The effect of first aid and care times on the clinical course and treatment results in multiple trauma. Initial interim results of an interdisciplinary trauma registry in the St. Gallen district hospital

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QUESTION
To date little is known about the influence of variable rescue (i.e., transportation/preclinical care) and clinical care times on the clinical progress and outcome of patients suffering injuries ranging from average to severe. Having examined this question within the framework of an ongoing study of trauma, we present the first provisional results and compare them with existing documentation.

METHOD
Since 15 June 1990, all cases of multiple injury have been recorded in a trauma register. The present interim investigation of 143 patients covers a period of 13.5 months. We have recorded the rescue and clinical care times and compared them with survival, disability, complications and length of stay in hospital or intensive care unit.

RESULTS
106 (74%) of the total of 143 patients were operated on an average of 5.5 hours after the accident. In cases of intracranial or intraabdominal bleeding, there was an average time lag of 220 minutes after the accident before the patient could undergo surgery. Overall, 70% of the total rescue time was spent on medical attention and waiting time in the emergency unit. The secondary transfer rate is 46%. In the case of 4 patients, it is possible that the delays involved contributed appreciably to mortality (19%, i.e., 4/21). Generally, however, no coherent and conclusive correlation could be established between prolonged rescue and clinical care times and a worsened outcome. False negative results cannot be totally excluded, since the classification of the individual degree of injury by means of ISS and TRISS is unreliable, the variable quality of medical care prior to arrival at our emergency unit has not been taken into account, and the case figures are low (possibly of a large-scale beta error).

CONCLUSIONS
The database for the assessment of standard times is still inadequate. For a reliable analysis, a total number of at least 500 patients is necessary (beta error acceptable). Our own data and the meagre results of other studies support the supposition that it is not the absolute time-lapse which has prognostic significance but the qualified medical assistance provided within a critical, individual, but extremely variable time-span. The increased employment of highly qualified emergency staff and a more efficient "triage", in the sense of a clearly directed trauma regionalization, could thus lead to optimization of trauma care.

**type**
journal paper/review (English)

**date of publishing**
17-10-1992

**journal title**
Schweiz Med Wochenschr (122/42)

**ISSN print**
0036-7672

**pages**
1571-81