

Introduction: Emergency service workers perform physical work while being subjected to multiple stressors and adverse, volatile working environments for extended periods. Recent research has highlighted sleep as a significant and potentially modifiable factor impacting operational performance.

Aim: This presentation would (a) examine the existing literature on emergency service workers' sleep quantity and quality during operations, (b) synthesize the operational and environmental factors that impact sleep (e.g., shift start times, shift length, sleeping location, smoke, noise, heat), and (c) assess how sleep impacts aspects of emergency service workers' health and safety, including mental and physical health and performance.

Methods: This presentation would be based on a narrative review conducted by the authors which used a systematic search strategy of health-related databases. Articles that were not relevant, duplicate or from non-peer-reviewed sources were excluded.

Results: Sleep is restricted during emergency service deployments, particularly when shifts have early start times, are long duration, and/or when sleeping in temporary accommodation (e.g., tents, vehicles). Shortened sleep impairs cognitive but not physical performance under simulated emergency services conditions.

Discussion: Depending on the organization and jurisdiction, these findings warrant re-evaluation of existing policies, formalization of beneficial but currently ad-hoc practice, or provide support for current procedures. Work shifts should be structured, wherever possible, to provide regular and sufficient recovery opportunities (rest during and sleep between shifts), especially in dangerous working environments where fatigue-related errors have more severe consequences. For agencies to continue to defend local communities against natural hazards, strategies should be implemented to improve and manage emergency service workers sleep and reduce any adverse impacts on work.

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Social Media in Disasters

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Introduction: Individuals may not receive messages via usual sources. Social media such as Facebook, LinkedIn, Twitter and social networking groups have been useful in the notification, information dissemination, safe notices, and reunification.

Methods: A survey of the literature and of social media sites to determine what possibilities of notification, information exchange, marked safe, and reunification information that can be helpful in disasters.

Results: Social media is useful during all phases of a disaster: pre-disaster notification, information dissemination during disasters, and safe notices/reunification post-disaster

Discussion: Social media is internet-based and requires a device that needs power. There is widespread internet access to various forms of social media, such as email, various broadcast sources,

and social networking sites. Social media may provide pre-disaster warnings (weather alert app, reverse 911), evacuation/sheltering information, blocked routes, open gas stations, stores with supplies, hotels/motels with rooms, and shelter locations. Social networking groups were full of messages informing others they could shelter someone fleeing the California wildfires and recent hurricanes. Volunteers can be alerted and responses collected via social media groups. Social media may reach individuals earlier than official announcements, although sometimes accuracy may be in question. Rumor and malignant information source as well as inaccurate information are possible and may need to be managed. Separation is common during disasters. Knowing if their loved ones are safe and well, then reunifying is critical, especially for the vulnerable: children/infants, elderly, and disabled. Reunification systems need safeguards for vulnerable individuals who may be exploited or abused during disasters. In previous disasters (Hurricanes Maria, Mark, and others; California wildfires), when usual communication was nonfunctional due to downed power lines or damaged/destroyed substations; social media was deluged with individuals giving names and identifying information for family and others and asking whether anyone has seen or heard from them.

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Standardized Measurement of Capillary Refill Time using Novel Technology

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Introduction: In a patient going into shock, blood is redistributed from the periphery to the central circulation, making an assessment of skin perfusion useful in a prehospital setting. Capillary refill time (CRT) is the time required for a pressure blanched skin site to reperfuse. Currently, CRT is tested by manually applying pressure for 5s to the skin and observing the time before reperfusion. Guidelines state that CRT should be 2–3s in a healthy patient. Shortcomings in this procedure include lack of standardization of pressure, subjective assessment of the time for reperfusion, and not accounting for the patient's skin temperature.

Aim: To develop a standardized objective procedure for testing CRT in the prehospital setting.

Method: The study protocol was approved by the Ethics Committee at Linköping University (M200-07, 2015-99-31). An electro-pneumatic device exerting constant force (9N) over 5s was developed. CRT was measured using the Tissue Viability Imager (Wheelsbridge AB, Sweden) which relies on polarization spectroscopy. To simulate hypothermic conditions, healthy volunteers were subjected to low ambient temperature (8°C). Blood loss was simulated using a custom-built lower body negative pressure (LBNP) chamber. In both scenarios, the CRT test was carried out on three test sites (finger pulp, forehead, and sternum).