

## 5. ORAL PRESENTATIONS: ABSTRACTS

### PARALLEL SESSION 1

Thursday 26 November: 14:10–15:40

## 1.1 Human ecology and health

### The Szczucin community—particular case of an environmental exposure to asbestos

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Szczucin is a small town (~14 000 inhabitants) in the South-East part of Poland. In 1959, an asbestos cement plant was started in Szczucin. It operated up to 1997. From 1959, when the production started, till 1993 about 370 000 tonnes asbestos were processed including 65 000 tonnes crocidolite (blue asbestos). Over the period 1959–85, the plant processed about 70% of the total crocidolite used at that time in the Polish asbestos-cement industry.

Soon after the plant had been started, the production wastes were made available for use by the population, which was in agreement with legal regulations on asbestos cement waste then in force. For longer than 30 years, all types of the asbestos cement wastes were used by the inhabitants to pave local roads, farmyards, sports fields, and also as an additive to construction materials in the individual farmsteads. Estimated total volume of asbestos wastes and asbestos-contaminated soil is 0.8–1.0 million m<sup>3</sup>, of which 330 000 m<sup>3</sup> on roads. Approximately the surface of 65.5 km roads, 8.6 ha farmyards, 28.6 ha driveways in contaminated with asbestos wastes. In the late 1980s, first cases of pleural mesothelioma, the cancer specific to asbestos dust exposure, were noted both among workers of the asbestos-cement plant and in the district inhabitants not employed in the plant.

Over the period 1987–2008, 88 cases of pleural mesothelioma were recorded, including 47 among Szczucin plant workers (occupational and environmental exposure) and 41 among Szczucin inhabitants (environmental exposure). The results of the observation of Szczucin inhabitants exposed to asbestos dust point to a serious risk of death from asbestos-related diseases, and from pleural mesothelioma in particular. The crocidolite-containing asbestos cement wastes used to pave farmyards, roads, sports grounds are particularly dangerous to children and juvenile people who are exposed to high quantities of asbestos dust when they play or simply stay in the open air.

### Randomized controlled study for the evaluation of programmes to prevent health risks due to environmental heat excesses, within the Turin elderly residents in 2004

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#### Background

In summer 2003, the persistence of extreme temperatures produced excess mortality in the European elderly population.

The present cluster randomized controlled study aims at evaluating the impact of a summer 2004 prevention programme including 'social care-taking' interventions, compared with 'soft home care' services.

#### Methods

The study population included 2653 persons aged >75 years, living alone in the city of Turin and classified as clinically (according to previous hospitalization) or functionally (were receiving a disability pension) frail. During summer 2004, the whole study population benefited from 'soft home care', including access to a call-centre, meteorological and health forecasting reports and information on protective behaviours, addressed also to the local support network.

One thousand three hundred and ninety-seven frail elderly were also cluster randomized to the offer of a 'social care-taking' programme based on a customized, active surveillance system run by social operators and aimed at promptly activating protection intervention. The impact of interventions including 'social caretaking', on hospitalizations and deaths in the target population, was compared with that of the group experiencing only 'soft home care' and evaluated through gender specific multilevel logistic regression models, first controlled for age and subsequently also for education and income.

#### Results

Among both genders, a strong protection against emergency hospitalization risk was observed within the group randomized to experience 'soft home care' and 'social care-taking', compared with the only 'soft home care' group, which was higher among males [odds ratio (OR) 0.33 95% confidence interval (CI) 0.11–0.96] than females (OR 0.53, 95% CI 0.28–1.01). Only among females, 'social care-taking' seemed to be associated with a slightly lower overall hospitalization risk (OR 0.96, 95% CI 0.93–0.98).

#### Conclusions

This study presents two important public health implications: first, it allowed to highlight the effect of programmes including 'social care-taking'; secondly, it helped raising awareness, both in health/social workers and the community, of the elderly needs for protection during summer.

### The decline in infant Mortality in Portugal: ecological correlates

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#### Background

Despite the recognized success of infant health in Portugal during the second half of the 20th century, the ecological association of the infant mortality rate (IMR) and demographic, socio-economic and health-care indicators has been studied only to some extent. This study aims at comparing two time periods before and after the 1974 political changes.

#### Methods

This ecological study uses routine and census data to describe the time trend of the IMR and examine its relationship with demographic, socio-economic and health care variables from 1910 to 1994 in Portugal. Regional correlations between the

infant, neonatal and post neonatal mortality rates and a set of six demographic, socio-economic and health care explanatory variables is also studied for three calendar periods (1960, 1971 and 1981).

### Results

The first marked decrease in infant and post neonatal mortality rates started around 1960 and seems to have been associated with decreases in the proportion of population working in the primary sector, illiteracy and unattended births. Marked increases in the proportion of hospital births and in the proportion of urban population also occurred around that time. An even more rapid decline of infant mortality occurred after 1970–75 and seems to have been associated with further increases in the proportion of urban population and in the proportion of births occurring in hospital, and with declines in illiteracy. From 1974 onwards declines in early neonatal and neonatal mortality rates were also more pronounced. Marked increases in the available income per capita, the gross national product per capita, and in medical and nursing staff also occurred after 1974.

### Conclusions

At regional level, average number of persons per family, proportion of hospital births and average number of births per physician were the variables most strongly correlated with the infant, neonatal and post neonatal mortality rates in 1960, 1971 and 1981. Regional differences in these rates do not seem to have been attenuated after the 1974 revolution and a north–south gradient was still apparent among the 20 districts in Portugal in 1981.

## Developing strategies to respond to climate change

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### Issue

Climate change is expected to impact the transmission patterns of communicable diseases, but the health impacts will vary across European countries depending on climate as well as differing capacities to adapt and respond to the problem.

### Description of the problem

Based on the latest scientific findings, the project sought to develop a set of decision-making tools to help EU Member States assess their potential vulnerabilities to climate change, and to consider how best to address these vulnerabilities.

### Results

We developed a set of decision-making algorithms based upon clear criteria and principles. Assessing vulnerabilities requires identification and modelling work to establish the links between climate change and different communicable diseases, and the mobilization of multi-disciplinary expertise to assess the key determinants of vulnerability within a country, which do not only relate to expected climatic changes but also the socio/demographic context, quality of infrastructures such as water supplies, level of agricultural activity, current vector abatement strategies, disease surveillance systems and so on. Meanwhile, developing adaptation strategies involves thorough assessment of specific options for each climate-sensitive disease. Criteria for evaluating the options needs to include health and economic variables, and all options should have indicators for monitoring and evaluation progress.

### Lessons

Adaptation strategies need to be developed so that they strengthen public health irrespective of climatic changes. Further, evaluating adaptation options requires cross-sectoral engagement and attention to social justice issues—will, for example, a given option exacerbate or improve health equalities? Strategies need to be relevant at regional and not only national levels.

## The public health services project in the SEE countries—improving human ecology

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### Background

A study on Health, Health Systems and Economic Development in South-eastern Europe (SEE) in 2005–06 identified the need to focus on regional cooperation in order to strengthen the performance of public health services (PHS). As a result, the PHS project was formed in 2007 under the auspices of the South-eastern Europe (SEE) Health Network and as part of the Social Cohesion Initiative of the Stability Pact. This pact encompasses nine states of the Balkans and was established in 2001. The goal is to implement a regional project to strengthen PHS with support of the WHO Regional Office for Europe, partner organizations and individual countries.

### Methods

The public health project is led by the former Yugoslav Republic of Macedonia through the National Public Health Institute in Skopje, with the participation of the SEE core group of experts on PHS and systems performance representing the nine ministries of health. Meetings are held twice a year and decisions are based on the agreed principles of cooperation by consensus.

### The process

(i) The shift from a planned to a market economy in SEE countries has also affected health care reforms. However, PHS reforms generally lag behind the curative sector. All public health services are facing unprecedented challenges, with low sustainable support for public health activities. Therefore this project is an important opportunity to assess the PHS in each country, to compare experiences, to review best practice in PHS and to develop, reform and upgrade the system in a context of common SEE regional effort. (ii) A tool/questionnaire developed by an expert group of WHO/Euro was used to assess the core PHS in each of the nine SEE countries and to identify national strategies for their reform. An agreement has been reached regarding top PH priorities that need health policy support for further action, and progress has been made in the development of a set of indicators for each of the three priorities.

### Conclusions

The supplement describes the unique process which nine SEE countries have undergone to assess their PHS in order to upgrade them at a national level and an effort towards PH actions on regional level.

## The applicability of a new internationally compatible instrument to assess environmental indicators relevant to obesity in Europe

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### Introduction

Although the food and built environments are important influences on rates of obesity, so far there has been limited work in Europe to capture those aspects of the environment that are important. We describe the development and piloting in five countries of a Community Questionnaire designed to capture the consequences of policies relevant to obesity.

### Methods

Between September 2008 and April 2009, trained fieldworkers in Ankara (Turkey), Brno (Czech Republic), Marseille (France), Riga (Latvia) and Sarajevo (Bosnia and Herzegovina) tested the instrument in urban areas of different socio-economic levels. Specifically, the instrument assessed aspects of the food environment (availability of shops selling foods, cost of indicative food items, advertising on children's television, cost and marketing of fast-food items) and of the built environment (availability and quality of cycle lanes, playgrounds, public transport stops, road crossings,

pavements). In-depth process evaluation was conducted at all stages of the pilots, including inter-rater reliability assessment as two pairs of fieldworkers collected all data on each site.

### Results

The pilot testing of the EURO-PREVOB Community Questionnaire revealed many practical and methodological challenges (e.g. access to high quality maps, authorized data collection in grocery stores, and difficulties in sampling areas of varying socio-economic levels). The instrument was considered generally relevant to all countries but variations were observed in its applicability. For example, countries reported different interpretations of the meaning of contextual variables, such as the presence of graffiti (positive vs. negative connotations) and the appropriateness of quality criteria for aspects of the built environment. Inter-rater reliability was generally good in all countries.

### Conclusions

It is possible to develop a novel method to assess obesogenicity in diverse settings. The challenge now is to implement it on a larger scale to make policy-relevant observations about key modifiable factors linked with child and adult obesity rates, and with inequalities in obesity in Europe.

## 1.2. Workshop: An ethical agenda for public health

*Chairs: Peter Schröder-Bäck\* and Els Maeckelberghe, The Netherlands*  
Organizer: EUPHA Section Ethics in Public Health

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The work of public health is to further the interests of community. Community, as the philosopher Beauchamp asserts, does not mean simply that the government ensures that individuals' interests are not offended by the actions of others. Rather, community means that we have shared commitments to one another, and that through collective actions related to health and safety, for example, we share a commitment to the common life, 'a central practice by which the body politic defines itself and affirms its values'.

Public health has its own set of moral priorities, and these are critical to the functioning of a civil society. In this workshop, we will explore urgent questions like the crisis in trust in public health experts and professionals; dealing with scarce resources; the intrusion of privacy in the name of public health interventions; ethical analysis of the EU health strategy and teaching ethics to public health students. The aim of the workshop is a constructive discussion about the moral priorities of public health. These presentations are aimed at encouraging and stimulating this discussion.

### The blurring of boundaries between policy, professionals and citizens and the problem of trust—a new philosophical agenda for public health

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#### Issue

Over the last decades the relations between public policy, professionals and citizens have rapidly changed. Processes of democratization of western societies and the growing voice of citizens have—paradoxically—stimulated a cry for evidence based public health by policy makers. At the same time we observe a decrease of public trust in experts and professionals. The recent Dutch public debate on vaccination of teenage girls for cervix cancer might illustrate this crisis in public trust: this so-called evidence based public health programme was considered preliminary by citizens and less teenage girls showed up than was expected. To develop socially robust public health policies—especially now that we face new

insecurities like unknown infectious diseases and innovations in public health like genomics and ambient technologies—public health needs to deal with this crisis in trust.

#### Problem

How to reframe the relations between public policy, science/professions and citizens.

#### Results

We will show that to understand and to deal with this crisis of trust we have to go beyond rationalistic perspectives on the relation between public policy, professionals and citizens and to develop a pragmatic philosophical perspective.

#### Lessons

The lesson drawn from this analysis and proposal is that in accounting for public health policy and public health programmes scientific evidence only can play a role in the context of pragmatic-political reasoning, not the other way around.

### Rare diseases and public health: what is more important—treatment or prevention?

Zbigniew Szawarski

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#### Issue

Rare diseases are defined in EC documents 'as life-threatening or chronically debilitating diseases which are of such low prevalence that special combined efforts are needed to address them so as to prevent significant morbidity or perinatal or early mortality or a considerable reduction in an individual's quality of life or socio-economic potential'. Low prevalence means >5 per 10 000 persons in the European Union. It seems to be a standard practice, at least in Poland, to allocate a substantial amount of financial resources for treating rare diseases. It is being done mostly for psychological, social, political and ethical reasons. However, we have no plans for designing and implementation of a comprehensive system of health education, health promotion and prevention of rare diseases, including prenatal screening (and in some cases—pre-implantation diagnosis) both for high-risk families and the society at large. The main reason quoted is the scarcity of health care resources and apparently immoral practice of prenatal and/or pre-implantation diagnosis.

**Problem**

How to establish an operational system for fair distribution of limited resources for treating rare diseases and preventing them?

**Results**

The fact that some people are suffering right now seems to be a much stronger moral reason to grant them substantial amount of health care resources than to plan and implement a system for reduction of suffering in the future.

**Lessons**

It seems impossible to rationally decide what is more important—treating or preventing rare diseases. One can sensibly claim that both activities are equally important. However, we should establish a system in which expenditures for treatment of rare diseases should be in the fixed and fair proportion to expenditures for public health activities. In the long-term prevention is more important than treatment.

### **My space or ours? A proposal for a new notion of privacy in matters of public health**

Els Maeckelberghe

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**Issue**

The ‘new public health’ has expanded its remit to include controlling, or attempting to control, the choices, or even the desires, of human beings. This could lead to an intrusion of privacy of individuals. The traditional notion of privacy is connected with the idea of decisional privacy: a person has the right to decide for herself about the nature of intimate relations she will engage in, the actions she performs and the values she is committed to, without interference from the state or other people, and without having to justify her relationships, actions and values to others. It is a concept about safeguarding restricted access to personal space. This might restrict public health interventions. The question is, however, whether this traditional notion of privacy is still viable.

**Problem**

How to conceptualize a notion of privacy that does justice to the individual and at the same time enables public health policy?

**Results**

Privacy as a condition of inaccessibility of the person, her mental states, or information will be shown to be too narrow a notion to work with in developing public health policies. We need a notion of privacy that goes beyond the public-private divide.

**Lessons**

We need to rethink the relation between public and private in order to assess the ethical feasibility of public health interventions. The new notion of privacy will provide a framework for appraising public health interventions.

### **Public health ethics as a framework for self-directed learners solving public health problems**

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**Issue**

Public health ethics provides a framework for ethical analysis specifically related to public health which is a multi-faceted discipline. Public health problems are naturally contestable because they touch upon social, political, cultural and economic values about which people not only care but also disagree. Therefore public health ethics is a topic that cannot be separated from teaching public health. Nearly every

public health teaching task is carried out in an ethically laden context. The objective is to show how and why the knowledge of public health ethics and the way it differs from biomedical ethics can support self-directed learning.

**Discussions**

Ethics in public health looks far beyond the question of how something should be done if it should be done. It can provide practical guidance for self-directed learning of both students and professionals highlighting and defining public health, values which differ from values that define clinical practice and research. In public health examples of ethical dilemmas arise frequently for example: to what extent should the right of an individual be sacrificed for the good of the population.

**Results**

Public health ethics supports self-directed learning providing a framework and allowing the learners to view public health problems from various perspectives thus making the learning process more meaningful and complete.

**Lessons**

Finding answers to fundamental questions related to public health is not an easy task because the field of public health is very eclectic and conflicted. Integrating public health ethical reasoning in public health self-directed learning can make a vital contribution to the learning process and overall student satisfaction with a learning programme.

### **The ethics of the European Commission’s health strategy ‘Together for Health’**

Peter Schröder-Bäck

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**Issue**

In 2007, the European Commission issued the ‘White Paper: Together for Health: A Strategic Approach for the EU 2008–13’. It is known as the EU Health Strategy ever since. As a strategic document, it offers the cornerstones of health programmes and a text of reference for setting priorities in EU health actions.

**Discussions**

The framework offered in this strategy is explicitly built on ‘shared values’—including universality, access to good quality care, equity and solidarity. From a philosophical point of view the explicit incorporation of values—that need to be safeguarded by norms—is highly welcome. Yet, many questions remain open for ethicists: What are further hidden normative assumptions? What is the ethical reasoning behind it? What (crypto normative) image of man and concept of health are endorsed or used in this crucial document? In other words, what exactly are the morals of the strategy and how can they be rendered coherent and consistent when it comes to conflicts of norms in policy-making practice.

**Results**

The document has a paradigmatic character as it incorporates values. One can well use public-health ethics frameworks to discuss and evaluate the health strategy from an ethical point of view and to scrutinize the philosophical base of it. This includes the selection of values and norms, their definitions, roles and normative powers, etc.

**Lessons**

Ethics helps to disclose crypto-normative implications of the strategy and to render arguments coherent. To ethically reason about health strategies—and especially the European Commission’s ‘Together for Health’—is helpful to make justified and robust strategic judgements in the policy arena.

## 1.3. Workshop: Medical practice variation: Explanations and methods from an international perspective

Chair: Peter P Groenewegen\*, The Netherlands

Organizer: NIVEL—Netherlands Institute for Health Services Research, Bilthoven, The Netherlands

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In general, people expect that the medical treatment they receive is provided by physicians who adhere to professional norms which are evidence based. The existence of variation in medical practice challenges that belief. It is widely acknowledged that variations in medical practice exist. The literature shows variation for all kinds of treatments in both primary and secondary care. These variations are not random, clear patterns of variation were found on several levels of aggregation, for example countries, regions, hospitals and physicians. This patterning of variation demands explanation. Besides, these patterns have implications for the methods of analysing medical practice variation.

The focus of this workshop will be on explanations for variation in medical practice and the methodology for analysing it. The workshop contains four presentations with data from the USA, the Netherlands, Sweden and France. All data are analysed with multi-level analysis. First, a presentation will be given on explaining medical practice variation. Secondly, a model of analysis for investigating practice variation with a focus on the combined analysis of measures of association and measures of variance and clustering will be presented. Thirdly, results from a study aiming to refute hypotheses that assume that physicians adapt a uniform practice style will be presented. Finally, results will be presented from a longitudinal study on variation in medical practice on physician and family level. We will discuss how to move on with research on medical practice variation.

### Explaining medical practice variation: social organization and institutional mechanisms

Judith de Jong

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#### Background

In general, patients expect that the medical treatment they receive is provided by physicians who adhere to professional norms which are based on evidence. The existence of variations in medical practice challenges that general belief. In the assumption that treatment by physicians is based on theoretical knowledge and the medical condition of the patient, similar patients with similar conditions would receive the same treatment, irrespective of the physician, hospital or practice they attend. However, examples from literature show a different situation. In this study, we tested several hypotheses on the causes of medical practice variation.

#### Methods

Data were used from two national data collections held in the Netherlands amongst general practitioners: the First and Second Dutch National Survey of General Practice. These data were collected in 1987 and 2001, respectively. Furthermore, data were obtained from the New York Statewide Planning and Research Cooperative System (SPARCS). The 1999, 2000 and 2001 SPARCS data were used. The analyses were performed using multilevel analyses.

#### Results

The results point towards the importance of similarities based on shared circumstances. It also shows that the most common explanation of medical practice variations based on individual preferences is unsatisfactory.

#### Conclusion

Medical practice variations are not merely individual differences in preferred practice styles, but are patterned by social processes in partnerships and local circumstances. We showed that institutional mechanisms are effective in influencing physicians' behaviour, and therefore could be used in limiting variation. However, we found no empirical evidence proving that institutional mechanisms reduce variation in this study.

### Understanding therapeutic traditions in a multilevel framework—new methodological approaches

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#### Background

Many methodological aspects concerning the analysis of practice variation, i.e. quantifying overall practice variation, understanding the importance of different levels, monitoring and distinguishing appropriate from inappropriate practice variation, needs more development.

#### Aims

To propose a model of analysis for investigating practice variation by focusing on the combined analyses of measures of association and of variance. We exemplify this by focusing on adherence to prescription guidelines for statin prescription as these lipid-lowering drugs have similar indications and efficacy.

#### Methods

The database LOMAS is used and consists of unidentified information on all individuals living in Skåne, Sweden. We use multi-level regression models and quantify the variance and clustering with the median odds ratio and the Pairwise odds ratio.

#### Results

Adherence to guidelines for statin prescription and the early adoption of a new statin seemed to be conditioned by contextual factors. The determinants of the individual behaviour are influenced directly by the contextual environment of the practice. Moreover, Health Care Practices that follow guidelines for one drug type also appear to follow guidelines for other drug types.

#### Conclusion

The approach of components of health variation is relevant for both examine determinants of prescription and for planning interventions, especially when it comes to deciding on what scale interventions should be directed. By investigating the role of different health care levels on adherence to guidelines, researchers can more efficiently build and test models that capture factors influencing the prescription process.

### A refutation of the practice style hypothesis: antibiotics prescription by French general practitioners for acute rhinopharyngitis

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#### Background

Much research in France or abroad has highlighted the medical practice variation (MPV) phenomenon. There is no consensus on the origin of MPV between preference-centred approaches

vs. opportunities and constraints approaches. This study's main purpose is to refute hypotheses which assume that physicians adopt a uniform practice style for their patients for each similar clinical decision as they go along during their professional lifetime.

#### Methods

Multilevel models are evaluated to measure variability of antibiotics prescription by French GPs for acute rhinopharyngitis regarding clinical guidelines; to test its significance and to prioritize its determinants, specially those relating to a GP or his/her practice setting environment, while controlling patient confounders. The study was based on 2001 activity data, along with an ad hoc questionnaire, of a sample of 778 GPs taken from a panel of 1006 computerized French GPs.

#### Results

We find empirical support for the rejection of the 'practice style' hypotheses. A large part of the total variation was due to intra-physician variability and that is patient characteristics that largely explain the prescription, even if GP or practice setting characteristics (location, level of activity, network participation, continuing medical education) and environmental factors (visit from pharmaceutical sales representatives) also exert considerable influence.

#### Conclusion

This suggests that MPV are partly caused by differences in the type of dissemination of information.

### Variation in children's consultation behaviour in the Netherlands: a longitudinal study (2001–2005)

Liset van Dijk

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#### Background

Previous research found that families vary in consultation behaviour for minor ailments, but less for other complaints. However, these studies covered a period of maximal one year. Our study aims to disentangle the variance in children's consultation rates over a five-year period. Moreover, its aim is to study what family factors influence children's consultation behaviour.

#### Methods

We used data from routine electronic medical records from 45 representative general practices in the Netherlands. Eleven-thousand children aged 1–12 years at study onset in 2001 were included. For these children five year of registration data were available as well as information on children's and family characteristics at baseline.

#### Results

Most variation in consultation behaviour for minor ailments can be found at the family level (44%; 39% at the child level), while for other complaints variation at the family level was only 5.4%. Important family characteristics explaining consultation for minor ailments include: parental consultation behaviour, mother's age and parents' self-perceived health status.

#### Conclusion

This longitudinal analysis shows even a larger amount of variation at the family level for children's minor ailment consultations. If a child presents minor ailments in general practice, GPs should consider the family context to optimize their policy towards these complaints.

## 1.4. Changing behaviour

### Pre- and post intervention results of the study OptimaHl 60+—changing the nutrition behaviour through self-regulation

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#### Background

OPTIMAHL 60+ is an intervention study which includes the participatory development and evaluation of an interdisciplinary counselling aid and aims to improve the nutrition behaviour of elderly people from 60 years onwards. OPTIMAHL 60+ also aims to improve the maintenance and enhancement of the quality of life, and autonomy of elderly with special attention to people with migration background and to those in low socio-economic status districts.

#### Methods

Four hundred and twenty-three elderly with and without migration background over 60 years were recruited in Bremen and Germany. Participants were assigned to either a control or intervention group. Nutrition behaviour was measured at three points in time in a face-to-face interview: pre- ( $T_0$ ), after 3 months of intervention ( $T_1$ ) and a 6 months follow-up ( $T_2$ ) by 24 h dietary recall and food frequency questionnaire.

Elderly in the intervention group received the counselling aid and further material. Regular intervention meetings were offered. The counselling aid was developed on the basis of the self-regulation model by Kanfer (The many faces of self-control, or behavior modification changes its focus. In: Stuart RB. *Behavioral Self-Management*. New York: Brunner/Mazel, 1977: pp. 1–48).

#### Results

First results indicate that the counselling aid supports in remembering what the elderly should eat and motivates to stick to the recommended daily/weekly intake.

After conducting T1 in December 2008, it is predicted that the nutrition behaviour related to the daily consumption of fruits and vegetables, milk/dairy product and weekly fish consumption changed positively in the intervention group.

First analysis show that there is a significant change from  $T_0$  to  $T_1$  in relation to the daily fruit and vegetable consumption in the intervention group ( $P = 0.003$ ).

#### Conclusion

OptimaHl 60+ helps the elderly to self-regulate their nutrition behaviour. The presented results will indicate if a long lasting nutrition behaviour modification can be achieved and if the counselling aid can be transferred into daily life. If the counselling aid proves to be valuable for elderly a further development and broader distribution is planned.

### Changes in nutrition habits and serum lipid profile of Lithuanian rural population between 1987 and 2007

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#### Background

Lithuania was undergoing many political, economic and social changes during transition period. Those changes influenced the nutrition habits of Lithuanians and diet-related risk factors for chronic diseases. The aim of the study was to analyse the

time trends in nutrition habits and serum lipids of Lithuanian rural population from 1987 to 2007.

#### Methods

Within the framework of the Countrywide Integrated Non-communicable Diseases Intervention Programme (CINDI) nutrition habits and serum lipids were assessed in randomly selected samples of population aged 25–64 years in five rural regions of Lithuania (2695 persons in 1987 and 1739 in 2007). Food frequency questionnaire was used for evaluation of nutrition habits. Levels of serum lipids were determined using enzymatic methods.

#### Results

Over the period of 20 years, the diet of Lithuanians has shown some positive trends. The intake of animal fat decreased. In 1987, the majority of population (91%) spread butter on bread. In 2007, only 30% of the respondents stated that they used butter. Animal fat was replaced by vegetable oil in cooking. The usage of vegetable oil increased from 13% in 1994 to 93% in 2008 in men and from 19 to 93% in women, respectively. The proportion of respondents using fresh vegetables at least on three days in a week increased especially among women. Since 1987, the prevalence of hypercholesterolaemia (>5 mmol/l) decreased from 85 to 52% in men and from 83 to 51% in women. The proportion of men having high level of low-density lipoproteins (>3 mmol/l) decreased from 88 to 53%, the same proportion of women—from 86 to 48%. The most remarkable decrease in the prevalence of hypercholesterolaemia was observed in the youngest age group (25–34 years).

#### Conclusion

The positive changes in the diet of Lithuanians have to be strengthened in order to achieve further reduction in prevalence of dyslipidaemias.

### About awareness, health risk perception and preventive behaviour of residents of radon affected areas in England and Wales

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#### Background

Radon is a naturally occurring radioactive gas found in rocks and soils that, with an estimated 1100 annual fatalities is recognized as the second largest cause of lung cancer in the UK. While in the mid-1980s, the UK Government conducted centralized campaigns to inform the public about the health risks of radon and to encourage testing and remediation, in the late 1990s, a more localized approach was launched with local authorities acting as the public face of the campaign. This presentation will show some preliminary findings of a population survey that was conducted as part of a multi-method research project.

#### Aim and research questions

The survey attempts to link people's attitudes, and testing and remediation behaviours to (i) the geography of radon occurrence in the area, (ii) the history of local radon testing initiatives, and (iii) the socio-economic context.

#### Methods

Between October 2008 and December 2009, data were collected in 15 local authorities in England and Wales that contain radon-affected areas. One thousand five hundred and seventy-eight residents aged between 16 and >70 years were face-to-face interviewed in their homes.

#### Results

To allow answering the above research questions, more detailed statistical analysis will be conducted in due course. The main, descriptive findings show that people of radon

affected areas have only a modest level of interest in radon, showed a limited knowledge of radon-related adverse health effects and expressed a moderate level of concern regarding the risks of radon to their health. Less than 20% of the sample had tested their home for radon and approximately half of those who tested above the action level conducted some kind of remedial work. Overall participants did show a reasonable level of trust in their local government that provided radon information during the latest localized campaigns.

### How does non-reciprocity exchange in close social relationships affect health and quality of life in early old age?—Longitudinal findings from the SHARE Study

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#### Background

Relationships are essential part of life at any age but they are especially important for well-being in older adults, since the risk of loneliness and isolation are higher after labour market-exit. However, little is known if the partnership per se is important, or whether the quality of this relationship is more relevant for health and well-being? In this context, we study associations between partnership and health considering quality of the partnership in terms of experienced social reciprocity (balance between efforts and rewards). In particular two questions are studied: (i) Is partnership associated to well-being? (ii) If so, to what degree does the quality account for this association?

#### Method

Data were obtained from the first two waves of the 'Survey of Health, Ageing and Retirement in Europe' (SHARE) initiated in 2004 and including some 15 000 retired men and women aged >50 years. Two indicators of well-being are used: quality of life and depressive symptoms. Given the two waves data, we predict well-being in wave 2 (2 years later) taking initial well-being status into account.

#### Result

Results of multivariate analyses demonstrate that partnership is associated with well-being. However, this association is contingent to the experience of reciprocity. Only if reciprocity is experienced within the partnership, positive effects on well-being are observed.

#### Conclusion

Having a partnership, in particular one that offers opportunities of experiencing reciprocity in exchange improves prospective well-being in early old age. This highlights the importance of enhancing the physical and social environment among early old age through programs that incorporate a variety of approaches promoting relationship skills building with older adults.

### Information technology to foster implementation of proactive interventions for smoking cessation in general medical practices

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Primary medical care based interventions are a core element of comprehensive Tobacco Control. Despite scientific evidence of the efficacy and cost effectiveness of advising patients for smoking cessation there is a lack of systematic integration in

routine care. Recent research demonstrated that computer based interventions could be an effective addition or alternative to interpersonal counselling delivered by the practitioner. The aim of this study is to test if the implementation of computer based smoking interventions can increase the intervention activities.

A random sample of 151 general practitioners from a defined German region was randomized into three groups receiving support for the implementation of the following interventions: (i) practitioner delivered motivational counselling (C), (ii) computer generated individually tailored counselling letters (L), (iii) a combination of C and L (C+L). Each practice received two on-site training sessions. The number of interventions registered over a period of 7 months was compared by negative binomial regression analysis. Patient outcome after 12 months was compared by logistic regression analyses, which was adjusted for cluster correlation among practices and baseline characteristics of patients.

The number of provided interventions per practice ranged from 0 to 776 with 15 practices exceeding 50 interventions within the study period. In total 690, 2195 and 1632 interventions were provided in practices allocated to group C, L and C+L, respectively. Differences were significant for the comparison of L vs. C ( $P=0.001$ ), C+L vs. C ( $P=0.015$ ) and non-significant for L vs. C+L ( $P=0.36$ ). Self-reported 7-day point abstinence prevalence was 11.3% for C, 13.6% for L and 17.3% for C+L. Differences were significant for C vs. C+L (odds ratio 1.64,  $P=0.02$ ) and non-significant for all other contrasts. The total number of patients reporting abstinence was highest for L ( $n=156$ ) followed by C+L ( $n=132$ ) and C ( $n=48$ ).

Some practices demonstrated, that systematic implementation of smoking interventions is feasible. The use of computer-based interventions increased the degree of implementation. However, further strategies are needed to improve the prevention of tobacco attributable harm in primary medical care.

## Success factors improving patient compliance behaviour—empirical results from Europe

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### Background

The current discussion in health economics is focused on potential efficiency reserves in patient compliance behaviour. Yet, there is little empirical evidence regarding the impact of special control variables on patient behaviour in Europe. We analyse which factors positively influence patient compliance decision.

### Method

We built a simple structural equation model reflecting the trade-off between perceived side effects and patient compliance behaviour. This behavioural model is applied to clinical trial data. Furthermore, our data allows the comparison of patient compliance behaviour between different subgroups.

### Results

A total of 1035 patients with a primary diagnosis of hypertension were included in the study utilizing a clinical trial in Germany between 2007 and 2008. The strongest influence on a patient's intended compliance is the degree of perceived therapy control (path coefficient: 0.48;  $P<0.01$ ) followed by coping with therapy barriers (pc: 0.35;  $P<0.05$ ), and physician-patient communication (pc: 0.33;  $P<0.05$ ). Moreover, general patient compliance behaviour is highly dependent on health insurance status.

### Conclusion

This study shows tangible starting points on how patients can be encouraged to take a more active role in their health care in order to optimize outcome and minimize risk. By reaching an exceptionally high explanatory power, our model identifies comprehensive strategies regarding the improvement of patient compliance. A combination of cognitive, behavioural, and affective components is significantly more effective than single-focused strategies both in the complete sample as well as in any of the here considered subgroups.

### Funding

German Heart Foundation.

## 1.5. Workshop: Epidemiology of mental health in the European Union

Chairs: Jutta Lindert, Germany and Sonia Diaz, Portugal

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The workshop includes a short introduction and four presentations with discussion. Prevalence of mental health and mental disorders varies in the European Union. Still there are no coherent research findings explaining the differences of mental health and mental disorders between countries and between subgroups within the countries. This workshop starts a series of workshops of the session of Public Mental Health, which will follow in the next years to describe the situation of mental health in the European Union.

The aim of this workshop is to begin a systematic overview on the current knowledge base on mental health in Europe and to discuss the relationship between mental health and mental ill health and risk factors. Therefore, we start the series of workshops giving an overview about mental health in Sweden (Lena Andersson, Ellenor Mittendorf: Rutz, Jutta Lindert) and providing an overview on possible interventions for depression (Anke Bramesfeld).

## The increase in mental illness among adolescents in Sweden—epidemiology and possible explanations

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### Background

According to a health survey by the World Health Organization on children 1–14 years old, Sweden was ranked among the highest in the European Union. However, at the same time mental illness has increased among adolescents and young adults in Sweden.

### Methods

Systematic review.

### Results

The proportion of individuals aged 16–24 years who suffered from worries and anxiety increased dramatically between 1980 and 2006, from 9 to 28% among females and from 4 to 14% among males. Also the proportion of high school students, who stated that they felt down, doubled between 1985 and

2001. And while inpatient visits due to psychiatric disorders decreased in the general population, it increased for certain diagnoses among younger individuals, for example the number of female adolescents treated for depression and anxiety which was eighth times higher in 2003 compared with 1980. Among males the same proportion was three times higher. Also regarding hospitalization for deliberate self-harm this trend has been observed. Lastly, sales of antidepressants have increases among young individuals.

#### Conclusion

Sweden is not the only country where this development among young individuals has been observed, many other high income countries have seen the same but may be it has been more pronounced in Sweden. Several suggestions have been put forward in the debate to explain this phenomenon, such as effects of the modern society, increased demands on individual decisions, a lack of historic continuity, labour market effects due to the globalization and in regard to Sweden; also effects of a secularized society.

### Individual and parental risk factors for suicide in a life-course perspective

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#### Background

Even though a wide range of risk factors for suicide have been identified, a life-course approach is seldom applied in suicidological research. A better understanding of the importance of biological and social pathways that operate across an individual's life cycle, as well as across generations, contributes to the development of tailor-made suicide prevention strategies. This study aims to investigate to what extent suicide is affected by individual and parental factors measured around birth, during childhood, adolescence and early adulthood.

#### Methods

The study applies a nested case control design through linkage of eight Swedish registers with national coverage. Ten controls, who are still alive at the end of follow-up (31 December 2007) are matched for each case by age, county, and sex. The study base comprises all individuals born in Sweden between 1973 and 1983 ( $N > 1.2$  million), to whom both parents could be identified. Cases are all individuals who have been registered for death due to suicide.

#### Results

Preliminary results suggest that in the multivariate analysis several risk factors related to the pre-, peri- and post-natal period, namely low birth weight, maternal teenage pregnancy, parental hospital admission due to mental disorder and suicide attempt and receipt of disability pension, increase the risk of offspring suicide. These parental risk factors also increase the risk of suicide in the offspring if the offspring has been exposed to these factors in childhood and adolescence. Maternal but not paternal death in childhood and receipt of own disability pension in young adulthood were further predictors of suicide.

#### Conclusion

A number of individual and parental risk factors measured at different life stages were found to increase the risk for suicide. A life course perspective can give new insights into the aetiology of suicidal behaviour and may contribute to make prevention strategies more effective.

### Distress among women in different age groups

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#### Background

Little research has been carried out on prevalence rates of distress [e.g. depression, post-traumatic stress symptoms (PTSS), hopelessness and burnout] of women in different age groups. The aims of this study were to measure the prevalence rate of depression, posttraumatic stress symptoms, hopelessness, burnout among women and to clarify the associations between age groups and distress.

#### Methods

Cross-sectional epidemiological study on women in Sweden ( $n = 6000$ , aged 18–64 years, response rate 64.1%). Measures were questionnaires on socio-economic and work-related characteristics and on depression, post-traumatic stress symptoms, hopelessness and burnout. Depression was measured with the 'General Health Questionnaire' (GHQ), PTSS with the 'Post-traumatic Symptom Scale', hopelessness with the 'Hopelessness Scale' and burnout with the 'Shiron-Melamed Burnout Questionnaire' (SMBQ).

#### Results

The prevalence rate of depression varied from 12.5 to 14.1%; of PTSS from 23.5 to 33.3%; of hopelessness from 11.5 to 16%; and of burnout from 9 to 17.1%. Depression was not associated with age group. Hopelessness was associated with age group in univariate analysis but not in multivariate analysis [odds ratio (OR) 0.7, 95% confidence interval (CI) 0.5–1.0]. PTSS and burnout were associated with age group. Both symptoms were higher in the youngest age group, compared with the eldest age group (PTSS: OR 1.6, 95% CI 1.2–2.1; burnout: OR 1.5, 95% CI 1.1–2.1).

#### Conclusion

Younger women show higher prevalence rates of PTSS and burnout compared with elder women. The higher prevalence rates of PTSS and burnout among younger women may be associated with job strain and/or with violent life events.

### Depression in Germany: epidemiology and service provision

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#### Background

The Burden of Disease caused by depression (depression and depressive disorders) impacts especially high in industrial countries. Eighty-five percent of the economic burden related to depression is due to productivity loss. Depression is a frequent disorder in Germany: 10% of Germans aged 18–65 years suffer from major depression during a years' course. Almost half of them experience recurrent episodes.

#### Methods

Calculation of the burden of depression in Germany, comparison of treatment possibilities for depression.

#### Results

The societal costs for depression in Germany are steadily increasing. This shows in rising numbers for days of sick-leave, disability retirement, inpatient service use and prescriptions of antidepressants. Also in Germany depression is under-treated: different studies indicate that about half of those suffering from major depression in Germany do not receive care. In recent years, several initiatives have emerged that aim for improving depression care (e.g. integrated care, telephone case management, alliances against depression).

#### Conclusions

Depression in Germany is a highly relevant burden for the society but remains largely untreated.

## 1.6. Occupational health 1

### Role and mission of the Interdepartmental Commission in charge of OEL in Poland

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#### Issue/problem

In the study by Schenk *et al.*, Occupational Exposure Limits (OELs) established by 18 different organizations or national regulatory agencies were compared. A total of 1341 substances with a CAS number had an OEL on one or more of the lists, but only 25 substances were on all 18 lists.

#### Description of the problem

In Poland, occupational exposure limits [MAC(TWA), MAC(STEL) or MAC(C)] for chemical compounds are established by the Interdepartmental Commission for Maximum Admissible Concentrations and Intensities for Agents Harmful to Health in the Working Environment. The main responsibility of the Commission is to consider, evaluate and adopt exposure limits for chemical and physical agents in the working environment and submit them to the Minister of Labour and Social Policy, who is responsible for introducing those values into legislation. MACs are established only on the basis of health criteria and assessment of health risk using the latest scientific data. The European Union has established a legal basis for setting Indicative Occupational Exposure Limit Values (IOELVs) and Biological Limit Values (BLVs) for compounds with threshold effects. They are set to protect workers from chemical risks, i.e. they are health-based limits, and they are based on the latest available data. The SCOEL Recommendations are thoroughly discussed by the tripartite Advisory Committee for Health and Safety at Work (ACSH); they are the subject of detailed technical discussions of its tripartite working party on chemicals (WPC) and are formally adopted as an opinion of the ACSH plenary. In addition, information is provided on the outcome of the formal inter-service consultation with the relevant Commission services. Member States are required to establish national limit values taking into account the Community IOELVs in accordance with the national laws and practices.

#### Results

All these bases of the system functioning in Poland and in UE have failed in relation to formaldehyde, SCOEL's proposal of IOELV for this compound due industry pressure.

#### Lessons

Should the Interdepartmental Commission take economic and technical feasibility as well as human health into account when setting MACs?

### Job strain predicts recurrent events after a first acute myocardial infarction: the Stockholm Heart Epidemiology Program

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#### Background

Studies investigating the prognostic role of job stress in coronary heart disease are sparse and have inconclusive findings. We aimed (i) to investigate whether job strain predicts recurrent events after acute myocardial infarction

(AMI) and if so (ii) to determine behavioural and biological factors that contribute to the explanation of this association.

#### Methods

Study participants were non-fatal AMI cases from the Stockholm Heart Epidemiology Program case-control study who were employed and aged 45–65 years at the time of their hospitalization ( $n=676$ ). Demographic, socio-economic, psychosocial, lifestyle-related, clinical and biological characteristics were obtained by means of questionnaires or clinical examination. With linkage to the national registers patients were followed for non-fatal AMI, cardiac and total mortality for 8.5 years.

#### Results

During the follow-up, 96 patients died, 52 of cardiac cause and 155 experienced cardiac death or non-fatal AMI. After adjustment for potential confounders, patients with high job strain had an increased risk of cardiac and total mortality and of the combination of cardiac death and non-fatal AMI relative to those with low job strain. The hazard ratios and the 95% confidence intervals (CI) 2.81, 95% CI 1.16–6.82; 1.65, 95% CI 0.91–2.98 and 1.73, 95% CI 1.06–2.83, respectively. The relationship between job strain and the combined endpoint of cardiac death and non-fatal AMI did not alter considerably after controlling for blood lipids, glucose, inflammatory and coagulation markers, smoking, alcohol consumption, physical activity, body mass index and sleep habits.

#### Conclusions

Job strain was associated with poor long-term prognosis after a first AMI. Interventions focusing on reducing stressors at the workplace or on improving coping with work stress in cardiac patients might improve their survival after AMI.

### Caesarean section rates among health professionals in Finland, 1990–2006

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#### Background

Concerns have been expressed over increase and unexplained variation in caesarean section rates and their health and economic consequences. The purpose of this supplement is to establish whether health professionals in Finland have caesarean sections more or less often than other women of a similar educational background.

#### Methods

Data on singleton births by occupation were obtained from the Finnish birth register in 1990–2006: midwives ( $n=3009$ ), nurses ( $n=101\,199$ ) and physicians ( $n=7642$ ). Teachers ( $n=23\,454$ ) were chosen as controls for midwives and nurses, and other white-collar workers ( $n=124\,606$ ) were chosen as controls for physicians. The odds ratios for mode of delivery were calculated using logistic regression, adjusting for age, parity, marital status and smoking, and in an additional analysis, also adjusting for post-term birth and birth weight.

#### Results

During the time period studied the overall caesarean section rate in Finland was 15%. The studied groups had similar rates of caesarean section. When adjusting for Background characteristics, midwives and nurses had marginally lower caesarean section rates than teachers and physicians had lower rates than other white-collar workers. In the case of first births, similar differences were found. Instrumental deliveries were somewhat lower among midwives as compared with teachers, and among physicians as compared with other white-collar workers.

## Conclusions

Our results suggest that Finnish physicians may prefer vaginal delivery and have relatively conservative opinions about caesarean sections. This may be an important explanation of the relatively low, compared with international rates, and stable caesarean section rates in Finland.

## Gender disparities in probability of having unmet health care needs—using the difference-in-difference test by occupational type

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### Issue/problem

Different occupational status can have diverse effects on health status and utilization of health care services. Distribution of occupational types among women is different from those of men and even if in the same category, working conditions and status for women may not be the same as men. Women mostly work in the conditions of irregular positions, low-wage and are excluded from welfare benefits. This study looks at how occupational status affects the probability of having unmet health care needs and if the effect varies between the two genders.

### Description

We used the data from the 2005 Korea National Health and Nutrition Examination Survey. The sample was consisted of 5768 men and 7402 women, aged 19–64 years and had one or more chronic diseases. We used difference-in-difference z-tests to compare the level of disparities in getting necessary health care between women and men, controlling for health needs of each gender. We also conducted logistic regression analyses to examine whether the effect of occupational status differ between the gender groups, controlling for age, income, education and self-evaluated health.

### Results

On average, the probability to have unmet medical care needs for women were similar to men. However, there were large variances within each group, especially among women. Differences in getting necessary health care services by occupational status among women were significantly larger than those of men. In both gender groups, professionals and office workers compared with the unemployed were less like to have unmet needs due to economic reasons. Professionals and office workers were more likely to have unmet needs due to time limitation.

### Lessons

Reporting of the overall level of utilization between the two genders only may hide underlying variances within each gender group. More concrete information on disparities within each gender should be investigated and reported.

## Physicians and their health status and self-care: what interventions in a context of decreasing medical demography? A pilot study in France, 2008

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### Objective

To study physicians health status (including burn-out) and self-care.

### Methods

Following a psychological study including 20 physicians, a cross-sectional study was conducted in 1235 GP and specialist practitioners (SP) randomized, within a total of 2819

ambulatory practitioners working in Upper Normandy region in 2008. The postal anonymous questionnaire contained 200 items collecting data about work (environment, content, schedules and ability), personal situation, health status, self-care and difficulties with their professional practice.

### Results

A total of 543 physicians were included (354 PCP, 189 SP), with an overall response rate was 44.7%. The mean age was 50.9 in PCP and 52.7 SP ( $P=0.02$ ). PCP weekly work hours were higher than SP (51.0 vs. 46.5 h,  $P<10^{-5}$ ); PCP were more unsatisfied with their work situation (42.1 vs. 25.6%,  $P=0.001$ ), especially because of the administrative work part (60.1 vs. 41.0%,  $p=0.01$ ). Exhaustion periods (18.6 vs. 12.4%,  $P=0.008$ ) and psychiatric diseases (32.1 vs. 18.0%,  $P=5 \times 10^{-4}$ ) were more prevalent in PCP; they also took more antidepressant drugs (10.6 vs. 4.3%,  $P=0.01$ ). PCP were more affected by osteoarticular diseases (66.6 vs. 58.3%,  $P=0.06$ ), overweight (34.9 vs. 22.8%,  $p=0.02$ ) and addictions (17.2 vs. 11.1%,  $P=0.06$ , essentially eating disorders). Up to date vaccination status was better for PCP (85.8 vs. 71.3%,  $P<10^{-4}$ ), whereas fewer PCP did cervical cancer screening (78.6 vs. 90.1%,  $P=0.04$ ). Prevalence of burnout was 16.3% (95% CI 14.7–17.9). Burn-out was significantly associated to primary care practice, high workload, psychotropic drugs consumption and sleep disorders.

### Conclusion

Physicians increasing workload and health status are emergent public health issues while French medical demography has reached a critical threshold, with serious difficulties expected in the next years. Furthermore, medical physician population is progressively aged. Some worrying aspects of physician health status support the fact that they should benefit from a specific health service as a public health priority, with a particular attention for PCP.

## Does being an informal carer deter women from attending for breast cancer screening? A census-based follow-up study

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### Background

According to the 2001 census, 14% of the UK adult population provide unpaid informal care, with women and the more deprived providing a greater amount and intensity of caring input. Carers are known to have worse levels of physical and mental health and in the USA: the time constraints of caring have been associated with lower uptake of health protection behaviours. In this study we examine the influence of informal caring on uptake of breast cancer screening in Northern Ireland, where uptake rates are ~75%, much lower than other parts of the UK.

### Methods

After ethical approval and data encryption, the National breast-screening database was linked to the Northern Ireland Longitudinal Study (NILS—a census-based longitudinal study, covering a random 28% sample of the population). Cohort attributes were from the census with caring in four categories (none; 1–19 h/week; 20–49 h/week; and >50 h/week). Multivariate logistic regression was used to relate intensity of caring to screening uptake, while adjusting for other socio-demographic and socio-economic factors.

### Results

Twenty-four percent of women aged 50–64 years were carers with 43.4% providing >20 h/week and 27.6% providing >50 h/week. Seventy-one percent of those providing care were aged 50–54 years. Carers were marginally more disadvantaged than non-carers in terms of housing tenure, car ownership and social class (NS-SEC) and more likely to live in urban areas. Uptake of screening for carers was 76.8% compared with 72.5% for non-carers. In the fully adjusted

model caring was not significantly related to attendance at screening—the likelihood of attending screening for those providing caring for 50+ hrs/wk compared with non-carers was 1.07 (95% CI 0.93–1.23).

## 1.7. Child and adolescent public health: Lifestyle determinants

### Neighbourhood socio-economic status and children's health

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#### Background

More and more studies show that neighbourhood socio-economic status (SES) is associated with the health status of its residents. Most of the evidence is, however, based on cross-sectional data. We describe the impact of neighbourhood SES on the development of ill health in childhood, taking into account individual SES.

#### Methods

The Dutch longitudinal PIAMA study collected parental reported health data of 3963 children during the first eight years of their lives. We studied neighbourhood disparities in asthma, general health status (RAND score), eczema and respiratory tract infections. Neighbourhood SES was indicated by the Dutch Social Status scores based on income, unemployment and educational levels of the residents and categorized into quartiles. We fitted GEE models that take into account the dependence between repeated measurements within the same individual, using the GENMOD procedure of SAS 9.1. The effect of neighbourhood SES on children's health outcomes was adjusted for educational level of both parents, as well as sex, age of the mother at birth, birth weight and whether or not the children had siblings.

#### Results

Children living in low SES neighbourhoods suffer from eczema significantly less often than their peers from high SES neighbourhoods (OR 0.81, CI 0.68–0.96), even after adjusting for individual SES. These neighbourhood disparities in eczema were stable during the entire period studied ( $P$ -value neighbourhood SES  $\times$  year 0.56). Neighbourhood SES did not affect the development of poor general health, asthma, or respiratory tract infections. The educational level of the parents only significantly affected the occurrence of respiratory tract infections (lowest educated OR 1.38, CI 1.15–1.65).

#### Conclusion

Socio-economic background of place of birth only slightly influences the health of young children. We will continue to study the social determinants of ill health among children in the Netherlands.

### Violence experience and daily physical education at primary schools—project: 'fit for pisa', Hanover/Goettingen, Germany, 2003–2010

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### Conclusions

Despite the higher prevalence of factors associated with lower uptake of screening, informal caring was not found to be a significant detriment to breast cancer screening uptake.

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#### Background

The intervention 'fit for pisa' supplements the mandatory two hours of physical education per week for the entire school term with another three hours of physical education per week at five primary schools in Goettingen. The evaluation gives information to which extent daily sports lessons affect health status, leisure activities and the education of students in the long run during the intervention as well as after its completion. The study is funded by the Federal Ministry of Education and Research.

#### Methods

The evaluation uses longitudinal-(cohort) and cross-sectional approaches. In order to evaluate the sustainability of the project, the children will be re-examined at the end of fifth and sixth class. A standardized instrument was used for data collection of the violence experiences. By means of a questionnaire 292 students of the fourth class were asked about their experience regarding violence both as an actor and as a victim. Data of 103 students of the intervention group (IG) and 113 of a control group (CG) were used for the longitudinal approach.

#### Results

The interim analysis at the end of fourth class indicates that students of IG have significant less experience of physical and verbal violence. In the IG, the experience as an actor according to the physical violence was significantly lower than in the CG (IG 7.1%; CG 14.1%). Stratified analyses concerning sex and social state had shown a difference in experience as an actor considering boys and girls with low social state. Girls with low social state of the IG report significantly less-experiences as a victim according verbal violence than girls with the similar social state of the CG.

#### Conclusions

The analysis shows, to what extent the violence experience of children of the IG changed after conclusion of the intervention measure. The quantitative analyses of the violence experiences confirm the positive effects of daily school sports on the social behaviour. First reservations about the intervention of parents and teachers were compensated by the positive experiences and effects of daily school sports.

### Quality of life and violence in primary schools of Hamburg

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Violence in schools (bullying) has repeatedly been the focus of societal discussions. Public health studies were primarily focused on secondary schools. In Germany, this study is the first one which gives information on: experiences with violence, practicing violence and attitudes towards violence

in primary school children in Hamburg. It simultaneously looks for an association between bullying and the subjective quality of life.

In November 2005, a cross-sectional survey was conducted in which 1154 primary school children of the third and fourth grade answered a quantitative questionnaire concerning the above issues. They needed 45 min to answer the questions. In addition to bi- and multi-variate analysis, Structural Equation Modelling was conducted to analyse the association between the main latent outcome variables bullying and quality of life.

The results show that bullying in primary schools is a common problem. Twenty percent of the third and fourth graders reported having been bullied at least once a week. Five to seven percent of children admitted to have bullied someone once a week. Twenty-five percent of the school children reported feeling a low subjective quality of life. While school climate and social support by friends and peers was associated with bullying, gender and socio-economic conditions did not show any significant association. Only 50% of pupils reported that they would inform adults about their current bullying situation.

In conclusion, to improve the violence situation in schools, factors influencing the school climate particularly the relationship between teachers and students, needs to be enhanced because these factors in turn influence the social support between the children, thereby preventing or decreasing bullying experiences and improving the subjective quality of life in children.

### Physical fighting among adolescents and related risk behaviours: the effect of school

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#### Aim

To measure the frequency of being involved in physical fights among adolescents, and to evaluate the association with other related health risk behaviours, studying the effect of schools.

#### Methods

The EPITeen project was designed to study a population-based cohort of urban adolescents. The present analysis included cross-sectional information collected with a self-reported questionnaire when adolescents were 17-year-old (1191 girls and 1125 boys). Physical fighting was defined as being involved in physical fight in the previous year. We used odds ratio (OR) and 95% confidence intervals (CI) to estimate the magnitude of associations by ordinal regression, adjusted to parents' education, smoking, alcohol, marijuana or hashish use and sexual behaviour. Mixed models were used to evaluate the cluster effect of schools.

#### Results

Overall, 142 (12.1%) girls have been involved in physical fights once, and 94 (8.0%) twice or more. In boys results were 243 (22.2%) and 289 (26.4%), respectively ( $P < 0.001$ ). School was the most reported place where fights occurred (45.0% of adolescents). After adjustment, among girls, to have been involved in fights was associated with marijuana or hashish use: 1–2 times [2.39 (1.20–4.74)]; three times or more [2.05 (1.12–3.78)]; alcohol use: experimenters [2.67 (1.45–4.93)]; drinkers but never been drunker [2.89 (1.53–5.46)]; ever been drunker [3.44 (1.69–7.00)]; and had sexual intercourses before 13 years [6.77 (2.47–18.54)]. In boys, we found significant associations with smoking: experimenters [1.58 (1.19–2.11)]; smokers [2.03 (1.32–3.12)]; ever been drunk [2.26 (1.45–3.50)] and sexual behaviour: ever had sexual

intercourse after 13 years [2.05 (1.55–2.70)] and before 13 years [2.34 (1.29–4.22)].

The mixed models showed that the associations observed were not modified by the cluster effect of schools.

#### Conclusion

Boys were more frequently involved in physical fights. Being involved in physical fights is related to other health risk behaviours. Although school is referred as the most frequent place where the fight occurred, it did not show a significant effect on the associations found at the individual level.

### Clustering of health-compromising behaviour and delinquency in adolescents and adults? Yes, but patterns differ by age

Sijmen Reijneveld

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#### Background

Preventive intervention mostly target at separate health compromising behaviours. However, their target groups may grossly overlap due to a co-occurrence of these behaviours in the same individuals. Evidence on the existence of such a clustering is very scarce, though, and evidence on differences between adolescents and adults fully lacks. This study aims to investigate the clustering of health-compromising behaviours and delinquent behaviour, in a representative sample of Dutch adolescents and adults.

#### Methods

A representative sample ( $N = 4395$ ) of the Dutch population aged 12–40 years (overall response rate 67%), was asked about various health-compromising behaviours, such as alcohol consumption, smoking, illegal drug use, unsafe sexual behaviour, physical inactivity, poor nutrition (such as skipping breakfast and not eating fruit and vegetables), poor sleep behaviour, unlawful traffic behaviour, and delinquent and aggressive behaviour.

#### Results

Health compromising behaviours were shown to cluster indeed, but in several interrelated clusters of a composition that differed by age. For young adolescents (12–15 years) two clusters were identified. These were a broad cluster of risk-taking behaviour, and a second cluster that consisted of alcohol, smoking and drug abuse. For older adolescents (16–18 years) and adults (19–40 years) three clusters were identified: alcohol (also comprising unsafe sex, unlawful traffic behaviour and vigorous physical activity); delinquency (also comprising aggressive behaviour, smoking, drug use, and little sleep) and health (several health promoting behaviours such as eating fruit and vegetables). For adults (19–40 years), clusters were rather similar to those for late adolescents, the main difference being that the alcohol cluster only comprised alcohol use and unsafe sex, and unlawful traffic behaviour was part of the Delinquency cluster.

#### Conclusions

The findings of this study support a more integrated approach to promoting healthier lifestyles, and suggest that the behaviour targets of integrated prevention programs should be different for adolescents and adults.

## Predict early findings of Preventive Child Healthcare professionals psychosocial problems in preadolescence? The TRAILS study

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### Background

Research indicates that early detection of psychosocial problems in children, if followed by adequate intervention, significantly improves their prognosis. The aim of this study is to develop and validate a prediction model using data from routine Preventive Child Healthcare (PCH) on early developmental factors in relation to psychosocial problems in preadolescence.

### Methods

Data were collected as part of Tracking Adolescents' Individual Lives Survey (TRAILS), a longitudinal study on the psychosocial development of adolescents from the age of 11 until 24 years. With permission of the parents information on early developmental factors from the PCH file was collected. Parents filled out the Child Behaviour Checklist (CBCL),

from which we used the scales externalizing, internalizing and total problems as outcome measures. To examine the influence of developmental factors on psychosocial problems multiple logistic regression analysis were performed, with a derivation sample ( $N=1058$ ). Furthermore, ROC curves were calculated, with a validation sample ( $N=643$ ) for the evaluation of the validity of the models.

### Results

Multiple logistic regression showed that behavioural problems, attention problems, enuresis (all at age 4), level of education of the father and being a boy significantly predicted CBCL externalizing problems [odds ratios (OR) 1.4–3.7]. Similar results were found for CBCL total problems (ORs 1.6–2.3). In contrast, CBCL internalizing problems were predicted by maternal smoking during pregnancy, sleep problems (at age 4 years) and being a boy (ORs 1.7–3.0). Prediction was best for externalizing problems with an area under curve (AUC) of 0.66 (95% CI 0.59–0.72) indicating moderate discriminatory power, compared with an AUC of 0.62 (95% CI 0.56–0.68) for total problems. For internalizing problems the AUC was 0.54 (95% CI 0.47–0.60) indicating very poor discriminatory power.

### Conclusions

Findings on early development as registered in the PCH files are predictive for externalizing and total mental health problems in preadolescents. However, internalizing problems are poorly predicted with developmental data.

## 1.8. Workshop: Developing a conceptual framework for training health care professionals in cultural competence

Chairs: Walter Devillé\* and Karien Stronks, The Netherlands

Organizer: EUPHA Section on Migrant and Minority Health

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According to the WHO, the right to health care for everybody includes that all services, goods and facilities must be available, accessible, acceptable and of good quality. They must be accessible physically for all sections of the population included vulnerable groups on the basis of non-discrimination. Accessibility also implies the right to seek, receive and impart health-related information in an accessible format. Services should be medically and culturally acceptable. One of the instruments in health care to deal with the multicultural population we are serving, is to integrate cultural competency into curricula of medicine and other health care training programmes for all students involved. However, initiatives remain sparse and often limited to selective modules or a few hours of education.

The workshop will present various initiatives in different countries and a framework for training of cultural competence. How to overcome barriers and develop strategies to integrate cultural competence into curricula will be discussed.

Added value: experiences from various countries in Europe will be shared and will give input for a general framework for training health professionals in cultural competence.

### Health personnel perceived cultural problems and opinions on training for the provision of care to a culturally diverse population

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### Background

The rapid increase of the immigrant population in Catalonia has posed new challenges for the health system and its professionals. Their health problems are not very different from those of the native population, but their particular characteristics—culture, language—make of them a culturally diverse population. The objective is to analyse health personnel perceived cultural problems in the provision of care to immigrant population and their opinions regarding their training on cultural competences.

### Methods

A descriptive and exploratory qualitative study was carried out by means of semi-structured individual interviews and focus groups to a criterion sample of informants: health care managers (21) and professionals (44) from primary and secondary care. A narrative content analysis was conducted by three analysts, segmented by informants' groups and themes. Area of study was made up of five regions in Catalonia with a higher proportion of immigrant population.

### Results

Health personnel perceive a cultural distance with the immigrant population. Differences in opinions emerged about the influence of cultural diversity on their daily practice. While some informants perceived it as a source of learning, others identified it as problem for the provision of care, that they related to differences with the health systems in country of origin, gender roles and professionals' misconceptions, among others. Therefore, specific training on cultural competences, ethnic characteristics and overseas health systems to understand immigrants' health care demands and to prevent cultural barriers is considered a priority by the majority. Some discrepant voices consider adaptation to the system to be immigrants own responsibility. All informants

agree, however, in pointing out a number of problems in current training programmes.

### Conclusions

Professionals' perceptions on the problems in providing care to a cultural diverse population seem to be mediated by insufficient information and training. They are willing to be trained in cultural competences but only through programmes adapted to their specific needs.

## Cultural competence: a conceptual framework for teaching and learning

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### Background

The need to address cultural and ethnic diversity issues in medical education as a means to improve the quality of care for all has been widely emphasised. Cultural competence has been suggested as an instrument with which to deal with diversity issues. However, the implementation of culturally competent curricula appears to be difficult. The development of curricula would profit from a framework that provides a practical translation of abstract educational objectives and that is related to competencies underlying the medical curriculum in general.

### Objective

This supplement proposes a framework for cultural competencies.

### Results

The framework illustrates the following cultural competencies: knowledge of epidemiology and the differential effects of treatment in various ethnic groups; awareness of how culture shapes individual behaviour and thinking; awareness of the social context in which specific ethnic groups live; awareness of one's own prejudices and tendency to stereotype; ability to transfer information in a way the patient can understand and to use external help (e.g. interpreters) when needed, and ability to adapt to new situations flexibly and creatively.

### Conclusion

The framework indicates important aspects in taking care of an ethnically diverse patient population. It shows that there are more dimensions to delivering high-quality care than merely the cultural. Most cultural competencies emphasise a specific aspect of a generic competency that is of extra importance when dealing with patients from different ethnic groups. We hope our framework contributes to the further development of cultural competency in medical curricula.

## Five steps to intercultural competence: methods and results of training health professionals

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### Background

Health care for migrants in Germany has been identified to have barriers. These include a lack of professionals qualified to work in foreign languages, qualified interpreters, a 'trans-cultural' competence profile and the psychosocial support needed.

### Approach

Statutory social and health service are challenged to overcome these barriers in through reliable transcultural services and guidelines. In 2003, EMT and ISTOB developed a 'Five-Step' programme for training transcultural competence. Until March 2009, this concept was applied in 10 institutions (total >15 000 employees).

### Results

The resources invested defined the scope and framework of implementation. The concept proposed consisted of five

steps: (i) defining the mandate of work with the management, (ii) kick-off event to confirm the mandate with staff, (iii) training of topics agreed at Kick-off, (iv) feedback with management and (v) follow-up and supervision of tasks arising from implementation of competence. The most commonly applied training modules were: differences between ethnic groups, psychosocial dimensions of migration and integration, improving communication across language barriers, interaction culturally different social (and gender) role models with professional roles, resolving intercultural and institutional conflicts through moderation, networking with communities and process management. Follow-up through supervision and feedback meetings with management proved to enhance sustainability. Key competences can improve 'customer' satisfaction when adopted as service principles: high quality of education and counselling of lay people by professionals, choosing an intelligible language for communication, respectful attitudes towards culturally 'strange' behaviour and appearance, ability to lead a conversation with more than one person (family), overcoming foreign language barriers, step-by-step communication of achievable solutions and future options, appropriate time management.

### Conclusions

Full evaluation of trainings and interventions is needed to demonstrate the impact of interventions. From the onset, improving intercultural competence in health care must actively engage the management to develop targets and goals. Larger institutions benefit from a train-the-trainer approach. Transparency and reliability of the transition from 'old' to 'new' practices and attitudes are key to implementing transcultural competence.

## Evaluation of a project using cultural mediators as a method of addressing the cultural competences of healthcare professionals in Danish hospitals

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### Introduction

The Danish National Board of Health has in 2007–09 conducted a project in collaboration with three hospitals in major cities in Denmark testing cultural mediators as a method of addressing cultural competences of healthcare professionals. Evaluations of cultural mediator projects in other European countries had shown good results in addressing cultural competences of healthcare professionals.

### Method

The cultural mediators were healthcare professionals already employed at the wards involved in the trial. They received training in intercultural communication thus enabling them to conduct training for their colleagues and in general to raise awareness of intercultural issues in the everyday work of the ward. As preparation for the project a baseline study was conducted using questionnaires among healthcare professionals and patients and group interviews with healthcare professionals.

### Results

In the baseline study, 91% of the respondents indicated that ethnic minority patients is a group that presents with certain challenges compared with ethnic Danish patients. The healthcare professionals especially identified language barriers, differences in perception of health/illness and lack of compliance as major issues. Interviews revealed that the group is a source of great frustrations and is perceived as taking up lots of time. But in none of the hospitals there had been made any attempts to deal with these frustrations systematically on a management level. Sixty seven percentage indicated that they would like to be better enabled to communicate with patients with ethnic minority background. The baseline study indicated that problems

related to ethnic minority patients often were attributed to ‘cultural differences’. Thus there was a great demand for information about traditions and beliefs related to different cultures.

Based on these results we wish to present at the workshop: (i) the results of the project in respects to the ability of the cultural mediators to address the cultural competences in

health care professionals as perceived by the healthcare professionals; (ii) main challenges and barriers for the cultural mediators in their work; (iii) recommendations for future work of mediators regarding organization, professional profile of the mediators and the methods used; and (iv) reflections on the nature of cultural competences.

## 1.9. Workshop: Pandemic Flu! Preparation for and management of the Influenza A(H1N1) outbreak

*Chairs: Chakib Kara-Zaitri\*, United Kingdom and Henriëtte L. ter Waarbeek, The Netherlands*

Organizer: EUPHA Section on Infectious Diseases Control

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Influenza pandemics are unpredictable events which have severe consequences worldwide. With the increase in global transport and overcrowded conditions in many areas of the world, pandemics are happening at a much faster pace than before. Despite advanced preparedness plans and extensive experiences with the pathogenic Avian Influenza A(H5N1) infection, all countries are still learning lessons to mitigate the impact of such global recurring events.

This workshop aims to explore:

(i) Mechanisms for strengthening coordination at national and international levels which will contribute to better global preparedness and response.

(ii) Methods which have been applied to manage the recent Influenza A(H1N1) outbreak and the extent to which preparedness plans have worked well.

The first aim is discussed in two supplements: one from the Netherlands and Germany which examines a cross-border Flu Pandemic preparedness plan involving the Euregion Meuse-Rhine region (Netherlands, Belgium and Germany), and another from Germany which assesses the strengths and challenges of having tiered preparedness plans representing the Federal Republic, its 16 individual States (lands) and the Cities and Municipalities, respectively.

The second aim is discussed in two supplements exploring the response to the H1N1 pandemic in two countries. The first contribution is from the United Kingdom and discusses FluZone—a web-based suite which has been used to manage all enquiries, cases and situations nationally through a number of regional flu response centres. The second contribution is from Germany and provides a critique on how the H1N1 outbreak was managed in the Franco-German-Swiss area of the Upper Rhine.

The findings from the four supplements presented yield the following urgent actions for improved preparedness for pandemic flu:

(i) Enhanced cross-border collaboration, exchange of real-time surveillance data and communication.

(ii) Practical and pragmatic tools for managing Pandemics at the local, regional, national and international levels.

### Euregional cooperation on pandemic preparedness

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#### Issue

The Euregion Meuse-Rhine (EMR) covers an area of 10 478 km<sup>2</sup> with 3.9-million people (35% of EU). It is one of the oldest cross-border collaborations (1976) and became a foundation in 1991 with five members: Province of Limburg-South (Netherlands), Province of Limburg (Belgium), Province of Liege (Belgium), Region Aachen (Germany) and the German-speaking community in Belgium. The heavy

daily traffic of goods, services and people across the borders poses a serious threat in respect of Pandemic Flu and there is therefore an urgent need to strengthen international collaboration on cross-border surveillance and incident management.

#### Intervention

An EU funded project called Interreg (2007–2013) was recently launched to stimulate and enhance cross-border cooperation in respect of economical, social and cultural dimensions. Pandemic Flu preparedness has been selected as the focal point of the project, especially that it is currently one of the three major threats to Dutch society.

#### Results

The paper discusses outline solutions in respect of the following key collaborative aspects in the context of improved preparedness for Pandemic Flu as well as other emerging infections to limit morbidity, mortality and social and economic disruptions within the Euregion:

(i) Development and implementation of a cross-border pandemic preparedness plan.

(ii) Real-time surveillance on cases and contacts taking into consideration the varying laws and regulations of exchanging data from one country to another.

(iii) Manual or automated systems for the rapid exchange of epidemiology and laboratory data.

(iv) Sharing of best practices and consistent communication with health professionals, the public and the media.

(v) Methods for improving ‘getting to know each other’ better.

#### Lessons

Securing a pragmatic collaborative system for managing cross-border Pandemic Flu is complicated, especially in view of the varying national laws and regulations, but it can be achieved by early negotiations and agreements on protocols for shared response and management.

### Pandemic Flu preparations in the Federal Republic of Germany

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#### Issue

Germany is a Federal Republic and consists of 16 individual states (lands). A tiered Pandemic Flu preparedness system representing the Federal Republic, the States and the Cities and the Municipalities, respectively, has been implemented. This has resulted in a variety of pandemic response plans at different governmental levels and the paper assesses the strengths and challenges of the current system in light of the recent outbreaks.

#### Intervention

The national pandemic preparedness plan was finalized in 2007 after consultation with the States. The plan consists of three parts:

(i) Federal tasks including supply of medicines, national surveillance and notification, cooperation at international level and national communication.

(ii) Cooperation between federal and state levels focusing on the development of emergency plans, the preparation of appropriate infrastructure and communication.

(iii) Reporting of epidemiological data for scientific analysis. Currently, every State has published its own plans, according to the national framework and the tasks to the individual municipalities have been allocated. The supplement explores the challenges of reconciling the individual plans with the national plan.

### Results

The North Rhine-Westphalia pandemic plan is taken as an example and discussed in respect of responsible institutes at the local public health authorities, the crisis management team at the State Ministry for Health and Environment and within the State Government. Conditions for improved collaboration with the Cities and Municipalities have been identified in the context of the city of Aachen. Detailed interpretation of plans in respect of preparedness of hospitals, transport and handling of cases, business continuity for the utility industries and the exchange of surveillance data with Belgium and the Netherlands have been articulated commensurate with the relevant WHO pandemic phase.

### Lessons

A Federal Republic like Germany faces similar challenges in respect of cross-border preparedness because of the inherent devolved state administrations. The articulation of national and state preparedness plans at the municipality level requires significant consideration, interpretation and planning and requires a pragmatic communication protocol.

## FluZone: a national web-based system for managing the Influenza A(H1N1) outbreak in England

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### Issue

Several lessons have been learned from the recent H5N1 pandemic and the Polonium incident in the UK. The recent H1N1 outbreak has provided a real test bed for a new national system facilitating a response in the most effective way by coordinating all the arrangements for the clinical assessment and management of the first few and subsequent cases of swine flu.

### Intervention

The new system is based initially on the establishment of a number of Regional Response Centres to respond to all Flu enquiries in a given area and liaise with general practitioners (GP), hospitals and reference laboratories on the diagnosis, testing and treatment of cases identified. The system then transfers the same facility to all Local Units after the First Few hundred cases have been thoroughly investigated.

### Results

FluZone is a secure web-based decision support system which has been implemented for this purpose and trialled during the H1N1 outbreak in England. Currently, FluZone consists of three interconnected modules:

(i) Response: to screen calls by non-clinical staff against an agreed protocol, triage (clinical, laboratory and epidemiology) calls by clinical staff, in collaboration with GPs, in light of the latest algorithm in respect of testing and antiviral treatment, and then to handover probable and confirmed cases to dedicated clinical staff.

(ii) Control: to facilitate the multidisciplinary management of enquiries, cases, contacts and situations based on a continuously updated protocol of conditioned actions and enabling direct data entry by the laboratories.

(iii) Report: to provide a real-time tabular and geographical dashboard of all possible, probable, confirmed and discarded cases locally, regionally and nationally.

### Lessons

Fluzone has provided a practical tool for effective communication and management of a Pandemic coordinating the operations of many health professionals locally, regionally and nationally, and a mechanism for seamlessly sharing the workload amongst the Regional Response Centres.

## Influenza pandemic planning, the new Influenza A(H1N1), and public health practice in the Upper Rhine region

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### Issue

The Franco-German-Swiss Conference of the Upper Rhine provides the institutional framework for cross-border cooperation in the Upper Rhine region (5.9-million people in a 21 500 km<sup>2</sup> area). Twelve working groups, including one in Public Health, have been established to deal with the cross-border issues that fall within the remit of the Upper Rhine Conference. An expert group of public health professionals from France, Germany and Switzerland, called EPI-RHIN, was established in 2001. One of the key aims of the group is to develop mechanisms for the direct and rapid cross-border exchange of information on communicable diseases, notably Flu, in the event of a pandemic.

### Intervention

Continuing education workshops for public health service physicians on the state of influenza pandemic planning in the Upper Rhine region were organized in 2004 and in 2008. Workshop contents were aimed at providing a mutual understanding of provisions and procedures foreseen for activation in the case of an influenza pandemic. Topics included, but were not limited to the cross-border management of pandemic influenza cases among travellers and commuters, pandemic planning at the work site, and the availability of drugs and vaccines.

### Results

The H1N1 pandemic provided a good test bed for the work undertaken by this project particularly after the WHO raised the level of influenza pandemic alert to Phase 5. The supplement discusses the cross-border management of the H1N1 cases, suspected or otherwise, in the cross-border area and assesses the extent to which the system implemented has achieved its objectives. Experiences with various structures developed during pandemic planning, and to the handling of issues which required cross-border management in public health practice are discussed.

### Lessons

The Franco-German-Swiss Conference of the Upper Rhine research has yielded lessons to be learned in the development of influenza pandemic planning, and its subsequent implementation.

## First estimation of direct H1N1pdm virulence from reported non-consolidated data from Mauritius and New Calenia

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We provide rough estimates of direct lethality from ARDS due to H1N1pdm from two independent sources of data, one from New Caledonia where 30 000 infections are assumed to have occurred and three deaths reported to be attributable directly to the pandemic virus. Another source is Mauritius where 70 000 infections are estimated to have occurred, and seven reported death from ARDS (five of them are currently confirmed). These surveillance data allows for first estimation of direct lethality due to H1N1pdm to be 1 per 10 000 infections, about 100 times more than regular seasonal influenza.

## 1.10. Inequalities and social justice

### Water Discipline: public health, human rights and the unrecognized Bedouin villages in the Negev

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Most residents of the unrecognized Bedouin-Arab villages in the South of Israel (Negev region) are not connected to the Israeli water grid. Therefore their access to water is irregular, sometimes from sources of untested and unknown quality. In many cases water is kept for prolonged periods in containers that are neither inspected. Water consumption in the villages is about half of the average national consumption; allocation of water to residents of the unrecognized villages is radically unequal as compared with the rest of Israel's residents (suggestion: a comparison of water allocation between the village residents and the rest of Israel's residents reveals drastic inequalities). This situation has severe health ramifications, from high prevalence of infectious diseases to infant mortality rates that are by far the highest in Israel.

In this article we will analyse the current water policies and reactions to them as they are shaped by the various stakeholders: public health practitioners, academics, non-governmental organizations, human rights activist and the Bedouin-Arab communities. We will focus on the tensions and potential for dialogue between the different discourses and practices such as public health ethics, community-based research, human rights and legal advocacy. Considering their distinct expressions in the particular political, social and cultural context of Israel, we will explore the advantages and possible pitfalls of these approaches. Such analysis of a particular case study can provide a model for rethinking and redressing forms of health inequalities, including the particular issue of the right to water as a right to health and a fundamental human right.

### Environmental justice: the social dimension of environmental health policies

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#### Background

In the past few years, the unequal distribution of environmental health risks (e.g. air-pollution, noise) and environmental resources (e.g. parks, recreational green areas) between different social groups has increasingly received attention from an environmental justice perspective in various European countries. Focusing the influence mediated by the natural, social and man-made built environment on public health, environmental justice has become a current topic of public health research and practice in Germany.

#### Problem

The fact that the extent of environmental health burden is closely associated with social status clearly indicates a need to act. As a prerequisite for equal opportunities in health, a new cross-sectional political field—environmental equity—must be established beyond science and research.

#### Results

The first impulses for the necessary systematization and implementation of environmental justice as a field of research and politics in Germany came from current research plans commissioned by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety as well as the

Federal Environmental Agency. They rest upon the results of the following project elements:

- (i) a survey of decision-makers in the field environment, public health and urban social development on how well the issue of environmental justice was known;
- (ii) bringing together the expertise of politics, research and practice at a two-day conference in October 2008;
- (iii) making recommendations on how to better consider the social dimension of environmental health policy.

#### Conclusions

Combining the results of these three projects shows that environmental justice in the context of public health offers a new conceptual framework for better understanding the causes and mechanisms of increasing inequality in health and social inequality in Germany. Using the environmental issues of mobility and traffic as an example, it is shown that at the political level, public health as a link between scientific research, political decision-making and practice in preventing, reducing or compensating social inequality in the distribution of environmental burdens and resources can give, shape and follow up on specific impulses.

### Tackling inequities in health: developing partnerships and funding mechanisms to address strategic research priorities of the Canadian Institutes of Health Research, Institute of Population and Public Health

Nancy Edwards

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#### Issue

Population health disparities and inequities remain tenacious within and between countries around the globe. An increasing number of research funding organizations are reexamining their priorities and funding mechanisms to ensure that research efforts address these inequities.

#### Description

The Canadian Institutes of Health Research is the national agency for health research in Canada. Its 13 institutes are mandated to stimulate and support leading edge science. The Institute of Population and Public Health recently launched priorities including pathways to enhance equities and reduce inequities in population health, and population health interventions and their implementation systems in public health and other sectors. An extensive consultation with other funders, decision-makers and scientists has led to novel funding mechanisms and partnerships to address health equity research priorities. Two illustrative examples will be presented.

#### Results

A multi-agency request for applications focusing on adaptation to climate change has been developed. This aims to advance policy-relevant knowledge on climate change and other stressors on vulnerable populations, resources and ecosystem health and their potential to worsen inequities within and between countries through the establishment of multi-disciplinary and multi-country research networks. The Global Health Research Initiative is a unique five-agency partnership in Canada. It supports research, capacity-strengthening and knowledge translation initiatives that address the health and health system problems of low- and middle-income countries.

**Lessons learned**

Facilitative leadership structures are needed to foster the development of inter-agency initiatives that harness existing strengths and capacities and take advantage of opportunities for complementarities. A focus on inequities and population health interventions to address them has required the strategic investment of resources that incentivize the research community to consider these questions. Increased alignment of resources is needed to effectively support the meaningful engagement of policy makers in research and knowledge exchange activities that inform policy and practice.

**Growth, inequality and population health in the era of economic globalization**

Chieh-Hsiu Liu

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**Background**

Economic growth and income inequality were taken as two independent predictors in the studies of population health; however, their potential combined effects have been least discussed. The objectives of this study are to develop a cross-classification by economic growth and income inequality, and to evaluate the impacts of different patterns of economic development on population health in the era of economic globalization.

**Methods**

This study included 77 developed and developing countries. Data were obtained from World Development Indicators 2006 and World Income Inequality Database Version 2.0 for the index year 1980 and 2000. Main measures included gross national product annual growth rate as the indicator of economic growth, and change in GINI index reflecting income inequality improvement. Economic development was defined by cross-classifying economic growth (rapid, stable or decline) and income inequality improvement (improving or worsening) into six groups. Population health indicators included life expectancy at birth, infant mortality and under-five mortality. We examined the differences in population health improvement among groups of economic development.

**Results**

The average change rates of life expectancy, infant mortality and under-five during 1980–2000 all indicated poorer improvement in economic decline countries, especially in those with income inequality worsening. The multiple regression analysis showed that economic decline with worsening income inequality had significantly negative effect ( $P < 0.05$ ) on the improvement of life expectancy, infant mortality and under-five mortality, even after the adjustment of the level of income, income inequality, education enrolment and health expenditure.

**Conclusions**

Income inequality improvement had significant protective effects on population health in economic decline countries. We suggest that the goal of economic development should refocus not only on economic growth but also income inequality improvement in the era of economic globalization and financial crisis.

**Inequalities in health status by employment status among women**

Kyeonghee Jung-Choi

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**Background**

To compare inequality in health status by education and occupational type among Korean women by applying different approaches of measuring socio-economic position—individual, conventional, dominance and joint classification approaches.

**Methods**

A nationally representative sample of 5813 women aged 30–64 from the 2005 Korean National Health and Nutrition Examination Survey was analysed. Women were divided into two groups: employed women and homemakers. Self-rated health was used as the dependent variable. Education and occupational type were used as socio-economic position (SEP) indicators. Four approaches (individual, conventional, dominance, and joint classification) were applied to measure women's SEP. Age-adjusted prevalence of poor health status was calculated by using four approaches and compared between the employment status. Odds ratios (OR) and relative index of inequalities (RII) were calculated from logistic regressions.

**Results**

Prevalence of self-rated poor health was not different between employed women (58.2%) and homemakers (58.8%). However, disparities in health among employed women were higher than those in homemakers regardless of approaches to measure education and occupational types. RIIs of employed women (3.01) was higher than those of homemakers (2.07) when the individual approach to measure education was used. A lower proportion of women in high SEP among employed than homemakers seemed to explain this. We found that disparities were higher when we used the individual approach for measurement of education and conventional approach for measurement of occupation, respectively.

**Conclusions**

Disparities in health among employed women were higher than those among homemakers regardless of measurement methods of education and occupational type. To avoid the dilution of the magnitude of inequalities among women, it is important to consider employment status.

**Health inequalities and the new labour market legislation in Germany**

Lars Eric Kroll

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**Background**

Since the 1990s, there has been an ongoing discussion about reforms that foster higher participation rates of the labour force in European welfare states. Germany is generally considered as a successful example of this policy approach. The federal government has increased the participation rate using measures like cutting down social benefits and retirement opportunities for the long-term unemployed among others. It is critically argued that this growth enhancing change of the German welfare model has led to an increase of health inequalities.

**Methods**

We are using representative data (Health Surveys of German Cardiovascular Prevention Study  $n = 11\,719$ , German Socio-Economic Panel  $n = 44\,918$ ) for the German population aged 25–69 years to present results for the timeframe 1990–2006. We compared unemployed and full-time employed men and women regarding their poverty rate, life satisfaction, economic sorrows and self-rated health status (SRH, 'good' or 'very good' vs. 'bad', 'less than good', 'sufficient').

**Results**

It is shown, that the new labour market regulations were associated with significant increases in poverty risks in the population as well as with increasing economic sorrows and a decreasing life satisfaction. The unemployed were affected disproportionately high by these negative effects. In line with these trends, health inequalities between the unemployed and full-time employed increased remarkably. While the prevalence of good SRH increased by 0.47 (95% CI 0.35, 0.60) and 0.54 (95% CI 0.37, 0.71) among full-time employed men and women, there was no significant increase among the unemployed. In fact, their health status

worsened insignificantly by  $-0.14\%$  (95% CI  $-0.55, 0.28$ ) and  $-0.04\%$  (95% CI  $-0.44, 0.37$ ) per year. Using logistic regression models a large part of this increasing difference can be attributed to the worsening situation of the unemployed.

**Conclusions**

The observed increases in health inequalities between unemployed and full-time employed in Germany should be regarded as a warning example for other European welfare states. As long as activating labour market policies are producing growth by consuming health, their success is questionable—at least from a public health perspective.

## PARALLEL SESSION 2

Thursday 26 November: 16:00–17:30

# 2.1. Workshop: The impact of public environmental health and its professional capacity needs

### The impact of public environmental health and its professional capacity needs

Peter van den Hazel

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#### Background

The principal objective of this project is to create a European network of public health (environment) Physicians to develop capacity in environmental health. The initial role of this network would be to coordinate continuous professional development (CPD) of public health (environment) [PH(E)] physicians across Europe. In particular, the project aims to:

- identify training and CPD needs of PH(E) physicians in all EU countries and assess levels of variation in access to training courses between countries;

- assess how courses can be coordinated to improve access to training and CPD in different countries;

- develop a proposal for a joint programme of training and CPD courses across EU countries that would be coordinated by the network.

#### Methods and means

Registration of organization of public health environment physicians and analysis of their role, current capacity and training needs are the main means of achieving the objectives of the project.

#### Expected outcomes

The project will establish a network of PH(E) physicians, identify training needs in all EU countries and assess coordination of courses to improve access. Ultimately, the network will allow trainees from one country to take courses delivered in another, and thus allow countries with limited capacity to access resources and skills in another. It will also promote cooperation between countries. The underlying need for this capacity will be shown at the hand of several cases.

This workshop will show how some environmental health practices need support from medically trained personnel. Besides each descriptive part of the underlying cases a link will be made towards the specific capacity of the medically trained professional to deal with these cases.

### Health effects of commuters' exposure to air pollution

Moniek Zuurbier

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<sup>3</sup>Julius Center for Health Sciences and Primary Care, Utrecht University, Utrecht, The Netherlands

#### Background and objective

People spend a significant amount of time in traffic, during which they are exposed to high levels of air pollution. The TRAVEL study was designed to study exposure and related acute health effects of people commuting by bike, car and bus.

Outcomes will be used in advice to policy makers in environment and public health.

#### Methods

From June 2007 till June 2008, volunteers repeatedly travelled for two hours in the city of Arnhem by diesel and trolley bus, by petrol and diesel car or by bike along routes with major and minor roads. During the commute, we measured fine particles (PM<sub>10</sub>), soot and ultrafine particles. Before and six hours after exposure we measured lung function, airway resistance, nitrogen oxide in exhaled air (FeNO) and coagulation and inflammation markers in blood. Preliminary results of FeNO and high-sensitivity C-reactive protein (CRP) plasma levels are presented.

#### Results

Exposure levels in petrol and diesel cars were comparable. On bicycle routes along minor roads exposure to soot and ultrafine particles was 30% lower than along major roads. Exposure to PM<sub>10</sub>, soot and ultrafine particles in electric powered buses was considerably lower than in diesel buses.

During the 47 measurement days, we collected 357 pre- and post-health measurements of 34 healthy, non-smoking, adult volunteers. Using mixed model analysis, we found no associations between exposure to air pollution and differences in post-pre levels of FeNO and CRP.

#### Conclusion

Vehicle type and route influence commuters' exposure to air pollution. Clean buses and bicycle routes with lower traffic intensity result in lower exposures of bus passengers and cyclists. Commuters' exposure of two hours to air pollution was not associated with FeNO, a marker of airway inflammation, and plasma CRP, a marker of systemic inflammation. These results are an incentive for policy makers to promote clean vehicles and routes.

### An early alerting system for chemical and environmental public health incidents in London

Catherine Keshishian

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Chemical Hazards and Poisons Division (London), Health Protection Agency, London, UK

#### Background

The Chemical Hazards and Poisons Division (CHaPD) of the UK Health Protection Agency (HPA) responds to 1000 environmental and chemical incidents with a potential public health impact each year. These include fires, accidental spillages, and deliberate releases. London is particularly vulnerable to chemical emergencies due to its dense population and heightened security status. Early inclusion of public health bodies in such events is essential for proficient incident management, ensuring that wider aspects of health are protected.

#### Methods

To address London's vulnerability, CHaPD established an Early Alerting System with the fire and ambulance services, Environment Agency and Drinking Water Inspectorate in 2005. These agencies often respond together to incidents, however, specific criteria for public health were agreed to enhance reporting between organizations and to CHaPD.

When an alert is received, CHaPD evaluate the information and provide medical toxicology, environmental science and public health advice as appropriate.

#### Results

Over 300 incidents were reported annually to CHaPD via the London Early Alerting System in 2006–08, representing over a third of all chemical incidents reported across England and Wales. In 2008, 8% of the incidents CHaPD responded to involved carbon monoxide, where the HPA has a role in coordinating response and ensuring occupants and neighbours are safe; and 6% were unknown 'chemical' fumes, where CHaPD may advise on sampling, provide health messages to the public and conduct long-term follow up.

#### Lessons

The London Early Alerting System has been extremely successful with increased case ascertainment and protection of public health. The scheme has had other important outcomes, such as improving inter-agency understanding of roles and responsibilities, and providing training opportunities. These factors will play an important role in the upcoming London 2012 Olympics, providing timely updates and allowing responders to take efficient and effective actions. Similar systems are being considered across the UK.

### Managing the prevalence of carbon monoxide exposure using various studies and actions

Ruth Ruggles

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<sup>4</sup>Leeds Teaching Hospitals NHS Trust, Leeds, UK

#### Background and objective

Carbon monoxide (CO) exposure is a significant but preventable cause of mortality and morbidity from chemical poisoning in the UK. The best estimates from existing surveillance suggest there are 50 fatalities and 200 casualties each year from CO toxicity; however these are believed to be gross underestimates. A recent study showed that 6% of gas appliances tested in 600 homes were producing dangerously high levels of CO, and there is evidence that both low- and high-level exposure produce symptoms that are often missed by clinicians as they mimic other pathologies. This study aims to better integrate the results from various studies into measures to reduce the impact of CO exposure in London and the rest of the UK.

#### Methods

The results of a series of studies including some surveys were integrated into an awareness-raising tool (a CO action card). Also, ambulance officers were engaged and trained to recognize the problem.

#### Results

The results of the combination of the evidence this far will be presented. The current plans for further studies as well as the CO action card and the results of the training of the ambulance officers will be presented. The relevance for public health policy will be discussed at length.

#### Conclusion

This evaluation will contribute significantly to reducing the burden of disease associated with CO. It is anticipated that the results of this evaluation will be used by clinicians to identify CO poisonings earlier and, by public health professionals to prevent further exposure in identified cases and to raise public awareness, and by policy makers to direct campaigns and promote safe practice.

## 2.2. European Commission Workshop: The European Commission—serving public health in Europe

*Chairs: Andrzej Rys and Ruxandra Draghia-Akli, European Commission Organizer: European Commission*

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This workshop will focus on how EU activities in particular the health programme as well as the RTD research programme is serving the public health agenda in Europe. The workshop intends to cover two presentations about current overall policy developments in relation to the above programmes to be followed by a panel discussion with representatives from relevant public health associations and discussion with the audience addressing practical aspects of developing public health capacity.

**The health programme 2008–2013: The 2010 programme**  
Andrzej Rys, DG Health and Consumers, European Commission

**Public Health and the EU Framework Programme for Research**

Kevin McCarthy, DG RTD, European Commission

#### Panel discussion

Chair: Ruxandra Draghia-Akli (tbc), European Commission

Participants: Mark McCarthy, EUPHA, Helmut Brand, ASPHER, Monika Kosinska, EPHA

**Discussion with the audience**

## 2.3. Drug utilization and self-tests

**Consistency of prescribing practices for key Primary Health Care diagnoses with treatment guidelines in Armenia**

Yelena Amirkhanyan

Y Amirkhanyan\*

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In 2006, Management Sciences for Health, Inc, a private non-profit organization providing public health management

services internationally, contracted the Center for Health Services Research and Development at American University of Armenia, to conduct a nation-wide survey of prescribing practices for key primary health care (PHC) diagnoses/conditions. One of the objectives of the study was assessing availability of treatment guidelines (TG) in PHC facilities and consistency of prescribing with existing treatment recommendations/guidelines.

Four PHC facilities were surveyed in each region and the capital Yerevan. Trained interviewers extracted from patients'

records prescription information into diagnosis-specific data collection forms for arterial hypertension (AH), type 2 diabetes, upper and lower respiratory tract infections (URTI/LRTI), and diarrhoea. About 6000 records were reviewed.

Antimicrobials were prescribed in 22.0% of diarrhea cases. Co-trimoxazole, furazolidone, amoxicillin, nalidixic acid, ampicillin and chloramphenicol comprised 90.0% of prescribed antibiotics, though there was no indication of enterovasive infection, for which co-trimoxazole is recommended. It is worth noting that 92.7% of patients were prescribed oral rehydration salts.

Patients with LRTI received two and three antimicrobials in 20.5 and 1.5%, respectively. Consistency of prescriptions with any of the most commonly used TG was 55.1% in children and 96.0% in adults.

Analysis of 1313 records of patients with AH revealed that >20% of patients also received nootropic medicines or so-called 'drugs for the elderly'. The highest observed consistency with TGs was 47.0%.

Consistency of prescriptions for treatment of diabetes with TGs was 35.0–56.0%.

TGs were not available in 11.4% of surveyed facilities. The highest number of any available TGs was six.

Treatment guidelines were not available in all facilities. Consistency of prescriptions with TG varied for selected PHC diagnoses and was not adequate for any of diagnoses. Introduction of unified TGs can positively impact pharmaceutical spending and assure quality of medical care.

### Mass media and GP statin prescribing

Robert Verheij

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#### Background

In March 2007, a Dutch consumer affairs television programme (Radar) questioned the effectiveness of statins in reducing mortality and cardiovascular incidents. We investigated the effects of this television broadcasting on statin prescriptions by GPs in people with and without cardiovascular (co)morbidity and/or diabetes.

#### Methods

Data (2005–07) was used from electronic medical records, collected in a representative sample of 60 general practices in the Netherlands (~210 000 registered patients, including 15 000 statin users). Logistic regression and chi-square tests were used to investigate the likelihood of starting and quitting statin prescriptions after the television programme, in comparison with the same period one-year earlier. A distinction was made between patients with and without cardiovascular comorbidity and/or diabetes, on the basis of previous GP consultations.

#### Results

The likelihood of quitting statins was about twice as high after the television programme. However, the effect appeared to be limited to patients without cardiovascular disease/diabetes (as known from previous GP consultations). Furthermore, the incidence of dyslipidemia presented in general practice decreased considerably and the number of newly diagnosed cases of dyslipidemia in which a statin was not prescribed, was twice as high after the television programme.

#### Conclusions

This study shows a considerable effect of the television programme on general practitioner's prescriptions. More patients quit statins, but the effect was restricted to patients without cardiovascular comorbidity and/or diabetes. Furthermore, after the television broadcasting fewer people consulted their doctor for dyslipidaemia, and once they did, the chance of getting a statin prescribed was considerably lower. These results illustrate the power of mass media in drug utilization.

### Mailing of the faecal occult blood test to increase participation to colorectal cancer screening: results from two ongoing randomized controlled trials in Italy

Paolo Giorgi Rossi

G Grazzini<sup>1</sup>, P Giorgi Rossi<sup>2</sup>, S Brezzi<sup>3</sup>, T Rubeca<sup>1</sup>, M Anti<sup>3</sup>, F Quadri<sup>2</sup>, L Camilloni<sup>2\*</sup>, D Baiocchi<sup>2</sup>, A Barca<sup>2</sup>, L Cilumbrillo<sup>1</sup>, P Borgia<sup>2</sup>

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#### Background

Low participation is the most important barrier to the colorectal cancer screening effectiveness. Mailing of the faecal occult blood test (FOBT) has been proposed as both a method to increase participation and to reduce front-office costs.

#### Study design and methods

Two multicentre randomized controlled trials are ongoing in Italy and here we present data from two centres. One trial, for which we present the results from Florence, is aimed at measure the effect on participation of mailing the FOBT to all the non-responders to the normal invitation, the control receive only the letter. The other trial, for which we present the results from Viterbo, compares the participation at the second screening round of previously responders in two arms one with direct mailing of the FOBT and the second with the normal invitation.

#### Results

In Florence, 697 non-compliers were mailed with the FOBT and 123 returned the faecal sample within 60 days since invitation. In the control group, 692 non-compliers were received a recall letter and 115 returned the faecal sample. The relative risk is 1.06 (95% CI 0.84–1.34). In Viterbo, 349 previously compliers were re-invited after three years with direct mailing of the FOBT and 147 returned the sample, while 348 were invited to take the FOBT at the clinic and 125 returned the sample. The relative risk was 1.17 (95% CI 0.97–1.41).

#### Conclusions

In our context, mailing the FOBT had no effect in increasing compliance, while can be used in previously responders to reduce front-office costs without any loss in compliance.

### Use of self-sampler to increase cervical cancer screening participation: results from an ongoing Italian multicentre randomized controlled trial

Paolo Giorgi Rossi

P Giorgi Rossi<sup>1\*</sup>, ML Marsili<sup>2</sup>, A Sperati<sup>1</sup>, F Carozzi<sup>3</sup>, A Iossa<sup>3</sup>, C Sani<sup>3</sup>, C Di Piero<sup>3</sup>, G Grazzini<sup>3</sup>, P Capparucci<sup>2</sup>, A Pellegrini<sup>4</sup>, ML Schiboni<sup>4</sup>, M Confortin<sup>2</sup>, C Bellanova<sup>2</sup>, A D'Addetta<sup>2</sup>, E Mania<sup>2</sup>, C Visioli<sup>2</sup>

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#### Background

In Italy, cervical cancer screening programs actively inviting women 25–64 years old, are affected by low participation. Some of the non-responders are covered by opportunistic screening, but 20–30% are not covered at all.

#### Study design and methods

Non-responders women aged 35–64 were randomized to one of four arms: standard recall letter to perform Pap-test at the clinic, recall letter to perform HPV test at the clinic, letter offering a home self-sampler for HPV test that should be required by phone at the screening centre, direct mailing at home of the self-sampler. Women who presented at the clinic or who mailed a cervical sample within three months since invitation were considered compliant. Here we present preliminary results of two centres, Florence and Rome, participating to an ongoing trial.

## Results

In Florence, the response rate to standard recall was 4.2% (10/238), to HPV test at clinic recall was 17.1% (40/234,  $P=0.0001$ ), to self-sampler at request was 5.0% (12/240), and to direct self-sampler mailing 16.8% (40/238,  $P<0.0005$ ). In Rome, response rate to standard recall was 9.5% (19/200), to HPV test at clinic recall was 7.0% (14/200), to self-sampler at request was 5.0% (10/200), and to direct self-sampler mailing 18% (36/200); out of 36 women who performed a self-sample in the direct mailing arm, one never had a Pap test before and four had a Pap more than 3 years before.

## Conclusions

Results differed by centre, in Florence the offer of HPV test, per se, increased compliance, while in Rome the direct mailing of self-sampler was the factor increasing up-taking. The offer of a self-sampler at request had poor performance in both contexts. In Rome, the effect on total coverage of a direct mailing could be  $>2.5\%$ .

## Cost containment measures for pharmaceuticals expenditure in the EU countries a comparative analysis

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## Background

A vast majority of the EU countries are witnessing a rise in the share of public pharmaceutical spending in the total drugs expenditure. This urges governments to adopt cost containment measures through more stringent norms in their pharmaceutical policies. The aim of this article is to review the existing pharmaceuticals cost-containment policies in the EU in order to illustrate the complexity of the drug policy decision-making and to assess the effectiveness of the cost containment measures introduced so far in the 27 selected countries. The article is focused on measures aimed at reducing the public expenditures on pharmaceutical products.

## Methods

In order to answer the research question concerning EU pharmaceutical expenditures, official data from Organization for Economic Co-operation and Development and World Health Organization statistics on pharmaceutical expenditures are used. For each of the selected countries, the evolution of pharmaceuticals expenditures in the last 10 years was analysed and an overview of the cost containment policies during the last 10 years will be presented. This is followed by a comparative analysis of the cost containment policy tools that countries have used to contain pharmaceutical expenditures.

## Results

It is shown that cost containment policies for pharmaceutical expenditure are mostly targeted towards supply side measures, as they are proved to be more effective than demand side measures. However, price control policies do not guarantee expenditure control as long they are not accompanied by control over volume. Rationalizing consumption volume should be targeted as well by giving more importance to demand side measures.

## Conclusions

We argue that, given the structurally imperfect pharmaceutical market and the dominant position of the supply side, it is maybe unrealistic to expect cost containment measures to be very successful. With an aging European population demanding more health care and an enlarging EU, it is likely that the debate concerning pharmaceutical expenditure will become a never-ending story. At the same time, substantial evidence shows that the effect of innovative drugs is worth the increased cost. Therefore, a change of perspective from the cost of medicines per se to the cost-benefit ratio of the pharmaceuticals might be the solution, almost ignored so far.

## Use of medicines, illness and perceived economic problems. Results from a cross national comparative survey

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## Background and Aim

The overall aim of the project (HEPRO) was to develop and support Healthy Urban Planning in cities and municipalities in six countries in the Baltic Sea area (Norway, Estonia, Latvia, Lithuania, Poland and Denmark) by carrying out a survey among partners. The data allow analyses of the impact of individual and contextual factors on health care use. The aim of this article is to analyse potential socioeconomic barriers to use of medicines in a cross-national context.

## Methods

The survey collected questionnaires from 32 959 citizens in 27 cities and municipalities (the Hepro Survey Questionnaire). Medicine use during previous 2 weeks was recorded based on a list of 12 commonly used medicines. Both OTC and prescribed medicines were included. Use of medicines were analysed in relation to disease, age, gender and perceived economic problems (PEP).

## Results

Between 66 and 58% of respondents reported medicine use. A strikingly similar age and gender pattern was observed across the countries. The level was higher for women than for men, and higher for older than for younger. Between 32 and 11% reported economic problems during the last 12 months. The overall proportion of medicine users among those with long-standing illness was between 80 and 90%. When data were analysed solely for those with disease, and stratified according to PEP it appeared for five of six countries, that those groups with PEP problems had the same level or higher level of medicine use than those without PEP. For Estonia this pattern was not found.

## Conclusion

The patterns of use of medicines are very similar in the different countries. Only in one country the pattern is different, indicating socio-economic barriers to use. Analyses of contacts with Physicians reveal similar results.

## 2.4. Workshop: Critical health literacy—new forms of empowerment and participation

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## Objectives

Health literacy has been introduced to health promotion as late as the 1980s and has been defined as reaching beyond

basic skills of reading and understanding health information to include the cognitive and social skills which determine motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. Health literacy not only supports

personal health management but also increases the chances of changing health-relevant living conditions. Health promotion measures have been suggested to improve health literacy in the population. Yet, there appears to be less awareness that certain health promotion interventions might increase rather than reduce social inequality in health literacy. This workshop is set up to provide participants with new insights into the theory, conceptualization and measurement of Health Literacy. We will include an explicit focus on that part of Health Literacy that allows (or even requires) individuals to critically reflect upon health issues and selectively act in favour of health and according to the context they live in, in other words on Critical Health Literacy. The different contributions of the workshop will discuss lay knowledge of health based on qualitative research in Portugal (Louisa Ferreira da Silva) as well as the question of how to measure health literacy in quantitative studies (Kristine Sørensen). The potential of patient organization groups in developing health literacy will be discussed in the contribution from Peter Nowak. Finally, María Cristina Quevedo's presentation will outline the ability of people in Columbia to critically analyse the social context of HIV and propose actions towards social and political change.

### Lay knowledge of health

Louisa Ferreira da Silva

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Modern societies attribute health production to experts. But late modernity shows limits of medical science regarding disease control and health inequalities.

Health promotion is a new concept bringing together individuals with experts for fighting disease and creating health. Public health takes part of that construction via knowledge democratization. However, even though a stronger understanding of the need for individual responsibility for health emerges, the ability to act accordingly to that knowledge is often restricted by the absence of a favourable cultural, social and economic environment. Research shows a gap between awareness of healthy norms, desirable attitudes and adopted behaviours.

Critical health literacy refers to the empowerment purpose of reflexive agency as regards lifestyles—cultural and social conditioned ways of being—resulting from choices in the interplay of structure and agency. Critical health literacy targets the dynamic process of changing 'belief-dispositions' into 'acting-dispositions'.

Our research aimed the understanding of lay knowledge and dispositions of health and illness. We analysed data from interviews with 79 Portuguese adults (men and women of a diversified 'qualitative sample'). It shows how social structure (living conditions and ideology) and subjectivity (culture and interpersonal relations) influence health choices. It reveals lay rationalities as the product of a complex process involving subjective human experience with its values, symbols and beliefs. It elucidates the intimate relationship common people sustain with medicine.

### Conceptualizing and measuring critical health literacy in the context of the European Health Literacy Survey (HLS-EU)

Kristine Sørensen

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Health literacy (HL) is a key concept in modern public health. Conceptually, Nutbeam distinguishes between functional, interactive and critical HL. The latter reflects the cognitive and skills development outcomes supporting

effective social, political and individual action, linked to both population and individual benefits. There is a need for research to develop the empirical basis of HL. While some instruments exist to measure HL, most do not entail critical HL as a component. Moreover, population-level data on HL are currently not available for most European countries. To address these gaps, the European Health Literacy Survey (HLS-EU) Consortium aims to develop a survey instrument to measure HL, including critical HL.

The HLS-EU is based on the Swiss HLS-CH questionnaire with a reduced number of items, measuring HL with generic core health competencies and regional specificities. The consensus of the item reduction and the content was achieved through a Delphi. Via translation-back-translation the questionnaire was translated and applied to a representative sample of  $n=1000$  participants in eight countries (AU, BG, DE, EL, IE, NL, PL and ES).

The HLS-EU instrument allows for a standardized comparison of levels of HL between and within populations in Europe. In the presentation, critical HL will be discussed as emerging from the development of the HLS-EU instrument and linked to the HLS-EU valorization of the HL concept in Europe where national task forces are set up to foster HL nationally and regionally to develop strategies for implementation of HL related activities in relevant political and social contexts hereby implementing the educational perspective of critical HL as defined by Nutbeam.

### Patients' groups and organizations as key players in developing critical health literacy?—Conclusions from an Austrian study (2007–09)

Peter Nowak

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Citizens in modern societies are expected to take more and more decisions in relation to health. Thus health literacy (HL) can be seen as one of the most critical capabilities in modern societies. The rise of patients' groups and organizations (PGOs) in many countries might provide an opportunity to develop HL on a broad scale. There is not much known on HL-specific activities and effectiveness of PGOs. Especially the relationships of PAOs to health care and politics could be crucial in becoming a key player in the context of critical HL.

This analysis draws on a comprehensive Austrian survey among PGOs including a self-administered questionnaire ( $n=625$ ) and 31 interviews with diverse PGOs and relevant stakeholders in the field. Quantitative and qualitative data will be re-analysed with regard to (critical) HL.

The preliminary results show that PGOs regularly provide their members, health care professionals and the public with relevant information, but only a minority sees proliferation of HL as one of the three most relevant activities. Health promotion effects like improving HL are considered as the most effective self-ascribed impacts of PGOs. Nearly half of the PGOs have very close relationships with health care professionals, but only a minority sees collective advocacy as most important activity. Only few PGOs have close relationships to local political institutions. Quantitative results will be presented in detail.

The preliminary results indicate, that PGOs have a high potential in the development of HL and health promotion in modern societies. But PGOs see HL-related activities not as very important and the closeness to health care professionals might lead to an uncritical attitude towards health care professionals. Development perspectives for future support for PGOs and collective participation of PGOs in health care and policy will be provided on the basis of qualitative results.

## 'Dialogical ethnography' a participants' proposal for HIV/AIDS prevention in Cartagena, Colombia

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In Cartagena, 90% of HIV reported cases are acquired by heterosexual contact and 70% of them are women with stable partners. In preliminary interviews, participants claim a significant role of the social context in the production of AIDS. Therefore, inspired by the Latin American Collective Health Movement initiative of merging lay and scientific knowledge in the construction of new knowledge and actions towards health; and the Liberation Pedagogy we conducted a participatory ethnography denominated 'dialogical ethnography' in which a total of 106 men and women living in Cartagena expose their ideas about HIV/AIDS and propose social actions.

This supplement presents two fieldwork results illustrating how through a critical evaluation of their socio-economical

context and self-reflexive processes participants understand the social determinants of HIV and propose a wide range of HIV prevention actions. First, participants describe how HIV occurs within a complex web of cultural and structural elements that comprise local 'culture of machismo', sexual practices of men having sex with men, sex work, the international industry of 'sexual tourism' and structural social and economic inequalities. Second, participants' claim for prioritizing preventive actions towards reduction of social and economical inequalities and the achievement of human rights including universal access to education, health, health education and work opportunities. Additionally, participants explain that to be effective, health education for HIV prevention shall be based on daily life experiences that comprise local knowledge and experience including preventive itineraries. Due to participants' ability to critically analyse the social context of HIV and their proposed actions towards social and political change; results suggest that 'dialogical ethnography' could serve as a method for a non-paternalistic starting point towards the achievement of Critical Health Literacy in Cartagena.

## 2.5. Mental health

### Housing and mental health in England: results of a national probability sample survey

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#### Background

There is a major policy focus across Europe on fuel poverty and cold housing. The physiological outcomes of poor housing are well understood, but the psychiatric epidemiology of these aspects of housing context is not.

#### Methods

We conducted a probability sample survey of 7400 adults representative of the English general population. Common mental disorders (CMD), such as anxiety and depression, were assessed using ICD-10 diagnostic criteria. The computer assisted interview collected data on individual circumstances and housing characteristics. Aspects of housing included the condition of premises and the environmental and community context. Logistic regression models were run in STATA to identify, after adjusting for financial strain, physical health and other variables, the relative contribution of environmental and housing conditions in predicting CMD.

#### Results

While population density and lack of green spaces and trees were not significant predictors of CMD after controlling for other variables, the perception that 'properties are too close to each other' was (adjusted odds ratio: 1.20,  $P=0.038$ ). Mould in the home (1.51,  $P=0.002$ ) and being unable to keep the home warm in winter (1.72) also both predicted CMD. While low-income was not a risk factor for CMD, being in fuel debt (1.73,  $P\leq 0.001$ ) and using less fuel than needed because of cost (1.66,  $P<0.001$ ) both were.

#### Conclusions

Even after controlling for economic circumstances, cold and damp housing still predicts CMD. A policy focus on tackling fuel poverty is therefore supported by the potential benefits that could accrue in residents' mental health. Neighbourhood policy in England has emphasized the need for access to parks and green spaces. We found that perception of housing proximity was a stronger predictor of poor mental health. This may suggest that presence of parkland alone is not enough: green space needs to be of good quality, and housing design needs to better mask population density.

### Mental health of migrant adolescents from war-affected countries—risk and protective factors

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#### Background

Young persons are strongly affected by displacement through political/military actions. Important questions are: how do adolescents cope with the consequences of living as refugees and how do they compare with their peers (natives of the home country) with respect to their mental health?

#### Methodology

The theoretical framework is the socio-ecological model by Urie Bronfenbrenner, with its setting of nested structures of micro, meso, exo, macro systems. Concentrating on micro- (family, peer group, school) and meso-systems (community) we determine risk and protective factors and the impact of the socio-economic environment on adolescents' mental health outcomes. Within a broader EU-funded research project a questionnaire was administered to students in Austria attending different school types beyond the mandatory school age, yielding a sample of 1100 students from Austrian and immigrant background. After testing the reliability of the large variety of indices constructed we try to statistically assess the impact of the risk and protective factors on youth outcomes using analyses of variance and regression techniques.

#### Results

Differences between Austrians and refugees/migrants in outcomes were minor. Most significant risk factors were intergenerational conflict and exposure to violence, important protective factors include school connectedness and peer support, explaining youth outcomes such as substance use, depression, somatic symptoms, resilience, among others.

#### Conclusions

The results of the research lead not only to a better understanding of the role of various factors in determining the well-being of adolescents but also help us to select measures to prevent or cope with mental health problems of young refugees and migrants.

## Workplace bullying and common mental disorders

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### Background

Workplace bullying is a prevalent problem with potentially serious and long-lasting adverse consequences for the mental health and well-being among the victims of bullying. We studied whether workplace bullying is prospectively associated with common mental disorders among middle-aged employed women and men.

### Methods

The participants were municipal employees from the Finnish Helsinki Health Study cohort baseline survey in 2000–02 ( $n=8960$ , response rate 67%) and follow up survey in 2007 ( $n=7332$ , response rate 83%). Workplace bullying at baseline was divided into those being currently bullied and those having earlier been bullied. Common mental disorders were measured by three to twelve symptoms in the General Health Questionnaire 12-item version both at baseline and at follow up. Odds ratios (OR) adjusted for age and baseline common mental disorders were separately calculated for women and men to examine associations of workplace bullying at baseline with subsequent common mental disorders at follow-up.

### Results

At baseline 5% of both women and men reported being currently bullied, and 19% of women and 13% of men reported having previously been bullied. Compared with those reporting never been bullied (OR 1.00) the currently bullied were more likely to suffer from common mental disorders at follow up, after adjusting for age and baseline common mental disorders [women OR 1.53, 95% confidence interval (CI) 1.17–2.00; men OR 2.29, 95% CI 1.30–4.05]. The previously bullied were equally likely to suffer from common mental disorders but somewhat less among men (women OR 1.47, 95% CI 1.25–1.72; men OR 1.64, 95% CI 1.10–2.45).

### Conclusions

Victims of workplace bullying run the risk of developing common mental disorders among both female and male employees. Workplace bullying is an occupational and public health issue of concern which should be tackled in order to safeguard employee mental health and well-being.

## Mental health services: improving access to socio-psychiatric care for immigrants (regional analysis)

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The region around Hanover, including the city, has 1.1 m inhabitants. Socio-psychiatric care is organized in a network (Socio-psychiatric Cooperative), with more than 200 out- and in-patient centres organized within the region (medical care, advisory centres, sheltered housing, etc.). In 2006, an experts' committee was set up to analyse the supply of socio-psychiatric care for immigrants (23.1% of the population) and to develop concepts to improve their access to the care network.

The study aims to analyse the complex care structure. It is intended to show how qualification of staff and intercultural services as well as geographical availability can influence immigrants' access of socio-psychiatric care.

A working group was formed, and a questionnaire was developed, validated and evaluated. In total, 89 socio-psychiatric facilities in the Hanover region were subjected to an analysis of the *status quo*. Services and patient characteristics were assessed. Socio-demographic mapping was one of the methods used to illustrate the results.

The analysis covered a total of 36 107 care cases, 16% of whom were immigrants. At the in-patient facilities, 17% of the cases are immigrants. At out-patient facilities and other services the

proportion is at 11%. At out-patient facilities 3% of staff are immigrants themselves. Out of 89 facilities five are specialized in the care of immigrants (37 staff, 12 nationalities, 864 cases). While 46% of the facilities offer specialized services only 12% have structured concepts (e.g. therapies offered in native tongues, interpreter services) for immigrants. The Mapping Method shows deficits of care provision in the out-patient section of socio-psychiatric care in a city-plus-region area. The study showed different approaches to improve immigrants' access to socio-psychiatric care. Besides staff development and the cooperation with specialized care programmes institutions need to increase staff with required language skills and they need to make sure that costs for interpreter services are covered.

## Individual and parental risk factors for suicide in a life-course perspective

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### Background

Even though a wide range of risk factors for suicide have been identified, a life-course approach is seldom applied in suicidological research. A better understanding of the importance of biological and social pathways that operate across an individual's life cycle, as well as across generations, contributes to the development of suicide prevention strategies. This epidemiological study aims to investigate to what extent suicide is affected by individual and parental factors measured around birth, during childhood, adolescence and early adulthood.

### Methods

The study applies a nested case-control design through linkage of eight Swedish registers with national coverage. The study base comprises all individuals born in Sweden between 1973 and 1983 ( $N > 1.2$  million), to whom both parents could be identified. Cases were all individuals who had died due to suicide from their 10th birthday to the end of follow-up (31 December 2005). Ten randomly selected controls, alive when the case died from suicide, were matched to each case by age, county and sex.

### Results

Preliminary results suggest that in the multivariate adjusted analysis several risk factors related to the pre-, peri- and post-natal period, increased the risk of suicide: low birth weight, maternal teenage pregnancy, parental hospital admission due to mental disorder and/or suicide attempt, and parental receipt of disability pension. These parental risk factors also increased the risk of suicide in the offspring if the offspring was exposed to these factors in childhood and adolescence. Maternal but not paternal death in childhood, and receipt of own disability pension in young adulthood were further predictors of suicide.

### Conclusion

A number of individual and parental risk factors measured at different life stages were found to increase the risk for suicide. A life course perspective can give new insights into the aetiology of suicidal behaviour and may contribute to make prevention strategies more effective.

## Suicide and suicide attempts among asylum seekers in the Netherlands, 2002–2007

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**Background**

Although suicide risk factors are known to be highly prevalent among asylum seekers, little data are available about the incidence of suicide and suicide attempts in this special group. Our study is unique because of its size and the availability of both suicide and suicide attempt data for a nationwide, well-defined asylum population. The objective is to analyse rates of suicide and suicide attempts among subgroups of asylum seekers by age, sex and region of origin in order to identify risk groups.

**Methods**

Staff of the Community Health Services for Asylum Seekers providing services in all asylum seekers centres in the Netherlands notified cases of suicide and suicide attempts in 2002–07. The total number of person-years studied is 210 000. Rates are calculated per 100 000 asylum seekers aged  $\geq 15$  years.

**Results**

Thirty-five suicide deaths and 519 suicide attempts were reported during 2002–07. Suicide deaths were more common

among males than females (rate 25.6 vs. 3.5/100 000/year). For males suicide was more common among asylum seekers than among the Dutch population, for females less common among asylum seekers than the Dutch population. Suicide attempts were less common among males than females (307.1 vs. 206.4/100 000/year). Important differences in age standardized rates are found between regions of origin. The highest suicide rate was found for males from North, East and Horn of Africa (53.9/100 000), the highest suicide attempt rates among males from Central, East and Southern Europe (318.5/100 000), and females from Middle East and South West Asia (460.0/100 000) and Central, East, Southern Europe (386.0/100 000).

**Conclusions**

Subgroups of asylum seekers are at increased risk of suicide and suicide attempts. Prevention should target these risk-groups. We have produced an information booklet and trained health staff in suicide prevention among asylum seekers (English version will be available).

## 2.6. Occupational health 2

**Development of national health policy for prevention and control of occupational cancer in Bulgaria**

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National approaches to occupational cancer prevention and control and national action plan have been developed to be implemented into a national cancer control programme in order to take integrated action on multifactorial workplace-related risk factors of cancer and strengthen national health system for improved workplace-related cancer prevention and control and protection of workers health.

A policy package has been worked out to include:

- (i) national evidence-based approaches and national action plan for prevention and control of occupational cancer and to set up an integrated prevention strategy; development of initiatives that include a wide range of stakeholders with the aim of primary prevention of occupational cancer by preventing and reducing workplace exposure to carcinogens and mutagens and promoting healthy lifestyles;
- (ii) regulatory framework on protection of workers from risks related to exposure to carcinogens and mutagens at work;
- (iii) changes to health information system stressing the importance of setting up national occupational cancer register;
- (iv) initiatives and practical recommendations to integrate validated cancer risk biomarkers into the framework of the national occupational health surveillance programmes of risk groups of workers exposed to carcinogens and mutagens at work.

A well-designed national policy framework and national action plan on primary prevention of occupational cancer within the integrated national cancer control programme is expected to lower national cancer incidence and mortality.

**Type of employment, gender, working conditions and health in Sweden**

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**Background**

Over the last decades new more peripheral types of employment (e.g. substitute and on-call work, self-employed), have emerged, while permanent contracts have declined. Working conditions in the periphery are less favourable than in permanent jobs. Moreover, women are over-represented in flexible jobs. This study aims to investigate how types of employment are related to health and whether working conditions and gender influence this relationship.

**Methods**

We used data from a longitudinal follow-up study carried out in Luleå, Sweden (response rate 94%). We used the data from 1995 and 2007. Data were collected by means of self-report questionnaires, including questions about type of employment, burnout, health, and Karasek's Job Content. Our final sample consisted of 850 working respondents of which 451 (53%) were male. Data were analysed by means of *t*-tests, (M)ANOVA's, and hierarchical regression analyses.

**Results**

Results indicate gender differences regarding type of employment (with women working more often in the periphery), working conditions (women report less job control) and health (women report more emotional exhaustion). Regression analyses showed that: (i) gender influences the relation between type of employment and demands (being self-employed increases demands for men and decreases demands for women), (ii) working as a substitute decrease social support for women, and (iii) gender influences the relation between working conditions and general health (women benefit more from higher job control than men do).

**Conclusions**

The results indicate a gender gap in almost all aspects of work quality and workplace health. In line with the European Commission (2008), we recommend introducing more gendered public health interventions on both national and organizational levels. Employment policies impact differently on men and women, and innovative and flexible work arrangements are necessary to target gender inequalities.

**A Cochrane review of the effects of flexible working conditions on employee health and well-being**

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**Background**

Flexible working entails a range of different flexible working arrangements affecting work hours, work contracts and the work place. Arrangements such as home working, flexible working hours and job sharing are becoming increasingly common, based on the assumption that flexible working will have positive effects on employee performance, health and work-life balance. Despite an emerging body of literature in the area, few studies question the implicit belief that flexible working is a wholly positive notion in terms of employee health and well-being. In addition, the equity implications of flexible working conditions are largely unknown. For example, little is known about the differential impacts of flexible working practices by occupation, socio-economic status, ethnicity or gender.

This Cochrane systematic review aimed to evaluate the effects (benefits and harms) of flexible working interventions on the physical and mental health and well-being of employees and their families.

**Methods**

Searches for prospective cohort studies with controls were conducted using seven medical, social science and business/management databases: ABI Inform; CINAHL; CENTRAL; EMBASE; MEDLINE; PsychINFO and Social Science Citation Index from start date to present. Outcomes relating to physical and psychological health as well as self-reported general health were extracted.

**Findings**

Included studies were independently appraised by two experienced reviewers using Cochrane defined criteria. Interventions were grouped as offering either employer or employee defined flexibility and due to heterogeneity in terms of study design, narrative synthesis was performed. To assess possible impacts on health inequalities, differential effects were explored by sub group analyses. The review is currently in progress and is due to be completed in September 2009; study findings will be updated thereafter.

**Conclusions**

Work and the workplace are recognized as important social determinants of health and health inequalities. Accordingly, the findings of this review are likely to be of interest to public health policy makers and practitioners worldwide (as well as employers) when considering aspects of employment reform.

### **Job strain and risk of disability pension; how much is accounted for by occupational status. The Hordaland Health Study (HUSK)**

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**Background**

The effect of job strain (the combination of high demand and low control) on disability pensioning is scarce in literature. With a substantial proportion of the population within working age on disability pension in 2008, western countries are confronted with a major challenge. We investigated empirically whether subjective experienced job strain was associated with future disability pensioning, and how both of these were related to occupational groups.

**Methods**

The study included 29 400 individuals born in 1953–57 (aged 40–44 years) from the Hordaland Health Study cohort. Baseline information was gathered from 1997 to 1999 and workers with valid scores on the Swedish Demand-Control-Support Questionnaire were classified according to ISCO-88, the International Standard Classification of Occupations ( $N = 7244$ ). Scores on demand and control on the 75 percentile

were combined to construct a high strain group, the remaining a reference group. The outcome assessed was award of disability pension in the follow-up period (from one year after baseline till end of 2004).

**Results**

During follow up, 213 employees (2.9%) were awarded disability pension. In the high strain group 45 employees (6.7%) were awarded disability pension compared with 168 (2.6%) in the reference group ( $P < 0.001$ ). Low occupational status i.e. occupations that require no more than primary education (ISCO-88), was associated with both high strain and awarding of disability pension ( $P < 0.001$ ).

**Conclusions**

High job strain was associated with disability pension award. Disability pension award differed between occupational groups. The results have implications for intervention strategies to reduce high job strain and potential disability in occupational groups.

### **Distribution of temporary employment and the association with job characteristics and health-related outcomes among paid employees in Taiwan**

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**Background**

In Taiwan, temporary employment has been adopted in a growing fashion as a means to reduce labour costs. It is well aware that temporary employment significantly damages employees' social security, however, its health impacts on employees seldom receive attention. The purpose of this study is to investigate the distribution of temporary employment across socio-demographic categories and employment sectors. Also examined were the associations of employment types with psychosocial job characteristics (assessed by Karasek's Demand-Control model), occupational health and safety (OHS) status and self-reported burnout (measured by the Copenhagen Burnout Inventory).

**Methods**

We analysed data from a representative national survey conducted during 2007 in Taiwan, which consisted of 9395 male and 7227 female employees aged 25–65 years. Employment types were dichotomized into permanent employment and temporary employment.

**Results**

Twenty-two percent of employees were under temporary employment; in both genders, temporary employment was more prevalent in older, lower education level, lower employment grade, and small-sized company workers. Compared with permanent employees, temporary employees were found to have significant higher perceived job insecurity, lower job control, fewer occupational health training, and more injury or illness due to work. After adjusting for demographic, social and job-related covariates, the results of regression analyses showed that temporary workers showed relatively higher scores for personal and work-related burnout.

**Conclusions**

Our results suggested that temporary employment has deleterious effects on employees' OHS measures as well as health outcomes. Considering the high prevalence of temporary employment in Taiwan, the results call for more attention on health effects of flexible employment.

## Individual and contextual predictors of permanent work-disability after sickness absence with psychiatric diagnoses: results from a population based, prospective cohort study in Norway 1997–2002

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### Background

Sickness absence due to psychiatric problems is on the increase. Many sickness absentees do not recover and end up on a permanent disability pension (DP). The aim of this study was to estimate whether contextual variables, characterizing the county of residence contribute to the risk of transition to DP, after adjustment for well-known individual factors.

### Methods

A prospective cohort study of 12 283 women and 7099 men with a spell of sickness absence longer than 8 weeks, certified with a psychiatric diagnosis, was carried out. Diagnoses and socioeconomic data for each case were obtained from

a national research database. Socio-demographic data characterizing each of Norway's 19 counties were obtained from Statistics Norway, and a deprivation index constructed. A Cox' regression model with the county deprivation index and other health care and social variables characterizing the counties were estimated for each gender, together with models combining of variables at individual and county level.

### Results

Generally men sickness absent with psychiatric diagnoses, were at higher risk of permanent disability. A diagnosis of a psychosis or anxiety, higher age, lower income and education also increased the risk of permanent disability. The deprivation index had a small but significant effect on the disability risk of women, but not for men. No other county variables reached significance when adjusted for individual variables.

### Conclusion

There are well-known individual risk factors for becoming permanently work disabled after sickness absence with psychiatric diagnoses. In Norway, the effect of county of residence seemed marginal for women and of no significance for men.

## 2.7. Maternal and child health

### Environmental tobacco smoke in pregnancy and lead level in maternal and cord blood at delivery, study in non-smoking women, Kraków, Poland (2000–2003)

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### Background

Exposure to environmental lead causes adverse neurodevelopmental outcomes in children. Some publications demonstrated the increased lead blood levels in smokers, but there is no data on association between blood lead level (BLL) and environmental tobacco smoking (ETS). The aim of our study was to assess the impact of ETS in pregnancy on the individual variability of the BLL in cord and maternal blood at delivery.

### Methods

The cohort recruited prenatally in Krakow, Poland consisted of 504 pregnant non-smoking women with singleton pregnancies between the ages of 18–35 years and their newborns. Blood cotinine level (BCL) and whole blood lead concentrations in cord and maternal blood were determined at delivery.

### Results

Mothers with cotinine levels >0.1 ng/l had a significantly higher mean BLL (1.93 vs. 1.70 µg/dl). Similar effect was observed in cord blood (respectively, 1.52 vs. 1.31 µg/dl). BLL adjusted in multivariable linear regression models to potential confounders (maternal age and education) was increased significantly by 0.31 µg/dl (95% CI 0.13–0.49) in mothers and 0.19 µg/dl (95% CI=0.003–0.38) in newborns, between the highest (>0.16 ng/l) and lowers (<0.05 ng/l) quartiles of cotinine level. The effect remained significant when natural logarithms of both BLL and BCL were introduced into models.

### Conclusions

Our findings may explained that the damage to the neurocognitive development of children observed in prenatally ETS exposed children may result from lead content in the side-stream cigarette smoke. As blood levels in pregnant women

might in part be attributed to the ETS exposure, the revision of public health policy should also aim at promotion of smoking cessation among all household members during pregnancy.

### Determinants of overweight among mothers with different ethnic backgrounds: a qualitative study

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### Background

Women from ethnic minority groups are more frequently overweight than Caucasian women. Available evidence suggests that this target group is less likely to participate and loose weight in 'standard' weight-loss programs. Therefore, the aim of this study is to gain insight in the determinants of weight-related behaviours among women from different ethnic groups. We focus, more in particular, on women with children. Based on the results future programs can be targeted.

### Method

Homogeneous focus group discussions were conducted among mothers of young children (age 0–12) with a Dutch, Surinamese, Antillean, or Ghanaian background (4–12 mothers per group; two focus groups per ethnicity). Data were analysed by a framework approach using Max-Q-DA software. Based on the EnRG framework the focus was on environmental and individual determinants.

### Results

Results show similarities in determinants between ethnic groups (e.g. perception of physical environment, barriers due to a combination of work, childcare, and household responsibilities) as well as differences. Differences have been found in determinants such as perception of weight, knowledge, motivation, social pressure and support, barriers, and strategies to overcome barriers. Some of these differences seem to be rooted in a socio-economic or socio-cultural context.

### Conclusion

Similarities in determinants of weight-related behaviours among different ethnic groups mostly relate to the physical environment, as well as responsibilities of mothers. In contrast, differences seemed to be rooted in the socio-economic or socio-cultural context. Therefore, targeting interventions to the socio-economic and socio-cultural context seems necessary when developing interventions to improve weight-related behaviours among mothers in different ethnic groups.

### 'I was like a robot': breastfeeding of very low birth-weight infants in Iceland

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#### Background

The care and nutrition of a very low birth-weight infant (VLBW, <1500 g) in the neonatal intensive care unit (NICU) is a formidable challenge. To feed him/her breast milk at an early age is important, but the milking and breastfeeding may become difficult and requires additional effort on behalf of the mother and staff alike. In Iceland, where prevalence of breastfeeding is high (~75% at 6 months), 30–50 VLBW infants are born each year. The objective of the study is to describe and analyse the milking process and breastfeeding of mothers of VLBW infants in Iceland.

#### Methods

Qualitative interviews with eight mothers who gave birth to VLBW infants or infants born <32 weeks of gestation. The mothers were recruited while attending preventive child health services for VLBW infants (MHB). At the time of the interviews, conducted in March 2008, the babies were 6–12 months of age.

#### Results

Initiation of breastfeeding with the help of breast pumps was delayed for up to 72 h. The mothers experienced difficulties and lacked support while their baby was learning how to breastfeed. They felt alienated and had limited guidance when it came to milking and breastfeeding after discharge from the hospital until they received support from the nursing staff of MHB.

#### Conclusion

To give a VLBW infant breast milk as soon after birth as possible is to be considered as part of their intensive care and attended to with urgency. There is a need to strengthen the education of staff in the NICU on the milking and breastfeeding of VLBW. The mothers also need mental support after traumatic birthing experience. Setting up a milk bank for VLBW infants should be considered.

### Infant mortality rates among babies born to migrant mothers: a record-linkage population-based study in central Italy

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#### Background

In Italy, there is an increasing interest to investigate inequalities in infant health related to maternal place of birth. In Lazio region, Italy, the rate of birth to migrant mothers increased from 4.3% in 1990 to 20% in 2007.

#### Methods

Using data from the Lazio birth database 2001–05 linked to regional mortality registry 2001–06, we estimated Infant Mortality Rate (IMR) per 1000 by place of birth of mother [Italian mothers (IMs) and migrant mothers (MMs) from non-industrialized countries] and gestational age. Two survival regression models were applied to estimate the hazard risk (HR) of neonatal (0–27 days) and post neonatal (>28 days) mortality for mother's place of birth adjusting for mother-age

and educational level and perinatal-gestational age, gender, plurality, congenital malformation and mode of delivery.

#### Results

The cohort was composed by 210 503 livebirths to IMs and 38 096 to MMs. The IMR was significantly higher for MMs compared with IMs (6.35 vs. 3.98; relative risk 1.6, 95% CI 1.38–1.84). The IMR was: 542.86‰ IMs and 465.12‰ MMs at 22–27 weeks, 98.84‰ IMs and 101.3‰ MMs at 28–31 weeks, 10.34‰ IMs and 14.35‰ MMs at 32–36 weeks and 1.43‰ IMs and 2.04‰ MMs at 37 weeks or more.

The results of multivariate models showed no mortality excess to MMs either than in post-neonatal deaths for at term babies (HRIMs > 37 vs. MMs > 37: HR 1.47; 95%CI 1.00–2.18).

#### Conclusions

Our study produces original population-based data on IMR in a Italian region. We showed an overall higher mortality of infants born to migrant compared with those to Italian mothers. The excess in mortality is observed among more mature babies than among preterm or very preterm babies. When we take into account relevant risk factors these differences are confirmed only in the at-term group for post-neonatal mortality. This study suggests that inequalities in health among babies born to migrant mother are associated to perinatal factors, while disadvantages in care may exist for more mature ones.

### Multiple measures of childhood socioeconomic circumstances and mortality: evidence from the British Whitehall II and French GAZEL studies

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#### Background

Father's occupational position, education and height have been used to examine the effects of adverse childhood socioeconomic position on health. These measures are used interchangeably and it remains unknown if they predict mortality equally well.

#### Methods

Pooled data from the Whitehall II and GAZEL occupational cohorts related to 18 393 men and 7060 women at mean age of 44 or 45 years at the time childhood socioeconomic position was measured. They were followed up for all-cause and cause-specific mortality; mean follow-up 19.2 years for all-cause and 17.8 years for cause-specific mortality.

#### Results

During follow-up, 1487 participants died, the most common causes being cancer ( $n=654$ ) and cardiovascular disease ( $n=290$ ). The three measures of childhood socioeconomic position were differently related to mortality. Education was associated with overall, cancer, cardiovascular and non-cancer–non-cardiovascular mortality [age-, sex- and cohort-adjusted hazard ratios varied between 1.30 (95% CI 0.96–1.84) and 1.60 (95% CI 1.26–2.04)]. There was evidence of a U-shaped association between height and all-cause, cancer and cardiovascular deaths. These associations were robust to adjustment for the other childhood socioeconomic indicators. Participants with manual parental occupational status had in general a slightly higher risk of mortality than those with non-manual parental occupational status, except for cardiovascular deaths for which there was no association.

#### Conclusions

Present study shows that the association between childhood socio-economic position and mortality depends on the specific socioeconomic indicator used and the cause of death being examined. Short height can be a misleading indicator of childhood socio-economic adversity as taller people do not have a health advantage for all mortality outcomes.

## 2.8. Workshop: Tobacco smoking among health professionals and medicals students in Europe: From epidemiology to smoking prevention and cessation training

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Tobacco smoking is considered the big killer and one of the most avoidable risk factors for many human pathologies. Reducing and controlling tobacco smoking should be a primary aim for a certain population, in order to reduce harms to health caused by this important risk factor, and it seems urgent to adopt intervention tools involved in responsibility fields such as health care, education, politics, economy and media.

Among health professionals the prevalence of tobacco smoke is extremely high, more than other professional categories, and this could be partly attributed to a low weight that tobacco smoking has in the medical curriculum of future physicians, that will contribute in a determinant way to healthy choices of their patients. In order to realise that, the medical students need to be adequately trained with the aim of acquire competences and skills that help patients to prevent tobacco smoking and to increase smoking cessation, through a programme oriented to specific issue related to the potential harm of tobacco products.

A survey conducted by Ferry *et al.* in the American Schools of Medicine underlined the lack of courses related to tobacco smoking. Moreover, a randomized trial carried out by Cummings *et al.*, the Schools of Medicine result as the ideal setting to teach smoking cessation techniques to health professionals.

The National Cancer Institute in 1992 recommended that primary and secondary prevention interventions on tobacco smoking would become mandatory in the curriculum of Medical USA students. However, until now this recommendation still is far from being fully implemented.

The aim of the workshop is to give an overview on the prevalence of tobacco smoking among health professionals and medicals students in Europe, and to show available European examples of smoking prevention and cessation training in the Schools of Medicine.

### Tobacco use prevalence, knowledge and attitudes among hospital healthcare professionals: a multicentre study in Italy

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#### Background

Healthcare professionals can play a key role in tobacco usage prevention because they could be considered as models. Aim of this multicentre cross-sectional study was to evaluate prevalence of smokers among hospital professionals and their knowledge, attitudes and behaviours towards smoking.

#### Methods

An anonymous questionnaire was administered to healthcare professionals in several hospitals of Chieti, Naples, Perugia, Rome and Turin. For the univariate analysis Mann–Whitney

and chi-square tests were used while a logistic regression model was performed for multivariate analysis.

#### Results

Sample population was composed of 1082 health professionals, 556 (51.4%) were females. Regarding profession: 274 (25.3%) were nurses, 265 (24.5%) were medical doctors, 185 (17.1%) were students and 358 (33.1%) were other healthcare professionals. Tobacco use prevalence was 44%. Most of responders recognized smoke as an important risk factor for respiratory and cardiovascular diseases and 733 (67.7%) considered health-care professional as a model for citizens. Among responders, 979 (90.5%) saw their colleagues smoking cigarettes within the hospital: 376 (47.4%) at the dependents' toilets, 238 (33.4%) at the department kitchens and 36 (4.7%) at the patient room. Multivariate analysis showed that healthcare professionals working in Naples had more risk to be smokers [odds ratio (OR) 2.05 in comparison to Rome; 95% confidence interval (CI) 1.31–3.20]. Moreover post-graduate students, nurses and auxiliary personnel had more risk than medical doctors (OR 3.15; 95% CI 1.66–5.98, OR 2.41; 95% CI 1.47–3.94 and OR 2.27; 95% CI 1.28–4.02, respectively), while who considered healthcare personnel as a model had less risk to be smoker (OR 0.70; 95% CI 0.50–0.99).

#### Conclusions

Results of this study show that among hospital professionals there is a paradoxically high prevalence of smokers. Interventions aimed to the development of an adequate culture of health promotion among these professionals are strongly needed.

### Tobacco smoking and medical students: results of a multicentre Global Health Professions Survey in Europe

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#### Background

Interventions undertaken by medical doctors can substantially increase smoking cessation rates among patients. Nevertheless, information on tobacco use and training to provide cessation counselling among medical students are scarce. The aim of this study is to assess tobacco use prevalence and tobacco cessation training among students of the School of Medicine in Europe.

#### Methods

The Global Health Professions Student Survey (GHPSS) has been conducted among third-year students attending medical schools in Germany, Italy, Poland and Spain. The GHPSS was originally developed by the World Health Organization, US Centers for Disease Control and Prevention and the Canadian Public Health Association. The survey was conducted in schools in March to April 2009 during regular class sessions.

## Results

The GHPSS was completed in nine medical schools, involving more than 1600 undergraduate students. Over 20 and 10% of the students currently smoked cigarettes or used other tobacco products, respectively. The survey showed that most of medical students recognized that they play a key role model in society, and are aware that they might receive a specific undergraduate training on counselling patients in order to quit smoking. However, most of the students reported they did not receive such training in a formal way during regular courses.

## Conclusions

The design and implementation programmes on smoking cessation counselling techniques are an important public health issue in the Schools of Medicine of Europe, even considering the high prevalence of tobacco smoking among medical students.

## Smoking prevention and smoking cessation training in European medical schools

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## Background

The aim of this study is to present some examples of development of a curriculum at the undergraduate level on smoking prevention and cessation programs in some countries of the European Region.

## Methods

We present the situation at the school of medicine level in four countries (Finland, Italy, Portugal and Turkey).

## Results

In Italy, there is no formal course on tobacco smoking prevention and control among the curriculum of medical

students. A focus group revealed that the following issues could be covered in such a course: (i) nicotine addiction; (ii) epidemiology of tobacco smoking related pathologies; (iii) motivation for starting smoking; (iv) economic aspects; (v) skills for treating a smoker who wants to quit.

In Portugal, there is an environmental health optional module, available for the medical students of the second and third years. Tobacco consumption is one of the most relevant topics included in the course, in which some field work is usually developed. Among the optional curriculum there is another course for the fourth-year students aiming to build capacity in helping future patients to quit. Moreover, for students of the fourth and fifth years, a specific optional training activity is available, consisting on Research Community Projects.

In Turkey, tobacco control classes have been developed since 2002, using a small-group discussion method. The students are distributed into up to 20 small groups, within which 10 hrs discussion are scheduled (five at the first-class and five at the third- class). The aim of first year's program is to increase the level of awareness of the medical students. During the third year, more detailed discussions regard health hazards of tobacco use, and ways of protecting people from tobacco use. In Finland, an Internet-based tobacco cessation model course has been developed. This course includes short multi-professional video clips as well as theoretical knowledge on smoking cessation counselling in different settings, offering a comprehensive and multi-professional national standard for smoking cessation training. The course can be adjusted to be completely Internet based or including a half-day multi-professional seminar with group discussions, role play exercises, case studies and lectures.

## Conclusions

In the Schools of Medicine evaluated large differences exist in facing the tobacco smoking prevention and control issues. This is a field in which an educational project must be developed at the European level.

# 2.9. Infectious diseases

## Knowledge, attitudes and behaviour towards Methicillin Resistant *Staphylococcus aureus* skin infections and *S. aureus* colonization rate among university students in Italy in spring 2009

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## Background

The aims of this study were to investigate knowledge, attitudes and behaviour of Public Health technician students towards Methicillin Resistant *Staphylococcus aureus* (MRSA) skin infections and to evaluate the *Staphylococcus aureus* (SA) colonization rate on students, who attend courses and practice in a teaching hospital setting, where the SA prevalence among inpatients is nearly 15.0% and among health-care-workers is 19.0%.

## Methods

Anonymous questionnaire was administered to a sample of students in March 2009, to get data on knowledge, attitudes and behaviours towards MRSA skin infection. Nasal swabs samples were collected and analysed by means standard methods for the SA recovery.

## Results

A total of 107 students were included (69 males and 38 females). Most participants recognize correctly the site of infection and its symptoms as 44.3% have the correct knowledge of the transmission mode and 38.7% recognize that MRSA infections are more likely to occur in people with weakened immune system. Most participants (52.8%) recognize antibiotics as effective and 74.5% knows that some strains could be antibiotic resistant. According to attitudes, 59.4% would ask the healthcare provider to best diagnose the infection. As far as concerns daily behaviour, 76.4% would ask for information on treatment to healthcare providers (53.8% from dermatologists), 67% would cover open skin area with a clean dry bandage, 67.9% would avoid sharing personal items with infected patients. We identified 30 (28.04%) SA carriers (no MRSA) without differences in age, gender, or educational level ( $P > 0.05$ ) but difference in outdoor ( $P = 0.010$ ) and indoor ( $P = 0.011$ ) sport-activity. Distinct resistance-phenotypes were found among 27/30 isolates.

## Conclusion

This is the first study of this type in Italy demonstrating that the prevalence of nasal-carriage-SA is lower than general Italian population (30.5%). There is a strong need to implement educational training to improve the level of knowledge on this issue.

## Rapid screening tests for Methicillin-resistant *Staphylococcus aureus* carriage at hospital admission: a systematic review and meta-analysis

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### Background

Methicillin-resistant *Staphylococcus aureus* (MRSA) infections represent a public health priority. Mandatory legislation for MRSA screening through rapid tests at hospital admission is under consideration in many countries worldwide. A systematic review and a meta-analysis of clinical trials and observational studies were thus performed to assess their impact in reducing MRSA colonization/infection.

### Methods

Medline, Embase, Science Citation Index and Cochrane Library were searched, until May 2008, to identify studies comparing rapid tests performed at hospital admission to conventional cultures or infection control measures in relation to the following outcomes: MRSA acquisition rate and bloodstream infections (BSI) incidence for 1000 patient-days and MRSA surgical-site infections (SSI) incidence for 100 surgical procedures. Quality assessment and data extraction were performed by two researchers. Meta-analysis was done using STATA 9.0.

### Results

Out of 1168 articles, nine studies (eight cohort studies and one cluster randomized, cross-over trial), all of average quality, were included. The meta-analysis showed that rapid tests did not significantly decrease MRSA acquisition rate compared with conventional cultures [three studies; relative risk (RR) 0.74 [95% confidence interval (CI) 0.47–1.16]]. Rapid tests were shown to significantly decrease the risk for BSI [three studies; RR 0.55 (95% CI 0.38–0.78)], but not for SSI [four studies; RR 0.70 (95% CI 0.47–1.05)] compared with standard infection control measures.

### Conclusions

Given the high costs of rapid tests, there is still not enough evidence to support their use where conventional cultures are applied. Moreover new studies aimed at going in deep of rapid screening tests value should be performed.

## Rapid estimates of the excess mortality associated with 2008–09 influenza activity in Portugal using a daily mortality monitoring system

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### Background

In the end of 2008, Portugal was one of the first countries in Europe to experience an intense influenza activity that lasted for a few weeks. High influenza incidence rates estimates were observed although with the epidemic peak was below the previously observed maximum values. Therefore, based on previous experience, an impact from this influenza activity on mortality was expected. This study sought to estimate the impact of influenza activity on mortality and to demonstrate the usefulness of the existing Portuguese rapid daily mortality monitoring system.

### Methods

Weekly estimates of influenza-like illness incidence rates, obtained by the Portuguese GP Sentinel Network, and weekly aggregated mortality data, generated by the Daily Mortality Monitoring (VDM) System, disaggregated by gender, age group and regions were used. Cyclic regression modelling was

used to calculate the number of excess deaths associated with the influenza epidemics. Confidence intervals, percentage above the baseline and excess mortality rates per 100 000 inhabitants were also produced.

### Results

Main results indicate that the overall estimate of the impact was of 1961 deaths (18 per 100 000 inhabitants), revealing a percentage of deaths above baseline of 17.9%. The results also indicate that the percentage of deaths above baseline was higher in women (21.6%) than in men (15.8%) and 82% of the total estimated excess deaths occurred in the elder individuals (>75 years). Different estimates were obtained by regions of residence.

### Discussion and conclusions

The overall excess deaths estimate for this Influenza activity was within expected values. For Portugal, some studies estimated an average of 1773 and 2475 deaths per epidemic period. Quick results for the impact of 2008–09 influenza activity were possible because there was a rapid daily mortality monitoring (VDM) system. It enabled the prompt identification and estimation which otherwise would have taken several years to be available.

## Is the tuberculosis (TB) active surveillance in homeless a strategy for the TB spreading prevention? An experience in Rome

Stefania Bruno

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### Issue

Homeless are at high risk for TB because of their living conditions and poor access to health care system. Evidence suggests that shelter based surveillance is a very efficient tool to reduce the TB spreading.

### Description of the problem

This study is aimed to:

- (i) Calculate the compliance to TB survey programme, in a sample of homeless recruited in two shelters in Rome (subjects who returned for Mantoux TST reading, after 72 h).
- (ii) Measure the skin-positivity prevalence [diameter  $\geq 10$  mm is the adopted criterion for Latent Tuberculosis Infection (LTBI) diagnosis for these risk persons]
- (iii) Investigate the associations between social risk factors and Mantoux positivity.
- (iv) Evaluate the access to a public specialized outpatient clinic for the early care pathway.

A collecting data form was filled in for evaluating risk markers and social risk factors (gender, age, civil status, native country, education, job condition, smoking, alcohol and drug consumption). Multiple logistic regression models were performed to find statistically significant determinants associated with Mantoux positivity.

### Results

During 1 year, 288 individuals (immigrants and Italians) were recruited and 259 came back for TST reading, showing the compliance of 89.93%: moreover, 141 subjects (54.44%) were negative and 118 positive (45.56%). One subject with active TB was found (3,4‰).

The immigrant status [odds ratio (OR) 1.81, 95% CI 1.06–3.01], male gender (OR 3.72, 95% CI 1.83–7.58), age over 60 years (OR 3.59, 95% CI 1.40–9.21), and obesity (OR 2.19, 95% CI 1.10–4.35), are significant risk factors for developing LTBI. As regards the access to the public specialized outpatient clinic, out of 118 positives, 70 subjects accessed to the organized clinical pathway (adherence 59.32%).

**Lessons**

The study shows an acceptable compliance of homeless to survey for LTBI screening; the tool of shelter-based active survey aimed at the early diagnosis is confirmed to prevent the TB infection spreading.

### **A seroepidemiological analysis of Hepatitis B vaccination status among health workers in Switzerland**

Damiano Urbinello

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**Background**

Healthcare workers (HCWs) represent a high-risk group for contracting Hepatitis B (HB)-related to professional exposure. In Switzerland, HB vaccination is recommended for adolescents relying since 2000 on a vaccination schedule including two adult doses (at 0 and 4–6 months) for 11–15-year-olds.

**Aims and methods**

In a retrospective cross-sectional study, data on 952 HCWs aged 16–24 years were collected from six hospitals in Switzerland with the support of occupational health departments. Data were analysed to determine Hepatitis B vaccination coverage, vaccination scheme, anti-HBs antibody titres, number of booster doses received to reach anti-HBs antibody titres  $\geq 100$  IU/l, as well as the impact of demographic and medical factors.

**Results**

Antibody titres were available for 908 HCWs. Overall, 86% of them had anti-HBs antibodies  $\geq 100$  IU/l when they started working in the hospital. 82 and 9 of 11 reached protective titre levels after one and two booster doses, respectively. Up to 2 boosters were in most cases enough to confer adequate protection, however there were 13 cases which needed three booster doses and two cases with four booster doses. 94.4% (899) of HCWs had received complete immunization: 7% at age  $< 10$ , 62% aged 10–15, 31% aged  $> 15$  years. The seroprotection rate was not different with respect to age at vaccination. 5.3% (51 HCWs) received an incomplete vaccination scheme (one adult dose or two pediatric doses). Nevertheless, 80.4% of them had anti-HBs titres  $\geq 100$  IU/l before any booster doses and all after a maximum of two booster doses. Twenty-two percent of HCWs vaccinated with a complete scheme, were vaccinated more than 5 years-ago, and still  $> 90\%$  of them had anti-HBs titres of  $\geq 100$  IU/l before any booster doses.

**Conclusions**

A majority of HCWs under the age of 24 years who begin working in hospitals in Switzerland were vaccinated with a

complete HB vaccination scheme and most displayed anti-HBs antibody titres  $\geq 100$  IU/l at least once. However, one of six young HCWs had no protective anti HBs levels either due to incomplete vaccination or because they were hypo- or non-responders after vaccination. Therefore it is very important that occupational health departments in hospitals maintain current screening and prevention activities for HB.

### **Q-fever outbreaks in the Netherlands triggers multidisciplinary collaboration**

Gabriëlla Morroy

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Until 2007, only 10–20 Q fever cases were registered annually in the Netherlands. In 2007 and 2008, two outbreaks occurred with 173 and 999 patients, respectively. The majority of patients came from the province of Brabant. Strong epidemiologic clues suggested dairy goat farming as the source of the outbreaks. The veterinary community knew since 2005 that Q-fever caused problems in small ruminants. Furthermore, dairy goat farming increased over the last 10 years. The Public Health Authorities were unaware of these developments.

The sudden emergence of Q-fever and the scale of the outbreaks took the Public Health and Veterinary Authorities by surprise. Q-fever in animals was not notifiable, investigations not standardized, certain diagnostic tools (i.e. PCR, typing, culturing) were unavailable or unvalidated and procedures/measures unclear. Multidisciplinary collaboration and the exchange of information between the Veterinary and Human Authorities were virtually non-existent. Although the Public Health Authorities urged the Veterinary Department for action the Ministry of Agriculture initially seemed reluctant.

In the course of 2008, these problems were tackled and multidisciplinary collaboration streamlined. Q-fever in dairy sheep and goats was made notifiable in June 2008, information exchange formalized and hygiene measures were implemented. A large-scale vaccination campaign against Q-fever in dairy goats en sheep commenced in September 2008, the effect of which will not be seen before 2010.

The level of preparedness is currently much higher than in 2007. All parties involved now underscore the necessity of structural data sharing and collaboration in the face of seemingly ever increasing zoonotic threats. The Veterinary sector now informs the Public Health Authorities of Q fever problems in ruminants. This enables the Public Health Authorities to be proactive and inform Physicians in specific communities. Informed Physicians can recognize, diagnose and treat Q fever properly and in a timely manner.

## **2.10. Workshop: WHO projects in Poland: First results of Development of a Polish Environment and Health information system (ENHIS) and Development of Polish Children Environment and Health Action Plan (CEHAP)**

*Chairs: Wojciech Hanke and Joanna Jurewicz, Poland*

**Organizer: Nofer Institute of Occupational Medicine**

Contact details: joannaj@imp.lodz.pl

WHO is co-organizing two interesting projects in Poland related to the main theme of the conference. In this workshop,

the results and progress of both ENHIS and CEHAP are presented and discussed.

The preliminary program:

(i) Information about CEHAP—Person from WHO

- (ii) Progress in CEHAP: objectives 1 and 2—Prof. Wojciech Hanke (Nofer Institute of Occupational Medicine, Lodz)
- (iii) Progress in CEHAP: objectives 3 and 4—Dr Kinga Polańska (Nofer Institute of Occupational Medicine, Lodz)
- (iv) Information about ENHIS—Dafina Dalbakova, WHO
- (v) ENHIS in Poland—Dr Joanna Jurewicz (Nofer Institute of Occupational Medicine, Lodz)
- (vi) Polish ENHIS on ambient air and drinking and bathing water quality—Dr Janusz Świątczak, dr Krzysztof Skotak (National Institute of Public Health, National Institute of Hygiene, Warsaw).

### Information about 'Children's Environment and Health Action Plan'

TBC

World Health Organization

National Environmental Health Action Plans (NEHAP) were first drafted by a number of countries in preparation for the Third Ministerial Conference on Environment and Health held in London in 1999. They were intended to consolidate a number of actions of differing priority within a number of departments, ministries and private industry that would ensure a reduction of environmental risk factors impacting on the nation's health. In the past years many countries have revised their NEHAPs or have drafted/are drafting more child-specific action plans following commitments taken by ministries of health and environment at the Fourth Ministerial Conference on Environment and Health in Budapest in June 2004.

In order to support Member States in their drafting and implementation process, WHO/Euro has initiated a project to give guidance for strengthening environment and health policy making, planning of preventive interventions, service delivery and surveillance in the field of environment and health. Through detailed Environment and Health Performance Reviews (EHPRs) WHO/Euro is providing country-based analytical description of the environmental situation in Member States. The major areas of this strategic analysis are the institutional set-up, the policy setting and legal framework, the degree and structural functioning of inter-sectoral collaboration and the available tools for action. This interdisciplinary assessment objectively examines the relevant policy and institutional framework that exists in Member States.

In July 2007, an evaluation mission took place in Poland. During this field visit, the WHO team met 52 representatives from 21 institutions from various sectors involved in environment and health. Based on this review a report has been prepared giving an overview of the current environment and health situation, evaluating strong and weak points of environmental and health system and services in Poland and formulating recommendations for further actions.

Poland is now in the process of drafting its CEHAP. The results of the EHPR and the national CEHAP will be used in the overall review of environment and health performance of the European Region to be presented at the Fifth Ministerial Conference on Environment and Health (Italy, spring 2010).

### CEHAP\_PL in progress in RPG 1 and 2

Wojciech Hanke

W Hanke

Nofer Institute of Occupational Medicine, Lodz, Poland

On the WHO/Polish Ministry of Health workshop on 24 November 2008, it was agreed that for each RPG a short background chapter will be prepared giving the necessary information on the extent of the problem. This chapter will then be followed by an overview of ongoing and planned preventive activities for reaching the objectives of each RPG. Three main overarching issues were identified that should be

covered by the CEHAP and for all RPGs: monitoring and surveillance; home and school oriented activities; youth participation. The proposed draft structure of the CEHAP is based on the review of examples from other countries of the European Region (e.g. Austria, UK, Slovakia, Lithuania).

The following developments at national level have been identified in relation to RPA 1 and RPG 2.

RPG 1—access to safe and affordable water and adequate sanitation: the access to a regular, clean and safe drinking water supply has significantly improved in recent time. However, still 15% of cities (usually small ones) have no access to pipeline water systems. Every ten citizen of urban areas and every fifth in rural areas have no access to safe water. The priority actions in regard should be to pool smaller water supply systems into larger ones which could meet the current standards for water quality. Significant progress was made in the prevention of shigellosis and salmonellosis. In order to provide a valid surveillance of waterborne diseases data on water quality should be linked with infectious diseases reports.

RPG 2—Reduce health consequences from accidents and injuries and enhance physical activity: The Gambit program has been very successful in Poland and proved that coordinated actions involving policy makers, schools and local communities are possible. The continuation of this program should be a priority within the CEHAP. In rural areas measures taken by Agricultural Social Insurance Fund (KRUS) and the Institute of Rural Medicine in Lublin to prevent accidents in children participating into farming activities have proven to be effective and should be followed up.

Several prevention activities to control and reduce overweight and obesity in children and adolescents have been initiated. The National Institute of Food and Nutrition has implemented a program for increasing children's and adolescents' awareness on healthy lifestyles in regard to nutrition and physical activity (in 2006 activities have been carried out in 4331 primary schools and gymnasiums). The National Programme for Prevention of Overweight and Obesity as well as the 'Chronic No. of infectious Diseases through Healthy Diet and Increased Physical Activity (POL-HEALTH)' programme have been launched. A good example for multisectorial collaboration is the educational programme coordinated by the State Sanitary Inspection 'Keep in shape' which was run in schools in the school year 2006–07. In line with these activities, the WHO Charter on counteracting obesity was signed by Civil Rights Spokesmen and the Director of the National Institute of Food and Nutrition in 2007. Another example for a systematic approach in promotion of physical activity is the effort made by the Ministry of National Education to change the educational curriculum in relation to programs of physical fitness in schools.

### CEHAP\_PL in progress in RPG 3 and 4

Kinga Polańska

K Polańska, W Hanke

Nofer Institute of Occupational Medicine, Lodz, Poland

The following developments at national level have been in relation to RPA 3 and RPG4.

RPG 3—*Ensure environments with clean air in order to reduce respiratory diseases*: activities focusing on urban and indoor air quality are progressing. However, a more systematic approach towards air quality management is needed. Urban air monitoring is mainly focussing on NOx and PM10 and clearly needs to be extended on PM2.5 monitoring as well. Routine monitoring results show that the main sources of air pollution are traffic and coal based heating systems in individual houses. Long-term policies addressing both sources are needed.

The exposure of children to passive smoking is still the major threat for their health. The educational activities are run

mostly by Sanitary State Inspection, however, to be successful they should be back upped by national campaigns.

Tobacco control legislation is currently in reading in the Polish Parliament and it is proposed that, as of 2009, a stronger law will be endorsed and reinforced.

*RPG IV*—Reduce disability and disease arising from exposure to hazardous chemicals, physical and biological agents and hazardous working environments: no major progress was observed in the area of prevention of exposure of children to chemical and physical hazards. Although some limited monitoring of lead poisoning is run in high-risk areas (Upper Silesia, Copper Basin in Lower Silesia) there is no valid information on the exposure to dioxins, PCBs and methylmercury. Poland has only recently ratified the Stockholm Convention yet. Taking into account limited funding opportunities, prevention activities should be preceded by valid diagnosis in high-risk areas. As schools are considered to be an important source of noise, pilot prevention programmes have been undertaken in the area of Warsaw. They included both noise monitoring and screening for noise induced hearing deficit.

Protection of children to sun emitted UV radiation, in order to protect skin melanoma, is of great public health importance in Poland. However, so far only limited prevention activities were initiated.

In addition to RPS, four overarching goals were proposed. The relate to activities related to more than one RPG. *Monitoring and surveillance*: will allow for evaluation of effectiveness of implemented prevention strategies and will be useful for identification of emerging environmental problems. Recognition of *socio-economic inequalities*: is crucial for formulation of successful policies related to all RPGs and for overcoming barriers in their implementation. *Climate changes*: increase the children exposure to air pollution and UV and may increase risk of diseases related to these factors. Finally, *'youth participation'*: will provide a credibility to proposed activities and will be a major step to achieve their sustainability.

### Information about ENHIS

Dafina Dalbakova

*D Dalbakova*  
World Health Organization

An EH information system, ENHIS, has been created through a series of projects co-sponsored by the European Commission led by WHO in collaboration with several Member States. The ENHIS system was used for assessment and reporting at the Intergovernmental Mid-term Review meeting (Vienna, June 2007).

To support Member States in the development and implementation of national children's environment and health action plans (CEHAPs) WHO/Europe has launched an initiative to provide guidance for strengthening the relevant policy-making, planning of preventive interventions, service delivery and surveillance. Environment and Health Performance Reviews (EHPR) have been conducted in several European countries enabling to identify the strong and weak points of the EH system and services and providing recommendations for further actions.

### Information about ENHIS—'Development of a National Environment and Health Information System in Poland'

Joanna Jurewicz

*J Jurewicz, W Hanke*  
Nofer Institute of Occupational Medicine, Lodz, Poland

The Ministers and Representatives of Member States in the WHO European Region responsible for health and the environment expressed their commitment to children's right to grow and live in healthy environments by adopting the Children's Environment and Health Action Plan for Europe (CEHAPE) at the Fourth Ministerial Conference held in

Budapest, Hungary, in June 2004. In their declaration, the Ministers and Representatives identified, among other priorities, 'the need for an environment and health information system as an essential tool to support policy-making in this field, allowing priorities to be set on the basis of evidence, enhancing access to information and facilitating communication with the public'. An EH information system, ENHIS, has been created through a series of projects co-sponsored by the European Commission led by WHO in collaboration with several Member States. The ENHIS system was used for assessment and reporting at the Intergovernmental Mid-term Review meeting (Vienna, June 2007).

To support Member States in the development and implementation of national children's environment and health action plans (CEHAPs) WHO/Europe has launched an initiative to provide guidance for strengthening the relevant policy-making, planning of preventive interventions, service delivery and surveillance. Environment and Health Performance Reviews (EHPR) have been conducted in several European countries enabling to identify the strong and weak points of the EH system and services and providing recommendations for further actions.

The CEHAPs and the EHPRs set a policy ground for the establishment of the necessary information and monitoring system in the countries. Poland is now in the process of preparation of CEHAP and has undergone an EHPR review. According to the Biannual Collaborative Agreement between the Ministry of Health of Poland and WHO/Europe for 2008–09, Polish institutions are developing a national environmental health information system following ENHIS/WHO methodology.

### Polish ENHIS on ambient air and drinking and bathing water quality

Świątczak Janusz

*S Janusz, S Krzysztof*

National Institute of Public Health, National Institute of Hygiene, Warsaw, Poland

ENHIS is a comparable information on environment and health in the pan-European Region, based on two principal tools to assess the impact of the environment on health and the effectiveness of mitigating policies: environmental health indicators and health impact assessment (HIA).

Indicators [structured according to the four Regional Priority Goals (PRG)] assess the current environment and health situation and are useful for identifying problems, monitoring trends and communicating this information. HIA is the assessment of the likely health impacts of a policy before it is implemented. This takes into consideration the distribution of impacts, for example on children. The usual process involves quantifying the relationship between an exposure and a health outcome, estimating the impact of a policy on the exposure, and then assessing the likely changes in health status.

Both tools are based on the state-of-the art scientific evidence whenever available, for example to identify and quantify the relationship between an exposure and a health outcome, and to provide guidance on effective policies. At times, however, the often complex relationship between health and the environment limited the availability of causative evidence. When evidence was often lacking, such as in the case of policy effectiveness, it was replaced by the use of expert opinions.

The presentation consist three main aims (based on indicator): ambient air, drinking and bathing water quality.

First aim concerning ambient air which contain contaminations emitted from motor vehicles, industry, heating and commercial sources. Air pollution can cause a significant burden of disease. Many researches and studies have also shown the associations with increased premature death, hospital admissions and exacerbation of symptoms, especially in relation to cardiovascular and respiratory disease. Despite efforts to reduce air pollution, it still continues to pose risks to

human health throughout the European Region. Indicator 'Children's exposure to outdoor air PM10' (code RPG3\_Air\_Ex1) in Poland is calculated in PM10 zones, based on the data collected in State Environmental Monitoring system supervised by Chief Inspectorate of Environment Protection.

Second and third aim—safe drinking and bathing water, are essential for public health. Microbial contamination, which can lead to outbreaks of waterborne diseases, is the main problem in public health terms. Chemical contamination of drinking water occurs less frequently but may also have health impacts, generally chronic and long-term. Indicator 'population with public water supply and access to improved water

sources' (code RPG1\_WatSan\_Ex1) in Poland is calculated based on State Sanitary Inspectorates data elaborated in district level (NUTS5). Indicator 'bathing water quality' (code RPG1\_WatSan\_S1) based on data collected in monitoring of bathing sites supervised by Chief Sanitary Inspectorate. In the presentation, methodology of the creation of individual indicators and the spatial-temporary analysis of obtained values for 2005–07 period are included. All values for given indicator are presented in the lowest considered level with aggregations up to regional (voivodeship) and country level. Trend in Poland from 2005 to 2007 based on NHIS indicators mentioned above is showed.

## PARALLEL SESSION 3

Friday 27 November: 10:30–12:00

### 3.1. Workshop: Environment and human health— towards the ecosystem perspective

*Chairs: Dorota Jarosinska\*, EEA and Peter Pärt, European Commission DG Joint Research*

**Organizer: European Environment Agency**

\*Contact details: [dorota.jarosinska@eea.europa.eu](mailto:dorota.jarosinska@eea.europa.eu)

Human ecology can broadly be described as the relation between human community and its environments. Changes in this dynamic system have been linked with risks to population health, and recently with increasing pressure on the Earth life supporting system. Air and water pollution, deforestation, loss of biodiversity, climate change, urban sprawl, and unsustainable production and consumption, increase human susceptibility to diseases and may affect not only physical health, but also mental and social well-being. A new framework to analyze complex relations between humans and the environment has been offered by the Millennium Ecosystem Assessment, 2005, where health and other constituents of human well-being depend on and influence vital ecosystem services, such as provision of water and food, regulation of floods, drought, and disease, or recreational and spiritual benefits.

The ecosystem is an advance from the ‘traditional’ approaches, which focus on individual environmental components, such as air, water, soil and their potential impacts on human health. Such an approach also creates opportunities to highlight the benefits of nature, of good quality environment to human health and well-being. This new perspective requires good information base, methods and tools, and broad cooperation between professional communities dealing with human health and the environment, as well as with other stakeholders. The European Environment Agency is actively involved in the European initiatives in this area, including development of the Shared Environmental Information System, the European Ecosystem Assessment and Biodiversity Issues (SEBI), and the Environment and Health process.

#### Introduction to the workshop

**Dorota Jarosinska**

*D Jarosinska*  
European Environment Agency

#### Nature, health and well-being—linking it together

**William Bird**

*W Bird*

Natural England, Sheffield, UK

Throughout Europe obesity and poor mental health are causing a significant rise in health costs and lost economic output. Poor mental health in the UK alone has been estimated to cost the economy £75 billion and the cost of obesity will rise to £50 billion by 2050. The Natural Environment is now recognized as a major health resource that can offer the health benefits particularly to the most deprived communities.

The evidence is showing that contact with nature and green-space can reduce stress, increase physical activity and reduce health inequalities. The value of the natural environment will depend on many factors including the quality, accessibility and the amount of community involvement.

The mechanism is still not clear but there is increasing interest in the way contact with nature reduces chronic stress. Many people living in deprived communities are up to 10 times less likely to live in the greenest areas. Stress is known to increase the risk of diabetes, heart disease and some cancers. Therefore living in areas devoid of greenery may increase stress and risk of many chronic diseases.

England’s conservation organization, Natural England is working with the Department of Health to create a Natural Health Service that will promote the Natural Environment as a means to deliver health for patients with heart disease, obesity, depression, diabetes and other chronic diseases. By evaluating each intervention and using the best available evidence there has been a shift towards using the outdoors as first line treatment.

#### Nature for human health: theory, evidence and implications

**Sjerp de Vries**

*S de Vries*  
Alterra, Green World Research, Wageningen, The Netherlands

## Psychological restoration, access to natural environments and public health

Terry Hartig

T Hartig

Institute for Housing and Urban Research, Uppsala University, Gävle, Finland  
Discussion of the public health impacts of environmental conditions has long focused mainly on the harm done by environmental stressors, toxic exposures, and more recently, global climate change. In recent decades, however, research has also begun looking to the beneficial health resource values of urban parks, urban forests, and other opportunities for contact with nature. One theme in this emerging

research area involves psychological restoration as a process that mediates between the environment and health. In this presentation I will outline the restoration perspective and overview several areas of research and practical activity focused on short- and long-term effects of restorative experiences in natural settings.

### Panel discussion

William Bird, Terry Hartig, Sjerps de Vries, Michel Huebel

## 3.2 Workshop: The health information strategy in Europe: how to use European NGOs

### The health information strategy in Europe: moving forward

Chair: Nick Fahy, European Commission

Organizer: Elvira Goebel, European Commission and Dineke Zeegers Paget\*, EUPHA

\*Contact details: office@eupha.org

This workshop will look at the health information strategy. After the research and policy are set at the European level and the projects financed, the question remaining is how these activities can be communicated to the public health community. Within the public health framework of the European Commission, emphasis is put on improving information on health for all levels of society. The European Commission has developed several tools to improve the information (e.g. EU Health portal). But can more be done?

This workshop aims at providing ideas and directions on how to further develop the health information strategy in Europe. The workshop consist of a presentation and a panel discussion and hopes for an active participation of the audience.

The presentation is by Dr Nick Fahy of DG Sanco's health information unit. He will present the current health information strategy and reflect on ideas on how to improve/complete this strategy.

A panel consisting of the three leading NGOs in public health in Europe: EUPHA – ASPHER and EPHA and Dr Kai Seiler of North Rhine Westfalia, Germany will reflect on the content and the organization of the health information strategy. This is followed by an open discussion and exchange of thought, lead by Dr Nick Fahy.

## 3.3. Public health in different settings

### Longitudinal study of ethnic differences in blood pressure in adolescents in Britain: findings from the determinants of adolescent social well-being and health study

Erik Lenguerrand

E Lenguerrand<sup>1</sup>, S Harding<sup>1</sup>, M Whitrow<sup>2</sup>, M Maynard<sup>1</sup>, K Cruickshank<sup>3</sup>, G Der<sup>1</sup>, A Teyhan<sup>1</sup>

<sup>1</sup>Medical Research Council, Social and Public Health Sciences Unit, University of Glasgow, Glasgow, UK

<sup>2</sup>Discipline of Public Health, University of Adelaide, Adelaide, Australia

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#### Background

The cause of ethnic differences in cardiovascular disease remains a scientific challenge. Blood pressure (BP) is an established risk factor for cardiovascular disease and the evidence for BP tracking from late childhood to adulthood is strong. We examine the emergence of ethnic differences in BP between early and late adolescence in Britain.

#### Methods

Longitudinal measures of BP, height, weight, leg-length (LL), smoking and socio-economic circumstances (SEC) were obtained from London schoolchildren of White British (692), Black Caribbean (670), Black African (772), Indian (384) and Pakistani and Bangladeshi (402) origin at 11–13 years followed up at 14–16 years. The baseline survey took place in 2003–04 and the follow-up survey in 2005–06. Age and ethnic specific mean BP, adjusted for anthropometry and social exposures, were derived using linear mixed models.

#### Results

Among boys, systolic BP (sBP) did not differ by ethnicity at 12 years but the greater average increase among Black Africans than Whites led to higher sBP at 15 years (+1.08) and 16 years (+2.9 mmHg). Consistently higher sBP was observed for Indian boys from 13 years (+2 mmHg). Among girls, ethnic differences in mean sBP were not significant at any age but larger average increases were observed for Black Caribbeans and Black Africans than for Whites. Similar trends were observed for diastolic BP. Body mass index, height and LL and change in these indices were independent predictors of BP, without specific ethnic effects. Ethnic differences in SEC led to a disproportionate effect of disadvantage on BP in girls in minority groups in late adolescence.

#### Conclusions

These findings suggest that adolescence is a key period for the expression of ethnic differences in BP. Timing preventive efforts to minimize BP rise in early adolescence may be rewarding, particularly for African and Indian origin children.

### Health and school performance amongst Danish adolescents: results from VestLiv–West Jutland cohort study

Claus D. Hansen

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## Background

Several studies have established that parental education (as a proxy measure of socio-economics status) makes a lasting impact on children's health in a life course perspective, contributing to higher morbidity and mortality. Much less is known, however, of the contribution of health to school performance and subsequent educational achievements. The aim of this study was to examine the impact of health measures on school performance at the end of compulsory school (9 years of school).

## Methods

Information from a birth cohort study of adolescents born in 1989 ( $n = 3058$ ) living in Ringkøbing County, Denmark in 2004 was collected from questionnaires. Participants' childhood health was obtained from questionnaires to their parents at the same time. Information on grades in Danish spelling, oral Danish and written math was collected at the end of compulsory school (~1 year after baseline). Information on social Background of the participants (e.g. household income, parents' highest education, etc.) was derived from a national register.

## Results

The results indicate that poor health leads to lower grades in all three skills examined. Participants indicating poor self-rated health at the age of 14 years has between  $-0.27$  [95% confidence interval (CI)  $-0.13$  to  $-0.40$ ] and  $-0.34$  (95% CI  $-0.21$  to  $-0.48$ ) lower grades, adjusted for a range of other factors influencing school performance. Specific symptoms leading to poorer school performance includes frequent headaches, high levels of perceived stress and depressive symptoms. If parents report health problems for the participant between ages 7 and 14, grades decrease with 0.89 (95% CI 0.44 to 1.32).

## Conclusions

Frequent headache, perceived stress and depressive symptoms contributes to lower grades at the end of compulsory school, thereby indicating that health may affect social mobility in the long run by lowering the chances of performing adequately in school. This emphasizes the need to provide more assistance for pupils with different types of health problems.

## Effectiveness of supporting therapies in young hospitalized oncology patients

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## Introduction

Hospitalization is distressing for children/adolescent and their families, especially in the case of oncological diseases. The support of Pet and Clown Therapies could be a way to reduce distress, improve quality of life and prevent mental problems regarding vigilance, memory and anxiety.

## Aim

To evaluate the effectiveness of supporting therapies on hospitalized paediatric oncology patients in terms of quality of life, school performance and relationships with family and friends.

## Materials and methods

We recruited 130 patients (age 6–17 years) with oncological diseases admitted to five paediatric hospitals in five regions of Central and Southern Italy (May to September 2008). Seventy-eight patients received supporting therapies in hospital. We measured physical and emotional health, self-esteem, relationships with friends and parents, school performance and disease perception of each patient using the Italian version of the Kiddo-Kindl questionnaire, which scores each dimension from 0 to 100. We compared the results obtained by

patients who received supporting therapies with those of patients who did not. Between-group differences were investigated using multivariate analysis of variance (MANOVA) adjusting for the potential confounders age and gender.

## Results

Mean age was 11 years, 63% were females. Children who received supporting therapies showed better results for physical health ( $P < 0.001$ ), emotional health ( $P < 0.001$ ), self-esteem ( $P < 0.001$ ), relationships with friends ( $P = 0.055$ ), school performance ( $P = 0.045$ ) and disease perception ( $P = 0.039$ ). Stratifying for gender, females showed results similar to those described above, whilst boys differed with regard to physical health ( $P = 0.025$ ), self-esteem ( $P < 0.001$ ) and school performance ( $P = 0.030$ ).

## Conclusion

Children in oncology wards who received supporting therapies showed better health-related quality of life, school performances and relationships with friends than similar patients who did not received such therapies. No differences in relationships with family members were observed. Girls seemed to gain benefit more than boys.

## Implementation of clinical pathways in Bulgaria—effects, outcomes and perspectives

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## Issue/problem

Implementation of clinical pathways as management and financial tools in Bulgarian hospitals was one of the main scopes of the health reform in the country. The expected positive effects of implementing clinical pathways were introduction of evidence-based practice, improved clinical effectiveness, improvement of resource management, as well as expected cost reduction by shortening length of hospital stay. The reform in inpatient care in Bulgaria was aimed at improving quality of care, cost containment of hospital expenditures and granting equity of access to all patients. Clinical pathways were viewed as a 'transition' measure on the way of introducing diagnosis-related groups.

## Description of the problem

The goal of the article is to analyze the observed effects, benefits and pitfalls, and discuss the perspectives of the clinical pathway system in Bulgaria. Currently, there are 299 clinical pathways, which are used as a method for contracting and reimbursing hospitals. Clinical pathways serve as algorithms which prescribe clinical behaviour in the process of treatment, as well as mechanisms for quality assurance, hospital financing and assuring patients' rights.

Results Some of the observed effects of clinical pathways are: significant reduction of length of hospital stay; improved bed occupancy; mixed effect on quality of hospital services; weak system control and accountability mechanisms; clinical pathway 'creep'; increased rate of readmissions and over-reporting of cases; increased hospital debts due to flat rate payment per clinical pathway; overspending stimulated by strict rules for clinical pathway reimbursement; cream skimming and cost-shifting; granted patients' rights and access to care.

## Lessons

Clinical pathway system is a good method for ensuring quality of care, however, it does not seem to be a good method for financing, as lack of ceilings for hospital activities and the retrospective payment often cause financial instability of hospitals. Clinical pathways should be kept as quality guidelines, while diagnosis-related groups should be implemented as means for reimbursement of hospitals. However, further research is needed before diagnosis-related groups are implemented in Bulgaria.

## Does the reprocessing after a period of disuse make the endoscope safe for reuse? An experience in Rome, Italy, from January 2000 to 2008

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### Issue

'Reprocessing' is the flexible endoscope decontamination procedure. When standards and reprocessing guidelines are followed, endoscopy-related infections are rare. Even if no empirical evidence supports the requirement to reprocess endoscope after a period of disuse and prior to the first case of the day, several guidelines keep on suggesting it.

### Description of the problem

This study aims to:

1. Evaluate bacteriologic assessment of flexible bronchoscopes stored after reprocessing procedure.
2. Estimate whether endoscope reprocessing before the first patient of the day is necessary or stored instruments could be safely used after extended storage.

From January 2000 to 2008, 264 flexible bronchoscopes (from 1 to 10 each time on the basis of instruments in active service) used in the Respiratory Care Unit of 'Gemelli' Hospital in Rome, were sampled quarterly by collecting two samples of sterile water from bronchoscope channel: one from a stored bronchoscope (pre-reprocessing sample); the second from the bronchoscope just sampled, after submitting it to a reprocessing cycle.

Three main outcome variables were investigated: culture status pre and post reprocessing, and type of organism cultured (skin-surface e.g. aerobic, anaerobic bacilli, etc; environmental e.g. moulds, spore-producing bacilli, etc.).

### Results

Out of 264 endoscopes in pre-reprocessing step, 10 were contaminated (13 skin-surface organisms isolated and an environmental one). Among post-reprocessing samples, 11 skin-surface vs. three environmental microorganisms were found.

Assuming  $H_0$  (null Hypothesis) as the same contamination rate pre and post-reprocessing, the Kruskal–Wallis test is not significant and we can't reject  $H_0$  (chi-square = -0.001;  $P=1000$ ). Comparing microflora types, we found high level of skin surface pre-reprocessing contamination and more represented environmental microorganisms in

post-reprocessing samples (Pearson chi-square = 1667;  $P=0.558$ ) but not statistically significant.

### Lessons

Reprocessing seems useful for endoscopes' disinfection, but it can also contribute to their contamination. Following guidelines is recommended but our findings suggest additional studies to find out and solve contamination's reasons and make reprocessing procedures safe even in first use.

## Health reform in the United States: new opportunities for public health?

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### Issue

With the election in 2008 of President Barack Obama, the US health care system is poised for a vigorous debate about universal health care access, insurance and costs. Dissatisfaction is widespread and there is no consensus among policy makers on how to reform it. Absent from most political discussions is the opportunity public health offers to greatly reduce the health care burden and simultaneously impact rising health care costs through effective prevention and health promotion programmes.

### Results

This presentation will guide EUPHA members through the recent debates and discussions on health care in the US, and offer commentary on how the US public health system can and should respond to the promise of prevention. Included in this discussion will be the recently proposed 'Wellness Trust' that seeks to fund a variety of clinical prevention measures by tapping into Medicaid and Medicare funding. Also presented will be various other initiatives to rebuilding public health and create high performing public health agencies. In many respects, this is a once-in-a-lifetime chance for public health to rise to the level of importance in the health arena that public health practitioners have long desired.

### Discussion

With open discussion with session attendees, the authors will actively seek input and ideas on how best to advance this opportunity and take advantage of the on-going health care debate in the US. Discussion of how different funding mechanisms, application of standards for health agencies, workforce competencies, and other initiatives to rebuild public health will be included in the discussion.

## 3.4. Smoking

### Age of initiation and intensity of cigarette use among smokers in Uzbekistan

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### Background

The age of initiation of tobacco smoking and the number of cigarettes smoked daily and overall are major determinants of tobacco-related morbidity and mortality risks.

### Objectives

To explore age of initiation and frequency of tobacco use in Uzbekistan.

### Methodology

A nationally representative sample of 1000 households was randomly selected in nine of the twelve provinces in Uzbekistan. All adults >15 years of age residing in the selected households were surveyed about tobacco use behaviour.

### Results

Uzbek smokers generally begin smoking after the age of 16, although 8% of urban smokers and 6% of rural smokers tried their first cigarette earlier. The use of nasvay (local smokeless tobacco) among men also begins at age 16 for 98% of rural residents and 78% of urbanites. The prevalence of heavy smoking (>11 cigarettes/day) increased with increasing age from 17.2% in the youngest age group from (15–24 years) to 48.4% in the 45–54 years age group, 57.7% among 54–65 years old, and 66.7% among those over 65 ( $P=0.02$ ). The prevalence of heavy smoking was significantly higher among married smokers (29.4%) than singles (1.8%,  $P=0.03$ ), and among Uzbeks (22%) than members of other ethnic groups (12.9%,  $P<0.001$ ). Government employees were also more likely to be heavy smokers (13.1%) compared with non-government employees (5.2%), students (0.3%), self-employed and entrepreneurs (6.3%), housewives (1.3%) and others (8.7%) ( $P=0.04$ ). Results of multivariate logistic regression indicate that male gender remains the strongest predictor of smoking (adjusted odds ratio 29.83, 95% confidence

interval 17.53–50.74), upon controlling for education, employment status, ethnicity, and marital status.

### Conclusion

These results suggest an urgent need for major efforts to prevent smoking, delay age of initiation, and promote smoking-cessation programmes, particularly among youth, and employees of Government agencies. Successful efforts in reducing smoking rates among adolescents will diminish the smoking-attributable burden of disease in Uzbekistan in the coming years.

## A cross-national comparative study of smoking prevalence and behaviour between British and Dutch South Asian and African origin populations

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### Background

Evidence suggests that Dutch people smoke substantially more than their British counterparts. These differences may relate, in part, to the health related policy differences between the two countries. It is unclear whether these differences reflect on ethnic minority groups. We therefore assessed whether the lower prevalence of smoking in the UK as compared to the Netherlands is observed in both ethnic majority and minority men and women living in these two countries.

### Methods

We used similar surveys from the UK (the Health Survey for England and the Newcastle Heart Project) and the Netherlands (the SUNSET study) to explore these questions.

### Results

After adjustment for potential confounders, compared with White-Dutch, the prevalence of smoking was lower in White-British men [prevalence ratio (PR) 0.61, 95% confidence interval (CI) 0.52–0.71] and women (PR 0.57, 95% CI 0.50–0.66); and White-Irish men (PR 0.75, 95% CI 0.61–0.93) and women (PR 0.61, 95% CI 0.50–0.74). Among African origin groups, compared with Dutch African-Surinamese, the prevalence of smoking was lower in the UK African-Caribbean men (PR 0.57, 95% CI 0.40–0.82) and women (PR 0.47, 95% CI 0.32–0.68), and Sub-Saharan African men (PR = 0.42, 95% CI: 0.23–0.75) and women (PR 0.30, 95% CI 0.12–0.75). Among South-Asian origin groups, compared with Dutch Hindustani-Surinamese, the prevalence of smoking was lower in the UK Indian men (PR 0.67, 95% CI 0.52–0.87) and women (PR 0.15, 95% CI 0.07–0.33), Pakistani men (PR 0.61, 95% CI 0.47–0.79) and women (PR 0.11, 95% CI 0.05–0.27) and Bangladeshi men (PR 0.76, 95% CI 0.59–0.99) and women (PR 0.10, 95% CI 0.02–0.42). Ever-smoking and smoking continuation rates were also lower in the UK ethnic groups than in the Dutch ethnic groups except for smoking continuation among the South Asian women.

### Conclusions

Similar to the European origin groups, the prevalence of smoking was lower in the UK South-Asian and African men and women than their corresponding Dutch counterparts. The differences suggest that anti-smoking policies might have an influence on both ethnic majority and minority groups, and illustrate the importance of residing countries' policy context on ethnic minority groups' smoking behaviour.

## A study on the association between smoking and body mass index prior to pregnancy and risk of hyperemesis gravidarum in the Norwegian Mother and Child Cohort

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### Background

Hyperemesis gravidarum (HG) is a disease of early pregnancy with unknown etiology characterized by excessive nausea, vomiting, metabolic disturbances and weight loss. Our aim was to study whether the previously reported associations to pre-pregnant low body mass index (BMI) and smoking could be explained by confounding effects of socio-economic variables.

### Methods

The sample consisted of 33 467 primiparous women participating in the Norwegian Mother and Child Cohort Study. Information on HG, BMI, education, maternal age, eating disorders as well as own and partner's smoking habits were obtained from self-reported questionnaires. Relative risk estimation and confounder control was performed using multiple logistic regression.

### Results

A reduced risk of HG was observed for women who smoked prior to pregnancy [odds ratio (OR) 0.71, 95% confidence interval (CI) 0.53–0.94] compared with non-smokers. Adjustment for education and partner's smoking strengthened the association (OR 0.44, 95% CI 0.32–0.60). For women with pre-pregnant BMI < 18.5 and between 25.0 and 29.9 had increased risk of HG compared to women with BMI between 18.5 and 24.9 (OR 1.94, 95% CI 1.25–3.02 and OR 1.41, 95% CI 1.09–1.81, respectively). This effect was slightly or not reduced when adjusting for possible confounders. No significant interaction between BMI, HG and smoking was revealed, suggesting that the effect of BMI on HG did not differ according to whether the women were smoking or not. Furthermore, there was no interaction between BMI, HG and eating disorders.

### Conclusions

Pre-pregnant smoking had a protective effect on the risk of HG. This effect was strengthened when socio-economic factors were accounted for. Low or high BMI increased the risk of HG, an effect which did not change by adjusting for socio-economic factors. Further research is needed to study the biological factors behind the associations between smoking and HG as well as BMI and HG.

## Social capital buffers the increasing inequity of smoking cessation

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### Background

Smoking cessation is the most cost-effective health care intervention. However, there are spectrum of factors that influence smoking cessation. High education is among these factors associated with higher quit rate. Social capital defined as trust in others and high social participation in formal and informal contexts has shown to influence smoking cessation positively. The aim of this study was to investigate the magnitude of social capital in modifying the impact of education with regard to smoking cessation.

## Methods

Scania Public Health Cohort is a population based prospective cohort study in Scania region, (south Sweden). In 1999–2000, a baseline postal questionnaire was answered by 13 604 individual aged 18–80 years. The response rate was 59%. In 2005, the same individuals were followed-up and a total of 10 475 persons returned the questionnaire with response rate of 77%. Of those, 2201 baseline smokers (899 men and 1302 women) were selected for this study. We used Cox's proportional hazard regression (the Breslow-Cox model) with time to event approach and Synergy Index (SI). Baseline smoking was dichotomized into continued smoking as risk (1) and quitting as event (0) yielding hazard ratios (RR) with 95% confidence intervals (CI).

## Results

The quit rate was higher among men (35.2%) compared to women (31.4%). Low-educated people were 31% less likely to quit, RR 0.69 (95% CI 0.55–0.87). Low-education and low-trust act synergistically and reduce the chance of quitting. Their joint impact was strongest among men and attributes to relative excess risk due to interaction (42%) compared to women (27%). Among women, low education and low social-participation jointly attribute to 41% less chance to quit.

## Conclusions

Having high trust was important for men, while having high social participation was important for women to quit smoking. Social capital seemed to buffer the effect of low education among both men and women regarding the reluctance to quit smoking during the follow-up period.

## Effect of policy measures on the smoking behaviour of people in Germany

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Many different measures are taken in the direction of reducing smoking among the population in Germany. The most important are the increase of the tobacco tax introduced in 2001 and the forbiddance of smoking on public places in 2007. Similar measures are also introduced in other European countries. However, the effect of those laws on the smoking behaviour of the people is not really measured.

With our study we want to see if there was any positive effect, that is, if people gave up smoking or started to smoke less. We use a hazard-regression model and analyze the behaviour of smoking people according to age, sex, education, place of residence (East–West Germany), time they have been smoking and regularity of smoking. We use the data of the Public Health Survey conducted annually by Robert Koch Institute through the method of telephone interviewing. The sample for the 2008 survey contains about 25 000 respondents aged 18 and above and includes individual level data on the smoking behaviour of the people.

The preliminary results show that introducing higher tax on the tobacco as well as the forbiddance of smoking on public places has a positive effect on the decision to quit smoking. We discuss further analysis and policy steps that can be taken as an additional measure in public health policies.

## Tobacco industry strategies to use the German Government to undermine the WHO's Framework Convention on Tobacco Control

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## Background

The Framework Convention on Tobacco Control (FCTC) is the first global health treaty developed under the auspices of the WHO and aims to reduce the global burden of disease from tobacco. Germany, well known for its opposition to national and European Union (EU) tobacco control legislation and for its influential tobacco industry, had long demonstrated its resistance to a strict convention. Yet it has now signed and ratified the treaty. It has been claimed that the final text of the FCTC was significantly weaker in its provisions than initially proposed as a result of pressure from a few countries including Germany. We examined tobacco industry strategies to influence the German Government and use it to undermine the FCTC.

## Methods

Analysis of previously secret tobacco industry documents released through litigation in the USA.

## Results

The documents reveal that the tobacco industry had identified Germany as a key target within its global strategy to fight the FCTC. The industry, particularly the German National Manufacturer's Association (VdC), had close contacts with the German Government that were used for intelligence gathering and lobbying, including covert and deceptive strategies. One key strategy involved creating and encouraging controversies between the financial, trade and other federal ministries on one side and the Federal Health Ministry on the other side, and using such intra-governmental conflicts to advance industry interests. Various business associations and other organizations were recruited to lobby the German Government using tobacco industry arguments. Germany was a key tobacco industry ally used to raise constitutional and economic arguments against the FCTC and to push for a 'broad and flexible' convention. Finally, Germany was successfully utilized to limit the EU negotiating mandate and the German position was employed to influence other countries against the FCTC.

## Conclusions

Our study suggests that Germany played a major role in the tobacco industry's efforts to undermine the FCTC.

# 3.5. Mental health among the ageing

## How can health systems in Europe respond to population ageing?

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## Background

All countries in Europe are experiencing an ageing of their populations, a trend that is projected to continue at least until

the middle of the twenty-first century. This has far-reaching consequences for the organization and delivery of health and long-term care, including health financing and expenditure. We describe the findings of a study undertaken to inform a Ministerial Conference hosted by the Czech presidency of the EU on the future sustainability of health systems.

## Methods

A comprehensive review of evidence on demographic trends in Europe and their consequences for the funding and delivery of health care.

## Results

While expenditure on long-term care is certain to increase with the ageing of the population, the consequences for health-care expenditure are disputed. The implications of ageing for the delivery of health care include the challenge of meeting the needs of a population with increasing numbers of co-existing disorders. However, appropriate health policies today can enable tomorrow's elderly people to receive support from a balanced and integrated provision of services. One of the most promising options is to promote healthy ageing, drawing on an increasing understanding of how this can be done. When elderly people are in good health, they will need less health care resources and are also more likely to remain in the labour force, alleviating pressures on financing health and pension systems.

## Conclusions

It will be essential to put in place appropriate systems to respond to the needs of ageing populations. These include a better coordination of health and long-term care services, optimal management of chronic disease including self-management, and enhanced prevention services to tackle obesity, smoking and mental illnesses. Given the long-term implications of getting things wrong, this must remain a priority even in the current period of financial and economic turbulence.

## Self-rated health before and after retirement in France: a cohort study

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## Background

Given the obvious conflict between the need to increase the economically active proportion of the population, and the de-facto decrease in retirement age in most Western countries, surprisingly few studies have longitudinally investigated how perceived health is influenced by work and retirement.

## Methods

We examined the trajectories of health for 14 714 workers (79% men) in the National French Gas and Electricity Company, the GAZEL cohort, from up to 7 years prior, and 7 years after, retirement using yearly measurements of self-rated health (SRH) from 1989 to 2007. Analyses were based on repeated-measures logistic regressions with generalized estimating equations.

## Results

Between the year before retirement and the year after, the estimated prevalence of suboptimal health fell from 19.2% (95% confidence interval 18.5–19.9%) to 14.3% (13.7–14.9%), corresponding to an 8–10 year gain in health. This retirement-related improvement was found in both sexes and across occupational grades, and lasted throughout the seven-year post-retirement follow-up period. Poor work environment before retirement as well as health complaints, indicated by depression, musculoskeletal complaints, sickness absence >21 days, and severe medical conditions, were associated with both a steeper yearly increase of suboptimal health while still working, and a greater retirement-related improvement.

## Conclusions

The results indicate an added burden of work on the perceived health of older workers, and a sizable and lasting improvement in perceived health after retirement suggesting that there is a need to redesign work for older workers in order to facilitate continued healthy participation in the labour force.

## Older people's living arrangements and risk of admission to a care home in Northern Ireland, 2001–2007: a census-based cohort study

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## Background

While it is known that some aspects of living arrangement, such as presence of a partner/spouse, influences the risk of admission to care home, the relationship to more complex living arrangements requires further clarity. In addition, living arrangements can change with advancing age and declining health which can confound the likelihood of admission.

## Methods

A census-based cohort study was used to follow 55 446 people aged >65 over 6 years. Cox regression models were used to assess how risk of care home admission varied by living arrangement with adjustment for age, sex, general health and limiting long-term illness.

## Results

A total of 2652 (5%) of the cohort was admitted to a care home during follow-up. People living alone had higher admission rates than those living with a spouse/partner, though alone-never-married (2.11; 95% CI 1.83–2.43) fared worse than alone-widowed (1.58; 95% CI 1.42–1.77). Couples living with children had the lowest risk of admission (0.67; 95% CI 0.54–0.83) compared with couples only; older people not in couples but living with children had lower risk than those living alone, but higher risk than couples with children. Those living with a sibling only had higher admission risk (1.53 95% CI 1.25–1.88). Men showed a greater risk reduction from living with a partner or children.

## Conclusions

Living with a partner and living with children both confer a lowered risk of care home admission compared to living alone, or in other household types. Intergenerational living has significant benefits to older people in terms of reducing admission risk. The importance family structure can play in determining older peoples' care requirement deserves attention as a crucial factor for future care service provision.

## Religiosity and the quality of life of post-operative colon cancer patients

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## Background

The aim of this study was to examine the relationship between individual religiosity and seeking support in the course of illness through prayer against the results of colon cancer treatment and the quality of life (QoL) of post-operative patients.

## Methods

The sample population consisted of patients from the Department of Gastroenterological Surgery in Kraków. Data was collected using a structured questionnaire after surgical colon cancer treatment. In total, 205 individuals took part in the interview. The interview asked about different dimensions of QoL following surgery. Statistical analysis was done using non-parametric tests (i.e. Mann–Withney i Kruskal–Wallis).

## Results

The results find a significant relationship between religiosity and the QoL of patients following surgery. Scales used to analyze QoL include the QOLI, FILC, RAND Mental Health Inventory, VAS and COOP Charts. Religiosity, understood as prayer frequency, was compared before and after surgery. Better QoL in QOLI and FILC scales was noted in individuals

who did not change their prayer habits after the illness. There was a significant relationship between QoL in FLIC and RAND scales and self-rated religiosity, where those describing themselves as religious were found to have better QoL than those describing themselves as non-religious, non-practicing, or even deeply religious. Respondents' attitude to religion was also significantly related with mood, pain perception, and how they perceived their QoL using COOP Charts one month before the study. No significant relationship was noted between religiosity and QoL against gender.

#### Conclusions

1. Attitude towards religion is a significant predictor of certain QoL dimensions in individuals following surgical treatment.
2. Prayer is a significant coping resource for dealing with disease.

### Transitions between care settings at the end of life in the Netherlands: results from a nationwide study

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#### Issue/problem

Transitions between care settings at the end of life could hinder continuity of care for the terminally ill, suggesting a low quality of end-of-life care.

#### Aim

To examine the nature and prevalence of care setting transitions in the last 3 months of life in the Netherlands, and to identify potential characteristics associated with them.

#### Methods

Between January 2005 and December 2006, we performed a mortality follow-back study on all non-sudden deaths for patients aged  $\geq 1$  year. Data were collected via the Dutch Sentinel Network General Practitioners (GPs), an existing health surveillance network representative of all GPs in the Netherlands. A care setting transition was defined as a change in setting of care.

#### Results

During the 2-year period we studied 690 patients whose deaths were 'totally expected and non-sudden'. In the last 3 months of life, 43 distinct care trajectories and 709 transitions were identified (involving a hospital 2/3 of times). The most frequent trajectory was home-hospital (48%). Forty-six percent experienced  $\geq 1$  transition in their last month of life. Being male, multi-morbidity, and absent GP-awareness of a patient's preferred place of death were associated with having a transition in the last 30 days; whereas being  $\leq 85$  years, having an infection and absent palliative-centred treatment goal were associated with terminal hospitalization for  $\geq 7$  days.

#### Lessons

Although majority of non-sudden deaths occur at home, transitions to hospitals are relatively frequent. To minimize unnecessary or unwanted transitions, timely recognition of the palliative phase of dying is important.

### Multiple causes-of-death analysis: a comparison between France and Italy

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#### Background

In developed countries the biggest- and ever growing-share of the deaths occurs over the age of 70. At those ages, death often results from a complex process that involves several conditions. As a consequence, the 'underlying' cause of the death is not sufficient to analyze the mortality profile of ageing populations. Since multiple cause-of-death analyses relies on the exhaustive information reported on the death certificate, it is a very relevant tool for that purpose.

#### Methods

The mortality profiles of Italy and France in 2003 are compared in this study. The data are national cause-of-death statistics and coded according to the Icd10 provisions. In France two-thirds of the certificates are entirely coded thanks to an automatic coding system that determines the underlying cause of the death. The coding of the remaining certificates requires the intervention of coders. In Italy underlying cause of death is determined automatically for 80% of the certificates and by coders for the remaining 20%. The grouping of diseased has been done according to the Icd10 chapters, external causes of death and deaths occurred below one year of age have been excluded from the present analysis.

#### Results

In 2003, 507 704 deaths at age one or over have been registered in France as compared to 550 835 in Italy. The mean number of causes reported on a certificate is lower in France (3.2) than in Italy (4.0). The share of the certificates mentioning only one cause is much higher in France (14%) than Italy (1%). The same holds true for certificates with two reported causes (24 vs. 10%). Ill-defined cause or 'mechanisms of death' are more frequently reported as underlying cause of the death in France (8 vs. 2%) while they are more frequently reported as associated causes in Italy. The ratio between the frequency of deaths with a specific disease as underlying cause and the frequency of deaths with that disease as underlying or associated cause is generally higher in France with the exception of the neoplasms and the diseases of the circulatory system for which the ratios are similar in the two countries.

#### Conclusions

These preliminary results suggest that the mortality profiles of France and Italy are significantly different and require further investigations.

## 3.6. Sickness certification practice

### Sickness absence as a measure of health functioning

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#### Background

Sickness absence is an increasingly used outcome in health research. Sickness absence indicates temporary inability to

carry out one's work-related tasks, and it has been shown to predict future disability pension and mortality. Otherwise little is known about the nature of sickness absence as a measure of health. The aim of this study was to examine different domains of health functioning as predictors of sickness absence.

#### Methods

Short Form 36 (SF-36) is one of the best-known instruments measuring different aspects of physical and mental health functioning. A questionnaire including the SF-36 was mailed

to the City of Helsinki employees ( $N=6934$ , response rate 67%) in 2000–02. Employer's register data were used to follow up the respondents for sickness absence episodes longer than two weeks for the subsequent three years. The predictive ability of eight subscales and two component summaries of the SF-36 were compared using regression methods and ROC-analysis.

### Results

All SF-36 subscales and component summaries were associated with the incidence of sickness absence during the follow-up. One standard deviation decrease in the component summary of physical health functioning increased sickness absence by 58% (95% CI 52–65%) and similar difference in mental health was associated with 24% (95% CI 18–30%) increase. Findings on the subscales paralleled these figures. In both men and women, strongest associations were found for physical functioning and bodily pain subscales.

### Conclusions

Sickness absence reflects a multitude of different domains of health functioning. In particular, ability to perform daily activities, pain and general health were important predictors of sickness absence longer than 2 weeks. Physical domains of health need constant attention in maintaining work ability among municipal employees.

## Are self reported data on sick leave reliable?— a comparison between self-reported and register data

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### Background

Sickness absence and return to work are common outcome variables for the effect of interventions for individuals on sickness leave. Use of official register data is often restricted, and research on sickness leave and return to work are often based on self-report. Few studies have examined the agreement between register data and self-report on sickness leave.

### Methods

One hundred fifty three sick-listed individuals participated in a 4-week inpatient vocational rehabilitation programme. One hundred thirty two (86%) answered a questionnaire three months after the rehabilitation programme, and 93 (61%) after 12 months. Self-reported data on sickness absence were compared with register data from the National Insurance Administration according to four categories: working, sick-listed, on medical/vocational rehabilitation and on disability pension. Agreement between self-report and register data was evaluated in cross-tabulations and reported with kappa values. Stratified analyses were done for gender, age, education, medical diagnosis and length of sickness absence at baseline.

### Results

Good agreement was found for medical/vocational rehabilitation (kappa=0.70 at 3 months and 0.65 at 12 months) and disability pension (kappa=0.65 at 3 months and 0.84 at 12 months). Moderate agreement was found for working (kappa=0.49 at 3 months and 0.67 at 12 months) and fair agreement for sick-listed (kappa=0.36 at 3 months and 0.25 at 12 months). Stratified analyses showed significant better kappa values for individuals sick listed, <12 months at baseline and individuals above 45 years. Non-responders at 12 months were on the average 10 years younger than responders.

### Conclusions

Good agreement was found between self-reported and official register data on sickness absence. However, official register data is preferred in research on sickness absence and return to work, because this will ensure full data sets and there may additionally be multiple and recurrent endpoints which is hard to obtain accurate information on from self reports.

## The occurrence of sick-listing problems: a repeated survey of 4000 Swedish physicians

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### Background

To handle sickness certification has been said to constitute a psycho-social work problem for Physicians, especially Orthopaedic Surgeons (OS) and General Practitioners (GPs). Levels of sickness absence are high in Sweden but have fallen since an all time peak in 2003.

### Aim

To study occurrence and possible changes in rate of physicians who experience sick-listing problems.

### Methods

During 2004 and 2008, a postal questionnaire was sent to all Physicians <65 years in two Swedish counties. Response rates were 71 and 61%, respectively. Answers to six questions on emotionally straining issues were analysed for those stating they performed sickness certification;  $n=3997$  in 2004; and 4050 in 2008. The answers from OS and GPs were compared to those of other physicians.

### Results

Rate of physicians seeing >6 sick-listing patients/week was reduced from 62 to 39% since 2004 among GPs. The reduction among OSs and other physicians was much lower; 82–78% and 44–39%, respectively. Fewer GPs (60 vs. 50%) and OSs (53 vs. 46%) in 2008 found it problematic to handle sickness certification at least once per week. The rate of GPs finding it problematic to handle situation where physician and patient have different opinions on the need for sick-leave, was reduced from 83 to 67%. The rate worrying at least monthly that a patient would report them to the disciplinary board in connection with sickness certification reduces by half to 6%.

### Conclusions

The rates of physicians experiencing emotionally straining issues in sickness certification have decreased. The many interventions after 2004 to increase quality in the sickness certification process, might have affected physicians' work environment in a positive way, but the results may also be due to effects of the decrease in sickness absence.

## Experiences of factors contributing to women's health literacy and informed decisions during sick leave. A focus group study performed in the South of Sweden 2008–2009

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### Background

Sickness absence has increased in recent years. Being absent from work due to illness cause involvement in new relations concerning rehabilitation and authority decisions. For the individual, these aspects are characterized of confusion, lack of communication and participation, which may prohibit the return-to-work process. Health literacy represents skills to

achieve, understand and make use of health information. It comprises critical thinking, analysis, decision making, goal setting, problem solving and communicating in a health related context. A decision aid for individuals on sick leave may strengthen their health literacy and ability to make well-founded decisions. The first step in a development process of a decision aid would be to explore experiences of strengthening factors during sick-leave. The aim of the study was to describe women's experiences of factors contributing to increased health literacy and ability to make informed decisions during sick leave.

#### Methods

The study was carried out in the south of Sweden. An explorative, descriptive, qualitative design with focus group methodology was used. Six groups of women on sick-leave discussed factors contributing to increased health literacy and ability to make informed decisions.

#### Results

The women's experiences formed four preliminary categories: knowledge about rules and regulations enabled the women to analyse, choose and value information and to be independent and partaking in rehabilitation. Clarity, concerning possibilities, rights, duties and mutual responsibilities strengthened their sense of control and improved decision-making, goal setting and problem solving. Being supported by a rehabilitation coach with an advocating role improved the possibilities to communicate and to understand information. Being a step ahead in the contact with authorities was necessary to avoid dropping out of the system.

#### Conclusions

The preliminary results revealed a variety of factors, which may form the basis in the development of a decision aid, intended to facilitate the return to work.

### Sickness certification—a frequent and problematic task in Sweden?

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#### Background

Physicians have a central role in the complex sickness-absence process. However, the scientific knowledge about the physicians' work with sickness certification is very limited. The aim was to describe problems and support from management and guidelines physicians experience in sickness certification.

#### Methods

Data from a questionnaire sent to all physicians in Sweden ( $n=37\,047$ ) in 2008. The response rate was 61%. Answers from physicians <65 years old who had consultations with patients in which sickness certification is considered ( $n=14\,243$ , 48% female) were analyzed.

#### Results

More than 80% of the physicians had consultations involving sickness certification at least once a week and 35% experienced problems with this task to the same extent. Forty percent of the Physicians assessed the work with sickness certification fairly or very problematic. Sixty percent stated: it was problematic to assess level and prognoses of work incapacity caused by disease/injury. However, almost as problematic was to handle a request to prolong certification initially issued

by a colleague. Thirty-four percent worked at clinics that had a policy on sickness certification and 60% experienced support, more or less, from their nearest manager. The newly implemented national guidelines on sickness certification were used by more than 50% and especially by physicians who recently graduated. They also stated that these guidelines were very or fairly valuable for the quality of this work task (90%). Seventy-six percent of the physicians with board exam valued the guidelines as very or fairly important.

#### Conclusions

To issue sickness certificates is a common and problematic task among the physicians. The implemented guidelines seem to be of great value in the physicians' work with sickness certification tasks especially for the recently graduated.

### Learning the task of sickness certification: a survey among all Swedish Physicians

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#### Background

High levels of sickness absence are a problem in many western countries. Sick leave can be understood as a powerful and potentially dangerous treatment. Despite the importance of this for the patients, physicians have very limited training in insurance medicine and the research about sickness certification practices is scarce.

#### Aim

To gain knowledge on how physicians attain competence in how to handle sickness certification of patients.

#### Methods

A questionnaire was sent to all physicians in Sweden ( $n=37\,047$ ) in 2008, response rate 61%. Answers from physicians <65 years-old and who had sickness certification as a part of their work ( $n=14\,243$ ) were analyzed. Outcome measures: ratings of importance of different types of learning for their competence in handling of sickness certification.

#### Results

Formal training was indicated by relatively few physicians as contributing to their competence in sickness certification: Seventeen percent was helped to a large/fairly large extent by their undergraduate education, 37% by internship and 46% by resident training. Instead, a high percentage (65%) found contacts with colleagues helpful to a large/fairly large extent, as well as contacts with patients (56%). Training arranged by Social Insurance Offices, as well as the physicians own searches for information were reported as helpful by one third.

#### Conclusions

Physicians' competence in sickness certification was not primarily attained through formal education but rather through informal learning at work. This could possibly lead to large local variations in how sickness certification is managed. In order to protect both health and the legal rights of the patients, formal education and continuing professional development could be strengthened. In addition, informal learning at the physicians' workplace should be supported and improved.

## 3.7. Workshop: Youth friendly health services—meeting the health needs of adolescents

*Chairs: Auke Wiegiersma\*, Jolianne Hellemans and Andrea de Winter, The Netherlands*

**Organizer: EUPHA Section on Child and Adolescent Public Health**

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Programme:

**General Introduction with description of workshop programme and goals**

Auke Wiegiersma, The Netherlands

**Adolescents! What's the difference? Presentation**

Auke Wiegiersma, The Netherlands

**Introduction YFHS—the five elements**

J.J.Hellemans, The Netherlands

**Discussion in groups**

**Topics for discussion:**

(i) Is your organization 'youth friendly'? What is good, what is lacking? How does that compare to other (inter)national health care organizations?

(ii) What would you give priority in the implementation of YFHS in your own organization?

**Introduction**

Adolescents are a very distinctive group of human beings that have health care needs very much different from those of children and adults. However, these differences are hardly taken into account in preventive and curative health care. This is made abundantly clear by the fact that in many hospitals adolescents are placed in children's wards at the age of 15 years or in wards for adults at the age of 17 years.

The same problems can be encountered in preventive care. The way adolescents are addressed, the examples given and the approach taken is often not appropriate for this specific group and more attuned to the needs of children. Recent research has shown that for health promotion programmes to be effective, one has to take into account the biological and especially neuropsychological level of development. This means that ideally for each subgroup of adolescents, one has to develop a different approach.

Clearly, such diversity in type of wards or preventive programmes is not feasible. However, some 'ground rules' can be defined that can be used to make preventive or curative care for adolescents more 'youth friendly'. This can imply mundane things like furnishing but also the creation of an informal atmosphere and paying strict attention to matters like confidentiality.

In this workshop, after a general introduction to the biological and neuropsychological development of adolescents and how this should impact on their health care needs, the 'Youth Friendly Health—Rules' are explained. After this the participants will be asked to discuss in small groups in what way their own health care institution—be it preventive or curative health care—takes the special needs of adolescents into

consideration and what can and should be changed to make it more 'youth friendly'. Also, group members are to discuss ways how to effect these changes.

After that, in a plenary discussion, the practical applicability and feasibility of the various ideas will be presented and discussed.

**Presentations**

Adolescence is characterized by a series of major changes that are unique to the human race. Probably the most fundamental changes are effected by the major developmental changes in the brain. The pruning (reduction of the number of synapses) and myelination (improving the speed of transmission) both making processes faster and more efficient, have vast effects on thought processes and behaviour. The change in volume of grey matter at its second peak at roughly the age of 12 appears to be influenced by environmental determinants. The evolutionary advantages of breaking away from parents, striking out on your own and taking risks in the process are more than obvious in a more primitive society but hardly applicable in our modern world.

One would think, that with increasing knowledge about the effects on thought processes and behaviour (health) care providers would have changed their approach to deal more effectively with this group. However, there are pitiful few examples of for instance hospitals that take the special needs of adolescents into account or health promotion activities that allow for the different levels of maturity and the way that should influence the methodology.

Based on various studies, it is possible to outline a few 'ground rules' for efficient and effective health care for adolescents—the Youth Friendly Health Services. Often even minor changes in the way health care is offered to this age-group, can have a major impact.

Adolescents are a very distinctive group of human beings that have health care needs very much different from those of children and adults. However, these differences are hardly taken into account in preventive and curative health care. This is made abundantly clear by the fact that in many hospitals adolescents are placed in children's wards at the age of 15 years or in wards for adults at the age of 17 years.

The same problems can be encountered in preventive care. The way adolescents are addressed, the examples given and the approach taken is often not appropriate for this specific group and more attuned to the needs of children. Recent research has shown that for health promotion programmes to be effective, one has to take into account the biological and especially neuropsychological level of development. This means that ideally for each subgroup of adolescents, one has to develop a different approach.

## 3.8. Seminar: Roadmap to 2015: a strategic planning process for association of schools of public health in Europe (ASPHER)

*Chair: Antoine Flahault, France*

**Organizer: ASPHER.**

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**Objectives and theme of the workshop**

The aim of ASPHER 2015 is to conduct a strategic planning process for the Association of Schools of Public Health in the European Region (ASPHER) in order to collectively establish goals and priorities through until the year 2015 and to develop a roadmap for the upcoming presidency. To this

end, a three-round Delphi survey process was carried out, in which the greater part of ASPHER members participated. In this survey, ASPHER's priorities were explored within the context of ten main topic areas: public health core competencies, good practice/innovation in public health teaching, international collaboration, ethics and values, accreditation of schools/PH programmes, professional opportunities for students and staff, research in ASPHER member institutions, PH

policy/advocacy, doctoral programmes, and new schools/PH programmes. The results of all three rounds were discussed and consulted with a group of external stakeholders formed by key professional organization in public health field. The final results of ASPHER 2015 will be presented during the seminar, and followed by a discussion regarding key aspects

concerning the future implementation of the European-wide public health education accreditation programme.

**Presenters include:**

Antonie Flahault, France; Ilana Levin, France; Robert Otok, ASPHER and Jacek Sitko, Poland.

## 3.9. Workshop: The pandemic in Europe—managing the public health impact of H1N1

*Chair: Ruth Gelletlie\*, UK*

**Organizer: EUPHA section on infectious disease control**

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The emerging epidemiology of the pandemic over the autumn months in Europe.

Presentations by representatives from ECDC, UK and other countries.

**Panel discussion**

## 3.10. Health determinants

### The influence of area size at different points in the life course on mortality

Oyvind Naess

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**Background**

Studies have investigated area level determinants on health risk. Few studies have looked at how area size matters for the estimates of area effects. No study has looked at this at different points in time through people's life course. In this study we wanted to follow the residential history of a cohort and investigate how area effects differ according to size of area and time point of area residency through people's life course. Area effects were both estimated as the variation in mortality (random part) and the effect of area level determinants (fixed part).

**Methods**

Data were obtained by linking the censuses from 1960, 1970, 1980, 1990 and 2001 with the death register. Deaths were from 2001 until 2006. Based on the population in Oslo 2001, all those who had been residents in Oslo in the period 1960, 1970, 1980 and 1990 were selected (age-group 30–69 years). Three different area sizes were used: electoral wards (478 areas), administrative areas (69 areas) and borrows (25 areas). All these were nested within each other. Area coding had changed through the period, and in order to use areas with similar geographic boundaries through time, areas were recoded. Level of education and air pollution was used as indicators of area level determinants. The analysis was run in multilevel logistic regression.

**Results**

The effect of area short time prior to death was larger than earlier residency. As distance in time between area of residence and follow up of death increased, the effect on mortality attenuated. Smaller areas had larger effects on the estimates.

**Conclusion**

Results from the study suggest that geographical size and time of area residency through the life course matters in studies of area effects on mortality. This has implications for interpretation of such studies when evaluating evidence for health policy and for future design of such studies.

### Nature conservation and preventative health protection in Germany – a strong partnership?

Thomas Classen

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**Background**

Unsustainable use of natural resources associated with climate change, degraded water resources, poor air quality, loss of biodiversity and several stressors of the urban living environment nowadays is discussed as a major threat to human health. Therefore, necessity of protecting nature as a health resource is increasingly considered a high-priority aim in multinational approaches. In Germany, the connections between nature conservation (nc) and preventative health protection (php), however, have not been ascribed much importance to science, politics and planning procedures so far.

**Objective and methods**

This study from a public health perspective systematically ascertained potential synergies and interferences between nc and php identifying the prerequisites and potentials for cooperation and developing a concept for implementation. Besides an extensive literature review, the study focused on a survey of 158 opinion leaders and stakeholders in national, federal state and scientific institutions and organizations using a standardized questionnaire and statistical (principal-component) analysis. Furthermore, 18 experts were interviewed and originated in an actors network.

**Results**

The studies reviewed outline strong evidence on the relationship between humans and nature and address references to nature and well-being. However, connections between the explicit conservation of nature and impacts on human health are rare and mostly confined to the international discussion of sustainable resources management. The survey showed that most of the stakeholders are basically open to connections between nc and php. Some promising, recently initiated approaches could be identified. Nevertheless, strict division of competencies and responsibilities were underlined as main causes for communication barriers and missing cooperation.

**Conclusion**

There is a need for improving dialogue, integration of strategies and concepts of nc and php, reduction of the immanent deficit of information, and reduction of situations with rivalry or conflicts. Nc and php in science and politics are

predestined for strategic alliances since sustainable development is healthy development!

### Community polarization in Northern Ireland: an examination of health outcomes using a census based population cohort aged 25–74 in 2001

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#### Background

Human settlement patterns in Northern Ireland are driven mainly by history: from plantations settled by Scots and English in the 17/18th Century; through to contemporary events—the recent civil unrest which, mainly for reasons of self-preservation in a climate of vicious inter-communal violence, forced many Roman Catholic and Protestant communities to retrench within traditionally more polarized areas. This study examines the effect of continuing community polarization on selected health outcomes—census based self-reported health measures, all cause mortality.

#### Methods

The Northern Ireland Mortality Study (NIMS) is a data linkage comprising the whole population registered at the 2001 Census linked to subsequent deaths occurring to the end of 2006. Eight-hundred-fifty-two-million-two-hundred-and-eleven individuals aged 25–74 were selected for analysis. An index of community polarization was derived based on percentages of Catholics and Protestants at area level (<10%; 10–30%; 30–70%; 70–90%; >90%). Logistic regression models assessed morbidity differences (general health; LLTI) and Cox proportional hazards assessed mortality. Analysis was stratified by denomination with adjustment for socio-demographic factors.

#### Results

While 22% of people lived in areas with 30–70% community mixing, 47% lived in more extremely polarized areas (with 90% or more from the same Background). Polarization was associated with disadvantage, especially in mainly Catholic areas. Catholics living in areas where they were had minority status were more affluent than their peers from areas where they formed the majority. In fully adjusted models Protestants in predominantly Catholic areas had higher likelihood of LLTI than those living in predominantly Protestant areas [odds ratio (OR) 1.47; 95% confidence intervals (CIs) 1.26–1.17], but so too had Catholics (OR 1.48; 95% CI 1.40–1.56). Higher mortality risks for both communities in more polarized areas largely disappeared after adjustment for socio-economic circumstances.

#### Conclusions

While spatial segregation is not desirable, this study presents little evidence suggesting it a significant determinant of health. Relatively poorer health in polarized areas may be due to greater deprivation or other unmeasured area-level factors.

### Assessment of asthma control and its socio-economic determinants

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#### Background

Asthma appears a major public health issue considering its high prevalence and the consequences on patients in terms of both morbidity and mortality. During the last decades, asthma prevalence has increased in industrialized countries. Despite available and effective medication there is still a lot of uncontrolled asthma. Asthma was considered a public health priority in France in the 2004 public health Law. Previous

studies have shown a higher prevalence among lower social classes. This study aims to estimate the asthma prevalence in France in 2006, assess the level of asthma control and discuss the factors associated with non-control.

#### Method

The analysis is based on a 2006 survey, representative of the French population, which collected data on socio-economic characteristics, self-assessed health status and medical care consumption, and included a standard set of questions on respiratory diseases. The level of asthma control (control, partly or completely uncontrolled) is assessed according to the 2006 Global Initiative for Asthma (GINA) guidelines. Determinants of uncontrolled asthma are identified among patients' characteristics by means of multivariate logistic regression analyses.

#### Results

In 2006, the asthma prevalence was 6.7% vs. 5.8% in 1998. Asthma is inadequately controlled for 61% of asthmatics: 46% of asthmatics are partly controlled and 15% completely uncontrolled. Among the completely uncontrolled asthmatics, 24% has no long term daily treatment and 54% has an inadequate treatment. Adjusted by level of treatment, gender and age, the likelihood of suffering from asthma totally uncontrolled rather than controlled increases with low income [odds ratio (OR) 3.13;  $P < 0.01$ ], current smoking (OR 1.79;  $P < 0.1$ ) and obesity (OR 2.39;  $P < 0.01$ ).

#### Conclusion

Since 2000, mortality and hospitalizations resulting from asthma are decreasing as a result of a better management of the disease. Nevertheless, our results show that the asthma prevalence increases in France and that the non-control of the symptoms are associated with socio-economic characteristics. Control of asthma requires not only a suitable and effective medication, but also improvements in the asthmatics' access to a therapeutic education, especially for people with lower economic status.

### Educational inequalities and risk in mortality among middle-aged Lithuanian urban population

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#### Background

In Lithuania, for the years 2000–07, mortality increased from 1406 deaths/100 000/year to 1620 deaths/100 000/year for men and from 654 deaths/100 000/year to 744 deaths/100 000/year for women. Health behaviours can have a potential role to explain differences between risk factors and education.

#### Aims

The objective of the study was to examine the extent to which risk factors can account in all-cause and cardiovascular disease mortality by educational level among middle-aged urban population.

#### Methods

In 1983–92, in the framework of the WHO MONICA study were examined 5403 persons aged 35–64. Biological and behavioural risk factors were defined by a standard methods. Educational level was classified by ISCED 97. Mortality data for the 1983–2007 were extracted from the official mortality register. A total of 1320 individuals died from all-cause and of 654 from CVD. The Cox proportional hazards model was used to evaluate the risk of death from all-cause and from CVD mortality.

#### Results

Risk of all-cause mortality in a lower secondary and primary school as compared to university was relative risk (RR) 1.61 [95% confidence interval (CI) 1.38–1.88] and from CVD was RR 1.50 (95% CI 1.20–1.87). Risk of biological factors on mortality from all-causes in a low-educational group as compared to high was assessed RR 1.54 (95% CI 1.30–1.83),

and from CVD was RR 1.42 (95% CI 1.12–1.81). Risk of behavioural factors on mortality from all-causes in a low-educational persons as compared to high comprised RR 1.36 (95% CI 1.16–1.59), and from CVD mortality RR 1.25 (95% CI 1.35–1.20).

#### Conclusions

Since the major part of mortality from all-causes and CVD was due to the middle-aged population in a low-educational level with behavioural and biological risk factors, a population strategy to reduce both groups of risk factors in a low-educational group should be encouraged.

### Marital status and risk of AMI case fatality in Scotland, 1988–2004

Carolyn Davies

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#### Background

There is evidence that marriage has a beneficial effect on health; unmarried experience higher mortality and incidence of mental and physical disorders. In particular, being unmarried is associated with elevated coronary heart disease mortality. We investigate the association between marital status and survival after a first acute myocardial infarction (AMI), any trends and relationships with age, sex and deprivation.

#### Methods

We used linked hospital discharges and death records for all Scotland (population 5.1-million) from 1981–2004 for those aged >30 years. Case-fatality was divided into CF0: death on day of first AMI; CF1: death in 2–28 days following AMI; and CF2: death in 29–365 days. Odds of case-fatality by marital status, adjusting for age, sex, year and area deprivation were estimated through multilevel logistic regression.

#### Results

Between 1988 and 2004, 178 781 of the 372 349 patients with a first AMI died on day of event, 34 198 died 2–28 days and 17 971 died 29–365 days. Marital status was significantly associated to each case-fatality outcome. The odds of CF0 for never-married/widowed compared to married had increased over time and was strongest in 60–74-year-olds living in deprived areas; e.g. OR for men aged 60–74 in most deprived areas in 2000–04 was 2.81 (95% confidence interval 2.65–2.98). The odds of CF1 by marital status were increasing and strongest in young men; e.g. OR for men aged 30–59 in 2000–04 was 1.54 (1.34–1.77). The odds of CF2 increased; e.g. odds ratio in 2000–04 was 1.75 (1.61–1.90).

#### Conclusions

Marriage is beneficial to survival after a first AMI. This relationship differs by socio-economic and demographic circumstances. The benefits of being married may be due to stronger social support e.g. relationship with short-term case-fatality may be explained by married patients taking less time to seek medical attention and long-term may be due to higher uptake/commitment to secondary prevention programmes.

# PARALLEL SESSION 4

Friday 27 November: 13:00–14:30

## 4.1. Workshop: International urban health—concepts and monitoring

*Chairs: Arpana Verma\*, United Kingdom and Erik van Ameijden, The Netherlands*

**Organizer: Proposed EUPHA Section on Urban Health**

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### Background

In 2007, for the first time, it was estimated that more than half of the world's population lives in urban areas, considering the fact that this figure is projected to rise to >60% within two decades. Considering an increasing number of people in the urban population, research into the health of urban populations is becoming more important. The study of urban health is becoming an important public health issue.

### Methods

A review of the published peer-reviewed and grey literature was undertaken together by contacting experts in the field.

### Results

There are >10 000 publications that have relevance to urban health. The topics covered are diverse and reveal over 100 groups working in the field of urban health.

### Conclusions

Urban health is an important public health issue. Both the developed and developing world have similar and diverse needs for their urban populations. Aims of this workshop are as follows:

- (i) to define what is urban health;
- (ii) to describe the current status of international urban health;
- (iii) to describe examples of urban health monitoring;
- (iv) to discuss and debate using international networks as exemplars, how to advance the European Urban Health network and agenda.

### What is urban health?

**Erik van Ameijden**

*E van Ameijden<sup>1</sup>, A Verma<sup>2</sup>, J Higgerson<sup>2</sup> on behalf of the EURO-URHIS 1 and 2 project groups*

<sup>1</sup>Department of Epidemiology, Municipal Health Service of Utrecht, Utrecht, The Netherlands

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'There is little consensus among national and international bodies about what may be called urban' (Vlahov and Galea, 2002). A comprehensive and commonly agreed definition of the concept of urban health is not possible; however, a short working definition can be that it concerns public health that is specific to cities. With regard to health monitoring there are no specific research methods required in cities, however, monitoring is more complex. This relates to the presence of a higher population proportion of low socioeconomic groups threatening representativeness and validity, and larger groups of hidden populations, such as drug users and homeless people. No determinants and diseases that are uniquely specific to urban areas were found, however, the prevalence between urban and non-urban areas can be quite different. A number of diseases are of concern primarily in cities (such as acquired immunodeficiency syndrome and asthma). There are also a number of environmental problems with a higher prevalence in urban areas (including water quality, population density, housing conditions and air pollution). In some countries the health situation is better in urban areas, whereas in others it is the opposite. Furthermore, there can be large health differences within cities between suburbs. What makes monitoring of

urban health different from monitoring on a national level is that there are different factors that steer health policy and practice. As a result of these factors, relevant indicators can vary between urban and national level.

In this presentation, we will demonstrate the various definitions that have been utilized in countries across the world and how a working definition was developed through review of the literature.

### Current status and the future of international urban health

**Arpana Verma**

*D Vlahov<sup>1</sup>, A Verma<sup>2</sup>, J Higgerson<sup>2</sup>, E van Ameijden<sup>3</sup>*

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Prof. David Vlahov—Director for the Center for Urban Epidemiologic Studies at the New York Academy of Medicine—introduces the field of urban health, looking at how the urban condition has changed over time, from the traditional inner-city view to the effects of suburbanization and the 'urban sprawl' being experienced in the cities of developed countries. This will be compared with urbanicity in the developing world, where more rapid population increases, the prevalence of slums and poor-sanitation generate many different health concerns.

This presentation will also look at the 'urban health model' and methodological difficulties in establishing a homogenous interpretation of urban. The features of the city that are considered to have an impact of the health of its population will be introduced alongside the introduction of a framework for urban health researchers. Three categories of investigation are proposed: the urban physical environment (such as air quality, housing conditions and access to green spaces), the social environment (e.g. the effects of high population density on the spread of diseases, the contagion of negative social norms or the positive effects of having a strong social network in close proximity) and the availability and access to health and social services (which can include the impact of disparities in socioeconomic status in terms of health insurance).

The presentation will also focus on the future of international urban health.

### International urban health projects

**Arpana Verma**

*A Verma<sup>1</sup>, E van Ameijden<sup>2</sup>, J Higgerson<sup>1</sup>*

<sup>1</sup>Manchester Urban Collaboration on Health, Clinical Epidemiology and Public Health Unit, University of Manchester, Manchester, UK

<sup>2</sup>Department of Epidemiology, Municipal Health Service of Utrecht, Utrecht, The Netherlands

There are many urban health-monitoring projects. Examples from the USA, Canada, New Zealand and UN projects will be demonstrated by members of the EUPHA Urban Health initiative.

There will be discussion questions to provide an opportunity for delegates to add their perspectives to the debate on how best to take forward the urban health agenda with respect to the international work that has been presented

during the workshop. The aspects for discussion include the following:

- (i) the need to find a working, comparable definition for the urban area;
- (ii) a comprehensive set of urban health indicators;

(iii) how best to take forward a European Urban Health Network.

The results of the workshop will be taken forward by the EUPHA Urban Health initiative if elected to become a EUPHA section.

## 4.2. Workshop: Can research ever get into the policy-making machine?

*Chair: Tamsin Rose, Belgium*

**Organizer: EPHA**

Contact details: t.blain@epha.org

Speakers: Tasmin Rose, Belgium; Joanna Vincenten, European Child Safety Alliance (tbc); Viviane Willis-Mazzichi, European Commission (tbc); Monika Kosinska, EPHA

Although evidence-based policy remains an acknowledged goal at European level, in reality it rarely occurs. The policy environment is characterized by tight timeframes, engagement by stakeholders with vested interests or ideological positions, political and economic considerations by the decision-makers. The aim of this workshop is to explore the challenges of getting research into the policy process and the role that health advocacy can play to increase the understanding and use of research evidence. It will provide an opportunity for exchanges of ideas, experiences and best practices on getting research into the policy-making process. It will explore recent examples of

policy-making at European level and highlight the difficulty of bridging the gap between the careful language of robust science and the rhetoric of politics.

The workshop will cover the following themes:

- (i) The importance of articulating research questions and themes around societal needs in order to have relevance for policy-making.
- (ii) How to maintain credibility for good research and sound science in an environment where evidence is used to justify a policy position.
- (iii) Building trust and relationships between researchers and health NGOs to increase understanding and uptake of research results.
- (iv) The role of communication as the problem and the potential solution.

## 4.3. Workshop: Primary care sensitive hospital utilization

*Chairs: Walter Ricciardi, Italy and Jouke van der Zee, The Netherlands*

**Organizer: Maastricht University, The Netherlands and Catholic University Rome, Italy**

Contact details: d.kringos@nivel.nl

### Background and aim

A strong and well-organized primary health care organization may act as a counterbalance against the usual dominance of the hospital sector in a country's health care system. This may be expressed in, for instance, a lower number of primary care sensitive hospital admissions in countries or regions with well-organized and strong primary health care facilities.

The aim of this workshop is to explore the relationship between primary and secondary medical care led by the concept of primary care sensitive hospital utilization. The results of this workshop may lead to an international working party on primary care sensitive hospital utilization.

### Content of the workshop

After an introduction by one of the two chairmen, the workshop will consist of four presentations with the following topics:

- (i) A presentation by Aldo Rosano about the concept of primary care sensitive hospital utilization in general and primary care sensitive hospital admissions in particular, followed by a description of the regional variation in primary care sensitive hospital admission rates in Italy.
- (ii) A presentation by Dionne Kringos of her EU-funded project (PHAMEU) to make explicit what is meant by strong and well-organized primary health care.
- (iii) A presentation by Michael van den Berg aiming at the description and analysis of (non-primary care) alternatives for hospital admissions from the hospital's point of view (day care; hospital related outpatient care) and show regional variations in these phenomena.
- (iv) A presentation from Germany by Peter Pechtel to explore the structural conditions that govern the relationship between

primary medical care, outpatient specialist care and inpatient care. In Germany, outpatient specialist medical care is mostly provided outside the hospital by independently established medical specialists while in Italy and The Netherlands, outpatient specialist care is provided from the hospitals.

The workshop will be closed with summary by one of the chairmen.

### Methods

(i) In the first presentation, the concept of primary care based hospital admission will be explained and described. The Italian National Hospital database will be used to show regional variations in primary care sensitive hospital admission rates and link these to some regional characteristics in primary care provision.

(ii) The second presentation will consist of the presentation of the PHAMEU-index; a set of indicators developed to measure quantitative and qualitative differences in primary care organization and provision. The focus of the presentation will be on these elements of primary care that could influence primary care sensitive hospital use and show some light on the mechanisms of how primary care could influence hospital utilizations in general and hospital admissions in particular.

(iii) Admissions form an important but not an exclusive form of hospital utilization. Specialist medical services can also be provided on an ambulatory base, either (and in many cases/countries) strongly related to the hospital environment or as a separate health care provision like in Germany. Day care is another alternative for hospital admissions that is usually organized by hospitals and not by primary care. The (international) data shown in the third presentation reveal a wide international variation in these ambulatory forms of specialized medical care.

(iv) Germany is an interesting case in this respect because health care provision is not divided between primary care on the one hand and specialized medical care on the other hand but along ambulatory care (both primary care and specialized

care) on the one hand and inpatient care on the other hand. The (regional) data in this (fourth) presentation stem from a national database of hospital care. The same selection of primary care sensitive admissions can be shown as in the first presentation about Italy.

#### Conclusion

Although it is not yet possible to derive material conclusions from the workshop beforehand, the workshop will certainly yield an enhanced (international) cooperation between researchers in the domain between primary and secondary medical care.

#### Participants:

Aldo Rosano (Lazio Health Care Authority, Rome); Dionne Kringos (NIVEL, Utrecht); Peter Pechtel (Dresden Technical University); Michael van den Berg (RIVM, National Institute of Public Health and Environment, Bilthoven, The Netherlands).

### Measuring the strength of primary care systems in Europe

Dionne Kringos

*DS Kringos<sup>1</sup>, WGW Boerma<sup>1</sup>*

NIVEL, Netherlands Institute for Health Services Research, Utrecht, The Netherlands

#### Background

The investment in primary care (PC) reforms to improve the overall performance of health care systems has been substantial in Europe. There is however a lack of up to date comparable information to evaluate the development and strength of PC systems. This EU-funded Primary Health Care Activity Monitor for Europe (PHAMEU) study, aims to fill this gap by developing a PC Monitor for implementation in 31 European countries.

#### Methods

On the basis of a systematic literature review, and consultations with experts across Europe, a comprehensive set of PC indicators has been developed. The indicator-set allows to assess stages of development of PC systems. Focus is on the structure (governance, financing, workforce development), process (access, continuity, coordination, comprehensiveness) and outcome (quality, efficiency, equity) of PC systems. In 2009, the PHAMEU project collected data across Europe by reviewing (inter)national literature and statistical databases, and consulting panels of national experts.

#### Results

The evidence underlying the key functions of strong PC will be explained. It will be shown how the complexity of European PC can be captured with the PC Monitor. Particular attention will be paid to the importance of hospitalization for PC sensitive conditions as indicator to measure the quality of PC systems. It will be shown how the development of PC can influence hospital use and admissions.

#### Conclusions

The study has developed a monitoring instrument for PC development applicable to all configurations of PC in Europe. Avoidable hospitalization for PC sensitive conditions is an important indicator for the strength of a PC system's structure and organization. Results are meant to be used to better inform the policy making process for strengthening health systems through PC.

### The Netherlands: low avoidable admission rates in a highly accessible health care system

Michael van den Berg

*M Van den Berg, R Heijink*

RIVM, National Institute for Public Health and the Environment, Bilthoven, The Netherlands

#### Background

The Dutch Health Care Performance Report (DHCPR) monitors the quality, accessibility and efficiency of the health care system. Avoidable hospital admissions are considered a strong indicator for each of these aspects. Avoidable hospital admissions are especially interesting in the Dutch health care system, where the general practitioner has a strong gatekeeper position and the overall health care policy is relatively non-interventionist.

#### Methods

In addition to many other indicators for quality and accessibility of care, we analysed the number of hospital admissions for a range of conditions that are described in the literature as 'avoidable'. Examples are asthma, diabetes complications, gangrene and pneumonia. We compared this number with the total number of hospital admissions and we investigated how the Dutch system performs compared to other systems. Moreover, we investigated the use of alternatives for hospital admissions.

#### Results

The total number of avoidable hospital admissions in the Netherlands is low compared with many other countries. The number of avoidable hospitalizations rose from 65 000 in 1995 to 83 000 in 2005 (more recent numbers coming up). However, the percentage of avoidable admissions decreased from 3 to 2.5% of the total hospital admissions, due to a relatively higher increase in the total number of admissions. Many admissions seem to be avoided by effective monitoring of chronically ill patients and high accessibility of primary care.

#### Conclusion

Although more detailed research is required to confirm this conclusion, our findings indicate that the Dutch health care system is relatively successful in avoiding unnecessary hospital admissions, thanks to its high accessibility and its strong pivotal role for primary care.

## 4.4. Health promotion and lifestyle

### Neighbourhood deprivation level and cardiovascular and diabetes risk: the role of individual risk

Suzie Otto

*Chairs: SJ Otto\*, B Klijs, HJ de Koning*

Organizer: Department of Public Health, Erasmus MC, Rotterdam, The Netherlands

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#### Background

There is evidence on socioeconomic differences in cardiovascular and diabetes risk factors, with subjects living in deprived neighbourhoods being at elevated risk of developing cardiovascular diseases (CVD) and diabetes. In this study, we examine whether this health inequality is still present among

high-risk subjects in deprived and affluent neighbourhoods who voluntarily participated in a random controlled trial (RCT) assessing the feasibility of population-based screening for diabetes.

#### Methods

In the RCT conducted in 2006–2007, subjects (40–74 years) were identified from two municipal registries. Eligible subjects were men and women with abdominal obesity (self-measured waist circumference), considered a risk factor for CVD and diabetes type 2. Screening consisted of plasma fasting glucose and lipid measures. For the deprivation level of neighbourhoods, the Dutch ranking-list of socioeconomic status of postal code area (1–3965) was used. In this study, data of the

high-risk subjects randomized in the screening arm and living in the most affluent (rank 58;  $n=359$ ) and most deprived (rank 3672,  $n=142$ ) neighbourhood, within the same city, were compared for: education level, current smoking, obesity [body mass index (BMI)  $>29$ ], self-perceived health (below good), newly detected diabetes, hypercholesterolemia.

#### Results

Education level and the proportion of current smokers were not statistically different between the neighbourhoods. The majority of the high-risk subjects in the deprived neighbourhood had low self-rated perceived health (below good, 25 vs 11%) and were often obese (BMI  $>29$ : 30 vs 17%). No differences were present between the neighbourhoods for the proportion of newly detected diabetes (2.1 vs 2.2%), hypercholesterolemia (20 vs 17%) and cholesterol/high-density lipoprotein ratio ( $>4.4$ : 42 vs 38%).

#### Conclusion

Screening of high-risk subjects in an affluent and a deprived neighbourhood showed no cardiovascular or diabetes health inequality, based on blood measurements. These findings suggest that individual risk is weightier in determining health outcome, than clear-cut differences in deprivation level of neighbourhoods alone.

### Is use of snus associated with weight gain and obesity in the Stockholm Public Health Cohort?

Jenny Hansson

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#### Background

Use of snus is common among Swedish men, but the health effects of snus use are not sufficiently known. Studies investigating the relationship between snus use and weight gain have yielded conflicting results. The aim of the present study was to investigate the relationship between use of snus, weight gain and obesity.

#### Methods

This study was based on the Stockholm Public Health Cohort, assessed in 2002 and 2007. Male participants ( $n=9954$ ), aged 18–84 years, were categorized according to tobacco use at baseline and at follow-up. Ever exclusive snus users (i.e. snus users who stated never having smoked regularly) were grouped into four categories: (i) current users at baseline and follow-up; (ii) former users at baseline and follow-up; (iii) quitters during follow-up; and (iv) starters during follow-up. Outcome was assessed at follow-up as weight gain  $\geq 5\%$  or onset of obesity (body mass index  $\geq 30 \text{ kg/m}^2$ ) in relation to baseline.

#### Results

Current snus users, as compared with never users of tobacco, were at increased risk of both weight gain and obesity. Odds ratio of weight gain and obesity were 1.35 [95% confidence interval (CI) 1.08–1.70] and 1.90 (95% CI 1.12–3.22), respectively, when controlling for age, baseline weight, physical activity, alcohol consumption and education. No increased risks of obesity or weight gain were observed for former users of snus, or men who quit or began using snus during follow-up.

#### Conclusions

Current use of snus seems to be associated with increased risk of weight gain and obesity among men. The public health implications may be important, considering the widespread use of snus. However, confounding by diet should be assessed in future studies.

### Country's transition and consumption of fruit and vegetables among adolescents in North–West of Russia between 1995 and 2004

Anastasiya Rogacheva

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#### Background

A country's economic transition reflects on the health behaviour of its population. Food habits learned early, influence health status and are difficult to change later on. Little is known on the eating habits of Russian youth. This study aims to assess changes in fruit and vegetable consumption among Russian adolescents during a transition period in the country between 1995 and 2004.

#### Methods

Behavioural cardiovascular disease risk factors were studied using an internationally comparable methodology among 780 (385 in 1995 and 395 in 2004) 15-years-old students, from all schools of Pitkäranta district in the Republic of Karelia in 1995 and 2004. Frequency of vegetables and fruit consumption was revealed by food frequency questionnaire. Chi-square test was used for assessment of difference in prevalence rates.

#### Results

Number of participants who reported low vegetable consumption decreased significantly among both genders between 1995 and 2004: boys—26 vs 14%, girls—33 vs 14%. Average vegetable consumption was 1–2 times a week by both genders and did not change since 1995. Also among girls consumption 3–5 times a week increased from 15 to 31%. Majority of boys did not consume fruit. However, the proportion of them somewhat decreased: 88 vs 79% and 1–2 times a week consumption increased from 6 to 17% by 2004. Among girls, low fruit consumption decreased: 91% in 1995 vs 65% in 2004. One to two times consumption increased from 7 to 23% and 3–7 times from 2 to 11%. Both genders consumed berries more often than fruit, on average 1–2 times a week.

#### Conclusion

Despite of positive changes in vegetable and fruit consumption among Russian adolescents majority of youth did not consume them on regular basis. As availability of fruit and vegetables has improved in Russian markets, 'healthy eating' should be promoted more among Russian adolescents, with a special accent on 'healthy choices' considering available possibilities such as berries.

### Heart health in Oberwart—an evidence-based regional Health Promotion Programme in Rural Austria

Ursula Pueringer

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In the district of Oberwart, Burgenland, Austria, cardiovascular mortality is above the Austrian average. A high prevalence of several risk factors for cardiovascular disease such as overweight, smoking, lack of physical activity, hypertension and high cholesterol levels is evident. Especially, alcohol and tobacco consumption in young people is alarmingly high. Thus—for the first time in Austria—a 3-year regional, comprehensive, gender and culturally sensitive heart health programme is initiated in the school and community setting aiming at the development of sustainable health promotion structures in order to improve the health status of the population.

The programme was designed along the lines of successful regional heart health programmes like the North Karelia Project or more recent initiatives like the Otsego-Schoharie Healthy Heart Program in the USA or the Norsjö bzw. Västerbotten Intervention Programm (VIP) in Sweden. Empowerment and participation of the local population at risk are the key elements of the programme. Additionally, it is intended to introduce the concept of 'Health in all Policies' at the community level. Community readiness will be assessed first and interventions influencing major lifestyle factors like diet, smoking and physical activity will be planned in a participatory way involving the target groups of the project (youth aged 14–18 years and men and women aged 30–60 years). Interventions will include health communication and information as well as group approaches to individual behavioural change and school/community health promotion programmes comprising capacity building. The University of Applied Sciences, Burgenland has the overall responsibility for the programme and project management, whilst the EBM Review Centre of the Medical University Graz will be carrying out the programme evaluation. Joanneum Research is assisting the monitoring and evaluation process. It is anticipated that the control group design will enable knowledge and best practice transfer to other interested regions.

### What's in a word? Response to weight status terminology and motivation to lose weight

Cindy Gray

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#### Background

Obesity prevalence is increasing, which is a major public health concern due to increased risks of associated morbidity. Accompanying the rising prevalence is the normalization of overweight resulting in people being unaware that the terms 'overweight' or 'obese' apply to them, and with it the health risks. Despite the importance of individuals being aware of their weight status and personal risk of ill-health, the response to weight status terminology is poorly understood. Our aim is to investigate people's response to weight status terminology in relation to motivation to lose weight.

#### Methods

Forty-eight in-depth interviews with men and women (aged 35 and 55 years) recruited from the longitudinal West of Scotland Twenty-07 Study, from which they had recently learned their body mass index (BMI) and body fat composition via a feedback letter.

#### Results

Although the term 'overweight' was acceptable to most respondents, few BMI-overweight respondents had found it motivational to lose weight. Whilst the term 'obese' was considered derogatory and upsetting, and most respondents would not like the word to be used towards them, it was recognized by some that the negative nature of the term could be motivational to people's weight loss. Ultimately, however,

many respondents favoured weight terms which conveyed the unhealthy nature of being overweight (such as unhealthily high body weight).

#### Conclusions

Health professionals should be aware of the potentially derogatory perceptions of the term obese and exercise sensitivity in their use of weight status terminology to ensure that people are fully aware of their weight status and personal risk of ill-health, and are motivated to change their eating and exercise behaviours accordingly.

### Health communication in a virtual world: a test of second life

L Suzanne Suggs

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#### Background

Physical activity and diet behaviours are significant public health targets, acknowledged in both the prevention and treatment of chronic disease. Second Life is a 3D virtual online world that allows for real-time social interaction through 3D self-representations called avatars. Over 15 million people from around the globe use Second Life and it is estimated that 80% of active Internet users will have a virtual world presence by 2011. Given the emergence of this medium combined with importance of healthy diet and physical activity behaviours, this study examined the use of Second Life as a channel for physical activity and diet health communication.

#### Methods

University students were recruited through classes and flyers posted on campus. Students attended an orientation session where they created their Avatar and completed a pre-test assessment. Later, they attended a health promotion event in Second Life. Participants then completed a post-test survey and were asked to attend a focus group to discuss the experience. Pre and post-tests assesses demographics, health status, weight, height and theoretical constructs of behaviour change including readiness and motivation to change, self-efficacy, behaviour, and intent to improve health behaviours.

#### Results

Forty participants completed both the pre and post surveys. Twenty-eight of them took part in one of the four focus groups. Body mass index calculations showed 15% of participants as overweight and 25% obese. Post-test results showed slight increases in motivation for eating healthy and being more physically active. Intention to improve diet increased 7.5% and intention to increase physical activity increased 5%. Focus group participants found the information informative and useful. They appreciated the anonymity of the format and judged the health educator avatar as informative, credible and personable.

#### Conclusions

This study illustrates the potential that 3D virtual world technology holds for the delivery of effective health communication messages promoting healthy behaviour change.

## 4.5. Workshop: Optimized Suicide Prevention Programmes and their Implementation in Europe (OSPI-Europe)

*Chairs: Ulrich Hegerl, Germany and Marco Sarchiapone, Italy*

**Organizer: University of Leipzig: Germany Italy**

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Depression and suicide are significant public health issues. With a lifetime prevalence of 13%, major depression is one of the most common psychiatric disorders in Europe. Every year, >58 000 persons commit suicide within the European Union. The majority of suicides occur in the context of a not optimally treated depression. The here-proposed workshop aims to introduce the research project ‘Optimized Suicide Prevention Programmes and their Implementation in Europe (OSPI-Europe)’. The aim of OSPI is to provide EU member states with an evidence based prevention concept, concrete materials and instruments for running and evaluating these interventions and recommendations for the proper implementation of the intervention. The project is funded within the 7th Research Framework Programme of the European Commission for four years. The consortium consists of 14 European partners (<http://www.ospi-europe.com>).

The workshop will address four key topics reflecting preparation, progress and outcomes of the work within OSPI-Europe. The workshop will start with an introduction on the aims and methods of the OSPI-Europe project. The introductory presentation is followed by a review of suicide prevention strategies in Europe and presentation of the OSPI intervention approach. The last two talks give an overview on the evaluation work that is done in OSPI. The third presentation reports about a review study on intermediate outcome criteria and evaluation of suicide prevention programmes. Finally, the last talk will discuss the necessity of investing in suicide prevention strategies from an economic perspective.

### Optimizing Suicide Prevention Programs and their Implementation in Europe (OSPI-Europe)—introducing the OSPI model intervention and evaluation methods

Sabine Schmidt

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Suicide is a significant public health issue. The highest rates for completed suicide are found in Europe. In 2005, the European Commission recommended multifaceted and community-based intervention for improving the care of depressed patients. However, strong empirical evidence for prevention measures is lacking. To provide a comprehensive evidence-based suicide prevention concept, the European project OSPI-Europe aims to implement and evaluate a multi-level intervention program in four European regions in Germany, Portugal, Ireland and Hungary. The presentation aims at introducing the OSPI model intervention as well as the methods for evaluation of the implementation. Further as an outlook, the status of work and preliminary results of the implementation will be presented.

OSPI-Europe is a collaborative project with 14 European partners which runs for four years and is funded by the European Commission. The OSPI model intervention is based on the Nuremberg intervention approach (Nuremberg Alliance Against Depression) and includes education of GPs using training sessions and videos (level 1), public relations activities (level 2), training sessions for multipliers such as priests, social workers, and the media (level 3), offers for high-risk groups (persons after suicide attempt) and support of self-help activities (level 4), as well as restriction of lethal means (level 5). As a result of the evaluation of the OSPI-Europe

intervention, EU member states will be provided with recommendations and materials for the implementation of comparable suicide prevention actions.

### Key elements of national suicide prevention strategies in Europe

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### Background

Given the increasing problem of suicidality in many European countries, focusing on suicide should be one of the key public and mental health concerns. Some European countries have national suicide prevention strategies whereas others act locally or regionally. Worthwhile mentioning is the European Alliance Against Depression (EAAD) which aims at improved care of depressed patients and subsequently prevention of suicidality. The EAAD follows a four level approach: co-operation with general practitioners, general public and local media, training sessions for community facilitators, initiatives for high-risk groups and self help activities. The aim of the study was to combine experiences from national suicide prevention strategies and EAAD in order to define best practice interventions.

### Methods

We reviewed eight national suicide prevention strategies and four review articles on the effectiveness of suicide prevention programmes and summarized their core elements (identified four EAAD levels and other target levels and target groups).

### Results

The review yielded some well-established facts: improving physician’s recognition and treatment of depression and suicide risk evaluation is an important component of suicide prevention; media can help or hinder suicide prevention efforts; educating gatekeepers (clergy, first responders, pharmacists, geriatric caregivers) contributes to reduced suicidal behaviour; improved acute and maintenance care of persons with recurrent or chronic psychiatric disorders, particularly patients who attempt suicide, has potential for prevention. In addition, other potentially promising approaches to suicide prevention were identified: targeting treatment interventions (pharmacotherapy, psychotherapy, follow-up care), additional risk groups (bereaved, different age groups, groups with mental disorder, other groups such as marginalized groups), and restricting access to means.

### Conclusions

The four intervention levels included in EAAD are largely present in the reviewed review articles and national suicide prevention strategies. Optimized suicide prevention programs should work alongside with ongoing activities in the country, with appropriate and collaborative liaison between responsible bodies.

## Intermediate outcome criteria and evaluation of suicide prevention programmes: a review

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### Background

There is increasing evidence for the effectiveness of multi-faceted prevention programmes to reduce suicide and non-foetal suicidal behaviour. However, evaluations of the effectiveness of these programmes often focus exclusively on primary outcome measures, such as suicide and non-foetal suicidal acts. In order to build the evidence for the effectiveness of suicide prevention programmes it is therefore important to also include intermediate outcome measures, which is the focus of the review presented.

### Method:

Intermediate outcome measures are defined as proximal effect indicators of single interventions of multi-level programmes and are directly linked to the objectives and content of each intervention. A review of the literature was conducted of suicide prevention studies including intermediate outcome measures and papers addressing psychometric characteristics of the measures used. Articles were identified through Pubmed, PsychInfo and ScienceDirect. Specific psychometric issues related to measuring change including content validity, construct validity, test-retest reliability and internal consistency were examined.

### Results

Instruments used in previous suicide intervention programmes were identified. Measures relevant only to specific programmes were excluded. Eighteen commonly used instruments were selected for the psychometric analysis. Intermediate outcome measures used in previous suicide prevention studies included instruments to measure changes in awareness of depression and suicidal behaviour, changes in attitude towards depression and/or suicide, attitudes towards help-seeking, stigma surrounding depression and/or suicide, acquisition of relevant skills, confidence in dealing with suicidal or depressed patients and changes in antidepressant prescription rates. Few of the instruments reached an acceptable standard on all of the predefined quality dimensions.

### Conclusions

Although intermediate outcome criteria are more common in recent studies evaluating the effectiveness of suicide prevention programmes, most measures lack sufficient psychometric quality. Researchers in the area of suicide prevention should ensure evidence-based decisions when defining and measuring changes in intermediate outcome measures.

## Making the case for investing in suicide prevention interventions: an economic perspective

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### Background

Reducing the rate of suicide remains a key public health target across Europe. This article looks at the potential case for investment in suicide prevention strategies from an economic perspective, estimating the lifetime costs of suicide and then considering how the potential cost effectiveness of an area based suicide prevention intervention.

### Methods

Different elements of cost: direct costs (e.g. police, funeral services, health care), lost productivity and intangible costs of pain, grief and premature loss of life are described. Data on suicide rates and non-foetal suicide attempts, life expectancy and economic activity in Germany, Hungary, Ireland and Portugal are then used to model the lifetime costs of completed suicides, as well as the costs of non-foetal suicide attempts. Using decision-modelling techniques, we then consider what level of reduction in suicides a multi-level community-based prevention intervention, such as that used in the EC funded OSPI project, would need to achieve in order to be considered cost effective.

### Results

Preliminary indications suggest that the average lifetime costs of each completed suicide are at least €2 million. This implies that even if an area-wide suicide prevention intervention were to achieve only a modest 1% reduction rate in the number of suicides, in most scenarios this remains highly cost effective.

### Conclusions

The costs of suicide are substantial and impact across sectors. Increasingly policy makers want to know not only about effectiveness but also the cost effectiveness of interventions when determining how best to make use of budgets. In countries where long-term effectiveness data is not available, models can be used to adapt existing data on effectiveness from another context/setting and synthesize this with local cost data. This can help highlight, as in the case of some area based suicide-prevention strategies, that these are likely to be highly cost effective.

## 4.6. Sickness absence and disability

### Work environment and sickness presenteeism in the Swedish Police Force

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### Background

Sickness presence (SP) is an increasing problem which might have consequences for the employer, colleagues, clients, the

public and the sickness present person, and possibly lead to long-term health consequences. The aim was to describe the prevalence of SP and to explore possible related work characteristics among Swedish police officers.

### Methods

We analysed a work environment survey conducted in 2007 among all employees of the Swedish Police Force. The response rate was 74%. The analytic sample comprised all respondents working as police officers ( $n = 11\,793$ ). Relative risks (RR) for SP were calculated with modified Poisson regression. Employees were defined as SP if they stated that they had

gone to work two times or more during the past 12 months despite judging that their health would have motivated sickness absence.

### Results

Forty-seven percent of Swedish police officers reported high SP. All studied work environment factors (poor support from colleagues and supervisors, poor ergonomics, poor leadership, low control and high stress) were significantly associated with high SP. The strongest RR was found for stress (RR 1.46; 95% CI 1.41–1.52). Adjustment for sex and seniority did not change the results. Poor support from colleagues and low control had higher impact on the RR for SP among older subjects. Adjustment for self-rated health lowered the RRs which, however, remained significant. Taking into account the interaction terms attenuated the RR further among subjects with poor self-rated health, indicating that the association between SP and poor health was not much affected by work environment.

### Conclusions

SP was high among the police officers. Work environment factors seem to be important for SP, particularly among subjects with good self-rated health.

## Absence incentives and requirements at work as triggers of sick leave

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### Background

Different incentives in the work environment, such as uncomfortable physical work arrangements or workplace conflicts, have in previous studies been associated with increased risks of sickness absence. On the other hand, workplace norms and regulations, implying that certain health conditions and work situations require sick leave, has not been researched. The objective of this study was to investigate whether experiencing different absence requirements and incentives at work can trigger a sick-leave spell.

### Methods

A case-crossover design was applied to 568 sick-leave spells, extracted from a Swedish cohort of 1430 employees with a 3–12 month daily follow up of all new sick-leave spells. Data was obtained through a baseline questionnaire and an interview when on sick leave. Exposure to three different absence requirements and nine different absence incentives on the first sick-leave day, was compared with exposure during several control periods for each case, and presented as odds ratios (OR) with confidence intervals (CI).

### Results

Results show increased ORs of sickness absence on days when expecting ‘work tasks which should be avoided if contagious’ (OR 8.31; 95% CI 2.43–27.46) and ‘an unusually low work-load’ (OR 2.62; 1.44–4.74), compared with unexposed days. Among the absence incentives, being exposed to ‘not getting enough appreciation from ones’ superior’ and ‘experiencing an unusually high work-load’, also showed increased odds ratios of sick leave.

### Conclusions

The results suggest that individuals may be more inclined to take sick leave on days when they are exposed to certain

work-related absence incentives or requirements, than on days when such factors are not present. However, some of the CIs are wide, and further studies are needed to repeat our findings, and study if the effect is modified by for instance type of occupation and health-related factors.

## Low-back pain—a population-based register study of care seeking incidence in Sweden

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### Background

Previous reports on the occurrence of low back pain (LBP) in society, which suggest 1-year period prevalence's up to 25%, are based on the subjects self-report. However, less is known about societal consequences of LBP through health care utilization and sick leave. A shift in focus towards actual health care utilization and costs, will give more reliable figures on the societal impact of LBP. The objective was to study the annual incidence of LBP leading to health care seeking.

### Methods

Through the population-based Skåne Health Care Register covering nearly 1.2 million inhabitants in a well-defined geographic region of Sweden we have access to individual data on age, sex, health care provider and ICD-10 codes that are continuously registered for in- and out-patient care (ICD-10 codes for private care not included ~32% of all outpatient care). We identified all individuals who had at least one visit to a physician during 2006 with a primary ICD-10 diagnosis of LBP (M54.3, M54.4, M54.5, M54.8, M54.9/P) with no health care visit due to LBP 2000 through 2005. We calculated health care seeking incidence estimates for LBP, adjusted for the loss to private care.

### Results

The 2006 crude incidence estimate per 100 000 individuals was 1987 (95% CI 1985–89) and 1598 (95% CI 1596–1600) for women and men, respectively, with increasing incidence with age. The peak incidence of 2891 per 100 000 was seen in the ages between 80 and 84 years. The 1-year period prevalence of individuals receiving health care due to LBP was 3.5%.

### Conclusions

Health care seeking incidence and prevalence of LBP was found markedly lower than previous self assessed LBP and the increasing health care seeking incidence with increasing age has not previously been shown suggesting that young patients with back pain do not seek as much health care as elderly individuals do.

## The needs of people with a long-term work disability regarding occupational rehabilitation support in the Netherlands

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### Background

In the Netherlands, the number of occupational rehabilitation trajectories for people with disabilities has increased substantially over the last 10 years. However, the rate of success is generally low. One reason may be that the rehabilitation support offered does not fit with client needs. This study aims to get more insight in client needs regarding occupational rehabilitation support.

**Methods**

Qualitative data were gathered by life story interviews. The study had a longitudinal design; three semi-structured interviews (1–1.5 h) were conducted with an interval of 6 months. Participants ( $45 \geq n \geq 35$ ) were selected by purposive sampling. Inclusion criteria were: received a disability benefit over 5 years; underwent a re-assessment of disability; started an occupational rehabilitation trajectory in 2006 or 2007. Analyses were based on principles of grounded theory and typologies of (illness) narratives.

**Results**

The self-image of clients turned out to be constitutive for their needs for occupational rehabilitation support. Particularly relevant is the degree to which they perceive themselves as being able to organize their lives. Within the spectrum of self-images three types of needs were distinguished. Clients who see themselves as 'organizers of their lives' feel ready for occupational rehabilitation and start purposively with the trajectory. They need support in developing and executing their plans. Within the group of clients who stress they are overwhelmed by life circumstances, there are two types of needs. Those who tend to develop a new self-image consider the trajectory a learning process. They need extensive support to put their lives in order. Others express they are not able to take the lead of their rehabilitation process and need support in directing their occupational rehabilitation.

**Conclusions**

The longitudinal narrative approach was successful in identifying relevant client needs regarding occupational rehabilitation support. The focus on how clients formulate organizing positions in their lives offers new tools for client oriented rehabilitation support. The results of this study can be used to develop a screening instrument for better referral to occupational rehabilitation professionals and trajectories.

**Illness and work as predictors of sickness absence in a population of individuals with impaired health**

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**Background**

Ill-health does not necessarily manifest itself in sickness absence. Determinants of sickness absence could therefore differ depending on the health status of the population. Most studies on risk factors for sickness absence however use a general population and do not address this issue.

**Aims:**

To analyse the importance of medical as well as work related factors, physical and psychosocial, on the individual's sickness absence decision in a population with self-reported illness.

**Methods**

Cross-tabulations and multivariate logistic regression were used to capture the associations between ill-health, work related factors and sickness absence. Questionnaire data on a working age population of 10 529 individuals from Central Sweden was used in the study.

**Results**

Long-term sickness absence was found to be related to the 'level' of ill-health. A broad spectrum of work related factors were also found to be associated with sickness absence. The results were found to be very similar for both men and women.

**Conclusions**

Work environment factors in the form of for instance job strain, job satisfaction and physical work environment seem to be of utmost importance to explaining long-term sickness absence within a population of individuals with impaired health. Policy implications can be drawn supporting measures enhancing job control, job satisfaction and improving physical work environment. The non-sensitivity of the results to gender implies that both men as well as women would benefit from such measures.

**Factors related to labour participation and underemployment among visually impaired persons worldwide: a literature review**

Yvonne Goertz

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**Background**

Throughout the world the unemployment rate of visually impaired persons (VIPs) is higher than the unemployment rate of the general working-age population, and VIPs often feel underemployed. Finding and maintaining a suitable job could improve their health and well-being. To improve their labour participation and underemployment, answering this research question is important: which factors influence labour participation and underemployment among VIPs?

**Methods**

A systematic literature review was conducted to answer the research question. Psychinfo and Eric yielded 351 hits using several key words. Thirteen quantitative studies published between 1990 and May 2008 were included in this review. Nine qualitative studies were screened for additional information. The methodological quality of the quantitative studies was assessed. Factors influencing labour participation and underemployment were classified according to the widely used International Classification of Functioning, Disability and Health model.

**Results**

The methodological quality of the studies varied considerably, mainly due to differences in sample sizes and in methods of data analyses. All studies were cross-sectional and the quality of the measurement instruments was similar. Practical support was negatively associated with labour participation. Communication training, having confidence in the future, and expectations of employers regarding success in work were positively related to labour participation. Emotional support and age of visual loss were not related to labour participation. The relationship between degree of visual loss and employment appeared to be ambiguous. Underemployed persons scored higher on cynicism and type A behaviour.

**Conclusions**

Factors related to the visual impairment, environmental factors, personal factors and some activities were all associated with labour participation. Job coaches and low-vision centres should take this broad view into account while helping VIPs with job finding. These insights can also help employers deal with visually impaired employees, and policy makers make better decisions regarding this issue and increase labour participation in society. In future research, more high quality studies, for example longitudinal studies, should be conducted.

## 4.7. Workshop: Preventing socioeconomic inequalities in health behaviour in adolescents in Europe: findings from project TEENAGE

Chair: Frank J. van Lenthe\*, The Netherlands

Organizer: Project Teenage

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Higher prevalence rates of unhealthy behaviours among lower socioeconomic groups contribute substantially to socioeconomic inequalities in health in adults. Preventing the development of these inequalities in unhealthy behaviours early in life is an important strategy to tackle socioeconomic inequalities in health. Little is known however, about health promotion strategies particularly effective in lower socioeconomic groups in youth. It is the purpose of project TEENAGE to improve knowledge on the prevention of socioeconomic inequalities in physical activity, diet, smoking and alcohol consumption among adolescents in Europe.

Health promotion research has increased substantially in the past decade. It is sometimes assumed that health promotion strategies may be particularly effective in higher socioeconomic groups, thereby increasing socioeconomic inequalities in health-related behaviour. Many intervention studies have incorporated indicators of socioeconomic position. In project TEENAGE, existing interventions aimed at promoting physical activity, a healthy diet, preventing the uptake of smoking or alcohol conducted in the general adolescent population in Europe have been reanalysed by socioeconomic position.

It is the aim of this workshop to (i) present the results obtained in the project and (ii) to discuss the findings and lessons that can be learned with regard to the prevention of socioeconomic inequalities in health-related behaviours in adolescence. The workshop consists of an introduction and design of this European project, followed by three presentations on the prevention of (i) physical activity and nutrition, (ii) smoking and (iii) alcohol consumption. Findings will be summarized by the chair and the synthesis of evidence will be discussed with the audience.

### The prevention of socioeconomic inequalities in physical activity and diet in adolescents in Europe

Nanna Lien

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#### Background

There are inequalities in physical activity and unhealthy diet in adolescence. Many intervention studies aimed at promoting physical activity and a healthy diet target adolescents. While they have often included socioeconomic indicators, results of interventions are hardly presented for higher and lower socioeconomic groups separately.

#### Methods

A systematic review of intervention studies conducted in the general European population of adolescents since 1995 was conducted. The search procedure resulted in a substantial number of studies for physical activity ( $n=20$ ) and for diet ( $n=17$ ). The majority of interventions used the school as a setting for the intervention. A selected number of state-of-the-art interventions [including computer tailored interventions, increasing the accessibility of (facilities for) healthy behaviour and the (free) distribution of fruit] were re-analysed.

#### Results

Results of the studies tend to suggest that there is no clear pattern of widening socioeconomic inequalities as a result of the interventions.

### The prevention of socioeconomic inequalities in smoking in adolescents in Europe

Laurence Moore

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#### Background

Smoking is considered the single most important factor in the explanation of socioeconomic inequalities in health. The majority of smokers start smoking in adolescence. Socioeconomic inequalities in smoking in adolescence are well reported. Many intervention studies aimed at the prevention of smoking target adolescents, but there is ample research exploring the differential effect of these interventions across socioeconomic groups.

#### Methods

In a systematic review of intervention studies conducted in the general European population of adolescents since 1995, a total of 21 studies were identified. A selected group of interventions, using an informal peer led approach, a social influence approach and class-based agreements were reanalysed.

#### Results

The result of the re-analysis show a mixed pattern. While some studies suggest that the approach used increased socioeconomic inequalities in smoking, other found no effect. Using an informal peer-led approach tended to work better for youth living in a deprived region.

### The prevention of socioeconomic inequalities in alcohol consumption in adolescents in Europe

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#### Background

In adults, there are well-established inequalities in alcohol consumption: the prevalence of excessive alcohol consumption is much higher among lower as compared with higher socioeconomic groups. Because alcohol consumption often starts in adolescents and the prevalence of consumption is often high, prevention approaches increasingly target adolescents. There is little knowledge as to whether such intervention approaches have a larger impact in higher or lower socioeconomic groups.

#### Methods

A systematic review was conducted in order to identify intervention studies conducted in the general European population of adolescents since 1995 aimed at the prevention of alcohol consumption. A total of four studies met the inclusion criteria and they were re-analysed for higher and lower socioeconomic groups.

#### Results

Preliminary results of a comprehensive social influence approach (incorporating components of critical-thinking, decision-making, problem-solving, creative-thinking, effective-communication, interpersonal-relationship skills, self-awareness, empathy, coping with emotions and stress, normative belief and knowledge about the harmful health effects of drugs) showed stronger effects in lower as compared with higher groups. Given the less number of studies identified, there is a need to increase research on preventing socioeconomic inequalities in alcohol consumption.

## 4.8. Workshop: European workforce for health: public health training and education perspective

*Chair: Theodor Tulchinsky, Israel*

**Organizer: ASPHER**

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As part of ASPHER's continuing efforts to strengthen the role of public health by improving education and training of public health professionals for both practice and research, this workshop is organized to provide a summary of recent developments within corresponding networks developed by the association, and to allow a discussion on future plans and strategies of both structures.

The European Network on Doctoral Studies in Public Health, a research area-oriented initiative, will be presented by the

network's leading institution, the Swiss School of Public Health+, on the present position regarding definition of models and joint recommendations for doctoral studies in public health. The European Network on Life-Long Learning in Public Health, a vocational training and practice area-oriented initiative, will be presented by network coordinators, the University of Maastricht (The Netherlands), on the results of a recent study mapping the supply and demand for public health courses delivered under the framework of life-long learning. Presentations will be followed by a discussion on future activities of both networks.

## 4.9. Workshop: syndromic surveillance in Europe—needed or needless?

*Chairs: Helmut Brand, The Netherlands and Thomas Krafft, Germany*

**Organizer: SIDARTHa Project Consortium**

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Syndromic surveillance systems (SSS) offer the opportunity to improve timeliness and cost-effectiveness of public health surveillance for communicable and non-communicable diseases by using signals or symptoms from pre-laboratory diagnostic data sources. There is an ongoing debate as to whether the advantages of SSS outweigh the advantages of greater accuracy from traditional laboratory confirmation, but also the delays in timing to complete laboratory analyses. While in North America, SSS have been developed and implemented mainly for bioterrorism reasons since 2001, there are only few and dispersed SSS initiatives across Europe. The European project SIDARTHa (co-funded by the European Commission; Grant Agreement No. 2007208; <http://www.sidartha.eu>) aims at systematically exploring the value of syndromic surveillance in the European context. A European SSS based on emergency department and pre-hospital ambulance service data is conceptualized, implemented and evaluated. The core of the SIDARTHa approach is a common model and methodology to be applied as a local/regional system setup in order to take into account local/regional specificities rather than a centralized European system based on local data transferred to a centralized system for analysis.

The workshop aims at bringing together European, national and regional representatives from the public health and health systems research community, public health and health care professionals, as well as policy-makers to discuss the importance of syndromic surveillance for Europe against the backdrop of the unfolding of recent events [i.e. the spread of the novel influenza A (H1N1)]. The EUPHA conference is the ideal venue for the kind of broad exchange of interested stakeholders required to advance the development of European syndromic surveillance. The workshop results will be incorporated into the adjustment of the SIDARTHa SSS to foster its acceptance, integration and maintenance and shared with project partners at ECDC and the European Commission's Health Threat Unit.

To facilitate an effective and focused round-table discussion among all workshop participants, presentations will be given on (i) lessons learned from the North American SSS; (ii) the outline of the first European approach on syndromic surveillance, SIDARTHa, and the experiences of the setup and implementation of the SIDARTHa SSS in four test regions; and (iii) European public health needs and expectations towards syndromic surveillance.

### Syndromic surveillance lessons—experiences from North America

**Mark Rosenberg**

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After the attacks on 11 September, 2001 the development of syndromic surveillance systems (SSS) gained momentum in North America mainly in order to detect and track bioterrorism attacks using the syndrome of influenza-like illness. This article presents two successful case studies.

The Richmond Ambulance Authority (Richmond, USA) implemented the commercial FirstWatch SSS in 2002. It works by continuously scanning 9-1-1 calls comparing patient complaints to historical data and to symptoms identified with specified events. When a significant spike occurs in contrast to defined patterns the system automatically alerts officials. The Richmond system has detected influenza-like-illness earlier (up to 4 days) than traditional surveillance and has been instrumental to detect water contaminations and food poisoning.

In Kingston (Canada), a SSS was developed as a demonstration project. The system is based on the open source tool Real-time Outbreak and Disease Surveillance (RODS). It monitors emergency department chief complaints at seven hospitals, focusing on the classification of gastrointestinal, respiratory and fever syndromes. Anomaly detection using the RODS algorithm and a modified Early Aberration Reporting System cumulative sum algorithm takes place automatically every 6 h. Both SSS were easily installed and did not require changes in staff or procedures although the thresholds needed to be adjusted/increased after the first test phase. Both successfully issue alerts on anomalies. The integration of SSS has enhanced communication, facilitated management of both the acute care and public health systems, and encouraged collaborative investigation.

## The SIDARTHa approach—European emergency data-based syndromic surveillance

Alexandra Ziemann

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The European Commission co-funded project SIDARTHa conceptualizes, implements/tests and evaluates a real-time web-based Geographic Information System (GIS) syndromic surveillance system (SSS) that automatically monitors routinely collected emergency department, pre-hospital emergency medical dispatch and ambulance patient data.

During the conceptualization phase, international state-of-the-art and lessons learned were explored by extensive literature and Internet review. The project group consisting of emergency-care professionals and health researchers from 12 different European countries discussed the applicability of emergency data for a SSS. A set of communicable and non-communicable syndromes that can be detected using routine emergency care data were identified: influenza-like-illness, gastroenteritis, intoxication, environmental (heat/cold, respiratory), domestic violence. Statistical modelling and simulations were applied to historic emergency data to identify suitable detection algorithms. On this basis, the SSS was developed and setup at a regional level in four test sites (State of Tyrol/Austria; Capital Region of Denmark; County of Goeppingen/Germany; Autonomous Region of Cantabria/Spain).

The SIDARTHa SSS uses an innovative standardized methodology which allows any regional health authority to implement its own SSS with local data, baselines and thresholds for the various emergency care settings of dispatch centre, ambulance and emergency department without any of the data leaving the local system. The flexible SSS design ideally supports the European health surveillance landscape in not replacing any surveillance structures but offering an option for earlier warning.

## Utility of syndromic surveillance in European public health practice

Helmut Brand

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There is an ongoing debate as to whether the advantages of syndromic surveillance systems (SSS) with the minimal risk of false identification outweigh the advantages of greater accuracy from traditional laboratory confirmation, but the delays in timing to complete laboratory analyses. In Europe, various initiatives at regional and national levels emerged, active research networks were formed and research plans by the European Commission show the interest of the public health community in exploring the potential of SSS in the European context.

As part of the European Commission co-funded project SIDARTHa, the experiences, demand, and preferences of its main user group, public health professionals, were explored in order to adjust the design and features of the SSS accordingly. Based on an extensive literature review, a Delphi-type study among European public health authorities, and the feedback from public health professionals and policy-makers at different levels during dissemination events current trends in experience and opinions regarding syndromic surveillance were derived.

The use of SSS across Europe has resulted in varying experiences. For example, Scotland usefully applied a SSS during the G8 summit in 2005 while Germany shortened the reporting time of traditional surveillance intentionally disregarding SSS during the 2006 Fifa World Cup. In general across Europe, the reliability of laboratory confirmed cases has been preferred to utilizing a syndromic approach.

The ongoing question is whether investing in the increasing rapidity of laboratory testings and a shorter reporting frequency outweighs investing in SSS. The utility of SSS for earlier warning and detection of unknown health threats has to be demonstrated.

## 4.10. Innovative methods and evaluation

### Improving representation of older people in clinical trials: a PREDICT systematic review

Andrew Beswick

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### Background

Older people are under-represented in clinical trials targeting a wide range of clinical conditions although they are those who suffer most from chronic diseases. Barriers to participation are recognized and suggest that appropriate interventions may improve the representation of older people and the external validity of trials. In the European Union FP7 PREDICT project (<http://www.predicteu.org>), we have conducted a systematic review of methods evaluated in older people to improve trial recruitment.

### Methods

Systematic review of published randomized controlled trials (RCTs). A search strategy to identify studies of older people and their representation in clinical trials was applied in computerized databases including MEDLINE, EMBASE, ISI Web of Science, CINAHL, PsycINFO, ASSIA and the Cochrane Database of Systematic Reviews. We did not restrict by date or language.

### Results

Searches found 358 articles relating to representation of older people in clinical trials. Four RCTs were identified targeting recruitment, consent, patient adherence and professional compliance. Settings were community-based cardiovascular

disease prevention, an outpatient schizophrenia clinic, a drug trial in Alzheimer's disease patients, and healthcare professionals in a cancer trial unit. Study sizes varied from 46 to 400 participants. Enrolment through general practice was more effective than community and electoral roll methods in recruiting healthy older people to a preventive trial. Education and counselling were effective in improving the understanding of consent procedures in older patients with mental health problems. Substituting clinic with home-based assessment was associated with lower rates of withdrawal from a trial in Alzheimer's disease. An educational intervention targeting representatives of institutions in a cancer group had little effect on recruitment of patients to trials.

#### Conclusions

Few interventions to improve participation of older people in RCTs have been evaluated. No RCTs were identified that evaluated simple interventions to address barriers such as transport issues, inconvenient timing or care of dependents. However, some methods targeting recruitment, consent and patient adherence may have value in the design of future trials.

### Context free research in the new research agenda in comparative effectiveness

Christine Huttin

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#### Background

Even within clinical sciences, differences between types of contexts challenge context-free research. For instance, research methods such as clinical trials are controversial in genomics because of the role of environmental factors and the influence of epigenetics. Recent contributions in metabonomics also challenge conventional pharmacogenomics discoveries and results from existing context-free study designs. Implications of such a controversy are important for health care decision-makers and the integration over time of reliable biomarkers to classify respondents vs non-respondents.

#### Methods

The case of asthma corticosteroids will illustrate this issue. Balding and Vercelli (2003) demonstrated that a better understanding of interactions between environmental factors and genes can reduce the number of false positives in many studies (e.g. impact of environmental level of antitoxin exposure on CD14 genotype). Ober and Thompson's (2005) study reviewing 35 genes contributing to asthma susceptibility also provides a good example of the importance of epigenetics as well as conventional pharmacogenomics to provide reliable statistical results in order to validate the use of biomarkers. It leads to rethink genetic models of asthma that integrate environmental modifiers.

#### Results

Various roles of exposure to endotoxins are presented (e.g. Werner *et al.*, Eder *et al.*, 2004; Zambelli *et al.*, 2005; viruses, e.g. McIntire *et al.*, 2003; Hoffjan *et al.*, 2005; pets, e.g. Gern *et al.*, 2004; day care, e.g. Hoffjan *et al.*, 2005 and tobacco, e.g. Wang, *et al.*, 2001; Colilla *et al.*, 2003; Meyers, *et al.*, 2005) on asthma susceptibility. Sex and early-life exposure, are also presented as major environmental factors on asthma susceptibility (e.g. the first positional clonal paper on children of mothers with or without BHR).

#### Conclusions

This disease provides a good basis for a discussion on challenges from new advances in sciences to the context-free research design to ensure best quality of evidence in medical knowledge. Implications of such a controversy are important for health care decision-makers, especially for insurance policies and the integration over time of reliable biomarkers to classify respondents vs. non-respondents.

### Comparison of a multidisciplinary intervention with a mini-intervention to facilitate return to work for sick-listed employees with low-back problems

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#### Introduction

Previous studies have indicated that an inter-disciplinary approach with a bio-psycho-social perspective may be more effective in reducing sick leave and ensure return to work (RTW) than a traditional mono-disciplinary approach. Some studies have focused on brief interventions, typically including a clinical examination and advice given by a medical doctor and a therapist. Other studies have included work place visits, psychological or cognitive therapy, physical rehabilitation programs and so forth. The aim of the present randomized study was to compare the effects of a mini-intervention with a comprehensive multidisciplinary intervention on RTW and disability.

#### Methods

Three hundred and forty-four patients sick-listed due to low-back problems for 3–16 weeks were included in a randomized comparative study in a hospital setting. The mini-intervention group received a clinical examination by a rheumatologist and a physiotherapist, whereas the multidisciplinary group also received consultations with a doctor in social medicine, a social worker and an ergonomist. One team member was appointed as coordinator, who made action plans with the patient. The coordinator was also in contact with the social services and the work place. Effect measures were RTW for four consecutive weeks (register-based), pain, disability and SF36 scores at 12 months follow-up.

#### Results

About half (52%) of the participants were women and the mean age was 42 years (SD 10 years). The hazard ratio (HR) for return to work during the first 12 months after the intervention started was 0.87 (CI 0.68–1.11) between the mini- and multi-disciplinary intervention groups. Median duration before RTW was 16 weeks. Pain scores, Roland Morris disability scores and SF36 scores were not significantly different between the groups at 12 months follow-up.

#### Conclusions

Brief interventions with thorough clinical health examinations may be just as effective as multidisciplinary interventions to facilitate return to work for low-back pain patients.

### A systematic review evaluating the statistical and methodological issues for meta-analyses of genetic association studies in the field of cancer research

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#### Background

Continuous advances in genotyping technologies and the inclusion of DNA collection in observational studies have resulted in an increasing number of genetic association studies in cancer research. Meta-analyses of genetic association studies are a powerful tool to summarize the scientific evidences, however their application present considerable potential and several pitfalls. Their methodological quality is of a general concern in the field of public health genomics, as their results actually support the process of a genetic test evaluation as a tool for predictive medicine.

#### Methods

We systematically reviewed all published meta-analyses on genetic polymorphisms and cancer risk, by searching for

relevant studies on Medline and Embase up to September 2008.

### Results

We identified 129 meta-analyses published since 1996, of which 59 (47.2%) of them written by European authors. Most meta-analyses involved common cancer sites, such as lung (19%), breast (15%) and colorectal (12%). Among the 249 gene-variants evaluated in association with cancer, the summary odds ratio was statistically significant ( $P < 0.05$ ) for 83 gene variants (34%). A structured bibliographic search on at least two electronic databases has been carried out by 41% of meta-analysts, while the language of included studies was not clearly specified in 87 reports (67%). The statistical heterogeneity was assessed in the greatest majority (96%), and resulted associated with publication bias ( $P = 0.008$ ) evaluation, which was appropriately checked in 72% of the meta-analyses. Publication bias was evaluated mostly when a random effect model has been used ( $P = 0.0001$ ).

### Conclusions

Meta-analyses can be a useful tool in dissecting the true gene–cancer association, provided that their method are properly applied and interpreted. From this systematic review, the methodological quality of meta-analyses of gene–disease association in cancer research appeared quite high, and increasing with the year of publication. Most deficiencies could be corrected easily, and meta-analysts should improve the methods of their work as it impacts on the process of evaluation of a genetic test in the practice.

## Evaluation of appropriateness and determinants of caesarean section by application of the Robson classification: the experience of an Italian teaching hospital

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### Background

The rate of caesarean section (CS) has been rising over the past 25 years: in 2006, Italy had the highest value (39%) among European countries. We used the Robson Classification (RC) in a Italian teaching hospital in order to evaluate appropriateness and determinants of CS.

### Methods

To the discharge abstracts of deliveries performed from 2004 to 2007 has been applied RC that classifies deliveries into 10 groups on the basis of category of pregnancy, obstetric history, course of labour and gestational age. By a record linkage between discharge abstracts of deliveries and newborns it was obtained information about pregnancy, delivery and newborn conditions. A multiple logistic regression analysis was performed in order to quantify the relationship [in terms of odds ratio—(OR)] between CS rate and specific characteristics and clinical conditions of mother, prenatal care, labour, foetal conditions.

### Results

The dataset included 10 879 deliveries, 41.4% of them with a CS. The most part of CS were elective (83.6% in 2007). The CS rates ranged from 1.4% (Group 3) to 96.7% (Group 6). Group 2 (nulliparous, single cephalic,  $\geq 37$  weeks, induced or CS before labour) and Group 5 (previous CS, single cephalic,  $\geq 37$  weeks) gave the most contributions, with the 19.6%

and the 30.2% of overall CS, respectively. Multivariate analysis showed that following factors increase significantly OR of CS: high maternal age, employment status, high educational level, previous CS, preterm delivery, multiple pregnancy, abnormal lie, abnormal fetal growth, specific pregnancy diseases.

### Conclusions

This study showed that multiple factors can affect CS rate and that a relevant number of potentially not appropriate CS has been performed (Group 2). A ‘labour ward audit cycle’ can be planned and performed in order to pursue an appropriate CS use, an effective treatment of maternal and foetal morbidities and high maternal satisfaction.

## Evaluation of the organization and provision of primary care services in Belarus; application of the WHO Primary Care Evaluation Tool (PCET)

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### Background

The study aimed to assess primary care (PC) policy and service provision in Belarus at the national level and from a perspective of physicians and patients.

### Methods

The PCET is an instrument that has been developed and tested for WHO Europe in 2007–08, specifically for application in health care systems in transition. The tool consists of a checklist to gather information at the national level; a questionnaire for PC providers; and a questionnaire for patients. The application of the (translated) tool was carried out in Belarus between October 2008 and February 2009. Fieldworkers supported surveys were held among random samples of physicians and patients in two regions of the country: Vitebsk and Minsk. A draft report has been discussed in Minsk in March 2009. The final report is expected in June 2009.

### Results

Results among 235 physicians and 1755 patients showed that the centralized hierarchical health care system left very little space for regional health policy development. Health system reform proceeded by incremental change and PC reform started relatively late. A PC model based on general practitioners (GPs) was adopted for rural areas only. Recruitment and retention of GPs was difficult. NGOs and patients organization were not involved in health policy development. PC practices were psychically well accessible during opening hours, but not by telephone. The accessibility during out-of-hours could be improved. Patients were satisfied with the way they were treated, but less so with waiting times. Even though physicians formally had no gate-keeping role, to some extent they acted as such. However, their coordinating role for the care process of the patient could be improved. Retrained GPs provided more comprehensive services compared with PC physicians in the traditional settings.

### Conclusions

The results of the application of the PCET in Belarus have shown that GPs make a difference in Belarus PC. However, at present only 10% of physicians in PC are GPs. It is now time to continue and speed up the realization of old policy intentions.

## PARALLEL SESSION 5

Friday 27 November, 15:00–16:30

### 5.1. Workshop: Building public support for health promoting agriculture policy

*Chairs: Enni Mertanen, Finland and Christopher Birt, United Kingdom*

**Organizer: EUPHA section on food and nutrition**

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#### Purpose

The purpose of the workshop is to discuss current EU food and agriculture policy, identify strategic opportunities for building public and political support for health promoting agriculture policy.

#### Objectives

- Providing participants with basic understanding of the Common Agriculture Policy (CAP) and how it affects nutrition.
- Providing participants with a brief overview of food and nutrition policy in Europe.
- Providing participants with practical examples of CAP policies that explicitly address public health nutrition and social goals.
- Providing participants with an overview of what direction CAP is taking towards 2013.
- Discussing strategic opportunities for public health advocates to engage with decision-makers.
- Defining concrete actions that can be taken and what resources are needed?

#### Background

EU CAP is one of the EU's largest policy areas measured in budgetary terms, accounting for approx. 40% of the budget in 2007. The policy was successful, perhaps too successful bringing about food surpluses in the 80s and 90s that were disposed of, many times at the expense of public health. Despite reform processes, change has been slow. However, recent changes and proposals have ventured into areas with explicit health or social goals. Currently, the budget review and CAP post 2013 debate are major opportunities for change and to advocate for public health as one of the public goods delivered by the CAP.

#### Discussion

- What are the current drivers for agriculture and food policy in Europe?
- What are the legislative vehicles for reform of the CAP?
- How can the European public health community build support for a more sustainable agriculture policy?
- How can the European public health community engage and mobilize policy makers?
- How do we form strategic alliances, i.e. one united voice to mobilize change in European agriculture policy?

#### Is the Common Agricultural Policy wholly health damaging? Or could it become health promoting?

Christopher Birt

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#### Outline of problem

The EU Common Agricultural Policy (CAP) was originally established to ensure food security in Europe. This was a worthy public health objective. However, the CAP soon had an increasingly serious negative impact on health. Recent reforms (e.g. decoupling of subsidies associated with flat rate farm payments) may have begun to mitigate some of these negative impacts on health. It now urgently needs reform so as to become health promoting.

#### Description of the problem

The history of how and in which ways the CAP became health damaging, and the mechanisms underlying this, will be summarized. Work estimating the extent of CAP-associated health damage will be reported. Drawing on evidence from other countries, inferences will be drawn on what a healthy CAP might look like.

#### Application of lessons learned

Current arrangements for CAP will expire in 2013. CAP reforms are inevitable, if only for budgetary reasons. This provides an opportunity to put health on the CAP reform agenda. Priority targets for the 'health lobby' in the pre-2013 period will be discussed.

#### Integrating health into the CAP—the EU School Fruit Scheme

Stella-Maria Xiraki, European Commission

A Gogolewska, T Garcia-Azcarate, G Keller, Stella-Maria Xiraki  
European Commission, Directorate-General for Agriculture and Rural Development, C2. Olive oil, horticultural Products, Brussels, Belgium

An estimated 22 million children in the EU are overweight. More than 5 million these are obese and this figure is expected to rise by 400 000 every year. Improved nutrition can play an important part in combating this problem.

In November 2008 the European Commission welcomed the political agreement in the Agriculture Council on its proposal for a European Union-wide scheme to provide fruits and vegetables to school children. The Council Regulation was published in January 2009.

European funds worth €90 million every year will pay for the purchase and distribution of fresh fruits and vegetables to schools. This money will be matched by national and private funds in those Member States which chose to make use of the programme. The programmes would be co-financed, either on a 50/50 basis, or 75/25 in the so-called 'convergence regions', where GDP/capita is lower.

The School Fruit Scheme aims to encourage good eating habits in young people, which studies show tend to be carried on into later life. Commission analysis of existing national policies and consultations with experts have demonstrated that the benefits of such a programme can be enhanced if the provision of fruit is accompanied by awareness-raising and educational measures to teach children the importance of good eating habits. Encouragement will also be given to networking between different national authorities which run successful school fruit schemes. The scheme starts during the 2009/2010 school year.

In April 2009 the Commission has published an Implementing Rules Regulation for the School Fruit Scheme, setting out the detailed rules for the application of the School Fruit Scheme, including rules concerning the allocation of aid between Member States, financial and budgetary management, national strategies, related costs, accompanying measures and information, monitoring and evaluation and networking measures.

Successfully developing and defining this policy has relied on a transparent process and involvement stakeholders from Public Health, Education, Agriculture and the fruit and vegetable industry.

## Strategic opportunities for health promoting agriculture in Europe

Robert Pederson

*RM Pederson*

European Agriculture and Health Consortium, Brussels, Belgium

There is consensus that the EU Common Agriculture Policy affects dietary habits, however there is less consensus on the magnitude of the impact. Current reform processes, such as decoupling, changing compensation structures (flat rate) in the School Milk Scheme, have most likely mitigated the impact of the CAP on public health nutrition. Current programs like the EU school fruit scheme (EU SFS) presented today and proposed legislation Food Aid to Most Deprived Persons (MDP), depart from traditional CAP instruments and target increasing demand for certain products and social policy goals.

The Budget Review 2008/2009 and the post-2013 CAP debate will shape future food and agriculture policy in the EU and offer strategic opportunities for creating major changes in food and nutrition policy. However, creating public support for inclusion of a health promotion dimension in the CAP will require new research agendas and mobilization of public health professionals and organizations.

This presentation will provide participants with insight into the political processes, possible scenarios of what shape CAP will take in 2013 and beyond. These processes open windows of opportunity for a stronger public health dimension in CAP or a healthier food policy, but successful advocacy will require building strategic alliances, new research and practical advocacy tools.

## 5.2. Workshop: The joint action for ECHIM; taking the development and implementation of the European Community Health Indicators shortlist forward

*Chairs: Arpo Aromaa, Finland and Nick Fähy, European Commission*  
**Organizer: Center for Public Health Forecasting, RIVM, Bilthoven, The Netherlands**

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As of 1998, the European Commission has called for and funded projects which aimed to develop a list of public health indicators for implementation at European level. In successive order these have been the ECHI-1 (European Community Health Indicators) project, the ECHI-2 project and the ECHIM project. The main outcome of these projects has been the so-called ECHI shortlist; a list of 88 indicators, together with accompanying metadata (definitions, calculation methods, preferred data sources, etc.). This shortlist is at the core of European Union public health monitoring policy. For that reason the Commission, in the 2008 call for proposals called for a Joint Action for working on the implementation of the ECHI shortlist in all Member States.

A proposal was submitted and accepted for funding and on 1 January 2009 and the Joint Action started. In this workshop a comprehensive overview of the ECHI work will be presented. First of all, the decade of developmental research preceding the Joint Action will be summarized as to sketch the point of departure for the current activities. Technical specificities of Joint Actions (a new financing mechanism), as well as the most important administrative information concerning the Joint Action for ECHIM (e.g. which project partners and which Member States are involved) will be briefly described. Secondly the objectives, methods and first results of the Joint Action will be presented, together with problems encountered in practice and problems expected for the future. Thirdly, the main means of dissemination of the indicators and their metadata will be presented, which consists of two (coherent) websites. Lastly, the policy context for the ECHI work will be sketched. This will include a historic overview, leading up to the role of ECHI in the currently effective Health Strategy. Moreover, the most important new developments relevant for public health monitoring will be presented, such as European Health Interview Survey (EHIS) and European Health Examination Survey (EHES) developments. The added value of this workshop is that participants will be informed on the state of the art of one of the main EU public health monitoring policies, and that this will be done in a comprehensive way, looking at the ECHI work from a historical, political and practical angle.

### State of the art of the work on the European Community Health Indicators shortlist

Peter Achterberg

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Centre for Public Health Forecasting, RIVM, Bilthoven, The Netherlands

The European Community Health Indicators (ECHI) work started over a decade ago with the ECHI-I project. This project acquired a central place in the EU Health Monitoring Programme, collecting proposals for indicator definitions from many European projects. These proposals were arranged systematically in the ECHI long list. During the successive ECHI-II project, from the long list, a shortlist of about 80 indicators was selected for priority implementation: the start of a European public health monitoring system. The next phase was coordinated by the ECHIM project. ECHIM identified national health information experts, and started mapping the availability of data in the Member States (MS) for calculating the shortlist indicators. Indicator metadata (calculation methods, preferred data sources, etc.) was documented in a structured way in the ECHI Documentation Sheets, and an update of the shortlist was performed. In this presentation, the main outcomes of the three ECHI projects and their coherence will be explained in more detail. In 2007 the EU Health Strategy White Paper 'Together for Health' was adopted, stating as one of its actions the implementation of a European ECHI system. In 2008 the European Commission therefore called for a Joint Action (JA) for ECHIM. This new financing mechanism implies a direct invitation from the Commission to the MS to present a proposal. Public Health Institutes from five countries took the lead in preparing the proposal, and 24 MS in total gave a declaration of intent for participating in the JA for ECHIM. It started per January 1st of this year and has a 3-year duration. More information about the JA's goals, methods and administrative structure will be presented during the workshop.

### Entering a next phase in the developmental work—starting the implementation process

Ari-Pekka Sihvonen

*A Sihvonen, A Tuomi-Nikula, E Kestilä-Kekkonen, A Aromaa*  
 THL, Helsinki, Finland

The Final Report of the European Community Health Indicators Monitoring (ECHIM) project presented a review of availability and comparability of data and ECHI shortlist

indicators. To be able to implement the ECHI shortlist in practice, however, comparability of data in international databases should be further improved, quality and comparability of existing national databases investigated, new databases identified, and indicators refined. More specifically, implementation entails putting the indicators in practical use by (i) introducing them to local administrators and decision makers, (ii) helping to create and modify data sources, (iii) creating and testing a temporary system for data flow from Member States (MS) to an EU-ECHI database, (iv) setting up a presentation system and (v) analysing and interpreting the results for health policy and planning. To achieve this, a network of MS experts has been established, and general guidelines for implementation have been developed. ECHIM supports the national ECHIM experts in formulating feasible short- and long-term national implementation plans, building up national teams, and taking actions to develop new data sources or improve the use of existing ones for ECHI Indicators for which currently no adequate data are available. Furthermore, a demo version of the data collection and data flow from MS to a temporary central EU-ECHI database will be planned and tested. Indicator data will be presented through a web-system (see the presentation on the ECHIM websites). By the end of the three-year term an ongoing process for implementing health indicators should have been set up and progress documented in most MS. It is clear, however, that a permanent arrangement must be established in the long run.

### Web-based dissemination of the indicator data and accompanying metadata

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The goal of the ECHI work ultimately is to provide a solid evidence base for policy making. To fulfil this goal, internationally comparable data based on the ECHI shortlist indicators need to be disseminated, not only to (inter)national policy makers, but also to public health experts, citizens and media. The main means of disseminating the shortlist data in the Joint Action for ECHIM will be through the internet. At least for 2009, the European Union Public Health Information and Knowledge System (<http://www.euphix.eu>) will be used as the platform. This system is structured according to the ECHI shortlist and has multiple possibilities for presenting interactive graphs and maps. During the early stages of the Joint Action it will be discussed with the European Commission how to shape the ECHI data presentations in the future, as currently several websites exist containing such information (EUPHIX, SANCO site, EU Health Portal), and a more coherent approach is needed. The participants of the workshop

will be informed on these developments. Next to the data itself, metadata will also be made available in the Joint Action. The website <http://www.healthindicators.eu> has been developed for this purpose and contains, among other things, information on indicator definition/calculation, and on the availability and comparability of data in/between the EU Member States. Close links exist between the data presentations in EUPHIX and the metadata in the healthindicators site. Both sites will be shown during the presentation. During the course of the Joint Action availability and comparability of data for the shortlist indicators will improve. These developments will be reflected in regular updates of both the EUPHIX and the health-indicators sites.

### Policy context of the European Community Health Indicators developments

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In the 1990s there was a growing need for solid international public health comparisons, to serve as evidence base for both national and supranational policy making. Therefore 10 years ago the European Commission initiated the development of a European public health monitoring system. The history of Commission initiatives will be sketched in this presentation, starting with the funding of the ECHI-I and ECHI-II projects in the Health Monitoring Programme (ECHI = European Community Health Indicators), followed by the ECHIM project in the successive Public Health Programme 2003–2008. The current Health Programme 2008–2013 is an implementing tool for the Health Strategy ‘Together for Health’. Setting up the ECHI system has been incorporated as a policy action in the Health Strategy to ensure a solid and continuous scientific evidence base for policy making. To operationalize this action, the Commission called in 2008 for a Joint Action for ECHIM, appealing to the Member States to commit to this next phase of the ECHI work. Next to the Joint Action, currently there are several other Commission activities related to implementing the ECHI system. These include work on the European Health Interview Survey (EHIS), which is being carried out in cooperation with Eurostat, and work on the European Health Examination Surveys (EHES). Both EHIS and EHES will serve as important data sources for the ECHI indicators in the (near) future. The state of the art related to the EHIS and EHES will be presented in this workshop. The implementation and maintenance of the ECHI system is a structural policy, which requires continuous Community and Member State action. To conclude this presentation, possible scenarios for a sustainable ECHI system will be explored.

## 5.3. Hospital care

### A construction site in the hospital: implication on environmental safety in operating room

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A construction site inside or near to an hospital can result in microorganisms or volatile particles contamination of hospital rooms. In high risk areas, such as operating rooms, air quality assessment is essential for prevention of nosocomial infections and it can be carry out through microbiological sampling and particle counts.

The aim of this study, conducted in 2008, was to determine how the particle counts may be predictive of contamination in operating rooms of an hospital adjacent to a construction site, supported by geostatistical maps in order to investigate particles distribution.

The relationship between nosocomial infections and construction activities was evaluated by Shewhart charts. Moreover hospital staff training programs, about specific behaviours to adopt during construction activities, were organized.

The particulate count was made by a portable laser particle counter (0.3–25.0 µm sensitivity) in 24 sampling points in a surgical ward. Particles with diameter  $\geq 0.3$ ,  $\geq 0.5$ , and  $\geq 25$  µm in 1 cube meter (quantity of particles/m<sup>3</sup>) were sampled by

probes positioned at 130 cm from the ground. Mean were 430.378 particles/m<sup>3</sup> (95% CI 201.941–658.814), 137.035 particles/m<sup>3</sup> (95% CI 37.379–236.692), and 83 particles/m<sup>3</sup> (95% CI 59–107) respectively, according with Italian law that request, for particles with diameter  $\geq 0.5 \mu\text{m}$ , less than 352.000 particles/m<sup>3</sup> in operating rooms.

Using spatial data modelling techniques (geostatistical analysis), in order to assess environmental air-particulate dispersion, maps of the particle's diffusion expected values were elaborated (Indicative Goodness of Fit = 0.0320; K-order Rank = 1; Jackknife = 1.080765).

Geostatistical maps related to the Shewhart nosocomial infections charts allow an accurate identification of risk areas for particulate/microorganisms contamination, an indication of the areas that must be sanificate for the control of contaminants and determination of the degree of compliance of staff training and the adoption of specific procedures during 'sites in the hospital'.

### Philanthropic hospitals modernization: an analysis of financing by Brazilian Development Bank (BNDES)

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#### Issue/problem

In Brazil, there are around 2000 philanthropic hospitals, which provide 40% of the public attendance, in terms of inpatient care. A great number of these non-profit hospitals needed modernization of administration and was suffering serious economic limitations for making investments.

#### Description of the problem

The objective of this study is to analyse the results of the Programme to finance philanthropic hospitals supported by Brazilian Social and Economic Development Bank (BNDES) since 1999.

This Programme financed projects of financial recovery and modernization of health care infrastructure and management, with the scope to fortify these non-profit institutions. BNDES is a Brazilian state-owned institution and main provider of funds for long term financing of investments in the domestic economy. BNDES's main mission consists of supporting the expansion, updating and continuous renewal of Brazil's economic structure, increasing the economy competitiveness, giving priority to both the reduction in social and regional unbalances, and the employment maintenance and generation. In the scope of improve development, BNDES supports projects of health care providers, public or private.

#### Results (effects/changes)

We utilized BNDES's data, from 1999 to 2008, about the projects of 133 philanthropic hospitals supported. Besides, to a sample of the large projects, we analysed information from: (i) technical visits (and interviews); and (ii) a questionnaire, especially the time-series indicators of accounting, finance, production capacity and productivity. The interviews indicate that the BNDES financial support enables an effective reduction in the cost of capital and propitiates the improvement of the management, which are indispensable by the financial sustainability of these institutions. The quantitative analysis shows an important improvement in financial indicators, besides a predominance of increase in some productivity indicators.

#### Lessons

This evaluation of a sample of hospitals funded indicates that the BNDES support was important to the financial recovery and modernization of infrastructure and management of these institutions.

### Short stay unit as a new option for improving the use of hospital beds: a meta-analysis

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#### Background

Short stay unit (SSU) is an alternative to ordinary ward (OW) for the treatment of selected patients. SSU is a ward that can provide targeted care for medical patients requiring a brief hospitalization ( $\leq 3$  days), because of acute phase of chronic illness (such as diabetis or obstructive pulmonary disease). The SSU model has been tested only in few hospitals and literature lacks of synthetic results about the impact on the efficiency of hospital care. The aim of our study is the evaluation of the SSU compared with OW in terms of length of hospital stay for medical patients.

#### Methods

A random effect meta-analysis was carried out consulting electronic databases (Pubmed; Embase; Google Scholar; Dare; Cochrane Library; Sumsearch; Scirus). We selected studies focused on comparison between SSU and OW for the same kind of patients. Articles evaluating short stay emergency observation wards were excluded. Mean difference of length of stay was calculated within 95% confidence intervals.

#### Results

We selected six articles for a total of 23 337 patients. The estimated mean difference was  $-3.06$  days (95% CI  $-4.71$ ,  $-1.40$ ) in favour of SSU. Sensitivity analysis confirmed the robustness of the results.

#### Conclusions

The SSU could reduce patients' length stay in hospital compared with OW. SSU could be considered as an efficient alternative to ordinary ward for selected patients. The impact of a shorter hospitalization might produce a reduction of the risk of hospital infections and increase of the patient satisfaction. Further studies can be focused on the definition of criteria for identifying patients that can be discharged at an earlier stage and than can be admitted in an SSU.

### Managing hospitals through patient pathways: the approach to stroke

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An important challenge for hospitals is to move their organization from a single ward approach to a systemic one, centered on the patient flow through the organization. Stroke can be an ideal disease to test this approach because of its epidemiological relevance and its multidisciplinary involvement including different health care organizations (i.e. acute hospitals, long term care facilities) to warrant a successful approach.

As part of a wider program for quality improvement, Udine University Hospital sets a group with clinicians, public health doctors, nurses and physiotherapists to define a shared stroke pathway. The aim was to include and merge professional and management perspectives to optimize performances and to guarantee high quality to patients.

Involved units were: Emergency Medical Service (EMS), Emergency Room (E.R.), Neurology, Neuroradiology, Clinical Pathology, Internal Medicine (n.3), Intensive Care Unit (I.C.U.) (n.3), and Rehabilitation (LTFC external to hospital and managed by different organization).

Through semi-structured meetings a flow chart based on the existing experience was discussed. Then single steps were

identified and for each step both clinical and management responsibilities were defined. As a result we ended with a new flow chart based on these phases:

- EMS early identification of the patient affected by stroke (triage).
- Immediate assessment in ER or neurology clinic.
- Rapid execution of Computerized Tomography (CT).
- Admission to treatment (Neurology, Medicines or ICU).
- Planning of a rehabilitation pathway in and outside the hospital.

Each step had a standardized formal protocol (including rules to effectively connect with other units) written by the ward specialists and approved by all the group; a final document, validated by the medical direction, explained all the pathway, included single protocols as well as performance indicators (timing of patient flow through units, timing of exams' execution (i.e. CT, INR), appropriated treatment, etc.) to guarantee data for continuous quality improvement.

### The Italian hospitals in the web: a cross-sectional analysis of the official websites

Grazia Orizio

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#### Background

The use of Internet for health purpose has steadily increased in the last decade, but only few studies have to date explored the information provided by health-related websites and the possibility to interact and communicate with health institutions via the Internet. With this purpose a cross-sectional study of all Italian hospitals websites was conducted, analysing their technical and content characteristics.

#### Methods

The list of all Italian hospitals was retrieved by the website of the Italian Ministry of Health. Therefore we searched for the hospitals' websites using the Google search engine and the retrieved working websites were coded using an ad hoc Codebook, comprising 89 items divided into 5 sections: technical characteristics, hospital information and facilities, medical services, interactive on-line services and external activities. We calculated a website evaluation score, on the basis of the items satisfied, to compare private and public hospitals.

#### Results

We found 419 over 652 public hospitals (64.3%) and 344 over 613 private hospitals (56.1%) with a working website,  $P=0.01$ . The mean website evaluation score was 37.0 among public and 27.2 among private hospitals ( $P<0.001$ ). No differences were found with regard to the interactive on-line services: even if nearly 80% of both public and private hospitals gave the possibility to communicate on-line, less than 18% allowed the reservation of medical services and a health-related forum was

present only in 1.5%. Less than 1% of websites provided information about hospital quality indicators as inpatient and surgical mortality rates.

#### Conclusion

A high percentage of Italian hospitals does not have an official website. Public hospitals were more likely to have a website and to provide more information than private hospitals. Anyway their websites remain more a source of information about hospitalization and services, with a lack of information about hospital quality indicators, rather than an interactive platform to communicate between users and hospitals.

### Evaluation of the adapted DRG system in Slovenia

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#### Issue

Improvement of hospitals' efficiency by optimizing patient care through the introduction of a DRG reimbursement system and patient pathways.

#### Description of the problem

One of the most important outcomes of the Health Sector Management Project running in Slovenia from 1999 to 2003 was the introduction of a DRG system. An adapted Australian system was introduced partly in 2003 and then as a shadow budgetting system from 2004 onwards. Health policy saw optimization of care in the hospital sector as one of the main priorities. It was foreseen that the turnover of patients would increase and that the average length of stay would significantly decrease. All acute care hospitals were invited to join the system. An online data exchange system was introduced supporting ranking of hospitals by basic performance indicators (ALOS, hospitalization rates, average DRG weight, etc.)

#### Results

Through the 5 years since its introduction we can see that the DRG system in Slovenia yielded some positive outcomes. The number of patient cases increased by 15% and there was an 11–15% reduction in the average length of stay. After the initial sharp increase in the average DRG weight, the trend slowed down and now runs constant. As there are still differences in reimbursement per hospital, there are remaining practice inconsistencies across the sector. This is supposed to be overcome by the beginning of 2011 through a uniform reimbursement system.

#### Lessons

Introduction of DRGs in Slovenia was accompanied by a lot of scepticism and reserve. There are several gains for the system through their introduction:

1. increased turnover of patients through increased hospitalization rates with reduced waiting lists
2. shorter length of stay for some typical procedures—e.g. hernia surgery, carpal tunnel surgery, etc.
3. easier comparability between hospitals
4. remaining inconsistencies due to the failure of an early introduction of a uniform reimbursement scheme, i.e. uniform pricing based solely on the DRGs.

## 5.4. Physical activity and health promotion

### Evaluation of a culturally targeted community based intervention for Turkish people in Rotterdam (The Netherlands)

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#### Background

Smoking prevalence in the Dutch Turkish population is very high. About 60% of men and 30% of women smoke. A community based culturally targeted intervention was developed to promote a non-smoking norm and to reduce smoking

prevalence. We assess the effects of the intervention on smoking behaviour and its determinants.

#### Methods

Effects, including percentage of non-smokers and quitters and the subjective norm towards smoking were measured in a quasi-experimental design with a pre-test and post-test among 400 participants in both groups (aged 18–60). Data were analysed by (logistic) regression analyses, corrected for differences in Background characteristics. A process evaluation was also carried out.

#### Results

Percentage of non-smokers increased from 54% to 60% in the intervention group and from 58% to 63% in the comparison group. Number of quitters at post-test was 12% and 9%, respectively (ns). Regarding the norm towards smoking no significant differences were found between both groups. Process evaluation results yielded important suggestions for future community interventions.

#### Conclusions

Although the intervention did not result in significant effects, it provides useful information for developing future interventions for ethnic minorities.

### Alcohol consumption and problem drinking as predictors of incident psychiatric hospital admission: evidence of gender differentials in combined analyses of the three linked Scottish Health Surveys (1995–2007)

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#### Background

Few studies have examined prospective associations of alcohol intake and problem consumption with subsequent mental disorder. We addressed this using pooled analyses of three Scottish cohort studies.

#### Methods

Responses of participants in the 1995, 1998, and 2003 Scottish Health Surveys were linked to psychiatric hospital admissions until the end of 2007. Analyses were based on 22 577 (95% of respondents) consenting to linkage who had no previous psychiatric admission. We used three measures of alcohol intake and problem drinking: exceeding guideline weekly limits (>21 standard units for men, >14 units for women); binge drinking (≥8 units for men, ≥6 units for women), and CAGE alcohol-related problems screening questionnaire (score ≥ 2). Socio-demographic factors: area deprivation, occupational social class, education and marital status; cigarette smoking, physical activity, somatic illness and psychological health (based on GHQ12) were ascertained at survey.

#### Results

Overall, 21% exceeded weekly drinking guidelines, 21% binge drank and 8% were problem drinkers. There were 115 psychiatric hospitalizations in men; 129 in women. In age-adjusted analyses, exceeding weekly alcohol guidelines was associated with increased risk of psychiatric hospitalization in men (hazards ratio = 1.54; 95% confidence interval: 1.06, 2.24) but not women (0.77; 0.43, 1.45) (sex interaction  $P = 0.067$ ). After additional adjustment for socio-demographic factors, smoking, physical activity and somatic illness, risk among men remained elevated but lost statistical significance (1.38; 0.93, 2.03). Corresponding results for problem drinking were 2.54 (1.44, 4.48) and 1.73 (0.94, 3.16) for all adults. Binge drinking was not associated with psychiatric illness in any of our analyses. Further adjustment for GHQ12 did not alter results. Findings were similar for analyses excluding non-drinkers (comprising never drinkers and ex-drinkers).

#### Conclusions

Problem drinking and, among men, excess weekly drinking was associated with subsequent psychiatric hospitalization. Associations persisted but not significantly after adjustment for socio-demographic circumstances and covariates including psychological health at survey. Findings were robust to the exclusion of non-drinkers.

### Physical activity before and after introduction of the congestion road tax in Stockholm: a quasi-experimental study

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#### Background

Modifications of the built environments have a great potential to increase physical activity (PA) on the population level. Introduction of the road congestion tax in Stockholm can be viewed as one of these interventions. The aim of the study was to assess the PA before and after the intervention and to compare it with other Swedish cities where no such intervention was performed.

#### Methods

A quasi-experimental study. Representative samples of adults aged 18–74 years from greater Stockholm (quasi-experimental group) and Gothenburg and Malmö (control group) participated in the International Prevalence Study (2003). PA was assessed by the International Physical Activity Questionnaire. The congestion tax road was introduced in Stockholm in January 2006. The data on PA were collected from the same individuals in both groups in May 2006. Numbers of minutes spent sitting, walking, doing moderate and vigorous PA were presented as medians and lower and upper quartiles: Md (Q1, Q3). Mann–Whitney and Wilcoxon tests were used for unpaired and paired data, respectively.

#### Results

In Stockholm, the number of minutes spent in moderate PA increased from 150 (60, 420) min/day to 180 (60, 420) min/day ( $P < 0.001$ ). Similarly, the overall PA increased from 1491 (713, 3151) min/day to 1706 (739, 3304) min/day ( $P = 0.023$ ). Time spent sitting decreased ( $P < 0.001$ ), although the median remained unchanged 300 (180, 480) min/day vs. 300 (142, 480) min/day. Similar, but less pronounced differences not significant changes were observed in Gothenburg and Malmö. However, we did not find any differences between the changes in PA between the settings.

#### Conclusions

The evidence on the effect of introduction of congestion road tax on PA of residents of greater Stockholm is inconclusive due to small sample size and short time between the implementation of the intervention and its evaluation. An analysis of long-term effects is warranted.

### Self-regulation methods to change the physical activity behaviour in elderly—pre- and post-intervention results of a German study (2009)

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#### Background

'OPTIMAHIL 60plus' is a counseling aid for those aged 60 years and above. It aims to improve the physical activity and nutritional behaviour, maintenance and enhancement

of the quality of life, and autonomy of the elderly with special attention to people with a low socio-economic status or migration.

### Background

The intervention study comprises the participatory development of the aid in cooperation with elderly people (using focus groups) and the evaluation of the intervention programme (intervention group = counseling aid and health information; control group = health information only).

### Methods

A total of 423 elderly (329 women and 94 men) participated in T0 and 369 (293 women and 76 men) in T1. Participants were assigned to a control ( $n=205$ ) or intervention group ( $n=218$ ). Physical activity behaviour was measured at three points in time: pre- (T0), after 3 months of intervention (T1) and at six-month-follow-up (T2) by 24-h recall and physical activity frequency questionnaire.

### Results

First results indicate that the elderly agreed that the counseling aid supports to remember how they should be active and motivates them to stick to the recommended daily activity. Looking at the results of the 24-h recall: Men are significantly more active outdoors at T1 compared with T0 (chi-square Test,  $P=0.0368$ ). The same is true for elderly with migration Background (chi-square Test,  $P=0.0139$ ).

### Conclusions

OptimaHI 60plus helps some sub-groups to self-regulate their physical activity behaviour. Results of T2 will show if the hypothesis, that elderly can optimize their daily physical activity with the help of the counseling aid, holds true and if it is transferred into daily living routines by the elderly. Possible modifications of the counseling aid are related to the results and part of the study.

## The effect of physical activity on functioning

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### Background

The minimum amount of physical activity for maintaining health and functioning is often neglected among the adults of today's modern society. Physical activity is associated with reduced risk of major chronic diseases and sickness absence. However, prospective studies on the association between physical activity and functioning among middle-aged people are scarce. The aim of this study was to examine whether physical activity is associated with functioning 5–7 years later among ageing middle-aged employees.

### Material and methods

Baseline data were collected by questionnaire surveys in 2000–2002 among 40–60-year-old employees of Helsinki City. A follow-up survey was conducted among baseline respondents in 2007 ( $n=7332$ , response rate 83%). Physical activity was classified into six groups according to recommendations taking into account both the volume (MET-hours/week) and intensity (moderate/vigorous). Functioning was measured by SF-36 health questionnaire physical component summary score (PSC).

### Results

The age adjusted proportion of respondents with good functioning at follow-up by baseline physical activity showed a clear difference ranging from 36–37% in the conditioning

group to 16–19% in the inactive group among men and women. Adjusting for baseline functioning explained a major part of the differences found between the physical activity groups, after which 10% more of the conditioning exercisers than the inactive still had good functioning. Adjusting for BMI and smoking further explained the differences, which however remained.

### Conclusions

Higher levels of vigorous physical activity among middle-aged women and men seem to be important for maintaining good functioning. By promoting physical activity at work places and in the occupational health care the age related decline in functioning might be postponed.

## Explaining educational differences in leisure-time physical inactivity in 12 European countries

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### Background

Physical inactivity has become a major public health problem in many industrialized countries. Leisure-time physical activity varies between socio-demographic groups: lower educational groups are more often inactive compared with higher educational groups. However, the determinants of educational differences in leisure-time physical inactivity are not known. We hypothesize that the relative contribution of occupation and employment status on these educational differences varies due to diverse labour markets and industries in different regions of Europe.

### Methods

The data were obtained from 12 European health surveys conducted in the turn of the century and identified in the EUROTHINE-project. Countries included Norway, Finland, Denmark, Estonia, Lithuania, Latvia, the Netherlands, Belgium, Germany, Italy, Spain, and Portugal. All the information was based on self-reports. Logistic regression was applied and relative inequality index (RII) was calculated for educational differences in leisure-time physical inactivity. Analyses were limited to those in the age of 30–59 years, done separately for gender, and adjusted for age, marital status, urbanization, and self-rated health.

### Results

Based on our preliminary analyses, the age-adjusted RII-values were similar in all countries: the lower educated were more physical inactive during leisure-time compared with the highly educated. The occupation and employment status only slightly attenuated these educational differences. In most countries, the association between education and leisure-time physical inactivity remained after adjustment for marital status, urbanization and self-rated health.

### Conclusions

Occupation and employment status were unable to explain the educational differences in leisure-time physical inactivity in any of our examined European countries. Bearing in mind the limitations of our study, the association between working conditions and different modes of physical activity needs to be further studied to implement better physical activity promotion programs for the working age population.

## 5.5. Workshop: Health-related functioning in terms of the International Classification of Functioning, Disability, and Health

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Compared with people without chronic diseases, those with chronic diseases report poorer self-rated health and functioning and more disability. However, results from similar studies using diverse concepts of functioning and disability are often incomparable. Not only to overcome such problems and to establish a common language for describing health and health-related states but also to permit comparisons of health data across populations, the World Health Organization (WHO) introduced the International Classification of Functioning, Disability, and Health (ICF). The workshop describes recent and upcoming developments and public health study findings regarding ICF classifications, concepts, and components.

The objectives of the workshop are 3-fold: (i) to inform on the latest developments in the ICF and give recent examples of its use, (ii) to illustrate the prevalence and changes therein over time of ICF components in patient and general populations, and (iii) to raise awareness about health disparities in terms of ethnic differences in ICF components.

After an introductory presentation on recent ICF developments, three ICF related topics will be presented. The first illustrates the development and validation process of an assessment tool for people with multiple sclerosis. The second topic demonstrates ethnic differences in the prevalence of functional limitations of coronary heart disease patients, as well as in its determinants. The third topic illustrates the trend in activity limitations in the Netherlands in the period 1990–2007. An audience discussion focusing on the use of the ICF in everyday practice concludes the workshop.

### The international classification of functioning, disability, and health: work in progress

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The World Health Organization (WHO) launched the International Classification of Functioning, Disability and Health (ICF) in 2001. The ICF is the result of the revision of the International Classification of Impairments, Disabilities and Handicaps (ICIDH), published by WHO in 1980. Extensive use of the ICIDH in rehabilitation and allied health-related practices raised comments, which led to the start of the revision process. The ICF is now in use worldwide in different settings, for different purposes, and is being applied at national and international level.

Typical differences between ICIDH and ICF are: (i) negative terminology in ICIDH versus neutral terminology in ICF, (ii) causal relationship in ICIDH versus multi-direction relationships between components in ICF, and (iii) addition of environmental factors as an important component (classification) in ICF and recognition of the role of personal factors (not as classification) in ICF.

In 2007, WHO issued the ICF Children and Youth version (ICF-CY) as the first derived version of the ICF and is considered the first structural contribution to an ICF updating process. The ICF-CY is designed to record the characteristics of the developing child and the influence of its surrounding environment. The differences between ICF and ICF-CY are: (i) modifications or expanded descriptions in ICF-CY, (ii) modifications of inclusions and exclusions in ICF-CY,

(iii) new classes in ICF-CY, and (4) expansion of qualifiers to include developmental aspects.

Nowadays, the WHO is (i) supporting the implementation of ICF by creating a database with information regarding use of ICF and ICF related materials, (ii) developing educational materials including webbased ICF training, (iii) evaluating the use of ICF, e.g. the kind of use of the Activities and Participation list (ICF annex 3), and (iv) developing regular ICF updating procedures.

### Integrated and patient-centered care using the international classification of functioning, disability and health

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#### Background

The health care system organization is shifting from being fragmented and service-centered to being an integrated, patient-centred system. Consequently, there is a growing need for tools to (i) facilitate integrated assessment for multidisciplinary care, and (ii) give patients the opportunity to play an active role in the assessment process. Using the International Classification of Functioning, Disability and Health (ICF), we developed the Multiple Sclerosis Impact Profile (MSIP). Our objective was to describe the process of development and validation of this assessment tool for people with multiple sclerosis (MS).

#### Methods

First, relevant items were selected from the complete ICF during a Delphi-study using 98 experts: patients, caregivers, medical and non-medical health care professionals. Selected items were operationalized using ICF-features. Next, data were obtained with the initial version of the MSIP from a postal survey among 530 MS patients for item reduction, scale construction and psychometric evaluation. A pilot study was performed to test the feasibility of use of the MSIP in integrated and patient-centred care in six regional MS centres with seven nurse specialists and 107 MS patients.

#### Results

The MSIP is a valid and reliable self-report measure with 36 ICF items reflecting a broad scope of disabilities and the perception of these disabilities. In clinical practice the MSIP seems to have added value in the enhancement of the role and influence of people with MS during a consultation whilst nurse specialists reported that patients were better prepared and having clearer insight into patients' health problems.

#### Conclusions

The MSIP can be applied in outcome and epidemiological studies. On individual level the MSIP can be applied in clinical practice to enhance the patient role, and as a basis for integrated care planning. The ICF turned out to be a useful classification as a basis for the development of a valid and reliable assessment tool.

### The role of ethnicity in functional limitations among Slovak coronary patients: a matched study

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### Background

Roma have been shown to have an adverse socio-economic position and unfavourable health compared with the majority of the population. We assessed whether the level of functioning in terms of the International Classification of Functioning, Disability and Health differs significantly between non-Roma and Roma coronary patients.

### Method

Out of 399 patients that were referred for coronary-angiography in the East Slovakian Institute for Cardiac and Vascular Disease 114 patients were selected for the purposes of this study. Due to a relatively small number of Roma patients ( $n=38$ ) and possible confounding effects of the socio-economic status (SES), patients were divided into three groups: 1 = Roma patients (with low SES income and education), 2 = matched non-Roma patients with low SES, 3 = matched non-Roma patients with high SES. Logistic regression controlled for age and gender was used to analyse data. Functional status was measured by ejection fraction (EF) and the physical component summary of SF 36 was used as subjective report of limitations in everyday life.

### Results

Non-Roma with high SES were less likely to have systolic dysfunction (EF lower than 40%) compared with Roma (OR, 0.22; 95% CI, 0.05–0.92), but non-Roma with low SES and Roma did not differ (OR, 1.21; 95% CI, 0.41–3.60). Both groups of non-Roma patients (with low and with high SES) were less likely to report perceived functional limitations compared with Roma (OR, 0.30; 95% CI, 0.10–0.83, OR, 0.18; 95% CI, 0.06–0.54).

### Conclusion

Ethnicity has been found to be a factor significantly influencing the subjective perception of the functional limitations level among patients with coronary heart disease, even after controlling for the effect of the socio-economic status. However, with regard to objective measure (EF), no ethnic differences were found. The perception of adverse functional status of Roma coronary patients may warrant additional care since this is expected to have adverse effects on quality of life of these patients as well.

## Time trends in late-life activity limitations

Coen van Gool

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### Background

This study sought to give the best estimate of the time trend in the level of functioning in terms of the International Classification of Functioning, Disability and Health among the Dutch older population between 1990 and 2007, based on several datasets using a meta-analytic approach.

### Methods

Data from two repeated cross-sectional surveys and three prospective surveys among non-institutionalized inhabitants of the Netherlands aged 55–84 years were used to examine study-specific and overall time trends of self-reported activity limitations based on ADL and SF-36 items.

### Results

Taking all activity limitations together there are no large changes over time. Looking at separate activities, the risk of limitations in climbing stairs based on ADL items is increasing approximately 4% per year (99% CI, 1.01–1.07) and the risk of limitations in getting dressed based on ADL items is increasing approximately 5% per year (95% CI, 1.00–1.08), whereas trends in activity limitations based on SF-36 items were mainly stable.

### Conclusions

The above results are relevant in the anticipation of care needs of the ageing population. Conflicting developments in underlying determinants of both activity limitations as well as chronic disease will be highlighted in regard of the results.

## 5.6. Sickness absence and mental health

### Workplace health promotion and absence culture are more important than structural factors as determinants of the staff sickness absence level in Swedish municipal social care

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### Background

In Sweden, there are large unexplained differences in sickness absence between regions as well as between employers within the same trade. The aim was to study sickness absence differences between municipalities in their social care sector in relation to internal workplace factors and external structural factors in the local society.

### Method

A questionnaire with focus on perceived organizational climate, health, absence culture and workplace health promotion (WHP) was sent out to 15 871 social care employees in a random sample of 60 out of Sweden's 290 municipalities.

The response rate was 58%. A database of the 60 municipalities was constructed with aggregated data from the questionnaire and official registers.

### Results

A lower sickness absence level was related to internal factors (better self-rated health, access to and utilization of a broader repertory of WHP measures, a more restrictive absence culture and a lower number of staff per older inhabitant) as well as external structural factors (lower rates of sickness and disability compensation, unemployment and mortality in the population). Multivariate analyses indicate that unemployment rate was the main external predictor, but the internal parameters WHP measures and absence culture were the most important overall predictors of the sickness absence level. A higher WHP level was only related to internal factors reflecting a better organizational climate. A more restrictive absence culture, on the other hand, was only related to external structural factors such as a more favourable situation concerning prosperity and labour market as well as age distribution and standardized mortality rate in the local society.

## Conclusions

Although the staff sickness absence level is related to local structural factors beyond the control of the manager such as labour market and absence culture, the managers' measures concerning WHP matter irrespective of these external circumstances.

## Sense of coherence strongly correlates with subjective health and mental health in college students

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### Introduction

The health status and behaviour of future teachers needs to be assessed in order to develop effective interventions for helping them become more conscious of the importance of health issues and change risk behaviours. Our objective was to survey health behaviour of students in teacher training at Hungarian universities by a standardized self-administered questionnaire.

### Methods

Students of IInd to Vth year from 27 faculties providing teacher training at the six largest universities and colleges in Hungary comprised the sampling frame ( $n = 30\,901$  students). All students of the selected faculties were sorted by university code, and every fifth student was chosen from the sorted list (5% of the sampling frame). Selected students were sent an invitation by letter and email to fill a paper- or internet-based anonymous questionnaire between 10 June and 31 July 2007. Up-front and conditional incentives were offered to increase response rate. The questionnaire included items on demographic data, subjective health, mental health (measured by the 12-item General Health Questionnaire), sense of coherence (measured by the abbreviated Antonovsky-questionnaire), social support, body weight & height, physical activity, dietary habits, smoking, alcohol and drug use. Data were recorded in an Access database, and analysed by Stata 8.0 software.

### Results

A response rate of 68.6% was achieved. Mean age of the students was 23.2 years; 67% of the respondents were female. 78% of them studied subjects related to pedagogy, and 70% of all respondents were potentially on track to become teachers. A total of 65.2% rated their health as very good or good. The average GHQ score for mental health was 2.8. A total of 24.1% of the respondents scored above the cutoff value, indicating unfavourable mental status. The mean score for sense of coherence was 61.43 (SD: 11.67, min: 21, max: 87). Sense of coherence strongly correlated both with subjective health and mental health but not with body mass index, physical activity, diet or substance use.

### Discussion

In accordance with others, sense of coherence was found to be an appropriate measure of subjective health as well as mental health in college students wanting to become teachers. However, sense of coherence does not seem to be related to health behaviour.

## Drinking behaviour and disability retirement in Norway. The HUNT Study

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### Background

The role of alcohol consumption in predicting work incapacity, and the relationship between alcohol use, mental health and disability pension (DP), is not clear. We aimed to prospectively investigate the relationship between drinking behaviour and the receipt of DP.

### Methods

A large cohort was linked to the national insurance database. Baseline information on 37 842 working age (20–61 years) individuals was gathered from the population-based health study HUNT-2. Participants already awarded DP at baseline were excluded. Among current drinkers risk drinking was assessed using the CAGE-questionnaire. Consequently we were able to compare six groups; abstainers and five groups with CAGE-scores 0–4. Potential confounders included age, gender, and symptoms of depression and anxiety (measured by Hospital Anxiety and Depression Scale). In a sub-sample ( $n = 17\,949$ ) we also looked at the impact of previous heavy drinking amongst abstainers ('sick-quitting').

### Results

A J-shaped association between CAGE-score and risk of subsequent DP was found. A CAGE-score of 1 yielded the lowest risk, while a score of 4 increased the risk (HR, 2.96; 95% CI, 2.07–4.22). Abstainers had an HR equal to 1.42 (95% CI, 1.19–1.70). In the subsample, previous heavy drinking among abstainers did not account for anything in the association with subsequent DP.

### Conclusions

Both abstainers and self-reported risk drinkers were at increased risk of being awarded DP compared with individuals reporting a CAGE-score in the range of 0–2. Most likely there are different mechanisms in each end of the curve. The increased risk among abstainers cannot be explained by previous heavy drinking.

## Sleep problems as predictors of disability pensions among middle-aged employees

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### Background

Among ageing employees sleep problems are a prevalent, but their consequences are poorly understood. This study examined whether sleep problems predict subsequent disability pensions among middle-aged employees.

### Methods

Baseline survey was collected in 2000–2002 among middle-aged employees of the City of Helsinki ( $n = 6373$ , 80% women). Data on disability pensions were obtained from the Local Government Pensions Institution and the State Treasury of Finland (2000–2004) and were linked to the questionnaire data. Sleep problems during previous month included troubles falling asleep and staying asleep, waking up several times per night, and non-restorative sleep. Respondents were categorized into those with severe sleep problems, moderate sleep problems and good sleepers. Sleep duration was categorized into short (5–6 h), normal (7–8 h) and long (>9 h). Cox regression analysis was used to calculate hazard ratios (HR) for disability pension.

### Results

There were 172 (3%) disability pension events during the follow-up. Age adjusted severe sleep problems (sleep onset insomnia, sleep maintenance insomnia, and non-restorative sleep) strongly predicted disability pensions (HRs, 2.7–5.3) among women and men. Long sleep predicted disability pensions (HR, 2.3) among women. Baseline health and health behaviour accounted for only part of the effects.

**Conclusions**

Sleep problems and sleep duration predict early exit from work through disability pension among middle-aged women and men. To support ageing employees maintain work ability until their normal retirement age, promotion of normal sleep and early detection and prevention of sleep problems should be emphasized in occupational health care.

**Insecure social bonds at work, mental ill-health and sickness absence**

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**Background**

The mental ill-health diagnoses seem to be increasing in Europe and there are global trends towards increasing stress and ill-health at work. In Sweden the long-term sickness absence increased dramatically from the late 1990s through to 2003 and most for mental diagnoses. During recent years the sickness absence rate has decreased but it is still among the highest in Western Europe. The association between diagnosis and psychosocial work factors in a sickness absent population was examined in order to test the existence of a previously suggested hypothesis of 'the burnout staircase', a seven step process prior to the long-term sickness absence starting with reorganizations followed by insecure social bonds affecting the work situation as well as trust in oneself and others. A second aim was to study if the model was applicable to both sexes.

**Methods**

The study population comprised of 2064 employed persons (1421 women, 643 men) presently sick-listed for at least three months, a subsample derived from the 2002 national Swedish survey on health, working conditions, life situation and sick-listing. The different steps in the burnout staircase were operationalized into different variables. Through logistic regression it was analysed whether or not persons with burnout diagnosis had higher probability of having experienced the different steps in the burnout staircase compared with other diagnostic groups.

**Results**

The hypothesis was supported. Women and men with a burnout diagnosis seem to a higher extent having experienced reorganizations, insecure social relations fraught with conflicts, incompatible demands, lack of trust and diminished self-esteem compared with other diagnostic groups. No systematic gender differences were found.

**Conclusions**

The staircase described in an earlier work seems to be a suitable model to describe the sickness absence process for persons with

a burnout diagnosis. The model also seems to be valid for other mental diagnoses.

**Lost years of working due to disability pension award for mental disorders**

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**Background**

More than 10% of the Norwegian population within working age is receiving disability pension. This proportion has been increasing the last two decades both in Norway and in other OECD countries, and mental disorders are among the most common diagnoses for award of disability pension. This study has three aims: (1) examining whether there has been an increase in the proportion that receives disability pension award for a mental disorder in the period 1992–2003, (2) comparing age when disability pension is awarded between mental disorders and other disorders and conditions, and (3) calculating lost years of working for mental disorders and for other diagnoses and conditions based on mean age when awarded disability pension.

**Methods**

Data from the Norwegian official registry over disability pension recipients were analysed. The registry contains complete information about all incidences of disability pension award in Norway from 1992 to 2003,  $n=405\ 910$ . Central variables were primary diagnosis for disability pension award, age when awarded and gender.

**Results**

The study has three main findings. (1) Of the total number of incidences of disability pension award, awards for mental disorders have increased from 18.2% in 1992 to 24.4% in 2003. This increase is found across all age groups, but is strongest in the younger part of the population. (2) Disability pensions for mental disorders were awarded at a younger age (46.0 years) than disability pensions for musculo-skeletal disorders (54.9 years) and other conditions and disorders (53.4 years). The mean age for disability pension award for mental disorders has decreased with one year from the beginning to the end of follow-up. (3) Mental disorder is the second largest diagnostic group of the total disability pension awards. Taking age at award into account, disability pension award for mental disorders entails more lost years of working than other conditions and disorders.

**Conclusions**

In Norway, the proportion of disability pensions awarded for mental disorders has increased. Pensions for mental disorders are awarded at younger age, and consequently causing more lost years of working than any other diagnostic groups.

## 5.7. Workshop: The elephant in the room: health of Roma communities in Europe

Chair: Tamsin Rose\*, Belgium

Organizer: Open Society Institute, Hungary

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With a population dispersed across much of Central and Eastern Europe, the Roma are the Continent's poorest citizens and largest minority. They experience appalling discrimination, social exclusion and in some cases are 10 times poorer than the average population and have a life expectancy that is 10 years shorter than their non-Roma neighbours. This abject poverty is accompanied by explicit prejudice expressed by all levels of society—public officials, media,

police and employers. The health care system is part of the institutional neglect of Roma needs, with hospitals turning away Roma patients and health professionals refusing to treat them.

Roma health has received little attention in European public health circles. Because of methodological problems and politicized nature of the issue, data about the living conditions and health status of Roma are hard to find. Lack of trust and negative experience with health systems means that there is limited engagement between Roma groups and researchers

which could create greater awareness of their unmet health needs.

This session is designed to highlight the work by Roma NGOs and activists to gather data on health conditions of their communities and their specific needs. It will provide valuable insight for participants interested in understanding and tackling Europe's most challenging health inequalities. The format of the session will be short presentations with plenty of time for questions and debate.

### Health, health protection and factors influencing health among Roma people in Macedonia

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Health statistics in Macedonia are not segregated according to ethnicity, and there is no previous research regarding health and access to health services of Roma in Macedonia. In 2007–2008, ESE undertook a national research among Roma people in Macedonia in order to determine their socio-economic status, health status, access to health services, health insurance coverage, their needs when approaching the health system, and the factors that are influencing their health.

The survey was conducted among 636 Roma people, selected by random sampling, also Focus group discussions were conducted with Roma men and women, Roma NGO representatives and health professionals.

Results revealed the main socio-economic problems of Roma people: low level of education, high unemployment rate, inappropriate housing conditions and poverty. These factors are directly related with the poor health status of the Roma people. Also the perception for their own health status is very negative. Half of the interviewed people are suffering from chronic diseases, with predominance of hypertension; moreover, people are not managing adequately their chronic diseases. Healthy habits are not enough present, due to the poverty and lack of health information. There is insufficient health protection during the pregnancy and delivery. Roma people are not satisfied from the ways how the medical staff gives explanations and advices related to their illness. Socio-economic and health status is even worse among Roma women, compared with Roma men.

General recommendations from the study, regarding improvement of Roma health, are the following: continuation of the special measures for improvement of the health insurance coverage; improving the access to and quality of health care services; introducing health promotion measures; introducing specific measures for reducing the risk factors for health; introducing measures for promotion of gender equality.

### Addressing the gap in immunization coverage of Roma children in R. of Macedonia

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Immunization coverage in Macedonia varies between 90 and 98%, depending on the vaccine type, among general population. However, among the Roma, immunization coverage of Roma children is much below the national average according to findings from field work of Roma NGOs. Prior research showed that only 66% of Roma children are fully immunized, although the limitation in this study is that data gathered from the parents of the children were not checked with the records of the primary health facilities for immunization. The current aim of this research is to accurately estimate the coverage gap and the root causes for it.

Data will be gathered through a survey among 645 Roma households with minor children reporting cases of not immunized or partially immunized children, and will be cross-checked against the records of the Primary Health facilities for immunization. Focus group discussions will be conducted with Roma population and health workers from immunization facilities to understand the causes and barriers to access immunization services, and develop more effective strategies. Parallel to the survey, the state health budget for the immunization program (from year 2006 to year 2008) will be analysed, in order to estimate the allocation and expenditures for this Program in Macedonia. Findings from the survey and budget monitoring will be used as a basis for proposing specific measures with budget allocation for improving the immunization coverage of Roma children in Macedonia.

### Improving access to health care for Roma in Valjevo

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Improving access to health care for Roma in Valjevo is a project conducted by the Roma Center for Democracy Valjevo and funded by the Open Society Institute's Roma Health Project. The project was conducted in collaboration with the Municipality of Valjevo, Health Center Valjevo, and Roma Radio 'Tocak'. The overall goal of the project was to 'localize' the national level policy adopted within the framework of the Decade of Roma Inclusion and promote its practical implementation at local level.

The project methodology involved different tools: promotion of health within the Roma communities, advocating for local policy implementation, setting up the instruments for implementation, conducting a campaign targeting local health institutions on the health rights of Roma in order to address stereotypes and discrimination of Roma in the area of health, and conducting a Roma health survey.

Aiming to create a qualitative local action plan, we conducted a survey about Roma health in Valjevo using qualitative (focus groups) and quantitative methods on the representative sample including 340 Roma persons, and we obtained information for 1307 Roma. The presentation will discuss the results of this survey. In addition, the presentation will also address the following outcomes of the project: establishing and activating the Municipality Commission for monitoring and implementation of the Roma Decade in Valjevo; informing more than 350 Roma individuals about TB, HIV and cancer; providing the opportunity of medical check-ups for more than 150 Roma people; assisting Roma families to obtain health insurance, and conducting a health media campaign reaching out to at least 4000 Roma individuals.

### Small area-level inequalities in health care utilization in Hungary after correcting for health needs and taking into account the percentage of Roma population

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#### Objectives

The objectives of our study were (i) to assess the small area-level inequalities in health care utilization in Hungary and (ii) to explore the relations between health care utilization and some individual factors as well as small-area level social, economic and health care capacity factors.

#### Methodology

For our analysis, we used data for 2007 from the National Insurance Fund Administration for major diagnostic groups (total, cardiovascular, cancer and other type) in two different

health care forms: one day hospital care and active hospital care. The outcome variable was health care utilization expressed in small area-level average of DRG cost-weighted. Individual factors used in the analysis were age and gender; on small-area level we used data on health care capacity, socio-economic situation, and small-area level health needs. For the statistical analysis, we used multilevel linear regression modelling. Our strategy for model building consisted of the following steps, first we put in the model the small area-level percentage of Roma population, then we corrected for individual health determinants such as age and gender, then for small-area level mortality and county level disability

estimates; then for small area-level social and economic variables and as the last step we corrected for health care capacity measured at the level of small area.

#### Results

According to our study, both individual and area-level variables played a role in the inequalities in health care use in Hungary. These inequalities showed different patterns in the different diagnostic groups and form of care. The percentage of area-level Roma population showed negative relationship with health care utilization in the case of one day hospital care for cancer after controlling for all the other variables.

## 5.8. Workshop: Scale and impact of health professional mobility in Europe: findings from a research project (2009–2011)

*Chairs: Matthias Wismar, European Observatory for Health Systems and Policies, and Walter Devillé, The Netherlands*

**Organizer: European Observatory for Health Systems and Policies**

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Health professionals have always moved between countries in Europe. Concerns about the scale of movements and their impact are however increasing. New patterns of disease, new technology and increasingly global markets have multiplied pressures on health systems making workforce planning increasingly challenging. Policy makers and managers need to respond but robust data on health professional mobility (HPM) and its impact is scarce. The workshop will address this information gap by presenting results of the pan-European research project PROMeTHEUS co-funded by the European Commission, which covers data for EU27 and case-studies of European countries.

Global preliminary results from the case-studies and specific preliminary findings from Finland, Poland, and the UK will be presented reflecting the perspectives of source and destination countries. As a cross-country mapping exercise, extensive collection of quantitative and qualitative data will provide evidence on the extent and directions of HPM, and on the observable impacts of mobility on national health systems, their functioning and long-term perspectives.

The workshop's first part will give the broader, general picture (presentations 1 and 2), while the second will zoom in on national experiences with HPM (presentations 3–5).

### Impact of health professional mobility in Europe: what do we know?

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#### Background

Concerns about health professional mobility (HPM) and its impact are growing. Health systems face multiple internal pressures which combined with globalizing labour markets make workforce planning increasingly challenging. Policy makers and managers need to respond but evidence-based insight into HPM is limited.

#### Methods

Qualitative research: extensive primary and secondary data collection and analysis were carried out in 19 countries.

#### Results

Preliminary results from 19 case-studies will be presented reflecting major questions facing policy-makers and researchers on the impact of HPM. The question of whether HPM influences health outcomes will be explored. With 3000 Polish doctors registering to practice in EU15; 1 in 7 nurses in Great

Britain, Ireland and Austria being foreign-born; and 10 000 Serbian health professionals working abroad, impacts on health services delivery and shortages/surpluses of labour are bound to occur. Less obvious, however, is whether HPM affect health outcomes, and if so, how this may be measured. In the context of recent EU enlargements, regional effects of HPM will also be examined. Cross-border flows can compensate each other when gaps caused by emigration are filled by foreign entrants, but can also displace scarcity to the exporting country and lead to deteriorating health services there. Individuals' freedom to move may conflict with the needs of health systems. Demographically, migrating young doctors/nurses may rejuvenate the workforce of destination but leave an ageing workforce behind. These patterns raise many questions. At national level, priorities of accessibility, quality and financial viability cannot ignore the availability of a skilled health workforce. HPM affects self-sufficiency, workforce planning, and overall sustainability of systems and services. At EU level, inter-dependence between Member States is evident. Are EU countries competitors or colleagues in a global labour market? With huge diversity across the EU in the content of medical training, tasks performed by professions, and revalidation systems, HPM poses challenges in terms of guaranteeing quality of care and patient safety.

#### Conclusion

Commentators agree that little is known about the realities of HPM and its significance for European health systems. With material collected during 2009 across Europe, the PROMeTHEUS case-studies will bring forward new elements to improve our understanding of these issues.

### Characteristics and magnitude of health professional mobility flows in Europe

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The mobility of highly educated health professionals as part of skilled mobility patterns has become an increasingly important issue in the European Union (EU). The recent enlargement processes, in which many Central and Eastern European country joined, gave access to the EU labour market, thus affecting and drawing attention to European health professional mobility (HPM). Dynamically changing migration flows of health professionals seem to evolve in Europe, determined and guided by many factors. Although the phenomenon of HPM evidently has effect on the national health system of member states and consequently on the health of the European

population, little information supported by valid and update data is available on the magnitude, composition, actual directions and features of the flows of HPM, let alone the main underlying causes and influencing factors, and the effect of HPM on the operation and quality of health systems. Data exist but due to problems such as differences in the data collected and in methodologies, lack of data, and data fragmentation, an accurate and comprehensive picture on what information we have, and on what conclusions can be made on the present situation of HPM to, from and within the EU, is missing.

Work Package 2 of the PROMeTHEUS project, co-funded by the European Commission, aims to address this problem. It has two main objectives. The first is to gather currently available data on HPM in the EU, testing and validating them, outline the current map of HPM in the EU, and identify the main gaps and problems regarding available data and its collection. The second objective is, based on these experiences and findings, to conclude a feasibility study on a sustainable and useful EU data collection system that could effectively support decision makers on HPM related issues. The presentation will introduce the preliminary results of the data collection. Global data and information on HPM will be gathered from 32 countries, including 5 non-EU countries. Data are provided by country correspondents and informants, and also gathered from national offices responsible for data collection, registration, etc. The work is in progress and the presentation will demonstrate the first results on the characteristics and magnitude of HPM flows in the EU.

### Health professionals' mobility in Finland

Hannamaria Kuusio

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#### Background

The paper aims to examine international inflow and outflow of health professionals in Finland and its impact on the Finnish health care system. Formerly, Finland was a source country of health workforce. However, Finnish health care organizations have recently increased the recruitment of foreign health care personnel due to shortage of labour in health sector.

#### Methods

Data on the inflow and outflow of health professionals were obtained from the National Supervisory Authority for Welfare and Health and from the Employment Survey Register maintained by Statistics Finland. In addition, senior experts on professional and workforce migration from governmental agencies were interviewed on challenges and forthcoming actions regarding Finnish migration policies in the health sector.

#### Results

According to the study the direction of workforce mobilization has changed during the last few years in Finland. The inflow of the foreign born health professionals has increased paralleling the decreasing outflow of the Finnish professionals. By the end of 2006, 3499 foreign health professionals had been granted a license to practice as a health care professional in Finland. Over 30% of them were not working. Regarding the outflow, nearly 6500 (about 5%) Finnish born physicians and nurses worked overseas in 2006.

#### Conclusions

The number of non-employed foreign health professionals who had been granted a license to practice as a health care professional in Finland is surprisingly high. Further research on factors explaining low employment rate is needed for establishing measures for recruiting these professionals back into the active workforce.

### Migration of health care personnel: case study from Poland

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#### Background

The accession of Poland into the European Union (EU) has had a considerable impact on the migration process of medical personnel, becoming a serious political and social issue. Low pay, difficulties in accomplishing professional development and personal costs confronted with better income, job satisfaction and career opportunities are driving forces for outward migration. The scale and impact of the migration phenomenon are constantly being monitored by different institutions including the Polish Ministry of Health.

#### Methods

A search of databases related to migration of Polish health care personnel was carried out using several searching engines (Google Scholar, PubMed, Medline, Cochrane Library, EMBASE, Science Citation Index and Web of Science and Academic Search Complete), as well as OECD and EUROSTAT. Furthermore, specific web pages of professional organizations within the EU were searched, including physicians and nurses chambers, and the Polish Ministry of Health whose prominent representatives were interviewed.

#### Preliminary results

Between 2003 and 2006, the number of doctors employed in Poland decreased by more than 10 000, with almost 96% ( $N=9577$ ) occurring in 2005. In 2006, there was a deficit of 4000 doctors and 3500 nurses. Polish health care units suffer especially from the insufficient number of specialists in anaesthesiology and intensive therapy (with a lack of 1000 specialists in 2007).

#### Conclusion

Initial findings point to a growing deficit of medical personnel in Poland due to outward migration, making the access to physicians more difficult. This process continues unabated constituting a heavy burden on the Polish health care system. Ageing of medical personnel and a generation gap are additional serious concerns. Effective remuneration policies in the Polish health care sector are required in order to improve the current situation.

### Migration of health professionals: UK case study

Ruth Young

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The UK National Health Service (NHS) has a long history of employing internationally qualified health staff, mainly from outside Europe. But European sources have recently started to become more important. First, the UK laid down a significant European 'migration platform' (e.g. in Spain, Germany, Italy, Greece, Poland) while it was pursuing its active international recruitment programme pre-2006. Second, mobility generally has grown following the 2004/2007 EU enlargements—as illustrated by professional registration numbers particularly from CEE countries (e.g. Poland, Bulgaria, Romania). The relatively fewer EU migrants still equated, therefore, to thousands of additional NHS staff in 2007 compared with 2000; with the sheer variety of countries and professional cultures represented making workforce integration equally, if not more, challenging than for other ostensibly more significant movements (India, Philippines, Australia, etc.). In addition, there is an on-going need, in the face of greater immigration restrictions on migration from outside Europe, of certain professions (e.g. midwifery) and labour markets (e.g. South East England) potentially to supplement

workforces using European sources. Certain professions (e.g. dentistry) are also more heavily reliant generally on European migrants. This presentation will detail the scale of Europe–UK mobility; and outline some potential impacts (e.g. on services and health care organizations—stemming from issues of ‘real’

equivalence of training and experience, language and communication, human resource challenges, etc.). In particular the presentation will highlight the lack of concrete research regarding such impacts.

## 5.9. Performance indicators

### Setting policy: the use of population impact measures Arpana Verma

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#### Background

Policy-making is under the influence of bureaucratic and political processes often not utilizing evidence-based methodology. Population Impact Measures (PIMs) were identified as a potential presentation method. They have the advantage of being measures of absolute risk relevant to the whole population; that is they identify actual numbers of individuals in a population who will either be at risk of a health outcome, or who will benefit from an intervention. This work was undertaken as part of the EURO-URHIS project (<http://www.urhis.eu>).

#### Method

Examples of two urban health problems were chosen to work with: the risk of cigarette smoking in the causation of asthma, and the benefit of a methadone treatment programme in reducing the mortality from drug use with heroin. Calculations were made of the population impact of both of these examples, and presented for discussion at two EURO-URHIS meetings.

#### Results

Calculations indicated that 61, 1198 and 7723 asthma cases in Manchester City, Greater London and England, respectively each year, were attributable to smoking prevalence of above 20%. If the methadone treatment uptake rate is increased from the current situation to 90%, it is expected that 91, 1838 and 9612 heroin user deaths would be prevented in Manchester City, Greater London and England, respectively each year. The differences between the figures reflect only the differences in the population sizes as asthma incidences are assumed to be same for all the three locations.

#### Conclusions

Population Impact Measures translate two types of information, local data and research findings, into real numbers in a population who are at risk or who might benefit from an intervention, and this may help policy-makers in evidence-based decision-making. It is possible to make measures of the Population Impact of risks and interventions, although for some risks and benefits the data required are difficult to obtain. Training will be required for policy-makers to understand the requirements for data collection, methods of calculation and implementation of the measures.

### System performance and community impacts: using the national PH Performance standards

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#### Issue

Since their introduction at the 2007 EUPHA Annual Conference, the National Public Health Performance Standards (NPHPS) and the 10 Essential Public Health Services have been of interest to European public health professionals as a means to define public health, measure

system capacity to perform basic public health functions in every community, and stimulate quality improvement in areas of deficiency and ineffectiveness. This presentation will share recent summary data from the application of the performance standards in 26 states within the US.

#### Results

The cumulative data from the NPHPS reveal that public health agencies at the local and state level vary considerably in their ability to perform all 10 essential services. For example, public health agencies were only meeting half of the model standards for surveillance of infectious and chronic diseases, and environmental hazards. Interestingly, state health agencies were less likely to perform well at delivering the 10 essential services than were local health jurisdictions. Further investigation has shown that public health agencies achieved many of their stated objectives for using the National Public Health Performance assessment tool, including identification of areas for improvement, building awareness in the community of public health, building stronger collaboration among partners, and tangible commitments for strengthening their public health system. Importantly, data has shown that using the NPHPS has impacted public health systems by increasing the sharing of resources and staff among partner organizations, more coordinating decision-making, and working cooperatively on seeking grants and other funding opportunities.

#### Discussion

These results suggest that EUPHA members would benefit from using the NPHPS as a system-wide assessment and quality improvement process. Adapting the CDC assessment tool, its methods have been achieved in various national jurisdictions. The CDC has begun an effort to fund pilot projects in other countries to assess the effectiveness of applying this tool and the 10 essential services. The goal is a common understanding of what constitutes a high performing public health agency serving any community in the world.

### Implementing public health performance standards in Israel: a systems approach

Ehud Miron

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#### Issue

Public Health Performance Standards (PHPS) play a vital role in improving the quality of public health organizations (PHO). This presentation explains the systems approach of applying the National Public Health Performance Standards Program (NPHPS) developed by the Centers for Disease Control and prevention (CDC) to public health agencies in the northern region of Israel.

#### Problem description

Ever since their conception on the basis of the 10 Essential Public Health Services (EPHS) the NPHPS have been a topic of interest for PHOs at different levels. This project will examine the current status of EPHS performance at local level in the northern region of Israel as defined by the Ministry of Health.

### Methodology/results

The basis for instrument adoption will be the ‘Local Public Health System Performance Assessment Instrument ver2.0’ developed by the CDC. After assessment we propose to analyse the results and together with feedback information collected from the participants in the assessment we will examine the need for local adjustment of the NPHPSP. We propose to start routine performance assessments on the basis of NPHPSP using a locally adjusted model measurement. The study will also collect data on local variables contributing or hindering adoption. The main focus will be the application of the instruments as a pilot-study before consolidating national implementation of PHPS and the development of an instrument that will be locally valid. We also expect to obtain information that will serve as a basis for further studies evaluating the performance of PHOs.

### Conclusions/discussion

The process of performance measurement will initiate and promote ongoing quality improvement that increases efficiency and performance, decrease waste, promote cost effectiveness, and improve population health outcomes. We will discuss the benefits of adapting NPHPSP to improve the performance of PHOs in your country using Israel as an example.

### Public health driven targets in Carinthia/Austria based on a health policy framework

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The field of Public Health is a ‘cross-sectional issue’. Traditionally, the provisions of social insurance law in Austria were strongly orientated towards a curative approach, whereas the tasks of the public health service were essentially limited to sanitary supervision and providing specialist advice to authorities, or linked to individual preventive programmes. The resulting vacuum with regard to modern concepts for health promotion and prevention was countered with the aid of a series of legislative initiatives. Until now this initiatives had no results in the direct relationships or health status among citizens, patients and health professionals. The vision to introduce a new view to the health system in Carinthia requires the development of a vision for health, a policy framework for all sectors, a process of target formulation that incorporates widespread stakeholder involvement, the creation of appropriate incentives and intelligence gathering. To face this essential challenges the government of Carinthia decided to develop a special health policy framework and health targets to advance the change process. The policy framework and the targets are viewed as a means of defining and setting new priorities in Carinthian health care, creating high-level political and administrative commitment to particular outputs, and providing a basis for follow-up, continuous management and evaluation. The contribution presents the developing process, the Carinthian health policy framework and the derived health targets for groups (e.g. vulnerable groups) with a special focus on the determinants of health. It gives an example not only for the start into a change process of a health system with a traditional curative based approach (like in many of the old EU countries), but also for systems in a process of a total reorientation like systems in South-Eastern Europe, which should learn from the cases of the old countries.

### Improving an health monitoring system through performance indicators in the Italian Health Service

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### Background

The Italian Constitution reserves to the central government the exclusive power to set the benefit packages or ‘essential levels of care’ (LEA). The LEA identify the health services supply to be guaranteed by public coverage, intended to realize a measurable ‘unified protection’ of the health needs. For such reason, it is necessary to identify mechanisms of monitoring the health supply performance in a perspective of universalism and fairness of access.

The aims of this research were to:

1. identify the indicators used to monitor the health systems performance
2. identify criteria for validating the indicators
3. validate LEA indicators

### Methods

The first stage of the research intended to identify the indicators mainly used in monitoring performance, has been focused on the literature review. We look through official websites of different countries and main browsers, using these keywords: ‘benefits package’, ‘health indicators’, ‘health system performance’, ‘performance indicator’, and ‘performance measurement’. The analysis of each indicator was based on the methodology used by the Italian Observatory Health Report concerning the rationale of the indicators, the sources of data and the pattern used.

### Results

At the beginning it was identified a list of 108 indicators (including 72 LEA indicators), but we took into account just those 53 which were used in at least 5 countries. The final stage of the research concerned the validation of the indicators so identified through the Delphi method/Rand scale. At the end 47 indicators were validated by the Expert Panel (20 members).

### Conclusions

The dashboard identified contains high-level indicators useful in measuring the National Health Service performance and in identifying the priorities and weaknesses to improve health care planning and results. The indicators can also be used for measuring the sustainability of building projects, the capability of different actors and the state of different regions in providing health care.

The results presented here are based on the project ‘SIVEAS’ which is funded by the Ministry of Work, Health and Social Policies (MoWHSP). The research project for the ‘international evaluation of the LEA indicators set’ is the result of the collaboration between the MoWHSP (SIVEAS group) and the Catholic University of Rome (the National Observatory on Health Status in the Italian Regions).

### Measuring the performance of public health agencies in Israel

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### Issue/problem

Over the next few months, the government of Israel will implement public health performance standards (PHPS) to assess and improve the performance of public health organizations (PHO) in the northern region of Israel.

### Problem description

The performance standards project in Israel uses the National Public Health Performance Standards Program (NPHPSP) developed the US Centers for Disease Control and prevention (CDC) to assess the performance of the PHOs in northern Israel. This presentation discusses the results of assessment.

### Methodology/results

The Local Public Health System Performance Assessment Instrument developed by CDC will be adapted and translated

to fit the PHOs in northern Israel. A team of experts from CDC and other organizations will train medical officers from participating PHOs on implementing PHPS. Performance of PHOs will be measured using a 5-point scoring methodology used in the instrument. The experience of participating agencies with PHPS will be evaluated using a mixed methods approach. The standards will assess the performance of participating on various factors including, but not limited to, preparedness, resources available, infrastructure, public health services delivered, and strategic planning. PHPS will be validated among participating PHOs using quantitative research methods. Validation will serve to implement the standards on a national level.

### Conclusion/discussion

Implementing performance standards is an effective way to improve the performance standards of PHOs and creating accountability. We will discuss the performance of participating PHOs in northern Israel, and identify advantages and barriers to implementing standards. This project serves as an example for European nations that plan to improve the performance of their PHOs using a performance standards framework. The process of performance measurement will initiate and promote ongoing quality improvement that increases efficiency and performance, decrease waste, promote cost effectiveness, and improve population health outcomes.

## 5.10. European public health

### Self-rated health in Slovenian adult population

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#### Background

Self-rated health is established indicator of population health status. It is predictive for increased morbidity and mortality. It has been widely investigated throughout Europe, whilst information for Slovenia is limited. We aimed to investigate distribution and determinants of self-rated health in Slovenia and to identify the subgroups at risk for poor self-rated health (PSRH).

#### Methods

The study was based on national health behaviour surveys database in adults aged 25–64 years. Questionnaires were sent out to 15 379, and 15 297 participants in years 2001 and 2004, respectively. Overall response rates were 64%, and 57%, respectively. A total of 9009 questionnaires in 2001 and 8321 questionnaires in 2004 survey were eligible for analysis of self-rated health. The main observed outcome was PSRH. Logistic regression was used for relating several determinants to this outcome in 15 246 participants.

#### Results

The global prevalence of PSRH was 9.4% in 2001, and 9.6% in 2004. Odds ratios (OR) for this outcome were highest in comparison to baseline groups in participants aged 50–59 years (OR<sub>50–59</sub> vs. 25–29 = 3.61,  $P < 0.001$ ), in divorced participants (OR<sub>divorced</sub> vs. widowed = 1.61,  $P = 0.015$ ), in participants with lowest educational level (OR<sub>uncompleted primary</sub> vs. university = 4.19,  $P < 0.001$ ), in unemployed participants (OR<sub>unemployed</sub> vs. employed = 2.47,  $P < 0.001$ ), in participants from lowest self-classified social class (OR<sub>lower</sub> vs. upper-middle = 4.93,  $P < 0.001$ ), and in residents from Eastern Slovenia (OR<sub>Eastern</sub> vs. Western = 1.29,  $P = 0.001$ ).

#### Conclusions

The prevalence of PSRH in Slovenia is lower than in most newly joined members of European Union while in line with many developed countries. Population groups at highest risk for PSRH are those over 50 years old, divorced, those with a lowest educational level, residents of Eastern Slovenia, and particularly those with lowest socio-economic status. These findings are consistent with other findings related to non-communicable diseases and mortality in adult Slovenes.

### Public Health Research in Republic of Macedonia as an essential public health function

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Analysis of good governance in public health sector in RM was performed by developing and applying an instrument for evaluation of 10 essential public health functions (EPHF) that are responsibility of health authorities, in order to identify 'grey zones' and provide recommendations and directions for improvement.

The analysis has been performed using the standardized questionnaire developed by US CDC & PAHO, translated and adapted to be used in Macedonian context. The instrument incorporates 11 EPHF and outlines 49 indicators that are evaluated through answers on questions for measures and sub-measures in the defined area. The survey was performed in three stages: translation of the instrument, pre-testing on representative sample of government officials and necessary adaptations made to be used in Macedonian context; interviews with three groups of respondents—central government officials, representatives of government institutions at local level and representatives of NGO and Summary of the results and preparation of final report, including recommendations for remedial activities.

Analysis of EPHF#10 Public Health Research shows 'minimum performance' by all three groups of respondents. There is partially developed public health research agenda, and key stakeholders are only exceptionally involved in research. There is existing research capacity, but lacking is interdisciplinary approach, regular evaluation of the research priorities, transparency in results dissemination and sharing of results with those concerned with the problem. In the subsequent SWAT analysis, activities for development of institutional capacity for PH research are identified as strength, weakness is in the absence of the agenda for PH research, while threats, or the biggest 'gray zone' to be addressed by the health authorities are seen in decision making that is not evidence based.

### Cross-border health activities in European regions: Good practice for better health

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#### Issue

Health-related co-operation between neighbouring countries has a long tradition in the European Union (EU), especially

in transfrontier structures known under the label of Euregio/ Euroregion. The enlargement of the European Union has shown an increase in patient mobility and the use of cross-border health services. Border regions call for a joint course of action to solve existing problems in the health sector.

#### Description

The EU-funded project 'Evaluation of border regions in the European Union' (EUREGIO) carried out a systematic inventory analysis of cross-border health-projects. It is based on written surveys among 53 Interreg IIIA offices, 67 Euregios and 328 project bodies. The responses of 122 health projects were considered. The intention was to create a Europe-wide transparency of health related activities in border regions.

#### Results (effects/changes)

A total of 37 Euregios or similar structures established health-relevant working groups, circles or projects. The cross-border health projects cover a wide spectrum of issues, e.g., education and training, patient care, prevention and disaster control. Four official criteria for cooperation (joint project development, implementation, staffing, financing) are met by the great majority of projects.

#### Lessons

Cross-border cooperation in health is underrepresented in many regions. The project results point to great potentials which should be further developed both in terms of quantitative and qualitative aspects. Recommendations are given for project actors and stakeholders. The exchange of results, the knowledge about promoting and hindering factors and also the exchange of experiences provide an important contribution to the success of future activities.

### Tradition in the modern era—challenges for health promotion. Transnational empirical research

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#### Background

The present multidisciplinary research has targeted the lifestyle and value choice of families in the so-called 'Visegrad countries' (Hungary, Poland, Czech Republic, Slovakia) from the aspect of tradition (T) and modernity (M). This scientific work is an integral part of understanding health and gaining knowledge on the social and demographic factors influencing healthy lifestyle (nutrition, leisure time, family habits and cultural habits). Through measured (independent) and 'created' (dependent) variables the category of the 'traditional' and the 'modern' person was created and characterized along their value system.

#### Methods

Our first research method was a process analysis of family, its social environment, social history and family functions, lifestyle and values. The second method was a structured assisted questionnaire interview on 500–500 families/households in each country.

#### Results

According to the independent variable (self-categorization) the international sample was dominated by 'traditional' people. Fine analysis through the dependent variable has revealed a large group with mixed (traditional and modern) practices (T: 21.5%; M: 14.0%; Mix: 64.5%). Traditional people value family care (75.7%), parenthood (75.5%), marital cooperation (73.2%); family (88.2%), work (44.4%); children (70.9%); relatives (29.8%); morals (20.1%); religion (16.5%). Modern people value respect (29.9%), sensual pleasure (12.9%); inner harmony (40.9%), friendships (27.9%); freedom and independence (25.4%); travelling and knowing the world (21.4%), career building (5.1%). Each group had distinctive socio-economic characteristics.

#### Conclusions

The historical social development of the observed countries has much in common and huge differences from the Western-European countries. A unique dual social structure has affected and affects still the lifestyle and value choice of people. The lay and the scientific characterization of tradition and modernity correlates and shows the dominance of traditional choices. This implies that to be more effective, health promotion needs different, more society-specific measures.

### Solutions for improving health cooperation in border regions (EUREGIO II)

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#### Issue/problem

Challenges like access to health services, health inequalities between and in the EU Member States, the demographic change and new health threats stress the relevance of activities to lower health risks and to optimize health services. At the same time it becomes more and more accepted that spending in health is not necessarily a burden but can be an investment for wealth, economic prosperity and employment. The EU INTERREG IVa programme offers the opportunity to link health issues with strategies for regional development within the specific context of activities in cross-border regions.

#### Description of the problem

Meanwhile, a lot of experiences with INTERREG IVa projects exist, but the experiences vary across the EU. Promoting cross-border activities and mutual learning not at least in the field of health services and social protection thus is an important issue. Changed information and support needs have to be identified and supportive tools have to be developed. The EU funded project 'Solutions for improving health cooperation in border regions' (EUREGIO II; period: December 2008 to November 2011) aims at stimulating and promoting cooperation in border regions by fostering the usability of various existing instruments and methods.

#### Results (effects/changes)

EUREGIO II analysis the information and support needs of stakeholders involved in respective projects (public officials, health service organizations) or with responsibilities for border regions. It supports the exchange of information and experience on good practice as well as the establishment of networks by developing and delivering specific tools and resources:

- A handbook for the effective use of EU Structural Funds (especially INTERREG)
- A guideline for Health Technology Assessments in border regions
- Legal expertises about the exchange of data, information and tort rights in the provision of cross-border health care services.

#### Lessons

The deliverables of EUREGIO II visualize existing shortcomings and promote the effective use of EU INTERREG IVa Funds by providing information about INTERREG IVa in general, hindering and promoting factors for good practice, practical hints and tools – not only for less experienced stakeholders.

### Setting up a European Health Examination Survey

Hanna Tolonen

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Comparable, high quality health indicators like prevalence of hypertension, mean total cholesterol levels and BMI are not

available in the European level. These indicators can be obtained only from health examination surveys (HES). The importance of and need for these health indicators has been recognized in most European countries as well as by the European Commission. DG Sanco has been working towards the European Health Examination Survey (EHES), which would provide comparable, high quality health indicators from all Member States (MS) and EFTA/EEA countries.

The feasibility of the EHES was evaluated by the FEHES Project during 2006–2008, which also defined many EHES standards. During the next 2 years, the EHES Reference Centre (EHES RC) will be established and about 10 national HES pilots will be carried out with support from the EC.

The EHES RC will be responsible for the overall coordination of the EHES pilot, maintaining and further developing the EHES standards, organizing training, and providing support

for the national survey organizers. It will develop a data transfer, quality control and reporting system for the EHES. Additional to that, the EHES RC will prepare, in close collaboration with the national experts, HES manuals for all European Union MSs.

The EHES pilots will be carried out in the countries which have a plan to conduct a national HES in the next 3 years. In these countries, the full-size national HES will be planned. A pilot survey will be conducted to test the feasibility of EHES standards in these countries, to gain experience and update the EHES recommendations based on the pilot evaluation. After 2 years, we should have a good basis for a sustainable EHES. A standardized national HES will be conducted in at least 10 MSs and the other MSs will start preparation of their national HES.

# PARALLEL SESSION 6

Saturday 28 November, 10:30–12:00

## 6.1. Urban health

### The use of data in urban health policy-making: a qualitative study

Arpana Verma

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#### Background

This study was part of the EURO-URHIS project (<http://www.urhis.eu>) to investigate how data is used to inform decisions on urban health, the use of aggregate tools in decision-making and the barriers in using evidence based policy-making within several European cities.

#### Methods

Semi-structured interviews were undertaken with representatives from nine European countries. Prior to the interview we presented a short introduction to aggregate measures to familiarize the interviewees with aggregate measures used in health policy. Interviews were taped and transcribed. This report describes the quantitative data that were gathered during the interview. Where more than one interviewee took part in the interview we recorded quantitative data at the city level so we only had one response for each city.

#### Results

Interviews were conducted in nine cities in eight European countries and a total of 20 subjects participated in the interviews. The participants represented 16 different institutions 9 of these institutions had been restructured in the past 5 years. The average number of years in post was 6.75 however this ranged from less than 1 to 22. Of all subjects, 8 (40%) were female and 12 (60%) were male. Six cities are able to make policy decision for the health of their population. All cities used standard measures such as prevalence, incidence, mortality and life expectancy to inform decisions. Very few cities used more complex measures such as DALYs, QALYs and health impact measures. All cities commented that they used other data in addition to those on the list. Often the 'other' data that was used was survey data but most surveys were conducted at the national level and data for the urban area was sparse.

#### Conclusion

In all cities aggregate measures were well received and participants thought that aggregate measures could help in informing decision makers. However, the respondents felt that they would need help to construct, interpret and communicate these measures to politicians and decision makers. More research is needed to evaluate how we can improve the use of data in informing urban health policy.

### Aromatic hydrocarbons outdoor and indoor pollution in Rome

Umberto Moscato

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#### Background

Citizen's exposure to environmental aromatic hydrocarbons (HA) can develop chronic poisoning over months or years, and result in severe bone marrow depression or chromosomal aberrations in lymphocytes. Aim of this study is to evaluate a new monitoring model, of easy applicable execution also in

other European urban realities, in order to assess population exposure or to promote risk management of outdoor and indoor benzene, toluene and xylenes (BTX) pollution.

#### Methods

Outdoor and indoor air sampling (cheap passive samplers) was carried out, during several phases, in about 150 sampling sites, for a duration of 2 days a month, from January 2006 to November 2008. We calculated descriptive statistics, correlation coefficient of indoor/outdoor HA levels and, moreover, a multiple linear regression was conducted (indoor BTX levels as dependent variable; BTX outdoor levels, air velocity, outdoor temperature and dampness, home smokers presence as covariates). A geostatistical analysis with aleatory functions of K-order, to assess spatial BTX distribution, was carried out.

#### Results

We detected high level concentrations of benzene (outdoor ranged from 1.7 to 23.5  $\mu\text{g}/\text{m}^3$ ; indoor from 2.5 to 33.4  $\mu\text{g}/\text{m}^3$ ), of toluene (outdoor: 1.3–461.6  $\mu\text{g}/\text{m}^3$ ; indoor: 16.7–185.3  $\mu\text{g}/\text{m}^3$ ) and of xylenes (outdoor: 1.1–72.2  $\mu\text{g}/\text{m}^3$ ; indoor: 14.8–320.2  $\mu\text{g}/\text{m}^3$ ). Correlation coefficients of indoor and outdoor BTX levels were, respectively, 0.932, 0.437 and 0.892 ( $P < 0.0001$ ). The multivariate analysis showed a strong association, particularly, between indoor toluene with benzene outdoor levels (from 0.591 to 0.619,  $P < 0.0001$ ). Linear 2D iso-value maps of BTX diffusion have been drawn by means of geostatistical data elaborations (Indicative Goodness of Fit = 0.0905; K-order Rank = 1; Jackknife = 1.079858).

#### Conclusions

The results suggest that exposure to BTX should not be underestimated since its acute, chronic and carcinogenic effects and that appropriate protective and preventive measures (e.g. city architecture and traffic planning, pollution assessment, policy strategies) are indispensable in order to promote risk management of BTX pollution.

### Health effects of particles in an urban environment with Saharan dust intrusions

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#### Background

Cities in southern Europe are often characterized by atmospheric dust intrusions from the Sahara desert. The presence of high dust concentrations for long periods of time raise concerns about adverse health effects.

#### Methods

We investigated the effects of particles (PM<sub>2.5</sub> and PM<sub>10</sub>) on total and cause specific daily mortality in the city of Madrid (Spain), during days with and without Saharan dust intrusions, between January 2003 and December 2005. Changes of effects between Saharan and non-Saharan dust days were assessed using a time-stratified case-crossover design.

#### Results

During Saharan dust intrusions higher risk of total daily mortality was found for PM<sub>10</sub>. An increase of 10  $\mu\text{g}/\text{m}^3$  in

PM10 with a lag of 3 days increased total daily mortality by 2.5% (95% confidence interval = 0.1–5.4%). In contrast, during non-Saharan dust intrusions higher risk was found for PM2.5, showing an increase of total daily mortality of 2.2% (0.1–4%) with a lag of 1 day, increased. Furthermore, higher risks for circulatory and respiratory mortality were again for PM10 during Saharan dust intrusions and for PM2.5 during non-Saharan dust intrusion days. No effects of particles were found for cerebrovascular mortality.

#### Conclusions

Saharan dust outbreaks may have adverse health effects. Current guidelines regarding the use of PM2.5 concentrations should be revised to the Mediterranean cities due to the days with intrusions of Saharan air. These days, concentrations of PM10 were revealed as an appropriate indicator of the effects on health.

### Benzo(A)pyrene emission in the cities of the upper Silesia industrial area in Southern Poland: 1980–2005

Justyna Kaźmierczak

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Polycyclic aromatic hydrocarbons (PAHs) significantly affect the health of human population, and benzo(a)pyrene (BaP) is considered to be one of the most potent carcinogenic substances.

#### Objectives

Thus, the aim of our study was to evaluate the level of benzo(a)pyrene in the atmosphere in administrative units of the Upper Silesia Industrial Area, and to analyse the changes in the time trends of pollution in the period 1980–2005.

#### Methods

The output data used in the study was obtained from the Provincial Sanitary and Epidemiological Station in Katowice city, which regularly carries out the hygienic evaluation of the environment. We calculated average annual concentration of benzo(a)pyrene for the administrative units of the Upper Silesia Industrial Area, i.e.: Katowice, Bytom, Dąbrowa Górnicza and Ruda Śląska. The joinpoint regression analysis was used to evaluate time trends of BaP pollution level.

#### Results

The obtained values of BaP concentration indicate that the allowable average annual concentration of the compound was significantly exceeded in all analysed administrative units. Over the studied period of time, the highest concentration of benzo(a)pyrene was recorded in Bytom (1985–531.4 g/m<sup>3</sup>) and Ruda Śląska (1980–366.3 g/m<sup>3</sup>). It should be stressed that in other cities, especially during 1980–1989, the levels of benzo(a)pyrene were very high (41.0–320.3 g/m<sup>3</sup>).

Favorable decreasing trends have occurred in all administrative units. Since the mid-1980s, the decrease of BaP annual level by 15% and 13% has been recorded in Katowice and Ruda Śląska, respectively. In Bytom, the annual decrease by 22% has been observed since the 1990s, whereas it was only 6% in the previous period. In Dąbrowa Górnicza, the 35% decrease was recorded over the years 1996–2000, but there occurred 44% increase of BaP annual concentration in the following years.

#### Conclusion

It is necessary to undertake pro-ecological initiatives aiming at the reduction of benzo(a)pyrene emission.

### Adverse health effects among people living in households or areas with problematic accumulation of rubbish: a population-based study, Belgium 2004

Edith Hesse

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#### Background

Chronic bronchitis and dermatitis due to exposure to household (HH) waste were found in refuse workers and ragpickers. A study found higher microbial contaminant levels in homes with indoor organic waste storage but not for non-separated waste storage. Few studies examine potential health impacts of exposure to domestic waste at population level. This study aims to assess the link between accumulation of rubbish in the living environment and chronic bronchitis and skin symptoms in the general population.

#### Methods

The study sample, from the 2004 Belgian health interview survey, consisted of 6530 HH and 12 945 individuals. Exposure was defined as bothering or problematic accumulation of rubbish at home during the past year or in the local area. The problem was reported by the HH reference person and attributed to all interviewees of the HH. The association between health outcomes and problematic accumulation of rubbish was assessed by multivariate logistic regression, adjusting for gender, age, socio-economic status (SES), urbanization level, number of persons per HH, reported exposure to exhaust gases in the local area, environmental tobacco smoke (ETS) and humidity at home.

#### Results

A total of 4.5% and 2.7% of people live, respectively, in local areas or in houses with problematic accumulation of rubbish. People with problematic rubbish in the area had higher probabilities to report chronic bronchitis: 1.94 (95% CI = 1.34–2.82) and skin problems: 1.59 (95% CI = 1.00–2.53). Adjusted ORs were, respectively: 1.64 (95% CI = 1.07–2.51) and 1.71 (95% CI = 1.00–2.92). Adjusted ORs for people with bothering rubbish at home were even higher, respectively: 1.71 (95% CI = 1.03–2.85) and 2.01 (95% CI = 1.08–3.74).

#### Conclusions

This study shows at population level a positive association between reported chronic bronchitis or skin diseases and problematic accumulation of rubbish in the living environment. The increasing insulation of buildings and the tendency to separate domestic waste at source might raise this risk. Bioaerosol health effects due to household waste merit further investigation in the general population.

### Water quality profile of an urban coastal zone in the north of Portugal. Influence of pollution sources, weather and water dynamics and sampling strategy evaluation

Alice Maia

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#### Background

Portugal has about 830 km of coastline with beautiful sand bordering by Atlantic. Bathing water quality is an important indicator of environmental quality and tourism development and is an issue of public health. A comprehensive assessment study of the coastal bathing water quality of the Concelho of Póvoa de Varzim was done by the local Public Health Authority, City Council and INSA.

#### Methods

The study was conducted in 15 contiguous beaches located upstream of an urban wastewater effluent during the bathing seasons of 2007 and 2008 and pretends to be the first part of a broader project with a total duration of 6 years, 3 years before and 3 years after the construction of a wastewater treatment plant. A total of 512 samples were processed. Regarding the future transposition into national law of the EU Directive 2006/7/EC this study aimed to search for faecal indicators as *Escherichia coli* and intestinal enterococci, and *Salmonella* spp. attending an historical presence of this pathogenic

microorganism in these waters, although not specified in the Directive. Tests were also done for hydrocarbons and anionic detergents. The results were evaluated according to month, tides, winds, precipitation and distance from pollution sources.

### Results

It was observed a statistical significant association between the microbiological indicators and the monitored parameters. The results for hydrocarbons and anionic detergents were below the recommended maximum. *Salmonella* spp. was detected on 23 samples including beaches classified as

Excellent by the new Directive, which compromises the idea of an absolute association between indicators and pathogens.

### Conclusions

This study emphasized the importance of Public Health in the assessment of bathing water quality, suggesting that routine sampling according to EU recommendations should be revised, defining health hazard indicators and implementing strategies on a beach-to-beach basis that strengthen public health surveillance systems and public information in order to enhance health prevention.

## 6.2. Workshop: Genomic literacy in the era of complex diseases—a challenge for European policies on Public Health Genomics

*Chairs: Angela Brand\*, The Netherlands and Arja Aro, Finland*

**Organizer: EUPHA Section on Public Health Genomics**

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“Human Ecology and Public Health” is the main theme of this Second European Public Health Conference. Human ecology explores not only the influence of humans on their environment but also the influence of the environment on human behaviour as well as human adaptive strategies to understand those influences better. Thus, human ecology is an interdisciplinary applied field that uses a holistic approach to help people to solve their problems and enhance potential within their near environments and closed ecologic systems. In this context, genomic literacy in the era of complex diseases plays an important role, since the complexity of diseases can only be understood by the close interaction between genomic and environmental factors including social factors. Furthermore, we nowadays know that our genomes are permanently changed by environmental factors (epigenomics) and that at the same time genomic factors are influencing our behaviour.

The workshop of the EUPHA section Public Health Genomics will (1) give an overview of the current state of knowledge in genomic research on chronic complex diseases and hereditary monogenetic disorders as well as their consequences for public health and health care practice, (2) contrast the rapidly increasing research findings with the limited genomic literacy of health care professionals and the general public, (3) underscore the importance of translating the findings from genomic research into health policies and health care applications, (4) describe the role of genomic literacy in the context of personalized health care being one of the biggest future challenges all European health systems have to face.

### Genomic literacy of research

Nicole Probst-Hensch

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### Issue/Problem

In the past genetic research was dominated by monogenetic disorders, i.e. diseases caused by highly penetrant, single gene mutations with a limited role of environmental factors. The predictive power of genetic testing for risk-associated mutations on the individual level is usually high for monogenetic disorders. Genetic testing for these disorders is routinely applied in health care practice by medical geneticists.

### Description of the project

In recent years, the main focus of genomic research has been on complex disorders, which are due to multiple genetic and environmental risk factors. Examples are coronary heart

disease, asthma and diabetes. Currently identified genetic variants for most complex diseases only explain a small proportion of the disease burden. The power of testing for high-risk genetic variants to predict the risk of complex diseases on the individual level is therefore very low.

### Lessons learned

As recent technical advances have made testing of multiple genetic variants affordable, the transfer of new knowledge on susceptibility to complex diseases to everyday medical practice is an important issue. At the same time, direct-to-consumer genetic testing for a wide range of low-penetrance variants associated with complex diseases is available through internet-based companies despite the low predictive value of these tests, the absence of proper evaluation of their clinical utility and often without appropriate genetic counseling.

### Conclusions

The first part of the workshop will contrast the status of knowledge on genetic testing for complex versus monogenetic diseases, illustrate the relevance to health care practice based concrete examples, and present direct-to-consumer approaches on the market.

### Genomic literacy of health care professionals and the general public

Murielle Bochud

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### Issue/Problem

The efficient translation of genomic knowledge on common chronic diseases into everyday clinical practice and public health represents an important challenge. It is expected that genetic tests will soon help diagnose, and predict the risk of complex diseases. As a consequence, most health care professionals will be asked about genetic testing by their patients. This new situation poses the difficult question of genomic literacy, not only of health care professionals, but also of the general public. The need for the lay people to understand genetic concepts in the framework of complex diseases is underscored by the growing availability of direct-to-consumer genetic testing.

### Description of the project

Genomic literacy includes knowing about benefits, risks, and limitations of genetic screening and testing, as well as the implications of genetic information. This implies knowledge about the terminology and technologies of modern genomics, the social and psychological implications of genetic testing on the individual being tested as well as on family members.

The piece of information that health professionals need to convey is not only highly complex, but also rapidly changing as new research findings accumulate.

#### Lessons learned

Yet, most health care professionals are not prepared to integrate the new insights from genomic research and the general public is not prepared to make informed decisions on such testing.

#### Conclusions

The presentation will provide an overview on the status of genomic literacy in the health care community and the general public, identify and discuss relevant gaps in knowledge about, and methods for the assessment of genomic literacy.

### Genomic literacy from a public health perspective

Angela Brand

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#### Issue/Problem

The role of genomic variants in complex diseases demands an assessment of genomic evidence in a systematic approach to close the gap between current genomic research and genomic literacy in health care and the general public.

#### Description of the project

Two barriers need to be overcome to initiate the process of knowledge transfer. First, the high predictive power attributed to genetic data not only by the public, but also by many health care professionals, is not justified for complex diseases. Information on low-penetrance genomic variants could be treated in the same way as environmental and behavioural factors such as social status, smoking, nutrition, etc. To efficiently transfer genome-based information and technologies into public health, a change in public perception of genomic data is needed. Second, the methodologies and frameworks applied to investigate complex diseases such as epigenomics and systems biology is hard to understand.

#### Lessons learned

Findings from genomic research and concepts like personalized health care need to be translated into a frame accessible to health care professionals and the general public.

#### Conclusions

In Europe, the need for an ongoing evaluation and processing of genome-based information and technologies has led to the establishment of an European and international Public Health

Genomics network. The two networks have the task to evaluate the role of genomics in health information, the ethical, legal, economic and social implications, the policies needed as well as training of health care professionals. This part of the workshop will present the European and international efforts in translating genome-based knowledge and technologies into health policies and health care systems.

### Genomic literacy in the context of personalized health care

Tomris Cesuroglu

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#### Issue/Problem

To combat with complex diseases, the focus is on promoting health and quality of life in aging populations, prevention, effective treatment and prevention of their complications. As a result, there is a paradigm shift in health care and medicine, from acute disease oriented approach towards increasing health status of individuals in the long term.

#### Description of the project

Personalized health care concept is a continuum of this paradigm shift, trying to make health promotion, disease prevention, early detection and treatment in the most effective way. It utilizes genome-based knowledge, combined with the advent of health information technology.

#### Lessons learned

In personalized health care the health risks and diseases of an individual can be assessed and managed with a holistic approach. The practice model developed by the GENAR Institute is an best practice example for it. As the models utilizing genome-based knowledge enter clinical practice, it is crucial for health professionals and the individuals to understand what is personalized health care and how information is utilized in it. This requires not only genomic literacy but also a new understanding of health literacy that enables individuals understand how they are developing complex diseases.

#### Conclusions

More complex assessment algorithms are required. Decision or management support systems utilizing information technologies will be one of the main assistants of health care practitioners in assessment and management of risks and diseases. Thus, in order to prepare health care practitioners and public for this kind of medical practice, literacy on information technologies will also be important.

## 6.3. Outpatient care

### Implementing innovation in Primary Care: an Italian experience

Lorenza Luciano

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#### Background

Since 2000, in Italy the General Practitioner (GP) Contract with the National Health Service has been changing towards increased participation of GPs in health care management to improve professional collaboration with other practitioners such as nurses and social workers. In Emilia Romagna (ER), a region in northern Italy, the Primary Care System has been reorganized with the institution of "Primary Care Units" (NCP) as main centres where GPs, nurses and other practitioners work together to deliver

comprehensive health care outside the hospital. The aim of this study is to analyse number, function and organization of NCPs in ER 2 years after the introduction of this new model in 2006.

#### Methods

A web-based questionnaire was administered to Primary Care coordinators in the 11 Local Health Authorities. The questionnaire explored the NCPs development in terms of GP participation, clinical organization, integration with other health care practitioners and chronic disease management.

#### Results

On 30 June 2008 there were 214 NCPs and 94% of total GPs (3013 on 3215) joined them; each NCP is composed of an average number of 15 GPs. In 159 NCPs, the GPs meet periodically for training courses and strategic planning. Only in 62 NCPs are clinical activities performed in a unique place, while other GPs continue to see patients in their own offices.

Only two NCPs provide nurse care. Chronic disease (diabetes–COPD–heart failure) management is implemented in several NCPs with different strategies.

#### Conclusions

The case of NCPs introduction in ER is certainly a leading model in Italy for primary care management but more efforts are necessary to develop further in this direction. From our analysis, we found that most NCPs are at this moment just a formal aggregation and a low percentage of them are engaged in integrated clinical activities. New strategies for implementing this model are requested.

### Physician density at municipal level and ambulatory health care consumption: a multilevel analysis

Johan Van der Heyden

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#### Background

Although there seems to be some evidence for a supplier-induced effect of ambulatory health care consumption, the quality of the studies is often poor, results are inconsistent and few studies distinguish between general practitioner (GP) and specialist care. The effect of physician density (physician-to-population ratio) on health care consumption taking into account crucial parameters such as the patient's health status and socio-economic position remains unknown.

#### Objectives

This study aims to assess the impact of the GP-to-population and specialist-to-population ratio at municipality level on the probability and the volume of GP and specialist contacts adjusting for population characteristics.

#### Methods

The study population consisted of 8931 participants (15 years and older) of the Belgian Health Interviews Survey 2004. Survey data were linked with information on the number of physicians per 10 000 inhabitants in the municipality of residence of the respondents. The influence of physician density on the use of ambulatory health care was assessed by multilevel analysis using logistic and Poisson regression models adjusted for age, gender, educational attainment and self-rated health at individual level and for degree of urbanization and region at municipality level.

#### Results

No significant association was found between consumption of GP care in the past 2 months (both probability of use and number of contacts) and GP or specialist density. The use of ambulatory specialist care did not vary significantly in function of GP density. The probability of a specialist contact and the number of specialist contacts were however significantly higher in municipalities with a higher specialist density ( $P$ , respectively  $<0.001$  and  $0.03$ ).

#### Conclusions

Whereas there is in Belgium no evidence that GP density affects the consumption of ambulatory health care, a higher specialist density seems to result into more frequent use of ambulatory specialist care, which may indicate that there is a supplier-induced demand. Additional research involving larger geographic units and reasons for specialist care may clarify this further.

### Use of and satisfaction to dental services after the Finnish oral health care reform

Jorma Virtanen

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#### Background

Dental services are provided by public and private sector in Finland. A major national oral health care reform to

reduce the out-of-pocket expenses was put into force in 2002. The aim here was to analyse the use of and satisfaction to the dental services before and after the reform.

#### Methods

Population surveys before (2001) and after (2004) the reform were conducted by the Social Insurance Institution and the National Institute for Health and Welfare. The use of and satisfaction to dental services during the previous 12 months in the public and private sector were asked. Age, sex and level of education served as Background variables. Data analysis included Chi-square test and linear regression modelling.

#### Results

The use of dental services among the elderly (born before 1946) in the public sector and among the young adults (born after 1955) in the private sector increased significantly. Generally, almost 80% of the respondents were satisfied with the services although a slight downward trend after the reform was observed. The private dental services were favourably appreciated especially among the young adults and the male participants ( $P < 0.05$ ).

#### Conclusions

The use of dental services increased in population groups previously not entitled to publicly funded care. A clear majority of the people was satisfied with their dental services. Close monitoring is needed to follow the long-term effects of the reform.

### Analysis of income differentials in outpatient health care in Stockholm using zero-inflated-poisson regression

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#### Background

Previous studies have shown varying degrees of horizontal inequality of utilization of health care in Sweden both regarding outpatient and inpatient care. The purpose of this study was to examine horizontal inequalities in utilization of health care in Stockholm County.

#### Methods

We linked data from a public health survey in Stockholm County 2006 ( $n = 30\,000$ ) to register data on socio-demographic Background characteristics and outpatient health care utilization in 2007. In order to account for the large number of non-users we used the Zero-Inflated-Poisson model (ZIP) to estimate the magnitude of the relation between income and the use of health care service when adjusted for need variables. The ZIP model is a two-part model with two regression equations: one that predicts whether a visit occurs or not and one that predicts differences in the frequency of visits.

#### Results

For both men and women we found a significant social gradient in frequency of General Practitioners (GP) visits favouring the lower income groups when taking need into account, but lower income groups also had a significantly higher probability of having no visits at all. Preliminary analysis show indications of a reverse association favouring the higher income groups when it comes to publicly funded private specialist care. We have no preliminary indications of any income differentials when it comes to other types of hospital outpatient care.

#### Conclusion

The preliminary results show that people from lower income groups have a higher probability of not going to the GP, but those who do go to the GP have a higher frequency of visits than do the higher income groups.

## Does waiting list active management in ambulatory care work? The results of a before-and-after study

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### Issue/problem

Waiting list management—in ambulatory as well in hospital care—is one of the most important issues in health care. Waiting list active management practices have been successfully applied in Denmark, Spain, and Sweden. The aim of our study is to evaluate the application of such a programme in cardiology outpatients.

### Methods

A controlled before-and-after study was performed in 2008–2009 on four ambulatory centres in Veneto Region. Our sample was: 746 outpatients (367 in the intervention—cardiology—and 379 in the control group—physiatry, respectively). Perceived quality of health care services was measured by administering an anonymous self-reported questionnaire.

### Results

We found that before the active waiting list management programme implementation, 52% and 41% in the intervention and control group, respectively, rated health care quality as “fair-good”. After the application of the active management programme, we found an increase up to 53.5% of self-reported quality in the intervention group versus a decrease to 34% in the control group, respectively. The application of the Chi-square test showed a statistically significance between the two groups as for the primary outcome (Chi-2: 5.74; df: 1; *P*-value < 0.05).

### Lessons

In many countries, waiting lists are associated with a low perceived quality and trust in health systems and patients in waiting list may result in poorer health status and reduced ability to benefit of care. As appropriateness in waiting list needs more comprehensive strategies, our experience—one of the first in Southern European countries—significantly outlines the importance that “do not leave the patient alone” is a determinant in improving patients’ experience of quality of care.

## Higher drop-out rate in non-native patients than in native patients in rehabilitation in The Netherlands

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### Background

Drop-out of a rehabilitation programme often occurs in patients with chronic non-specific low back pain of non-native origin. The exact drop-out rate is not known, however. Drop-out patients might have a health disparity compared with programme completers.

### Objectives

The first aim of this study was to determine the difference in drop-out rate between native and non-native patients with chronic non-specific low back pain participating in a rehabilitation programme in The Netherlands. The second aim of this study was to determine differences in reasons for drop-out between native patients and non-native patients.

### Methods

A retrospective study (*n* = 529) in patient files was performed in two rehabilitation centres and two rehabilitation departments of general hospitals. Patient files were checked for diagnosis, status of origin, sex, age and outcome, i.e. reason for finishing treatment. The difference in drop-out rate between patients of Dutch and non-Dutch origin was tested by Chi-square tests and logistic regression analysis, controlling for age, gender, type of rehabilitation institute and phase of the rehabilitation programme. The differences in frequency in reasons for drop-out between native and non-native patients (*n* = 99) were tested by Chi-square tests.

### Results

Drop-out among patients of non-Dutch origin (28.1%) was twice as high as among native Dutch patients (13.7%) (*P* ≤ 0.001). Drop-out occurred among one-fifth (18.7%) of the total patient population. In regression analyses drop-out was related to status of non-Dutch origin, treatment in a rehabilitation centre and the diagnostic phase of a rehabilitation programme. Withdrawal due to different expectations on the content of rehabilitation treatment occurred significantly more frequently in non-native patients (*P* = 0.035).

### Conclusion

Patients of non-Dutch origin drop out considerably more frequently than native Dutch patients. Furthermore, this study provided evidence that drop-out in non-native patients is related to different expectations regarding the content of rehabilitation treatment.

Keywords: Rehabilitation, Patient Dropouts, Low Back Pain, Minority Health.

## 6.4. Workshop: Injury epidemiology

### EUPHA section on Injury Prevention and Safety Promotion and EUPHA Section on Organizer: Public Health Epidemiology

Chairs: Johan Lund\*, Norway and Giuseppe La Torre, Italy

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Epidemiology is the backbone of injury prevention. It is “the study of the distribution and determinants of health-related states or events in specified populations” (Last 2001). Such studies are necessary for documenting the amount and distribution of injuries in the population for strengthening the priority setting in prevention activities. They also show the dose–response relationship, do our chosen preventive measures have effect, and to which extent? With limited economical and personnel resources, it is a need to give the policy and decision makers evidence based advices on where

to invest in prevention activities, and inform about which measures have effect.

During the last years the international literature has been growing with regards to evidence based efficient preventive measures. There is however, still a need to increase the number of epidemiological studies in Europe, especial from the Eastern European countries, where up to now quite few such studies have been carried out. One of the aims with this workshop is to inspire such studies to be done.

The first study in this workshop is an analysing of injury mortality in the countries in the European Union (1985–2002), showing great variations between the countries. Especially the Baltic states have high mortality rates. Alcohol is shown

to be a dominant risk factor in all countries, however, increases in importance the further east we are in Europe.

In a study from Italy data from registers on road traffic injuries and safety law violations (2001–2007) are utilized to find any connections between number of fines and number of fatalities and injured on the roads. Weak and non-significant associations were found for most included road behaviours, except for violations of the crash helmet law for motor cycle use.

We know quite much about hospitalized and fatal injuries. But we know very little about injuries giving temporary and permanent impairments and handicaps. All around the globe many projects are now working on finding knowledge to fill this white area of the injury map. Denmark is known for having comprehensive health register of the population with high quality. Such registers have been used to find long-term consequences of injuries. The third study in this workshop shows that injuries have lasting consequences for physical and mental health up to at least 10 years after the injury event, in particular for people sustaining head, neck and back injuries.

### Fatal injuries mortality in European Union

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#### Background

There is a huge premature mortality difference between eastern and western part of the EU (<http://www.hem.waw.pl>). Presented work is based on analysis of differences in access to health among European Union member states. One of the fundamental problems contributing to the gap was fatal injuries mortality, percentage of which was especially high in former SU countries (Estonia, Latvia, Lithuania). The aim of our paper is to discuss and try to explain reasons for such dramatic health gap in Europe.

#### Methods

Trends in death rates from fatal injuries in European countries in the period 1985–2002 were analysed for 25 EU countries and Russia.

#### Results

There exists enormous difference mortality from fatal injuries between the EU15 and the EU10. However, also within the EU10 there are as well essential differences in the level of fatal injuries mortality. The Baltic States are an absolute leader in Europe in mortality from injuries. In some of these countries among young and middle-aged men injuries were the main cause of death, before the CVD. The course of fatal injury mortality trends in all considered countries was identical in men and women, although lower in women. In CEE countries alcohol was responsible for 38% of all deaths from injuries in the male population aged 20–64. In the Baltic States this proportion was 48%, and in the EU15 at the level of 29%. In female population this proportion was 29% in CEE countries, 42% in the Baltic States and 19% in EU15.

#### Conclusions

Observation of the epidemiological situation shows that during the last 15 years there was observed change of trend in fatal injuries mortality and decrease of the injuries risk in the EU. Unfortunately this favorable trend is not present in some Baltic States.

### Road traffic injuries and deaths on Italian motorways: are they associated with safety law violations?

Giuseppe La Torre

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### Background

Road traffic injuries are an important problem in Italy. Several measures have been taken to reduce this problem, including law enforcement policies to improve safe road behaviour (e.g. wearing of seat belts and helmets). We analysed recent trends in road traffic injuries and deaths on Italian motorways and their association with safety law violations.

### Methods

We used data on both road traffic injuries and safety law violations from Police registries, concerning the period March 2001–August 2007. Using linear regression models, we evaluated two outcomes: (1) the number of fatal injuries and (2) the total number of injuries (fatal and nonfatal combined). Covariates in the analysis were the number of fines: for dangerous speed, for excess of speed, for motor cycle use without a crash helmet, for driving without safety belts, for driving under the influence of alcohol or drugs, and the season of accident occurrence. With the R<sup>2</sup> coefficient we evaluated the quality of the model.

### Results

During the period considered (2001–2007), a significant decrease of road traffic injury and fatality rates on motorways occurred. Simultaneously, fines for bad road behaviours have increased, except for not using seat belts or motor cycle helmets. We found weak and non-significant associations between fines for most included road behaviours and our outcome variables. The number of fatal injuries, however, is significantly associated with the number of fines for motor cycle use without a crash helmet ( $\beta = 0.53$ ;  $P < 0.001$ ) and the summer ( $\beta = 0.20$ ;  $P = 0.03$ ). Similar associations are shown for injuries with wounded people ( $\beta = 0.49$ ;  $P < 0.001$  and  $\beta = 0.19$ ;  $P = 0.01$ ).

### Conclusion

Violations of the crash helmet law, as indicated by the number of fines, are associated with nonfatal and fatal injuries on Italian motorways.

### Long-term consequence of injury on self-rated health

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#### Background

Knowledge on long-term consequences of injury on health is vital when injury prevention policies and emergency care are planned. However, few studies have described lasting health consequence associated with injury. This study analyses the relationship between injury and self-assessed health 10 years post-injury.

#### Methods

The study makes use of public health research databases linking health interview survey information with data from national health registers, in particular hospital data. Using this database the health of a group of Danish injury patients involved in an accident during 1995–2005 was compared to a non-injured group up to 10 years post-injury. The association between self-reported general and mental health and injury-related factors was estimated using logistic regression.

#### Results

The OR of poor general health and poor mental health were 1.33 (95% CI = 1.22–1.45) and 1.32 (95% CI = 1.18–1.47), respectively, among injury patients compared to non-injured. Though decreasing with time, the effect of injury on general health was significant 10 years post-injury. Injury type was significantly related to health, with neck and back patients reporting poor general health in particular.

#### Conclusion

Injuries have lasting consequences for physical and mental health up to at least 10 years after injury event, in particular for people sustaining head, neck and back injuries. This emphasizes the need for prevention of these injuries.

## 6.5. Workshop: What's the use of cost-effectiveness of disease prevention

*Chairs: Hans van Oers\* and Jantine Schuit, The Netherlands*

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### Reason for the workshop

The aging of western populations will likely lead to an increase in the number of people with chronic diseases. Some chronic diseases can cause years of pain and loss of function, while public health strategies can effectively help prevent or diminish negative consequences of these diseases. In recent years the literature regarding the cost-effectiveness of disease prevention has grown exponentially. Yet, our understanding of what prevention is effective and what not did not keep pace; an increasing part of that literature makes assumptions unquestioningly about effectiveness in cost-effectiveness of disease prevention.

### Objectives of the workshop

The objectives of the workshop are threefold: (1) to inform on the use of cost-effectiveness in public health policy and vice versa, (2) to inform on the effectiveness and cost-effectiveness of several current disease prevention practices, and (3) to raise awareness about limitations in the use of the concept of cost-effectiveness in disease prevention.

### Lay out of the workshop

In the workshop three topics will be presented. The first is to inform on not only how cost-effectiveness analyses can be used in public health policy, but also how public health policy can enhance cost-effectiveness analyses. The second presentation illustrates the cost-effectiveness of several examples of disease prevention. The third presentation demonstrates limitations in the use of the paradigm of cost-effectiveness, and argues in favour of a wider use of the concept of effectiveness in disease prevention. An audience discussion concludes the workshop. The discussion will be stimulated by several provocative propositions from the three presentations.

### Enhancing the use of cost-effective prevention strategies: two-way traffic

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### Issue/problem

Recently there has been a shift from a supply-directed development of cost-effective prevention towards a demand-directed one, as it is important that prevention strategies that are being developed fit the health policy and public health practice needs. However, the use of cost-effective prevention in public health policy is still not optimal and should be enhanced.

### Results (effects/changes)

The enhancement of the use of cost-effective prevention in public health policy may be achieved using knowledge brokering. The focus of knowledge brokering is not on merely transferring the results of cost-effectiveness research, but on the arrangement of the interactive process between researchers and policy makers so that they can come to feasible and research informed policy options. Knowledge brokering is a two-way process that aims to (1) encourage policy makers to be more responsive to research findings, and (2) stimulate researchers to conduct policy relevant research and translate their findings to be meaningful to policy makers.

### Lessons

Differences between the worlds of researchers and policy makers contribute most to a mismatch between supply and

demand of knowledge on cost-effective prevention. Critical successfactors in achieving a balanced knowledge brokering that could be identified preliminarily are: (1) structuring the interactive process in different steps with researchers extracting the main message from their research and the knowledge broker translating it within the framework of the policy context, and (2) choosing a knowledge broker who has a strong commitment with the process instead of the outcome, who is acceptable to all stakeholders and who has access to both the research community and policy makers.

### Cost-effectiveness research on preventive measures: A review of the literature

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### Issue/problem

In light of increasing health care costs and limited resources, an intervention should not only be effective, but also cost-effective too. Decision and policy makers require information about the effectiveness of an intervention in relation to its costs to be able to answer the question: does the intervention provide good value for money? Study objectives were: (i) which diseases or health problems are subject of preventive interventions and corresponding economic evaluations in terms of WHO-ICD-10 chapters? (ii) How do those diseases or health problems relate to the burden of disease in the Netherlands? And (iii) how cost-effective are these preventive interventions?

### Results (effects/changes)

In 2007, 246 economic evaluations of preventive interventions were published. Most evaluations focused on the prevention of infectious (55) and cardiovascular diseases (33), cancer (47), and psychological and behavioural disorders (27). Almost half of the economic evaluations (42%) used Quality Adjusted Life Years (QALYs) as outcome measure. Almost three-quarters of the evaluations (72%) showed an incremental cost-effectiveness ratio (ICER) from below the €50 000 per QALY.

### Lessons

This study shows which diseases or health problems are subject of preventive interventions and corresponding economic evaluations in terms of WHO-ICD-10 chapters. The published economic evaluations of preventive interventions correspond rather well with the burden of disease in the Netherlands, except for infectious diseases. Finally, it appeared that almost all published economic evaluations of preventive measures show favorable cost-effectiveness.

### Prevention: cost-effectiveness in context

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### Issue/problem

The literature on the cost-effectiveness of prevention is growing. To project long-term health gains and cost implications, economic evaluations of preventive measures are based on mathematical models. In economic modelling, assumptions have to be made, for instance on long-term effects and uptake. Such assumptions have an important influence on the cost-effectiveness ratio. How realistic are these assumptions? How do they relate to the evidence and practice?

**Results (effects/changes)**

Based on a literature review, we will present cases that illustrate the above-mentioned questions. We found that many preventive interventions that were evaluated as being cost-effective, lacked a conclusive evidence-base for effectiveness. Some interventions only have evidence on intermediate outcomes and not on, e.g. mortality reduction. Other interventions only have evidence from retrospective studies but not from controlled trials. For instance, although the ECDC concluded that there is not enough evidence to implement routine vaccination of healthy children against influenza, more than five recent economic evaluations conclude that this would be very cost-effective. Taking a

closer look at the evidence regarding the effectiveness of this vaccination shows that there is indeed no trial-based evidence for vaccinating healthy children below 2 years of age. There is only evidence from a few retrospective studies.

**Lessons**

Apparently, the absence of a convincing evidence-base for the effectiveness of a preventive intervention does not restrain some researchers from modelling the potential cost-effectiveness of such an intervention. Model assumptions on long-term effectiveness or uptake sometimes are very unrealistic. For decision-making about which interventions are worthwhile, policy makers need economic evaluations based on realistic assumptions.

## 6.6. Disability pensions

### Disability pension and sickness absence after coronary revascularization. A 15-year follow-up study in Sweden 1992–2006

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**Issue**

Cardiovascular disease is a major cause of chronic illness and coronary revascularization by coronary artery bypass graft surgery (CABG) or percutaneous coronary intervention (PCI) are established treatments. Evidence based guidelines for sickness absence after coronary revascularization is lacking. Swedish national registers of CABG, PCI, causes of death and hospitalizations that can be linked to a national register of sickness absence provide opportunities to obtain a basis for development of evidence based guidelines for sickness absence after these interventions. The aim of this paper is to describe the methodology and present basic descriptive results.

**Method**

The patients were recruited from two national registers: The Swedish Register of Coronar Bypass Surgery and The Swedish Coronary Angiography and Angioplasty Registry (SCAAR). All patients were followed regarding cause specific mortality and hospitalization using national registers. Information on disability pension and sickness absence at least 3 years after the intervention was obtained from a national register at the National Social Insurance Agency (the MIDAS database). This includes information on all sickness absence: date of start and end of each sick-leave period and each sick-leave spell, the extent of the sick-leave spell (part-time or full-time) and information on temporary or permanent sickness absence and disability pension. From Statistics Sweden information about socio-demographic and socio-economic variables (e.g. level of education and income, unemployment benefits (date and grade), type of occupation, marital status, geographical residence, emigration, country of birth, citizenship) were obtained.

**Results**

During 1992–2006 86 300 subjects 30–65 years of age underwent a first CABG ( $n=34\,050$ , 17% women) or PCI ( $n=52\,250$ , 22% women) in Sweden. Of these 23% (CABG 26% and PCI 21%) had disability pension at the time of intervention. A total of 2.1% died within 1 year after the intervention (CABG 2.4% and PCI 1.9%).

**Conclusion**

Combining information from national registers by record linkage is a promising and new opportunity to provide a basis for evidence based information on sickness absence and disability pension after CABG and PCI in Sweden.

### Occurrence and characteristics of disability pensioners—a prospective cohort study of 56 000 twins followed for 14 years

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**Background**

The rate of disability pensioners has increased in many welfare states and is considered a major public health problem. Nevertheless, the scientific knowledge regarding risk factors for disability pension (DP) is still limited. To use twin data would widen the possibility to gain such knowledge. The aim was to estimate the occurrence of DP over 14 years in a twin cohort and elucidate social characteristics of these disability pensioners.

**Methods**

A prospective cohort study of all Swedish twins born 1929–1958 (=56 184 individuals) was conducted. Those not on old age pension and <65 years of age in 1993 ( $n=51\,451$ ) were followed until 2006 regarding DP. Data was obtained from the Swedish Twin Registry and Statistics Sweden. Descriptive analyses were performed using DP as outcome.

**Results**

In 1993, 10% of the cohort was on DP, and the yearly prevalence of DP varied between 10 and 15% over the 13 following years. There were higher rates of DP among: women (60%) compared to men (40%); 55–64 years of age (55%) compared to younger age groups (between 15 and 30%); and married (50%) compared to unmarried (25%). Further, lower educational level (junior-high or high school) was observed among the majority (>85%) on DP. The analyses also revealed regional differences in the occurrence of DP.

**Conclusions**

The prevalence of DP per year in the Swedish twin cohort was about 12% for the period 1993–2006, which corresponds to national data on DP. Large variations with gender, age, marital status, educational levels, and region were established. Results show that this cohort provides a good basis for further studies on possible familial risk factors for DP.

### Sick leave due to hearing diagnoses and risk for disability pension; a population-based cohort study with 12-year follow-up

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**Background**

Impaired hearing is a growing public health problem in Sweden but knowledge of consequences of such impairments

for sick leave and disability pension (DP) is lacking. The aim was to study occurrence of sick leave due to hearing diagnoses and the risk of being granted a DP for people with such sick leave compared to persons sickness absent with all other diagnoses.

#### Methods

All the people aged 16–64 and not on DP in 1985 who lived in a Swedish county were included ( $n=229\,470$ ). Those who in 1985 had had at least one new sick-leave spell >7 days were followed for 12 years with regard to DP. We calculated the relative risk (RR) and 95% confidence intervals (CI) of being granted DP among those with sick-leave due to hearing diagnoses (otitis media chronica, otoscleritis, morbus Meniere, otosclerosis, deaf, vertigo, or tinnitus) compared to persons on sick-leave with other diagnoses.

#### Results

In 1985, 504 people had a new sick-leave spell with a hearing diagnosis. Twelve years later, 35% of those had been granted DP, compared to 23% of all other 1985 sickness absentees. Their RR for DP was 1.5 (95% CI, 1.3–1.7). Women had a RR of DP of 1.2 (1.2–1.2) compared to men. Compared to those aged <45 years, those older than that with hearing sick-leave diagnoses had an RR of being granted DP of 2.8 (2.7–2.9).

#### Conclusions

Considering the rates of persons with impaired hearing, the number of sickness absentees with such diagnoses was low. However, those on sick leave due to hearing diagnoses had a 50% higher risk of DP compared to those with other sick-leave diagnoses. The excess risk increased considerably with age. Knowledge is needed on whether they are sick listed with other diagnoses and reasons for their high DP risks.

### All-cause and cause specific mortality among disability pensioners with musculoskeletal diagnoses—results from a prospective cohort study in Norway 1990–2004

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#### Background

Studies from several countries have shown an increased premature mortality related to disability pension (DP) status, probably caused by the disease leading to DP, socio-economic deprivation, lifestyle and negative effects of marginalization. We investigated the mortality among persons with DP caused by musculoskeletal disorders (MSD), the main cause of DP in the Nordic countries.

#### Methods

A 10% sample of the Norwegian population aged 30–59 was followed with respect to death from January 1 1990 until the end of 2004. Those with DP caused by MSD at baseline (2312 women/846 men), and those obtaining DP during follow-up (2812 women/1842 men) were compared to those without DP. Time-dependent Cox' proportional hazards analysis was used for all-cause mortality and mortality from 17 specific causes. DP status, age, education and income were explanatory variables.

#### Results

Overall, age-adjusted hazard ratio (HR) was 1.8 (95%CI 1.5–2.1) for women with DP at baseline and 2.0 (1.7–2.3) for those obtaining DP during follow-up. Respective HRs for men were 2.3 (1.9–2.6) and 2.2 (2.0–2.5). Adjustment for socio-economic variables did not affect HRs for women, but slightly for men. Among women with DP, respiratory cancer was the most frequent cause of death, with HRs 3.2 (2.2–4.7) and 2.1 (1.4–3.1) for the two DP groups. HRs for ischemic heart disease were 1.6 (1.0–2.7) and 2.2 (1.5–3.4) and for chronic lung disease: 3.1 (1.5–6.2) and 5.1 (2.9–8.9). Among men with DP, HRs for ischemic heart disease were 2.0 (1.5–2.6) and 2.1 (1.5–3.0), for respiratory cancer 2.3 (1.6–3.3) and

2.9 (1.9–4.5), and for chronic lung disease 4.9 (2.6–9.3) and 3.7 (1.5–8.9).

#### Conclusions

Tobacco-related causes of death contributed heavily to the increased mortality among persons work-disabled by MSD. Screening for co-morbidity and preventive actions should be considered.

### Gender differences in work modifications when returning to work after sickness absence: a prospective cohort study in The Netherlands

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#### Background

Women in Northern European countries have higher sickness absence rates. The scarce literature suggests that fewer work modifications are made for female than for male employees when returning to work after sickness absence. Our objective is to describe gender differences in work modifications and changed job characteristics during return-to-work after sickness absence in the Netherlands.

#### Methods

A 13-month prospective cohort study was performed among 119 employees (54 women and 65 men; response 94.4%) who had reported sick for more than 1 month due to mental or musculoskeletal disorders in 2000. Men and women were of comparable ages and educational levels, worked in similar sectors, at corresponding functional levels, and had the same types of health disorders. They were interviewed bi-monthly. Eight job characteristics were assessed upon the employee's inclusion in the study; at return-to-work eight work modifications and the job characteristics were assessed. Chi-square and *t*-tests were applied.

#### Results

Work modifications occurred in 77.4% of the return-to-work attempts (no gender differences); reduced working hours, reduced work pace, or task reassignments were most frequent. Compared to men, reduced hours and pace were more often used for women between 12 and 20 weeks of absence ( $P<0.001$  and  $0.01<P<0.001$  respectively) and reduced hours also during the whole period ( $0.01<P<0.001$ ). Applying reduced hours related to type of disorder in men and to applying different time-schedules in women. At return, employees' job autonomy and emotional demands was higher ( $P<0.001$ ); women had more job satisfaction ( $P<0.001$ ).

#### Conclusions

Work modifications were widely applied during return-to-work but predominantly aimed at reducing work pressure. In this sample of men and women with almost similar jobs, women reported a few more work modifications. Some job characteristics improved upon return-to-work for men and women; women were more satisfied. Dutch legislation probably encouraged work modifications. Employers seem to treat jobs differently rather than men and women. It is recommended that employers consider the whole range of possible work modifications to improve the return-to-work effectiveness.

### Why are women more likely to be awarded disability pension?

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**Background**

Women are more often awarded disability pension than men. We aimed to examine possible mediating and confounding factors including mental, psychosomatic and physical health and educational level.

**Methods**

Using a historical cohort design, we utilized a unique link between a large epidemiological cohort study and a comprehensive national database over disability pension award. Baseline information on health was gathered from a 1995–1997 population-based health study of individuals in their middle working age (35–55) in Nord-Trøndelag county, Norway, who were not already claiming disability pension ( $n=24\,750$ ). The outcome assessed ( $n=494$ ) was the awarding of disability pension within 6–30 months as registered in the National Insurance Administration.

**Results**

Women had more often the lowest educational level, more body areas wherefrom symptoms were reported and more somatic conditions, but there was no gender difference in symptoms of anxiety and depression within this age group. Women were more likely to be awarded disability pension during follow-up than men ( $n=309$  versus 185, 2.4% versus 1.5%,  $P<0.001$ ). Most of this gender difference (OR = 1.65, 95% CI, 1.37–1.98) was explained by adjustment for somatic symptoms, physical conditions and mental health (OR = 1.23, 95% CI, 1.01–1.49). Adjustment for educational accounted for some of the gender difference on top of adjustment for health (OR = 1.19, 95% CI, 0.98–1.44).

**Conclusions**

Gender differences in health accounts for about 60% of the gender difference in disability pension award.

## 6.7. Workshop: Migrant and Ethnic Health Observatory (MEHO)

### Institute of Health Policy and Law, Erasmus Medical Centre, Erasmus

*Chairs: Marleen Foets\* and Gerrit Koopmans, The Netherlands*

**Organizer: University Rotterdam, The Netherlands**

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The ethnic composition of the European population is changing which has major influence on the demands to health care sectors. Migrant and Ethnic Health Observatory (MEHO) is a project with a public health perspective focussing on the health of immigrant/ethnic minority groups in Europe. The main objective of MEHO is to develop indicators to monitor the health status of immigrant/ethnic minority groups in Europe. Not only immigrant/ethnic minority groups in Western Europe are included, but also the Roma population in Central and Eastern Europe.

MEHO focuses on five critical health areas: mortality, cardiovascular diseases and diabetes, infectious diseases, cancer, self-perceived health and health care use. In the first 2 years we mainly focused on (1) problems regarding the delineation of the study population (what do we consider as migrant/ethnic groups) and (2) on the search of available data throughout Europe.

In this final year of the project, we are preparing reviews of research already published and we tried to obtain some of the available data in order to analyse them from a comparative point of view.

During this workshop we will present (some of) the results of this latter part.

The project is funded under the framework of the Public Health Programme 2003–2008 of the European Commission (contract number 2005122).

### Mortality of migrant groups in different European countries: does it matter where migrants move to?

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**Background**

Mortality studies from several European countries have compared migrants groups to the native population. Up to now, however, no mortality study compared migrant groups coming from the same place of origin, but who moved towards different European countries. The aim of this paper is to make the first set of comparisons between host countries.

**Methods**

Data on mortality by age, sex country of birth or nationality were obtained for nine European countries in the late 1990s or early 2000s. Data were derived from national death registries combined with population census. Comparisons between selected countries could be made with respect to the mortality of immigrants from, respectively, Eastern Europe, Turkey, Northern Africa, sub-Saharan Africa, the Caribbean, or some Asian countries.

**Results**

For most country-of-origin groups, we observed large variations between host countries in the absolute levels of mortality. For example, comparisons could be made for Moroccan migrants now living in Spain, Italy, Belgium and the Netherlands, respectively. The mortality of Moroccans tended to converge towards the levels of the respective host countries, although not to the same extent in every country. Similarly, migrants from the Caribbean could be compared for England, Scotland and the Netherlands, respectively. We observed much higher levels of mortality of migrants in the Netherlands than those in England.

**Conclusion**

The observed differences between host countries suggest that the mortality of migrants is determined to a large extent by the nature of different migration flows, and by variations between host countries in their social and epidemiological contexts.

### Acquiring data on and comparing of cardiovascular diseases and diabetes in migrant/ethnic groups in Europe

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**Background**

CVD and diabetes in ethnic populations pose a significant public health challenge. Information on available data sources is lacking and ethnic differences in mortality and morbidity from CVD and diabetes across Europe have not been systematically explored. Aims were: (1) to determine the availability of data on CVD and diabetes in ethnic groups across the EU; (2) to prepare an epidemiological overview for seven EU countries.

**Methods**

A network of researchers has been established and searches of bibliographic databases and internet sites. Death registers are currently used to examine mortality from CVD by country

of birth in Scotland, England, Denmark, Sweden, France, Italy and the Netherlands. Multiple sources will be used for determining CVD and diabetes morbidity by country of birth or self-reported ethnicity.

### Results

Twenty-five countries had one or more data sets; two-thirds came from eight Nordic and Western European countries. No data could be identified for several countries. Relevant mortality data were identified for 24 countries. Country of birth was the most common ethnicity indicator. Data on CVD and diabetes morbidity in ethnic groups are scarce. Data differ in how ethnicity and disease are defined and measured which limits data comparability.

At the MEHO workshop, we also will present data on: (i) mortality and morbidity in selected ethnic groups relative to the majority population in the selected EU countries; (ii) where possible, mortality and morbidity between the same ethnic groups residing in different EU countries. Currently, data are being acquired and processed for these purposes.

### Conclusion

We have identified existing data on CVD and diabetes, and are comparing mortality and morbidity from these causes, in different ethnic groups across EU countries. This information may help generate aetiological hypotheses and direct health resources.

## Cancer patterns in non-Western migrants to Europe: present knowledge/findings

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### Background

Epidemiologic studies dealing with cancer occurrence in migrant groups may contribute to the gain of further insight into the aetiology of cancer. This study aims at investigating differences in cancer patterns among non-Western migrants residing in Western Europe in comparison to the native population of the host country, respectively.

### Methods

Thirty-one Studies conducted in Denmark, France, Germany, Spain, Sweden, The Netherlands and the United Kingdom focussing mainly or partly on cancer in adult migrants from non-Western countries, published in English between 1990 and March 2009, were included. Studies were gathered using pubmed and other established scientific databases (keywords: neoplasm/cancer + ethnicity/ethnic minority/(im)migrant(s)/foreign(ers)/country of birth). Due to heterogeneous measures of association used in the studies, tendencies were used instead of combined RRs or ORs to indicate differences (significantly elevated, elevated, no difference, decreased, significantly decreased).

### Results

Studies on cancer risks in migrants showed significant variation between the migrant and native populations of several countries. Almost all studies showed differences in mortality and morbidity, mostly favouring the migrants. Furthermore, migrants from non-Western countries are in general less prone to lifestyle related cancers (e.g. breast and colorectal cancer) but have a greater likelihood to suffer from cancer sites that are related to infectious diseases mostly experienced during youth/childhood before migration (e.g. nasopharyngeal, liver, stomach and cervical cancer). Additionally, a convergence towards the level of the rates in the native population of the host country could be observed over time.

### Conclusions

Using several studies conducted in Western European countries, results could be compiled, providing important incentives for further research (with special respect to aetiology

research). Research on the European level could reveal regional variation of risk profiles among migrant groups from the same countries. In this context, a uniform migrant definition would simplify research in this field substantially.

## Register data for cross-country comparisons of migrants' health care utilization in the EU: a survey study of availability and content

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### Background

Cross-national comparable data on migrants' use of health care services are important to address problems in access to health care; identify high-risk groups; and to evaluate health care systems. The main obstacles limiting analyses are lack of sufficient coverage and availability of valid data. The objective of this study was to reveal the availability of register data on health care utilization which allow for identification of migrants in the EU countries; and the comparability of data between the EU countries.

## Difference in blood cholesterol and growth parameters between Roma and non-Roma children

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### Background

Roma minorities living in Central and Eastern European countries are characterized with low SES, poverty, discrimination and thus vulnerable regarding their health status. Due to legislation and ethical issues it is impossible to identify Roma in current national or health registries. Therefore there is a need for targeted "ad hoc" data collection. Previous research shows unhealthy nutritional habits (especially fatty) and a higher cardiovascular risk in adults. We therefore examined cholesterol levels, as well as measures of weight and height in Roma children.

### Methods

Cross-sectional study including Roma (252) and non-Roma (1952) schoolchildren from the same vicinity. Children were selected from 2 age groups (11 and 17). Data collection was provided from primary health pediatric outpatient clinics and included basic anthropometric measurement and total cholesterol measurement "TCH" (2005–2008). As Roma were defined children living in Roma settlements or in areas with a compact Roma population. Statistical analysis was performed in SPSS with ANOVA, GLM and regression model.

### Results

Roma children have statistically a lower body weight, height and also a lower TCH ( $P < 0.001$ ). The differences are more pronounced in the 11 years group. Differences were larger with respect to height than with respect to weight. Levels of TCH are significantly lower in all age and sex groups of Roma, except in 17-year boys. Regression model and GLM confirmed the dependence of TCH on body height, weight, BMI and sex.

### Conclusions

The results are claiming lower anthropometric parameters and thus of growth retardation in Roma children. The results also confirmed lower TCH levels in all age and sex groups of Roma children, despite expected and described higher risk of Roma ethnicity for cardiovascular diseases. We assume that body parameters are more important predictors of cholesterol levels in childhood than the others factors, e.g. unhealthy diet.

## 6.8. Training and education

### Establishment of the Master of Public Health education in Northwest Russia

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#### Background

Russia has the highest prevalence of cardiovascular diseases in the world and the lowest life expectancy in Europe. While Public Health education as it is understood in Europe is almost non-existent, Russia has more doctors than any of the EU countries. Combining these facts makes it obvious that health disease prevention and health promotion fail in Russia and that public health measures are needed to address the health crisis, but this cannot be done without trained public health workforce.

#### Objectives

To provide a Master of Public Health education by international standards in Northwest Russia.

#### Results

The International School of Public Health (ISPHA) was opened in October 2006 as a collaborative effort of Norwegian, Swedish and Finnish universities and Northern State Medical University in Arkhangelsk, Russia. The education is fully comparable with European 120 ECTS MPH programmes. In 2007, ISPHA became the first Russian member of ASPHER. Altogether, there are 67 students from all regions of Northwest Russia. Most of them are doctors, psychologists, dentists and health administrators. The main difference between ISPHA and traditional Russian education is that ISPHA puts much emphasis on developing critical thinking and evidence based practice through obligatory courses in epidemiology, biostatistics, scientific writing, health promotion, etc. The language of command is English. Most lectures are currently given by international lecturers. Russian co-teachers have been trained in the train-the-trainers programme from 2008. Some courses are already taught by them. The first graduates obtained their MPH degrees in 2009. The school will be taken over by the Russian partners in 2011. The school is currently working on accreditation by national authorities and introduction of a PhD programme.

#### Conclusion

Establishment of the MPH education in Russia was successful. The major threat to its sustainability is a current lack of a national accreditation. Other challenges and achievements will be discussed.

### Using priority setting to introduce public health concepts to a multi-professional audience

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#### Background

One mission of the French School of Public Health is to provide vocational training to public health professionals including public health doctors, hospital managers and environment health engineers. The variety of students' Backgrounds makes it both a challenge and an opportunity for addressing underlying concepts of public health.

#### Objectives

As part of a one week multi-professional introductory module, we designed a teaching session named the "priority exercise". The exercise aims to explore how decisions are made in public

health, the difficulty of reaching consensus and the influence of implicit or explicit values in this process.

#### Results

At the start of the 3 h exercise, 30–40 students are split into five multi-professional groups. Each group is allocated a specific role (e.g. patients representatives, health professionals) and given the task of ranking in priority order a list of eight health topics (e.g. suicide, breast cancer). The groups' tasks consist of firstly, agreeing on a method, and secondly reaching consensus on the ranking. A set of health statistics is provided. During the last hour of the session, each group feeds back their results. The aim is then to discuss issues related to the usefulness and limits of information and to understand the ethical dimensions of priority setting. In most cases these topics arose spontaneously from the small-group feedbacks. The teacher's role is to ensure all main issues are addressed, to further illustrate with example such as the Oregon Health Plan and with current French public health priorities.

#### Conclusions

This exercise constitutes a first step in acquiring competencies in consensus methods. Evaluations from over 40 sessions during the last 6 years have shown high level of satisfaction with its content and interactive style. It can easily be adapted to other national contexts.

### The Culture Lab—an innovative public health training approach to raising cultural awareness and competency

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#### Background

Public health professionals must consider cultural dimensions when designing interventions and so should have a good grasp of how culture can impact health behaviour, public health information and practice. Examination of one's own cultural world views in the light of contrast and possible conflict with other world views is vital in addressing health issues in culturally diverse communities.

#### Objectives

To present an innovative educational solution known as the "Culture Lab" which provides students with structured learning opportunities based on scenarios drawn from: medical anthropology, public health literature and cultural investigations founded on students' personal knowledge and health experience.

#### Results

Student sub-groups are provided with structured interactive learning opportunities involving tasks highlighting the 'taken for grantedness' of one's own practices and views. The contrast with other representations and practices is a key element in an emergent and experiential process. Students treat their fellow participants as anthropological informants and record results in their 'culture lab' log books. Such examples enable exploration of links between representations and language, epidemiology and anthropology, reflection and debate on different explanatory frameworks related to health and illness. Although the Culture Lab originally arose through working on Eurpubhealth Erasmus Mundus Master Program workshops on culture and health in which students from over 20 countries have participated, an ideal terrain for transnational comparison, we have successfully transferred activities and its principles to other Master level courses in public health, health management, social work & disability studies for both French and American students.

## Conclusions

Such activities serve as catalysis for raising cultural issues and developing ethical and cultural awareness and competency through public health education practice. They help equip public health practitioners to design culturally sensitive interventions and tackle issues involving populations from diverse cultural Backgrounds.

## Social Inclusion through transcultural (health-) education, capacity building and empowerment

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The health of immigrants is of increasing concern. EMZ has developed a systematic approach to develop, capacitate, implement and evaluate the regional establishment of transcultural health mediator training and education campaigns. In 2003, the With Migrants for Migrants—Intercultural Health in Germany programme (MiMi—Mit Migranten für Migranten) was launched. It recruits, trains and supports transcultural mediators and enables them to teach the German health system and related health topics to their respective immigrant communities. MiMi has now expanded to 42 sites throughout Germany.

MiMi determined that immigrants should be provided with culturally appropriate information in their native languages and easy-to-reach local arenas, such as municipal health service points, community centres, sports clubs, religious institutions, educational institutions and private company offices. As of December 2008, MiMi has trained 781 mediators from 65 different countries, involved over 17 000 immigrant attendees in community group sessions (reporting high satisfaction rates for usefulness of activities), and helped to diffuse health knowledge to more than 41 500 family members.

In MiMi the mediators are well-integrated immigrants with a sense of civil and social commitment. They are 20–60 years of age, with legal residence in Germany. The majority of the mediators (80%) are women. About 25% were born in Turkey (the biggest ethnic minority in Germany) Recruitment from smaller communities is increasingly successful. During community group sessions, information on health and health system access is delivered in diverse languages. Programme participants are usually immigrants with lower levels of social integration. A total of 17.4% did not speak sufficient German (self-assessment).

MiMi<sup>©</sup> and related systems are able to empower migrant communities and (social) service providers to provide access to communities previously out of reach. By addressing language (and cultural) barriers social marginalization and discrimination are overcome. The inclusion of the MiMi<sup>©</sup> methodology in a growing number of European programmes (e.g. AIDS & Mobility Europe, Correlation Network) should allow for synergies to develop between mediator systems.

## Willingness to emigrate among medical students in Poland

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## Background

Labour emigration has intensified since Poland joined the EU. However, emigration of high skilled workers remains controversial. The costs of educating medical doctors are high and the brain-drain is believed to adversely affect the Polish health care system.

## Aim

To predict the scale of emigration of youngest physicians from Poland in the nearest future.

## Methodology

The study was based on a survey of 1214 medical students at five universities in Poland (Katowice, Poznań, Kraków, Warsaw, Białystok) and a comprehensive literature review. The survey utilized an original questionnaire. It included 25 questions regarding respondents' migration plans, factors affecting the decision to migrate, steps taken to implement the migration plan, and demographic characteristics.

## Results

Sixty-two percent of the respondents considered emigrating, of which 71.8% have taken concrete steps to accomplish this plan. Most students indicated a 50% probability of emigration and preferred long-term emigration. Students would change their decision if they were guaranteed better remuneration in Poland and easier access to professional training courses. Interestingly, 84.2% of students declared they were able to enhance their professional experience in Poland. Factors affecting the desire to emigrate included: sex, place of origin, age and the years in medical school. According to some estimates, in 2008 the number of physicians who emigrated reached 7000, which equals 50 percent of medical school graduates in any given year.

## Conclusions

1. Anecdotal data suggest that current scale of emigration may adversely affect the health care system, particularly in Western Poland, and in certain medical specializations.
2. Most of the medical students are willing to emigrate. Fewer students in their last year of study plan emigration. Moderate engagement in making preparations for leaving, as well as generally optimistic opinions about professional development in Poland, indicate that the actual scale of emigration of graduates will be relatively low.

## The value of transnational ties between academic and public health institutions

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All health systems have the primary aim of maintaining and improving the health and well-being of their population.

Although national comparisons of health systems exist, these are not easily contextualized, nor offer any real opportunity for reflection and critical dialogue between academics and public health professionals from different countries. We believe such bench-marking opportunities are a useful and much underestimated resource for informing both public health practice and training. This stance results from the development by EHESP over the last decade of ties with the NPHS and its allied organizations in Wales, with France (Brittany) and, latterly, Germany (Baden Wurttemberg) and Italy (Emilia Romagna). These ties involve study trips and the holding of regular joint seminars on a wide range of different themes of mutual

interest. Past themes include comparison of health policy and organization, health inequalities, environmental health hazards, vector borne diseases, mental health and its promotion, and disability policy. Three main outcomes may be discerned: Firstly policy development facilitated through critical insights gained from comparative analysis. Secondly educational development achieved through a deeper understanding of policy, practice and cultural context in each region. A situation brought about through exchanges, work experience and joint work linking academic and public health services. Thirdly the development of comparative research, which informs this whole process.

## 6.9. Impact assessment

### Health impact assessment of a social welfare payment for inclusion policy: a tool to improve health gaps and promote equity?

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#### Background

In policy health impact assessment (HIA), quantifying and modelling accurately multivariate and complex realities is crucial to informed and evidence based decision-making processes. Multivariate statistical methodologies and data mining techniques represent a useful and powerful contribution. Our ongoing research aims to explore the potential added-value of multivariate statistics in each step of HIA. Analysing the impact of RSI (Social Welfare Payment for Inclusion) social policy allows us to evaluate its potential consequences on health and health care inequalities.

#### Methods

A case-control study was conducted in the Lisbon council (June 2007–March 2008), with a random sample of 1513 women of fertile age, divided into three groups: 499 women considered very poor, from the RSI beneficiaries of SCML (Santa Casa da Misericórdia de Lisboa)—Group 1; 1014 controls, including 507 poor women from other SCML beneficiaries—Group 2; and 507 non-poor women from four Health Centers in Lisbon Council—Group 3. Data were collected by personal interview (semi-quantitative questionnaire). A total of 1054 women answered the questionnaire (61%, Group 1; 58%, Group 2; 90%, Group 3). Multivariate statistical data analysis included clustering models, multiple correspondence analysis and structural equation models.

#### Results

Applying multivariate statistical data analysis identified different profiles between women of the three groups. Preliminary results show distinct representations of fertility, pregnancy planning behaviour and patterns of access and use of reproductive health care. Linking these potential inequalities to the RSI policy permits us to evaluate its impact on health and health care access and use.

#### Conclusions

Gradients of poverty and associated patterns of behaviour and use of reproductive health care were identified. Linking these inequalities to the RSI policy also creates the opportunity of improving particular aspects of the policy itself, in order to ameliorate eventual maldistribution of health care and promote health equity. The present work is essential to subsequently model links among health determinants, health benefits/costs, key policies and economic benefits/costs.

From a policy, education and research perspective, comparison offers great benefits. It allows academics to apprehend the professional day-to-day reality of health system functioning. For professionals it furnishes a distancing thus allowing a re-examination of the ‘taken for granted’ reality and, often considered, superiority of one’s own national system and practice. Such outcomes are a most welcome resource for improved health system understanding and for the development of systems which have the capacity of adjusting to the constantly changing health needs and demands of our time’.

### Health impact assessment of Roma housing policies in Central and Eastern Europe

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An outstanding feature of marginalized Roma communities of the Central-Eastern European countries is their severely substandard living conditions which contribute to their shorter life expectancy and worse health status compared to the majority. Several efforts have already been taken at the international and local level to tackle housing problems, but the health consequences of the implemented measures in most cases have neither been assessed in the decision-making process nor evaluated after implementation through health impact assessment, a proper tool to analyse and optimize health effects of policies, could be applied to disadvantaged populations.

Four health impact assessments of Roma housing policies and programmes were carried out in the frame of HIA-NMAC project funded by the European Commission. National housing policies in force were chosen from Bulgaria and Slovakia, whereas local level housing development programmes were assessed from Lithuania and Hungary. The latter was carried out retrospectively, making possible the comparison of the experienced effects of an implemented programme to that of the ongoing policies and programme. Housing development was found to have beneficial effects on the health status of Roma populations. Negative impacts were predicted on housing tenure and maintenance, neighbourhood satisfaction, social network, and housing safety that should be mitigated. Continuous community development with full participation of the community could lead to empowerment enhancing beneficial effects and reducing negative ones. Close cooperation is also needed between all stakeholders to reach sustainable integration.

In order to improve the predictive value of HIAs of national level housing policies, more evidence should be produced by the careful documentation, evaluation, and dissemination of locally implemented housing projects. National housing policies with dedicated budget aiming at Roma provide the framework within which local projects can be built and implemented. Evaluation of local projects not only helps improve national policies, but also—in case of successful projects—can decrease prejudice against Roma in majority populations.

## The impact of the Euthanasia Act on the number of requests for Euthanasia and Physician assisted suicide

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### Objective

To investigate changes in the number of and reasons for requests of Euthanasia and physician assisted suicide (E/PAS) in Dutch General Practice after implementing the Euthanasia Act in 2002.

### Design

Retrospective dynamic cohort study during the period 1977–2007.

### Participants

Standardized registration forms were used to collect data annually on E/PAS via the Dutch Sentinel Practice Network. This network of 45 general practices represents 0.8% of the Dutch population and is representative at a national level for age, sex, geographic distribution and population density.

### Results

Analysis of 1011 E/PAS requests (54% male) showed an increasing trend until 1990. Thereafter a slight decrease, which stabilized after 2004 around 2.2 per 10 000 ( $P < 0.05$ ). Malignancies were reported in 74.8% of these requests. The group younger than 60 years of age (23.7%) is overrepresented. Pain showed a declining trend over the years ( $P < 0.001$ ), but remained the most frequent reason for requesting E/PAS. Deterioration was a frequent reason for patients' requests until around 1991; thereafter this reason decreased ( $P < 0.01$ ). Dyspnoea showed a decreasing frequency during the period 1977–2007 ( $P < 0.05$ ).

### Conclusions

The incidence of requests for E/PAS in Dutch General Practice did not increase after implementing the Euthanasia Act. Pain has declined, but remained the most frequent reason in requesting E/PAS in Dutch General Practice throughout the study period.

## Explorative SWOT analysis of Health Technology Assessment (HTA) and Health Impact Assessment (HIA)

Rainer Fehr

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### Issue and objectives

With HTA directed at health technologies and HIA applicable to “any” intervention inside or outside the health sector, both approaches target at sound assessments to assist decision makers. Both “cultures” exhibit some maturity but hardly interact with each other. This paper aims to clarify if and how HTA and HIA can profit from each other.

### Approach

Methods deployed for this comparative analysis are literature review as well as structured, criteria-based comparison, mainly as a comparative SWOT (strengths, weaknesses, opportunities, threats) analysis, based on existing literature and the authors' expert judgement.

### Results

Literature on HTA/HIA comparisons is scant. Our SWOT results include the following. ‘Strengths’: both approaches are multi-/inter-disciplinary and have developed accepted procedures and methodologies, with HTA enjoying a strong legal basis, well-developed infrastructure supported by major players, and well-established collaborative networks. HIA works more prospectively and across sectors; with a tradition of stakeholder participation, of considering equity issues, and of regional/local perspectives. ‘Weaknesses’: both HTA and HIA struggle to incorporate the systems perspective adequately. Besides, HIA could improve its usage of reliable

evidence whereas HTA, beyond the systematic usage of literature, would profit from adding more strands of relevant input. ‘Opportunities’: both approaches may profit from global trends towards more rational policy-making, with the European Commission and WHO fostering both HTA and HIA. More specifically, the need for efficiency and cost containment lends support to HTA; “Health in all policy” thinking calls for HIA. ‘Threats’: both approaches may be accused of working with oversimplifications limiting their usefulness; their results may tend to arrive too late for the decision-making process; they may be seen as representing “red tape”.

### Conclusions

With “assessments” representing a key function of Public Health, HTA and HIA both deserve efforts to be further developed. The SWOT analysis demonstrates opportunities for mutual learning. Next steps would include: comparing HTA/HIA terminologies, HTA/HIA stepwise procedures, and existing HT/HI assessments of similar topics.

## Quantifying health impact of policy proposals: DYNAMO-HIA

Stefan Lhachimi

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### Background

Evaluation and quantification of the impact of policy proposals on population health—usually, but not necessarily done within a health impact assessment framework—is increasingly a common practice. So far, no generic quantification tool suited to daily, applied work exists. The DYNAMO-HIA project funded by the EU and undertaken by a European research consortium intends to fill this gap with a tool that translates expectations on risk factor change through associated diseases into changes in population health. The tool will be freely available and wide use by practitioners and policy makers is encouraged.

### Tool

The presentation will show potential users a step-by-step application from the field of obesity, applying different hypothetical BMI-reducing policies to real life populations and quantify the resulting effects on several diseases (stroke, diabetes, CVD, and selected cancers) and on summary measures of population health using data for the UK and the Netherlands. We will illustrate what kind of (population level) data is needed and an intuitive understanding of the methodology will be given. Special attention will be paid on the range of outcome measures yielded by the tool.

The final tool will be published with data on health determinants (smoking, obesity, alcohol) and diseases (cancer, CVD, diabetes, COPD) for several EU countries. However, in principle arbitrary risk factors and different chronic diseases can be modeled allowing diverse policy questions.

### Lessons

The audience will be able to decide whether the tool will be useful in their daily work by having a general idea what kind of policy questions DYNAMO-HIA is able to answer, what input is needed, and how the model output can be used within a policy context.

## The public health impact of economic crises and alternative policy responses in Europe

David Stuckler

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### Background

There is widespread concern that the current economic crisis, particularly its effect on unemployment, will adversely impact population health. To examine the impact of economic downturns on public health, we identified what happened to mortality rates during major economic changes over the past three decades in 26 European Union countries. We also examined how this impact of economic change on public health was influenced by government labour and welfare interventions.

### Methods

We identified changes in mortality associated with short-term fluctuations in employment and examined the impact of different types of government expenditure on the magnitude of observed mortality changes. Mortality rates from the World Health Organization European Health databases were obtained for over 50 diseases in 26 European Union countries between 1970 and 2007. These were analysed with unemployment data from the International Labour Organization and data describing government expenditures on social programmes, obtained from the Organization for Economic Co-operation and Development.

### Results

After correcting for population aging, past mortality and employment trends, and country-specific differences in health care infrastructure, we found that each one percentage increase in the rate of unemployment was associated with a 0.79% rise

in suicide rates of persons under-64 (95% CI, 0.16–1.42%), a 0.79% rise in homicide rates (95% CI, 0.06–1.52%), and a 1.89% rise in rates of death due to respiratory infections (95% CI, 0.02–3.76%), with greater effects observed for women than men. In contrast, transportation-related death rates, such as deaths due to motor-vehicle accidents, declined on average by 1.39% (95% CI, 0.64–2.14%). We found no significant effect of rising unemployment on all-cause mortality rates ( $P=0.68$ ). A mass rise in unemployment (>3% increase in the unemployment rate) was associated with a greater impact on suicides rates (4.45%, 95% CI, 0.65–8.24%), deaths due to falls (5.98%, 95% CI, 0.92–11.00%), and deaths due to alcohol poisoning (28.0%, 95% CI, 12.30–43.70%). Important variations were observed among European Union countries, with populations of Central and Eastern Europe, where suicide rates were historically relatively high and social protections relatively weak, experiencing greater rises in suicides than Western European populations when unemployment rates rose sharply. One contributing factor could be differences in social spending on active labour market programmes (employment retention programmes). When this spending was above US\$190 per capita (adjusted for purchasing power parity), rising unemployment had no observed effect on suicides; however, at present, western European countries spend 6-fold more on these labour market protections per capita than eastern European countries (\$261 versus \$37 per capita, respectively). Within 2 years of a major economic downturn, however, mortality rates in those countries vulnerable to economic shocks appeared to return to their long-term trend.

### Interpretation

Rapid and large rises in unemployment are associated with significant short-term rises in premature deaths associated with intentional violence. Active labour market programmes to maintain and quickly reintegrate people in jobs appear to mitigate some adverse health effects at a population level.

## 6.10. International health

### Social determinants of perceived fair/poor health in adults, Armenia, 2006

Anahit Demirchyan

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### Background

The study identified determinants of fair/poor self-rated health as an indirect measure of health status and mortality prognosis in adult population of Armenia during a period of socio-economic transition to market economy.

### Methods

The study used data generated from a cross-sectional household health survey conducted in 2006 with a sample of 2310 households throughout Armenia. The survey utilized a multi-stage probability proportional to size cluster sampling technique in each of Armenia's 11 marzes to generate representative sample of households. The survey instrument was a combination of interviewer-administered and self-administered surveys. The latter included items on self-rated health and was completed by both female and male representatives of a household. The differences in self-rated health in both genders were analysed by three main dimensions: social, behavioural/attitudinal, and psychological. Binary logistic regression models with perceived health as the outcome were fitted to identify the determinants of fair/poor self-rated health.

### Results

Overall, 2309 women and 462 men aged 18 and over participated in the survey. The rate of perceived “fair/poor”

health was high in both genders: 61.7% in women and 59.8% in men. The set of independent predictors of fair/poor self-rated health in women included low affordability of health care services (95% CI, 1.43–3.26), weak ties with friends/community (95% CI, 1.45–2.61), probable (95% CI, 2.24–4.07) and possible (95% CI, 1.21–2.15) depression, and lower education (95% CI, 1.18–2.16). For men, the set of independent predictors of perceived fair/poor health was almost similar and included weak ties with friends/community (95% CI, 1.60–6.06), probable (95% CI, 1.81–8.75) and possible (95% CI, 1.53–6.00) depression, and low education (95% CI, 1.30–5.02).

### Conclusions

The study results confirm the role of both material and social factors underlying health inequalities in Armenia. Based on these findings, social reforms to create a universal access to health care services and education are recommended for reducing health inequalities and improving the population health status.

### Social inclusion in health services use: before and after fee removal in Nepal

Ashok Bhurtyal

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### Issue/problem

People of Nepal have long been divided across hierarchical strata. Gender, ethnicity and economic class are the most

important lines of such division. Women, the ascribed 'lower caste' people and the poor people have been marginalized for centuries. Since 2007, the ministry of health and population removed user fees in primary health services. This policy has affected social inclusion in health services use.

#### **Description of the problem**

Records of 1850 health services users were selected randomly from the district hospital, the primary health care centre (sub-district level), and four out of eight health posts (community/village level) in a perennially neglected mountain district of Nepal. Proportions of health services use by privileged and underprivileged ethnicities, men and women, and rich and poor people at two periods, before and after user fee removal, were calculated. Besides, semi-structured interviews were conducted among health services users, providers, management staff, and representatives of donors and non-government organizations working in the district.

#### **Results (effects/changes)**

After fee removal, the use of health services by women, underprivileged ethnicities, and poor people has increased by 2.4%, 6.8% and 9.2%, respectively. However, the users and providers had conflicting opinions over the delivery of free health services. There was no evidence to establish the role of health system related confounders, however, the effect of democratization of the state was suspected, behind the increase in health services use.

#### **Lessons**

Removal of user fees promoted overall use of health services and the access by marginalized groups of people. Such policy will contribute towards realization of universal coverage of health services, when the health system is aligned towards the ongoing process of democratization of the state. Other developing countries can learn from Nepal's experience with removal of user fees.

### **Iron deficiency anemia in rural Cambodia: community trial of an iron ingot**

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#### **Background**

Iron deficiency anemia (IDA) is the commonest micronutrient deficiency: more than 3.5 billion people are affected globally, predominately in non-industrialized nations. Previous studies have reported that the use of iron pots in daily cooking ameliorates IDA. We report a study on the use of a novel treatment to address IDA in rural women in Cambodia, where the use of iron pots is uncommon.

#### **Methods**

A longitudinal community-wide intervention was conducted in Kandal Province, Cambodia. Rural women ( $n = 144$ , 16–74 years) were enrolled and randomly assigned to one of three groups: control, iron treatment, and iron treatment with follow-up visits to enhance compliance and provide basic nutritional education. Blood parameters measured included hemoglobin, serum ferritin, and C-reactive protein concentrations at baseline, 3 months and at 6 months. All subjects in all groups received a one-month supply of iron plus folate pills to ensure that iron blood levels were within normal ranges (i.e. hematocrit  $\geq 40\%$ ) before the trial. A reusable fish-shaped iron ingot was then distributed to the two treatment groups and participants were directed to add the fish to the cooking pot. Laboratory trials confirmed that elemental iron could be released from the iron fish during cooking. We hypothesized that the iron ingot would leach iron into food providing an adventitious iron source.

#### **Results**

Preliminary results suggest that the iron fish was not effective at maintaining iron blood levels, as demonstrated by a

downward trend in serum ferritin levels over the course of the 6 month study period.

#### **Conclusions**

This study does not provide conclusive evidence that a supplemental iron ingot is effective against IDA. Though a novel treatment option, further research is warranted to determine if the iron leached from the ingot is bioavailable and whether or not the current iron fish provides enough surface area for metal leaching.

### **National rural health mission in India: from policy to action**

Ramesh Chandra Sethi

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#### **Issue/problem**

Public health policy and perspectives.

#### **Description of the problem**

Despite of vast network of primary health centers, health care outreach and even after two decades of Safe Motherhood campaigns 1987 lunch in India, 78 000 women die from pregnancy-related complications and one million children born in India are dying every year even before they become 28-days old. To tackle such problems Government of India, implemented National Rural Health Mission (NRHM) programme on 12 April 2005 in 18 high focuses States where maternal mortality ratio and child mortality rate is in large scale and public health care system is highly neglected.

#### **Study design**

The study uses cross-sectional, nationally representative data from National Family Health Survey 1998–1999 and 2005–2006. It focuses on availability of and access to quality health care services by women and children of particularly 18 States out of 30 States in India where NRHM has been implemented. It is a unique and innovative single largest primary health care programmes being run by any country in the world.

#### **Setting**

This study specially focuses on 18 States of India like Uttar Pradesh, Uttaranchal, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Orissa, Rajasthan, Himachal Pradesh, Jammu and Kashmir, Assam, Arunchal Pradesh, Manipur, Meghalaya, Nagland, Mizoram, Sikkim and Tripura.

#### **Results (effects/changes)**

There are variations within the States as some States were making strong progress while others lagged behind. But it is very important to know the key to success and problems of failure of different States.

#### **Lessons/discussion**

Poor quality of health care and problem of accessibility is likely to reduce its utilization. The NRHM need greater emphasis by the local political representatives, strong political will, financial resources, administrative infrastructure, intersectoral coordination, effective, efficient and sustainable action for improving the quality of availability and accessibility to increase utilization of health care of women and children to achieve better maternal health outcomes.

### **Using a colour coding system to provide care for pregnant women in Malaysia**

Rachel Koshy

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#### **Issue/problem**

Malaysia has done well in achieving health of the population, especially in the reduction of maternal mortality. Various measures to further reduce maternal deaths were instituted and the strategies and initiatives among others include the 'Risk Approach', referral and feedback system, provision of emergency obstetric care and the confidential enquiries

into maternal deaths. The 'Risk Approach' further evolved into a colour coding system for pregnant women in 1989.

#### **Description of the problem**

All antenatal mothers are categorized into the four colour codes based on their level of the risk factors. The colours are red, yellow, green and white. Each antenatal card is tagged with a colour code according to the risk identified and the check list is attached to the card. Those tagged red, yellow and green are required to deliver in the hospital. Mothers are alerted on the colour codes attached to their antenatal cards. This colour coding system allows health staff to refer patients identified with high-risk factors to receive further care at the appropriate health facilities. It avoids unnecessary delay in referring high-risk cases.

#### **Results (effects/changes)**

This system allows for effective management during antenatal care as it is able to categorize high-risk cases and provide care especially those with complications. It also allows timely referral of pregnant women to higher levels of care according to their designated colour codes. Monitoring and supervision of the health staff providing the codes are carried out by the senior staff.

#### **Lessons**

Through this Colour Coding System, care is provided to all pregnant women and more to those in need. It empowers the health personnel to identify not only the risks but also the type of health personnel required for the pregnancy. It is an alert system for preventing and avoiding possible causes of maternal mortality in developing countries.

### **Influencing cardiopulmonary resuscitation intentions in Singapore: an examination of the effects of message appeals on protection motivation theory**

**Shallyn Leow**

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Cardiopulmonary resuscitation (CPR) is crucial for survival during sudden cardiac arrest (SCA) (Hopstock, 2007), the most frequent cause of death resulting from coronary heart diseases. Figures from different countries have shown that the typical low survival rate of pre-hospital cardiac arrest victims can increase manifold when the public is CPR-trained. CPR education programmes have been available in Singapore since 1983, but to date, only 20% of out-of-hospital cardiac arrests receive bystander CPR (Lateef & Anantharaman, 2001). Recent statistics revealed that the survival rate of SCA victims in Singapore stand at merely 2% (Today, 2008), similar to that of New York (St. Louis Post-Dispatch, 2009), while the percentage of surviving SCA victims in other places range from 40% in Sweden (Today, 2008), to 74% in Las Vegas (Access Medical, accessed April 10, 2009, from [http://www.accessmedical.com/sudden\\_cardiac\\_arrest.html](http://www.accessmedical.com/sudden_cardiac_arrest.html)). Therefore the low survival rates of SCA victims in such areas should be addressed, because with CPR, many lives could be saved.

This research examines the intention to perform CPR amongst youths in Singapore. A survey was first used to examine the predictive utility of Protection Motivation Theory (PMT) for CPR intention among 359 youths, conducted in high school classrooms. Findings revealed that the coping appraisal components of PMT, perceived response-efficacy and self-efficacy, were useful in predicting CPR intentions. We then conduct an experiment with 426 high school students to examine the effects of message appeals on CPR-learning intentions. The experimental results showed that fear priming enhances the effects of guilt message appeal, leading to higher coping appraisals and behavioural intention.

This study concludes that health communicators can help individuals increase their levels of response-efficacy and self-efficacy by gaining more knowledge of SCA and CPR and reinforcing the notion that one can perform CPR easily. Messages on influencing CPR-learning intentions should utilize fear and guilt appeals concurrently.

# PARALLEL SESSION 7

Saturday 28 November, 13:00–14:30

## 7.1. Workshop: European urban health: Past, present and future

*Chairs: Arpana Verma\**, UK and Erik van Ameijden, The Netherlands

**Organizer: Proposed EUPHA Section on Urban Health**

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### Background

‘Health is an important priority for Europeans. We expect to be protected against illness and disease. We want to bring up our children in a healthy environment, and demand that our workplace is safe and hygienic. When travelling within the European Union, we need access to reliable and high-quality health advice and assistance. Public authorities in Member States have a responsibility to ensure that these concerns are reflected in their policies. In addition, the European Union has a vital role to play through the obligations placed on it by the European Treaties.’ [http://ec.europa.eu/health/ph\\_overview/overview\\_en.htm](http://ec.europa.eu/health/ph_overview/overview_en.htm).

The majority of European citizens live in urban areas. This is projected to rise over the next two decades. Improving urban health in Europe and the monitoring of urban health have been important issues for several decades.

### Methods

A review of previous European urban health projects and networks, was part of a project to formulate a system of urban health indicators.

### Results

There have been many projects concerned with urban health related projects. A unified, evidence-based urban health indicator system is required for Europe. The various projects are discussed in this workshop.

### Conclusions

Urban health is a priority for Europe for many decades. Urban health networks and projects to help monitoring health indicators have been funded by a variety of sources. In this workshop we will present the important and groundbreaking work from the past, present and future in the field of urban health in Europe.

### Past and present urban health networks

Erik van Ameijden

*E van Ameijden<sup>1</sup>, A Verhoeff<sup>2</sup> on behalf of the EURO-URHIS project group*

<sup>1</sup>Department of Epidemiology, Municipal Health Service of Utrecht, Utrecht, The Netherlands

<sup>2</sup>Municipal Health Service of Amsterdam and University of Amsterdam, Amsterdam, The Netherlands

### Background

With urban Europe at the centre of much health research, the need to create a network of support is invaluable to researchers. The aim of this presentation is to demonstrate the key projects in the field of urban health in Europe both past and present.

### Methods

A review of urban health related networks was conducted through a multimodal search strategy together with contacting researchers in the field.

### Results

The main networks found are: EUROCITIES is a network of major European cities to bring together the local governments of more than 130 cities in Europe that allows sharing of knowledge and ideas, exchange of experiences, analysis of common problems and development of innovative solutions. The network is active across a wide range of policy areas.

URBAN AUDIT provides European urban statistics for 258 cities in 27 European countries and other associated countries. It contains almost 300 statistical indicators presenting information on matters including demography, environment and health. The WHO EUROPEAN HEALTHY CITIES Network consists of a network of cities from around Europe that are committed to health and sustainable development. They are designated to the WHO European Healthy Cities Network on the basis of criteria that are renewed every five years. Each five-year phase focuses on a number of core priority themes. The overarching goal of Phase V (2009–2013) is health and health equity in all local policies. Cities are focusing on three core themes: caring and supportive environments, healthy living and healthy urban design. MEGAPOLES is a network of 15 European capital cities established in recognition that these cities face similar public health challenges. The aim of the network is to improve health and reduce health inequalities through information exchange, comparison and co-operation between capital cities. Since its establishment in 1997 Megapoles has produced a number of publications that focus on the distinctive features of health promotion in an urban context.

### Conclusions

Networks are an important part of urban health research and aid in public health policy making at urban level.

### European Urban Health Indicator System—from ECHI to EURO-URHIS

Arpana Verma

*A Verma, C Birt, A Macherianakis, on behalf of the EURO-URHIS project group*

Manchester Urban Collaboration on Health, Clinical Epidemiology and Public Health Unit, University of Manchester, Manchester, United Kingdom

### Background

Urban health and health in all policies are important issues for the European Union. At city level, it is difficult to find data to allow comparison, benchmarking and investigating disease trends over time. EURO-URHIS (<http://www.urhis.eu>) has been funded by DG SANCO with partners in most of the European countries. EURO-URHIS has used the European Community Health Indicators (ECHI) shortlist with additions deemed necessary to describe urban health. The aims of the EURO-URHIS project are to develop a comprehensive urban health information and knowledge system to help to identify and prioritize urban health problem and enable the monitoring of effects of actions taken to address them.

### Methodology

Urban areas and urban health were defined. Fifty indicators were chosen that best represented the needs of urban health. A postal questionnaire was developed and piloted to collect data on the availability of indicators important for urban health. This was sent to 60 cities across Europe to ascertain what data is available at urban level.

### Results

Many of the indicators were available at urban level with similar definitions. A system of indicators was developed for describing the health of a city's population named EURO-URHIS 39 that would allow transnational comparison.

**Conclusions**

Urban health indicators across Europe are available and can be routinely collected to help with evidence-based policy making at urban level. The cross-sectional and longitudinal analyses of these indicators should allow transnational comparisons for European cities. Future funding will be sought to collect EURO-URHIS 39 from participating cities.

**European urban health indicator system part two: Urban health monitoring and analysis to inform policy**

James Higginson

*J Higginson on behalf of the EURO-URHIS 2 project group*  
Manchester Urban Collaboration on Health, Clinical Epidemiology and Public Health Unit, University of Manchester, Manchester, United Kingdom

**Background**

Continuing from the work of EURO-URHIS, the EURO-URHIS 2 project (<http://www.urhis.eu>) commenced in January 2009 for four years and is funded by DG Research under FP7 and is aiming to;

- (1) collect data at the urban area (UA) level
- (2) provide tools for evidence-based policy
- (3) develop methods for cross-sectional and longitudinal assessment for urban population health including all relevant determinants of health

(4) validate these tools and methods by using existing population-based registries and databases

(5) apply the tools in the field, ensuring that they are easy and intuitive to use by policy makers.

This presentation will highlight the methods used to define an urban area across Europe and the methodology for choosing urban health indicators for monitoring to inform policy and evidence-based practice.

**Methods**

UAs will be defined through a series of geographical, administrative and public health boundaries. The health data will be collected using existing population-based registries and databases, the priorities of policy makers in terms of policies and interventions for their particular UA, and a lifestyle/environment survey undertaken by people living in each UA.

**Results**

Twenty-eight UAs from 13 countries have been recruited into the study. All UA boundaries have been selected by the project management group. Three data collection tools have been formulated based on the EURO-URHIS 39, ECHI and EHSS tools. They have been piloted and translated for each of the countries to allow data collection.

**Conclusions**

It is possible to use a multimodal approach to define UAs and urban health indicators that take into account differences across Europe and are applicable worldwide.

## 7.2. Seminar: Developing of health communication in Europe

*Chair: Paulo Moreira\*, ECDC*

**Organizers: European Centre for Diseases Control and EUPHA**

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**The practice in the United States**

Jay Bernhardt

Bernardt J

CDC, Atlanta, United States

**The practice in Europe**

Representatives from ECDC/HCU

**Panel discussion with representatives from EUPHA**

World Association of Science Journalists

ASPHER

Industry

## 7.3. Workshop: Health services research into European policy and practice

*Chair: Peter Groenewegen\*, The Netherlands*

**Organizer: NIVEL – Netherlands Institute for Health Services Research, Utrecht, The Netherlands**

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With support of the Seventh Framework Programme of the European Commission, a new European initiative has started, aimed at identifying, evaluating and improving the contribution of Health Services Research to the health policy process in the EU. In order to do so, we aim to achieve active involvement of researchers, as well as policy makers in the European Union and its Member States.

By offering them a platform for dialogue and consultation we aim to develop tailored research questions for a policy supportive HSR agenda. This will also be a stimulus to improve the connections between research & policy structurally, both at the level of Member States and at European level. Given the broad nature of HSR the field is divided into five main areas, and we seek expertise across the EU on each of these areas:

- (1) Health (care delivery) systems;
- (2) Health care organizations and professional practices;
- (3) Health Technology Assessment;
- (4) Benchmarking & performance indicators (crosscutting all areas);

(5) Relationships between research & policy (crosscutting all areas).

During the workshop at EUPHA we will present the general approach of the initiative. One of its activities will be an identification of the current state-of-the-art of HSR, which clarifies the areas for which outcomes can be used for policy making, and also results in an inventory of research areas that are currently under-researched from a policy perspective. A second activity will be to clarify the needs and demands of policy makers for HSR inputs by means of an online consultation, directed at priority setting for the main topics of HSR. Thirdly, it is necessary to assess at Member State and European level current infrastructures for the translation of HSR into the policy and practice. Understanding and promoting the 'linkage and exchange' between health services researchers and the users of their products is crucial in ensuring an effective use of HSR. This evaluation includes opinions and experiences of policy makers, other stakeholders and researchers as to the role of HSR in health policy development. This is to determine, whether current infrastructures are sufficient to meet the needs of health policy makers and to recommend how possible shortcomings can be removed. Result of all this is that by April 2010 a working

conference will be organized, in which all stakeholders contribute together to a reinforcement of HSR in Europe.

### The state-of-the-art of HSR in Europe

Johan Hansen

*J Hansen*

NIVEL – Netherlands Institute for Health Services Research, Utrecht, The Netherlands

In this section of the workshop we present an overview based on mapping the current state-of-the-art concerning various fields of health services research, addressing the different levels of analysis in HSR.

(1) HSR at the level of health care systems, being national or sometimes regional entities, influenced by European institutional forces.

(2) Health care organization and professional practices, in primary, secondary, tertiary and long-term care, forming an intermediate level between the health care system at large and service provision in the interaction between patients and providers.

(3) Health care interventions in the field of Health Technology Assessment (HTA), systematically assessing the medical, social, ethical, and economic implications of the development, diffusion, and use of health technology.

(4) Benchmarking and performance indicators, as the collection and dissemination of information on 'good practice' is an issue relevant to all areas of HSR, especially in light of 'responsive health care systems' with a growing emphasis on the needs of users (and choosers) of health care services.

(5) The relationship between the HSR community and the health policy process at the various subsystems and levels of the health care system, with a focus on modes of commissioning research by policy makers as well as on how results of research are fed into the policy process.

Given the broad nature of these topics our discussion will focus especially on two main questions: (a) to what degree can conclusions from studies in particular institutional settings can be transferred to other settings, and (b) what are the methodological issues of international comparisons, such as availability of and access to comparable data and pitfalls of measurement in international studies. Identified studies from the various areas of HSR are presented as examples on how to improve comparability across Europe. This mapping will also result in an inventory and discussion of research areas with the workshop participants that are currently under-researched from a policy perspective, to be addressed in the second section of the workshop.

### Setting priorities in HSR: direction and first outcomes of an a consultation among experts across Europe

Willemijn Schäfer

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In this section we will describe and discuss the findings of an online stakeholder consultation, held across researchers and policy makers Europe in the summer of 2009, addressing two main questions:

(a) What are (or what should be) the research priorities for the field of health services, including topics, methodology issues and timeliness?

(b) Is the current research infrastructure equipped for these needs, and if not, how can it be strengthened?

As Health Services Research is a typical example of applied research, aimed at the solution of health care policy problems, emphasis should be placed on determining, among stakeholders in the field, what these problems are and how they should be studied. To feed the exchange and dialogue between researchers and policy makers, it is vital to clarify the views and experiences among stakeholders, policy makers and the research community at national and international level.

This systematically collected input will serve as a point of reference to evaluate current research and a research agenda for the future. It is therefore important to share and discuss its outcomes with the participants of the EUPHA workshop. What conclusions can be drawn from the consultation and which topics should receive more or less attention, when setting priorities for the HSR agenda of the future?

### Current and future linkages between research & policy across Europe

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In this section we will address the relationship between the HSR community and the health policy process at the various levels of the health care system (regionally, nationally and at European level). Its focus will be on modes of commissioning research by policy makers as well as on how results of research are fed into the policy process. This includes structures and conditions for the effective transfer of knowledge as well as feedback structures between decision makers and researchers. The question of how research is (and should be) linked to policy is applicable to all of the areas within HSR. As HSR is typically applied research, it is vital that an effective relationship between decision makers, other stakeholders and researchers is reinforced. In practice, the relationship and communication between the health services research community and decision makers has been structured differently across Europe, varying from formal councils and other bodies to more informal connections. Without effective communication channels between researchers and the users of their results, the available HSR potential may not be focussed on the priorities of policy makers, and policy makers may not be effectively provided with available evidence from HSR studies. During the session we will present a identification of research policy linkages across Europe. Together with the workshop participants, these linkages will then be evaluated in terms of their usefulness for the EU as a whole. There are several promising perspectives on the relationship between research and policy and how to strengthen it, such as emphasising the importance of formal and informal relationships and interaction between researchers and decision makers, and those that emphasize the institutions, which facilitate and constrain interaction. What is the empirical evidence for these perspectives and are all European countries taking equal advantage of approaches already known to work well in other contexts?

### HSR on Benchmarking & performance indicators in Europe

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In this section we will address HSR on the use of benchmarking and performance indicators in Europe. The objective is to provide a preliminary state-of-the-art account concerning the research on benchmarking and performance indicators in various fields of health services. During the session we will present the framework and approach that we use to map the HSR in this field. Our framework is based on four perspectives that can be identified in the research on benchmarking and performance indicators:

(1) Measurement through indicators on the one hand (performance measurement) and the proper embedding of sets of indicators in policy- and management-cycles on the other (performance management);

(2) Benchmarking and performance indicators on the macro, meso and micro level of healthcare systems;

(3) The dimensions of quality involved (e.g. effectiveness, safety and patient centeredness);

(4) The functions and objectives of performance measurement and management in healthcare.

Apart from these four perspectives, the HSR in this area can be subdivided in nine sub themes: (1) research on theory of benchmarking \* & performance indicators; (2) research on performance frameworks; (3) research on international comparability of performance indicators; (4) research on safety indicators; (5) research on quality indicators in cancer care; (6) research on quality indicators in hospital care; (7) research on quality indicators in primary care; (8) research on

quality indicators in mental healthcare; (9) research on quality indicators on patient experiences.

Literature review and consultation of key researchers across Europe will be conducted to provide the overview. The intermediate outcomes will be shared and discussed with the participants of the EUPHA workshop. What conclusions can be drawn from the preliminary overview and which topics should receive more or less attention when setting priorities for the agenda on HSR on benchmarking and performance indicators in the future?

## 7.4. Safety and injury prevention

### Home injury prevention among Arab children in Israel Subhi Badarni

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Home injuries are the main cause of morbidity and mortality among 1–14 year-old children. One of every four is hospitalized for an injury sustained at home. A survey in Nahariya Hospital showed a hospitalization ratio of 1.7:1 of Arab to Jewish children. Seventy two percent of hospitalizations were due to falls and head injuries.

The objectives of the study were the following:

- (1) To minimize home injuries among children.
- (2) To increase awareness regarding domestic hazards for injuries.
- (3) To increase the implementation of safety measures at home.
- (4) To call the attention of the authorities responsible for law enforcement relevant to safety in the home.

The study targeted parents, school and kindergarten teachers, public health nurses and leading positions on the local authority level.

#### Intervention

The interventional activities of the program were the following:

- (1) Instruction and training for mothers of children under the age of 13 years.
- (2) Training of school teachers in injury prevention.
- (3) Training of local authority staff and recruiting them to become agents of change.
- (4) Working with the local authorities' Planning and Construction Committees to enforce building regulation promoting safety.

#### Lessons/results

Injury prevention had become an integral part of nurse's and schoolteacher's work. Statistics of safety conditions at home showed significant improvement. The safety deficiencies were reduced from 35% to 23%. Fall injuries remained high. Our hypothesis is that this may be related to increased awareness levels among professional health and medical staff as well as in the community level, which led to increase reporting and registration of childhood injuries. Local authorities have developed safety instruction for their Planning and Construction Committees and enjoined to Healthy Cities Network in the country.

### Paternal parenting and unintentional injury of young children: A population-based cohort study in Japan Takeo Fujiwara

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#### Background

Unintentional injury is the leading cause of death in young children. A previous study reported the protective effect of maternal parenting on young childhood injury; however,

few studies have shown an association between paternal parenting and young childhood injury. The purpose of this study is to investigate the impact of paternal parenting to reduce the likelihood of childhood injury, a leading cause of death in young children.

#### Methods

A population-based birth cohort study in Japan (2001–2002), 'The Longitudinal Study of Children Born in the 21st Century', was used ( $N=42\,144$ ). The impact of paternal parenting on 6-month-old infants (feeding, diaper change, bathing, putting the child to sleep, playing and taking a walk) on the incidence of young childhood injury (fall, near-drowning, accidental ingestion and burn) till 18 months of age was analysed by multiple logistic regression.

#### Results

Infants who received a high degree of paternal parenting (feeding, diaper change, bathing, putting the child to sleep, playing and taking the child for a walk) at 6 months were less likely to suffer from all unintentional injuries at 18 months than those who received a low degree of paternal parenting (adjusted odds ratio: 0.91, 95% confidence interval: 0.85–0.98). Taking the child for a walk by father was strongly prevented all unintentional injuries, and there were significant dose-response relationships: odds ratio for trend was 0.92 (0.89–0.94).

#### Conclusions

Paternal parenting of infants at 6-months-of-age prevented childhood injury at 18 months of age. Paternal parenting behaviours such as taking a walk with the infant showed the most protective effect on childhood injury. Further study is needed to show the causal association between paternal parenting and childhood injury.

### Exploration of the impact of a large reduction in alcohol prices on hospital admissions related to alcohol

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#### Background

In 2004 there was a large reduction in the price of alcohol in Finland due to a reduction in alcohol taxes by one-third, on the average, and due to the abolition of travellers' duty free allowances from the EU. We examined to what extent these changes affected hospital admissions related to alcohol.

#### Design

Time series intervention analysis with auto-regressive integrated moving average modelling was applied to the monthly aggregations of hospital admissions in Finland for the period 1996–2006 to assess the impact of the reduction in alcohol prices. Analyses were carried out for men and women aged 15–39, 40–49, 50–69 and >69 years.

## Results

The impact of the price reduction on hospital admissions related to alcohol varied according to sex and age. The rate in chronic hospital admissions increased in every age-group under age of 70 years in men. Among men aged 50–69 years, the increase was largest: the impact parameter of 0.20 indicates an increase of 22% in mean rate of hospitalizations, which implies an increase of 18.0 monthly hospitalizations per 100 000 person-years. In other age-groups the increase varied from 13 to 16% (4.8–13.0 hospitalizations). Among women aged 50–69 years, the rate in chronic causes increased by 25% (4.3 hospitalizations), while among women under age of 40 years, the rate decreased. Among men, the rate in acute hospital admissions increased in every age-group under age of 70 years. The increase was largest by 18% and 20% (7.2 and 6.2 hospitalizations) among men aged 40–49 and 50–69 years. Among women aged 50–69 years, the rate in acute causes increased by 38% (2.3 hospitalizations), while in other female age-groups, an increase was not statistically significant.

## Conclusions

The results obtained in a natural experiment setting with time series analyses suggest that a reduction in alcohol prices led to increases in hospital admissions related to alcohol in certain population subgroups in Finland, even when trends and seasonal variation had been taken into account. Particularly, persons aged 50–69 years were affected.

## Delinquent and aggressive behaviour among Roma and non-Roma adolescents

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## Background

Roma are frequently mentioned in public opinion as behaving antisocially and aggressively, but there is no scientific basis for this belief. The aim of our study is to assess self-reported delinquent behaviour and levels of self-reported aggression among Roma and non-Roma adolescents.

## Methods

In a cross-sectional study among Roma ( $N=330$ ; mean age = 14.5; interview) and non-Roma adolescents ( $N=722$ ; mean age = 14.9; questionnaire) delinquent behaviour, physical aggression and hostility were measured using questions from the International Self-Reported Delinquency Study and The Aggression Questionnaire. The effect of Roma ethnicity was assessed using multivariable linear regression analyses controlled for gender, socioeconomic status (parental education and parental employment status) and social desirability.

## Results

Roma ethnicity and female gender were associated with fewer delinquent behaviours and acts of physical aggression (both  $P<0.01$ ). The effect of socioeconomic status was not significant, but adjustment for it reduced the strength of the association with ethnicity. Social desirability proved to be a significant confounder; adjustment for it eliminated the associations of ethnicity with delinquent behaviour and physical aggression but showed an association of Roma ethnicity with hostility, indicating higher hostility among Roma adolescents ( $B\ 2.53$ ; 95% confidence interval 0.82–4.24).

## Conclusions

Delinquent behaviour and physical aggression seems to be reported less frequently by Roma adolescents, but this may mostly be due to social desirability. After adjustment for social desirability, ethnic differences mostly disappear, and only hostility occurs more often among Roma adolescents.

## Hip fracture: efficacy of early surgery to prevent 30 days in-hospital mortality

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## Background

Hip fracture represents an important cause of quality of life worsening and mortality in the elderly. Several studies evaluated the risk factors associated with post-operative mortality, but results are often discordant. The aim of our study is to assess, whether there is an association between operative delay (2 or more days after hospital admission) and 30 days in-hospital mortality in patients with diagnosis of hip fracture discharged from an Italian teaching hospital.

## Methods

One thousand three hundred and twenty patients with diagnosis of hip fracture discharged from S.Orsola-Malpighi teaching hospital of Bologna were included. Gender, age and comorbidities, collected from hospital discharge records (SDO) and the American Society of Anesthesiologists score (ASA), International Normalized Ratio (INR) and Haemoglobin collected from clinical records were considered as potential risk factors. In the final logistic regression model only the factors selected by using a stepwise procedure ( $P$  entry = 0.1 and  $P$  stay = 0.05) were included.

## Results

The average mortality rate was 3.3% and the 56.5% ( $n = 746$ ) of patients had an operative delay less than 2 days. Age, male gender, diabetes and aritmia were the only factors statistically associated to mortality included in the final model. The adjusted RR of mortality for an operative delay of 2 days or more after hospital admission is 1.80 (95% confidence interval 1.02–3.20) compared to an operative delay of less than 2 days.

## Conclusions

The operative delay is positively associated with an 80% increased risk of 30 day in-hospital mortality. These results suggest that organizational causes of the operative delay should be investigated in order to reduce waiting time for surgery.

## Short and long-term outcome after severe traumatic brain injuries with different injury mechanisms in five European countries

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## Background

The International Neurotrauma Research Organization in Vienna collected data on treatment and outcome of 1172 patients after severe traumatic brain injury (TBI) in Austria, Slovakia, Bosnia, Macedonia and Croatia. We hypothesized that injuries with different mechanisms may have different outcomes.

## Methods

We categorized the patients based on the mechanism of injury into traffic related (TR), fall and other. We analysed the injury severity and the short [after the intensive care unit (ICU) treatment] and long-term outcome among these groups. The long-term (6 months) outcome was favourable, when the Glasgow outcome scale (GOS) was 'alive' or 'moderate disability' and it was unfavourable, when the GOS outcome was 'death', 'persistent vegetative state' or 'severe disability'. Subsequently we analysed in the same manner the TR injuries only.

## Results

Out of the total of 1065 patients with information on injury mechanism 521 had TR injury (49%), 419 falls (39%) and 125 other mechanism of injury (12%). The most severe injuries were in the TR group [mean injury severity score (ISS) of 32.7]. The ICU survival was 72% in other, 64% in TR and 62% in falls ( $P=0.11$ ). The long term outcome was favourable in 84% of other, 83% of TR injuries and 71% of falls ( $P<0.05$ ). The most severe TR injuries were in motorcycle drivers (mean ISS=34). The highest ICU survival among TR injuries was 73% in car-drivers, the worse 57% in pedestrians. The most favourable long term

outcomes were in car-passengers (94%) and the less in car-drivers (73%).

## Conclusions

The study showed that the TBI after falls or traffic related mechanism in Five European countries have severe short- and long-term consequences and a relatively high mortality rate. Injuries with these mechanisms are effectively preventable with relatively simple measures. These should be enhanced and supported by policies and decision makers on EU, national and especially on local level in municipalities or regions. Such an approach will help to avoid unnecessary tolls on lives or quality of lives.

# 7.5. Diabetes

## Diabetes in Europe—Results of the DE-Plan project in Styria, Austria

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### Background

The EU-Project “Diabetes in Europe – Prevention Using Lifestyle, Physical Activity and Nutritional Intervention” was implemented by Styria vitalis in a district in Styria. The aim of the prevention project was to identify persons with elevated diabetes risk and invite them to participate in a one-year-nutrition and physical-activity-programme in the community setting led by specially trained persons – prevention coaches.

### Subjects and Methods

In 13 communities in the Deutschlandsberg district, Styria, the target group aged between 45–74 years (11.309 persons) was selected from population registers and received the Findrisic questionnaire. Participants, who scored more than 14, were invited to a 75 g oral-glucose-tolerance test (oGTT). Individuals with normal glucose tolerance, impaired glucose tolerance and impaired fasting glucose according to the oGTT were asked to participate in the prevention programme, diabetics were transferred to a disease management programme. The quantitative data collection was carried out with a general, a clinical and a quality of life questionnaire at the beginning and after the end of the intervention as well as one year later. Qualitative data were collected in facilitated group discussions.

Statistical analysis was carried out with the statistical package SPSS 16.0. *t*-Test was used for paired samples with metric scales, Wilcoxon Test for paired samples with non metric scales. A *P*-value of 0.05 was considered to indicate statistical significance, a *P*-value < 0.10 indicated a tendency.

Results of the evaluation after one year

Individuals successfully managed a behavioural change regarding nutrition habits and enhanced physical activity. Significant changes in fasting glucose and blood fat values could be shown. Quality of life assessments showed significantly less bodily symptoms, less depression symptoms and less emotional strains. A significant reduction in BMI, waist circumference and blood pressure could also be demonstrated. The two-years-evaluation is currently undertaken and will be presented at the conference.

## Prevalence and determinants of the metabolic syndrome in Arkhangelsk, Northwest Russia

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### Background

Metabolic syndrome (MetS) is a cluster of risk factors associated with higher risk for diabetes and cardiovascular diseases (CVD), but no large studies on MetS in Russia can be identified in PubMed. We assessed the prevalence of the MetS and its correlates in Arkhangelsk, Northwest Russia.

### Methods

A cross-sectional study. Altogether, 1918 men and 1637 women aged 18–90 years from Arkhangelsk, Northwest Russia, completed a questionnaire on age, income, education, diet, smoking, physical activity and alcohol intake. They also underwent a physical examination, blood sample were taken. MetS was defined by modified criteria of National Cholesterol Education Program Adult Treatment Panel III. The level of glycosylated haemoglobin  $\geq 6.1\%$  or self-reported DM, or treatment for high blood sugar was used as a criterion of hyperglycaemia. Independent associations between MetS and other factors were assessed with logistic regression.

### Results

The age-standardized prevalence of MetS was 19.8% [95% confidence interval (CI) 18.1–21.5] among women and 11.5% (95% CI 10.1–12.9) among men. In women, MetS was associated with age  $\geq 60$  years vs. 18–29 years [odds ratio (OR) 7.7, 95% CI 3.1–19.0], low intake of fresh fruits and vegetables (OR 1.4, 95% CI 1.0–1.9), low leisure time physical activity (OR 1.7, 95% CI 1.2–2.3) and Body Mass Index (*P* for trend < 0.001). In men, MetS was associated with age  $\geq 60$  years vs. 18–29 years (OR 8.5, 95% CI: 3.4–21.3), Body Mass Index (*P* for trend < 0.001), the frequency—of alcohol consumption (moderate vs. abstainers, OR 0.6 95% CI 0.4–0.97), and the number of alcohol units consumed on one occasion (5–6 units vs abstainers OR 0.4, 95% CI 0.2–0.8).

### Conclusions

The prevalence of MetS in women is comparable with other European countries, but in men, it is almost twice lower. Factors associated with MetS also differ between genders with alcohol being negatively associated with MetS in Russian men.

## Risk factors of diabetes mellitus in road transport drivers

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### Background

Road transport drivers form one of the professional groups with a critical impact on public safety. Regarding the character of their professional activity – exposure to stress, sitting working mode, shift and night work, the subjects involved are at risk of obesity and hypertension, thus – indirectly – of carbohydrate metabolism disorders/diabetes.

### Methods

A cross-sectional study accounted for all the road transport drivers (bus and trucks above 3.5 t), examined at an outpatient clinic of occupational medicine.

## Results

Excessive body weight was identified in 62.6% of the studied population, 45.3% presented with overweight and 17.4% were obese. Hypertension was noted in 36.7% drivers. Odds ratio calculations demonstrated the hypertension risk to have been 4.23-fold higher in overweight subjects vs. those with normal body weight [95% confidence interval (CI) 2.82–6.36]. In 47.5%, drivers hyperglycaemia was found. The calculated risk factor – the odds ratio of 2.03, confirmed the higher chance for hyperglycaemia in hypertensive vs. normotensive subjects (95% CI 1.75–3.53). The calculation of odds ratio indicated a 3.54-fold higher chance for hyperglycaemia incidence in subjects with two diabetes risk factors (overweight and hypertension (95% CI 2.28–5.52). The prevalence of hyperglycaemia was also conditioned by the degree of obesity, especially when combined with hypertension.

## Conclusions

It should then be stated in conclusions that the high prevalence of diabetes risk factors among road transport drivers indicates a necessity of undertaking multidimensional actions, targeted onto this particular professional group and including various health care sectors.

## A community-based screening initiative for type 2 diabetes

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## Background

The prevalence of diabetes in Europe is estimated at 4% of the total population, but only half of those are actually diagnosed. Type 2 diabetes patients account for more than 90% of this population. The Scientific Institute of Public Health in Belgium (WIV) released a consensus document on the need for screening in this field. This study explores a community-based screening initiative for type 2 diabetes and aims to identify risk patients and undiagnosed type 2 diabetes patients.

## Methods

A programme designed to screen for diabetes type 2 in adults aged 45–70 years was introduced in a middle-size community (Aartselaar) from October to December 2007. Participation rates and screening results were provided. In addition, an evaluation of the programme was performed by written questionnaire and by Focus Group Discussions (FGDs).

## Results

All inhabitants aged 45–70 years ( $n=4364$ ) from the community were invited for screening. Of these, 572 (13%) were screened. The participants were 59 years on average, mostly female (59%) and a slight majority of participants attended their general practitioner (GP) for the blood test as opposed to a free test at community location. Most frequently reported risk factors were large waist size (48%), being older than 65 years (25%) and high blood pressure (20%). Individuals older than 65 years reported significantly more risk factors. The screening identified 427 (75%) new risk patients for diabetes type 2 and two newly diagnosed diabetes type 2 patients. The 208 completed questionnaires (19% response) and three FGDs identified the personal invitation, the article in the community paper and the GP as a motivator as strong elements in the programme and the poster and website as weak elements.

## Conclusions

The study showed limited participation yet identified a substantial number of risk patients and confirmed earlier

findings of waist size being a more common predictor for type 2 diabetes.

## Early identification of individuals with high diabetes and CVD risk factors. The Krakow Municipal Atherosclerosis, Diabetes and Hypertension Prevention Program

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## Background

Cardiovascular diseases and type 2 diabetes can be prevented or delayed by implementing life style modifications. These have provided the rationale for screening main risk factors in subjects without symptoms.

## Objective

To evaluate the Diabetes Risk Score (DRS) as an opportunistic tool for early identification of individuals with type 2 diabetes or impaired glucose tolerance.

## Material and methods

Study population: 41 000 individuals (38% men) aged above 25 years, without any history of diabetes type 2 (DM2) and CVD events, screened in 42 general practices in 2004–05. A short questionnaire was developed to characterize individuals according to their future risk of developing type 2 diabetes and CVD diseases. Fasting cholesterol and glycaemia, anthropometric measurements (weight, height and waist circumference) and blood pressure were determined in all participants. DRS was calculated and used to identify asymptomatic patients. Determination of the DRS cutoff point for the detection of glucose abnormalities was based on ROC curve. The DRS of 9 and above was taken as an indication for advanced biochemical testing.

## Results

Among examined subjects 15% men and 12% women ( $P<0.05$ ) had glucose metabolism impairment. Diabetes type 2 was found in 4.5%, impaired glucose tolerance (IGT) in 3.6% and impaired fasting glucose (IFG) in 4.9% of the patients. The sensitivity of DRS in detecting individuals with glucose abnormalities was 0.78 (95% confidence interval 0.77–0.79), whereas the specificity was 0.71 (95% PU: 0.70–0.72). In 74% of newly diagnosed diabetics, the DRS value diagnosed disturbance in glucose tolerance. A standard fasting blood glucose (FBG) test (FBG  $\geq 6.1$  mmol/l) had the same sensitivity and a specificity of 0.993 (95% PU: 0.992–0.994) for the diagnosis of glucose abnormalities. Additionally, a strong correlation between DRS classes and CV risk factor distribution was found.

## Conclusions

DRS, a simple inexpensive tool, is able to discriminate those subjects who are more likely to present metabolic abnormalities.

## The role of knowledge for diabetes self-management: A qualitative study of a peer education project in urban poor communities in Cambodia in 2008

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## Background

In developing countries non-communicable diseases are evolving rapidly. By now 80% of all deaths from chronic diseases occur in low- and middle-income countries (WHO, 2008). According to this trend considerably high prevalence of diabetes of 5–11% has been detected in Cambodia in 2004. Particularly for socially deprived people who are facing

restricted access to diabetes care the self-management of the disease is essential to prevent complications. Disease-related knowledge has been identified an important factor for the self-management of diabetics. The necessity to develop interventions imparting diabetes-related knowledge adjusted to the target group is indicated. This study investigated the role of knowledge for the diabetes self-management of participants of the peer education intervention MoPoTsyo located in urban poor communities in Cambodia. Indications for further starting points of the intervention were to be identified.

#### Methods

Qualitative semi-structured interviews were conducted with ten participants of MoPoTsyo (eight women, two men, 35–65 years) living in the urban and sub-urban communities Sras Chork and Anlong Kangan. All interviews were recorded, transcribed and analysed according to qualitative content analysis (Mayring, 2000).

#### Results

Diabetes-related knowledge was assessed being essential for the disease self-management of all participants. All of them reported to implement the knowledge imparted by MoPoTsyo, which shows its practicability. Some potential misunderstandings regarding the disease, the interpretation of urine test results and body reactions occurred. Different ways of successful knowledge transfer were identified ranging from formal teaching by the peer educators to informal exchange of experiences of the diabetics themselves.

#### Conclusions

Interventions imparting diabetes-related knowledge should assess the state of knowledge of the target group accurately to detect misunderstandings and avoid harmful behaviour. Different ways of knowledge transfer offered by a peer education approach should be analysed and utilized purposefully.

## 7.6. Workshop: Work life participation—predictors and in relation to different health outcomes

Chair: Kjell Torén\*, Sweden

Organizer: EUPHA section on Social Security and Health

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Working life has profound impact on health. Hazardous exposures, such as dust, chemicals and psycho-social factors can cause disease and impair already existing diseases. Statistics from EU claim that the societal cost for work-life induced disease is around 3% of the gross national income. Work can also improve health through prosperity, increase self esteem and favour participation in society, and a high proportion of work life participation in the general population is a goal of our society.

Working life participation is also depending on social insurance legislation, which varies over time and between countries. For example, in Sweden, age and unemployment have for certain periods of time been accepted as a contributing cause of early retirement, while it is not today. Working life participation is here used as the broad term, and as we will discuss in this workshop it can be measured in many different ways. Common measures have been work ability, work disability, return to work, work change, sickness leave and early retirement. It can also be assessed on a macro level as percentage of the population at work and staying in a certain work.

There is a lack of knowledge regarding occupational factors that predicts work life participation among workers with symptoms and disease, and these factors may differ between different disease groups. For example, it is well-known that workers with occupational asthma remaining in their original work environment will develop a more severe disease, and will end up with a more severe asthma compared to those changing work environments. In studies among subjects with rheumatoid arthritis decreased work ability has been associated with heavy work, low education, high age and disease severity. On the other hand, there are data supporting that workers in a physical demanding job with musculoskeletal disorders may benefit by physical activity and maintain current job with proper adjustments in the job. Hence, it may be a difference between different type of symptoms and chronic diseases (musculoskeletal-, mental- and respiratory) regarding the best way to promote sustainable work life participation.

The focus of this workshop will be to discuss different methods of assessing work life participation and to discuss whether the predictors vary between different groups of diseases.

#### Assessments of work disability

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There are great challenges in assessing work ability. The concept is broad and comprises the physical, psychological and social capability of a worker to perform and interact within her work. Work Ability Index (WAI) is an instrument used worldwide to assess and predict work ability. Critique of WAI concerns the many disparate items which are more or less changeable over time. A single item of work ability ('current work ability compared with life-time best') has often replaced WAI. The validity of this replacement has not been reported. This presentation focus on assessment of work ability among workers on long-term sick leave with the following measures: the total score of Work Ability Index, the global single item of work ability (single-item-WA) and the degree of working activity, in relation to symptoms, health and type of diagnosis. The study-group was a cohort of female workers on long-term sick leave, followed every 6th month with questionnaire and register-based data of working activity (0–100%). Stratified analysis was made for the types of diagnosis: musculoskeletal, mental, cardiovascular and respiratory. The results showed a general strong agreement between WAI and single-item-WA analysed with correlation. The correlations were strong also when changed WAI resp. single-item-WA was analysed as well as within the different type of diagnosis. Both WAI and single-item-WA showed similar patterns of relations to dimensions that are included in the concept of work ability, i.e. aspects of health, sick leave and symptoms of stress and pain (analysed by univariate and multivariate regressions). Further, WAI and single-item-WA, as well as changed WAI resp. and single-item-WA, explained and predicted future working activity, sick leave degree, health and health-related quality of life. In conclusion, the single-item measure of work ability could be a good alternative to WAI to follow status and progress of work ability among workers on long-term sick leave.

#### Predictors for work-disability and labour force participation variability among persons with airway disease

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Airway diseases are common among adults of working age and can be exacerbated by occupational factors; work-disability among persons with airway diseases is an important public health issue. We have found consistently negative condition-related effects associated with work disability defined by a variety of measures. In 53 adults with asthma treated at subspecialty pulmonary practice, 36% reported a 5 years

cumulative prevalence of change in job duties, pay or job change or job loss due to asthma. In 48 adults with cystic fibrosis (CF) all of whom had a history of labour force participation at some point, 35% had ceased work because of their disease, 27% were employed full time and CF had affected career choices in 47%. In a community-based cohort of 359 adults with asthma, 21% had experienced work disability defined by changed duties, work reduction, or job change; those with poor working conditions were at greater risk of disability (odds ratio 2.5). In a hospital-based cohort of severe asthma, 14% of 465 adults reported complete work cessation due to asthma. In another population-based cohort of adults with asthma ( $n = 125$ ) or chronic rhinitis ( $n = 175$ ), those with asthma were less likely to be currently working (58% vs. 69%  $P = 0.02$ ) but among those still at work, rhinitis was associated with more frequent impaired work effectiveness (36% vs. 19%;  $P = 0.02$ ). Even in COPD, which is more prevalent in older-age adults, 58 (25%) of 234 subjects with any prior labour force participation reported work cessation due to their disease. Analysing economic impact among 401 adults with asthma, work disability accounted for 35% of total asthma-related health costs overall. In summary, work disability, by a variety of different measures, is common in a spectrum of airway diseases. The health and social costs of such disability warrant greater attention to this problem and its potential amelioration.

### Predictors for return-to-work after sick leave due to musculoskeletal disorders and effectiveness of interventions

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## 7.7. Migrant health

### Mediterranean migrant diabetes morbidity and mortality in Belgium

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#### Background

Despite their generally lower socio-economic status, migrant groups generally have a lower all-cause mortality rate than the host population. This phenomenon has also been observed in Belgium. However, migrant groups, 'privileged' with regard to mortality, often have a higher prevalence of type 2 diabetes. In Belgium e.g. diabetes prevalence is higher in the Turkish and Moroccan communities, especially among women. In addition, these women also show excess diabetes mortality. In this article, we address diabetes morbidity and mortality of Mediterranean migrants in Belgium. More specifically, we examine the hypothesis that excess diabetes mortality among Mediterranean migrant women is due to the fact that these women are less active on the labour market and/or less often occupy physically taxing jobs, at least compared to the male migrant population.

#### Methods

Logistic regression with diabetes as outcome variable was performed on the basis of the Health Interview Surveys 1997–2001–2004. To estimate diabetes mortality, Cox regression was used on data from the National Mortality Databank 1991–96.

#### Results

In men, no significant ethnic differences in diabetes prevalence are found. In women on the other hand, a higher diabetes prevalence is observed in the Italian [odds ratio (OR)

Musculoskeletal disorders are a common cause of sickness absence. In a prospective study on prognostic factors for return to work (RTW) workers were included when on sickness absence of 2–6 weeks due to musculoskeletal disorders. A self-administered questionnaire was used to collect personal and work-related factors, pain, functional disability and general health perceptions. The main factors that were associated with longer sickness absence were older age, gender, perceived physical workload and poorer general health for neck, shoulder and upper extremity disorders, and functional disability, sciatica, worker's own perception of the ability of return to work, and chronic complaints for low back pain. Workers with a high perceived physical work load returned to work increasingly slower over time than expected, whereas workers with a high functional disability returned to work increasingly faster over time. These results indicate that interventions among workers off work for prolonged periods need to address physical workload as well as perceived limitations due to pain. In order to examine the effects of timing of structured interventions for workers on sick leave due to low back pain on return to work (RTW) a systematic review was conducted. Complete RTW curves were collected from literature and mathematically fitted to a Weibull distribution to evaluate the impact of program characteristics on cost-effectiveness. The cost-benefits of a RTW intervention among workers on sick leave due to low back pain were determined by the effect of the intervention, costs of the program, natural course of RTW in the target population, timing of enrolment of persons into the intervention, and duration of the intervention. The latter three factors are seldom taken into consideration, whereas their impact may easily exceed the influence of effect size.

1.93; 95% confidence interval (CI) 1.17–3.19], Turkish (OR 7.40; 95% CI 4.02–13.64) and Moroccan communities (OR 5.03; 95% CI 3.25–7.78). In line with these findings, excess diabetes mortality is found in Spanish and Moroccan women, but not in men. Results indicate that labour market participation plays an important part in this excess mortality. Whether or not the job is physically taxing, seems to bear little significance.

#### Conclusions

The higher diabetes morbidity and mortality among Mediterranean migrant women is associated with their being unemployed. An active screening of these women and improving their access to the labour market should be considered as important tracks for preventive policy.

### Access to health services in Catalonia from the Ecuadorian immigrants' perspective

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#### Background

The increase of immigrants in Spain poses new challenges for the delivery of healthcare. According to international evidences, immigrants present some special characteristics that may generate an inadequate access to healthcare services. In Spain, the access is basically analysed as service utilization, without an in-depth analysis focusing on the actors' perspective. The objective is to analyse factors that influence the access to healthcare services from the Ecuadorian immigrants' perspective.

## Methods

A descriptive and qualitative study with a phenomenological approach was carried out by means of semi-structured individual interviews to a criterion sample of informants (18). The selection criteria were: Ecuadorian nationality, age, sex and legal status. A narrative content analysis was conducted segmented by themes. The study area was Barcelona, which has the highest proportion of the Ecuadorians population of Catalonia.

## Results

Informants agreed that they used healthcare services when they perceived their health problem as serious. Moreover, they considered easy the access with the personal healthcare card. Other elements that facilitated access were identified: language knowledge, free healthcare and, to less extent, the proximity to healthcare centres. However, emerged some factors that hinder the access: level of information (personal healthcare card, health system organization, etc.), working conditions (schedules, fear of asking permission, etc.) which, according to some informants, hampers the continuity of treatment too; primary care and specialist day consultations opening times; and in the physician-patient relationship, work overload and professionals' behaviours (lack of visual and physical contact), according to some informants. Some informants felt discriminated against by their physical appearance and their educational level at the user service unit.

## Conclusions

Although access to healthcare was perceived as easy with the personal healthcare card, interviewees identified some barriers related to the immigrant population (poor knowledge of the system and poor working conditions), and to the system (information availability and organization) or to the healthcare personnel (medical care and discriminatory attitudes).

## Migrant Worker Presentation and Care in a UK Emergency Department

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### Issue/problem

Concern was raised about Emergency Department (ED) attendance by new European migrants (A8) with primary care, rather than emergency, complaints. The study aim was to assess the frequency and appropriateness of their attendances.

### Description of the method

A retrospective case note study of A8 migrants attending the ED, over 9 months in 2007, was undertaken at St John's Hospital, West Lothian, Scotland.

### Results (effects/changes)

Of 11 709 attendees at the ED, aged 18–40, 378 (3.2%) were identified as A8 migrants. Polish people comprised 321 of the 378 (85%) A8 attendees. The number of A8 attendances that were judged to be 'inappropriate' was 108 (29%; 95% confidence interval 24–34%). Infections were by far the most common 'inappropriate' presentation, accounting for two thirds of attendances. Many attended with primary care complaints; however, inappropriate attendance was not associated with low GP registration rates.

Language problems were documented for 126 (33%); however, the interpretation services were only used for 15 (12%). Friends, relatives or colleagues were used to translate for 56 (44%) and no interpretation was recorded for 55 (44%). Reasons for ED attendance are complex and also relate to knowledge and expectations of healthcare. NHS Lothian standards for interpretation were not met due to under use of interpretation services and reliance on informal interpreters. The reasons for the high staff concern about 'inappropriate attendance' are not clear and could be due to their sudden rise in numbers, in an area that previously had little ethnic diversity.

## Lessons

(1) Education for migrants about NHS healthcare services and appropriate access is important and of staff about the organization of other health services and healthcare expectations of migrants.

(2) Investigation of staff attitudes and reasons for under use of interpretation services and assessment of access to interpretation should take place. (3) Staff concerns about 'inappropriate' attendance should be put in context to ensure that negative staff attitudes towards A8 patients do not develop.

## The role of language mastery in the use of folic acid among pregnant women with different ethnic Backgrounds in the Netherlands

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### Background

Not all (soon to be) pregnant women use folic acid, despite the beneficial effects for the child. Research shows ethnic differences in folic acid use. An important determinant of the knowledge of folic acid is language proficiency. This study investigates whether ethnic differences in folic acid use can be explained by mastery of the language of the host country.

### Methods

Data were derived from the Generation R study, a multi-ethnic population-based prospective cohort study in Rotterdam, the Netherlands. Information was obtained from registered data of pregnant women enrolled in seven midwife practices and from written questionnaires at enrolment.

In this study, 1972 women with an expected date of delivery in 2002–2004 were included. Two groups of pregnant women have been compared: Cape Verdean, Moroccan, Turkish and Dutch Antillean women, known to have in general low mastery of the Dutch language, ( $n=628$ ), and native Dutch and Surinamese, known to have in general good mastery of the Dutch language, ( $n=1344$ ).

Data have been examined with multinomial logistic regression analysis using two models: no use relative to adequate use (use before pregnancy) and sub-adequate use (use since or later than pregnancy recognition) relative to adequate use of folic acid.

### Results

The use of folic acid is lower among the Cape Verdean, Moroccan, Turkish and Dutch Antillean than among the native Dutch and Surinamese women; 59% of the first group do not use it and 29% start the intake too late. Correcting for important determinants of folic acid use, e.g. pregnancy planning, the relative risk of no use compared to adequate use of folic acid is lower for women with good language proficiency.

### Conclusions

Mastery of language is related to folic acid use. To make women with low mastery of the Dutch language aware of folic acid, information must be communicated in their native language by general information campaigns before pregnancy, e.g. explanatory leaflets on the contraceptive medicines, information on an internet site, and during pregnancy by midwives or gynecologists, who can use the same means.

## Migrants use of complementary health care in relation to regular mental health care in the Netherlands

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**Background**

The use of regular mental health care by migrant groups in the Netherlands nowadays is on a level comparable with that of indigenous Dutch citizens. However, when need is taken into account, there is still a gap between migrant groups and indigenous citizens. As migrants tend to use other sources of care, such as (religious) healers or other practitioners known in their country of origin, they possibly use these complementary sources of care instead of regular care. We therefore explored complementary care utilization in relation to utilization of regular mental health care among the four largest migrants groups in the Netherlands.

**Method**

Data were used from a random sample of adults ( $N=1339$ ) drawn from the four largest migrant groups in the Netherlands. Use of regular mental health care and of complementary care both were measured as binary variables (yes/no). In addition two indicators of need (anxiety or depression, and role limitations) were measured. Furthermore accessibility factors, such as language mastery and use in daily contacts were measured, as well as acculturation (modern vs. traditional values).

Logistic regression analyses were applied to predict regular care use on the basis of need and accessibility factors, corrected for possible confounders (age, gender, income and education). Use of complementary health care was added as a predictor in order to demonstrate whether it acts as a substitute.

**Results**

Use of any care for mental health problems (regular or complementary) was predicted by both indicators of need. Use of any regular mental health care was predicted by the same indicators of need, and the use of the Dutch language in daily contacts. Adding the use of complementary care to the model revealed a positive effect of this predictor (odds ratio 2.875;  $P=0.017$ ).

**Conclusions**

Complementary care is not a substitute for regular mental health care, but is mainly used in combination with regular care.

**Migrants' utilization of healthcare in Europe— a systematic review**

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**Background**

Utilization of services is an important aspect of migrants' access to healthcare. The aim of this review was to study the European literature on utilization of health services related to screening, general practitioner, specialist, emergency room and hospital by adult 1st generation migrants. Our study question was: Are there differences in migrants' utilization of healthcare services compared with non-migrants?

**Methods**

Publications were identified by a systematic search of PUBMED based on a combination of terms. Appropriateness of the studies was judged independently by two researchers based on the abstracts. Additional searches were conducted via the references of the selected articles. The final number of studies included in the review was 23.

**Results**

The results suggested a diverging picture regarding utilization of healthcare services by 1st generation migrants compared to non-migrants in Europe. Overall, migrants tended to have lower attendance and referral rates to mammography and cervical cancer screening, higher use of GP but less use of consultation by telephone, and same level of use of specialist care as compared to non-migrants. ER utilization and hospitalization showed an inconsistent picture: both higher and lower levels of utilization have been shown between migrants and non-migrants as well as no differences.

**Conclusions**

Knowledge about health behaviour of all groups in society is a prerequisite to target offers and give everyone equal opportunity to achieve their full health potential including avoiding disadvantages for migrants in access to healthcare.

## 7.8. Late breaker: The impact of the economic crisis on public health: what is the role of the public health community

*Chair: Josep Figueras, European Observatory on Health Systems and Policies*

**What is the evidence of the impact of the economic crisis on public health?**

David Stuckler, UK

**What we know and what we do not know—update from WHO/EURO**

**Update from the European Commission**

**Reflections from EUPHA: what should the public health community do?**

Walter Ricciardi, Italy

**Debate on the role of the public health community**

## 7.9. Workshop: Policy impact assessments; theory, practice and needs

*Chairs: Gabriel Gulis\*, Denmark and Rainer Fehr, Germany*

**Organizer: Gabriel Gulis and Rainer Fehr**

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The proposed workshop aims to review recent stages of policy impact assessment at European level and discuss needs both in terms of practice and research. It builds up on completed or running European Commission research and implementation projects (DG Research and DG SANCO/EAHC). The Health

impact assessment in new member states and accession countries (HIA-NMAC) project conducted case study HIAs on policy issues in different countries and also interviewed local policy makers on barriers and opportunities for use of HIA. The case studies among other findings identified a lack of knowledge on conduct of risk appraisal step of HIA; specifically conduct of risk assessment on level of

policy – determinant of health has shown to be more complex than expected. Policy makers among other barriers highlighted the lack of tools as well as user-friendly, fast and effective methods to conduct HIA of policies, plans, projects. Presentations of invited speakers and subsequent discussion are going to address the following issues:

- (1) State-of-the-art of impact assessment processes with regard to tools and methods, with a focus on risk assessment of policies.
- (2) Contributions to improvement of use of impact assessment processes in Europe.
- (3) Future research and implementation needs.

### **DYNAMO-HIA: a ready-to-use tool to determine the health impact of policies and actions**

**Wilma J. Nusselder**

*WJ Nusselder, H Boshuizen, S Lhachimi, H Smit, M Kulik, P Van Baal, JP Mackenbach, Erasmus Medical Center Rotterdam, Rotterdam The Netherlands*

A major bottleneck in HIA activities is the quantification step of policy options on population health. Currently, there is no off-the-shelf tool available that can be readily used. The DYNAMO-HIA project, funded by the EU, has developed a prototype of such a ready-to-use tool: It quantifies the health impact of changes in health-determinants/risk factors as a result of different policies or actions. The tool can be used with arbitrary risk factors and delivers a broad range of outcome measures. It will be made publicly available together with an initial data set on important health determinants (smoking, obesity and alcohol consumption) and their effects on four example diseases (cancer, cardiovascular disease, diabetes and chronic obstructive pulmonary disease) for most EU countries. Other diseases and health determinants can be easily added by future users when required.

In the presentation, we will illustrate how DYNAMO-HIA translates user expectations of the impact of a policy on health determinants into health effects associated with these changes in the population, by modelling the intermediate steps from risks factors through several chronic diseases, on mortality and morbidity in the population, allowing comparing different policy measures.

### **Assessing health implications of policies: Views from WHO**

**Marco Martuzzi**

*M Martuzzi*

WHO EURO, Rome office for environment and health, Rome, Italy

In this presentation, some experiences of WHO Europe in risk assessment, health impact assessment, strategic environmental assessment and intersectoral work will be discussed. The use of scientific evidence, its interface with the policy domain, the role of cross cutting issues such as uncertainty, environmental health equity and vulnerable subgroups will be addressed, comparing and contrasting different methodologies and approaches.

### **HEIMTSA/INTARESE projects**

**Fintan Hurley**

*F Hurley*

Institute of occupational medicine, Edinburgh, United Kingdom

HEIMTSA (Health and Environment Integrated Methodology and Toolbox for Scenario Assessment) brings together an international team of scientists in the areas of epidemiology, environmental science and biosciences, to collaborate on developing and applying new, integrated approaches to the assessment of environmental health risks and consequences, in support of European policy in transport, energy, agriculture,

industry, household and waste treatment and disposal. INTARESE brings together a team of internationally lead scientists in the areas of epidemiology, environmental science and biosciences to collaborate on developing and applying new, integrated approaches to the assessment of environmental health risks and consequences, in support of European policy on environmental health. The presentation will summarize findings of two projects with respect to policy impact assessment.

### **Impact Assessment practice to support sustainable policy objectives in Europe**

**Peter de Smedt**

*P de Smedt*

European Commission - DG Research Environment - Sustainable Development Unit I.2, Brussels, Belgium

Sustainable Development (SD) has become an overall policy objective in Europe. This is confirmed by the recent issuing of a renewed European SD Strategy in 2006 and a variety of national and regional SD strategies. The purpose of this article is to analyse how, in Europe, policy instruments, such as environmental and socio-economic models have been developed in order to provide a solid foundation for sustainable policy measures. The analysis involved the set-up of a scoping study during Spring 2008 to evaluate and compare different current practices. The selected Impact Assessment (IA) exercises and research policy cases have been analysed on the basis of a set of criteria developed for this scoping study.

The empirical evidence of this scoping study confirms a broad variety of successfully established IA-related initiatives in Europe and the interviewed policymakers and researchers find the IA approaches legitimate on a conceptual basis. Formal activities and guidance for IA, for example, are well established within the EC. Both communities however acknowledge that the full potential of IA tools to support sustainable policy objectives in practice is not yet met. Researchers often find the scope of the current IA exercise too narrow and too sectoral to support real change in order to anticipate the unsustainable developments. Yet, the contribution of a formal IA exercise should be evaluated in its full context as being part of a broader policy process. The framing of the policy question, for example, has most often been established before the IA exercise was initiated. In addition, research projects often struggle to bridge the gap between science and the formal policy process. The tools used in any such process-based application must be simple, based as far as possible on rigorous analysis, while recognizing explicitly where value judgments are included. Moreover, whilst being simplifications of reality, many scientific models remain so complex that they are seen rather as black boxes instead of transparent analytical tools. Hence, some of what modellers see to be the great strengths of modelling tools are felt by non-modellers to be serious weaknesses. Consequently, research outcomes do not fully reach the policymakers.

### **RAPID project**

*Gabriel Gulis*

RAPID project group University of Southern Denmark, Unit for Health Promotion Research, Esbjerg, Denmark

Risk assessment from policy to impact dimension (RAPID) aims to develop, pilot test and implement via case study on a selected EC policy and series of national workshops. The first step of the project is to conduct a survey of 'policy risk assessors' in participating countries with aim to be able recommend risk assessors for municipalities and authorities for conduct of risk appraisal step of HIA and later use the identified institutions, experts for implementation of newly developed methods.

## 7.10. Workshop: Public health genomics and effects on solidarity, responsibility and justice

*Chairs: Klasien Horstmann and Jeantine Lunshof, The Netherlands*

**Organizer: EUPHA Section on Public Health Genomics**

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One of the biggest challenges all European health systems currently face is genomics. Genome-based knowledge and technologies will have to be implemented in a responsible manner, having regard to all the evidence, if the goal of improving population health is to be achieved. At the same time, these developments in public health genomics raise important issues for health care provision and access to European health systems. How will public health genomics be organized and reimbursed and which effects will this have on the organization of solidarity, responsibility and justice? While, these are issues of important relevance for health professionals, the public and policymakers for the years to come, they have only recently been started to be discussed. In this workshop we will explore how developments in public health genomics might affect European health systems. Questions that arise deal for instance with the impact of genetic (risk) information on access to health and life insurance. People fearing that the use of genetic information might lead to the rise of a 'genetic underclass' stand opposed to those arguing that genetic information for risk assessment is not different from other kinds of medical information. Other questions deal with the reimbursement of genetic technologies in European health systems. The main issue here is whether and how financial and organizational arrangements for health care will affect the use of genetic technologies, and whether their application should be strictly regulated. These debates are especially interesting now that in many European countries health systems are reorganized and boundaries between public and private are redefined. In line with that it is discussed how the implementation of public health genomics in European health systems articulates and contributes to new notions of solidarity, responsibility and justice. The concrete example of nitri-genomics has been chosen to demonstrate these challenges. The workshop will consist of 5 presentations, followed by general discussion.

### Solidarities in practice: how technology and organization distribute health care access in the genomic era

Erik Aarden

*E Aarden*

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As genomics is becoming an ever more important part of medicine and public health, an issue of increasing interest is how genetic technologies are made available to patients and what this will mean for solidarity in Europe. Whereas, in most European countries health care for the majority of the population is covered, the often still experimental and controversial nature of genetic technologies means that their provision is not self-evident.

In a comparative, in-depth study of the provision of three specific genetic technologies in Germany, the Netherlands and the United Kingdom, we have analysed the mechanisms and criteria applied for the organization and reimbursement of genomic medicine.

In this article we will present results from our study and draw some conclusions about solidarity in the era of genomics. As we will indicate, different health care systems entail different 'therapeutic cultures' that lead to different approaches to the incorporation of new technologies. As a result, the constitution of public health genomics and genomics in medicine varies

between countries and, consequently, the significance of technological developments for health care access and distribution differs. Hence, we propose to speak of 'solidarities in practice' with regard to how differences in health care access result from the nationally specific ways genomics is integrated.

### The co-construction of genetics, insurance and solidarity: the effects of genetic anti-discrimination regimes in European practice of insurance

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**Issue**

Widely it has been debated that genetic technologies, with its potential for risk profiling, will imply an individualization of risk and the breakdown of solidarity. This has stimulated fierce debates about the 'impact' of genetics in private insurance, producing public fears of 'genetic discrimination' in insurance and worries about solidarity. Because of these public fears, policymakers in many European countries have installed genetic anti-discrimination regimes to protect genetic risks in insurance and to safeguard solidarity for genetic risks. In this article we will document on the practical effects of genetic anti-discrimination regimes in insurance for solidarity and access to insurance. To do so, we analysed the co-production of genetic technologies and private insurance in different European countries by taking as starting point insurance practices.

**Problem**

How to assess, the impact of genetic anti-discrimination regimes in insurance?

**Results**

Although the introduction of genetics in insurance was supposed to pose big problems for genetic risks, the accompanying regulations to protect genetic risks result in the relatively under-protection of non-genetic risks, like lifestyle risks. So policy arrangements aiming to prevent discrimination and to maintain solidarity with genetic risks actually contribute to new kinds of discrimination and new challenges for solidarity. Moreover, as far as the mechanisms of legal justice stimulate a 'game of comparison' between different risk groups, legal protection itself might become a mechanism for discrimination and a threat to solidarity itself. These findings demonstrate that genetic legislation raises new controversial issues with respect to solidarity.

### Just Public Health Genomics

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**Issue**

One of the challenges Public Health is currently focusing, is the integration of genome-based knowledge for the better of population health. This article will describe ethical challenges and foundational moral conflicts this so called 'Public Health Genomics' enterprise is facing.

**Discussions**

Ethical challenges consist in the limitation of self-determination when the public's health and associated social welfare are at stake. Also, it is feared that genomics widens the gap of

health inequalities. These issues — among other things — have to be discussed in such diverse contexts as labour and insurance market. Two normative principles for these discussions are the utilitarian calculus and the justice principle.

#### **Results (effects/changes)**

Weighing the different arguments from utility and justice, the plausible key criterion for Public Health Genomics is found to be justice. Justice is a norm to balance individual rights (derived from the fundamental value of human dignity) and welfare with welfare and rights of groups or populations. An essential specification of the criterion of social justice that derives its normative stances directly from the concept of human dignity (rather than liberty, another derivative of human dignity) is that people must be enabled and empowered to live a self-responsible life in order to take part in social communication.

#### **Lessons**

The developed arguments and normative framework should contribute to making justifiable decisions in policy development. The justice criteria presented constitute benchmarks that have to be considered for good and right Public Health Genomics — in fact, Public Health in general — research, practice and policy making.

### **Sociotechnical constraints on reaching public health goals via public or group avenues**

**Bart Penders**

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Contemporary science can be characterized by large scale multi-sited interdisciplinary cooperation. This kind of cooperation is thought necessary for solving complex scientific problems and, by doing so, to reach the social and normative goals of science, for instance, the promotion of public health. In this presentation I will present the results of analysis of a large-scale multi-sited scientific practice, questioning the latter assumption. Do the strategies to solve scientific problems indeed contribute to the normative goals of large-scale science? To be able to analyse problem solving in multi-sited scientific practice, I first introduce the concept of doability and amend this notion to make it suited for multi-sited research practices. Second, I will demonstrate the fruitfulness of this conceptual frame by presenting an analysis of the field of nutrigenomics, in which large scale research is organized to contribute to

‘health for all’. Third and finally, I will show that the strategies to make research problems in the large scale multi-sited research practice of nutrigenomics doable, do not necessarily contribute to a public health aim.

In fact, making the study of nutrigenomic problems doable, implies that the goal of health has to be fragmented into many distinct norms for health. These norms for health co-exist with one another and may translate in different, possibly conflicting, research strategies, policies and actions.

### **Lay understandings of food, health and personalized diets in everyday life**

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Nutrigenomics, nutrigenetics or nutritional genomics are gaining an increasingly prominent place in the bioscientific discourse on food and health. In addition to large scientific and technical breakthroughs, the new fields are envisioned to facilitate applications that may have far-reaching consequences on the level of everyday life. These applications may include new foods, services, diets and technologies to prevent, mitigate or cure disease as well as to make possible individually tailored health-optimizing diets that are based on the genetic makeup of individuals.

The applications of nutrigenomics have a potential to transform the meanings of food and eating as well as to further individualize and medicalize the ways that people eat. However, the emerging social debate on nutrigenomics attention focusing on the ethical, legal and regulatory aspects relating to the study of human genes seems to overlook the social and cultural conditions and consequences of the new technology on the level of everyday life. The aim of this article is to discuss the possible encounters of nutrigenomics and the everyday practices of eating as well as to develop a theoretical basis for an empirical study on the social and cultural aspects of nutrigenomics. The starting point of the article is the notion of practices of eating as both individual and collective modes of doings and sayings, thought and activities. Through the use of a practice theoretical approach, to the study of food and health, the article discusses the potential changes in everyday eating, in lay notions of genes, food and health and in people’s ways of promoting and maintaining their health that may result as a consequence of nutrigenomic information and its dietary applications.