pre-selected and placed throughout the hospital. Afterward, controllers de-briefed with each of the evaluators as well as with hospital personnel in areas that did not receive teaching on the policy.
Results: The areas that did not receive in-person training on the policy update wanted to assist but did not know how to respond and did not follow protocol for securing their areas. Furthermore, areas of the hospital were identified where the overhead paging system did not work as well as gaps in hospital police staffing to cover key hospital exit points.
Conclusion: This drill revealed that all hospital personnel need dedicated and personalized training on policy updates highlighting their roles in response, communication lines need to be tested, and plans to address concurrent clinical emergencies need to be formulated.

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Fire in the Hole: Modeling the Thermal Effects of a Nuclear Detonation in an Urban Environment

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Introduction: In general, models for thermal effects of nuclear weapons are not as well developed as models for blast and radiation effects, yet casualties resulting from fires and burns in a nuclear detonation would significantly impact civil defense and emergency healthcare. Previous studies have conducted in-depth analysis of the various atmospheric conditions that affect the thermal radiation transmissivity. However, such models have yet to consider the role that buildings play in the urban environment to estimate the casualties from the thermal effect more accurately.
Method: A three-dimensional model of the area within a three-mile radius of the detonation site in Atlanta, Georgia, USA was created in Blender. To represent the thermal energy resulting from a 15 kiloton, near-surface burst, a point light was created with a power of 96,725 gigawatts and a radius of 81 meters. Using the Cycles render engine, the resulting light/shadow was orthographically captured directly above the scene.
Results: The rendered model demonstrated the attenuating effects of the built, urban environment. Nearly half (46.82%) of the pixels in the resulting raster were black, or regions that were not exposed to any thermal energy. Slightly less than a quarter (22.32%) of the pixels were white or light gray, or regions that received mostly direct thermal energy. The remaining regions (30.86% of the pixels) were dark gray, or regions that were initially in shadow from the thermal pulse but received thermal energy via reflection from nearby buildings.
Conclusion: As the thermal pulse travels at the speed of light, it arrives at a location before the blast wave. As such, the built urban environment offers protection from the thermal energy released during a nuclear detonation. Future studies that incorporate this thermal model may more accurately determine the quantity and geospatial distribution of burn casualties in the aftermath of a nuclear detonation.

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Hazmat and Hate: Planning and Response for Special Operations Teams to a Neo-Nazi Public Demonstration

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Introduction: October 18, 2017 an unfortunately popular white supremacist brought hate and thousands of protesters to the University of Florida in Gainesville, FL just months after the violent domestic terrorist attacks in Charlottesville, VA. The threats, violent possibilities, and intense planning undertaken by law enforcement and fire-rescue were hugely successful.
Method: Multi-faceted planning from law enforcement, to crowd control, to medical emergency response, to fire suppression, to hazardous material detection and response, to rescue task forces, to extreme sides to protesting... all proved hugely successful.
Results: While there was still violence, complex plans of violence among protests were successfully thwarted.
Conclusion: The coordination between Gainesville Fire Rescue, Gainesville Police Department, Alachua County Sheriff's Office, Florida Highway Patrol, the University of Florida and more was hugely successful and something to be proud of despite such hatred and violence projected while also protecting the first amendment.

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