

## Saving lives together

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**Training in first aid has a long tradition in Norway. We believe that survival after time-critical events outside hospital can be further improved through systematic training.**



Illustration: Helene Brox

The Directorate of Health seeks to engage all ready and willing forces in a collaboration aiming to increase the survival rate after cardiac arrest and other time-critical incidents outside hospitals. The reason is that the population is an especially crucial actor in the medical emergency chain [\(1\)](#). Hence, good, life-long learning is called for. The voluntary organisations should continue to play an important role. Programmes that coordinate efforts across multiple links in the medical emergency chain have been shown to improve survival rates, for example in Denmark [\(2\)](#).

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## Time-critical conditions

Out-of-hospital cardiac arrest (OHCA) is the most time-critical emergency condition of all. Each year, laypeople or ambulance personnel attempt to resuscitate approximately 3 000 persons who have suffered an out-of-hospital cardiac arrest [\(3\)](#). The proportion of patients with cardiac arrest who receive cardiopulmonary resuscitation (CPR) before the ambulance arrives is high in Norway (over 80 %) [\(3\)](#). In 2017, altogether 368 patients survived for at least 30 days after suffering out-of-hospital cardiac arrest in Norway (nearly 14 % of

those who were treated by paramedics). This is equivalent to 6.8 per 100 000 inhabitants, but the figures vary from one health trust to another [\(3\)](#). In Denmark, the average 30-day survival rate amounted to 7.7 per 100 000 in the years 2012–16 [\(4\)](#). If Norway could achieve the same survival rate as Denmark, 47 more people would survive each year.

Injuries and poisonings cause approximately 2 500 deaths each year in Norway, of which approximately 600 are suicides. With an annual incidence of 40 per 100 000 inhabitants, serious injuries account for approximately 6 % of all deaths in Norway. When it comes to serious injuries, it is estimated that 1.8–4.5 % of those who die may be saved if bystanders help keep the airways open and stop major haemorrhages [\(5\)](#). 3 % of 1 900 may constitute 57 lives saved per year.

Each year, around 12 000 patients suffer a cerebrovascular stroke [\(6\)](#), and approximately 2 000 of them die [\(7\)](#). The proportion of patients who receive thrombolysis amounts to 21 %, but varies from 5 % to 37 % in different health trusts [\(8\)](#). We may assume that the time from symptom onset to treatment can be reduced if the population is taught how to recognise symptoms of cerebrovascular stroke and how to react.

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## Life-long learning of first aid

First-aid skills are best maintained by repeated training [\(9\)](#). We therefore believe that a national strategy for life-long training in first aid ought to be developed, where the training starts in the pre-school institutions and is followed up through school, higher education, leisure activities, working life and into the retirement years [\(10\)](#). In addition, special training in life-saving first aid should be provided to health personnel, to broad target groups through the sports and voluntary organisations, and targeted to groups that perhaps have no previous training, for example newly arrived immigrants.

Providing first aid to someone in a life-threatening condition can be a tough experience [\(11\)](#), and many patients die even though they have received high-quality first aid. We are therefore seeking to establish a system through which first-aiders can contact the health services, both in order to provide feedback about their experiences and to take care of those individuals who need further follow-up.

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## First responders

First responders are personnel who have undergone standardised training in life-saving first aid and have access to simple medical equipment, and are thus able to provide life-saving first aid before the first professional healthcare personnel arrive. First responders should be alerted in situations where their contribution is likely to provide a health gain [\(12\)](#). First responders may include

personnel from the fire and rescue services, the police, the primary health services (e.g. home nursing services) or voluntary organisations such as the Red Cross, Norwegian People's Aid or the Norwegian Society for Sea Rescue.

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## Better EMCC

Interaction between the caller and the operator at the EMCC (Emergency Medical Communication Centre, 113) is crucial in emergency situations. Most people know that they can call the EMCC, but not everybody is aware that they can receive guidance and assistance regarding what can be done while help is on the way, for example initiating CPR (1). The role of the EMCC is to provide reassurance to the population in the knowledge that it is always available to help. Its motto, 'Call 113 – and you are no longer alone', expresses the same idea. Knowledge of the medical emergency number 113 must be incorporated into all training in first aid, including the way in which the EMCC takes charge and instructs all callers. Participants in first aid training courses should practise how to save lives in collaboration with the EMCC.

*«The population is an especially crucial actor in the medical emergency chain»*

Since the EMCC operator is the professional partner in the first-aid team, the operators need to receive more training in the role of team leader. A national standard for basic and maintenance training of EMCC operators ought to be developed (13).

Publicly available defibrillators have become visible to the EMCC with the aid of registration at the [www.113.no](http://www.113.no) website, and the authorities are currently seeking to establish automatic positioning of callers on a map in the EMCC.

To provide better help to time-critical incidents, it is crucial to have quality registries of relevant conditions, such as the Norwegian Cardiac Arrest Registry, the Norwegian Myocardial Infarction Registry, the Norwegian Stroke Registry and the Norwegian National Trauma Registry. These registries should collect data on the early identification and treatment of patients. Measures initiated by both the caller and the EMCC should be systematically evaluated with a view to improving the training of the general public as well as that of the EMCC operators.

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## Saving lives together

The 'Saving lives together' programme focuses on the initial links in the medical emergency chain (14, 15), especially on training and implementation. We emphasise collaboration across agencies and organisations to achieve coordination between the different partners. The authorities help ensure that the content of the training prioritises interventions that will save more lives.

The challenge will be to maintain the focus and the quality once the programme is completed. The measures will thus need to be incorporated into the practices of existing organisations.

Until now, efforts have included the introduction of first-aid training in pre-schools, primary, lower and upper secondary schools and among older people. A standard for first aiders is being prepared and a website with information to the public about first aid is being developed. EMCCs all over the country have initiated simulation training, systematic review of audio logs and registration of call data for medical quality registries. Many of these projects have received financial support from the Gjensidige Foundation, which has granted more than NOK 60 million to various projects under the programme to date. Grants remain available for training purposes and input from further target groups, and we would like to systematise training for workplaces, sports and recently arrived immigrants.

The key objective now is to maintain and improve the structures that help ensure that patients with time-critical conditions meet competent and confident first aiders, with good support from the EMCC and technology, irrespective of where the patient is located or who is the closest to provide help.

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