

followed by STEMI Care, the most common trauma cases were from road traffic collisions followed by falls and farm accidents.

**Conclusion:** This study will be the first to describe the overall characteristics of HEMS patients in Ireland over a decade of service provision. As the Irish health system continues to evolve, so must its aeromedical services.

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### Prevalence and Risk Factors for Workplace Violence in the Ambulance Service

*Magnus Viking PhD(c)<sup>1,2</sup>, Karin Hugelius PhD<sup>2</sup>, Lisa Kurland PhD<sup>2</sup>*

1. Region Örebro County, Örebro, Sweden

2. Örebro University, Örebro, Sweden

**Introduction:** Workplace violence within the ambulance services is a serious problem. A prevalence of up to 8.5% of all ambulance missions has previously been reported. Prior research used a retrospective design and the knowledge of risk factors for workplace violence is weak. Therefore, the aim of the current study was to measure the prevalence of workplace violence within the ambulance service in a Swedish region.

**Method:** This was a prospective cohort study using data from all ambulance missions in a region in Sweden during one year. The data was analyzed with descriptive and analytic statistics using SPSS.

**Results:** Data was collected from 28,648 ambulance missions. A total of 209 unique workplace violence incidents were reported, corresponding to a prevalence of 0.7%. Seventy-three of all incidents reported physical violence and 161 verbal threats, where some of the incidents included both physical and verbal violence. The most common risk factors for workplace violence were: the perpetrator was under the influence of alcohol or drugs (70.5%), mental illness (60.5%) and communication problems (15.3%). The perpetrator was most often a man (n=68%) between 18 and 29 years of age. Co-variation between the risk factors was high. No significant differences in the occurrence of workplace violence could be seen in relation to time of the year, weekday, or time of day.

**Conclusion:** The prevalence of workplace violence was one of the lowest reported. An understanding of risk factors could be used within the ambulance service and dispatch centers to identify situations with an increased risk of workplace violence and mitigate the risk of such incidents.

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### Association Between Ambulance Prehospital Time and Maternal and Perinatal Outcomes in Sierra Leone: A Countrywide Study

*Marta Caviglia<sup>1</sup>, Giovanni Putoto<sup>2</sup>, Andrea Coniti<sup>1</sup>, Francesca Tognon<sup>2</sup>, Amara Jambai<sup>3</sup>, Matthew Vandy<sup>3</sup>, Ives Hubloue<sup>4</sup>, Francesco Della Corte<sup>1</sup>, Luca Ragazzoni<sup>1</sup>, Francesco Barone-Adesi<sup>1</sup>*

1. CRIMEDIM - Center for Research and Training in Disaster Medicine, Humanitarian Aid, and Global Health, Università del Piemonte Orientale, Novara, Italy

2. Doctors with Africa - CUAMM, Padova, Italy
3. Ministry of Health and Sanitation, Government of Sierra Leone, Freetown, Sierra Leone
4. Research Group on Emergency and Disaster Medicine, VUB, Brussel, Belgium

**Introduction:** Sierra Leone, one of the countries with the highest maternal and perinatal mortality in the world, launched its first National Emergency Medical Service (NEMS) in 2018. We carried out a countrywide assessment to analyze NEMS operational times for obstetric emergencies with access to timely essential surgery within 2 hours. Moreover, we evaluated the relationship between operational times and maternal and perinatal mortality.

**Method:** We collected prehospital data of 6,387 obstetric emergency referrals from primary health units to hospital facilities between June 2019 and May 2020 and we estimated the proportion of referrals with a prehospital time (PT) within 2 hours. The association between PT and mortality was investigated using Poisson regression models for binary data.

**Results:** At the national level, the proportion of emergency obstetric referrals with a PT within 2 hours was 58.5% (95% CI 56.9% to 60.1%) during the rainy season and 61.4% (95% CI 59.5% to 63.2%) during the dry season. Results were substantially different between districts, with the capital city of Freetown reporting more than 90% of referrals within the benchmark and some rural districts less than 40%. Risk of maternal death at 60, 120, and 180 min of PT was 1.8%, 3.8%, and 4.3%, respectively. Corresponding figures for perinatal mortality were 16%, 18%, and 25%.

**Conclusion:** NEMS operational times for obstetric emergencies in Sierra Leone vary greatly and referral transports in rural areas struggle to reach essential surgery within two hours. Maternal and perinatal risk of death increased concurrently with operational times, even beyond the two-hour target, therefore, any reduction of the time to reach the hospital may translate into improved patient outcomes.

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### Survey on Applications of Emergency Medical Drones

*Soon-Joo Wang MD, PhD<sup>1</sup>, In Byung Kim MD<sup>2</sup>*

1. Hallym University, Hwaseong, Korea, Republic of
2. Myongji Hospital, Goyang, Korea, Republic of

**Introduction:** Traditionally, helicopters or special types of airplanes have been used to transport emergency patients when an aeromedical transport is necessary. However, despite its excellent utility, the cost of each flight is relatively expensive and has many limitations. So as an alternative to traditional aircrafts, there has been a movement to overcome the limitations of traditional air transport through the development and application of emergency medical drones. In this study, practical applications of emergency medical drones were investigated.

**Method:** As a first step, through literature and internet searches, the current state of development, field of use, results, and problems of emergency medical drones were investigated. Based on this first investigation, a second Delphi survey of

experts was conducted to investigate the appropriate fields for the use of emergency medical drones and the expected future applications.

**Results:** Currently, emergency patient support drones are being used to transport first aid equipment including an automatic external defibrillator, manage emergency patient status and on-site remote evaluation, and transport human organs during organ transplantation. Emergency medical drones for emergency patients are being developed, including systems that manage the patient's condition by applying additional advanced technologies.

**Conclusion:** Emergency medical drones were classified into drones for transporting emergency patients and drones for emergency medical support according to whether emergency patients were on board. Drones for emergency patient support were being used to transport first aid equipment, manage emergency patient status and on-site remote evaluation, and transport organs during organ transplantation. The trend of air transport in the future is expected to change to a futuristic means of transportation in the form of emergency medical drones.

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### Evacuating Premature and Critically Ill Neonates When Hospitals are Endangered by Disasters: A Case Study of the PANDA Team Evacuation of a Neonatal Intensive Care Unit During Severe Wildfires in Oregon, USA

*Kathryn Leppold RN*

PANDA Transport, Oregon Health & Science University, Portland, USA

**Introduction:** In September 2020, severe wildfires in Oregon (USA) came dangerously close to Hospital A. The entire county was under evacuation orders. The Neonatal Intensive Care Unit (NICU) at Hospital A needed to evacuate patients to other areas for safety, however the characteristics of premature and critically ill neonates required a specialized transport team. This presentation outlines a case study of how the Pediatric and Neonatal Transport team (PANDA), based at Oregon Health and Science University (Portland, Oregon, USA), responded to evacuate neonatal and infant patients to other metro area NICUs during the wildfires.

**Method:** Case study.

**Results:** During a six-hour period, both PANDA transport teams on shift were activated to complete back-to-back transports of neonates and infants by ground ambulance to fire safe locations. Each patient was transported by a PANDA Registered Nurse and PANDA Respiratory Therapist, with an Emergency Medical Technician who drove the ambulance and Medical Control available by phone. The PANDA team normally operates in non-disaster settings. This was the first time PANDA was activated to evacuate patients from a hospital during a disaster. This presentation will discuss lessons learned and implications for future practice.

**Conclusion:** Wildfire frequency and severity is predicted to increase due to climate change. Evacuation of premature and

critically ill neonates requires a specialized transport team due to patient size, weight, and other considerations. Specialized transport teams should develop disaster evacuation workflows and resources, and regularly practice for these events. There is also a need for trauma-informed care in the post-evacuation setting to transport staff and parents of patients who were unable to travel with their child during transport. A full team pre-transport risk assessment is crucial in these circumstances.

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### The Role of the Louisiana EMS Designated Regional Coordinator in Emergency Response During 2020/2021 COVID Pandemic and Hurricane Season

*Shayna Goldfine MPH, Nicole Volpi PhD*

Region 1 Louisiana Department of Health, New Orleans, USA

**Introduction:** Post Katrina Louisiana's Health Department (LDH) used some of the Hospital Preparedness Program (HPP) funding to create a regional Emergency Medical Services liaison position entitled EMS Designated Regional Coordinators (EMS DRC). Regional EMS DRCs work with local pre-hospital agencies, hospital coalitions, and local/state/federal counterparts during the preparedness and response phases of a disaster. This presentation explores the EMS DRCs role during the 2020/2021 COVID pandemic and annual hurricane season.

**Method:** The EMS DRCs were activated at the beginning of the COVID-19 pandemic. EMS agencies across the country were struggling to meet the call volume demand while balancing sick employees. The eleven LA Region 1 EMS agencies reached out to the EMS DRC for assistance. The EMS DRC coordinated with the LA State Health Department to provide surge ambulances to any ambulance agency in need. These units were utilized for COVID response, but once hurricane season hit in both 2020 and 2021 Surge ambulances were quickly transitioned to COVID and Hurricane response.

**Results:** During the initial COVID outbreak, 18 state surge ambulances were divided amongst four agencies. In 2020 Louisiana saw six named storms, one of which caused significant damage. After Hurricane Laura hit in 2020 the EMS DRCs managed 80 Federal surge ambulances stationed across 41 non-congruent hotel shelters. The 2021 COVID response brought another 21 Federal Surge ambulances to the region. Once Hurricane Ida hit that year over 60 surge ambulances got reassigned to six regional EMS agencies for COVID and Hurricane response.

**Conclusion:** The COVID-19 pandemic and subsequent hurricane devastation exposed gaps in EMS response capabilities to response. The EMS DRCs play a significant role in providing continuous care through working relationships with local, state and federal partners

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