

and aeroplanes) from other countries such as Singapore, Australia, and the USA were provided. One tried in vain to produce artificial rain. Due to the fires in the pit soil, the fires did not stop until it had rained for several days.

The fires produced a very intense haze that was transported enormous distances; thus, it affected not only Indonesia, but also parts of Malaysia and Singapore. The main problem from the haze was exposure of the population to airborne particles, especially particles smaller than 5 microns in diameter. There were no direct effects detected from toxic gases. Visibility was an indicator of the severity of the haze.

Exposure of people to such a haze for a prolonged period was a new phenomenon. It is not possible to determine the actual number of people exposed, but probably approximately 40 million people were exposed in one way or another. At least 40 deaths have been related directly to the smoke exposure. People with pre-existing respiratory and cardiac problems, very young children, and the elderly were the most severely affected. Symptoms predominating were eye irritation, conjunctivitis, bronchial asthma, bronchitis, and superimposed acute respiratory infections. There were no skin problems.

**Key words:** contamination; exposure; fires; particulates; smoke; toxic exposure

### Duration of Reversible Clinical Death

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Research by the Brukhonenko and Sirotnin School revealed erroneous concepts of the impossibility of complete reanimation of higher animals and a human after the clinical death that lasted for more than 5–6 minutes. While performing reanimation research using dogs with an artificial blood circulation method, researchers have proved that successful organism reanimation is possible after clinical death lasting 25 minutes. In addition, the dynamics of basic vital functions of organisms, reanimated after acute blood loss, electrotrauma, mechanical asphyxia, radial acceleration, sharp decompression, or drowning in salt water were studied in detail. Complex research of brain functions of the reanimated animals allowed us to conclude that the resistance of neurons of cortex to anoxia is greater than it generally was thought previously. Taking into account the methodological point of view, there is no proof for the formation of irreversible changes in brain during the periods of death sampled during the post-reanimation period. Considering the development of terminal states and legitimacies of exchange processes common both for animals and a human, the results of fundamental research by the followers of Brukhonenko and Sirotnin, are considered to be the

essential proof and grounding of the possibility of complete reanimation of humans after prolonged clinical death.

**Key words:** anoxia; brain function, clinical death, morphology; reanimation; resistance to anoxia; resuscitation

### Analgesic and Local Anesthetic Effects of Ketamine

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In-field medical care and Disaster Medicine differ substantially from the medical practices used in the normal hospital settings. In these settings, the number of emergency drugs available must be limited for practical reasons. In this respect, ketamine seems to be an exceptionally useful drug: it is a drug with multiple characteristics and indications that make it suitable for use in these circumstances. It possesses amnestic, sedative, anticonvulsant, and bronchodilatory properties, and it has a stimulatory effect on circulation.

Ketamine is accepted widely as the first choice for field anesthesia. It can be administered either intravenously or intramuscularly. It also is a potent analgesic agent, and even can be used to produce local anesthesia. It only is a question of time before it will be able to be administered transdermally. Furthermore, all of its effects are dose-dependent. Thus, local anesthesia or analgesia being provided in the field can be advanced to anesthesia simply by increasing the dosage. These advantages have not yet been fully exploited.

**Key words:** local anesthetic agents; ketamine; local anesthesia; pharmacology

### A New Approach—The World-Wide Air-Medical Transport Service Network

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**Background:** The Emergency Medical Assistance (EMA) Group Ltd and Euro-Flite Air Ambulance Ltd have promoted the creation of an unbroken chain of world-wide, air-medical services. This network enables both a cost-effective as well as a time-saving solution for cases requiring long distance, air-medical transport.

**Demand for the service:** Strongly increasing tourism, business travelling, and great number of expatriates in risk zones such as emergency and conflict areas or other locations with considerable health risks have increased the need for repatriation and medical evacuations to the