Javier, a 20-year-old whose head and right arm protruded from the rubble. It took rescuers two hours to extricate him. Following extrication, he was stabilized for the transportation. (Luckily, Javier is alive.) At 15:00 hours, all of the private E.M.S. personnel were "invited" to leave the scene.

The 386 injured and astonished victims were treated in various hospitals, 86 died. This only is a photograph and just as every reader may have felt, emergency specialists too were overcome by dispair—first because of the cowardly act, and second in the fact that inadequate training deepened the sense of failure.

030.
Bellows-on-Sternum Resuscitation (BSR)

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Objective: During the performance of advanced cardiac life support (ACLS), cardiopulmonary resuscitation (CPR) must be performed until a perfusing rhythm can be restored. For two persons, CPR using a bag-valve-mask and simultaneous ACLS is difficult to perform.

Hypothesis: Bellows-on-Sternum Resuscitation (BSR) will provide better conditions.[1] Is the performance of BSR feasible during ACLS?

Material: The Cardiovent (Kendall, prototype) is a bellows with a rubber block at its lower end. With compressed bellows, external chest compressions can be performed in a way similar to that accomplished when using the Cardiopump™ (but without decompression). Expansion and compression of the bellows allows ventilation without removing it from the sternum.[1]

Once a patient is endotracheally intubated, one person can perform both ventilation and cardiac massage. During mask ventilation, the second person has to hold the mask only and has one hand free.

Method: The authors performed two-person CPR (5:1 ventilation/compression ratio) with ventilation by mask on a Laerdal Recording ResusciAnne. We alternated ventilation by BSR and conventional ventilation with a self-refilling bag (Weinmann Combibag).

Results:	BSR	Conventional
Cycles/min	11–12	11–13
Frequency of chest compressions/min	75–100	70–100
Compression depth correct (38—51mm)	98%	98%
Pressure release correct (0—1 mm)	90%	98%
Time for ventilation (sec)	1.4–2.2	1.0–2.0
Ventilation correct (0.8—1.21)	81%	92%

Conclusions: After 1 hour of training, we were able to perform BSR with a quality similar to that achieved during standard CPR. Correct pressure release and the visual control of hand position were the main problems. Studies on a Mega-Code Trainer could test the hypothesis that overall performance of two-rescuer ACLS is better when associated with BSR.

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047.
Patient Identification and Information Systems: Application Issues in Europe

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One of the most crucial elements in emergency care is patient assessment: early access to reliable information and identification can have a major impact on effectiveness of the care provided. The advances in information technology have resulted in patient identification and information systems that can be applied to emergency and disaster care. The systems can be divided into "low-tech" and "high-tech" versions. Examples of low-technology options include the European Emergency Passport, Medic Alert, microfilm-based versions (German Emergency Card, Sabeco Emergency Card, Medicard), and magnetic strips. The high-tech versions, most of which are in different stages of testing, are microchip-based cards ("smart cards") that require software programs, a PC and a reader that can be portable and adjusted for use in f.i. an ambulance. The high-tech options have significant potential in (routine) Emergency Care, in particular when used in combination with other Health Care Telematic Networks. Directorate XIII of the European Union has supported, since 1987, the development of these cards through its AIM program (Advanced Informatics in Medicine). Examples of smart cards in Europe include: DefiCard, Diabcard, CSAM/Vitale, MPC, Sabeco Smartcard. In the presentation, we will introduce and briefly discuss the "SIRRCUS" criteria as a simple tool that can be used to evaluate the increasing number of options that will be offered and/or become available in the near future: 1) speed; 2) integration; 3) relevance; 4) reliability; 5) cost; 6) user friendliness; and 7) security.

052.
Simple Device for Difficult Intubations

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Objective: To evaluate the efficacy of a new endotracheal tube introducer for difficult intubation.

Background: In difficult intubations, a narrow stylet is easier to pass into the trachea than an endotracheal tube (ETT). Rather than passing an ETT over the stylet, we devised an inexpensive, disposable stylet that expands to allow the passage of an ETT through it. As the ETT passes down the device, it is guided into

the trachea past the soft tissues and potential obstruction from swelling, tumors, or vocal cords.
Method: Consultant anaesthesia staff were to use the device following two or more failed attempts at intubation.
Results: Over an 18-month period, there were 10 reports of failed intubation from seven consultants. Of these, eight intubations were successful on first attempt when the introducer was used. Notably, it was beneficial with an "anterior larynx," pharyngeal edema, one patient with a laryngeal tumor, and for intubation of awake patients in the emergency department and intensive care unit.
Conclusion: This simple, disposable device appears efficacious in unanticipated, difficult intubations. A follow-up randomized study is underway to assess its effect on the success rate of routine intubations by less experienced operators.

063.
Telemedicine and the Remote Assessment of Disasters

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For appropriate disaster relief to be mobilized, an early expert assessment is essential. The current approach includes the immediate dispatch of a team of academic experts. The limitations of this approach are that the required disciplines must be estimated correctly without information on the actual conditions, the depth of knowledge for assessment is limited to the expertise of the initial team, and the risks to the members of this team. The early stages of a disaster usually are associated with hazardous conditions and an austere environment for which academic experts usually are not ideally suited.

A remote assessment method will be described and demonstrated which involves deploying a team of data collectors with expertise in functioning within the disaster environment. These operators gather data, images, and video which are immediately transmissible over the INMARSAT satellite link to a home-base array of experts. Appropriate experts can interrogate the operational data collectors and direct the assessment from their remote location. Remote assessment technology enables a small team of field-experienced data collectors to act as the eyes and ears of a large and flexible group of experts without the costs and risks of deploying them.

029.
"In-Field" Assessment of Endotracheal Tube Placement

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Objective: Oesophageal tube malposition is among the leading causes of anaesthesia incidents. While clinical maneuvers for detection of tube position are unreliable, monitoring (i.e., quantitative capnography) can prevent such incidents. The problem is important particularly in prehospital care where capnography is not yet available.
Method: We tested three devices used for assessment of tube position:

1) Oesophageal Detector Device (ODD) as described by Pollard and Wee.[1,2] A syringe is connected to the endotracheal tube and air aspirated. With oesophageal tube malposition, the oesophagus collapses and very little air can be aspirated. With correct tracheal tube placement, due to the rigidity of the trachea, air easily can be aspirated.

2) Chemical disposable capnometer (EASYCAP, Nellcor, Pleasanton, California USA); and

3) Infrared miniaturized capnometer (MiniCAP, MSA, Owing Mills, Maryland USA).

In 50 anaesthetised and intubated minipigs, an additional, identical tube was placed in the oesophagus. Inexperienced personal (e.g., students) were asked to use one of the devices on one of the tubes and to decide within 30 seconds, if its position was tracheal or esophageal. Using the ODD, the proband first inflated 100 ml air into the tube and than tried to aspirate the same volume. EASYCAP and MiniCAP were used according to manufacturers' manual.
Results: Each device was used 25 times at a tracheal and 25 times at an oesophageal tube. All decisions were correct. When ventilating the oesophagus for capnometric control, we saw 6 times regurgitation into the tube (5 times with the EASYCAP and 1 time with the MiniCAP). In these cases, oesophageal position was identified by regurgitalton, not by the display of the device. With use of the ODD, no regurgitation was seen.
Conclusions: We recommend initial control of ET-tube position with an ODD in any emergency intubation, because it is: a) CO_2-independent (works well in cardiac arrest); b) quick; and c) without risk of regurgitation. This should be followed by continuous control of tube position, ventilation, and circulation with capnometry.

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020.
Considering 391 Runs Performed by One Physician in Vittal Emergency Medical Services

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Objectives: The objective of this paper is to describe the study of one physician's work to improve the quality of the assistance provided.
Methods: Three hundred ninety-one prehospital incidents performed by the same physician were analysed. One of our best qualified professional was chosen because of her ability to complete the assistance forms. Dispatcher priority decisions were