

However, there is no national study regarding the outcomes from OHVF. Therefore, this study was undertaken to determine the outcomes of OHVF cardiac arrest patients, and to analyze factors that influenced the survival of OHVF patients in the Japanese prehospital setting.

**Methods:** A survey was distributed to 311 fire defense headquarters throughout the country, and it was analyzed to determine factors that could have influenced the outcomes. A retrospective review of OHVF cardiac arrests from April 1996 through March 1997 was performed. Data obtained from the resuscitation records were evaluated statistically.

**Results:** 224 fire defense headquarters responded, and data from 643 cases of OHVF on the scene were: Cardiac etiology; 440 (68.4%); 482 (74.9%) were male; average age = 61.5 ±16.2 years; witnessed arrests = 497 (77.3%); bystander CPR = 190 (29.5%); collapse to ambulance arrival interval = 8.8 ±6.5 minutes; call to ambulance arrival interval = 6.0 ±3.6 minutes; call to first shock interval = 19.1 ±10.3 minutes; admitted alive = 186 (28.9%); one month survival = 80 (12.4%), and survival to hospital discharge = 62 (9.6%). Factors that influenced survival to hospital discharge were cardiac etiology ( $p < 0.0001$ ), age ( $p < 0.0001$ ), call to first shock interval ( $p = 0.0031$ ), witnessed arrest ( $p = 0.0069$ ), and call to ambulance arrival interval ( $p = 0.011$ ).

**Conclusion:** The call to first shock interval was considerably longer than in other reports. This significant delay in defibrillation seems to explain poor survival to discharge of OHVF in this study. Under the current law, the use of a semiautomatic defibrillator by ambulance crews requires permission by physicians via radio. However, this system appears to have a tremendous drawback in saving OHVF patients on the verge of death, because time delays are inevitable under the circumstances in which medical control is required in order to defibrillate. In order to improve survival of OHVF patients in Japan, a revised program in which defibrillation can be performed without any delay, should be implemented.

**Keywords:** ambulance; Japan; defibrillation; discharge; medical control; out-of-hospital; prehospital; survival; time intervals; ventricular fibrillation

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##### Mass CPR Teaching as a Method of Instilling Confidence and Comfort in the Performance of CPR Skills

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**Introduction:** Mass CPR teaching is one way of increasing the number of people in a community who may be prepared to help persons in cardiac arrests.

**Methods:** A questionnaire survey was conducted during our first mass teaching CPR programme to 200 first-year university students. A total of 196 completed forms were received.

**Results:** One-hundred ninety-three respondents (98.5%) felt confident that they could perform CPR, 70 (37.5%) felt "very confident", and 123 (62.8%) felt "confident", 181 (92.3%) felt they would be "comfortable" to perform CPR in a real life situation, 29 (14.8%), "very comfortable"; and 152 (77.5%), "comfortable" after the two-hour training session.

Of the 196 respondents, 164 (83.7%) had heard of and/or witnessed CPR (H/W group) while the other 32 (16.3%) had not heard of nor witnessed it (NH & NW group) prior to entering university. In the H/W group ( $n = 164$ ); 162 (98.8%) felt confident, 60 (36.6%), "very confident"; and 102 (62.2%), "confident"; and 153 (93.3%) felt "comfortable" that they could perform CPR in a real life situation; 25 (15.2%), "very comfortable"; and 128 (78.1%), "comfortable". Whereas, in the NH & NW group ( $n = 32$ ), 31(96.8%) were confident; 10 (31.2%), "very confident"; and 21 (65.6%), "confident" and 28 (87.5 %) felt comfortable to perform real life CPR; 4 (12.5 %), "very comfortable"; and 24 (75 %), "comfortable".

**Conclusions:** From these results, mass CPR teaching seems to be an effective method for instilling confidence and comfort in CPR skill performance. Prior knowledge may be advantageous in achieving the above.

**Keywords:** CPR; CPR training; effectiveness; experience

#### G-75

##### Emergency Life-Guards in Japan Improve Outcome from Out-Of-Hospital Cardiopulmonary Arrest

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**Purpose:** The aim of this study was to evaluate the emergency medical service (EMS) concerning out-of-hospital cardiopulmonary arrest (oh-CPA) in Japan.

**Background:** Sudden cardiopulmonary arrest (CPA) patients in Tokorozawa City and the surrounding area (population, approximately one million) are transported to our hospital by Japanese EMS. In the past, ambulance personnel of Japan were permitted to perform only bag-valve mask ventilation and external chest compressions for CPA patients. However, since 1991 specifically trained ambulance personnel, emergency lifeguards (ELGs), have used defibrillators and intubation devices except for endotracheal tubes.

**Patients and Methods:** A total of 1,151 CPA cases were studied. These patients were transported to this hospital from 1981 to September 1998. Prognostic factors influencing the outcomes (1. Survival; 2. Good recovery) in CPA cases were evaluated using multivariate analysis (quantification theory type). These included: etiology 2) age; 3) gender; 4) witnessed arrest; 5) bystander CPR; 6) crew of EMS (ELG or not); 7) time interval from collapse to arrival; and 8) arrival status (CPA or oh-ROSC). Moreover, we examined the same factors in 235