

and water transportation in China, and has the name of "nine province main thoroughfares."

In 2000, Wuhan Medical Emergency Center and Wuhan Helicopter General Aviation Co. Ltd signed an agreement to make use of two Enstrom 480 helicopters to provide aerial rescue services. The aero radius is 180 km, or 11 flight hours. The helicopter rescue expert team consists of 65 high-grade doctors from 16 professional subjects of 15 large hospitals. We already have transacted the "A" flight permission procedure; we can fly as soon as we get the dispatch report, weather permitting. So far, the service has rescued five critically ill patients.

At the present time, Wuhan is the only large city in which the citizens can dial "120" to dispatch rescue helicopters. The EMS system shows the solid construction of aquatic, overland, and aerial rescue.

**Keywords:** emergency medical services (EMS); helicopter; rescue; system  
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E-mail: wh120@vip.sina.com

### Chlorine Gas Lung Injury: Intravenous Versus Aerosolized Corticosteroid Treatment in a Porcine Model

Jianpu Wang, MD; Liming Zhang, MD; Sten M. Walther, MD, PhD

**Objective:** Chlorine gas remains one of the most common gaseous intoxicants due to its widespread use in modern society. Current treatment of acute chlorine gas injury is mainly symptomatic. This blind placebo-controlled study examined the effects of post-injury corticosteroid administration in chlorine gas injured pigs followed for 24 hours.

**Method:** Anesthetized and mechanically ventilated pigs were exposed to chlorine gas (400 ppm) for 15 minutes, then assigned to three groups: 30 minutes after gassing each group received either aerosolized budesonide (n=8), intravenous betamethasone (n=8), or placebo (double-dummy, n=8). Hemodynamics, gas exchange, and lung mechanics were evaluated for 24 hours.

**Results:** Airway and pulmonary artery pressure increased, and arterial oxygenation fell precipitously in all animals (from  $13.5 \pm 0.8$  to  $6.5 \pm 0.9$  kPa,  $p < 0.001$ ). These immediate changes were followed by a gradual improvement over six to eight hours to a stable level of dysfunction for the remainder of the experiment in placebo animals. Arterial oxygen tension, pulmonary vascular resistance, and airway pressure recovered faster and more completely in the budesonide and betamethasone groups than in the placebo group ( $p < 0.01$ ). Lung wet to dry weight ratio was greater in the placebo group than in the budesonide and betamethasone groups ( $6.34 \pm 0.59$  vs.  $5.56 \pm 0.38$  and  $5.53 \pm 0.54$ , respectively.  $p < 0.05$ ).

**Conclusion:** Treatment of chlorine gas lung injury with aerosolized budesonide or intravenous betamethasone improved symptoms and signs of lung injury compared with placebo. This study supports early treatment with corticosteroids in victims of chlorine gas injury.

**Keywords:** chlorine gas; corticosteroids; lung injury  
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### Evaluation of Disastrous Consequences of BSE

### Epidemic with Public Panic in Japan

Shinichiro Yanagisawa, MCS; <sup>1</sup>Ko Nakajo, MS; <sup>2</sup>Hiroshi Aino, MS; <sup>2</sup>Hiroki Inoue, MD, DMD; <sup>2</sup>Li Cai, MD; <sup>2</sup>Isao Kamae, MD, DrPH<sup>1,2</sup>

1. Research Center for Urban Safety and Security, Kobe University
2. Kobe University School of Medicine

**Background:** In 2001, the detection of bovine spongiform encephalopathy (BSE) in Japan, the first case in Asia, made the public extremely nervous about the safety of food products containing beef, which led to deteriorating consequences on the beef market in Japan. Unfortunately, the anthrax threats in the United States in the same year drove the BSE epidemic to a kind of "media-induced" disaster in the society.

**Objective:** To address the public concern over the BSE epidemic, the mass screening system established by the Japanese government was reviewed with respect to its advantages and limitations.

**Methods:** Based on the evidence from BSE tests reported by the European Union, the accuracy of the screening system in Japan was investigated, and the number of false negatives and positives under the current system was estimated.

**Results:** The analysis indicated that, since Japanese cattle were still at low risk, there could exist a very small quantity of error in BSE detection with less than one false negative in four years. However, it was confirmed that the current system is far from the best for protecting humans from the BSE hazard.

**Conclusion:** Despite the BSE epidemic, the human risk for BSE in Japan is quite low in Japan compared with other medical risks. Scientifically rational communication through the media will be needed to prevent the next mass panic caused by irrationality.

**Keywords:** bovine spongiform encephalopathy (BSE); epidemic; media; public concern; risk; screening  
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### Enhancement of Management for Land Transportation of Dangerous Chemicals

Zhu Mingxue; Zhao Jie

Department of Naval Medicine, Second Military Medical University, Shanghai, People's Republic of China

Every day, there are many vehicles transporting dangerous chemicals on the expressways. If the chemicals leak, catch on fire, or explode, a serious chemical event would involve the dense population living along the way.

1. Management issues associated with transportation of dangerous chemicals
  - a. Transportation without proper certificates or with disqualification certificates
  - b. Driving not in accord with the time scheme and designed traffic line
  - c. Imperfect safety regulations for blocking leaks and fire control
  - d. Drivers and escorts working without training
2. Reasons and lessons from chemical accidents
  - a. Some special vehicles transporting dangerous chemicals aren't qualified by the correlative governmental administration

- b. Transportation of dangerous chemicals always crosses various provinces
  - c. The escorts and stevedores have insufficient responsibility
  - d. Traffic accidents happen easily on the dangerous roads.
3. Protection against disaster chemical accidents caused by traffic toxic source
- a. Education about chemical rescue and life saving should be more widely available
  - b. Laws against transporting dangerous chemicals must be strengthened, and enforcement must be strict
  - c. The media should expose those who break the laws
  - d. It is essential for professional departments to solve the technical problems in practice, and provide materials and tools against disasters

**Keywords:** chemicals; enforcement; laws; lessons; management; protection; roads; traffic; transportation

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### Hospital Preparedness for Terror Events

Hillel Yaffe Medical Center

Terror events have a major impact on the national level. Our experience at the Hillel Yaffe Medical Center consists of having treated almost 600 casualties in the last 24 months, who were injured in 36 mass casualty events.

In-advance, hospital preparedness, as part of a comprehensive contingency plan, is crucial in order to perform successfully in these events. This is especially true because they are managed in situations of extreme uncertainty. Horizontal and longitudinal coordination among all participants, civilian as well as military agencies, is very important. There is no doubt that only pre-event preparedness and coordination can assure and improve performance of any organization, and especially hospitals in cases of mass casualty events.

**Keywords:** contingencies; coordination; events; hospitals; mass casualty events; plan; preparedness; terrorism

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### Decontamination of Casualties at Hospital Emergency Department Door

Mr. Eric W. Williams

Medical Displan Victoria, Fitzroy Victoria, 3065 Australia

**Objectives:** (1) To address the planning required to ensure contaminated casualties presenting to a hospital for treatment are decontaminated prior to entry to the emergency departments; (2) To ensure all hospital and other responding staff are protected adequately by using personal protective equipment during decontamination; (3) To ensure that staff and patients in the hospital are kept safe from contamination; (4) To show that an all-agency approach is required to contain, rescue and treat affected persons who suffer minor and major trauma; and (5) To show that all agencies must have training programs to highlight the dangers of unprotected response.

**Methods:** To demonstrate that planning and training for a disaster such as a CBR (chemical, biological, or radiological) incident with an all-agencies approach, provides an effective integrated response for major and serious toxic re-

leases. Providing decontamination facilities outside emergency departments will assist in keeping staff, patients, and facilities free from contamination.

**Results:** When all agencies integrate and respond synchronously, they are more effective in combating hazardous materials incidents. This is especially true when agencies are used to working together on a daily basis.

**Conclusion:** "Those who work together on a daily basis, tend to work well together in disasters."

**Keywords:** agency training; all-agency; biological; CBR incidents; chemical; decontamination of casualties; emergency department decontamination facilities; hazardous material incidents; nuclear; releases

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### Taiwanese Nurses' Attitudes, Concerns, Gloving Practices, and Knowledge with Regard to HIV/AIDS

Francis Fu-Sheng Wu,<sup>1</sup> Chi-Wen Juan,<sup>1</sup> Hao-Yeh Chen,<sup>1</sup> Chun-Chih Chen; Robert Siebers,<sup>2</sup> Min-Ho Huang<sup>3</sup>

1. Department of Emergency Medicine, Show Chwan Memorial Hospital, Changhua, Taiwan
2. Department of Medicine, Wellington School of Medicine & Health Sciences, Wellington, New Zealand
3. Department of Surgery, Show Chwan Memorial Hospital, Changhua, Taiwan

**Introduction:** Many studies have documented nurses' attitudes and concerns regarding HIV/AIDS, but little is known from Taiwan. We studied Taiwanese nurses' attitudes, concerns, gloving practices, and practical knowledge regarding HIV/AIDS, and whether these factors were interrelated.

**Method:** A questionnaire queried the attitudes, concerns, gloving practices, and practical HIV/AIDS knowledge of 1,090 nurses from a large, metropolitan hospital in Changhua, Taiwan. Associations between attitudes, concerns, and gloving practices were analyzed statistically using Pearson's Chi-square or Fisher's exact tests; a *p*-value of <0.05 was deemed significant statistically.

**Results:** The response rate was 80.9%. Their main concern was both HIV and hepatitis contraction in the workplace. However, only 58% treated all biological samples as potentially infective. Between 76.3% to 89.4% of these nurses always wore gloves when handling a variety of biological specimens. Of the total sample, 210 (19.3%) were seriously considering leaving nursing because of fear of contracting HIV/AIDS. Virtually all of the nurses (95.6%) considered it their right to be informed of the presence of HIV-positive patients in their direct work area; 76.4% believed that HIV testing should be mandatory for all patients. Knowledge of which biological specimens can harbor HIV was deficient: the mean correct score was 71.6% (95% CI: 70.6-72.6), and 48.8% (95% CI: 47.5-50.1) for HIV destruction methods.

**Conclusion:** Taiwanese nurses have concerns and fears of HIV/AIDS, which may be why almost one-fifth are seriously considering leaving the profession. These fears and concerns could be related to deficiencies in practical HIV/AIDS knowledge. Continuing educational programs are recommended to alleviate nurses' concerns.

**Keywords:** AIDS; attitudes; concerns; education; HIV; knowledge; nurses; right-to-know; specimens; testing

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