

EPIDEMIOLOGY OF UNINTENTIONAL CARBON MONOXIDE FATALITIES IN THE UK

Alexandra de Juniac, *Centre for Radiation, Chemical and Environmental Hazards (London), Health Protection Agency, UK and St George University, London, UK*

Irene Kreis, *Centre for Radiation, Chemical and Environmental Hazards (London), Health Protection Agency, UK*

Judith Ibison, *St George University, London, UK*

Virginia Murray, *Centre for Radiation, Chemical and Environmental Hazards (London), Health Protection Agency, UK*

Background and Aims: Carbon monoxide (CO) is a colourless, odourless, tasteless, non-irritant gas, which is potentially lethal. We describe the epidemiology of unintentional non-fire related CO fatalities in the UK and where possible to link this to sources of CO.

Methods: Unintentional CO related deaths were as recorded on the CO-Gas Safety Society (COGSS) database. Results were compared to results from the English House Condition Survey (EHCS). Statistical tests included the calculation of relative risk and 95% confidence intervals.

Results: The COGSS database from 1 January 1996 to 31 December 2007 inclusive was used, covering 462 deaths. Patterns were mostly as expected with spikes of death in the colder season but some small changes over time occurred. The most striking results concerned those related to heaters which could not be tested against national usage data and gas vs non-gas heating fuels which was tested. By consulting the EHCS the overall relative risk for death due to non-gas vs gas fuels was found to be 10.52 (95% CI 7.71 – 14.34).

Discussion and Conclusion: The main weaknesses of the study lies in the heavily reliance on figures from an incomplete database. While confident in the broad observations there is the possibility of sample bias in the COGSS figures. There do not appear to be any other studies, which have examined CO-poisonings in a similar way. However, several of the more generic findings are corroborated in a few recent studies.

Despite possible apprehensions about the quality of the data, there is nonetheless a clear need for concern regarding CO-related deaths in the UK. In particular, the use of non-gas fuels has not before been highlighted as a significant cause of CO poisoning and the relative risk (although not the absolute risk) of CO-related fatalities from these fuels is substantial. Further investigation and more elaborate use of existing data is needed.