Relationship Between Incontinence and Disease Severity in Patients Transported by Ambulance

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Introduction: As there have been no reports concerning the relationship between incontinence and disease severity in patients in the prehospital setting, a retrospective investigation examined this relationship using data from Shimoda Fire Department.

Method: Patients who were transported by Shimoda Fire Department from January 2019 to December 2021 were investigated. The following details of the subjects were collected: age, sex, contents of incontinence, season of transportation, weather, wind speed, temperature, place of collapse, scene time, classification of disease, disease severity (as judged by a physician at a receiving hospital) and mortality rate at the initial treatment. The subjects were divided into groups based on the existence of incontinence at the scene or not (Incontinence [+] and Incontinence [-]). We compared the variables mentioned above between these groups.

Results: There were 499 cases with incontinence and 8,241 cases without incontinence. There were no significant differences between the two groups with respect to weather and wind speed. The average age, percentage of male patients, percentage of cases in the winter season, rate of collapse at home, scene time, rate of endogenous disease, disease severity, and mortality rate in the Incontinence (+) group were significantly greater in comparison to the Incontinence (-) group, while the average temperature in the Incontinence (+) group was significantly lower than that in the Incontinence (-) group. Regarding the rates of incontinence of each disease, neurologic, infectious, endocrinal disease, dehydration, suffocation and cardiac arrest at the scene had more than twice the rate of incontinence in other conditions.

Conclusion: This is the first study to report that patients with incontinence at the scene tended to be older, showed a male predominance, severe disease, high mortality, and required a long scene time in comparison to patients without incontinence. Prehospital care providers should therefore check for incontinence when evaluating patients.

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Potential Effect of a Heat Wave on Body Temperature of Patients at the Emergency Department and in the Hospital: A Comparative Retrospective Study

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Introduction: The impact of a heat wave on body temperature of patients being admitted to the emergency department (ED) and of patients that were already hospitalized was investigated. This can provide insight into measures or infrastructural adjustments that still need to be made.

Method: A retrospective study comparing the measured body temperature of patients admitted to the ED and patients already hospitalized during a heat wave from August 11-13, 2020 versus a period in which no heat wave, no manifest presence of COVID-19, and no other endemism was present (October 10 and October 20, 2019, and November 5, 2019) was conducted. Two groups were created per period: morning and afternoon measurements.

Results: Comparing the heat wave to the control period, no statistical difference was observed in morning temperature measurements at the ED. In the afternoon temperature measurements at the ED, however, a statistically significant difference ($p < 0.01$) was measured. Afternoon measurements during the control period showed a mean of 36.842 °C, whereas the measurements during the heat wave showed a mean body temperature of 37.191 °C. For hospitalized patients, a statistical difference ($p < 0.01$) was measured in both morning and afternoon temperature measurements. The control period showed a mean morning body temperature of 36.629 °C and a mean afternoon body temperature of 36.7154 °C, as opposed to the heat wave mean body temperatures in the morning (36.698 °C) and afternoon (36.7937 °C).

Conclusion: This study emphasizes the rise in body temperature during a heat wave, independently of other factors that influence body temperature. Hospitals should focus on preventive measures, such as air conditioning and providing good temperature control. Further research is needed.

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Emergency Medical Services Response: Outcomes of Non-Transported Patients

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Introduction: As a part of a primary intervention, Emergency Medical Services (EMS) may leave a patient at the scene. This decision is made in partnership with the dispatching center. The prognosis of these patients is often unknown. The aim of our study was to assess the outcomes of non-transported EMS patients.

Method: It was a descriptive, prospective study conducted over a two-year-period. We included all alive non-transported EMS patients from the site of intervention after a primary mission of the EMS team based on a medical decision. The prognosis was

assessed by unexpected events (UE) defined by death, second EMS call, urgent consultation or hospitalization/surgery within seven days. We considered two groups: a group with UME (UME+) and a group with good evolution (UE-).
Results: We included 97 patients. The average age was 56±19 years. Seventeen patients (17,5%) had no medical histories. Hypoglycemia was observed in 43% of patients. Thirty-four patients (35%) had an UE. These UEs were distributed as the following: ten consulted a private doctor, ten consulted their family physician, seven called the EMS, three visited the emergency department and four died. There were no significant differences in demographic, anamnestic characteristics between two groups. Psychiatric pathology was more common in the UE- group(28% vs. 9%; p=0.0037). Intravenous injections were more common in the UE+ group (64% vs 39% ; p=0,019). Among the four deaths, three were unexpected.
Conclusion: One-third of non-transported EMS patients had UE. Unexpected death was rare (one patient). Setting-up a system for these patients including scores and algorithms, and a post-EMS compulsory visit in collaboration with family physicians could be beneficial.

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When the Tertiary Care Hospital Becomes Technologically Austere: Communication Lessons Learned from an American Health System Cyberattack

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Introduction: Cyberattacks continue to plague medical systems across the world with nearly 24% of all cyber breaches impacting health systems. In Fall 2021, a large, tertiary care county hospital in Indianapolis, Indiana, USA suffered a cyberattack, causing over four weeks of downtime, forcing the system to revert to paper charting and to operate without the electronic medical record (EMR) or internet. Communication in the Emergency Department is structured through the EMR system or wireless local area network (WLAN) phones, causing communication difficulties when online systems are disrupted.
Method: In the twelve months following the breach, a series of communications-focused interviews with stakeholders including residents, faculty, nurses, and consultants were analyzed using a thematic analysis.
Results: Through interviews, four key themes and recommendations were identified for every internet-dependent tertiary care system to establish and maintain communication links when the primary form of communication is compromised and access to internet is limited or nonexistent:

- Expect systems to fail–plan ahead
- Develop multilayered communication tools that are stored and structured at different sites
- Notify all affected teams immediately and initiate the downtime action plan
- Reassess and adapt the downtime action plan as information becomes available

Conclusion: While every system is going to experience different struggles during cyberattacks and downtime, all hospitals can benefit from improving communication structures when the established communication pathways are no longer available. Consider cybersecurity threats in your emergency planning meetings and designate systems to protect your communication abilities during downtime.

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Increasing Effectiveness of Large-scale Prehospital Care during Crisis and Disasters.

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Introduction: In the Netherlands several additional facilities and working methods are created to strengthen the effectiveness and capacity of the regular daily health care during large incidents and disasters. One system is called GGB (Large-scale medical assistance). The daily healthcare is organized in 25 safety-regions, which are far too small to handle big incidents. GGB provides in organizing assistance between regions, increasing the effectiveness of ambulance care, the deployment of other emergency services and volunteers, and coordination of this all. GGB is developed to deal with an incident with 250 injuries. This method was investigated to determine value.
Method: Based on a standard questionnaire, key persons of ambulance care, trauma care, Red Cross and Offices of Public Health and Safety per safety region were asked about their experiences with GGB. (125 forms)

Subsequently, the regional outcomes for each discipline were evaluated in a national conferences (four conferences). To conclude, an interdisciplinary national meeting was held to bring the results together. The authors developed the questionnaires, supervised the research process, and presented the results to the authorities.
Results: Results indicated that the working methods for scaled-up care is useful and should be continued. The extra financial costs outweigh the gained strength. The cooperation between professionals and volunteers also receives a lot of support. Proposals have been made for further improvements, in particular concerning cooperation between organizations. Bottlenecks have also been identified in the collaboration between health care, fire services and community care.
Conclusion: In the perception of the care providers there is added value and cost-effectiveness. This is important for the support of the system. As a next step, the authors want to focus on measuring the actual effectiveness. For that, we want to be able to compare systems in several countries. The presentation ends with a call to do so.

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