

Preface

The first edition of the WHO *Air quality guidelines for Europe* was published in 1987. Since then new data have emerged and new developments in risk assessment methodology have taken place, necessitating the updating and revision of the existing guidelines. The Bilthoven Division of the WHO European Centre for Environment and Health has undertaken this process in close cooperation with the International Programme on Chemical Safety (IPCS) and the European Commission.

At the start of the process, the methods to be used in the risk assessment process, the use of the threshold concept, the application of uncertainty factors, and the quantitative risk assessment of carcinogens were discussed, and the approach to be used was agreed on. In setting priorities for the compounds to be reviewed, a number of criteria were established: (a) the compound (or mixture) posed a widespread problem in terms of exposure sources; (b) the potential for personal exposure was large; (c) new data on health or environmental impact had emerged; (d) monitoring had become feasible since the previous evaluation; and (e) a positive trend in ambient air concentrations was evident. Application of these criteria has resulted in the selection of the air pollutants addressed in the review process.

It is the aim of the guidelines to provide a basis for protecting public health from adverse effects of air pollutants and to eliminate or reduce exposure to those pollutants that are known or likely to be hazardous to human health or wellbeing. The guidelines are intended to provide background information and guidance to (inter)national and local authorities in making risk assessment and risk management decisions. In establishing pollutant levels below which exposure – for life or for a given period of time – does not constitute a significant public health risk, the guidelines provide a basis for setting standards or limit values for air pollutants.

Although the guidelines are considered to be protective to human health they are by no means a “green light” for pollution, and it should be stressed that attempts should be made to keep air pollution levels as low as practically achievable. In addition, it should be noted that in general the guidelines do not differentiate between indoor and outdoor air exposure because, although the type of environment determines the composition and concentration of air pollution, it does not directly affect the exposure–response relationship.

In general, the guidelines address single pollutants, whereas in real-life exposure to mixtures of chemicals occurs, with additive, synergistic or antagonistic effects. In dealing with practical situations or standard-setting procedures, therefore, consideration should be given to the interrelationships between the various air pollutants. It should be emphasized, however, that the guidelines are health-based or based on environmental effects, and are not standards *per se*. In setting legally

binding standards, considerations such as prevailing exposure levels, technical feasibility, source control measures, abatement strategies, and social, economic and cultural conditions should be taken into account.

It is a policy issue to decide what specific groups at risk should be protected by the standards and what degree of risk is considered to be acceptable. These decisions are influenced by differences in risk perception among the general population and the various stakeholders in the process, but also by differences in social situations in different countries, and by the way the risks associated with air pollution are compared with risks from other environmental exposures or human activities. Therefore, national standards may differ from country to country and may be above or below the respective WHO guideline value.

This second edition includes an introduction on the nature of the guidelines and the methodology used to establish guideline values for a number of air pollutants. In addition, it describes the various aspects that need to be considered by national or local authorities when guidelines are transformed into legally binding standards. The version available on World Wide Web includes all background information on exposure and on the potential health effects of pollutants and provides full documentation for the sections on "Health risk evaluation" and "Guidelines", published in printed form as *Air quality guidelines for Europe*, 2nd ed. Copenhagen, WHO Regional Office for Europe, 2000 (WHO Regional Publications, European Series, No. 91).

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