

endangered species. The value of certain research may offset the expense and ethical issues of using primates, but seldom is their use of sufficient value for teaching common procedures to justify the use of a primate for such purposes.

**Deceased Human Models:** Human cadavers are the most realistic. Humans, live or dead, must be treated with dignity and respect. They, or their kin, have the right to determine what can be done to them. Donated cadavers pose only financial and didactic issues. Cadavers are cold, may be preserved, do not bleed, and their tissues are stiff. The newly dead are more like a living patient, but may not have given consent prior to their death. Is it ethical to continue a futile "code" a little longer to practice "running a code"? Is there really no chance that the person might revive? Is it ethical to continue long enough to let one more person perform some procedure? Does the invasiveness of the procedure matter? Is there a difference between practicing CPR, intubation, venipuncture, pericardiocentesis, or open-chest cardiac massage? Alternatively, is it ethical not to practice at every opportunity so that when the skill is needed, it is ready?

**Live Human Models:** The use of live humans raises additional issues of consent and coercion. The less invasive the procedure, the less concern regarding the coerciveness of consent. Patients who are used for training purposes should be so informed. Many of the same principles should guide recruiting volunteer human models as guide the human research subject. The volunteer may altruistically wish to aid in medical education and perhaps wishes for some personal gain, but should not stand to gain anything of sufficient value so as to be an unfair or coercive inducement.

**Keywords:** animals; coercion; education models; emergency medicine; ethical issues; ethics; learning; models; skills; teaching models; volunteers

#### G-88

##### Management of Mass Casualties from Traffic Accidents in the City

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China has only 2.2% of the total numbers of motor driven vehicles in the world, but the number of automobile accidents is 9.0% of the total automobile accidents in the world. Currently, the annual number of deaths from traffic accidents in China approximates 86,000 persons. Shanghai is one of the biggest cities in the world. It contains a population of 13,000,000. Statistics from the past five years indicate that the traffic accidents exceed the past records by 60,000 cases with an average of two persons killed daily. The Shanghai First Aid Central Station (SFACS) is composed of 173 ambulances and 517 specialists. Altogether, 110,889 persons requiring first-aid were transported by SFACS in 1998. The number of persons wounded by traffic accidents and disaster was

26,681 persons with 318 persons found dead before hospitalization.

All patients who have sustained severe injuries due to trauma should be transported to an identified hospital in Shanghai. Every central hospital in Shanghai is setting up a Resuscitation Department so as to receive massive numbers of critically wounded casualties in accordance with the condition of the disaster. The function of a Resuscitation Department is to sort out all the critically wounded from ordinary ones and provide resuscitation and render all supportive treatments concerned. Their function include:

- 1) Cardiopulmonary resuscitation;
- 2) Immediate treatment of life-threatening respiratory failure, organ injuries, and the loss of blood; and
- 3) Initial management of fractures and injuries from these disasters with transportation to the Orthopedic Department.

**Keywords:** cardiopulmonary resuscitation; emergency medical services; hospitals; injuries; mass casualties; resuscitation; resuscitation department; Shanghai; traffic accidents; trauma

#### G-89

##### Evaluation of Emergency Medical Services Systems (EMSS) for Burn Patients in Osaka Prefecture

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**Introduction:** The population of Osaka Prefecture is 8,730,000, which is the second biggest in Japan. Based on the Emergency Medical Service System (EMSS), Osaka Prefecture is covered by 33 fire departments, and has 17 tertiary emergency medical care facilities that always are available for acute life-threatening diseases and injuries including burns. This study examined the efficacy of the EMSS in the care of burn victims.

**Methods:** The efficacy of EMSS for burn patients was studied in 1996, using a questionnaire sent to the 33 fire departments and 17 tertiary emergency hospitals.

**Results:** The replies from the fire departments indicate that 1,103 burn patients were transported to hospitals by ambulance in 1996: there were 71 patients with severe burn injury of more than 30% of their body surface. For every 1,000 population, 1.26 burn victims were transported by ambulance in a year, and 0.8 victims per 100,000 persons had severe burns in Osaka Prefecture.

Of the severely injured 71 patients, 48 (67.6%) were admitted to the tertiary emergency hospitals. And 91.4% of the patients whose burn area did not exceed 30% were carried to the primary or secondary hospitals. When an ambulance crew noticed that the patients might have an inhalation injury, they were transported mainly to the tertiary emergency hospitals, as were the severe cases.

According to the replies from the questionnaire sent to the 17 tertiary emergency hospitals, 35 patients with