

were ANOVA and LSD.

**Results:** During the period of June 94 through December 95 (1.5 years), the average ED patient processing time from registration to disposition, was reduced by about two hours ( $p < 0.05$ ) as well as the reduction of variations among the different specialties (SD from 2.43 to 1.28).

**Conclusion:** Quality assurance programs in ED may be able to reduce patient waiting time to significant degrees.

**Keywords:** delays; emergency department; processing time; quality assurance; waiting time

#### S1-4

##### Quality Management of Emergency Medical Service in Japan

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The previous observational cohort study by Kohama, *et al* in 1990, indicated that the overall survival rate of out-of-hospital cardiac arrest (OHCA) in Japan was lower than that of the western, industrialized countries. Based on this report, Kyukyu-Kyumei-Shi (Emergency Medical Technician) system in Japan was established in 1991 in an effort to improve outcome from OHCA. However, recent investigations suggest that Kyukyu-Kyumei-Shi system did not improve overall mortality from OHCA.

Overall mortality (case mix) is not a good indicator of quality assessment of emergency medical service (EMS), because background etiology of OHCA influences outcome. Most of Japanese physicians consider that the incidence of cardiac etiology of OHCA is lower than is that in the western industrialized countries. However, this speculation can not be proven due to the lack of epidemiological data.

The Utstein style of reporting of data for OHCA allows us to provide more appropriate comparisons. Many studies based on Utstein style, emphasize that only patients with OHCA who are with ventricular fibrillation (VF) or ventricular tachycardia (VT) have a moderate prospect of survival. Therefore, it seems we should use the outcome of VF/VT as an indicator for quality assessment of EMS.

The survival rate (discharged alive) from witnessed VF/VT in Funabashi City was 18.1%, almost the same as that of the western industrialized countries. However, other parts of Japan have a lower survival rate, even after Kyukyu-Kyumei-Shi was introduced. Funabashi City is the only city in Japan that has a two-tiered EMS. The future prospective of two-tiered EMS in Japan should be discussed.

The population-based incidence of witnessed VF/VT

due to cardiac etiology in Japan was 1.9 cases/100,000 population, which is one tenth of that in the western industrialized countries. It is estimated that there are only 2,000 VF/VT cases per year throughout Japan. In the meantime, 6,000 Kyukyu-Kyumei-Shi already have become involved in EMS. This matter needs to be reconsidered based on the cost-benefit analysis.

Although the need for implementation of continuous quality improvement (CQI) for Japanese EMS has been discussed after establishing Kyukyu-Kyumei-Shi system, such a concept has not been well-realized as a tool for system evaluation.

**Keywords:** cardiac arrest; cost-benefit; emergency medical services (EMS); incidence; Kyukyu-Kyumei-Shi; out-of-hospital; prehospital; quality; tiered system; Utstein; ventricular fibrillation; ventricular tachycardia

#### S1-5

##### Current Initiatives on CQI of Emergency Medical Services in the United States

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**Objective:** Can patient satisfaction scores be improved using continuous quality improvement (CQI) methodology?

**Method:** Like many emergency departments, we historically have prided ourselves on the quality of care given to our patients, but were surprised to discover that our patient satisfaction scores as measured by NCG, were lower than expected. This prompted us to embark upon a program of continuous quality improvement. In the first phase of the program we analyzed the results of the patient satisfaction survey to identify those areas that could be improved. The initial efforts included focus groups of patients in the community who use our service and meetings with all employees who worked in the Department. Hospital quality management experts worked with us to create a process to improve our overall scores. We also examined patient satisfaction scores for individual physicians, and developed a plan to improve these scores. Armed with tools learned at Institute for Healthcare Improvement Breakthrough Series, we sought to decrease waits and delays in our Department, which was a major component of patient dissatisfaction.

**Results:** The mean patient satisfaction score for the "Total Process" improved from 66% in Wave I to 76% in Wave XV, and physician specific scores increased from 67% to 78% during the same period time.

**Conclusion:** Patient satisfaction scores can be improved by using CQI methodology.

**Keywords:** continuous quality improvement (CQI); delays; emergency department; waiting time; physicians, emergency; quality assurance