

Focus on IFA's work

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Narcotic gases at anaesthesia workplaces

Problem

Anaesthetic gas mixtures of nitrous oxide and volatile anaesthetics such as halothane, enfluran or isofluran are widely used in hospitals for operations under general anaesthetic. Leaks may result in operating room personnel being exposed to these gases prior to and during the operation. Exposure continues even after the operation, as patients who remain under care in recovery rooms exhale the anaesthetic gases. Studies have shown that under unfavourable ambient conditions, the threshold limit values for narcotic gases may be exceeded.

Activities

In collaboration with the German Social Accident Insurance Institution for the health and welfare services and with other interested bodies, exposure measurements were performed at anaesthesia workplaces, and EGU recommendations developed. In this process the results of numerous studies from the literature were considered.

Results and Application

The EGU recommendations for operating theatres describe the requirements to be met so that simplified procedures for the monitoring of anaesthesia workplaces can be applied in accordance with the TRGS 525 (Technical rules governing hazardous substances in hospitals). For the greater part, these requirements concern



General anaesthetic with gaseous anaesthetics. Source: SUVA (Swiss accident insurance institution)

standard good practice for the inspection and maintenance of technical equipment. Besides the technical aspects, the organizational measures with a significant bearing upon exposure to gaseous anaesthetics are described. These aspects particularly include the designation of an expert (physician) who is to receive particular information on occupational health and safety in the course of further and ongoing training.

For recovery rooms equipped with a ventilation system which satisfies the standard governing ventilation systems and equipment in hospitals, sustained compliance with the limit values for anaesthetic gases may be assumed, provided regular servicing and inspections are conducted

in order to prevent leakages from equipment carrying anaesthetic gases. Provided this is the case, surveillance measurements of the exposure to anaesthetic gases at workplaces in recovery rooms are unnecessary.

Area of Application

Hospitals, doctors' practices

Additional Information

- BG/BIA-Empfehlungen zur Überwachung von Arbeitsbereichen: Anästhesiearbeitsplätze – Operationssäle (Kennzahl 1017). Hrsg.: Deutsche Gesetzliche Unfallversicherung (DGUV), Berlin 2011 www.dguv.de/ifa/egu
- BG/BIA-Empfehlungen zur Überwachung von Arbeitsbereichen: Anästhesiearbeitsplätze – Aufwachräume (Kennzahl 1018)..Hrsg.: Deutsche Gesetzliche Unfallversicherung (DGUV), Berlin 2011 www.dguv.de/ifa/egu
- DIN 1946 Ventilation and air conditioning – Part 4: Ventilation in buildings and rooms of health care (VDI Ventilation rules) (12.08). Beuth, Berlin 2008

Expert Assistance

IFA, Division 3: Hazardous substances: handling – protective measures

German Social Accident Insurance Institution for the health and welfare services, Hamburg

Literature Requests

IFA, Central Division