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## Continuous medical education (CME): Do we need CME for paediatric environmental medicine in Europe?

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### Abstract

The knowledge about the influence of environmental hazards on children's health is increasing enormously. European Ministers of Health and Environment, like many other stakeholders, identified the environmental hazards in Europe for the health of children as so serious, that they called for a "Children's Environment and Health Action Plan for Europe (CEHAPE)" approved in June 2004. The knowledge of paediatricians and other health care providers on children's health and environment in Europe is insufficient, due to the lack of training in environmental medicine for medical students, clinical trainees and postgraduates. Only continuous medical education in environmental medicine can help to fill this gap of knowledge and is thereby urgently needed. The World Health Organization developed a training package for health care providers for children's health and environment, containing excellent material for paediatric training events. The International Network on Children's Health, Environment and Safety (INCHES) developed additional training material for paediatricians within the Children's Health, Environment and Safety Training (CHEST) project. The German Network Children's Health and Environment offers training for paediatric doctors' assistants in primary prevention. To improve knowledge about children's health and environment at all levels in paediatric settings, greater efforts of national institutions, paediatric associations and other institutions are necessary. It is time to strengthen existing structures and to introduce, where necessary, new structures for training in environmental medicine.

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### Introduction

Knowledge about the influence of environmental hazards on children's health is increasing enormously. Knowledge of paediatricians about environmental medicine is restricted, and should and could be increased. Opportunities to increase the knowledge of paediatricians will be shown, and restrictions for paediatricians will also be discussed.

### Background

Why should paediatricians know about "children's health and environment"?

Children are exposed to many environmental pollutants, such as air pollutants, environmental tobacco smoke, and heavy metals. Exposure to environmental pollutants at a young age or even before birth may cause adverse respiratory health effects, developmental deficits, cancer and other health effects. The health effects may emerge directly at birth, but may also appear later in life (time gap between exposure and effect). In the

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case of some cancers, for example, the health effects may appear in adult life, but may (partly) originate at exposure during childhood (critical window of exposure). Paediatricians should have profound knowledge about these serious health hazards for children (Boese-O'Reilly, 2001; Landrigan and Garg, 2005; Tamburlini et al., 2002; Valent et al., 2004).

### **Who knows and who doesn't know about "children's health and environment"?**

A small group of medical doctors and other health care providers are specialised in environmental health. Many paediatricians, general practitioners, nurses, and other health professionals lack sufficient knowledge on the health effects that environmental pollution can cause (Boese-O'Reilly and Shimkin, 2005; McCurdy et al., 2004). Increased knowledge on environmental health can lead to earlier diagnosis, earlier detection of certain exposures of children, better treatment and prevention of health effects in healthy children. Also providing training in environmental health for other professional groups, such as journalists, policy makers and lawyers, can improve, secure and boost awareness of children's health and environment (Van Den Hazel et al., 2006a, b).

### **Where, and where not, do paediatricians learn about "children's health and environment"?**

It would be possible to learn about children's health and environment as a medical student, during clinical training to become a paediatrician, and during postgraduate training. Unfortunately these opportunities are not greatly availed of in most countries. Environmental medicine is, when provided, part of the regular curriculum for medical students. Children's health and environment is not part of the usual clinical training. During postgraduate training, children's health and environment training are offered in some countries, but are hardly ever frequented. This lack of appropriate training results in insufficient knowledge of most paediatricians about children's health and environment (Van Den Hazel et al., 2006a, b).

### **Discussion**

Environmental hazards are an important factor in children's health. The growing scientific evidence of the severity of the environmental health effects concerns national and international stakeholders (UNEP et al., 2002). Too few paediatricians are trained in environmental health issues. It needs to be discussed why this is

the case, and how to stimulate interest and how to improve knowledge of this important subject needs further thought.

### **Restrictions**

Restrictions, such as that most paediatricians are "very busy doctors", with a full daily agenda are certainly there. Most paediatricians work daily with sick children in outpatient settings or hospitals. They do have very limited time for postgraduate training, and spend most of this training time on classical issues such as infectious diseases, neonatology and similar topics. They do not have enough time to learn a new topic and open up new fields, like environmental medicine. In Germany, out of more than 10 000 paediatricians, only approximately 100 paediatricians were trained in environmental medicine. One of the most important issues in environmental health is to consider the possibility that a disease might be caused or triggered by environmental factors. It would be essential for every paediatrician to ask environmentally related questions as part of taking the normal patient and family history (Balk, 2005). Unfortunately the environmental history is nearly never taken, possibly, once again, due to lack of knowledge, and time. The "time" restriction is connected to the "money" restriction. Health care systems do have financial restrictions, and it is difficult for new emerging issues such as environmental health to obtain necessary funding. In most countries there is no financial benefit at the moment, no funding or remuneration for environmental medicine.

### **Opportunities**

There are many opportunities to improve the knowledge of paediatricians in CHE, for example, to offer more training courses at various levels, such as regional training courses, or seminars at European levels. Improvement of financial aspects of CHE, for example, sponsoring of environmental medicine needs to be discussed. The implementation of CHE as a regular and paid service for patients would be a big step in improving CHE.

### **Which postgraduate training opportunities do exist?**

Existing training courses are offered by many organizations, such World Health Organization (WHO), International Network on Children's Health, Environment and Safety (INCHES), International Society of Doctors for the Environment (ISDE),

national paediatric organizations, and other national and regional organizations.

## World Health Organization

WHO promotes children's health and environment, together with other international agencies (Prüss-Üstün and Corvalan, 2006; UNEP et al., 2002). WHO organized an international conference, in Bangkok, in 2002, on children's health and environment. One of the results of this conference was "The Bangkok Statement" (WHO, 2002). The Bangkok statement declares, "to incorporate children's environmental health into training for health care providers and other professionals". WHO has prepared a "Training package for health care providers" to improve the capacity to diagnose, prevent and manage paediatric diseases linked to the environment (WHO, 2006): The training package "should enable those in the front line" – the health professionals dealing with children and adolescent's health – to recognize and assess diseases linked to, or triggered by environmental factors". Paediatricians, family doctors, nurses, primary and other health care workers should be trained in the relationships between children's health and the environment through the use of harmonized training materials. The training package will be a collection of 40 modules in total, peer-reviewed, to train health care providers. The 20 existing modules cover important topics of children's health and environment and are well used globally in different training settings. The other 20 modules are still being developed and peer-reviewed.

Efforts are undertaken by WHO, in partnership with experts from various countries and organizations such as the International Pediatric Association (IPA) and the International Network on Children's Health, Environment and Safety (INCHES), to establish training courses in different countries. In Europe, for example, training events took place in Cyprus, Italy and Spain.

At the International Forum on Chemical Safety (IFCS) Forum IV meeting (1–7 November 2003, Bangkok, Thailand) participants recognized that children represent the future of our societies, that they require safe environments in order to reach their full potential as individuals and contributing members of these societies, and that different sectors in society should be informed and trained on the recognition of the adverse effects posed by chemicals (IFCS FSC, 2003).

## Children's Health and Environment Action Plan for Europe (CEHAPE)

The Children's Health and Environment Action Plan for Europe (CEHAPE), approved by European Ministers of health and environment in June 2004, asks for

collaboration to ensure its implementation by developing and providing training opportunities and materials and promoting the incorporation of child health and environment issues in the training curricula of child and adolescent health professionals (WHO, 2005).

## International Network on Children's Health, Environment and Safety (INCHES)

The INCHES is a global network of health organizations, environmental organizations and medical doctors, with the aim of promoting healthy and supportive environments that protect the foetus and child from environmental and safety hazards. INCHES initiated the CHEST (Children's Health, Environment and Safety Training) project because of the observed lack of knowledge, as described above, on children's environmental health in health care providers, policy makers and other professionals. CHEST received funding from the European Union (DG Health and Consumer Protection, Project no. 2003310). With the CHEST project INCHES aims to increase this knowledge, to improve children's health and environment.

The Children's Environmental Health section of WHO identified the same lack of knowledge on environmental health in the field and shared the idea of creating training modules on environmental health. CHEST and WHO cooperated in the production of modules for training in environmental health.

INCHES organized the Fourth International Conference on Children's Health and the Environment in June 2007 in Vienna. This conference was the fourth after Amsterdam (1998), Washington (2001) and London (2004) by INCHES. It offered a worldwide platform dealing with health problems of children caused by important environmental influences (<<http://www.inchesnetwork.net>>). The conference provided an international forum for the latest recent research findings in paediatric environmental health, an insight into the activities in the field of science and policy interface, and tried to define the relationship between environmental contaminants and children's health in the world. The conference was a good chance to learn more about CHE, to establish networks and to promote local initiatives in CHE.

Another chance for CHE is e-learning, a modern form of communication, where fewer resources are needed.

## German Network Children's Health and Environment

In Germany, the German Network Children's Health and Environment used a different setting approach to

improve knowledge on CHE (Lob-Corzilius, 2004). In 2003, a training for paediatric doctors' assistants in primary prevention began. It is a 60 h training course; the first courses were well accepted. It is still a pilot project with more than 200 participants till date (Lob-Corzilius, 2005). Outpatient clinics, as well as the settings in private practice, offer an excellent opportunity for doctors' assistants and nurses to interact with the parents. The course provides training to inform and support families to encourage them to change their life style and attitude.

## Conclusions

As described above, the knowledge of paediatricians and other health care takers on children's health and environment in Europe is insufficient, due to the lack of training in environmental medicine for medical students, clinical trainees and postgraduates. Inclusion of environmental medicine into the university curricula, and thorough continuous medical education in environmental medicine can help to fill this gap of knowledge. Greater efforts of national institutions, paediatric associations and other institutions are necessary.

The evidence of serious health effects from environmental hazards for children is growing globally. European Ministers of Health and Environment, like many other stakeholders, identified the environmental hazards in Europe for the health of children as so serious, that they called for a "Children's Health and Environment Action Plan for Europe (CEHAPE)" approved in June 2004. The knowledge of paediatricians and other health care takers on children's health and environment in Europe is insufficient, due to the lack of training in environmental medicine for medical students, clinical trainees and postgraduates. Only continuous medical education in environmental medicine can help to fill this gap of knowledge, and is thereby urgently needed. To fill gaps of knowledge about children's health and environment at all levels in paediatric settings, greater efforts of national institutions, paediatric associations and other institutions are necessary. It is time to strengthen existing structures and introduce new structures for training environmental medicine, where necessary.

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