density in the vicinity of the spinal canal near T10. For nearly two hours, efforts were made to identify and remove the FB. These efforts were unsuccessful. The following day, a 4 x 6 x 34 mm sharp glass fragment was removed under fluoroscopy in the operating room.

**Conclusions:** Patients with glass FBs in soft tissues that are missed in the emergency department have a high risk of mortality and morbidity related to migration in the late period according to their location and form. Widespread use of ultrasound by emergency physicians and training programs have the potential to reduce the significant morbidity, costs, and risk to be exposed to radiation, and they provide the possibility to determine and remove missed FBs in early stages.

**Keywords:** emergency department; foreign body; glass; hospital; soft tissue injuries
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## (149) How to Improve Assessment of Tetanus Immunity in the Emergency Room: A Prospective Cost-Effectiveness, Double Blind Study

*M.S. Stubbe;[1] R. Swinnen;[2] D. Desruelles;[2] E. Brasseur;[2] L. Mortelmans;[2] M. Vranckx;[2] P. Lheureux[2]*
1. Erasme University Hospital, Brussels, Belgium
2. Belgium

**Background:** In case of injury, the choice of prophylaxis against tetanus depends on the patient's vaccination history, which may be unreliable. In order to improve the evaluation of tetanus immunity, the use of a rapid immunoassay (Tetanos Quick Stick®, (TQS)) as well as some demographic characteristics are helpful to avoid inadequate prophylaxis and cost.

**Objective:** The objective is to evaluate the contribution of TQS to the choice of prophylaxis, and to perform a cost-effectiveness analysis. The final purpose is to define the place of TQS in a modified algorithm for emergency room (ER) assessment of tetanus immunity.

**Method:** In a Belgian multicentric, prospective, double-blind study, 611 adult patients with injuries were included in five centers; 507 (83%) of the records were valid. The TQS was performed by a nurse before the vaccination history and the choice of prophylaxis was made according the official algorithm by a doctor who was unaware of the TQS result.

**Results:** Overall, seroprotection was 74.1%, but this varied significantly among centers from 58.2 to 84.0% ($\chi^2$ <0.001). Immunity decreased with females and with increasing age. Protection according vaccination history was negative or unknown in 33.9% of patients and positive in 66.1%, with 57.9% and 82.1% positive TQS, respectively. Cost-effectiveness analysis suggests a 25% economy by using the test in patients <60 years of age, with injuries at risk and negative or unknown vaccination history.

**Conclusion:** In selected patients, TQS is a cost-effective tool to evaluate tetanus immunity. An algorithm is proposed for ER assessment of tetanus immunity which integrates age and TQS result.

**Keywords:** algorithm; cost-effectiveness; prophylaxistetanus; vaccination
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## (150) Are Initial pH Levels and Sodium Bicarbonate Administration Related in the First Return of Spontaneous Circulation in Out-of-Hospital Cardiac Arrest Patients?

*C.W. Hsu;[1] S.H. Tsai;[2] S.J. Chu[2]*
1. Taipei, Taiwan
2. Department of Emergency Medicine, Tri-Se, Taipei, Taiwan

**Objective:** The relationship between initial pH levels and sodium bicarbonate administration with first return of spontaneous circulation (ROSC) in out-of-hospital cardiac arrest (OHCA) patients in the emergency department (ED) was assessed.

**Methods:** A one-year, retrospective, cohort study was conducted. Patients with OHCA were recruited from 01 January 2005–31 December 2005. All eligible subjects in the ED were stratified into two groups if there was ROSC. Baseline characteristics were registered before ROSC; these included: age; gender; medical history; initial electrocardiographic rhythm; beginning time of cardiopulmonary resuscitation (CPR); and advanced cardiac life support (ACLS); beginning time of first dose of epinephrine and bicarbonate; total doses of epinephrine and sodium bicarbonate; and initial pH value. Analysis of the differences between groups were tested using an independent *t*-test on continuous data or a Chi-Square test in categorical data.

**Results:** A total of 90 eligible subjects (48 men and 42 women, mean age: 67.1 ±18.2 years) were recruited. The gender, percentages of sodium bicarbonate administration, initial rhythm of cardiac arrest, beginning time of CPR and ACLS, beginning time of first epinephrine, and total doses of epinephrine, were similar between groups. The initial pH value of the ROSC group was higher than those without: 6.990 ±0.224 vs. 6.87 ±0.253. The total dose of sodium bicarbonate administration was higher in the ROSC group compared to those without: 1.84 ±3.11 vs. 0.8 ±1.98.

**Conclusions:** A high initial pH level in the ED is an important predictor of ROSC in patients with OHCA.

**Keywords:** cardiac arrest; emergency department; epinephrine; pH levels; sodium bicarbonate; spontaneous circulation
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## (151) Management of the Airplane Crash in Marathona (Helios Airlines)

*S. Papanikolaou;[1] P. Efstathiou;[2] S. Spirou;[3] A. Georgiadis;[2] C. Gogosis;[3] O. Daligarou;[2] N. Michos;[3] S. Papanikolaou[3]*
1. Athens, Greece
2. National Health Operation Center, Athens, Greece

**Objective:** Present of the management of a major accident with mass injuries.

**Conditions:** On the 14 August 2005, a Cypriot airlines "Helios" passenger airplane crashed in the region of Marathonas. The NCHS received a briefing on the incident and was called to manage a sudden-onset incident, which consisted of an unknown number of heavily injured or dead people. It also was called on to coordinate the involved institutions, with the objective of treating the most injured people, the management of the dead, and the psychological support of relatives and friends of the victims.

**Conclusions:** Coordination of all involved institutions is essential, as is the existence of Coordinating Center in the region and a Center of Information and Psychological Support for the relatives and friends of victims. The existence of plans and the training of special teams for coping with mass destructions also is important, as is rapid decision-making and activation of corresponding infrastructures.

Keywords: airplane crash; Greece; injury; mass casualties; psychology; sudden-onset incident
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## (152) Escape from a Skyscraper during a Disaster

*S.J. Wang;[1] M.H. Back[2]*
1. Hallym University Hangang Sacred Heart Hospital, Seoul, South Korea
2. Kangwon National University, Samcheok, South Korea

**Introduction:** Recently, there has been an increasing trend in the worldwide construction of skyscrapers. After the 2001 World Trade Center terrorist event, the disaster or safety-related problems associated with skyscrapers have become important issues in several countries. Research on the escape, transport, and emergency medical support of victims in skyscrapers is lacking. This study was conducted on the conditions of victims that escaped from a 63-story building.
**Methods:** After medical check up, 33 volunteers participated in the study. Each was assigned into one of six groups. These groups were categorized as the following: Group 1—splint application; Group 2—stretcher; Group 3—vision loss; Group 4—piggyback; Group 5—free personal escape; and Group 6—group escape. The escape was made from the 54th floor to the ground and various times were checked. During the escape, video was recorded at several important places and the recording was analyzed after the experiment. Every participant responded to a questionnaire after the experiment.
**Results:** The average escape time was 13 minutes and 55 seconds. The vertical escape velocity shows group 5, 6, 1, 2, 3, 4 in the order of the fastest velocity. The velocity in 40th floor was faster than 20th floor. The questionnaire results indicated the many differences from the routine escape patterns.
**Conclusion:** Escape from a disaster in a skyscraper has different patterns from other disaster conditions. Victims feel more difficulties and the escape velocities depend on the various conditions.

Keywords: disaster; escape; skyscrapers; velocity; vertical
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## (153) Vision-Restoring Project in an Area of Natural Hazards and Political Instability

*S.O. Otsu*
Japanese Red Cross Society Wakayama Medical Center, Wakayama, Japan

**Introduction:** The Japanese Red Cross Society (JRCS) coordinated with the Sri Lanka Red Cross Society (SLRCS) to launch a vision-restoring project in Trincomalee, Sri Lanka after the Sumatra Earthquake and Tsunami in 2004. However, security in the northeast area of Sri Lanka has destabilized from 2005. This presentation reports on the activities of this project and the challenges of operating in an area of natural hazards and political instability.
**Methods:** The local staff of the SLRCS (two administrators and four caretakers) and volunteers (one ophthalmologist and one optician) were involved in the project since the planning stage, while the JRCS functioned primarily for coordination. Activities included vision screening, providing glasses, and referring appropriate patients for cataract operations. Data from September 2005 to June 2006 were analyzed and key issues in the successful operation of the project were identified.
**Results:** A total of 5,634 people (male 2810, female 2,824) visited the vision screening camp. Of these, 857 (15%) were diagnosed with cataracts and 410 were referred for cataract surgery. By emphasizing the involvement of the SLRCS, the project was able to continue even after security became unstable.
**Conclusion:** During a disaster caused by natural hazards, vision impairment deprives people of a chance to reconstruct their lives. Because treatable diseases cause most visual problems in developing countries, it is important to conduct a vision restoration project as a health relief activity. Coordination and cooperation with local structures from the planning stage increased the chance for the continuation of the project, even when the situation unexpectedly changes.

Keywords: cataract; disasters; natural hazards; political instability; vision restoration
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## (154) Comparison between the Public and Private Ambulance Systems in Bucharest

*T.B. Ratiu;[1] O. Cismaru;[2] L. Luca[2]*
1. Ambulance Unit of Bucharest, Bucharest, Romania
2. Romania

**Introduction:** Bucharest is the largest city in Romania and has 2.5 million permanent inhabitants plus students and temporary national and international workers. The demands of such a big city are difficult to fulfill and the task of rescuing people in an emergency are difficult. Ambulances and emergency teams can be found in both public and private systems. The aim of this study was to make an objective comparison between public and private systems in Bucharest.
**Methods:** The Ambulance Unit of Bucharest (SAMB) represents the public system and the PULS Ambulance is the oldest private ambulance station (1990).
**Results:** The Ambulance Unit of Bucharest (SAMB) has 30 emergency crews and 20 standard crews, while PULS has five emergency crews and six standard crews. Emergencies (grade 0 and 1) represent 35% of the total cases for the public ambulance and 10% for the private one. The average arrival time during an emergency is 20 minutes for public ambulance and 10 minutes for the private one. During 2005, the public ambulance registered 350,000 cases and the private ambulance registered 25,000 cases.
**Conclusions:** Although the public ambulance is paid from national funds and provides medical care to all persons irrespective of their nationality and/or payment of health