

BUILT ENVIRONMENT, HEALTH AND ETHICS OF INTERVENTION

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Summary

Indoor air quality is an important determinant of health and well being. However, the control of indoor air quality is often inadequate, one reason being the poor articulation, appreciation and understanding of basic principles underlying policies and action related to indoor air quality. As a result, the general public is familiar neither with those principles nor with their associated rights. A WHO Working Group was convened to agree on a set of statements on “The right to healthy indoor air”, derived from fundamental principles in the fields of human rights, biomedical ethics and ecological sustainability. This document presents the conclusions of the Working Group, informs individuals and groups responsible for healthy indoor air about their rights and obligations, and individuals by bringing those rights to their attention.

1. Background

Indoor air quality (IAQ) is an important determinant of population health and well being. People in modern societies spend most of their time in indoor spaces such as at home, work, school and in vehicles. Exposure to the hazardous airborne agents present in many indoor spaces causes adverse effects such as respiratory disease, allergy and

irritation of the respiratory tract. Improperly or poorly ventilated combustion appliances pose a real risk of acute poisoning by carbon monoxide. Indoor exposure to radon and environmental tobacco smoke increases the risk of lung cancer. Many chemicals encountered indoors cause adverse sensory effects, giving rise to a sense of discomfort and other symptoms.

The control of indoor air quality is often inadequate in spite of its significant role in determining health. Tensions and conflicts often occur between individuals suffering from indoor air pollution and those whose actions negatively influence indoor air quality. Most exposure to indoor air occurs in private homes, where intervention by public regulation is often considered a violation of personal freedom. Furthermore, commercial interests have often delayed the implementation of indoor air pollution controls in spite of scientific evidence of the harmful impact of such pollution on health.

To a large extent, the inadequate quality of indoor air arises from a poor articulation, appreciation and understanding of the basic principles underlying the policies and actions related to indoor air quality. As a result, the general public is familiar neither with those principles nor with their associated rights.

A WHO Working Group was convened to agree on a set of statements on “The right to healthy indoor air”, derived from fundamental principles in the fields of human rights, biomedical ethics and ecological sustainability. These statements inform the individuals and groups responsible for healthy indoor air about their rights and obligations, and empower the general public by making people familiar with those rights.

The statements were formulated at a meeting of the Working Group convened by the WHO European Centre for Environment and Health (WHO/ECEH), Bilthoven Division, in Bilthoven on 15–17 May 2000. The invited experts, who represented a wide range of specialties and countries, were recommended to WHO by contacts in governmental institutions and through expert groups involved in the assessment and maintenance of indoor air quality, bioethics and environmental ethics (list of participants in Annex 1). The Chairperson of the meeting was Dr Lars Mølhave and Dr Nadia Boschi acted as Rapporteur. Those invited received in advance of the meeting a background paper prepared by a small group convened by WHO/ECEH in November 1999.

The exact text of the principles recommended, and most of the text of the commentary was agreed at the meeting. A smaller editorial group worked on it directly after the meeting, and the entire text of this report was reviewed and accepted by all members of the Working Group within a few weeks following the meeting. The report summarizes the main conclusions and recommendations of the Working Group, and sets out the statements on The Right to Healthy Indoor Air.

2. Conclusions and recommendations

2.1 Conclusions

The discussion concentrated on the adaptation of the widely accepted principles of human rights to situations where indoor exposures might affect those rights. In addition, the discussion defined the applications and target audience of the principles formulated, and also recommended the framework for their implementation.

1. This document is intended as a global framework to provide directions, give guidance and/or set priorities at local levels. Further, the need for cooperation at international, national and local levels is emphasized.
2. The document is expected to have both short- and long-term outcomes. In the short term, in countries where indoor air policy and programmes are less developed, the document will provide guidance for the development of such policies and programmes. In the long term, European and worldwide recognition of the importance of the right to healthy indoor air will increase the use of the principles identified in this document.
3. The principles identified in the document mainly apply to the WHO European Region, although they have a bearing on indoor air issues in other regions.
4. Healthy indoor air is determined by a large number of factors and, as a result, no single profession or authority has full responsibility for healthy indoor air. This document is written for those that have control, e.g. policy-makers and regulators, and for the benefit of the general public.
5. Because the fields of health and the environment are often separately addressed, the management of indoor air quality requires cooperation and collaboration in solving indoor air problems. A multidisciplinary and intersectional approach is required within a systematic framework.
6. The principles aim at stimulating the occupants of buildings or vehicles to seek healthy indoor air for themselves, to participate in the decision-making process about the control of exposure(s), and to behave responsibly as consumers.
7. Access to information, exchange of expertise between scientists, and availability of adequate educational programmes are key aspects for the adoption of the principles contained in this document.

2.2 Recommendations

1. The principles should be brought to the attention of national governments with a view to placing healthy indoor air on the agenda for future action.
2. Healthy indoor air should be considered an important aspect of the human environment. This document should therefore be taken into consideration in the formulation of future environmental statements.
3. WHO should work more closely with national authorities to adopt the measures required for the implementation of the principles, and follow up their implementation periodically.
4. The dissemination and promotion of the principles that establish individual rights to healthy indoor air as embodied in this document are recommended with the aim of:

- encouraging and promoting the use of an international framework and principles by governments and other relevant agencies for the development of national and local strategies;
 - establishing educational and informational programmes (e.g. developing a Web site) to raise awareness and assist people to take reasonable measures to reduce the risks to their health from harmful exposures to indoor agents;
 - promoting the exchange of information between those involved in the formulation of policy and those involved in science; and
 - encouraging the education of air quality professionals, which is needed both at the level of continuing education and in professional training; such training should include other relevant specialties such as medicine, architecture and engineering.
5. The principles, written in lay terms with a commentary, should be considered as ethical guidelines framed in the context of human health and sustainability. It is therefore recommended that WHO, and its Regional Office for Europe in particular, promote the application of the principles to achieve an optimal environment. Such an environment should reconcile global as well as local ecological integrity with the prevention of harmful effects on human health in both the short and long term.
 6. The appropriate authorities should organize or initiate preventive actions against documented health risks caused by indoor air exposure.
 7. Wide support should be given to requirements to adopt measures to control sources of significant air pollutants.
 8. Cooperation between those responsible for healthy indoor air and the energy, building and outdoor environment sectors should be encouraged to identify, analyse and propose solutions to existing and potential conflicts between the sectors.
 9. Public health and energy policies should be coordinated. It is also important that private sector actions consider both indoor air quality and energy.

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Biographical Sketch

Lars Molhave. Master of Science (Experimental Atomic Physics and Chemistry), Ph.D. in Public Health, and D.Ms. (Doctor of Medical Sciences, Doctoral Thesis), is an associate professor at the Department of Environmental and Occupational Medicine, Aarhus University, where he is head of the Air Pollution Unit, which investigates human reaction to air pollution in occupational and non-occupational environments. The key words of this research are: controlled experiments in climate chambers and field investigations, theoretical modeling, investigation of human subjects, (normal subjects, workers, allergic or asthmatic persons), investigation of human reactions (objective eye, lung, neurologic or skin effects and subjective sensory effects), investigation of exposures (airborne exposure to particles or vapors of volatile organic compounds (VOCs) thermal exposures) and technical innovations (exposure generations, source control, emission models, ventilation, building materials, exposure measurements).

Lars Molhave has received the following research awards: National Research Foundation, Research Associate; R.G. Nevin's Physiology and Human Environment Award for Significant Accomplishment in Man's Response to the Environment, ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) USA; the Environmental Protection Agency's (US EPA) Scientific and

Technological Achievement Awards within the category of health effects. He also has the following scientific and technical duties: member of the International Society of Exposure Analysis (ISEA); elected international trustee of the International Society of Indoor Air Quality (ISIAQ); editorial advisory committee of the journal, *Indoor Air*, and is research consultant to eight national and six international organizations. His list of publications includes 62 internationally peer-reviewed research publications and journals; 11 peer reviewed chapters for international textbooks, and 151 other publications.

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