

(Ca<sup>2+</sup>) from the cells into the intercellular medium against a great concentration gradient. The accumulation of Ca<sup>2+</sup> in the cytosol is the primary cause of the cold paralysis of cell functions.

We removed a portion of Ca<sup>2+</sup> from the blood, thereby decreasing this gradient, and thus, decreased the cold threshold for the arrest of ventilation, circulation, and thermoregulation, e.g., renewed intensive firing rate of the neurons even at the skin temperature of 0°C, at which temperature they never were noted to function.

Ivanov K: *Ann New York Acad Sciences* 1997;813:32–38.

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**Key-words:** brain function; brain temperature; calcium fluxes; cooling; hypothermia; retention of function

### The Work System of the Air Ambulance in the Arkhangelsk Region

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The Arkhangelsk region is situated in the northwest of Russia. It has a territory of 578,000 square km. The population is 1,527,700 people: 75% of them live in 13 towns and 38 villages. In the region, there are 4,000 settlements with populations of 3,000–5,000 people each and these comprise 26% of the total number of persons in the region. The majority of these small settlements especially on the seaside of the White Sea and the Karsky Sea, are not connected to the big centres by highways.

In order to provide this part of population with the first aid, the air ambulance is used (plane AN-2, 12 people aboard, speed 180 kph; plane L-410, 15 people aboard, speed 350 kph; helicopter MI-8, 12 people aboard, speed 200 kph). Air ambulance bases are in Arkhangelsk, Kotlas, and Narjan-Mar where there are large hospitals. To provide this medical aid, they use different teams. At the central base in Arkhangelsk, four teams are on duty: 1) traumatologic; 2) adult surgical; 3) children surgical; and 4) therapeutic. Each team consists of 2–3 specialists. The teams have the portable equipment, sterile instruments, and medicines specific to accomplish their respective tasks.

Annually, these teams make nearly 500 flights, they perform 300–350 surgical operations, and evacuate about 800 sick or injured people from the detached districts of the region to the larger centres.

**Key words:** air ambulances; air-medical transportation; emergency medical services; medical aid; pediatrics; teams; trauma

### The System of Medical Provision of Safety Operations on Technological Catastrophes and Disasters in the European North of Russia

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The system for the provision of medical care for the population in cases of emergency includes the combination of scientifically based principles of safety measures coupled with the evacuation of the population and forces and the means for the provision of the first medical aid. The essence of this system is in the organisation of the first medical aid given at the proper time and in strict sequence, and in the treatment of the affected people during their rescue with immediate transportation from the site of the disaster to medical institutions in accordance with the type of injuries sustained by the victims.

In Russia, a two-staged system for the provision of medical care during a disaster was adopted. Taking into consideration the main principles for the provision of first medical aid to mass casualties, some important questions must be solved: 1) medical investigation for the cause of the injuries; and 2) sorting of the affected people. The principal rules in the system for the provision of medical care to those affected are:

- 1) Provision of first aid and qualified medical help as soon as possible;
- 2) Definition of preventive measures according to the situation with thorough medical sorting between those who need first aid and those who can wait for help;
- 3) Composition of groups of medical services that correspond to the main needs as relate to the source of the injuries; and
- 4) Organization of the evacuation of the victims away from the site of the event in preparation for the second stage of medical evacuation.

The system for the provision of medical care is one of the main and most difficult activities of health care during the post-disaster, medical relief operations.

**Key words:** disaster; emergency; evacuation; first-aid; medical care; rescue; safety; transportation

### A New Type of Disaster

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In 1997, uncontrolled man-made forest fires in Indonesia (Kalimantan and Sumatra) involved about 310,000 hectares of forest and estates that produced a haze. In all, about 500 houses were destroyed by the fires, especially those built on pit soil. This difficult situation was probably an El Niño phenomenon. The haze period lasted from mid-July to October 1997.

Apart from Indonesian fire fighters, firefighters from Malaysia also were involved. Also, support (helicopters