

**Results:** CRT on the finger pulp and sternum was shown to be increased following the hypothermic conditions, but not on the forehead. Skin temperature on the three sites followed the same pattern, with the forehead being virtually unchanged. Tests performed during LBNP revealed an apparent effect on CRT following the simulated blood loss, with prolonged CRT for all sites tested.

**Discussion:** A successful methodology for objective assessment of CRT was developed, which was validated on healthy volunteers following hypothermia or simulated blood loss. Ongoing work will investigate a combination of hypothermia and blood loss to more accurately simulate the prehospital setting.

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### Strategies to Decrease Nurses' Stress in a Federal Medical Station (FMS) Medical Needs Shelter in the U.S. after a Hurricane Disaster

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**Introduction:** National Disaster Medical System (NDMS) Disaster Medical Assistance Teams (DMATs) are used to provide medical care when local and state resources are overwhelmed in response to natural and human-made disasters. The stress these professionals experience during these events requires intentional and therapeutic interventions to support emotional and mental resilience. Evidence-based interventions will be presented.

**Aim:** DMATs were deployed after Hurricane Maria to work in a Federal Medical Station (FMS), at the Coliseum Bencito, Manati, Puerto Rico. The FMS was operated through a collaboration of federal agencies and non-government agencies. Community infrastructure was impacted, including two damaged area hospitals, overwhelming available resources with increased patient care demands. The facility provided acute care and short-term services around the clock for a 10-day period, serving several hundred clients, in and around the municipality of Manati.

**Methods:** Several strategies were utilized to decrease stress levels while nurses worked at the FMS included having a safe and secure environment, sharing stories with peers, taking scheduled breaks, utilizing physical activities (Zumba), and having designated sleeping areas. Additional strategies used for clients were relief supply choices, allowing one person to stay with special needs client, and bereaved care.

**Results:** Nurses were able to decrease stress levels to themselves and clients while working with community partners providing acute and chronic health care needs at the area where health care services were impacted. Verbal and written feedback was provided during formal and informal meetings as well as receiving client comments on the services given at the facility.

**Discussion:** Contribution to practice-heightened emotional responses in a disaster setting are expected and should be a focus of intervention even with health care providers. Nurses were able to employ disaster nursing knowledge, including mental

health strategies in this setting and be able to better address the needs of others.

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### Study of Guardians' Recognition of Children's Safety After a Disaster

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**Introduction:** In Japan, after an earthquake, or when there is a heavy downpour, transportation is affected and guardians of children may not be able to reach home in time from the office. In elementary schools, because the guardian is unable to come and pick up the child, the teacher needs to ensure that the children are protected, and therefore, bears enormous responsibility. Since commuting times to work are long, guardians need to instate measures for the safety of their children.

**Aim:** This study aims to clarify guardians' recognition of children's safety in the event of a disaster, and examine the corresponding challenge they face in terms of commuting distance.

**Methods:** The subjects are 2,181 guardians of children in four elementary schools near places where landslides had occurred in Hiroshima city in 2014. The questionnaires distributed throughout the school produced 1,027 valid responses. Guardians were divided based on commuting distance into two groups; one of whom were within 3-km commuting distance and the other of more than 3 km. The two groups were compared for their recognition of children's safety using a chi-square test.

**Results:** Children's safety in school was a concern for 73.9% of guardians. The safety of school buildings in case of a disaster was a cause of concern for 80% of guardians who are close commuters, and 73.9% of guardians whose commute distance is longer ( $P = 0.015$ ). The fact that children cannot return home was a cause of worry for 33.9% of guardians whose workplace is nearby, and for 29.9% whose workplace was distant ( $P = 0.044$ ).

**Discussion:** Most parents, especially guardians going to work far away, do not recognize that they cannot reach home, and therefore, need to think about providing safety measures for their children in the disaster.

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### Study on the Effectiveness Evaluation of Personal Protective Equipment for Health Care Staff Trained with Graphical Interpretation and Operation

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**Introduction:** Proper use of personal protective equipment (PPE) is essential when facing emerging infectious diseases.