of violence, provided that base. The six READI scales correspond well with Flannery’s three domains of mastery,

attachment, and meaning in his Model of the Stress-Resistant Person. Mastery is represented in items in the three readiness competency scales: clinical competency, operational competency, and soldier survival skills. Attachment is reflected in items in the group identification/integration scale and the leadership/administration scale. Meaning is referenced in the personal/physical/psychological readiness scale.

Investigators who included the READI in their research provided rich insight into opportunities to enhance and shape it for different communities and organizations of health care personnel. At least six important lessons were learned.

### LESSONS LEARNED FROM TESTING

In addition to studies throughout the early years of the READI, 1997 to 2004, investigator teams continue to employ the READI in their reviews<sup>7</sup> and research<sup>8-10</sup> with diverse populations and cultures. With respect to evidence rating, based on the Agency for Health Care Research and Quality’s Innovations Exchange,<sup>11</sup> the data-based studies provide evidence at the “suggestive” level. That is, generalization must be limited.

However, these studies identified additional modifications and applications. The first was the need for more concise versions of the READI. Because readiness involves at least those six dimensions, the READI is somewhat lengthy, presenting the potential for respondent fatigue and error. Second, the development of versions for all the military services revealed the need for a version without military jargon and terminology, suitable for civilian nurses. Third, military and civilian nurses suggested that there is a need for an additional instrument focused specifically on the growing number of core clinical competencies. The fourth lesson was that the Reserve Components have unique readiness requirements since reserve personnel are twice a citizen, having also to prepare to temporarily leave their civilian employment settings.<sup>8</sup> Fifth, some degree of measurement error creeps into the READI because varied response formats are found within the instrument. A consistent response format may trigger response set, which is minimized by minor variations. Finally, a self-scoring method and a red-amber-green (not ready-moderately ready-fully ready) reporting scheme would be a helpful feature for the READI. These lessons learned lay the foundation

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for future research to meet the challenge of measuring individual readiness.

## FUTURE APPLICATIONS

More than 10 years after the READI was developed and tested in North America, international versions were created and tested in the Republic of Korea and Japan. A Republic of Korea Army Nurse translated the READI, developing appropriate cultural modifications. The READI-Korea was tested in two studies with 93 Armed Forces Nursing Academy cadets and 556 military nurses.<sup>4</sup> The Korean research demonstrated moderate individual readiness and identified training needs. A former Japan Ground Self Defense Force nurse also translated the READI with appropriate cultural modifications. The READI-Japan was pilot tested, modified, then administered to 427 nurses dispatched in the 2011 Great East Japan earthquake.<sup>5</sup> The research in Japan involved confirmatory factor analysis, which suggested a seventh dimension, stress, consistent with Flannery's attachment, and mastery domains. Testing the READI in South Korea and Japan produced new, useful international versions with improved reliability and validity.

The use of simulation to prepare for disasters is rapidly growing, but delivering the content consistently and effectively is difficult. One study with 63 prelicensure nursing students in a mid-western state evaluated their ability and perceived readiness to know what to do in a simulated mass casualty incident.<sup>12</sup> Measured outcomes included critical thinking, functionality within the health care team, and learning from mistakes. Qualitative responses from the students at the conclusion of their exposure to disaster preparedness education were enlightening in three areas. First, students were challenged to apply what they had learned in books, yet disconcerted, they realized the effect of chaos on their performance. Second, they stressed how their critical thinking was put to work. Third, they recognized the importance of situational awareness and establishing priorities. Resources such as the National Center for Disaster Medicine and Public Health offer didactic, web based, and simulation educational strategies through a single platform.<sup>13</sup> The READI could be a valuable tool to supplement and complement these strategies.

The READI, in its multiple versions, adaptations, and applications, is a proven, useful instrument to measure indi-

vidual readiness to deploy. As new questions are raised and new possibilities envisioned, the READI is a valuable template for related applications when military and civilian health care personnel are called on in response to disasters and conflicts in austere environments.

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