Conclusion: Although less common than BT, PT is associated with higher prehospital and ED mortality. Increased scene time and the number of procedures was associated with greater mortality for both BT and PT. Further study is required to better understand any causal relationships between prehospital times, interventions, and patient outcomes.

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Emergency Care in Cases of Occupational Traumas Among Members of a Vessels Crew, on Sea Transport Ships of Northern Water's Basin

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Study/Objective: Sea transport fleet is the main supplier of goods for commercial enterprises and settlements on the Arctic coast of Russia.
Background: Extreme conditions of navigation in the northern latitudes lead to the creation of dangerous situations for occupational traumas.
Methods: There were 1,367 damages with disability that occurred on vessels of sea transport fleet (208.1 per 1,000 employees).
Results: Heightened risk for traumas where the ship's work related to maintenance and repair mechanisms of the engine room (124.4); galley (73.4); maintenance of deck machinery (69.2); handling by the crew (54.8); moving on ladders and decks (44.9); mooring (30.2); machine tools (9.6); and with hatch covers (7.0). Blunt trauma applied in most cases (173.0), sharp (11.0), and thermal agents (11.0). Poisoning by acid, alkali, metal vapor, carbon monoxide, and poisons amounted just 2.4%. Alcohol intoxication among the sailors of the transport fleet was set to 8.9% of occupational traumas on sea transport fleet (18.0). Fractures of the bones of various localization occurs 2.5 times more frequently, and severe bruising almost 2.9 times. Bone fractures are the leading type of damage in the structure, in all the anatomical and functional segments ($P < .001$), including the closure, amounted to 85.5% of cases and open ones - 14.5% ($P < .001$).
Conclusion: For occupational traumas on ships, 27.7% of patients (54.1) were surgical procedures designed to stop bleeding from wounds, toilet of antiseptic solutions with elements of surgical treatment, and application of aseptic and plaster casts. More than one-half of the patients (63.6%; 123.7) were treated conservatively, and only 9.7% (17.7) were subjected to surgical intervention. Complications occurred in 15.5% of patients. The average number of disability days was 42.7; bed days 26.4. Recovery occurred in 85.4% (17.5) affected seafarers; they were transferred to light work, followed by vocational rehabilitation 7.5% (15.8), set disability 1.4% (2.8). Mortality was 5.7% (12.0).

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Perceived Collaboration during Mining Incidents - Focus Group Discussions with Mining Workers and Managers, Rescue Service Personnel, and Ambulance Personnel

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Study/Objective: To study perceived collaboration among mining workers and managers, rescue service personnel, and ambulance personnel when mining incidents occur.
Background: Studies focused on rescue operations in mining incidents and on the emergency medical service's part in the rescue operations are scarce. In Sweden, usually the local rescue and ambulance services are dispatched to mining incidents. In a Swedish study, it was found that about one-half of the ambulance personnel in mining districts felt unprepared for managing mining incidents, and almost all the personnel desired to learn more about mining incidents.
Methods: Six focus group discussions were performed that included mining workers and managers, rescue service personnel, and ambulance personnel that have a mine in their uptake area in the county of Västerbotten, Sweden. Additionally, ten complementary individual interviews with ambulance personnel were undertaken. The interviews were transcribed verbatim and analyzed with qualitative content analysis.
Results: The rescue service personnel and the mining personnel perceived their collaboration to be good, but there are still things to consider, eg, being sure that all rescue personnel are willing to enter the mine. During a fire in the Kristineberg mine 2013, several difficulties arose uncovering the need for further collaboration. The ambulance personnel were mostly left out of the collaboration, as most often they waited for the injured to be brought up from the mine. Both the rescue service personnel and ambulance personnel need to rely on the mining personnel when entering the mine, which can lead to difficulties.
Conclusion: There is a need to prepare for major injury incidents in a mine, eg, a fire incident with several injured. Therefore, the three organizations need to collaborate more closely, especially the ambulance personnel need to be included more.

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Early Implementation of BLS, Determining the Effectiveness of Cardiopulmonary Resuscitation

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Study/Objective: Correlation between the effectiveness of emergency medical actions taken by ambulance medical staff and early BLS implementation in cases of a sudden cardiac arrest was investigated.

Background: The coronary and cerebral perfusion in patients with sudden cardiac arrest in prehospital conditions mostly depends on quality of chest compression taken by the witness, and on the medical emergency procedures implemented by ambulance teams.
Methods: The retrospective studies analyzed 1,078 cases of a sudden cardiac arrest that occurred in the Siedlce District, Poland. The collected data emerged from medical documentation of Emergency Ambulance Service in Siedlce. The influence of early BLS implementation by witnesses before ambulance arrival, the type of ambulance medical staff performing medical actions, and ambulance arrival time to a place of an accident were taken under consideration on the effectiveness of a successful cardiopulmonary resuscitation. If the return of spontaneous circulation was obtained and a patient was taken to hospital, actions were considered to be effective.
Results: In the years 2013, 2014, and 2015, there were respectively reported 345, 354, and 379 cases of a sudden cardiac arrest. Having analyzed the whole group of 1,078 cases - early BLS implementation before ambulance arrival was taken by 31% of witnesses. It was noticed that taking early BLS implementation significantly increased the effectiveness of a resuscitation from 31% to 53%. Ambulance arrival time was compared (BLS/non-BLS cases) and it was 7 minutes 51 seconds and 8 minutes 12 seconds, respectfully. Moreover, the type of ambulance medical staff (with and without a doctor) did not have any impact on the effectiveness of a resuscitation.
Conclusion: The effectiveness of emergency medical actions, in cases of a sudden cardiac arrest especially, depends on early implementation of BLS by witnesses in prehospital condition.
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Does EMS Performance Lead to a Reduced Number of Organ Donors?

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Study/Objective: To evaluate whether Emergency Medical Service (EMS) identifies potential organ donor candidates and initiates the care needed.
Background: According to Finnish Organ Donation guidelines, all patients in need of organ transplantation should have timely and fair access to transplants. Thus, every potential donor should be identified and referred to intensive care. For most potential donors, EMS is the point of entry to medical care, and unconsciousness is the most typical presentation in the prehospital setting.
Methods: We conducted a retrospective study with data from Helsinki EMS hospital and out-of-hospital cardiac arrest databases. Patients included were ≤80 years old, with a Glasgow Coma Score ≤8, and transported to hospital with code "702" (unconscious) in 2015, and EMS witnessed traumatic cardiac arrests in 2013-2015.
Results: In 2015, we identified 84 patients belonging to this study group; 24 patients (male n = 12, median age 57 [IQR = 48-66] years) were later diagnosed with stroke, traumatic brain injury, or were resuscitated from cardiac arrest and did not have contraindications for organ donation in theory. Of those, 22 patients were intubated and ventilated on scene, of which 11 died later in the hospital. Six of them were considered for organ donation and two patients became organ donors. Both patients who were not intubated on scene, and allowed to breath spontaneously, were subsequently intubated in the emergency department and considered for organ donation, and one of them became an organ donor. In 2013-2015, four trauma patients had an EMS witnessed cardiac arrest (male n = 3, median age 32 years). Three of them received Basic Life Support cardiopulmonary resuscitation. All had clinical evidence of severe blunt multitrauma and they died on scene.
Conclusion: Possible organ donor candidates are well recognized in EMS. EMS performance does not lead to a reduced number of organ donors.
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Cold Exposure After a Train Crash - An Experiment in a Cold Environment

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Study/Objective: To explore the air cooling rate in an intact rail carriage, in a cold environment, after power was turned off.
Background: There have been a growing number of train disasters globally. The high speeds increase the risk of severe injuries, and many train routes are far from navigable roads. Rescue operations after international train crashes have been complicated and lengthy. In the circumpolar regions, cold exposure has to be added as a negative factor, as hypothermia could be lethal, especially in combination with trauma. However, there is a lack of knowledge about the specific milieu that the passengers could be exposed to in a train crash in a cold environment.
Methods: The experiment was performed inside an intact train, type Coradia Nordic X62, in Sweden. The outdoor temperature was -13.8ºC, and inside the carriage the air temperature at the floor was +21.0ºC when the power was cut. Air temperature was measured by air loggers every 30 seconds.
Results: After one hour, the air temperature at the floor reached approximately 15ºC, after two hours, 12ºC, and after four hours, 6ºC. A theoretical simulation shows that the floor temperature should reach temperatures below zero after seven hours.
Conclusion: The results draw attention to the importance of a rapid rescue operation, as well as an ability to retain heat in the carriages, is of great importance in order to reduce the risk for secondary injuries and fatalities due to hypothermia. In order to fulfill the needs of thermal comfort for passengers travelling in cold environments, and in rural areas far from passable roads, more effective material not dependent on electricity might be needed in the trains.
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