Another aim of practice, was to improve the cooperation and communication with the technical rescue team, such as the fire brigade. The teams were given sufficient opportunities for discussion with the tutors. No model solution was proposed to the teams in order to allow several different ways of solution to be found.

Results: The analysis of the trauma training provided interesting results. Overall, the participants were enthusiastic about the performance. On a range of marks from 1 to 5, the average total mark was 1.2. All participants would recommend it to others. The professional benefit was stated as being very high (mark: 1.1).

To the effect of a quality process, all persons seriously injured now are recorded within the rescue service area. The first results also show an increased application of the subjects taught in the real situation.

Conclusion: Thus, it can be shown that quality management leads to higher quality standards also in the rescue service, significantly improving the medical care provided to the population.

Key words: alert; analysis; doctors; hazards; management; paramedics; plan; quality; rescue; standards; stress; team; training; trauma; tutors

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Quality Management in the Rescue Service: Resuscitation Analysis in a Rescue Service Area

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Introduction: Based on a prospective study, resuscitations in a rescue service area were analysed within a period of 12 months with respect to place, time, primary cardiac rhythm, measures to be taken, and, in particular, the outcome of the patients. The data all were collected in the District of Dachau, Bavaria, where emergency medical services are provided exclusively by the Bavarian Red Cross. A demanding training of the paramedics who have to undergo an annual test in Advanced Cardiac Life Support (ACLS) and early defibrillation has been running for several years. A first-responder system also has been installed. The ambulance and emergency vehicles, as well as the first-responder systems are equipped with AEDs. The patients are resuscitated according to a preset resuscitation algorithm including early defibrillation by rescue service staff and drug treatment on the basis of the American Heart Association (AHA) guidelines.

Methods: The district analysed has approximately 129,000 inhabitants. The medical care of the population is nearly exclusively provided by the district-owned hospitals of Dachau and Markt Indersdorf. The rescue service operates four rescue stations and two emergency doctor vehicles around the clock. Based on a record sheet, all resuscitations within the period of 01 January 2000 through 31 December 2000 were recorded. The outcome of the patients could be followed-up in all cases.

Results: In total, there were 90 resuscitations. The average age was 60 years. A few more men than women were resus-

citated. The most outstanding fact was a relatively high rate of resuscitations of children (8%). Approximately 20% of the patients were resuscitated by laymen. The most frequent cause for the resuscitations were internal diseases (81%). Most patients (78%) were treated at home. The outcome was surprising: 42% of the patients were taken to hospital after return of spontaneous circulation. Also, 12% were long term survivors. A most satisfactory outcome is the fact that 6% of the survivors were able to leave the hospital without any neurological deficiencies.

The subgroup analysis of resuscitations indicates that the best outcome occur in cases of observed cardiac arrest and immediate resuscitation by laymen.

Conclusions: First-class technical equipment and superior training of the rescue service staff may significantly improve the rate of resuscitations in a rescue service area. It can be shown that quality management leads to higher quality standards also in the rescue service, significantly improving the emergency medical service for the population.

Key words: bystanders; cardiopulmonary arrests; defibrillation; outcome; quality management; resuscitation; standards; training

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Quality Management in the Rescue Service: Development of Standards for Treatment of Stroke Patients

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Introduction: In view of the number of stroke patients to be treated each year, and the importance of the emergency "stroke" for each patient, the Förderverein and the Bavarian Red Cross of Dachau decided to promote quality standards in the preclinical care by specific training and the development of a stroke record.

Methods: Based on a prospective observation, the treatment of stroke patients was to be surveyed in a rescue service area over a period of 8 months with respect to gender of the patient, age, body temperature, blood sugar, oxygen saturation, and ECG-rhythm. The collective survey comprised the District of Dachau, Bavaria, the rescue service of which being exclusively provided by the Bavarian Red Cross. The District of Dachau covers an area of 579 sqkm with approx. 129,000 inhabitants. The rescue service operates four rescue stations and two emergency doctor vehicles. Several first-responder systems have been installed.

In current training courses, guidelines for stroke treatment were imparted, and a standardised record sheet was introduced; it was to be filled-in by every paramedic in case of the diagnosis of "stroke". Besides age and gender, the risk and prognosis factors for the disease as known today, had to be obtained in accordance with an algorithm.

Results: On the basis of this record sheet, all stroke treatments from 01 June 2000 up to 01 February 2001 inclusive were recorded. The evaluation of these records indicated that: in total, 94 patients were treated under the primary