

increase in insurance fines. The insurance experts affirm that the number of accidents resulting in material damages is inversely proportional to the driver's age. The inexperience of the young paramedic results in crashes, additionally endangering the patient that the vehicle is transporting. Another aspect that complicates the problem is proving that the damaged emergency vehicle is not juridically responsible. In spite of repeated orders given to the paramedics regarding their driving technique; the number of accidents has not decreased. Two years ago, drive data recorders (DDR) were installed in ambulance. The DDRs are linked by WiFi by the car key. Each paramedic is identified by his/her key. Each key is recovered once a week and a software program is used to detect problems. Data are compiled for the speed, the beacons, the sirens, and the geographical position of the ambulance, in real time. This information has been made available by the judicial processes.

Since the implementation of the DDRs, the number of ambulance road crashes and complaints has decreased. Of the 4.7 ambulance crashes each year (prior to the implementation), the number of incidents has decreased to 0.6. After one-year period of adaptation, the paramedics accepted the principle, particularly because it protects them from the risks of false declarations of contravening. Hopefully, the number of accidents will decrease due to this system.

Keywords: ambulance; crash; drive data recorder; emergency medical services; France; paramedic

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(N32) Telephone Cardiopulmonary Resuscitation: Intensive Training Increases the Number of Patients Who Will Benefit

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Introduction: Telephone cardiopulmonary resuscitation (T-CPR) improves the survival rate of out-of-hospital cardiac arrest. Previous articles showed only 50% of patients deserving T-CPR received it, mainly because dispatchers did not recognize the cardiac arrest.

Methods: After eight weeks of intensive T-CPR training, data were collected for six months (296 cases). All trauma, pediatrics, deaths, and cases when the caller was distant from the patient were excluded. Cases when the patient still was able to talk during the call or when witnesses spontaneously performed CPR also were excluded. For each case, dispatchers had to explain why they did not provide T-CPR.

Results: Out of 296 cases, 139 were excluded. Of the remaining 157 cases, dispatchers decided not to provide T-CPR because the patient was too old, too physically diminished, willing but not able because the witness was too agitated to listen to instructions, or because there was a language barrier. Of the remaining 139, T-CPR was offered in 72 cases (52%). Five inappropriate T-CPR (false positives) were counted. Of the 67 who did not receive T-CPR, dispatchers failed to ask the right question (is breathing normal?) on 22 occasions. On the remaining 45 cases, the witness described the breathing as normal.

Conclusions: Improving the rate of TCPR is difficult. The main reason TCPR was not provided was agonal breathing.

Dispatchers must ask to hear the patient's breathing by having the witness place the telephone on the mouth of the victim. In the future, videophones will be of great help. The outcomes of these patients must be collected to confirm the usefulness of TCPR.

Keywords: cardiac arrest; dispatching; emergency health; out-of-hospital cardiac arrest; telephone cardiopulmonary resuscitation

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(N33) Dispatching: Seizure Patients May Need Telephone Cardiopulmonary Resuscitation

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Introduction: Ventricular tachycardia and ventricular fibrillation during cardiac arrest sometimes produces a seizure that is wrongly considered epilepsy. Therefore no telephone cardiopulmonary resuscitation (T-CPR) is provided.

Methods: Over an eight-week period, dispatchers were trained to systematically call witnesses back two minutes after an adult seizure, to check the breathing and the state of consciousness of the patient. For six months, all calls with seizure as the major complaint were collected. Children <18 years old were excluded. Whether the new procedure was used and how many out-of-hospital cardiac arrests presenting as seizures received T-CPR with this procedure (second call after two minutes) was recorded.

Results: Over a six-month period, 93 calls for an adult seizure were placed. Cases where the witness was a medical professional (24) were excluded, as were cases when the caller was distant from the patient (9). Of the 60 remaining cases, dispatchers called back after two minutes on only 26 occasions (43%). Only three of those 60 patients were classified naca 6 or 7. Two of them benefited from T-CPR after the second call. No T-CPR was provided to the third victim (dispatcher did not call back).

Conclusions: Cardiac arrest presenting as a seizure is unusual. Although this procedure is time-consuming, it proves to be useful. The compliance of the dispatchers on this procedure still is low. More explanation and training is necessary to improve the rate of "second calls".

Keywords: cardiopulmonary resuscitation; dispatching; emergency health; out-of-hospital cardiac arrest; seizure; telephone cardiopulmonary resuscitation

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(N34) On-Site Presence of a Paramedic, Emergency Physician, and Dispatcher is a Key to Success during Major Incidents

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Introduction: Efficient leadership is the key to a successful management during a major incident. Since the beginning of 2008, Switzerland has been experimenting with a new, on-site, medical management system: a specially trained paramedic and emergency physician are sent on-site to lead the management of the crisis.

Methods: As soon as the incident involves >10 wounded victims or requires more than five medical vehicles (ambu-

lances, helicopters), the special paramedic/doctor team is dispatched. Seven doctors and eight paramedics are on call for this duty at all times.

Results: A major road incident occurred on 09 April 2008. It involved 55 vehicles, caused one death, and left 24 wounded. On their first mission, the team performed well. All patients were evacuated in less than two hours. Patients were transferred correctly to five different hospitals. No secondary transfers were necessary.

Conclusions: This “team of competences” to manage such circumstances is a great benefit as paramedics and doctors are complementary. The ability to send a medical dispatcher on-site was the second key to success. The dispatched managed all communications with external partners, which allowed the team to concentrate on the on-site communication.

Keywords: disaster; dispatch; leadership; major incident; medical team; paramedic

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(N35) Do Bystanders Provide Cardiopulmonary Resuscitation?

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Introduction: Telephone cardiopulmonary resuscitation (T-CPR) improves survival after an out-of-hospital cardiac arrest (CA). But, do bystanders agree to perform T-CPR, and if not, why?

Methods: All cases where T-CPR was provided were collected and the reason why bystanders did not agree to perform CPR were recorded. Situations in which a professional (doctor, nurse, paramedic) was on-site were excluded.

Results: Eighty-five cases were reviewed. Of those, bystanders agreed to provide T-CPR in 57 cases (66%). Bystanders refused to perform T-CPR because they were: (1) too old to physically perform the procedure (12 cases); (2) too stressed to perform it (10 cases); (3) physically unable because of a disability (2 cases); and (4) believed the patient was still alive.

Conclusions: No bystanders refused to provide CPR because of the fear of catching diseases, probably because new guidelines suggest skipping ventilation for adults with non-traumatic CA. Also, no one had a fear of hurting the patients. Those two reasons, often cited as an explanation the low rate of CPR performed by witnesses, seem to be myths. In all the pediatric cases included in this study (five cases), all bystanders agreed to provide T-CPR with ventilation. They all were parents of the child victims.

Keywords: bystanders; cardiac arrest; cardiopulmonary resuscitation; emergency health; telephone cardiopulmonary resuscitation

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(N36) Hospital Emergency Readiness Overview Study

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Introduction: A 2001 survey showed a deficiency in preparedness of Canadian emergency departments for a contaminated mass-casualty incident. Since then, the Canadian Federal and Provincial governments have made efforts to remedy these deficiencies.

Methods: This paper repeated the original survey modified with input from Federal, Provincial, and academic authorities.

Results: The new survey has, to date, collated results from 38 hospitals across Canada. Less than a quarter of hospitals had performed a risk analysis, and of those, more than half had not revisited the analysis within five years. About half the responders also coordinated with other organizations. There was improvement in the recent review of tabletop (65% vs. 40% in 2001) or full deployment exercises (30% vs. 4%). Of the facilities, 88% had a reporting protocol for bio-events, such as a sentinel case of smallpox (37% in 2001). Only 38% of hospitals stocked personal protective equipment (6% in 2001) in the emergency department. Of those, 40% who stocked the equipment have not trained within

	2001	2008
Plan review within three years	81%	80%
Simulation within three years	40% (paper trial)	65% (tabletop)
Exercise within three years	4%	30%
Protocol for bio-events	37%	88%
PPD in the ED	6%	38%
Decontamination plan	18%	62%
Antidotes on site	13%–34%	100%
Availability of N-95 masks	NA	100%
HEPA filter rooms	NA	74%

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Table 1

the past year, and 62% have a chemical decontamination plan or team (18% in 2001). The prompt availability of chemical improved from 13–34% in 2001 to 100% today. All of the respondents made N95 masks available, and about half of the staff had been fit tested within the past year, 88% had access to supplies in the event of an emergency, and 74% had high efficiency particle air (HEPA) filtered rooms installed in their emergency department.

Conclusions: The preliminary results of the Hospital Emergency Readiness Overview (HERO) study showed that despite improvements, significant gaps remain in Canadian healthcare facilities in the event of a disaster.

Keywords: Canada; disasters; emergency departments; emergency health; preparedness

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