

is rapidly feminizing. Female GPs may, for instance, have more specific needs regarding the balance between work and

private life. Hence, the future organization of the GP-profession should be more gender-sensitive.

## K.3. Workshop: Training in public health (environment); the PHEEDUNET project

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The DG SANCO public health funds under contract number 2006335 the PHEEDUNET project. The coordinator is the Radboud University Nijmegen, Department of Public Health. Project partners come from the Netherlands, United Kingdom, Germany, Lithuania, Hungary and Spain. The aim of the project is to create a European network for the training and development of public health (environment) physicians. Physicians with specialized training in environmental public health are often required to lead investigations but access to these highly-trained physicians varies between European countries. The EU-funded project PHEEDUNET creates a network to improve the capacity in environmental health by co-ordinating training and professional development across Europe. Training needs are identified and co-ordination of courses is sought to improve access for students. The exchange of skills and linking resources will promote capacity building and networking. A series of workshops and a conference are scheduled. The workshop at EUPHA presents several initiatives across Europe of successful training programmes and capacity building activities. Through the workshop it is hoped that other initiatives are identified and stimulated.

### Training in public environmental health: an example of the academic collaborative centre on environmental health

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#### Background

The Academic Collaborative Centre on Environmental Health (ACCEH) is built on a consortium of several public health services and universities. In the Public Environmental Health field there is a problem of capacity of professionals. The number of young researchers and professionals needed is too small for universities to set up large training programmes. The Environmental Health field together with universities is seeking alternatives to provide enough professionals both at university and at the public health level. The Academic Collaborative Centre on Environmental Health (ACCEH) is one way to reach this goal

#### Objectives

The aim of the Collaborative Centre is to improve the quality of work on projects which link science and the daily practice in public health related to health and environment. The ACCEH consists of four projects and one coordination project. Besides training young researchers there are scientific activities to improve the knowledge within the workforce of the public health services. The universities benefit from easy access to the work and data that are provided at a local level by the Public Health Services.

#### Results

The projects' main outcome will be the scientific results from the four thematic projects. These results have to be communicated to different stakeholders. In addition to these scientific results, the ACCEH strives to communicate about its strategic

role and place in the interactive field of environmental health between Public Health Services and universities.

The four topic projects are:

(i) TRAVEL: Transport Related Air pollution: Variance in commuting, Exposure and Lung function; (ii) TRAPAM: Traffic related air pollution and attributable morbidity, in the provinces of Noord-Holland and Flevoland, the Netherlands; (iii) Development and communication of environmental health indicators on the local scale; and (iv) 'Reactive Airways Dysfunction Syndrome in communities and first responders exposed to irritants due to chemical incidents and fires.' Seminars, workshops, scientific data from the projects are results of the close collaboration between universities and public health services.

### Developing competencies in environmental public health: an example from the UK

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The Health Protection Agency (HPA) was established in 2003 and has an active training remit in environmental public health. Two main competency domains were identified by practitioners: (i) specialist environmental public health knowledge and skills; and (ii) generic organizational skills. The first domain contains five competency areas: toxicology, environmental science, environmental epidemiology, risk assessment and management and environmental public health. The latter could be described as 'the science and art of preventing disease, prolonging life and promoting health where environmental hazards are the key factor, through organized efforts of society.'

These competencies are applied to acute and chronic environmental hazards ranging from emergency response to strategic information, evidence and guidance production for policy-makers. To achieve this, HPA staff and other public health colleagues have been developing training activities for a broad range of professionals in England and Wales.

HPA specialists have developed a wide range of teaching and training opportunities. These include a one-day and one-week courses on the competency domains, in partnership with academic institutions, on: (i) toxicology for health protection; (ii) environmental science for health protection; and (iii) environmental epidemiology. Workshops, exercises and courses at regional and local level, aimed at HPA, public health trainees and partner agency staff have helped to embed underlying principles, response tools and lessons learnt from incidents into service procedures.

Among the European collaborations HPA specialists have undertaken in this area, are multi-country projects focused on emergency response to deliberate release of hazardous materials. HPA specialists recognize the need to work across Europe more effectively in developing the area of environmental public health in terms of curriculum development, teaching models and resources, sharing scarce expertise and developing capabilities, highlighting lessons from key case studies, and learning assessment and evaluation.

## Paediatricians' attitudes, beliefs and knowledge on environmental health in Spain

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### Background

The PHEEDUNET project wants to create a European network of PH (E) physicians to develop capacity in environmental health.

### Objectives

To study the attitudes, beliefs and knowledge about environmental health (EH) of the Spanish paediatricians.

### Method

A self-evaluation survey based on the theoretical and practical knowledge of topics related to environment and child health.

### Results

A total of 882 paediatricians answered the survey, 70% of them worked in primary care, and 7.1% belonged to environmental NGOs. Forty-one percent had some information about EH. The issue they were most concerned about was second-hand smoke. Their score on the pollutants affecting the health of children in their clinical practice were (maximum 10): indoor air pollutants (7.84); injuries/accidents (6.51); outdoor air pollution (5.13). Over a quarter (25.5%) of the responders did not systematically record the environments in which their patients live, play or study. The most frequently asked questions by parents were (1–4 points) on injuries and accidents (2.16), ultraviolet radiation (2.06) and contamination of drinking water (2.05). Paediatricians considered respiratory diseases as the most environmental related.

### Conclusions

The Paediatric Associations and Institutions should warrant the inclusion of EH in the syllabus of pre-graduate, graduate and continuing education of paediatricians.

## Zinc Violet, case studies in the use of advanced teaching tools in widely different settings

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The development of advanced teaching tools using simulation is costly and often of limited value to the institution developing it. The investment can only be regained if the teaching tool can be used in other places and/or a wide range of applications. Thus the objective is to assess the usefulness of an advanced teaching tool in a range of settings and cultures. Zinc Violet is a simulation of a problem using real data and data analysis software, characters, reports, literature, role-play and financial or time limitations. The students are placed in a problem that they have to solve where their choices have consequences and the simulations aims to engage them. The programme has a long history of development in two countries and is based on real investigations. All uses of the teaching tool have been formally evaluated in the context of use.

Zinc Violet has been used to teach applied epidemiology in three different Masters degrees at three different universities in

two different countries. It has also been used in a professional development course in another country. Applications used are applied epidemiology, environmental epidemiology, risk assessment and risk communication. Participants have come from Australia, China, France, India, Ireland, Italy, the Netherlands, Nigeria, Pakistan, Taiwan, UK and other countries. Professional backgrounds have included physicians, nurses, environmental scientists, toxicologists and dieticians. The evaluations have been that the simulations facilitated very good engagement. All research applications were highly successful succeeding in engaging people from all disciplines and cultures. The risk communication application showed only the first half of the simulation to be useful but for that part they were engaged. Continuous technical updating is essential as 'bugs' were found to be irritating. Substantial investments in highly developed teaching tools can pay off in a wide variety of settings. The tool does need to be very rich and engaging and the lecturer needs to ensure different applications are used with clear direction to ensure students do not get drawn into parts that are less relevant. A mix of media such as computer and role-play with close to live characters encourages engagement.

## 'Environment and Health' vs. 'Environmental Medicine' neither similar nor controversial

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In the past environmental medicine has been seen as subject of public health which mostly looks for 'Environment and Health,' asking the question: What harm originating from the environment is targeting biological systems? Risk awareness and risk assessment stay in the middle of interest in order to avoid general health damage and to start prevention. One does this using tools of Toxicology, Occupational Medicine, Hygiene and Epidemiology. Urgently needed, but long lasting investigations and scientific proof on those illnesses are skipped or take so much time that prevention starts very late. So we get the right information too late, probably burdening a high amount of people and causing irreversible health damage. The point of no return to get rid of persistent contamination may be lost in this way.

Increasing prevalence, of illnesses is linked to the environment for over 30% of the population. And 4–9%, depending on which literature is used, suffer from severe diseases like Multiple Chemical Sensitivity, Chronic Fatigue Syndrome and Fibromyalgia. Caring for those patients is the main task of 'Environmental Medicine' in the sense of diagnosing, treating and starting primarily medical prevention. To do this job physicians have to gain basic knowledge from the 'Environment and Health' sector as well as from 'Environmental Medicine.'

This knowledge should be transferred by an education with a curriculum regarding both fields. Since 1993 we have gained a lot of experience in Germany and later on in Luxembourg in such a postgraduate education at the base of the curriculum of the medical association in Germany. The outcome, follow up and sustainability of this education are discussed.

Hence trained physicians could deliver data which are of high epidemiological concern urgently needed and valuable for investigations at universities.

'Environment and Health' as well as 'Environmental Medicine' work sometimes parallel, but urgently cause one another, like a medal which has two sides not being worth one without the other.

## L.3. Session: Infectious diseases 2

### Is sexual transmission of HIV important among clients of drug treatment centers?

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#### Background

Although heterosexual contact is the major form of transmission, injection drug users still represent the majority of notified HIV cases in Portugal. Despite the risk associated with injection drug use, we hypothesize that sexual contact is an important form of HIV transmission among drug users. The purpose of this study is to quantify condom use frequency and its determinants among clients of drug treatment centres (DTC).

#### Methods

We surveyed 10 341 clients of 40 DTC in Portugal, from January to December 2007, using a questionnaire that included socio-demographic variables, previous HIV test results, drug use history, sharing of injection material and condom use in the previous month. A rapid HIV test was conducted among all participants except those with documented seropositivity or with a negative test less than six months ago. Pre- and post-test counselling was provided to all participants and those with positive results were referred to an infectious diseases clinic, according to the national HIV referral protocols. All participants provided oral informed consent.

#### Results

Test results were obtained from 9469 participants (91.6%), 10.3% of which were positive (975). We found significant gender differences in HIV prevalence (women—13.0%; men—9.7%; OR = 0.72; 95% CI 0.62–0.85). Condom use in all sexual contacts in the previous month was reported by 26.7% of participants; 29.2% always used it with the regular partner, 62.1% always used it with occasional partners and 47.1% always used it with commercial partners. Condom use was associated with HIV serological status (negative—22.7%; positive—64.0%; OR = 6.05; 95% CI 4.96–7.39), attendance to DTC (follow-up—27.1%; first appointment—19.9%; OR = 0.67; 95% CI 0.56–0.80) and gender (women—24.2%; man—27.3%; OR = 1.17; 95% CI 1.01–1.36).

#### Conclusions

Condom use among drug users attending DTC is low which can contribute to HIV transmission. Interventions to increase condom use in this specific population should be prioritized.

### Screening and treatment of immigrants has highest impact on HBV carrier prevalence in Germany: results of a deterministic mathematical model

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#### Background

While the effectiveness of hepatitis B vaccination in reducing the burden of hepatitis B related disease has already been evaluated, little is known about other preventive strategies in that respect. We developed a model that describes the transmission of the hepatitis B virus (HBV) taking into account migration and assessed the effect of preventive strategies such as general infant vaccination, vaccination targeted at migrant populations, screening of migrants at entry into the country and treatment of chronic carriers on transmission dynamics. Different combinations of these strategies were also considered.

#### Methods

A deterministic compartmental model was developed that distinguished between migrant and resident populations and could account for vaccination, screening and treatment. Model parameters were taken from data available in Germany. The model did not explicitly include high-risk groups like injecting drug users and homosexual men.

#### Results

Screening of the migrant population on entering the country with subsequent actions had a major impact on the prevalence of HBV carriers, particularly in the migrant population. A screening of 80% of all immigrants reduced the prevalence of carriers in both native and migrant populations by five times and screening of 100% led to elimination of HBV in the population in the long run. Treatment of HBV carriers in the migrant population reduced the prevalence of carriers both in the migrant and the native populations, while treatment of carriers in the native population alone has no impact on the prevalence in the migrant population. Interestingly, infant vaccination among both populations and vaccination of the migrant population had little impact on the prevalence of HBV carriers, showing that prevalence is mainly determined by immigration of chronic carriers from countries with high prevalence of HBV.

#### Conclusion

Screening of migrant populations at entry was found to have the largest impact on the prevalence of HBV carriers if followed by effective treatment. For confirmation of these findings further empirical studies are needed to investigate the actual HBV prevalence in entering migrant populations and the feasibility of their consequent treatment.

### AIDS mortality in African migrants living in Portugal: evidence of large social inequalities

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#### Background

Portugal has the highest HIV infection and AIDS rates in Western Europe, and is one of the main receiving countries of African migrants in the south of this region. Most originate from its ex-colonies, principally Cape Verde, Angola and Mozambique. Research has found higher AIDS mortality rates in the urban areas of Greater Lisbon, which have large African migrant populations, but differences in mortality rates between Africans and Portuguese-born have not been explored.

#### Aim

To examine infectious disease and AIDS mortality among African migrants aged 25–64 years living in Portugal.

#### Methods

Data from death registrations, 1998–2002, and the 2001 Census were used to derive standardized death rates by country of birth, occupational class (men only) and marital status. The rates were derived for causes with at least 20 deaths in each 10-year age group

#### Results

Compared with Portuguese-born, African migrants had higher mortality for infectious diseases, including AIDS [Men: rate ratio 3.43; (95% CI) 3.07–3.84; Women: 5.05, (95% CI) 4.09–6.22]. There was considerable heterogeneity among Africans with Cape Verdeans having the highest mortality. Death rates were higher among those who were unmarried compared with those who were, for AIDS mortality African men (unmarried compared to married): 5.83, (95% CI)