UK Indoor Environments Group

Response to the Strategic Review of Health Inequalities in England Post 2010 (Marmot Review)

The UK Indoor Environments Group (UKIEG) is a multidisciplinary group set up in 2003 to co-ordinate and provide a focus for UK activity concerned with indoor environments, health and well-being. We currently have approximately 150 registered members with a wide range of expertise from medics to toxicologists, architects, designers, appliance manufacturers, academics, regulators, researchers, chemists, modellers, engineers, building managers, environmental health professionals, social scientists - and others working in fields connected with the built environment. The main function of the UKIEG is to provide a platform for members to discuss issues of common interest (www.ukieg.org). However, we have also developed a collaborative research project (funded by the MRC in their Lifelong Health and Wellbeing initiative) which aims to explore the role of the indoor environment on chronic disease states (WELLINE project: http://www.welline.org.uk).

The UKIEG Committee are pleased to comment on the Marmot Review and feel that this is a very big undertaking which might be in danger of being too diverse although the structure for the approach seems very reasonable. We would particularly like to comment, however, on that part of the review which refers to the Built Environment:

1. Overall the wider (external as well as internal) environment is mentioned in passing but not in great enough depth. The report is very social science driven and attention to the real difficulties in assessing exposure to a wide range of environmental and other potential contributory factors for inequalities is not mentioned in the main report. The UKIEG firmly believes that the importance of factors relating to the indoor environment (e.g. air quality, noise, lighting, thermal and moisture conditions, etc.) and their effects on human health is not explicitly acknowledged in the Built Environment Report. The importance of indoor air quality on health is acknowledged, for example, by the development of indoor air quality guidelines by the World Health Organization (http://www.who.int/indoorair/en/). The global challenges associated with air quality (both indoor and outdoor) are discussed, for example, by Bjorn Larsen et al, in: Lomborg B, 2009, 'Global Crises. Global Solutions', Cambridge: Cambridge University Press (for an online version, see: http://www.copenhagenconsensus.com/The%2010%20challenges/Air%20Pollution.aspx).
2. The report fails to mention two important initiatives: the Scottish Government is developing a programme of work aimed at policy development in the broad context of environmental health called 'Good Places Better Health' (GPBH: http://www.scotland.gov.uk/Publications/2008/12/11090318/0). This programme is largely designed to explore environmental factors that play a role in the health of children. GPBH also examines the role of environmental inequalities in its remit. The second initiative, also based on children, is the UK Children's Environment and Health Action Plan (CEHAP) produced by HPA which cuts across a number of the issues covered in this report (http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListName/Page/1204707136075).
3. The report states that *"Poor housing conditions such as damp and cold are problematic but are limited and falling. However rising fuel prices may impact further on the problem of poorly insulated and energy inefficient homes causing more serious fuel poverty and related health impacts"*. The authors

recommend that "*Government develop a comprehensive programme of energy efficiency measures*". The UKIEG wishes to highlight that energy efficiency measures – particularly those aimed at increasing air tightness of buildings – can potentially increase the concentration of indoor pollutants such as airborne biological agents (e.g.bacteria, fungi, and allergens from mites and animals), chemicals derived from building materials and household cleaning agents, gases and fine particulate matter from cigarette smoke and from the combustion of fossil fuels in heaters and cookers, and gaseous pollutants from the soil, such as radon. Subsequent reliance on mechanical ventilation systems in airtight buildings also raises concerns for health due to risks associated with poor system design, unit failure and lack of maintenance. Therefore, it is crucial to understand that poorly formulated energy efficiency policies could easily cause further degradation of indoor air quality and thereby reduce, not improve the health of the occupants. A number of research initiatives are addressing concerns in this area. For example, the Bartlett School of Graduate Studies is advising Government on Building Regulations Part F (covering ventilation) and the NHBC Foundation has recently published a report on indoor air quality in highly energy efficient homes (http://www.nhbcfoundation.org/Researchpublications/tabid/339/language/en-GB/Default.aspx).

4. The Report refers to climate change, cold-related mortality, fuel poverty and energy efficiency. However, heat-related health risks should also be acknowledged. Energy efficiency policies should be considered in the light of adaptation to future heat waves. This is particularly important since insulation may keep heat out of the home, but it may also prevent heat escaping. Therefore, passive measures to reduce over-heating need to be incorporated in building design and adaptation to avoid excessive reliance on air conditioning units.
5. The health risks from exposure to carbon monoxide (CO) and other products of combustion, such as NO/NO_2 and particles, are not mentioned in the Report. These risks are very relevant to health inequalities because lower income households are less likely to properly maintain their combustion appliances, more likely to block what little ventilation there is in order to preserve heat, and more likely to use unflued appliances such as paraffin stoves. They are also more likely to use gas cookers for heating which raises the indoor concentration of combustion products as well as the general indoor level of moisture (leading to damp and mould problems). There is also growing concern about the health effects of chronic low level poisoning, especially from CO. The All Party Parliamentary Group for Gas Safety (APPGGS) was set up to address these concerns (http://www.gassafetygroup.org.uk/).
6. The health risks associated with exposures to chemicals derived from building and interior design materials, and from household cleaning agents, are also not adequately acknowledged in the Report. Although industry is actively encouraging the use of low-formaldehyde emission products, a recently completed EU-funded project highlighted the need for harmonized protocols for testing, reporting and labeling building materials, equipment and products with respect to emissions (EnVIE, http://www.envie-iaq.eu/finalreports.html). Also, recent work considering the chemical reactions between common indoor air pollutants has highlighted the potential for greater health effects than those associated with the individual pollutants.
7. The Report mostly focuses on the role of the domestic environment. However, other indoor environments should be considered – especially workplaces, care homes and schools. For example, there is increasing evidence that environmental noise and poor indoor air quality (e.g. high levels of CO_2) impact children's learning performance. The report should also acknowledge that a cumulative effect of exposure to pollutants in work and school environments in addition to exposure in the domestic environment may be of significance.

Based on the points above, the UKIEG would like to suggest the following:

I. Indoor air quality and occupant health should be given sufficient consideration in the development of energy efficiency initiatives.

II. Protocols for indoor air quality testing, reporting and labeling for building materials, equipment and products should be developed.

III. A holistic, cost benefit approach encompassing all the various potential factors needs to be developed. At present there is to some extent a collection of tools but not an integrated toolbox.

IV. Consideration should be given to the health impacts of indoor environments other than housing – especially schools, workplaces and care homes.

UKIEG Committee, 30th July 2009

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