10145 - Determinants of response in the second survey (18 months after) among victims and relief workers of the Enschede firework disaster

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May 13-2000, a firework storage facility with 1000 tons of heavy fireworks exploded in a residential area in Enschede, The Netherlands. The explosions and fire killed 22 and injured over 900 people; some 400 homes were destroyed. Two-three weeks after the explosion, a health survey was performed among victims and emergency relief workers. The first health survey showed that at least 50% of the victims reported health problems, such as sleeping problems and restrictions in daily functioning. Since little is known about (early) development of disaster-related health effects and 10-30 % of victims may, as a rule of thump, develop aspects posttraumatic stress and, to a lesser degree, medically unexplained symptoms, a follow-up of the victims was considered necessary. Therefore a second health survey was performed 18 months after the disaster. Both surveys are part of a larger health care program for the victims. The main objectives of the second survey were to investigate the changes in health between the first survey and second survey and some of the important determinants of bad health in the second survey. Data collection of the second survey finished in January 2002.
The response in the first health survey was slightly less than 30% among the victims. Based on demographic information and socio-economic status no clear indications of strong selection was observed. However, anecdotal information indicated that some groups were insufficiently reached. In particular, people who were severely debilitated were unable or unwilling to attend.
The overall response in the second study was over 75%. The most important determinant of response in the second survey was telephone ownership and telephone contact prior to the second survey. If the respondent was reached by telephone, he/she was explained the purpose of the study and was invited to participate, preliminary indications suggest that those reached by phone more often returned their questionnaire than those who were not. Other determinants, such as age, gender, ethnicity, education and the health status in the first survey will be reported. In conclusion, contacting people by telephone enhances their commitment to participate in the Enschede disaster firework study.

10382- Mud volkanoes phenomen of the Azerbaijanian shore of the Caspian Sea.

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Introduction: Mud volcanoes - is one of most interesting and unique phenomena of a nature. During study of natural complexes of coast of the Caspian sea we in details investigated this phenomenon.

The purpose of work is the revealing eruption of activity mud volcanoes and influence on an environment.

Statistical data: On the basis of the historical and ecological analysis the regular account paroxysm is made. Since 1810 more 70 continental and sea volcanoes are fixed about 200 eruptions. The facts of intensive generation and accumulation of huge quantity hydrocarbon gases in entrails under the large pressure are established.

The connection mud volcanoes with oil and gas deposits is determined which have brought glory to the Azerbaijan coast of the Caspian Sea.

Dated to zones of regional breaks and Alpine folded, mud volcanoes make uniform genetic process tectonic and formation oil and gas of congestions. They are closely connected with tectonic, litology, hydro-geological, geochemical, thermodynamic and other features entrails and generically are by the special kind volcanism.

Practical value: From revealed in the world more than 700 modern mud volcanoes within the limits of Azerbaijanis' is fixed about 240 displays, including 202 on coastal land and 38 in water area of the Caspian Sea. Total amount volcanic breccias of separate volcanoes reaches several billions $м^3$.

The not less important fact is that volcanic breccias is widely applied in an agriculture and medicine. Enriched with specific components, volcanic breccias has a beneficial impact on a human body. It is used for treating the diseases of peripheral and central nervous system, skin and such diseases as polyarthritis, radiculitis, polynephritis, hepatitis etc.

Conclusion: In Azerbaijan, large-scale clinical researches on mud volcanoes in the Republican Scientific Institute for spa treatment and physiology. It has been proven that the volcano mud of consistence has alkaline reaction. It contains a series of microelements (iodine, bromine, chlorine, lithium etc), naphtenic acids, bitumen, humic substances and nitrogen-containing bitumen.

Besides it, the district Gobustan, known by mud volcanoes, is one of first in the World of parking of the primitive man, has received the world glory of rock drawings by the images. Here is created archaeology reserve open-air.

Abstract # 10386

Review of health hazards from volcanic gases

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Background

Volcanoes are associated with a variety of gaseous emissions including CO_2, SO_2, HCl, HF, CO, Rn and heavy metals (including Hg). Fluxes of these gases can be substantial in terms of atmospheric source strengths. For example, the mean SO_2 flux from Mt Etna in Sicily is equivalent to the anthropogenic SO2 emissions from France, making it the largest global point source emitter of SO_2. It is unclear whether the dose-response effects from research on anthropogenic emissions can be directly transferred to volcanic emissions. This review aimed to identify clinical and epidemiological studies to characterise the health hazards related to volcanic gases.

Methods

A search of the medical literature (Medline 1966 to present and Embase 1988 to present) was conducted. Studies considering volcanic ash alone were excluded.

Results

Only 12 epidemiological or clinical studies were identified (concerning Lake Nyos (Cameroon), Hawaii, Mt Sakurajima (Japan), Rotorua (New Zealand) and Mt St Helens and California in the USA), together with approximately twenty reviews or emergency planning articles. There was not enough evidence to fully characterise the risks due to the small number of studies and inadequate exposure measures, but improved hazard identification was possible.

Volcanic gas emissions can be usefully classified as eruptive and non-eruptive. Emissions during eruptions have been little studied but can be a concern if sustained. The eruption of Laki in Iceland in 1783 resulted in an acid aerosol "fog" affecting many parts of Europe. Numerous contemporary documents report respiratory and eye symptoms and a preliminary analysis of UK parish mortality records has suggested an associated increase in mortality of 30%. Many volcanoes also emit gases between eruptions or during low-level activity, e.g. from lava lakes or fumarole fields or diffusely through the soil. Degassing episodes can persist for months or years and are often associated with large fluxes of SO_2 and also halogen gases. As well as Mt. Etna, Kilauea (Hawaii), Mt Sakurajima (Japan) and Masaya (Nicargua) fit into this category. Diffuse degassing is often associated with CO2 emissions, though H_2S and Rn are also of interest. Occasional deaths from CO_2 accumulation have occurred in volcanic areas including Mammoth Mountain in California, southern Italy and Nicaragua. When CO_2 is discharged into a

stable lake, high concentrations can dissolve under pressure and be catastrophically released. This is the favoured explanation for the disaster at Nyos crater lake in Cameroon in 1986 that resulted in approximately 1,700 deaths.

Conclusions

Volcanic air pollution related to eruptive and non-eruptive events deserves further epidemiological attention. Volcanic emissions may produce air pollution episodes (e.g. Laki) or contribute to urban air pollution (e.g. Popocatopetal volcano near to Mexico city) and have the potential to affect large communities. They also provide the possibility of studying a relatively 'purer' form of pollutant compared with the complex mixtures seen from vehicle and industrial emissions.

11098 - Conceptual Framework for a Global Disaster Information Market
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The confluence of technologies that has enabled the sharing of digital information on a global scale is transforming the world from an information desert to an information jungle. In a wired world, the ability to quickly and easily search through masses of information to find a particular nugget is increasingly important. This is particularly critical during an unfolding disaster.
One approach would be to create a global "information market" to facilitate interactions and exchanges among providers and users. Autonomous providers could be organized according to their role in society, which determines the kinds of information they provide: governments, businesses, academia, and NGOs. "Market" is used in the sense of bartering and exchanging information, irrespective of whether money changes hands or not. Autonomous users could be grouped according to how their information needs to be formatted: practitioners (vertically integrated, domain-specific, technical, problem solutions), businesses (innovation, markets, investment), policy analysts (horizontally integrated, multiple domains, non-technical, issue analysis), and the general public (simplified). Users and providers would be connected through various types of functionality or views of disaster management.

Who (directories of organizations, experts, services)
What (thematic searching of subjects and issues; data, information, and knowledge)
When (temporal searching, based on events)
Where (spatial searching, based on place)
Why (generic information about disaster management)

A non-profit information broker, such as the Global Disaster Information Network could establish and maintain an information market such as that described here. Like the agora of ancient Greece, it would be a gathering place in cyberspace, where providers and users could converse with each other to the benefit of all.