

The Right to Healthy Indoor Air

Report on a WHO Meeting

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EUROPEAN HEALTH21 TARGET 10

A HEALTHY AND SAFE PHYSICAL ENVIRONMENT

By the year 2015, people in the Region should live in a safer physical environment, with exposure to contaminants hazardous to health at levels not exceeding internationally agreed standards

(Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998)

EUROPEAN HEALTH21 TARGET 13

SETTINGS FOR HEALTH

By the year 2015, people in the Region should have greater opportunities to live in healthy physical and social environments at home, at school, at the workplace and in the local community

(Adopted by the WHO Regional Committee for Europe at its forty-eighth session, Copenhagen, September 1998)

ABSTRACT

Indoor air quality is an important determinant of health and wellbeing. 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.

Keywords

AIR POLLUTION, INDOOR
ENVIRONMENTAL POLICY
HOUSING
HUMAN RIGHTS
ETHICS
EUROPE

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Background

Indoor air quality (IAQ) is an important determinant of population health and wellbeing. 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.

Summary of discussion: conclusions and recommendations

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.

Conclusions

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 intersectoral 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.

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.

Statements on the right to healthy indoor air

Introduction

Everyone has a right to healthy indoor air. It is the dual purpose of this document to:

1. inform those who have an influence on public health about this right and of their obligations related to this right, and
2. empower the general public by making people familiar with this right.

The right to healthy indoor air applies across the world. While it is an individual responsibility to prevent air pollution indoors, decision-makers both inside and outside the public health sector have important additional tasks in this respect. In particular, the building and energy sectors have pertinent roles to play. Many factors influence indoor air quality, including the design, construction, equipment, operation and maintenance of buildings or other indoor spaces, as well as outdoor air quality and the occupants' preferences or activities. All individual groups, whether private or public, associated with a building or other indoor space, bear responsibility for healthy indoor air and the protection of the health of its occupants.

The health and wellbeing of people in the developed and in the developing world suffer a negative impact from unhealthy indoor air. However, it must be recognized that in many countries, indoor air pollution from the use of solid household fuels (coal and biomass) is currently considerably more severe than typical levels in Europe. This indoor air pollution adds significantly to the global burden of disease and premature mortality. In these biomass-burning regions, there is a clear need for development and implementation of interventions to reduce exposure to pollution as part of primary health care programmes and through adequate social and economic policy. Even though the focus of this document is on issues of most relevance to the WHO European Region, its recommendations may also apply to indoor air issues in other regions.

Awareness of the health significance of good indoor air quality is low in many societies, mainly because sufficient information is not available to those affected. In modern societies, exposure to indoor air results in more contact with many environmental contaminants than exposure to food, water and outdoor air. However, the laws protecting people from harmful exposures indoors are less developed than regulations concerning ambient air, drinking-water or food quality. This potentially increases inequalities in health and aggravates health risks in the less informed, poorer parts of the society and among the most vulnerable groups, especially children.

International statements concerning the right to an environment that improves living conditions and increases wellbeing and health also apply to indoor environments. These statements and those contained in this report provide the basis for formulating a policy for healthy indoor air. It is important to emphasize that in developing programmes and practices regarding indoor air quality, other exposures to which individuals are subject (i.e. all types of exposure in a time and geographical framework) also need to be considered.

Human rights are the rights of individuals that should apply to all people around the world, representing fundamental freedoms or needs that every state ought to recognize and protect. Specific human rights law is listed in several key documents; foremost of these is the Universal Declaration of Human Rights, which was drawn up to give more specific definition to the rights and freedoms referred to in the United Nations Charter. The Charter, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights constitute what is often called the “International Bill of Human Rights”. These human rights apply globally, irrespective of gender, age, religion, economic status, national origin, ethnicity and the like.

There are several links between health and human rights. The human rights mentioned in the Universal Declaration of Human Rights that are most relevant to indoor air quality and health are:

Article 25: (1) Everyone has the right to a standard of living adequate for the health and wellbeing of himself and of his family, including food, clothing, housing and medical care and necessary social services ...

Article 29: (1) Everyone has duties to the community in which alone the free and full development of his personality is possible.
(2) In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society.

Energy use in buildings comprises about one third of all energy use. Another 10% of all energy consumption is for the production, maintenance, renovation and ultimate fate of buildings when

taken out of service. The inefficient or inappropriate use of energy in buildings has an important negative impact on the sustainability of global life-support systems. This negative impact may be reduced by the use of good building design and technology. Because the integrity of ecological life-support systems – including air, water, soil, oceans, fisheries, forests and climate – is integral to the survival of humanity, it is essential to exercise care for these systems for the benefit of both current and future generations. The achievement of a healthy indoor environment must thus reconcile the concern for global ecological integrity with the prevention of both long- and short-term effects on human health. The necessary respect and care for indoor environments is similar in practice to the respect and care for local, regional and global environments. “Think globally, act locally” applies here.

Dissemination of knowledge of the principles that determine individual rights to healthy indoor air will help people to understand what values are being given priority in any specific context, be it at the home, office or government level of decision-making and/or policy formulation. At the same time, encouraging individual behaviour towards sustainability will also help to ensure sustainable indoor air quality.

The principles below derive from the fundamental principles in the fields of human rights, biomedical ethics and ecological sustainability, and focus on interactions among them.

Principles

- Principle 1** Under the principle of the human right to health, everyone has the right to breathe healthy indoor air.
- Principle 2** Under the principle of respect for autonomy (“self-determination”), everyone has the right to adequate information about potentially harmful exposures, and to be provided with effective means for controlling at least part of their indoor exposures.
- Principle 3** Under the principle of non-maleficence (“doing no harm”), no agent at a concentration that exposes any occupant to an unnecessary health risk should be introduced into indoor air.
- Principle 4** Under the principle of beneficence (“doing good”), all individuals, groups and organizations associated with a building, whether private, public, or governmental, bear responsibility to advocate or work for acceptable air quality for the occupants.
- Principle 5** Under the principle of social justice, the socioeconomic status of occupants should have no bearing on their access to healthy indoor air, but health status may determine special needs for some groups.
- Principle 6** Under the principle of accountability, all relevant organizations should establish explicit criteria for evaluating and assessing building air quality and its impact on the health of the population and on the environment.

Principle 7 Under the **precautionary principle**, where there is a risk of harmful indoor air exposure, the presence of uncertainty shall not be used as a reason for postponing cost-effective measures to prevent such exposure.

Principle 8 Under the **“polluter pays” principle**, the polluter is accountable for any harm to health and/or welfare resulting from unhealthy indoor air exposure(s). In addition, the polluter is responsible for mitigation and remediation.

Principle 9 Under the **principle of sustainability**, health and environmental concerns cannot be separated, and the provision of healthy indoor air should not compromise global or local ecological integrity, or the rights of future generations.

Commentary

In this part of the document, the application of the above principles is placed into context and explained. The principles and the commentary are mutually supportive. It may happen that any of the principles could be in apparent conflict with others. It is the object of any rights- or ethics-based analysis to be transparent in the rationale as to how a decision to act was reached. In providing such a rationale, any principle could take precedence over any other. The articulation of the rationale for invoking any one principle over another establishes transparency.

Principle 1. The human right to health

The severity of symptoms and the duration of any negative health effects are primary criteria for determining the seriousness and importance of various indoor air pollution health impacts. Shortened life expectancy, diminished quality of life, disability and hospitalization are key indicators. Symptoms of health effects resulting from indoor pollutant exposure can be classified by severity and duration. Short-term acute effects resulting from infectious agents are often affected by building practices. Examples include respiratory diseases such as legionnaires’ disease and hypersensitivity pneumonitis. Asthma and allergy, or chronic upper respiratory obstructive diseases, may have less severe acute symptoms but are important because of their lengthy (often life-long) duration.

The quality of indoor air not only has a bearing on health, but also on the quality of life. This interpretation derives from the 1977 World Health Assembly, which resolved that by the year 2000, all people should attain a level of health permitting them to lead socially and economically productive lives. Exposure to pollutants that qualitatively decrease the health, functioning or comfort of occupants is, therefore, unacceptable.

Indoor air pollution from the use of solid fuels in simple unvented stoves is common in developing countries. As their economies develop, populations tend to use cleaner fuels and less polluting stoves. That this occurs, however, does not imply that waiting for economic development is a necessary or desirable approach to achieving better indoor air quality. Indeed, the great triumphs in public health are in identifying ways to help people improve their health even before they participate in the fruits of economic development.

Principle 2. Respect for autonomy (“self-determination”)

Everyone has the right to expect others to respect their individual judgement in their own evaluation of personal exposure and its effects. For example, if a person finds the air quality

uncomfortable or offensive enough to warrant a formal comment or complaint, that person's assessment needs to be respected.

Those responsible for public health and education have a duty to inform people regarding the relationship of indoor air quality to health. Article 26 of the United Nations Declaration on Human Rights states:

- Article 26: (1) Everyone has the right to education...
(2) Education shall be directed to the full development of the human personality and the strengthening of respect for human rights and fundamental freedoms.

It follows from Article 26(1) that education programmes for the general population should underline the importance of indoor air quality for health and provide insight into the basic mechanisms and sources of pollutants.

It is essential that individuals have some level of personal control over their own indoor environment and air quality. The personal control is necessary because the evaluation of an "optimal indoor environment" differs from person to person. However, public health authorities should recommend minimum standards.

People have the right to adequate, understandable information about the environments that they inhabit. This includes balanced and objective information on the exposures and associated risks.

The right to self-determination requires that full information be available to people making decisions about actions affecting their indoor air exposure. Therefore, those with access to relevant information should make it available to others. The providers are accountable for the adequacy of the information they provide.

The population should be protected against factors which may change their sensitivity to indoor air exposures as well as against misinformation causing people to set wrong priorities.

All reasonable measures should be taken to inform the general public of national and international laws pertaining to indoor air quality, and their rights in relation to these laws.

Principle 3. Non-maleficence ("do no harm")

Indoor air should contain no pollutants without a justifiable reason or purpose for their presence. It is recognized that a balance must be struck between indoor air requirements and considerations such as the economy and health. Unwanted or unacceptable exposures are defined as the presence of indoor exposures that cause undesirable effects on the occupant(s).

Those who design, provide, build, maintain and occupy indoor environments have a duty to do no harm to indoor air quality in that environment. Ignorance about indoor air quality matters is not an excuse for causing harm. The facts on indoor air quality must therefore be readily available to, and used by, all the parties concerned.

Exposures indoors should not occur as the result of mitigation of environmental problems in occupational or outdoor environments (e.g. by discharge, dilution or substitution that migrates to the indoor environment).

Environmental tobacco smoke is a special case of an indoor air pollutant with serious, large-scale negative health consequences. As such, environmental tobacco smoke should be excluded from indoor environments.

Principle 4. Beneficence (“doing good”)

Those who provide, maintain and occupy indoor environments have a responsibility to promote good indoor air quality.

Protection of the health and comfort of the most sensitive occupants is required under the principle of beneficence.

When convincing evidence exists on health risks due to indoor air exposures, the appropriate societal authorities should organize or initiate action to prevent or eliminate these exposures.

Principle 5. Social justice

Social justice refers to the equitable distribution of burdens and benefits within society. Unhealthy indoor air is a burden, and healthy indoor air is a benefit. Therefore, there should be social and economic equity in the distribution of healthy indoor air.

Those involved in public health should recognize this unequal distribution of healthy air by virtue of social or demographic factors. Special attention may need to be paid to affected groups, as well as to others vulnerable by virtue of their health status, to reduce health inequalities and ensure progress toward more egalitarian societies.

Various groups experience different exposures to unhealthy indoor air, e.g. the economically disadvantaged (more exposure to environmental tobacco smoke, more poor quality combustion devices), women and the elderly (more time spent indoors), and ethnic minorities (lack of information in an appropriate language).

The right to quality indoor air is equally essential for people of all nations and at all socioeconomic levels. Economically disadvantaged individuals must be given due consideration whenever decisions affecting their indoor air quality are to be made by either public or private organizations.

All minorities (including susceptible groups such as children) have the same rights to protection as the general population. In particular, sensitive groups within the population have the right to adequate means for ensuring them an indoor air quality that meets their specific needs.

Solidarity with the less privileged urges rectification of the unequal distribution of resources and prevention of and a response to human suffering.

Principle 6. Accountability

As a minimum, all applicable laws and regulations should be followed. In addition, all relevant standards of practice and guidelines should be followed. Transparency provides the basis for understanding the rationale for decision-making.

Those responsible for and concerned with human and environmental health, both in governments and in nongovernmental organizations, should develop and adopt indicators of healthy indoor air

and its achievement for the whole population. These indicators should include exposure and risk assessment related to indoor pollutants with significance for health. They should also include factors that have an impact on indoor air quality as well as determinants of general environmental quality that directly and indirectly affect and are affected by the quality of the built environment.

It is sometimes argued that *household* air pollution should not be the concern of government public health bodies. After all, it is said, the occupants themselves are responsible for most of the activities that produce the indoor air pollution they experience. Indoor air pollution, by this reasoning, is not an “externality” and thus does not need to be addressed by society at large. However, there are several problems with this argument.

- Governments and other outside agencies clearly do have a role in research and education to inform householders of the risks. Householders alone are not in a position to conduct or interpret such research.
- Through appliance standards, building codes, fuel standards and pricing, consumer product standards and labelling and other measures, governments already exercise a number of controls over indoor air quality and have the responsibility to see that such controls reflect actual risks.
- Households are not democracies with every person having an equal say. Children, in particular, are not in a position to make the kind of judgment needed to protect themselves. In many societies, women have little say in many household economic decisions, such as the purchase of fuel, even though they may experience most of the indoor air pollution exposure.
- Children are a vulnerable group. Therefore, particularly stringent controls should be applied to afford their protection from involuntary exposure to indoor air pollutants. This includes exposure in home, hospitals, kindergartens and schools.
- Lastly, distinguishing hazards as being externalities or not may fit some economic decision-making models but is not congruent with public health practice. From a public health standpoint, the task is to reduce human exposures to harmful substances no matter what their origin or where they occur.

Principle 7. Precautionary principle

Prevention is better than restitution, mitigation and restoration, not only for reasons related to health, but also because prevention is cost-effective. Prevention is better than cure.

Principle 8. “Polluter pays”

Regardless of the primary responsibility, no party is exempt from the responsibility to act for the achievement of healthy indoor air. Polluters cannot avoid their responsibility to compensate the affected parties.

Economic, operational or administrative arguments are insufficient justification for not acting against the pollution of indoor air.

Principle 9. Sustainability

The provision of healthy indoor air is a fundamental aspect of the design, construction, operation, maintenance, replacement/demolition or conservation of sustainable buildings. However, in providing healthy indoor air, the minimization of environmental impacts is also essential for sustainability.

Considerations of sustainable development, sustainable living and sustainable health are all relevant to the promotion of healthy indoor air.

The policies of public health and energy programmes should be coordinated. It is also important that private sector actions consider both indoor air quality and energy.

Luxury services that improve the short-term quality of life should not take precedence over longer-term global or local ecological considerations. Global ecological integrity is dependent not only on consumption and the population, but also on technology. The inappropriate uses of technology in conjunction with over-consumption have a negative impact on the sustainability of life-support systems. The latter are based in the services provided to humanity from the natural world. Over-exploitation and pollution are destroying these natural systems. In other words, humans are threatening global ecological integrity by over-consumption, the growth in populations and the inappropriate uses of technology.

A dilemma emerges when considerations of human comfort, not essential to human health and wellbeing, place in jeopardy the ability of life-support systems to be self-sustaining because of over-exploitation and pollution. Thus, where human health needs conflict with the health needs of other species, human health needs should prevail; but where human comfort jeopardizes the sustainability of life-support systems, the protection of the life-support systems should prevail.

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The Rights to Healthy Indoor Air

- P1 Under the principle of the human right to health, everyone has the right to breathe healthy indoor air.
- P2 Under the principle of respect for autonomy ("self-determination"), everyone has the right to adequate information about potentially harmful exposures, and to be provided with effective means for controlling at least part of their indoor exposures.
- P3 Under the principle of non-maleficence ("doing no harm"), no agent at a concentration that exposes any occupant to an unnecessary health risk should be introduced into indoor air.
- P4 Under the principle of beneficence ("doing good"), all individuals, groups and organizations associated with a building, whether private, public or governmental, bear responsibility to advocate or work for acceptable air quality for the occupants.
- P5 Under the principle of social justice, the socioeconomic status of occupants should have no bearing on their access to healthy indoor air, but health status may determine special needs for some groups.
- P6 Under the principle of accountability, all relevant organizations should establish explicit criteria for evaluating and assessing building air quality and its impacts on the health of the population and on the environment.
- P7 Under the precautionary principle, where there is a risk of harmful indoor air exposure, the presence of uncertainty shall not be used as a reason for postponing cost-effective measures to prevent such exposure.
- P8 Under the "polluter pays" principle, the polluter is accountable for any harm to health and/or welfare resulting from unhealthy indoor air exposure(s). In addition, the polluter is responsible for mitigation and remediation.
- P9 Under the principle of sustainability, health and environmental concerns cannot be separated, and the provision of healthy indoor air should not compromise global or local ecological integrity, or the rights of future generations.

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EUROPE

The WHO Regional
Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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