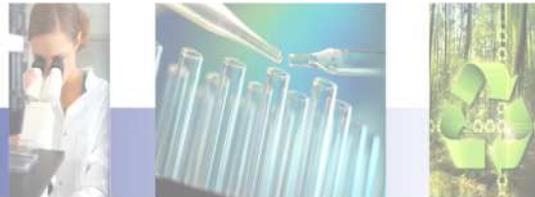




ERA-ENVHEALTH

NEWSFLASH



NEWS:

1ST SEMESTER 2018

ERA-ENVHEALTH ANNUAL MEETING AND OPEN CONFERENCE NOV, 20-21 2017, PALERMO, ITALY

TWO BELGIAN RESEARCH STUDIES - FOCUS ON:

- TIGER MOSQUITOS
- FLORISTS' EXPOSURE TO PESTICIDES

BELGIUM CRITICAL REVIEW FORMULATING SEVERAL RECOMMENDATIONS ON INDOOR AIR QUALITY

ENVIRONMENTAL PUBLIC HEALTH TRACKING – A REQUIRED AND CHALLENGING APPROACH

ROADMAP FOR HEALTHY BELGIUM BUILDINGS

SENTINEL PRACTITIONERS FOR THE ENVIRONMENT AND HEALTH: IDEAS AND PROPOSALS

THE ERA-ENVHEALTH NETWORK

WWW.ANSES.FR/EN/CONTENT/ERA-ENVHEALTH-NETWORK

REMINDER:

SAVE THE DATE

- 16-19 May 2018: IAIA Durban, South Africa
<http://conferences.iaia.org/2018/index.php>
- 26-30 August 2018: ISES-ISEE Joint Annual Meeting, Ottawa, Canada <http://isesisee2018.org/>
- 11 September 2018: next annual ERA-ENVHEALTH open conference, Berlin, Germany

EDITORIAL

The **ERA-ENVHEALTH NETWORK**, created as a continuation of the project funded by the EC FP7, is proceeding, focusing on information exchange and circulation of proposals for joint activities.

The **ERA-ENVHEALTH NETWORK** had its annual meeting and organised the Open Conference, this time in Palermo, Italy, on November 20th and 21st respectively. The Conference theme was “**Linking environmental and epidemiological data in contaminated areas**”.

In this newsflash we present a series of ongoing projects and recent events in the field of environment and health.

The **MEMO project** “Monitoring of Exotic Mosquitoes in Belgium” will focus on 23 locations across Belgium where exotic mosquitoes could enter the country. Tiger mosquitos not only cause painful bites, but they can also transmit viral diseases such as dengue fever, chikungunya and Zika.

Another study conducted in Belgium was related to **florists' exposure** aiming to identify pesticides and measure contamination levels on flowers to estimate exposure of Belgian florists. Results highlighted the need for better awareness among the florists who should change their habits and practices (hygiene and protective equipment) to reduce their exposure.

The Superior Health Council of Belgium has published a critical review formulating several recommendations on Indoor Air Quality (IAQ) enforcing the need for targeted educational, preventive and remedial initiatives that respect the social context of this field, in order to guarantee healthy indoor air for Belgian citizens.

Environmental Public Health Tracking is addressed in this newsflash issue as a tool to integrate understanding and action in environment and health. This integrated approach is needed to assess and monitor the relationships between environmental factors and human health in a broader spatial, socio-economic and cultural context.

The German Environment Agency organised in Brussels a briefing on “**European Harmonisation of the Health Assessment of Construction Products Emissions**”, to promote discussion on the topic of Europe-wide harmonised labelling of material emissions and to propose improvements to the draft VOC classification system. The presentation and reporting documents are available for download.

The Italian project “**Cambiamenti climatici nella vision della Planetary Health**” finishing in March 2018, is coordinated by the Italian National Institute of Health. It has been set in many components in collaboration with many Italian Institutions dealing with climate change effects evaluation and prediction. One of the goals of the project was the development of a Training action towards General Practitioners (GPs) and Paediatricians (PEDs) in order to combine the local concerns according to the Global ones.

In the last page of the newsletter you can find the list of **ERA-ENVHEALTH** members and more information about the network.

Theme of the next ERA-ENVHEALTH NETWORK open conference in Berlin on 11 Sept 2018:
“**Considering vulnerable groups in research and risk communication**”



ERA-ENVHEALTH GENERAL ASSEMBLY IN PALERMO (ITALY) 20 NOVEMBER 2017

As usual, the **ERA-ENVHEALTH NETWORK** members met this year prior to the open conference in Palermo for the annual General Assembly meeting on November 20, 2017. These face-to-face annual GA meetings are a great forum to discuss how to improve the information exchange within the network and think about the future activities of the network to make sure members make the most of the added-value of taking part in this network. All members took this opportunity to thank CNR who hosted this year's annual meetings. It was once again a fantastic meeting.

The main focus of the network is on information exchange and having privileged contact points in counterpart organisations. A number of very interesting themes and activity ideas were discussed this year in order to revive the network and enhance information exchange and collaboration within the member organisations focusing on common interests. The **theme** for the **next open conference, to take place on 11 September 2018 in Berlin, hosted by UBA**, was also validated: “**Considering vulnerable groups in research and risk communication**”.

ERA-ENVHEALTH OPEN CONFERENCE IN PALERMO (ITALY) 21 NOVEMBER 2017:

“LINKING ENVIRONMENTAL AND EPIDEMIOLOGICAL DATA IN CONTAMINATED AREAS”

One year after the launch of the International Centre for advanced study in environment, ecosystem and human health, CISAS Project, the coordinators decided to host the General Assembly meeting of the **ERA-ENVHEALTH NETWORK**. This is particularly significant, as the network is representing the ongoing work developed by the Italian National Research Council, NRC, during the last ten years in the environment and health domain. Six Institutes of the Italian NRC are joining their efforts to develop multidisciplinary studies focusing on three contaminated sites of national interest (SIN) – Milazzo, Augusta-Priolo and Crotone - under the CISAS project umbrella. In this framework, the experience of the **ERA-ENVHEALTH NETWORK** members is crucial, to compare and promote competence and expertise, and to open the perspective to the European landscape.

As we all know, the international dimension (or, better, the lack of boundaries) is an integral characteristic of the environmental determinants. One of the pollutants ubiquitously detected in the environment, the mercury, is the main pollutant in one of the CISAS areas, Augusta-Priolo, and it is the subject of a series of international agreement, recently culminated with the entry into force of the Minamata Convention in 2017. For this reason, Liliana Corra was invited, who participated to several Conventions on chemicals and international working groups. She is directly responsible for the inclusion of the Article 16, Health aspects, in the Minamata Convention, being representative of the International Society Doctors for the Environment, ISDE, at the discussion tables where the text was elaborated. The experience of Dr Corra and her international vision helped us to widen the perspective of the environment and health research.

Together with the National Research Council experts involved in the CISAS project, two members of the **ERA-ENVHEALTH NETWORK** presented the activities of their respective Institutions during the Open Conference.

Human Biomonitoring, HBM, is a research tool that will be used in CISAS: Ric van Poll, from RIVM, the Netherlands, presented the case of PFOA pollution, widely detected in water, that has been recently faced in North Eastern Italy too. Amalia Gastaldelli, IFC-CNR, presented a specific HBM used to identify alteration in metabolism that can promote liver disease. Joana Ferreira, from the University of Aveiro, Portugal, presented the recent developments in the integrated assessment from atmospheric emissions to health that is a theme of crucial relevance.

The CISAS project has been in contact with INPHET, International Network on Public Health and Environment, a group of researchers committed to provide an international clearinghouse for public health practitioners and researchers on how to monitor environmental hazards, exposure and health data (<http://www.epiprev.it/INPHET/home>). Members of the network are Paolo Lauriola, rapporteur of the conference, and Ariana Zeka, from the Institute of Environment, Health and Societies of the Brunel University in London. She presented the Environmental Public Health Tracking. The presentation of the state-of-the-art went on with Francesco Forastiere, one of the international leading experts in the matter of Health Impact Assessment of Air Pollution. Fabrizio Bianchi, IFC-CNR, one of the coordinators of the CISAS project and member of the **ERA-ENVHEALTH NETWORK**, concluded the Open Conference and thanked especially Adrienne Pittman, from ANSES, France, for being over the years the brilliant coordinator and supporter of the **ERA-ENVHEALTH NETWORK**.

A report of the Open Conference is available at the CISAS project website: <http://www.cisas.cnr.it/> through this link www.cisas.cnr.it/wp-content/uploads/2017/09/Report_Open_Conference_No_v2017.pdf

BELGIAN NEHAP PARTNERS ON THE LOOKOUT FOR TIGER MOSQUITOES

- THE MEMO PROJECT

Exotic mosquitoes like the tiger mosquito have been able to move to Southern Europe and are increasingly heading towards Belgium due to globalisation and global warming. The Belgian NEHAP partners (the ministries of environment and health on federal, regional and communities' level) have joined forces with the Institute of Tropical Medicine Antwerp (ITM). They are looking for tiger mosquitoes in those places where they are most likely to enter the country. This way the partners want to reduce the chances of the species getting a foothold in Belgium. The name of this monitoring project is MEMO: "Monitoring of Exotic Mosquitoes in Belgium".

Tiger mosquitoes (*Aedes albopictus*) are small and fierce creatures. In addition to leaving painful bites, they can also transmit viral diseases such as dengue fever, chikungunya and Zika. The mosquitoes originate from South East Asia but have already found permanent residence in Europe and America, due to international transport of goods, global warming and the mosquitoes' own excellent adaptability. Tiger mosquitoes have been living in Southern Europe for several years now, and have recently been spotted in France's Alsace region too. Their habitat is increasingly moving north. Over the last few years, ITM has found a few tiger mosquitoes in Belgium, but so far these mosquitoes have not been able to survive the Belgian winters or procreate. Tiger mosquitoes are regularly spotted in the Netherlands as well. In order to prevent the creatures from becoming regular customers in Belgium, Belgian government agencies have established the MEMO project.

"Good monitoring is crucial in preventing tiger mosquitoes from getting a foothold in Belgium. If we can map the sites where the mosquitoes are spotted, we will be better able to control them. We know where tiger mosquitoes are most likely to enter our country, and we will act as guard dogs there," Dr Wim Van Bortel said, ITM researcher and the MEMO project's co-ordinator.

Points of entry

The MEMO project will focus on 23 locations across Belgium where exotic mosquitoes could enter the country, such as tyre centres, garden centres, ports and airports. Being one of the world's top-100 most invasive species, tiger mosquitoes will often hitch a ride with second hand tyres and lucky bamboo plants. Stagnant water inside tyres, or water in which plants are transported, is the perfect environment for the mosquitoes' eggs.

However, just because a few tiger mosquitoes have been spotted in Belgium does not mean the country is facing a virus outbreak. *"Tiger mosquitoes do not pose a threat, per se. True, they can transmit viruses from one human being to another, but for this to happen, a mosquito should first bite a person infected with the virus, before it can be transmitted to another person. Such viruses generally enter the country through an infected traveller,"* Van Bortel said. Transmission of a virus requires the virus and a tiger mosquito to be in the same place at the same time. Generally, this only happens when the population of tiger mosquitoes is sufficiently large.

Project initiated by federal, regional and communities' government agencies

ITM has monitored exotic mosquitoes in several locations for many years and is now continuing its efforts throughout Belgium within the MEMO project. The project will run for three years and will be funded by the Flemish, Walloon and Brussels' authorities and the Federal Public Service Health, Food Chain Safety and Environment, as part of NEHAP, the national health and environment action plan. ITM will carry out the project together with the Royal Belgian Institute of Natural Sciences (KBIN) and Barcoding of Organisms and Tissues of Policy Concern (BopCo).



EXPOSURE OF BELGIAN FLORISTS TO PESTICIDE RESIDUES ON CUT FLOWERS

**Khaoula Toumi (GxABT), Laure Joly (WIV-ISP), Christiane Vleminckx (WIV-ISP),
Bruno Schiffers (GxABT)**

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Millions of flowers are produced in Africa, India, Israel or Latin America before they reach consumer markets located in Europe. Flowers are usually grown intensively on small areas and are very susceptible to damaging insects and diseases. As a consequence, flower growers use a broad range of pesticides to control a wide range of pest organisms, to prevent loss of crops and to provide a high quality at affordable prices. Flowers are usually sprayed regularly up to harvesting while maximum residues levels (MRL) are not set up for flowers as they are non-food crops. Despite their efficacy, through exposure to remaining residues on foliage, pesticides can cause a range of health effects such as contact allergies, dermatitis and skin effects, neurologic pathologies, cancer, hormone disruption and problems with reproduction and foetal development.

A study on florists' exposure was conducted in Belgium by the University of Liege (**Gembloux Agro Bio Tech**) in collaboration with the Scientific Institute of Public Health (**WIV-ISP**) in order to

- characterise and identify pesticides and measure contamination levels on flowers
- estimate potential dermal exposure of Belgian florists to the pesticide residues
- estimate total exposure of Belgian florists through a biomonitoring

The first step of this study was to assess the prevalence of pesticide contamination and to evaluate the average levels of contamination of the cut flowers most commonly sold in Belgium (roses, the number one flower sold annually, gerberas, and chrysanthemums). The high level of contamination of flowers whatever their origin was confirmed [1]. The great majority of pesticides sprayed on cut flowers are persistent, fat-soluble and dislodgeable by human contact (hands, gloves and clothing).

To evaluate the potential dermal exposure of florists, through the transfer of pesticides to hands, pairs of cotton gloves were distributed to a group of florists who wore them during their normal professional tasks. The gloves acting as a reservoir for active substances in contact with the skin were then analysed. Results confirmed a significant exposure level of florists, who handle flowers daily and for several hours, to pesticide residues that possibly endanger their health [2]. The exposure of florists appeared to be an example of a unique professional situation in which workers are exposed regularly to both a very high number of toxic chemicals and rather high concentration levels.

Thus, these results stress the need for a biomonitoring programme (urine analysis in progress) to refine the exposure and for a better awareness among the florists who should change their habits and practices (hygiene and protective equipment). Regulation (EC) 396/2005 on Maximum Residue Limits (MRL) could be advantageously extended to pesticide residues on flowers and MRL set up to ensure a high level of protection not only for the professionals but also for the general population.

References:

1. Toumi, K., Vleminckx, C., Van Loco, J. & Schiffers, B. (2016). Pesticide residues on three cut flower species and potential exposure of florists in Belgium. *International Journal of Environmental Research and Public Health*, 13(10), 943-957.
2. Toumi, K., Joly, L., Vleminckx, C. & Schiffers, B. (2017). Risk Assessment of Florists Exposed to Pesticide Residues through Handling of Flowers and Preparing Bouquets. *International Journal of Environmental Research and Public Health*, 14(5), 526-544.



ENVIRONMENTAL PUBLIC HEALTH TRACKING AS A TOOL TO INTEGRATE UNDERSTANDING AND ACTION IN ENVIRONMENT AND HEALTH ¹

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Human health and wellbeing are intimately linked to the state of the environment. The recognition of environmental factors as important determinants of health and health equity, of health as a human right, and the creation of resilient communities and supportive environments are priority areas for action reflected in regional and international frameworks adopted by the WHO (The WHO “Health 2020: the European health policy framework”, 2012¹, and the “Health in all Policies² - HiAP approach, 2013) and the UN Sustainable Development goals³. Therefore, there is great potential for prevention to improve lifelong health, wellbeing, and life expectancy, and to tackle raising healthcare costs and inequalities.

In the past, environmental health problems have often been successfully addressed by controlling a single source of pollutant or exposure. Today’s problems are often more complex. The traditional, predominantly hazard-focused and compartmentalised approach to environment and health is simply insufficient to fully address today’s complex interconnected and interdependent issues. Challenges such as climate change, the persistent social inequalities in health, migration due to climate changes, the traditional gene-environment approach (epigenetics), all call for a new integrated approach to environmental public health. In fact this new approach is strikingly needed to face global concerns first and foremost in developing countries. Most developing countries have no control to health problems caused by environmental and climate changes, with serious and significant impacts on population health in many forms: vector spread diseases, extreme events (heat waves, droughts, severe rainfalls), resources security (water, food, land), also on of the drivers of population displacement ⁱⁱ

Environmental Public Health Tracking (EPHT) aims to merge, integrate, analyse and interpret environmental hazards, exposure and health data (Fig 1) ⁱⁱⁱ. EPHT can provide timely, accurate and systematic environmental data to public health decision makers on how to reduce the environmental hazard burden on health. By effectively linking environmental and health data, and translating it into meaningful information (Fig. 2), EPHT can help to protect the health of the public. Thus, EPHT represents the essence of proactive public health practice, since the ultimate goal of such a system is to guide public health action.

Ideally, **exposure tracking** includes the systematic measurement of harmful environmental agents to which individuals are exposed. Exposure tracking also helps evaluate the effectiveness of public health policies by monitoring changes over time. It needs to be closely coordinated with ongoing hazard tracking. This involves the monitoring of individuals, communities, or population groups for the presence of an environmental agent or its metabolite ³. Exposure (and hazard) tracking is sufficient for public-health surveillance when the causal link between exposure and health effect has been established, when there is sufficient time latency between exposure and effect, when the concentration-response functions are known, and when exposure measurements are representative of population’s exposure. Examples of these situations include exposure to chemicals in drinking water. The final component of environmental public health surveillance is health effects tracking, which represents the traditional public health surveillance efforts. This also is an opportunity to raise concerns in situations when the link between environmental exposure and health effect is not established, or not yet known.

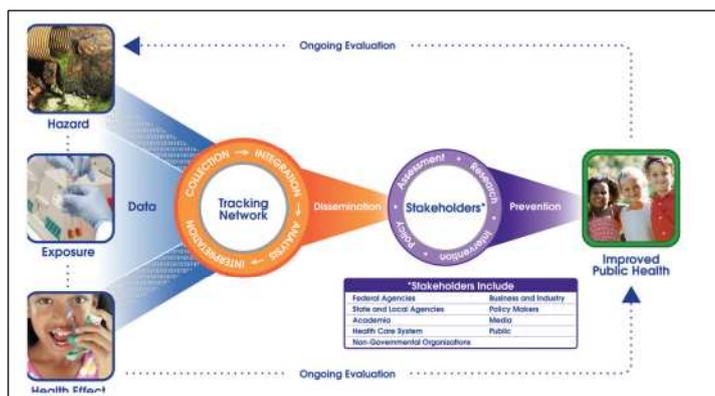


Fig 1: Environmental Public Health Tracking components (US CDC).^{4,5}

¹ On behalf of the International Network of Public Health and Environment Tracking (INPHET) Scientific Committee

ⁱⁱ The total number of people vulnerable to migration might increase to 1 billion by the end of the century without significant further action on climate change. (www.thelancet.com Published online October 30, 2017 [http://dx.doi.org/10.1016/S0140-6736\(17\)32464-9](http://dx.doi.org/10.1016/S0140-6736(17)32464-9))

ⁱⁱⁱ EPHT can be defined as: “The ongoing collection, integration, analysis, and interpretation of data about environmental hazards, exposure to environmental hazards, human health effects potentially related to exposure to environmental hazards. It includes dissemination of information learned from these data and implementation of strategies and actions to improve and protect public health” (United States Center for Disease Control and Prevention, 2003)

ENVIRONMENTAL PUBLIC HEALTH TRACKING AS A TOOL TO INTEGRATE UNDERSTANDING AND ACTION IN ENVIRONMENT AND HEALTH (CONT.)

This integrated approach is needed to assess and monitor the relationships between environmental factors and human health in a broader spatial, socio-economic and cultural context, and can be described as Environmental Public Health Tracking (EPHT). Public-health decision makers can use this timely, accurate and systematic approach to inform and draft policies that reduce environmental health burdens and prevent disease efficiently and cost-effectively. Indeed, (EHPT) tracking can also support the response to increasing community concern in the wider European region, and also contribute to the statutory obligations of European Union (EU) member states around environment and health surveillance. Environmental Public Health Tracking in Europe (EPHT-EUROPE) aims to strengthen European environmental and public policy in the context of Sustainable Development Goals. All these issues are equally relevant in those countries which are not members of the EU, but are aiming at developing their collaboration with the EU environmental and public health strategies.

Related added value to challenge

A number of thematic areas have been identified which will also facilitate to link themes/activities with existing EU projects and networks:

- Climate and environmental change: which is getting the major concern all over the world either in terms of environment and health effects or first and foremost for the need to redefine a new developing model to be properly tracked
- Migration: which can be directly due to climate change as well as indirectly to environmental-socio-political and economic changes, and therefore calls for an adequate understanding on an ongoing basis

- Air quality: the effect of which have been more and more characterized either from a quantitative or qualitative viewpoint
- Water: quality (and quantity) which is getting more and more an emergency issue in many countries, as resources deplete and environmental and climate change pressures increase.
- Chemicals: the effects of which are getting one most important concern related to a new sustainable and healthy socio-economic development

Particular attention will be paid to arrange a strategy to share with some developing countries, which will be involved in the Consortium. In support of this, the European Union is committed to develop a stronger cooperation towards a foreign policy for developing countries (EUROPEAID), which must be based on sustainability and socio-economic development. All these issues must be also taken into due account to face effectively the recent and dramatic issues such as migration, poverty, conflict and wars.

References:

1. Health 2020. A European policy framework supporting action across government and society for health and well-being. Copenhagen, WHO Regional Office for Europe. 2013.
2. Leppo K et al. Health in all policies: Seizing Opportunities. WHO. 2013
3. UN Sustainable Development Goals. (<https://sustainabledevelopment.un.org/sdgs>)
4. McGeehin MA et al, 2004. National environmental public health tracking program. Bridging the information gap. Environ Health Perspect 112(14):1409-413,
5. Thacker SB et al, 1996. Surveillance in environmental public health: issues, systems and sources. Am J Public Health 86:638-41.
6. H. Liu A. Bartonova, M. Pascal, et al. Approaches to integrated monitoring for environmental health impact assessment. Environmental Health 2012, 11:88 Page 6 of 13 <http://www.ehjournal.net/content/11/1/88>

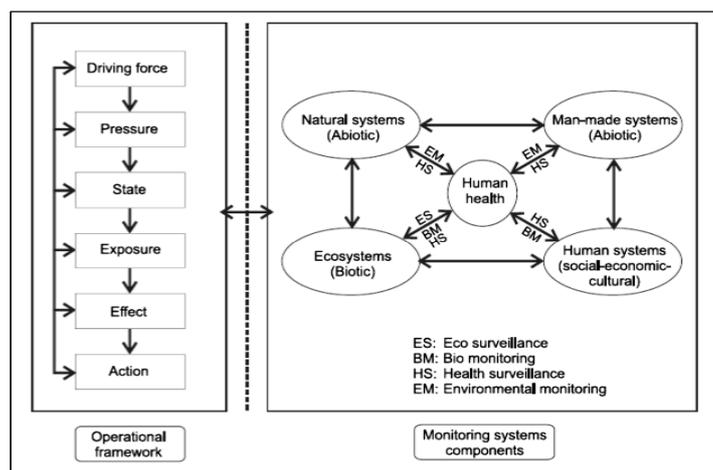


Fig 2: Environmental Public Health Tracking components (US CDC).⁶

ROADMAP FOR HEALTHY BUILDINGS – 1ST STEP: HARMONISATION OF HEALTH CRITERIA FOR CONSTRUCTION PRODUCTS

LUNCH BRIEFING, 19 OCTOBER 2017, BRUSSELS, BELGIUM

The German Environment Agency organised on 19 October in Brussels a briefing on 'European Harmonisation of the Health Assessment of Construction Products Emissions'. The aim of the event was to present and discuss a planned delegated act of the European Commission with a mandatory class system for emissions from construction products.

The Commission Services introduced their draft proposal for a VOC (VOC: volatile organic compound) classification for the CE marking of construction products in the summer of 2017. In the view of the German authorities, the current proposal is very weak in content and offers little protection for consumers from emissions of construction products. The proposed criteria make it impossible to select safe products for use indoors. Germany cannot accept this proposal and stands up for resuming negotiations on the technical content of the delegated act. From the German point of view, it is essential that the future classification is compatible with a high level of protection for consumers.

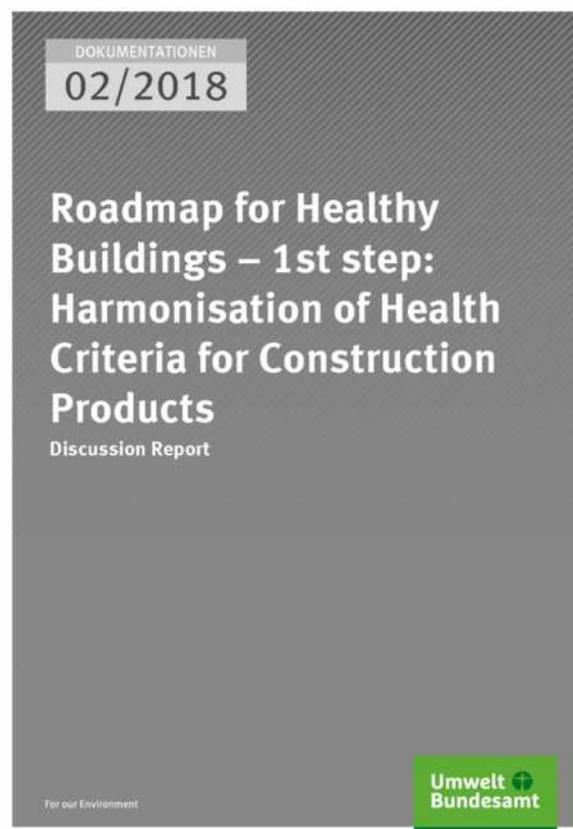
The intention on 19 October was therefore to promote the discussion on the topic of Europe-wide harmonised labeling of material emissions and to propose improvements to the draft VOC classification system. Some of the important key discussion points from the briefing were:

- Communication needs: regulators need a classification system fitting to their national requirements. NGOs expect that products placed on the market are safe and therefore consider the lack of pass/fail criteria in the Commission draft proposal a fatal flaw. Industry identifies professionals as important information users and recommends the use of eco-labels for consumer information.
- Suitability of TVOC as an indicator: The Commission's proposal does not include the assessment of the total concentration of volatile organic compounds (TVOC). The omission of this criterion allows for an unlimited amount of emissions from a construction product into indoor air. Although the participants acknowledged that TVOC is not a toxicological indicator, it was agreed that it is a very useful and needed parameter due to its application in certification and labelling schemes for buildings and construction products.

The discussion on 19 October confirmed that the harmonisation of health requirements for construction products is a common goal for all concerned. The participants welcomed the opportunity for negotiations on the current Commission draft proposal. In addition, the positions of the different stakeholders became clearer. However, the German Environment Agency also reiterated that Member States wish to maintain their (currently higher than the one proposed) level of protection and therefore wish to see room for improvement in the delegated act.

A brief event report, the presentation slides of the speakers, the event program as well as the German position in a Scientific Opinion Paper can be downloaded here:

<https://www.umweltbundesamt.de/en/service/dates/briefing-evaluation-of-construction-product>



THE BELGIAN SUPERIOR HEALTH COUNCIL ON INDOOR AIR QUALITY

The Superior Health Council of Belgium has published a critical review formulating several recommendations on Indoor Air Quality (IAQ). Indoor air contains a variety of contaminants, typically in a wider range than encountered outdoors and at higher concentrations for some pollutants. In Belgium, people spend on average 85 % of the day indoors. Because the indoor air quality can affect the overall personal exposure of building occupants, it is an important environmental determinant of an individual's health.

The potential health impact of a poor IAQ and its context have been acknowledged since several decennia highlighting environmental tobacco smoke as a major indoor air pollutant and assigning the building envelope and its ventilation as potential determinants of IAQ. Current global trends and evolutions in sustainability, leading to an increased use of new, more sustainable or recycled building materials as well as to increasingly energy efficient, airtight and insulated buildings with controlled mechanical ventilation, are indeed likely to cause a considerable impact on the quality of the indoor environment in the near future. This evolution also tends to lead to an increasing responsibility of building occupants in creating a healthy indoor air, in terms of use and maintenance of ventilation systems but also in terms of behaviour and product use indoors.

Therefore there is a need for targeted educational, preventive and remedial initiatives that respect the social context of this field, in order to guarantee a healthy indoor air for Belgian citizens.

It was reported that ambient air is responsible for 2/3 of the total burden of disease (BoD) from indoor air exposures in Europe. The other 1/3 of the BoD related to indoor air exposures is caused by heating and combustion equipment (cooking and heating with solid fuels), water systems, and water leaks. Condensation and underlying soil as source of radon are other important sources for the IAQ associated BoD.

This critical review on the IAQ of Belgian households and public buildings includes scientific and grey literature published from 2005 until 2015. The current national understanding on indoor chemical agents, microbiological indoor pollution as well as radon, was inventoried and evaluated, and resulted in the identification of national knowledge gaps and needs for further research.

The full advisory report is available on:

<https://www.health.belgium.be/en/advisory-report-8794-indoor-air-quality>



THE SENTINEL PRACTITIONERS FOR THE ENVIRONMENT AND HEALTH: SOME IDEAS AND PROPOSALS

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James Mackenzie attended medical school in Edinburgh in the late 1800s and practiced in Burnley, England. He wrote, "I had not been long in the practice when I discovered how defective was my knowledge. I left college under the impression that every patient's condition could be diagnosed ... for some years I thought that this inability to diagnose my patients' complaints was due to personal defects. But gradually, through consultations and other ways, I came to recognise that the kind of information I wanted did not exist."¹ He used information from any source he could find, acquired and developed scientific instrumentations to use in practice, and persisted to follow-up with patients to determine answers to clinically important questions. He was knighted for his work². Most epidemiologists agree that the first modern environmental epidemiology study has been the "natural experiment" carried out in London in 1854 by an anaesthetist named J. Snow.

He described the mortality rates due to Cholera in different neighbourhoods and noticed that some of them showed figures higher than in the others ones. In particular the former ones the drinking water supplies were provided by the Southwork e Vauxhall Company, whilst some of the other were supplied by the Lambeth Company which five years before changed the tapping point upstream London. There were some families living in the same premises supplied by those two companies which showed the same marked difference rates of mortality. One of the area in which such highest level of mortalities was around the Broad Street Pump in Soho. It's important to underline (even though this is not the only one example, another one happened in the case of AIDS), that all these conclusions have been presented 40 years before when Koch discovered the microbic agent of cholera (*V. cholerae*).

THE SENTINEL PRACTITIONERS FOR THE ENVIRONMENT AND HEALTH: SOME IDEAS AND PROPOSALS (CONT.)

By the way, J. Snow elicited some protective conditions in some particular groups such as brewers and Jews: the formers because used to drink pasteurized beer; the latter because they used to wash their hands. He first publicized his theory in an 1849 essay, *On the Mode of Communication of Cholera*³, which was fiercely criticized by *The Lancet*⁴. Following these observations in 1857, all London drinking water supplying companies have been obliged to filter Thames water⁵. In addition to all these well-known examples, there are some other events which have been reported within the specialist milieu. In 400 B.C.E Hippocrates said *"Whoever wishes to investigate medicine properly, should proceed thus: in the first place to consider the seasons of the year, and what effects each of them produces for they are not at all alike, but differ much from themselves in regard to their changes. Then the winds, the hot and the cold, especially such as are common to all countries, and then such as are peculiar to each locality. We must also consider the qualities of the waters, for as they differ from one another in taste and weight, so also do they differ much in their qualities. In the same manner, when one comes into a city to which he is a stranger, he ought to consider its situation, how it lies as to the winds and the rising of the sun; for its influence is not the same whether it lies to the north or the south, to the rising or to the setting sun. These things one ought to consider most attentively, and concerning the waters which the inhabitants use, whether they be marshy and soft, or hard, and running from elevated and rocky situations, and then if saltish and unfit for cooking; and the ground, whether it be naked and deficient in water, or wooded and well watered, and whether it lies in a hollow, confined situation, or is elevated and cold; and the mode in which the inhabitants live, and what are their pursuits, whether they are fond of drinking and eating to excess, and given to indolence, or are fond of exercise and labour, and not given to excess in eating and drinking"*⁶.

This statement reveals a strong interest both in understanding of and actions for prevention.

These individual practitioners who studied their patients' problems with scientific rigor precluded networks of practices or research institutes. A practice-based research network is a group of practices devoted principally to the care of patients. These practices are affiliated with each other, and perhaps with academic or governmental enterprises, to investigate the phenomena of clinical practice as it occurs in communities. They offer an important laboratory for the scientific investigation of primary care. Many experiences of sentinel physician networks have been carried out all over the world, but very few dealt with environmental health issues, and almost none have taken into account the peculiarities and opportunities of targeting GPs and PEDs.

In 2003, the Wonca (*World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians*) organised an international conference on how to get family medicine research started as a global activity and responsibility. In that occasion it was assessed that in healthcare systems where the General Practitioner (GP) and the Paediatricians PED act as a gatekeeper, 90–95% of all patient are initially cared by GPs and PEDs, 80% of the health problems solved in primary care. As such GPs and PEDs could be the source of a huge amount of data which could really help in taking the most appropriate and effective adaptation measures to face Climate Change at national and local level. In addition, it must be taken into real account the influential role of GPs ad PEDs on individual patients and communities (Policy) either in the field of individual attitudes or the collective planning choices (Advocacy). They could really be able to couple the link between global determinants and local concerns. Their influential role could be strengthened by integrating the overall Health Local Authorities within a formally recognized national network.

This is the reason why an interesting project is under way in Italy. This project has been funded by the Italian MoH, within the preparatory process of the G7 health experts working group (G7 HEWG), toward the declaration of the G7 health Ministries: global strategies to reduce the effects of Climate Change on Global health (see encl.). The overall title of this project is "Cambiamenti climatici nella vision della Planetary Health" and it was coordinated by the Italian National Institute of Health. It has been settled in many components in collaboration with many Italian Institutions dealing with climate change effects evaluation and prediction. One of the goals of the project was the development of a Training action towards General Practioners (GPs) and Paediatricians (PEDs) in order to combine the local concerns according to the Global ones. ISDE and the National Federation of Physician Colleges (FNOMCeO) have been committed to develop this line. The project started on March 13th, 2017 and will finish next March 12th, 2018.

References:

1. Mair A. Sir James Mackenzie MD, 1853-1925: general practitioner. London: Royal College of General Practitioners, 1986.
2. LD Green The History of PBRNs The Establishment of Practice-Based Primary Care Research Networks in the United States in Practice-Based Research Networks in the "21st Century The Pearls of Research Proceedings from the Conference Convened by the AAFP Task Force to Enhance Family Practice Research" September 27-28, 1998 Leesburg, Virginia 16-28, 1998.
3. Snow, John (1849). *On the Mode of Communication of Cholera*. London: John Churchill.
4. Snow, John (1849). *On the Mode of Communication of Cholera*. London: John Churchill.
5. AM Lilienfeld, DE Lilienfeld, *Fondamenti di Epidemiologia*, pag 36 Ed Piccin 1986, <http://classics.mit.edu/Hippocrates/airwatpl.1.1.html>.
6. E Hummers-Pradier, M Beyer, P Chevallier, et al, *European Journal of General Practice*, 2009; 15: 243–250 Leppo K et al. *Health in all policies: Seizing Opportunities*. WHO. 2013.



THE ERA-ENVHEALTH NETWORK

COLLABORATION IN RESEARCH TO HELP TACKLE THE CHALLENGES IN E&H AND THEIR POLICY IMPLICATIONS

The European Environment and Health Action Plan for 2004-10 pointed to a need to strengthen networks between researchers, policy-makers and stakeholders. The FP7 ERA-ENVHEALTH project was set up to bring together European organisations planning research in the Environment and Health (E&H) arena with the objective of providing policy support. ERA-ENVHEALTH's task was to mobilise scientific research in support of European and national policies on E&H issues.

Goals and activities

ERA-ENVHEALTH facilitates better communication and deeper understanding of the drivers and priorities in E&H for both scientists and policy-makers. ERA-ENVHEALTH is a **unique active transnational network** in the E&H field. ERA-ENVHEALTH has shown that transnational collaboration in E&H fills an important niche and the network is an **innovative forum** to discuss challenges, visions and emerging issues. In this respect

- **access to, sharing and communicating information** is a crucial success factor, and

- **joint activities** are essential to promote exchange and collaboration and foster new ideas to

enhance the uptake of environment and health issues and co-benefits in different sectors and provide valuable support in tackling the future challenges for better health and well-being.

Join us!

- Become a **member**: signature of the network agreement, contribution on a voluntary basis
- Contribute to the ERA-ENVHEALTH **newsflash**: with regular up-to-date information on E&H activities
- Participate in the **annual conferences** and help build up this innovative discussion forum

The structure of the network is based on “contributing and sharing” and involves no centralised budget; each organisation participates on a voluntary basis.

Acronym	Name	Country	Logo
ANSES	French agency for food, environmental and occupational health & safety	France	
Centre Léon Bérard	University Lyon 1	France	
CNR	Italian National Research Council	Italy	
EPA	Environmental Protection Agency	Ireland	
FPS HFCSE	Federal Public Service Health, Food Chain Safety and Environment	Belgium	
MEDDE	Ministry of Ecology, Sustainable Development and Energy	France	
Folkhälsomyndigheten	Public Health Agency of Sweden	Sweden	
RIVM	National Institute for Public Health and the Environment	Netherlands	
SPW	Wallonie public service	Belgium	
Swedish EPA	Swedish Environmental Protection Agency	Sweden	
UA	University of Aveiro	Portugal	
UBA	German Environment Agency	Germany	
UoWM	University of Western Macedonia	Greece	

CONTACTS

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