

Results: Data were obtained from January 2006 to December 2007. Of 20 eligible months, 25,549 trauma patients presented to the emergency department. A total of 5,168 (20.2%) sustained head trauma, and 3,336 head CTs were performed with a 29.1% positive rate of substantial head injuries. The mean rate of missed head injuries among different physicians was 4.8% (range: 3.6–5.7%, $p = 0.78$). The monthly data were analyzed and a moderate correlation between monthly trauma volume and the decrease in positive rate of head CTs was identified (Pearson $r = -0.511$, $p < 0.05$). By introducing different cut-point values of trauma volume, the threshold of trauma census in discriminating the significant decrease of positive head CTs was identified.

Conclusions: The findings imply that the head CT scans might have been misused in the overcrowded setting, despite the fact that there is a standard guideline justifying its use. This phenomenon also warrants future studies focusing on the quality of care indicators regarding unnecessary examinations and the overall cost-effectiveness analysis.

Keywords: computed tomography; head trauma; hospital; patient volume; trauma

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(N28) Creation of a Baseline to Cope with Orotracheal Intubation

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Since 2005, a regional baseline has been created in order to profile intubated patients in the prehospital emergency system of Strasbourg, a city with a population of 490,000 people. In this early, retrospective study, every time an orotracheal intubation was performed, the patient was entered into the system. The baseline indicates the identification of the patient; the purpose of the intubation (cardiac arrest, neurological indication, traumatic indication, etc.); the diameter of the tracheal tube; who performed the intubation; the number of attempts; the drug used for the intubation, induction, and sedation; the time of the intubation; the Cormack score; and the patient output after 24 hours. Since 2005, 3,580 patients have been entered into the system, providing a large amount of information. For instance, women represent 70% of intubated patients; at 17 hours, there is the highest rate of intubation; at 24 h women have much greater chance of surviving; and men were more likely to be involved in car crashes than women. This baseline can be helpful in managing the prehospital medical system.

Keywords: baseline; emergency medical services; France; orotracheal intubation; patient; prehospital

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(N29) Effect of Endotracheal Suctioning on Intracranial Pressure in Severe Head Injured Patients Admitted to the Neurosurgical Unit

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Introduction: Endotracheal suctioning (ETS) is a routine nursing procedure used to decrease pulmonary complications; however, in patients with severe head injuries, it can

result in a sudden increase in intracranial pressure (ICP) and may put the patients at risk for further cerebral damage. The purpose of this study was to examine the effect of ETS on ICP in patients with head injuries.

Methods: Twenty-one patients with acute, severe head injury (Glasgow Coma Score ≤ 8 , range 4–8) were studied. The ETS procedure consisted of administration of 16 breaths at 135% of the patient's tidal volume, 100% FIO₂ before and after suctioning with a standard catheter (16 French) with the application of negative pressure for a duration between 10–15 seconds. Each subject received four passes of insertion of standardized suction catheter. A repeated measure model for ANOVA was used to examine the changes in mean ICP from one minute before suctioning to the ICP, during the first, second, third, and fourth passes of catheter insertion.

Results: Intracranial pressure significantly increased during suctioning.

Keywords: emergency health; endotracheal suctioning; head injury; intracranial pressure; patients

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(N30) Patient Comfort during Prehospital Care

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Introduction: Feelings of comfort, warmth, and safety, and the preservation of dignity are important for all prehospital patients. The study deals with the well-being and comfort of patients during transport to the emergency department. In the Swedish ambulance service, all patients transported by ambulance are provided with blankets. One task for the ambulance staff is to prevent any negative experiences or feelings of discomfort, insecurity, and risk for hypothermia. Does the new equipment (the rescue bag) increase comfort? Does the patient feel any difference between the new equipment and the traditional blankets? The aim of this study was to examine whether new equipment can increase the well-being/comfort of patients.

Methods: The pilot study investigated the ambulance patients' view of comfort. The quantitative study was performed in a test group ($n = 46$) and control group ($n = 48$) of randomly selected ambulance missions. For the intervention in the test group, new equipment (rescue bag) was used. Ordinary ambulance blankets were used for the control group.

Results: Patients were more satisfied with the rescue bag than the ordinary blankets.

Conclusions: The rescue bag offers more comfort and is a safer way of transporting patients via ambulance.

Keywords: ambulance transport; blanket; comfort; hypothermia; rescue bag

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(N31) A New Way of Decreasing the Damages due to Paramedics Driving

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Accidents due to emergency vehicles cause numerous casualties and material damages, resulting in a significant

increase in insurance fines. The insurance experts affirm that the number of accidents resulting in material damages is inversely proportional to the driver's age. The inexperience of the young paramedic results in crashes, additionally endangering the patient that the vehicle is transporting. Another aspect that complicates the problem is proving that the damaged emergency vehicle is not juridically responsible. In spite of repeated orders given to the paramedics regarding their driving technique; the number of accidents has not decreased. Two years ago, drive data recorders (DDR) were installed in ambulance. The DDRs are linked by WiFi by the car key. Each paramedic is identified by his/her key. Each key is recovered once a week and a software program is used to detect problems. Data are compiled for the speed, the beacons, the sirens, and the geographical position of the ambulance, in real time. This information has been made available by the judicial processes.

Since the implementation of the DDRs, the number of ambulance road crashes and complaints has decreased. Of the 4.7 ambulance crashes each year (prior to the implementation), the number of incidents has decreased to 0.6. After one-year period of adaptation, the paramedics accepted the principle, particularly because it protects them from the risks of false declarations of contravening. Hopefully, the number of accidents will decrease due to this system.

Keywords: ambulance; crash; drive data recorder; emergency medical services; France; paramedic

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(N32) Telephone Cardiopulmonary Resuscitation: Intensive Training Increases the Number of Patients Who Will Benefit

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Introduction: Telephone cardiopulmonary resuscitation (T-CPR) improves the survival rate of out-of-hospital cardiac arrest. Previous articles showed only 50% of patients deserving T-CPR received it, mainly because dispatchers did not recognize the cardiac arrest.

Methods: After eight weeks of intensive T-CPR training, data were collected for six months (296 cases). All trauma, pediatrics, deaths, and cases when the caller was distant from the patient were excluded. Cases when the patient still was able to talk during the call or when witnesses spontaneously performed CPR also were excluded. For each case, dispatchers had to explain why they did not provide T-CPR.

Results: Out of 296 cases, 139 were excluded. Of the remaining 157 cases, dispatchers decided not to provide T-CPR because the patient was too old, too physically diminished, willing but not able because the witness was too agitated to listen to instructions, or because there was a language barrier. Of the remaining 139, T-CPR was offered in 72 cases (52%). Five inappropriate T-CPR (false positives) were counted. Of the 67 who did not receive T-CPR, dispatchers failed to ask the right question (is breathing normal?) on 22 occasions. On the remaining 45 cases, the witness described the breathing as normal.

Conclusions: Improving the rate of TCPR is difficult. The main reason TCPR was not provided was agonal breathing.

Dispatchers must ask to hear the patient's breathing by having the witness place the telephone on the mouth of the victim. In the future, videophones will be of great help. The outcomes of these patients must be collected to confirm the usefulness of TCPR.

Keywords: cardiac arrest; dispatching; emergency health; out-of-hospital cardiac arrest; telephone cardiopulmonary resuscitation

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(N33) Dispatching: Seizure Patients May Need Telephone Cardiopulmonary Resuscitation

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Introduction: Ventricular tachycardia and ventricular fibrillation during cardiac arrest sometimes produces a seizure that is wrongly considered epilepsy. Therefore no telephone cardiopulmonary resuscitation (T-CPR) is provided.

Methods: Over an eight-week period, dispatchers were trained to systematically call witnesses back two minutes after an adult seizure, to check the breathing and the state of consciousness of the patient. For six months, all calls with seizure as the major complaint were collected. Children <18 years old were excluded. Whether the new procedure was used and how many out-of-hospital cardiac arrests presenting as seizures received T-CPR with this procedure (second call after two minutes) was recorded.

Results: Over a six-month period, 93 calls for an adult seizure were placed. Cases where the witness was a medical professional (24) were excluded, as were cases when the caller was distant from the patient (9). Of the 60 remaining cases, dispatchers called back after two minutes on only 26 occasions (43%). Only three of those 60 patients were classified naca 6 or 7. Two of them benefited from T-CPR after the second call. No T-CPR was provided to the third victim (dispatcher did not call back).

Conclusions: Cardiac arrest presenting as a seizure is unusual. Although this procedure is time-consuming, it proves to be useful. The compliance of the dispatchers on this procedure still is low. More explanation and training is necessary to improve the rate of "second calls".

Keywords: cardiopulmonary resuscitation; dispatching; emergency health; out-of-hospital cardiac arrest; seizure; telephone cardiopulmonary resuscitation

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(N34) On-Site Presence of a Paramedic, Emergency Physician, and Dispatcher is a Key to Success during Major Incidents

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Introduction: Efficient leadership is the key to a successful management during a major incident. Since the beginning of 2008, Switzerland has been experimenting with a new, on-site, medical management system: a specially trained paramedic and emergency physician are sent on-site to lead the management of the crisis.

Methods: As soon as the incident involves >10 wounded victims or requires more than five medical vehicles (ambu-