

**International Society of Doctors for the Environment - ISDE  
National Federation for the Colleges of Physicians and  
Dentists -FNOMCeO**

***World Health Organization - WHO  
(for technical support)***

**promote**

**Preconference - The Expert-Meeting on  
Training strategies in Children's  
Environmental Health**

*Sansepolcro (Arezzo) - 2015 February, 27th*

**Target:** to involve training experts within Scientific Societies of Paediatrics, General Practitioners, Gynaecology, Public Health, FNOMCEO, Italian National Health Institute, ISDE.

**Goals:** possibility of adopting WHO training packages; suggestions for a national strategy of training in children's environmental health; identification of available resources and subjects to involve

**PRELIMINARY PROGRAM  
15.00-15.30**

**Welcome and Opening statements**

Valentino Mercati, *ABOCA President*

Roberto Romizi, *ISDE President*

**15.30-16.45**

**Session "Training for Health Care Providers"**

**Presentation of WHO Training Package for the Health Sector on  
Children's Environmental Health by members of WHO Working Group**

**Opening** by Maria Noel Brune Drisse, *WHO Head Quarters - Geneva. Switzerland*

**Presentation of the WHO training Modules**

Stefania Borgo, *Member of the WHO Working Group on Training Modules for the Health Sector on Children's Environmental Health*

Ernesto Burgio, *ISDE International Scientific Committee President*

Lilian Corra, *ISDE International Secretary*

**16.45-17.30**

**Session “Developmental origin of health and disease and early-life prevention of non-communicable diseases”**

**Opening** by Giampaolo Donzelli, *Head of Perinatal Medicine and President of the Meyer Paediatric Hospital Foundation (Florence)*

**Developmental Origins and primary prevention of neurodevelopmental diseases**

Ernesto Burgio

**Developmental Origins and primary prevention of obesity**

Lucia Migliore, *Full Professor of Medical Genetics Department of Translational Research and New Technologies in Medicine and Surgery University of Pisa*

**17.30-19.00**

**Round table and debate among training experts**

Chair by *ISDE*

- Giuseppe Miserotti, *FNOMCeO*
- Rita Ferrelli, *Italian National Health Institute*
- Rino Agostiniani, *Italian Paediatrics Society*
- Giampietro Chiamenti, *Italian Federation of Paediatrics*
- Mauro Ruggeri, *Italian Society of General Practice*
- Domenico Sallese, *Italian Society of Occupational Medicine and Industrial Hygiene*
- Vitalia Murgia, *Paediatrician*
- .....

**Scientific Secretariat**

International Society of Doctors for the Environment

*In official consultative status with WHO and the United Nations Economic and Social Council (UNECOSOC).*

**Organising Secretariat**

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REGIONE  
TOSCANA



## **International Society of Doctors for the Environment - ISDE Tuscany Region**

***Under the technical support of World Health Organization  
promote the***

### **5<sup>th</sup> International Conference UPDATE ON GLOBAL ENVIRONMENTAL HEALTH**

*28<sup>th</sup> February 2015*

*Auditorium Pieraccini, San Donato Hospital of Arezzo*

#### **Sponsored by**

Italian Ministry of Health\*; Italian Ministry of the Environment\*; ISS (Italian National Institute of Health)\*; Italian Institute for the Protection and Environmental Research (ISPRA), Italian National Research Council (CNR); National Agency of New Technology, Energy and Sustainable Economic Development(ENEA)\*; Italian National Committee for UNESCO\*; National Federation for the Orders of Doctors and Dentists (FNOMCeO)\*; United Nations International Children's Emergency Fund (UNICEF); Food and Agriculture Organization of the United Nations (FAO).

\* confirmed.

#### **Aims of the Event:**

- to enhance the debate on emerging global and local environmental issues;
- to establish a pilot experience for similar events in other countries;
- to access Environmental Health Promotion strategies, taking into account emerging issues, such as globalization and international co-operation, related to these issues;
- to strengthen the interaction among public health, economy and policy making sectors;
- to support the awareness and the circulation of WHO Environmental Health Policies in a global-local perspective;
- to assess the health impact as a tool for primary prevention (LIFE10 ENV/IT/000331 HIA21 project)

#### **Target**

Authorities; International, National and Local Organizations and Institutions. Italian Regions and Regional Agencies for Health and Environmental Protection. Universities, Research Institutes, Scientific Societies. Local Public Health Agencies, with particular regard to representatives of the Departments of Prevention, General Practitioners, Family Paediatricians and of Experts in Medical Training. Healthcare executives and officers. Professionals and operators in the field of information. Non-governmental organizations (NGOs); no-profit organizations, foundations, associations. Private sector, trade associations, profit organizations.

Available places: 180.

## PRELIMINARY PROGRAM

### 9.30 Participants' registration

### 9.45 Welcome and opening address

Antonio Strambaci, *General Direction for Sustainable Development, Climate and Energy of the Ministry for the Environment, Land and Sea*

Luigi Marroni, *Regional Health Councillor for Tuscany*

Lorenzo Droandi, *President of College of Physicians of Arezzo*

Enrico Desideri, *General Director of the Public Health Agency of Arezzo, Vice President of Federsanità ANCI*

Marcello Caremani, *Head of Arezzo Municipality Department of Health and Social Policies*

**10.45-13.30**

**Morning session**

**“GLOBAL SCENARIO ON HEALTH AND ENVIRONMENT”**

### Welcome and opening presentation

Roberto Romizi, *ISDE President*

Valter Giovannini, *General Director of the Office for Citizenship Rights and Social Cohesion, Tuscany Region*

### 11.00 Where are we in relation of the Sustainable Development Goals - SDGs?

**New WHO assessments on Air Pollution and Global Conference on Climate Change and Health**

Maria Neira, *Director Department of Public Health, Environmental and Social Determinants of Health World Health Organization*

### 11.30 Environmental Persistent Pharmaceutical Pollutants as a new and emerging issue for SAICM - Strategic Approach to International Chemical Management

Lilian Corra, *ISDE International Secretary*

### 11.50 The contribution of early exposure to environmental pollutants on the growing burden of non-communicable diseases

Ernesto Burgio, *ISDE Scientific Committee President*

### 12.20 Qualitative growth: sustainability and development

Massimo Mercati, *Aboca General Director*

### 12.40 Questions and answers

### 13.15 Closing remarks of the morning session

### 13.30 Lunch

**14.30-18.00**

**Afternoon session**

**“APPROACHES TO THE EVALUATION AND MANAGEMENT OF MULTIPLE AND COMPLEX ENVIRONMENTAL EXPOSURE”**

**14.30 Introductory remarks**

Pietro Comba, Director of the Department of Environment and Primary Prevention *ISS - Italian National Institute of Health*

Enrico Desideri, *General Director of the Public Health Agency of Arezzo*,  
*Vice President Federsanità ANCI*

**14.45 Health impact assessment as a tool for primary prevention**

Fabrizio Bianchi, *Research Manager Environmental Epidemiology Unit - Institute of Clinical Physiology - Pisa Italian National Research Council (CNR)*

**15.10 Questions and answers**

**15.25 Contaminated sites, toxic exposure and chemical burden of disease**

Agostino Di Ciaula, *ISDE Italy*

**15.50 Questions and answers**

**16.05 Round table “Sentinel Physicians”**

- Emma Capogrossi, *Head of Ancona Municipality Department of Hygiene and Health, Member of the Italian WHO Healthy Cities Network*

- Claudio Cricelli, *President of the Italian Society of General Medicine (SIMG)*

- Aldo Di Benedetto, *Office IV GD Health Care of Italian Ministry of Health*

- Graziella Sapia, *Coordinator of the Environmental Health Committee - Italian Federation of General Paediatricians (FIMP)*

- Mauro Ucci, *member of Executive Board of the Italian Federation of General Practitioners (FIMMG)*

- Emanuele Vinci, *Coordinator of Working Group on Profession, Health and Environment, Development of the National Federation for the Colleges of Physicians and Dentists (FNOMCeO)*

- Representative of *Ministry of Health*

**17.45 Conclusions and recommendations: next steps for action**

Maria Neira, *Director Department of Public Health, Environmental and Social Determinants of Health World Health Organization*

**18.00 Closing remarks**

Roberto Romizi, *President of ISDE*

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## Abstracts

### **7 million premature deaths annually linked to air pollution**

**Maria Neira, WHO**

In new estimates released WHO reports that in 2012 around 7 million people died - one in eight of total global deaths – as a result of air pollution exposure.

This finding more than doubles previous estimates and confirms that air pollution is now the world's largest single environmental health risk.

Reducing air pollution could save millions of lives. new estimates are based on the latest WHO mortality data from 2012 as well as evidence of health risks from air pollution exposures. Estimates of people's exposure to outdoor air pollution in different parts of the world were formulated through a new global data mapping. This incorporated satellite data, ground-level monitoring measurements and data on pollution emissions from key sources, as well as modelling of how pollution drifts in the air.

After analysing the risk factors and taking into account revisions in methodology, WHO estimates indoor air pollution was linked to 4.3 million deaths in 2012 in households cooking over coal, wood and biomass stoves.

The new estimate is explained by better information about pollution exposures among the estimated 2.9 billion people living in homes using wood, coal or dung as their primary cooking fuel, as well as evidence about air pollution's role in the development of cardiovascular and respiratory diseases, and cancers.

In the case of outdoor air pollution, WHO estimates there were 3.7 million deaths in 2012 from urban and rural sources worldwide.

Many people are exposed to both indoor and outdoor air pollution. Due to this overlap, mortality attributed to the two sources cannot simply be added together, hence the total estimate of around 7 million deaths in 2012.

### **Health impact assessment as a tool for primary prevention**

Fabrizio Bianchi

Italian National Research Council, Institute of Clinical Physiology,  
Unit of Environmental Epidemiology and Disease Registries, Pisa, Italy

Many recognized and avoidable factors have a considerable impact on morbidity and premature mortality, many of which are outside the control of the health sector (IHME 2012). The role of multiple societal sectors in damaging or destroying health represents the basis for the Health in All Policies approach (Ståhl 2006). Since the Gothenburg consensus paper (WHO European Centre for Health Policy 1999), Health Impact Assessments (HIA) has been strongly supported by WHO through intersectoral actions to protect health (WHO Regional Office for Europe 2013).

HIA is a participatory process to assess the risks attributable to interventions or strategies before they are decided, designed and conducted as a tool for decision makers.

HIA has broad similarities with the environmental impact assessment, EIA, and fits well in a strategic environmental assessment, SEA. The use of HIA in the framework of the "Integrated Pollution Prevention and Control" procedure, IPPC (Directive 2008/01/EC) offers the opportunity to study in deep the relationship between epidemiology and risk assessment, and the consequences in terms of primary prevention.

Main critical points of HIA are: - at the screening phase, how to consider the initial health status of the communities involved according to their levels of exposure, - at the appraisal phase, how to use risk assessment and epidemiological methods and tools, and - at all phases, how to obtain and implement the public participatory activities. Uncertainty and risk assessment are crucial components

in the evaluation phase and should focus on determinants of health and risk factors, both when the evidence is persuasive and when it is weak.

Particularly critical are the chemical risk assessments that have not been the subject of epidemiological and toxicological studies. Furthermore, special attention should be given to a cumulative risk assessment.

In Italy and elsewhere the debate on how to plan national legislation on HIA has gradually developed along two lines: HIA as a stand-alone tool, HIA within EIA and SEA, and more recently as part of the IPPC, AIA in Italy. To understand the barriers hampering the full application of HIA, international experiences have been recently reviewed by Kemm (OUP 2014), and Feher et al. (WHO 2014). In Italy there are several regional and local experiences, national projects, and recently HIA has been assumed in the National Prevention Plan as evaluation tool.

### **The contribution of early exposure to environmental pollutants on the growing burden of non-communicable diseases**

Ernesto Burgio, *ISDE Scientific Committee President*

A poor start to life, due to maternal stress and/or exposure of the embryo, foetus or child in the first months/years to chemical and physical agents that may disrupt the fetal programming and tissue development is associated with an increased risk of a number of disorders, including non-communicable diseases throughout the life course. The concept of *DOHaD (Theory of fetal origins of adult disease)* explains how during early life (at conception, and/or during fetal life, infancy and early childhood), the environment induces changes in development that can have a long term impact on health and disease risk. Environmental exposures, including parental lifestyle and maternal diet, stress, smoking, obesity and exposure to chemical and physical agents (endocrine disruptors / toxins / ultrafine particles) have been shown to increase and modulate disease risk. The effects of these exposures are often gradual and subtle: by disrupting the development and programming of tissues and organs, they can cause medium to long-term illness and/or predispositions to disease in exposed individuals and even in the following generations. It is thought that some of these developmental alterations come about through changes in the activity of genes through epigenetic processes, that could mediate responses to challenges such as poor diet or unhealthy lifestyle, by this way affecting disease risk. The recent and persistent increase in neurodevelopmental disorders and neuropsychiatric, neurodegenerative, cardiovascular, endocrine and metabolic (obesity, type 2 diabetes, osteoporosis), inflammatory, auto-immune diseases and even in cancer could be at least in part a consequence of an extremely accelerated environmental change and a resulting epigenetic *mismatch*. All this is certainly alarming, but also potentially encouraging: as the epigenetic *programming* is fluid and largely reversible, some timely interventions could reduce the risk in exposed individuals and limit its transmission to the next generation. DOHaD has therefore important implications for our societies, for global health policy and even for the future evolution of our species.

### **ENVIRONMENTALLY PERSISTENT PHARMACEUTICAL POLLUTANTS- EPPP**

Lilian Corra, *ISDE International Secretariat*

State the problem: Pharmaceuticals comprise one of the few groups of chemicals specifically designed to act on living cells. Many Pharmaceutical chemicals are designed to be slowly degradable or even non-degradable, to resist chemical degradation during passage through the human or animal body. Thereby, they present a special risk when they or their active metabolites or degradants enter, persist, and disseminate in the environment. In this proposal, we use the term EPPP (Environmentally Persistent Pharmaceutical Pollutants) as an abbreviation for these substances.

Although Pharmaceutical residues entering the environment are included in Directive 2001/83/EC (as amended), Directive 2001/82/EC (as amended ) they are insufficiently addressed in developing countries as a pollution problem.

A new global database on measured environmental concentrations with more than 120,000 entries has shown that EPPPs have become a global problem with potentially harmful concentrations for aquatic organisms found in all UN regions. Chemicals of pharmaceutical origin, widely used globally by humans and for food production for an intended purpose they can persist in the environment and residues are presently found in drinking water. They are found in fish and other animals where they may accumulate.

The concentrations of active residues of chemicals of pharmaceuticals origin detected in surface waters and sediments may be low but they may persist for long periods of time contributing to chronic and persistent exposure. They may pose a threat of important magnitude for Public Health with significant adverse effects on the environment and on human health as exposure may start since conception during the phases of development, with possible important consequences for adult life ,e.g. special impacts on vulnerable populations (elderly, sick, and children).

EPPPs are already found in water all over the world. That diffuse exposure might contribute to endocrine disruption, development of microbes resistant to antibiotics, reproductive effects that may derive on extinction of species and imbalance of sensible ecosystems, genetic, developmental, and immune health effects in humans and other species.

As the world's population is growing and ageing, more people in the developing world can afford medical treatment, and as new treatments are developed, the degree of environmental pollution from chemicals of pharmaceutical origin can be expected to increase without further developing adequate risk management measures. Thus, to mitigate current and to prevent future problems, recognition and global management actions have to be established.

### **Contaminated sites, toxic exposure and chemical burden of disease**

Agostino Di Ciaula, ISDE Italy

About 2.5 millions of potentially Contaminated Sites (CSs) actually exist in Europe, and only 15% of the recognized sites have been remediated. Waste management, industrial and commercial activities are responsible for about two-thirds of contaminations. From an epidemiological and clinical point of view, the Italian "Sentieri" studies offer a valid description of health damages in subjects free-living in CSs ("Sites of National Interest", SNI). Results clearly showed that chronic environmental exposure to toxics increased mortality and morbidity (oncological and non-oncological diseases), congenital anomalies and perinatal disorders, as compared with control areas. Starting from the mapping of SNI (1998), the absence of remediation caused a risk duration lasting about 15 years and involving about 6 millions of Italians, with about 1,200 avoidable deaths/year. The epidemiological data exploring CSs indirectly demonstrate that the awareness of risk currently does not induce good changes in health policies in a reasonable time interval, mainly due to the lack of primary prevention strategies. Furthermore, the possibility exists that increased levels of several diseases have not been observed in people living on contaminated lands, mainly due to defective observational methods. An adequate health risk assessment in CSs should need observational epidemiology (quantification of damage) but also risk assessment analysis (quantification of risk to possibly prevent further damages) and primary prevention measures. Unfortunately, the biochemical/molecular burden of diseases is usually not sufficiently considered, although it is significantly wider than measurements made by classical epidemiology and might generate relevant preventive suggestions. In conclusion, the correct management of CSs should be aimed to effectively protect health and should require a powerful change of direction, pointing not only to a rapid remediation but also to a correct risk analysis and to preventive measures, employing innovative epidemiological tools.

## **Qualitative growth: sustainability and development**

**Massimo Mercati, Aboca General Director**

*It is becoming more and more evident that the crucial problems of our time (energy, environment, climate change, food security, financial security) cannot be separately studied and understood because they are systemic problems, this is to say that they are all interconnected and interdependent.*

(Fritjof Capra)

The economic and the social spheres have been involved, and in many cases overthrown, by the recent economic crisis that emphasizes how the concept of “growth” used today is inadequate. In front of the evident limit of this concept, we have to rethink if this word can still have a meaning for the future. According to many analysts we are close to reaching the so called peak oil theorized by M. King Hubbert in 1956. From this point forward we will be at the highest level of exploitation of oil resources and the extraction will necessarily diminishing and consequently shaping an inexorable increase of prices. On the other hand, it appears obvious that unlimited growth in a finite planet is not possible, therefore the notion of growth itself will have to be redefined completely. This evolution from a quantitative to a qualitative perspective of growth is based on the uniqueness of a product rather than on lowering its costs.

The success reached by Aboca proves how fundamental is to be based on these values in order to be competitive on the international markets: the key to gain the trust of the consumer is the creation of company reliability through the attention on products quality.

Qualitative growth proposes itself as a new conceptual base, established on environmental protection and safeguard of human health, as the one-way out of the disruptive consequences generated by the current model of growth. In this regard, the strong link between agriculture, environment and health appears explicative: the impact that agricultural activities have on the ecosystem, on the well-being of populations and on the development of territories can be both a problem and an opportunity depending on how agriculture is practised. It is for this reason that the role of agriculture cannot be limited to food supply but must also involve the production of social and environmental public goods respecting human health. To profoundly understand these dynamics in order to orient productive processes in a consequential manner is the biggest opportunity that the recession offers us.

*Massimo Mercati*