Green Week 2013
Indoor air quality and its effects on health
HealthVent project
The Right to Healthy Indoor Air (WHO, 2000)

- Indoor air quality is important for health in European countries - 2,000,000 healthy life years are lost every year due to exposure indoors in EU (EnVie, 2009; IAIAQ, 2011)
- Strategic priorities to control exposures:
  - Policies re. energy efficiency, building materials, products and maintenance
  - Policies re. the impact of outdoor environment
  - Policies re. specific building construction and equipment
- HealthVent Project: Developing health-based ventilation guidelines to control exposure to pollutants in new and existing non-industrial buildings reconciling health and energy (to protect EU citizens against health risks due and to avoid investment and energy cost)

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Key Elements of Guidelines for Health-based Ventilation

• Air represents a bigger exposure burden and health threat indoors than outdoors.
• Outdoor air is an important source of exposures occurring indoors.
• Air quality must comply with WHO guidelines providing the criteria to manage air quality indoors and outdoors.
• Source control is the priority strategy in controlling exposures followed by ventilation.
• Health-based ventilation rates cannot be lower than the base rate of 4 L/s per person applicable when human bioeffluents are the only source of air pollution.
• Health-based ventilation rates ensure that exposures meet the WHO air quality guidelines after the sequential approach of source control and ventilation. Only then ventilation can be justified by health criteria.
• Health-based ventilation is decoupled from ventilation for controlling thermal comfort.
• Ventilation systems cannot create risk for health to support health-based ventilation.
• Implementation of guidelines is expected to reduce burden of disease by 55% with basically no effect for energy use if advanced systems are used.
• Legislative framework needs to be developed and research implemented to support the guidelines.
Legislative Framework

• Indoor air quality and ambient air quality issues need to be included in all relevant documents and EU regulations.
• Indoor air quality issues need to be integrated in the potential review of Ambient Air Directive by DG ENV. accounting for the associated environmental, health, social and economic impacts
• Indoor air quality Green Paper needs to be developed.

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Policy Implications

- Common regulations on ventilation rates harmonizing calculation practice among countries
- Harmonized product labeling criteria to be used as a part of ventilation rate design specifications.
- European regulation providing guidance on proper scope, design, construction, maintenance and inspections of ventilation systems.
- Indoor air quality maintenance and operation procedures to be included in the future recast of EPBD and in the revision of ventilation regulations.
- Cross-cutting criteria for energy requirements decoupling ventilation for indoor air quality control from ventilation for achieving thermal comfort.
Priority Research Needs

- Population representative measurement campaigns on indoor exposures in all major types of building allowing the benchmarking of current exposure conditions and associating them with health effects: better characterization of exposures, ventilation rates and registering chronic effects.
- Development of smart systems responding to and conciliating the needs of individuals especially subpopulations having special requirements
- Development of sensor/control technologies.

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Conclusions

- Implementation of the guidelines for health-based ventilation will promote advancement of knowledge, technological innovation and will secure competitiveness of the European market.
- The basic rights to grow up, live, work and learn in healthy indoor environments will be secured.
HealthVent Project

• Funded in the framework of the Second Programme of Community Action in the Field of Health (2008-2013), European Commission – Directorate General for Health and Consumers
• July 1, 2010 to March 31, 2013
• €495,000 (total €750,707)
• Based on experience, findings and recommendations of EnVie, IAIAQ, WHO Air Quality Guidelines and other relevant projects in the field of IAQ and health
• 11 partners, multidisciplinary team of experts from medicine, engineering, indoor air sciences, exposure and risk assessment, energy, ventilation practices and patients groups

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