

**Introduction:** Cyberattacks on healthcare systems are increasing in frequency and severity. Hospitals need to integrate cybersecurity preparedness into their emergency operations planning and response in order to mitigate adverse outcomes during increasingly likely cyber events. No data currently exists regarding the level of preparedness of US hospital systems for cybersecurity attacks. We surveyed hospital emergency managers to assess cybersecurity preparedness for these events.

**Method:** Fifty-seven emergency managers representing hospitals across the US participated in an online Qualtrics survey regarding current preparedness and response procedures for cybersecurity hazards.

**Results:** Survey responses between April 2019 and May 2021 demonstrated that a majority of hospital systems surveyed included cybersecurity disasters in their HVA (82.4%, 47/57), and most ranked it as one of their top five priorities (57.4%, 27/47). However, over half denied specifically mentioning cybersecurity in their EOPs (52.6%, 30/57). Fourteen of the 57 hospital systems (24.5%) endorsed previously activating an Emergency Response for a cybersecurity incident unrelated to Information Technology (IT) failure.

**Conclusion:** The survey results suggest that American hospitals are currently underprepared for cybersecurity disasters. We emphasize the importance of prioritizing cybersecurity in HVAs and implementing specific EOP annexes for cybersecurity emergencies.

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### NGO-led Disaster Response Through the Use of Interdisciplinary Teams

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**Introduction:** Japan is one of the most disaster-prone countries in the world. The government has traditionally taken the lead during disaster responses, but now NGOs have begun to play an active role in disaster response. Peace Winds Japan (PWJ), is the first Japanese NGOs to utilize medical teams, search-and-rescue dogs, and disaster response in conjunction with one another. The presentation will be focused on operations and lessons learned.

**Method:** Initially, the NGO only supported disaster-affected areas, both domestic and abroad, by providing relief supplies. However, in 2010 they began training rescue dogs to perform life-saving search-and-rescue operations immediately after sudden onset disasters. In 2014 NGO dispatched rescue dogs and a disaster response team for the first time at the Hiroshima landslide disaster. A medical team was added in 2018, and since then has sent out teams to ten other disaster sites, including West Japan Flood in 2018 and Ukraine Crisis as an international EMT in 2022.

**Results:** One of the strengths of the organization is the ability to respond quickly by using aviation and maritime transport. They operate two helicopters and one vessel and can promptly and effectively transport patients and resources. Eight critical

patients were transported from the hospital by helicopter during the West Japan Flood.

**Conclusion:** Furthermore, joint rescue drills were conducted with both public and private organizations, and continue to seek ways for collaboration and cooperation in disaster settings.

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### It's Sinking: Coastal Cities of Jakarta and Semarang, Indonesia

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**Introduction:** Jakarta and Semarang are predicted to be engulfed by seawater by 2050, based on evidence by the Copernicus Sentinel-6 satellite. The current sinking rate is reaching almost 20 cm annually in both coastal cities, as reported at the World Economic Conference in May 2022, due to climate change, rising sea levels and excess groundwater extraction leading to land subsidence. Therefore, the objective of this study is to analyze the sinking of both coastal cities of Jakarta and Semarang, using indicators of vulnerability, exposure, and impact by 2050.

**Method:** The YEW Disaster Severity Index (DSI) was used to analyze the impact, vulnerability, and exposure attributed to sinking. Data were obtained from real-time Google, Copernicus Sentinel-6 satellite, and triangulated with United Nations Office for Disaster Risk Reduction, World bank Data, Government of Indonesia Central Bureau of Statistics, as well as reputable journals.

**Results:** The impact analysis on the sinking of Jakarta and Semarang, calculated in April 2022, using the YEW DSI, scored a High DSI impact of 6.03 and a Moderate DSI impact of 5.76, for each town respectively. Jakarta and Semarang also scored more than 100% baseline ability to cope on the YEW DSI indicators, which accounted for five vulnerability indicators and one exposure indicator of a total 13 million population affected. By 2050, both cities will be 5.6 meters below sea-level, with a constant current sinking of 20 cm per year.

**Conclusion:** At present, vulnerability and exposure of the affected population account for a total of 13 million in both coastal cities. The analysis showed the inability to cope within local capacity, indicating a response is needed. The future of Jakarta and Semarang is in the hands of local, national, and global decisions and policymakers, in mitigating its impact through forest land conservation, adaptation, and relocation of the affected population.

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