

category A. Ninety-five percent were examined within one hour of arrival, as opposed to 63% prior to SART. Colposcopy was done on 87% of SART patients and 27% of pre-SART, with genital injury documented in 55% of SART cases and 28% of pre-SART, and non-genital injury in 56% of SART and 49% of pre-SART patients. 100% of SART patients received STD, HIV, pregnancy, hepatitis and tetanus prophylaxis. No specific records were kept for pre-SART patients. There have been numerous positive incalculable results since the SART was launched including improved relations with Special Victims Unit, the NYPD, and the DA's office; opportunities for leadership roles in the community as survivor advocates; recruitment of SART examiners from our ED staff; increased awareness of the impact of culture on survival from sexual assault; and opportunities for further research.

**Conclusion:** The South Bronx SART program has resulted in improved health care for survivors of sexual assault and a benefit to the community. This program model has wide implications for care of survivors of sexual assault nationally.

## 8 Internationalizing the Broselow™ Pediatric Emergency Tape: How Reliable Is Weight Estimation in Indian Children?

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**Objective:** The Broselow™ Tape is a reliable method of estimating children's weights based on height-weight correlations and can determine standardized medication dosages and equipment sizes using color-coded zones. Our study sought to determine the accuracy and clinical utility of the Broselow tape in the Indian pediatric population.

**Methods:** We conducted a prospective cross-sectional study of children receiving care at the outpatient department of a government pediatric hospital in Chennai, India, over one month. Actual weight (measured by a standardized weighing device) and estimated weight (determined by the Broselow Tape) were collected for each child. The mean percentage difference (MPD) was calculated to estimate bias. Accuracy was defined as agreement within 10% between the measured and estimated weights, as well as agreement on Broselow color-coded zones. A correction factor was derived using linear regression.

**Results:** 548 subjects were divided into the three weight-based groups comprised of 175 (<10kg), 197 (10-18kg) and 176 (>18kg) children. The MPDs ( $\pm$  95% CI) were -2.36% (-4.2,-0.5), -11.34% (-12.87,-9.8) and -12.95% (-14.94,-10.95) for each weight-based group. Agreement within 10% was 52.57% (45.17, 59.96) for the <10 kg group, but only 44.67% (37.72, 51.61) for the 10-18 kg group and 33.52% (26.54,

40.49) for the >18 kg group. The Broselow color-coded zone agreement was 70.85% in children <10kg, but only 56.34% in the 10-18 kg group and 37.5% in the >18kg group. Application of a 10% correction factor improved accuracy to 77.15% (71.29, 83.01) for the 10-18 kg group and 63.06% (55.93, 70.19) for the >18 kg group.

**Conclusions:** The Broselow Tape overestimates weight by more than 10% in Indian children predicted to be >10kg, increasing the risk of medical errors due to incorrect dosing or equipment selection. Applying a 10% weight-correction factor may be advisable. The accuracy and clinical utility of this correction factor requires prospective validation.

## 9 Use of Therapeutic Hypothermia for Comatose Survivors of Out-of-Hospital Cardiac Arrest in Arizona Emergency Departments

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**Background:** Improved neurologic outcomes have been demonstrated in patients undergoing mild therapeutic hypothermia after resuscitation from out-of-hospital cardiac arrest. Therapeutic hypothermia was endorsed in 2003 by the American Heart Association, and in 2005 by the International Consensus Conference on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science. Despite widespread acceptance in the scientific community, therapeutic hypothermia may not be routinely used by emergency physicians.

**Objective:** To evaluate the current use and methods of administration of mild therapeutic hypothermia for comatose survivors of cardiac arrest in Emergency Departments (EDs) throughout Arizona, and to identify barriers to implementation.

**Methods:** A telephone survey was administered to all ED medical directors in Arizona. Contact information was extracted from the United States Department of Health and Human Services database. Directors were asked about the demographic characteristics of their hospitals and EDs, current use of therapeutic hypothermia, protocols for hypothermia, perceived barriers to use, and potential for future implementation.

**Results:** Of 61 ED directors, 52 (85%) responded, two (3%) refused, and seven (11%) were unreachable. Therapeutic hypothermia was used routinely in five (10%) of EDs. Two had structured protocols. The most common cooling method used was ice packs and cooling blankets (80%). Two of the EDs using hypothermia were rural and routinely transferred comatose survivors to urban hospitals after initiating hypothermia. Of EDs not using hypothermia, common reasons given included lack of evidence supporting its use (42%) and

cost or lack of trained personnel (35%). 72% of non-users indicated they had no future plans for adoption.

**Conclusion:** Although considered standard of care by the scientific community, therapeutic hypothermia in cardiac arrest patients remains rarely utilized by most EDs throughout Arizona. Barriers to use include inadequate education regarding the benefits of hypothermia, perceived cost, and lack of training in implementation.

#### 10 EMS Patients Receive More Rapid Care than Ambulatory Patients for Acute Stroke

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**Background:** It has been demonstrated that the majority of pre-hospital delay occurs from the time of onset of acute stroke (CVA) to the time of the patient's actual decision to seek care. What is less clear is the role of the emergency department (ED) care providers on the pace of the patient's care in the setting of CVA.

**Objective:** To study the effect of EMS transport on the pace of care of providers in the ED.

**Methods:** Retrospective chart review of four months of patients with a final ED diagnosis of CVA. Demographic data as well as time to order and time to administration for CT head, aspirin, and neurology consult were examined and compared for patients who presented via EMS vs. those who walked into the ED. Comparisons of the medians (in minutes) were done for each variable examined. We also calculated the odds for CT done in less than one and two hours from arrival.

**Results:** Forty-three patients received the final diagnosis of CVA during the four-month period. EMS transported 19 of these (44%). EMS patients had a CT ordered more rapidly (52 vs. 108 minutes), and a neurologist called more quickly (90 vs. 469 minutes) than the ambulatory patient. The EMS patients had an OR of receiving a CT of the head within one hour of 3.09 (95%CI: 0.64,15) and an OR = 3.33 (95%CI: 0.86, 13) within two hours. None of the differences were statistically significant for either the ordering of the therapies or their administration.

**Conclusion:** In this facility, it appeared that there was a trend to treat patients with CVA who presented via EMS more rapidly than those who walked in. It is unclear the effect this had on outcome.

#### 11 Incidence of Hypokalemia in Patients Presenting to the Emergency Department with Diabetic Ketoacidosis

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**Background:** Hypokalemia is reported to occur in approximately three to four percent of patients with DKA. To prevent complications of severe hypokalemia, the American Diabetes Association (ADA) treatment guidelines recommend ensuring that serum potassium levels are > 3.3 mEq/L prior to initiation of insulin in the treatment of DKA.

**Objective:** To assess the incidence of hypokalemia in patients presenting to the ED with hyperglycemia with or without DKA.

**Methods:** This was a multicenter retrospective study at three urban academic EDs with a combined annual adult census of 150,000. Charts of patients who presented to the ED between January and December 2005 with hyperglycemia (defined as serum glucose > 200 mg/dL) or DKA (defined in accordance with ADA guidelines as serum glucose > 250 mg/dL, serum bicarbonate < 18 mEq/L or anion gap > 15, and evidence of ketonemia or ketonuria) were reviewed. Initial lab values on presentation were assessed for the incidence of hypokalemia.

**Results:** 800 patients (461 with DKA) were diagnosed with hyperglycemia. The mean potassium level was 4.7 mEq/L (range 3.3 to 8.1, SD +/- 0.8). For those patients diagnosed with DKA, the mean potassium level was 4.9 mEq/L (range 3.3 to 7.5, SD +/- 0.8). Only two cases of serum potassium < 3.5 mEq/L (both 3.3) were found in our DKA patients (incidence of 0.4 percent).

**Discussion:** Our results suggest that the incidence of hypokalemia in ED patients with DKA may be far less than three to four percent. As the demographics of DKA are changing (e.g. increasing numbers of older patients, patients with renal disease, and patients with congestive heart failure), our ability to depend on IV fluids alone as the initial therapy in DKA may be diminishing. Today's DKA patients may be less likely to tolerate large fluid loads and are potentially more prone to hyperkalemia. The benefits of early insulin administration may outweigh the risk of causing severe hypokalemia.

**Conclusion:** The incidence of hypokalemia among hyperglycemic patients presenting to the ED with or without DKA appears to be less than prior estimates. Further research is needed to better determine the risks and benefits of administering insulin before obtaining serum potassium values.

#### 12 Development of a Model to Compare Emergency Chemical Decontamination Methods

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**Background:** Many first responders plan to decontaminate people contaminated by hazardous substances by drenching the victims with water before removing their contaminated