

# POSTER PRESENTATIONS: ABSTRACTS

## CHILD AND ADOLESCENT PUBLIC HEALTH

### Teaching first aid in Danish primary schools

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#### Background

In Denmark, approximately 3500 citizens experience out-of-hospital cardiac arrest annually. The survival rate from out-of-hospital cardiac arrest is nationwide approximately 6.5%. In 2004, cardiopulmonary resuscitation was attempted in 29% of observed out-of-hospital cardiac arrests in Denmark. In an attempt to increase this percentage the Danish government in 2005 decided that first aid including cardiopulmonary resuscitation is an obligatory part of the road safety education in Danish primary schools. The main purpose of this study was to examine whether the Danish primary schools actually teach first aid and cardiopulmonary resuscitation to the pupils.

#### Methods

A questionnaire survey was conducted as a representative study among headmasters at 650 randomly selected Danish primary schools and simultaneously, a sample of 150 randomly selected independent boarding schools for upper secondary students offering the tenth form was made. The tenth form students were asked to fill in a questionnaire on training in first aid including cardiopulmonary resuscitation during the seventh to ninth form at their previous primary school.

#### Results

The response rate among headmasters was 57.8% and a total of 61 independent boarding schools completed the questionnaire (2532 students responded); the response rate was 40.7% at school level. According to the headmasters the number of Danish primary schools teaching first aid was 30%. The number of schools teaching cardiopulmonary resuscitation was 25%. The results reported by students and headmasters concerning training in first aid and cardiopulmonary resuscitation during the seventh to ninth form were similar; a larger part of students reported receiving training outside the school. 31.3% of the students reported that they believe they would be able to provide cardiopulmonary resuscitation if necessary.

#### Conclusions

Compulsory training in first aid and cardiopulmonary resuscitation has not been fully implemented in primary schools. If training in first aid and cardiopulmonary resuscitation is to be strengthened, it is recommended to work out a strategy for the area.

### Do parents' education, perceived discrimination and hopelessness explain worse self-rated health in Roma adolescents compared to the majority population?

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#### Background

The worse health of ethnic minorities living in extremely deprived areas is frequently associated with lower education. Discrimination and hopelessness may also negatively affect their health. Our aim is to explore whether parents' education, perceived discrimination and hopelessness contribute to worse self-rated health in Roma adolescents living in settlements compared to non-Roma adolescents.

#### Methods

A cross-sectional survey was performed among Roma adolescents ( $N=330$ , mean age = 14.5) and non-Roma adolescents ( $N=722$ , mean age = 14.9) in elementary schools. Roma adolescents were selected from segregated and separated Roma settlements. The effect of ethnicity on self-rated health (SF-36) was analysed using logistic regression models adjusted for gender. We examined the effect of adding the highest education of parents, perceived discrimination (ISRDI) and hopelessness (Hopelessness Scale for Children) to this model.

#### Results

Being a Roma adolescent living in a settlement significantly increased the likelihood of having poor health [odds ratio/95% confidence interval (OR/CI), 3.15/2.36–4.21] compared to non-Roma adolescents. The effect of ethnicity decreased, but remained statistically significant after adding parents' highest education, perceived discrimination, and hopelessness into the model (OR/CI for ethnicity, 1.78/1.12–2.82). Those reporting discrimination (OR/CI, 1.81/1.24–2.65) and a higher level of hopelessness (OR/CI, 1.27/1.14–1.41) had a higher probability of bad health. The effect of parents' education was not significant.

#### Conclusion

Parents' education, perceived discrimination and hopelessness only partially explained the worse self-rated health of Roma adolescents living in settlements compared to non-Roma adolescents.

### Gender analysis of sexual behaviour of senior high-school students in Skopje, R. Macedonia – cross-sectional study

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#### Background

Gender perspectives shape the way adolescents view sexuality and play an important role in sexual behaviour, risk taking attitude and their use and access to information and services. The aim of the study was to assess the gender influence on main determinants of sexual behaviour of senior high-school students in Skopje, R. Macedonia.

#### Methods

After ensuring privacy and confidentiality, a cross-sectional study was carried out in Skopje by enrolling 310 high-school students (49.7% males, 49% females, 1.3% unknown) from five randomly selected high-schools, from fourth grade, using 32 items paper-and-pencil self-administered questionnaire.

#### Results

The prevalence of sexual activity was higher among boys than girls (when reaching grade 4 of the study 62.7% of the boys and 26.7% of the girls are sexually active) ( $P < 0.01$ ). In addition, significant gender difference was found in the following: the mean age of onset of sexual activity is 16 years for boys and 17 years for girls; concerning the duration of the relationship before the first sexual intercourse 33% of the boys and 2.5% of the girls had experienced one-night stand relationship ( $P < 0.01$ ); and concerning the number of partners, having four or more sexual partners reported 29.8% of the boys and 5% of the girls ( $P < 0.01$ ). Of those sexually non-active, 62.5% of the boys and 15.5% of the girls did not start with sexual activity because they did not have a chance ( $P < 0.01$ ); 17.9% of the boys and 79.1% of the girls felt unprepared ( $P < 0.01$ ).

## Conclusion

The data indicates substantial gender differences in sexual initiation patterns and sexual conduct. Boys and girls are vulnerable at different time in their development and hence need to be reached with different public health interventions for improving of their sexual and reproductive health, adapted to local cultural and gender norms.

## What do children understand? Communicating health behaviour in a European multi-centre study (2007–2011)

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## Background

The increasing prevalence of childhood overweight/obesity is a growing public health concern. Diet and physical activity have been identified to be important factors in the prevention of overweight. To clarify how a healthy behaviour can be communicated to children effectively, through e.g. teaching, role modelling has been worked out using the results of IDEFICS-study focus group discussions from seven European countries.

## Methods

Standardized focus groups were carried out in seven European countries (Cyprus, Estonia, Germany, Hungary, Italy, Spain and Sweden), using a standardized questioning route. Focus groups were undertaken between February and April 2007 with 6–11-year olds and parents of pre-school and school children with different socio-economic backgrounds (low-high SES). Each focus group discussion was audio-taped, transcribed and analysed according to: diet/physical activity/barriers and facilitators for healthy eating and sports.

## Results

Results illustrate limited communication between parents and children in most countries—Cyprus seems to be the exception. Parental attitudes to healthy eating and physical activity are strict, however, the rules are not in accordance with these. In addition, follow-up of rules is inconsequent. Parents list barriers that hinder from realizing rules or setting up control mechanisms. Barriers are mainly time constraints or financial aspects but behavioural aspects (i.e. motivation of the parents) also play a role. As a result, children are confused and not aware of rules or consequences and do not learn a healthy behaviour.

## Conclusion

To establish long-term health behaviour in children, parents should focus on the communication of rules and consequences. For the IDEFICS-study intervention this means to use a setting-oriented approach, in which not only the community, kindergartens/schools but also the families are targeted. In particular a support of parents to increase their awareness of education (their role) and to stick to a consequent follow-up of rules is necessary.

## Prevalence and trends of alcohol use among school-aged children in Lithuania, 1994–2006

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## Background

Alcohol abuse is considered as one of the most important risk taking behaviours among youth in the global world. Aim of this study was to analyse features and trends of alcohol consumption among 11-, 13- and 15-year-old adolescents (students from schools) in Lithuania in 1994–2006.

## Methods

Results from WHO collaborative cross-national Health Behavior in School-aged Children (HBSC) study are presented. In Lithuania, representative samples of 5428, 4513, 5645 and 5632 students aged 11-, 13- and 15-years-old were included into school-based questionnaire survey correspondingly in 1994, 1998, 2002 and 2006. The standardized methods of international HBSC study were applied. Frequency of use of different alcohol categories (beer, wine, spirits, sparkling wine, liqueur, alcohol mixes) and reported episodes of drunkenness were in focus of this research.

## Results

Prevalence of students who reported have been drunk 'two or more times' in their lifespan has increased by 2.5 times (from 9.8% to 25.6%) during 1994–2006. Significant increase of drinking frequency among girls was observed—percentage of girls who have reported alcohol use (50.3%) was almost approached the level of boys (56.8%,  $P=0.006$ ). The reported mean age of the first onset of drinking had shifted by 2 years toward younger age during the period of observation. The comparison of reported drunkenness 'two or more times' show that Lithuanian respondents are among the most tending to be drunken (29.0% in boys and 22.1% in girls) and were in the second worst position in the rating scale when comparing with other 36 countries involved in HBSC study. The results suggest that increased use of 'light' alcoholic beverages could predict increase of drunkenness prevalence. The recent data show that ready-to-drink beverages ('alcopops') at least once per week were used by 15.3% of boys and 17.5% of girls ( $P=0.216$ ), beer—16.9% of boys and 5.6% of girls ( $P<0.001$ ).

## Conclusions

Significant shift of the onset of drinking alcohol toward younger age was observed during 1994–2006 in Lithuania. The trend of increase of alcohol consumption among school-aged children in our country has resulted that our population of young people approached the highest levels of alcohol consumption in Europe.

## The effect of personality dimensions and alcohol availability on alcohol consumption by young adolescents

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## Background

Monitoring regular alcohol consumption in the period of transition from childhood to adulthood is an important task of public health policy. The aim of this study was to explore the separated and combined associations of selected intraindividual and social predictors with alcohol consumption by young adolescents.

## Methods

The research sample (data collection in 2007) consisted of 3599 young Slovak adolescents (mean age 14.4, 49.6% girls). Binary logistic regression was performed to assess the impact of the Big Five personality factors (extroversion, agreeableness, emotional stability, conscientiousness, openness to experience) in the first model and also alcohol availability (1 = very easy to 7 = very difficult) in the second adjusted model on alcohol

consumption (drinking per last month or not). Analyses of these two types of models were performed separately for genders.

#### Results

In the models containing only personality factors higher extroversion for both genders increased the probability of alcohol consumption. Higher agreeableness and conscientiousness decreased alcohol consumption only among girls ( $c=0.55$ ; 95% CI 0.53–0.58 for boys and  $c=0.58$ ; 95% CI 0.55–0.61 for girls). In the second adjusted models combining the Big Five personality variables and alcohol availability the effect of personality factors disappeared. The only risk predictor of alcohol consumption for both genders remained alcohol availability ( $c=0.72$ ; 95% CI 0.69–0.74 for boys and  $c=0.77$ ; 95% CI 0.75–0.8 for girls).

#### Conclusions

The results support the meaningfulness of the restriction of alcohol availability as a prevention policy health strategy regarding alcohol consumption by young people.

### Waist circumference and early diagnostics of a metabolic syndrome

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#### Background

According to recent investigations, metabolic syndrome is considered as a predictor of cardiovascular diseases (CVD) and type 2 diabetes. Purpose of the study was to investigate association of waist circumference (WC) and some components of metabolic syndrome (blood lipid levels, arterial blood pressure (BP) and anthropometrical parameters) in adolescent population of Novosibirsk.

#### Methods

In 2003 the representative sample of the Novosibirsk adolescents of both sexes aged 14–17, (667 subjects) were examined. The program included questionnaire, double measurement of arterial blood pressure, anthropometry, (weight, height, body mass index, waist), assessment of blood lipid levels [total cholesterol, triglycerides, high-density lipoprotein cholesterol (HDL-C)]. Adolescents were divided into three groups: non-obese (BMI <85 percentile), 567 (84.7%), overweight (BMI 85–94 percentile) 69 (10.3%) and obese (BMI  $\geq$  95 percentile) 33 (4.9%). In each group the average values of the parameters were evaluated.

#### Results

Mean systolic and diastolic BP, triglycerides and anthropometrical parameters of the obese adolescents were higher and levels HDL-C were lower comparing to the non-obese and overweight adolescents ( $P \leq 0.001$ ). Associations ( $P \leq 0.001$ ) between WC systolic BP (boys  $r=0.42$ , girls  $r=0.28$ ), triglyceride level (boys  $r=0.20$ , girls  $r=0.17$ ), HDL-C (boys  $r=-0.19$ , girls  $r=-0.14$ ), BMI (boys  $r=0.89$ , girls  $r=0.80$ ) were found in both gender groups. Multiple linear regression analysis showed the WC as a better independent predictor for the systolic BP ( $P \leq 0.001$ ), HDL-C ( $P \leq 0.001$ ), triglycerides ( $P=0.012$ ), than the BMI ( $P=0.029$ ,  $P=0.33$ ,  $P=0.25$  accordingly).

#### Conclusion

Waist circumference may be useful as an early predictor of metabolic syndrome in adolescents.

### Does change of non-smoking policies have influence on smoking prevalence decline in Lithuanian school-aged children: HBSC study 1994–2006?

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#### Background

Significant progress in implementation of different anti-smoking policies has occurred in countries across the Europe including Lithuania during last decade. Despite much effort spent on anti-smoking programmes in European schools limited effects were observed. Our study was aiming to analyse time trends on smoking in Lithuanian school-aged children during period 1994–2006 in the context of anti-smoking policies, which were implemented in Lithuania.

#### Methods

Research was a part of WHO Cross-National Health Behavior in School-aged Children (HBSC) study carried out in Lithuania. The standardized methods of international HBSC study protocol were applied. Stratified random representative samples of 5428, 4513, 5645 and 5632 students aged 11-, 13- and 15-years-old were included into school based anonymous questionnaire survey respectively in 1994, 1998, 2002 and 2006. Questions on frequency of smoking, age of initiation and other questions were included.

#### Results

Prevalence of smoking was increasing significantly among boys during period 1994–2002 (11.3%, 19.8% and 23.6%, respectively in 1994, 1998 and 2002), but has started to decline after (17.3% in 2006,  $P < 0.05$ ). Similar trends observed among girls: 3.6%, 8.5%, 14.6% and 12.5% of girls have reported smoking in cross sectional surveys of 1994, 1998, 2002 and 2006. Prevalence gap in smoking between boys and girls diminished during period of observation. Boys living in rural areas were more frequent smokers than urban in 1994 and 1998 (13.9% vs 9.5%,  $P < 0.05$ ; and 20.0% vs 19.6%,  $P > 0.05$ ). However, surveys of 2002 and 2006 showed opposite transition (22.1% vs 25.6%,  $P < 0.05$  and 16.9% vs 17.8%,  $P > 0.05$ ). Urban girls have reported more frequent smoking in comparison with rural girls.

#### Conclusions

Decrease in prevalence of smoking in school-aged children was observed during 2002–2004. It could be related to implementation of tobacco control measures in Lithuania: total ban of advertisement (since year 2000); increase of tobacco taxes (every year since 1998), ban of sale of reduced cigarette packages, ban of tobacco product imitations, introduction of youth smoking prevention programs and warnings on tobacco products. Further monitoring of prevalence of smoking and preventive measures should be continued.

### The prevalence of passive smoking of pupils from rural school communities—a major public health problem

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#### Background

The improvement of school children's health condition is significantly influenced by the environment and the air quality. An enhanced quality of life is a social ethical imperative as well as a responsibility of the family, school and community the children live in. Due to the fact that both passive and active smoking have serious consequences especially on children's health condition, our survey approaches a major public health issue that reflects school children's life quality as provided by family, school and society. It does so by assessing the prevalence of passive smoking in a school community as well as actions and attitudes correlated with tobacco use in family and society.

#### Objectives

With this study we wanted to find out the frequents of passive smoking by pupils from rural schools; the distribution of

passive smokers according to gender, of non-smokers according to parents' and friends' smoking habit; the exposure to passive smoking according to age group.

#### Results

The questionnaires was distributed in 2008 to 1140 pupils aged 10–18, enrolled at Rural Schools in County Cluj from Romania. The study revealed a high prevalence of passive smokers (65%), some of whom had never been smokers or had been occasional smokers (31.42% and 33.58%). Additionally, the survey highlighted that most school children start smoking in their teens (74.30%) and that most of the passive smokers are female (54.34%). Family environment is positively correlated with passive smoking with children exposed as early as 7 years old; however, joining teen age peer groups in school facilities where active smoking takes place accounts for most of the passive smoking.

#### Conclusions

The situation of non-smoking school children can be partially solved by health education and prevent programs as well as by observing their rights to a healthy smoke-free environment at rural school, at home and in the community, or other public health prophylactic activities. In order to gather primary data the questionnaire was distributed in 2008 to 1140 pupils aged 10–18, enrolled at Rural Schools in County Cluj from Romania.

### E-interventions for students with hazardous or problematic alcohol use: a pilot study in Antwerp, Belgium

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#### Background

In 2005, the University of Antwerp (UA) did an electronic survey on substance use among the student population of Antwerp. Results showed that 10% of the male student population has an indication of problematic alcohol use. Literature research shows that brief electronic interventions have a positive effect in reducing alcohol use of students and that students prefer electronic above face-to-face interventions.

#### Methods

A website was developed to motivate students with hazardous or problematic alcohol use to reduce their alcohol consumption and to enlarge their willingness to search for help. The website contains a questionnaire where students can test their alcohol use. The AUDIT (Alcohol Use Disorders Identification Test) was developed by the World Health Organization (WHO). AUDIT is a validated test with 10 questions assessing hazardous and harmful patterns of alcohol consumption. According to their answers, the students receive immediately a personal feedback. After the test, they get the possibility to send a mail to a student counsellor for questions, guidance or advice. The website is promoted by the student counsellors per campus by means of flyers, posters, an e-mail to all students, in student magazines and so on. Begin April 2008 the website [www.eentjeteveel.be](http://www.eentjeteveel.be) was launched in the UA and all schools for higher education in Antwerp.

#### Results

After 3 weeks the site counted 2000 visits. Of them, 41.9% show no risk of problematic alcohol use (AUDIT score of 0–7), 40.5% show a moderate risk (8–15), 9.7% a high risk (16–20) and 7.9% a very high risk (21–40). Of the people who scored more than 15, 46% stopped the test after receiving the feedback, 13.5% searched for information and 3.7% asked for guidance, an appointment or asked for advice.

#### Conclusions

The effect of the e-intervention on the problematic alcohol use of the Antwerp students will be evaluated in a survey.

### Injuries among young people in Europe

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#### Background

The purpose of the report is to raise awareness and provide the European and national authorities and stakeholders with an insight into the size and impact of injuries and risk-taking behaviour among young people aged 15–24.

#### Methods

Desk research was performed as regards to injury statistics, identification of risk factors and determinants was done by a systematic literature review from the databases. As a part of the study European experts from different fields of injuries were consulted. The report was reviewed and evaluated by high-level experts in the field.

#### Results

For young people's injuries are the leading cause of death, three thirds of their death causes are due to injuries. Traffic injuries and suicides are the most common injury related deaths among young people. Every year more than 20 000 young people die due to injuries in the EU27.

Injuries are also an important cause of morbidity in young people with falls being the number one cause of morbidity and disability. The most common non-fatal injuries are sports injuries. Men are more at risk than women; the total number of hospitalisations and deaths in young people is three times higher in males than in females.

#### Conclusion

There are substantial differences in injury rates across Europe. The rate is much higher in Eastern Europe than in Northern or Western Europe. The differences within countries are also remarkable.

Young people's injuries are complex phenomena. Rather than finding one single measure to tackle the issue, a new, holistic approach ought to be taken. A combination of educational, structural and environmental measures is likely to be successful in preventing injuries in young people. Furthermore, in order to achieve an impact, injury prevention activities ought to be initiated simultaneously at different levels of society and included in the official agenda of healthcare systems and schools.

### Availability of behavioural determinants of obesity in children in Europe

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#### Background

Obesity and overweight are critical determinants of health in children and adolescents. European-wide comparable lifestyle indicators such as nutrition and physical activity should frequently be measured if only because there is a crisis in obesity and overweight in Europe. In that fact, an inventory list focusing on indicator availability across Europe is of special interest.

#### Methods

A detailed database was developed including national as well as European data sources that measure nutrition and physical activity for babies, children and adolescents aged 15 and over.

Data gathering was assisted by European countries by selecting one-off studies, non-routinely analysed data and routinely analysed data in their country. The project created an inventory list of statistical indicators derived from, for example, the Health Behaviour in School-aged Children-study. Project results demonstrate whether determinants on nutrition and physical activity are available or rather missing in Europe.

#### Results

The database presents a mixture of results—some countries have a large amount of data (Germany, France, United Kingdom), whereas other countries do not collect data sufficiently. Belgium, Italy, Macedonia, Spain, Austria, Finland, Hungary, Slovakia and Sweden do not measure several determinants or do not provide data for all ages. Cyprus, Greece and Turkey have very limited data. In general, data about breastfeeding are rare. Most of data were collected for older children, especially children aged 10 years and over. Nutrition data are more available than physical activity determinants. In the majority of cases, countries do not survey the determinants 'children who walk or bicycle to school' or 'have access to safe places to play'. Indicators measuring television watching and using computers are available in almost all countries.

#### Conclusions

The results illuminate the lack of data in most of Europe. Determinants are not comparable, and consequently specific health conclusions on a European level cannot be made with actual available data. The project contributes absolutely essential information for a European-wide scale of health monitoring in childhood and adolescence.

### Effects of neighborhoods deprivation on adverse birth outcomes in an urban area of Lisbon metropolitan area

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#### Background

Birth weight (BW) has been studied as a result of several genetic, demographic and socioeconomic characteristics and as health determinant in the development of the individual, specially its influence in adulthood morbidities. The main objective of this cohort study is to examine the effect on BW of living in a disadvantaged neighbourhood in an urban area of Lisbon Metropolitan Area. We analysed the impact of biologic, social factors and the contextual influence, i.e. the significant variance of BW between the neighbourhoods.

#### Methods

A database (hospital records) with individual data on newborns BW and maternal risk factors was used (523 live singleton babies). Neighbourhood characteristics were also included. Connections between individual and neighbourhood level determinants and the outcome were analysed using multilevel regression technique. We analysed not only the impact of biologic, social factors (infant sex, maternal age, parity, gestational age and maternal smoking, education and occupational class, gestational diabetes and hypertension) and mode of delivery, but also the contextual influence.

#### Results

Live singleton BW varies with sex (156 g less on female newborns;  $P=0.000$ ), with gestational age (155 g less per week until 37 weeks;  $P=0.010$ ). Mother's age, education, smoking habits and pregnancy pathologies (diabetes) also have a significant impact in the BW. After conditioning for the biological and social factors the place of residence has shown significant influence ( $P=0.047$ ). The multilevel model developed suggest that not only the variance between neighbourhoods is significant (BW varies significantly among neighbourhoods) but also there is a significant variance of the influence of the gestational age (centred at 37 weeks) among the

neighbourhoods ( $P=0.048$ ), i.e. the variance between neighbourhoods for BW is bigger for preterm newborns.

#### Conclusion

Our study confirmed the relevant genetic variation of BW but also the variance between the neighbourhoods, especially the deprivation of these is relevant for the BW for preterm singletons.

### Monitoring health inequalities in adolescence—The Finnish School Health Promotion Study

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#### Background

In Finland the well-being and health of adolescents (14–18-year olds) have been monitored in schools since 1995 by the School Health Promotion (SHP) study. It has been carried out in all secondary schools and upper secondary schools. From this year on the students in vocational schools are included in the SHP study.

#### Methods

The SHP study data is gathered by an anonymous classroom-administered questionnaire which covers living conditions, school experiences, health, health behaviour, health knowledge and experiences of school health services. Schools participate biannually in the SHP study. It is carried out in Southern, Eastern and Northern Finland in even-numbered years and in Western and Central Finland in odd-numbered years. In 2005–2006 there were 165 000 respondents who covered about 80% of all eighth and ninth grade secondary school pupils and first and second grade upper secondary school students.

#### Results

Regional, municipal and school results are reported within 8 months. Municipalities get a wide variety of results from a written report to school-specific figures and tables. They can use the information for example in making municipal health promotion strategies or in planning health promotion in schools.

#### Conclusions

The SHP study is designed to gather information for promoting adolescents' well-being and health in municipalities and schools. At national and regional level, the inclusion of vocational schools in the SHP study makes it possible to monitor health inequalities of adolescents with different backgrounds or in different regions. In vocational schools it is also possible to stratify results by fields of education.

### Teenager's sexual behaviour and drinking style in Finland

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#### Background

Adolescent's early sexual activity and alcohol use have been widely recognised as a major public health problem. In this large-scale study we focused on the relationship between adolescent's sexual behaviour and drinking style. Three aspects of sexual risk-taking were included: early activity, unprotected sexual intercourse, and having sex with multiple partners. Furthermore, to obtain more comprehensive perception of adolescent alcohol use, we made the distinction between different drinking styles, i.e. alcohol drinking and drunkenness-related drinking.

## Methods

Cross-sectional school survey data from School Health Promotion Study was collected in Finland in 2002–2003. The national sample consisted a total of 100 790 adolescents from the eight and ninth grades. Mean ages were 14.8 and 15.8 years. The SHPS questionnaire concentrates on adolescent's health and health-related behaviours, such as sexual behaviour and use of alcohol. To examine the association between sexual behaviour and drinking style among teenagers, we used logistic regression analysis.

## Results

The likelihood of engaging in sexual intercourse increased with the frequency of alcohol drinking among 14–16-year-old teenagers. In particular, frequent drunkenness-related drinking increased teenager's probability to report that they had experienced not only sexual intercourse, but to engage in sexual risk-taking behaviours. We found that the likelihood of engaging in unprotected sex and/or having multiple sexual partners was many-fold for adolescents drinking frequently until they were in a state of drunkenness. Especially for girls, drunkenness-related drinking at least once a week was associated with multiple partners (OR = 4.21, 95% CI 3.24–5.48).

## Conclusions

Results confirmed that it is not the frequency of alcohol drinking per se, but it is the drunkenness-related drinking style that is strongly associated with sexual risk-taking behaviour in adolescence. Consider the short- and long-term harms related to early sexual activity and alcohol drinking, further research and efficient interventions are needed. For instance, it could be effective to combine both alcohol education and sexual education in school settings to reduce both adolescents' alcohol use and various harms.

## Family relations and the spread of the drugs use among adolescents in region of Koper and Slovenia

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## Background

The use of drugs among the adolescents is an important public health problem. We took part in the European researches with the objective to define the extension of the problem in the region of Koper and in Slovenia, to find the influence of family relations to legal and illegal drugs use and to use the results for planning the preventing measures.

## Methods

In the year 2003, there participated 4120 adolescents from the first class of secondary schools in Slovenia and 1699 from the region of Koper in the research. In the year 2007, there participated 1355 adolescents from region of Koper. We chose and elaborated from the questionnaire only those questions that were sensuously connected with the subject of research. Statistically significant differences between observed events were evaluated with chi-squared test.

## Results

The results of the research in year 2003 showed, that the family relations were important risk determinates for legal and illegal drugs use among young people in region of Koper and Slovenia. The research in year 2007 for the region of Koper showed satisfactory results: the percent of adolescents, who have experience with legal or illegal drugs is declined and the part of the adolescents, who had rarely relation of trust with their parents is declined too.

## Conclusions

The parents and the children have to be included in the specific preventive programs for acquire the knowledge and

skills to improve the family relation and the relation in the society.

## Availability of baby friendly hospitals in EU Member States, EEA and candidate countries

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## Issue/problem

At maternity hospitals particular attention should be paid to the needs of newborns and infants. In order to provide for a baby friendly standard at hospitals the WHO and UNICEF started an initiative in 1992. The aim of this study was to assess to what extent this initiative has been implemented in the EU Member States, the European Economic Area and candidate countries. This abstract is a meta-analysis of the implementation of the baby friendly initiative at national level.

## Description of the problem

In order for a maternity hospital to be certified baby friendly ten criteria need to be fulfilled. To assess the number of baby friendly hospitals data collection was initiated at national level. During the data collection period subcontracted partners, who are no experts in child health, were asked to collect readily available data on the number of baby friendly hospitals in their country and as a percentage of all maternity hospitals. Involving lay people in the data collection process served the purpose of presenting a picture of easily accessible data. Data were collected within the frame of the project 'Scientific Platform of the Working Party Lifestyle', which was substantially funded by the European Commission, DG SANCO. A total of 31 countries were analysed.

## Results (effects/changes)

The existence of baby friendly hospitals was reported for 20 European countries. The highest accreditation rates were reported for Cyprus and Turkey. About 90% of maternity hospitals there are accredited baby friendly hospitals. In most countries where no baby friendly hospitals were reported, initiatives to gain accreditation and/or initiatives to promote breastfeeding in maternity hospitals were reported. For some countries no number of maternity hospitals was provided and for Austria, Bulgaria, Germany, Luxembourg and the Netherlands no data on baby friendly hospitals were given.

Countries report that initiatives to acquire the baby friendly hospital status are pursued to a different extent.

## Lessons

The Baby Friendly Hospital Initiative started 16 years ago. Findings suggest low impact either due to low recognition of the initiative or low level of commitment.

## Adolescent's knowledge and attitude before and after 2-year program: scaling-up HIV/AIDS Response in Croatia

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## Background

The purpose of the Program is to stimulate collective and individual action on HIV/AIDS among young people. Scaling-up HIV/AIDS Response Program in Croatia from 2003 to 2006 resulted in numerous health education activities: distribution of educational material, establishing

anonymous testing counseling services, education of high school population (lectures, workshops and peer education). High school population was asked at the beginning and at the end of the Program about knowledge an attitude regarding HIV/AIDS.

#### Objectives

The goal is to compare knowledge and attitude regarding HIV/AIDS before and after the Program. Students completed anonymous questionnaire. In representative stratified sample were 1026 (first and third grade) students from 20 high schools.

#### Results

Number of correct answers decreased in both group of questions (regarding knowledge and attitude).

#### Conclusion

Despite the Program 27% of students don't consider condom use as a safe protection from HIV/AIDS and think mosquito could transmit HIV infection, 25% of student would not let HIV positive students to continue high school education and 40% would not let HIV positive teacher to continue with work.

### The area-based social patterning of injuries among 10–19-year olds: changes over time in the Stockholm County

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#### Background

Area-based studies of childhood injuries strongly suggest that neighborhood socio-demographic and economic circumstances impact on various—though not all—types of injuries. The primary aim of this study was to investigate the stability over time of the association between area characteristics and childhood injuries of various causes.

#### Methods

Register-based and ecological, the study encompassed Stockholm County's 138 parishes, and considered two time periods (1993–95; 2003–05). Two indices were measured: economic deprivation and social fragmentation, and parishes were allocated to their respective quintile on each index. Data on both unintentional and intentional injuries for children (boys and girls) aged 10–14 and 15–19, respectively were gathered from the County Council's hospital inpatient register. For each period and index, gender, age and cause-specific comparisons were made to assess the rate ratios (with 95% CI) of being injured using parishes belonging to the best index level as a comparison group. A series of simple and partial Pearson correlations were also calculated.

#### Results

Regardless of time period, there were rather few significant rate ratios and, when they occurred, there were both under and excess risks. Most strikingly, intentional injuries were more frequent during the second time period and in considerable excess among girls aged 15–19 from more economically deprived areas. Also, during that last period, none of the injury causes correlated significantly with the index of social fragmentation after adjustment for economic deprivation (partial correlation).

#### Conclusions

Over a 10-year period, differential economic deprivation among parishes has widened more than social fragmentation in Stockholm County. The correlation between those indices is high in both periods of time whilst the association between the levels of each index and injury rates varies depending on group

of injuries or time period considered. It is of concern that intentional injuries have increased numerically and are significantly and positively correlated with economic deprivation (net of social fragmentation), in particular among girls.

### Ten years pediatric heart transplantation activity in France

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#### Context

In 2003, our study had shown that children had a more difficult access to transplantation associated with higher mortality on the waiting list than adults. Pediatric priority was taken in place in august 2005: organs from donors less than 50 kg and aged less than 55 years were reserved in priority for children aged less than 16 years. We analysed the situation 1 year after.

#### Methods

Patients registered on the French heart waiting list from 1996 to 2006 were included. The description of patients' characteristics was analysed and was followed by analyses using Kaplan Meyer and Cox's model. The ages' classes were 0–5 years, 6–15 years, 16–17 years, 18–20, more than 21 years.

In France before 2008, pediatric patients were defined as children aged less than 16 years old.

#### Results

From 1996 to 2006, 345 children were registered on the cardiac waiting list (7%). Dilated cardiomyopathy (47%) and congenital heart disease (24%) were main indications. Children aged less than 5 years had a disadvantaged access on the waiting list: there were 3.75 candidates per graft in 2006 ( $\leq 2$  for others ages); the waiting list median was 8 months [95% CI (3.2–13.7)] against 2.7 months [95% CI (1.5–4.3)] for the other children and teenagers and 3.9 months [95% CI (3.7–4.2)] for adults (>21 years); 55% of them were dying on the waiting list more than the others (19% for the 6–15 years and 11% for more than 15 years). Adjusted on the main risk factors (medical status, indication and donor weight), the risk to be transplanted remains lower for these children.

#### Conclusion

In a context of organ shortage, the children on the waiting list in France had a disadvantaged access to transplantation not only related to their particularities (indication, morphology, etc.). The priority could change this trend.

### Dating violence among 16–24-year olds in Denmark – risk factors and health implications

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#### Background

Partner violence among adults has significant health implications for, in particular, female victims. Studies in America, Britain and Norway on partner (dating) violence among young people report correlations between dating violence and depression, anxiety, self-harm as well as previously exposure to family violence. Majority of studies have been conducted among selected youth groups, e.g. college students. We conducted a national representative study among youth in Denmark.

#### Methods

An Internet-based survey among 2123 randomly selected 16–24-year olds. 1751 (82%) had experiences with dating; they constitute the study population. Gender distribution 63% female 37% male.

## Results

Of the females, 5.6% and of the males 2% had been exposed to physical violence (hit, slapped, pushed, kicked, stranglehold or threats with a weapon), and 6.7% of the females and 1.9% of the males had been sexually harassed or assaulted by a present or former partner within the last 12 months.

Comparing victims of dating violence to young people who have not been victims of any form of violence showed correlations between exposure to dating violence and substance use ( $P \leq 0.0001$ ), early sexual debut for females ( $P \leq 0.0001$ ) and males ( $P = 0.046$ ), own use of physical violence ( $P \leq 0.0001$ ) and attempted suicide ( $P = 0.001$ ). Having witnessed partner violence against mother ( $P \leq 0.0001$ ) or father ( $P = 0.002$ ) is additionally a strong risk factor for females not for males.

## Conclusions

Dating violence victims present a number of public health related problems such as substance use, early sexual debut and suicide attempts. The results indicate an intergenerational transmission of violence among females and more severe health implications for female compared to male victims. They also indicate a strong need for primary prevention of partner violence, also among youth.

## Evaluation of a school-based adolescent health promotion programme with focus on well-being related to stress

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## Background

A considerable gap exists between prevention, mental health promotion and early intervention programmes. The aim of this study was to evaluate a school-based health promotion programme for adolescents aged 12–15 years with focus on well-being related to stress.

## Methods

A health promotion programme comprising massage and mental training was implemented for a single academic year in one school (intervention school, 153 participants) in order to strengthen and maintain well-being. No intervention was implemented in the other school (non-intervention school, 287 participants). A questionnaire was developed and tested, resulting in 23 items distributed across the following six areas: self-reliance, leisure time, being an outsider, general and home satisfaction, school satisfaction and school environment.

## Results

A pre- and postintervention comparison of the six areas was made within each school. In the intervention school, the boys maintained a very good or good sense of well-being related to stress in all six areas, while the girls' sense of well-being was maintained in five areas and deteriorated in one area. In the non-intervention school, the boys maintained a very good or good sense of well-being related to stress in four areas and deteriorated in two areas, while the girls' sense of well-being was maintained in two areas and deteriorated in four areas. For more information, read Haraldsson *et al.* Public Health 2008;122:25–33.

## Conclusions

Massage and mental training for adolescents helped to maintain their well-being related to stress.

## Prevalence of asthma among children in central St Petersburg, Russia

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## Background

According to the official data, the reported prevalence of childhood asthma in St Petersburg (population 4.5 million) is 1.5%. However, in neighbouring Finland it is more than 3 times higher. We hypothesise that the official Russian data may underestimate the true burden of disease.

## Aims

To study the prevalence of asthma and its correlates among children in St Petersburg, Russia.

## Methods

A cross-sectional study was conducted. The sample included 1464 children aged 0–18 years from two central districts of St Petersburg, whose parents filled in a questionnaire, which included items on children's respiratory health, socio-economic factors, housing conditions and own history of asthma and allergies. Spirometry (forced expiratory volume in 1 s [FEV1] and forced vital capacity [FVC]) was assessed in all children, whose parents reported respiratory problems. Asthma was diagnosed if FEV1/FVC < 0.85. Independent effects of the studied factors on asthma were assessed by multiple logistic regression. Crude and adjusted odds ratios (OR) were calculated.

## Results

The overall prevalence of asthma was 7.4% (95% CI 6.2–8.8). After adjustment for all studied factors, a history of allergies (OR = 1.6, 95% CI 1.0–2.6), bronchitis or pneumonia in infancy (OR = 12.2, 95% CI 7.3–20.5) and parental history of allergies (OR = 3.6, 95% CI 2.2–5.8 for one parent and OR = 7.1, 95% CI 3.0–17.0 for both parents) were associated with childhood asthma. Children whose mothers were out of work (OR = 3.4, 95% CI 1.1–10.4) also had higher odds of asthma compared to the reference group.

## Conclusion

The observed prevalence of asthma is several times higher than officially reported. Respiratory illnesses in infancy, parental allergies and socioeconomic factors are associated with asthma in children in St Petersburg. The factors potentially responsible for the large discrepancies between the official data and the observed prevalence of asthma will be discussed.

## Changes in adolescent sexual activity and risk behaviour in 1996–2007

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## Background

Very little is known on changes in adolescent sexual risk-taking behaviour during the last decade. The aim of this study was to describe recent changes in sexual risk-taking behaviour among Finnish adolescents from 1996 to 2007.

## Methods

Participants in the ongoing School Health Promotion Study were included ( $N = 296\,453$ ). The study was carried out in Finland annually in eighth (mean age 14.8 years, SD  $\pm 0.3$ ) and ninth (mean age 15.8 years, SD  $\pm 0.3$ ) grades of secondary schools from 1996 to 2007. An anonymous questionnaire about adolescent health and health behaviour was completed during one ordinary school lesson under the supervision of a teacher.

## Results

Among total population, the percentages of kissing on mouth, fondling with cloths on, fondling naked or under cloths, having at least one sexual intercourse, having sexual intercourses >10 times, multiple sex partners (3 or more), or not using contraception at the latest intercourse increased between 1996 and 2001 ( $P$  for trend < 0.001, all). There were no major



changes between 2002 and 2007. Among sexually active adolescents, the proportion of teenagers who have had only one lifetime sexual intercourse declined between 1996 and 2007, while that of 10 or more intercourses increased ( $P$  for trend  $<0.001$ , all). During 1996–2001, the percentage of teenagers who have had only one sex partner declined, while that of two or more sex partners increased ( $P$  for trend  $<0.001$ , all). The proportion of teenagers not using contraceptive methods at the latest intercourse increased in 1996–2003.

#### Conclusion

Our findings suggest that increased sexual experiences, frequent sexual intercourse, having multiple sex partners and non-use of an appropriate contraceptive method may have contributed to increased teenage abortion rate in 1996–2001.

### Stresses of parenting in families having preschool-age children

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#### Background

If parents are depressed, anxious, or feel stress, it has a negative impact to their child development, their behavioural problems and their social competences.

#### Methods

The survey was performed in 21 randomly selected kindergartens of Kaunas city. Parents were asked to answer to 56 questions about their family, lifestyle, habits, problems they meet. Three hundred and sixty questionnaires were distributed to parents and 271 returned filled up (response rate was 75.3%). Parents of 3–7-year-old children participated in the survey. Parent's age varied from 20 to 49 years, one-third of them belonged to younger age group (20–29 years), a little bit more than a half belonged to middle age group (30–39 years) and the rest of the parents were older (40–49 years).

#### Results

Mothers answered to the questions more frequently than fathers did. In most families children were growing together with their both parents and 15.2% of families were single parent families, where mothers were raising their children alone. Half (51.6%) of the parents referred that the biggest stress to them provoke diseases of their children, almost every fifth (18.7%)—behaviour of their children; 14.6%—unsafe environment; 6.4—financial problems. Diseases worried mostly the youngest age group parents, financial problems and unsafe environment were mentioned mostly by older age group parents. Two thirds (66.8%) of parents answered that they have somebody who help them to nurture their child. Parents who have somebody to help them, more often mentioned that their child sometimes is irritable, nervy or stuffy. But these parents give their child more attention and less medicine, than the parents who nurture their child without anybody's help.

#### Conclusions

In full families the most stressing events for parents were children's health problems. Mothers, who raised their children alone, mentioned children's behaviour problems as number one, financial problems they mentioned more frequently than full families. Diseases worried mostly the younger age group parents, financial problems and unsafe environment were mentioned mostly by older age group parents.

### The influencing factors on suicide ideation among adolescents in South Korea in 2006

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#### Background

Suicide is the fourth leading cause of death in South Korea. Suicide mortality rate has been increased, showing 7.1 per 100 000 in 1991 and 23 per 100 000 in 2006. Suicide problem is more serious among adolescent. It is the second most common cause of death in adolescent. Suicide is an important public health issue in South Korea.

#### Purposes

The aim of this study was to examine whether health risk behaviours predict suicidal ideation can be used for screening of suicide risk population and for development of suicide prevention program. The objectives of this study were to examine prevalence of suicidal ideation, to analyse the association of general characteristics with suicidal ideation, and to examine relationship health risk behaviours with suicide ideation.

#### Methods

The data used in this study were derived from the 'On-line Youth Health Risk Survey' collected by Korean Center for Disease Control in 2006. This survey was conducted from 71 404 adolescents in 400 junior high schools and 400 high schools from the nationwide regions. The participants were seventh grade to 12th grade. Logistic regression was used for the analysis.

#### Results

The prevalence of suicidal ideation was 23.4% in South Korea. The risk factors of suicide ideation were depression (odds 7.98), stress (odds 4.38), feeling unhappiness (odds 3.58), drug use (odds 2.74), health status (odds 2.18), present smoking (odds 1.92), present alcohol drink (odds 1.72), sexual activity (odds 1.75), living with none of parents (odds 1.67).

#### Conclusion

Suicide screening and prevention program should be developed, considering these risk factors. Suicide prevention program should be applied to risk population prior to suicidal ideation.

### Effectiveness of daily physical education at primary schools—project: 'fit for pisa'

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#### Background

In most instances an increasing overweight/adiposity is attended by a loss of physical performance and motor function. The early school age of an adolescent is denominated as the so called 'motor learning age'. This time period is characterized by an increased need for physical action and therefore important for the physical and psychosocial development of a child. The Goettinger intervention measure 'fit for pisa' compliments the obligatory two school hours sport/week by three sport hours more during the whole permanence of the children in the elementary school. Constant physical activity represents one of the most important factors which influences on health and well-being.

#### Methods

The longitudinal section study had taken place between 2003 and 2007 (intervention group  $n=87$ ; control group  $n=64$ ). Apart from the school entrance medical check-up the pupils are examined annually for their medical state of health, their motor development and their emotional well-being by dint of

a questionnaire. For the data collection were used mainly standardized instruments and methods (e.g. the 'Muenchner Fitness Test').

### Results

Significant differences (e.g. action speed and local ability of muscular endurance) concerning the motor performance of the children of the intervention test group and the control group can be stated ( $P < 0.05$ ). In addition, it had been proved that additional lessons lead to more self-confidence. In the range of the students' weight (given as BMI) there were no relevant effects.

### Conclusions

The results of a 4-year study of test group show that additional physical education produces positive results regarding motor ability and self-confidence. Moreover, the whole social and family environment has been including in continuous studies. A holistic approach containing other relevant factors such as nutrition and change of eating habits is required to achieve a more positive effect on the children's health.

## Prevalence of congenital anomalies in Latvia in 2000–2005

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### Background

Congenital anomalies are one of the main reason of mortality and morbidity of infants. European health for all database show a great differences among countries in indicators of congenital anomalies. Although several studies around the world to confirm the same average prevalence of congenital anomaly: 2–3%.

### Objectives

The aim of the study was to describe situation and trends in live birth prevalence of selected congenital anomalies during 2000–2005 and its relations with maternal age and health during pregnancy.

### Methods

Data from State Newborn register was used. All diagnoses ICD Q00–Q99 were counted. Prevalence rate estimation with 95% CI and linear regression was used to determine the trends.

### Results

The sample consist of 3542 congenital anomalies registered in study period, giving a total prevalence 28.8 per 1000 live births (95% CI 23.0–31.2) and it has increased average per 0.86/1000 each year ( $y = 0.8574x + 25.836$ ;  $R^2 = 0.2958$ ). First common reason was congenital malformations and deformations of the musculoskeletal system—in 13.5 cases per 1000 live births, next common was congenital malformations of the circulatory system—8.6/1000 live births and it has increased for 0.3/1000 in a year ( $y = 0.3487x + 7.3651$ ;  $R^2 = 0.2535$ ). Infant mortality rate due to congenital malformation has declined from 1.7/1000 live births in 2000, to 1.1/1000 in 2005 ( $y = -0.1445x + 2.0933$ ;  $R^2 = 0.7561$ ). Among newborns with congenital malformations one-third was from first pregnancy, and from advanced aged mothers. In 36.0% mothers of newborns reported about infections of urogenital system,

in 18.5% about diseases of respiratory system and in 14.7% about medicine use during pregnancy.

### Conclusion

The prevalence of congenital anomalies in Latvia among live births during study period remains high. The registration system might be improved for more advanced studies of various risk factors.

## Physical activity in adolescents: prevalence and associate factors

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### Introduction

The practice of physical activity (PA) is an important health factor. Some epidemiological researches have pointed the protector role of PA in the occurrence of cardiovascular diseases, diabetes, osteoporosis and some sorts of cancer. However, it is still curious that, besides the recognition of the benefits of physical activity, it was not until recently that the first recommendations have been made to the adolescent population.

### Objective

To determine the prevalence of physical activity in an adolescent community sample from the district of Viseu and Covilhã, Portugal.

### Methods

This was a transversal research with 858 individuals (463 female and 395 male) selected randomly among the students from the district of Viseu, who attended the ninth grade of school. The data gathering was processed through a self-administered questionnaire answered by the students in the classroom. In order to evaluate the participants PA, who were aged over 14 years, they answered a questionnaire about their PA during the last year.

### Results

The data revealed that: 68.9% of the adolescents practiced physical activity other than the school physical education; physical activity is more practiced by male students (82.6%) than by female (40.9%)— $P < 0.001$ ; the youngest adolescent group (11–13 years) referred they practiced physical activity more frequently (75.8%) than the oldest group (14–16 years) (64.3%); the boys (44.2%) and the youngest (38.5%) referred they practiced physical activities during the week more frequently; other data revealed that 25.8% of the boys practiced physical activity during four or more hours against 11.9% of the girls; otherwise, 39.6% of the girls practiced only half an hour or less against 22.8% of the boys; adolescents from higher socio-economic groups and who live in urban areas were more active than the remaining.

### Conclusions

When comparing these results with those obtained in other regions of the country or in other countries, we can conclude that the prevalence of PA among these adolescents is not high. As well, programmes which incentivate the practice of PA should be implemented as precociously as possible and sustained during the remaining life cycle.

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### Background

The technological changes in health make possible to estimate the effectiveness of health interventions, why we wanted look

# CHRONIC DISEASES

## Impact of hospital mortality by acute myocardial infarction (AMI) in Canary Islands (1996–2005)

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in Canary Islands the impact of health care on the acute myocardial infarction (AMI) in the decline of its mortality rate.

#### Methods

We have used the CMBD of public hospitals of acute of Canary Islands (1996–2005), from which we have selected the courtesies due to AMI (410 ICD-9-MC). The comorbidity was measured with the rate of Charlson. We construct a logistic regression model whose dependent variable is the death (Exitus 0/1) and as independent variables age, stay, the rate of Charlson (1–2, 3–4 and >4), sex (man, woman), causes of admission (urgent, programmed) and years. We estimate a cutoff point of 10% given the rate of overall mortality of period. We have analysed 13 347 cases losing a 2.7%, being the global setting of the model of 67.3%.

#### Results

The mortality rate is 10% (9.5–10.5), being 8.1% for men and 14.6% for women adjusted by age. The stays not confer any risk. The age confers a risk of death of 5% for each year of life fulfilled. The urgent admission OR 2.18 (1.42–3.35) comorbidity OR 1.83 (1.30–2.25) and being a woman OR 1.29 (1.14–1.47). Years can't confer risk since 2000, being this meaning from 2003 so the reduction in the rate is confirmed.

#### Conclusions

The hospital mortality rate by AIM in women is greater than that of men in all ranges of age and in every year. The difference is of 6.5 points in our series compared to 3.3 at national level. There is a decrease in the rate of hospital mortality by AIM in the period, consequence of therapeutic progress, being statistically meaning the decrease in our series since the year 2003.

### Impact of outdoor autonomy in quality of life of people with multiple sclerosis

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#### Background

Multiple sclerosis (MS) it is a chronic neurological disease, characterized by demyelisation, and a broad spectrum of physical, emotional and social impairment. The combination of a progressive and unpredictable disease process is a stressor, which powerfully impacts upon the quality of life of patients with MS. The aim of the present study is to examine the Impact of outdoor autonomy perception in quality of life in patients with MS

#### Methods

Two hundred and eighty patients with MS were recruited via their neurology department of a central hospital in Lisbon. They were eligible for inclusion in the study if they met the following criteria: diagnosis according to relevant medical criteria, between 18 and 65 years of age, being diagnosed at least 1 year ago. The mean age was 40 years (range 18–65), 71.3% were women, 61.1% were married, 63% active workers, and mean school level of 12 years.

#### Methods

The study is cross-sectional and correlational. Material: we use the domain of autonomy outdoors (five items) of the IPA (Impact on Participation and Autonomy) questionnaire, that measures several aspects of participation and autonomy, and the Multiple Sclerosis Quality of Life scale (MSQOL-54) a multidimensional quality of life questionnaire.

#### Results

The correlations between autonomy outdoors and the domains of MSQOL-54: Physical Health ( $r=0.65$ ,  $P<0.01$ ), Physical Role Limitations ( $r=0.71$ ,  $P<0.01$ ), Emotional Role Limitations ( $r=0.55$ ,  $P<0.01$ ), Pain ( $r=0.52$ ,  $P<0.01$ ), Well-being ( $r=0.50$ ,  $P<0.01$ ), Energy ( $r=0.57$ ,  $P<0.01$ ), Health in General ( $r=0.42$ ,  $P<0.01$ ), Social function ( $r=0.67$ ,  $P<0.01$ ), Cognitive Function ( $r=0.40$ ,  $P<0.01$ ),

Health Distress ( $r=0.58$ ,  $P<0.01$ ), Overall Qol ( $r=0.56$ ,  $P<0.01$ ), Sexual function ( $r=0.42$ ,  $P<0.01$ ), Change Health ( $r=0.28$ ,  $P<0.05$ ), and Satisfaction with sexual function ( $r=0.45$ ,  $P<0.01$ ), are all statistic signification.

#### Conclusion

There is a statistically significant correlation between the variables, suggesting that autonomy outdoors can play an important role in the quality of life of patients with MS.

### Psychosocial predictors of change in the quality of life among coronary patients

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#### Background

Health related quality of life (HRQL) has been increasingly considered as an important measure for evaluating the effectiveness of treatment strategies among coronary patients. Moreover, it has been shown to be a predictor of mortality after surgical interventions. Our aim was to identify the psychosocial predictors of change after coronary revascularization in the HRQL among patients with coronary heart disease.

#### Methods

One hundred and six patients scheduled for coronary angiography (CAG) were interviewed at two measurement points: baseline (before CAG), and follow-up (12–24 months after CAG). Health-related quality of life was then assessed using the SF-36 survey (physical and mental component). The GHQ-28 questionnaire was used for measuring psychological well-being (anxiety, depression), the Maastricht interview for vital exhaustion, the Type-D questionnaire for personality and the Cook–Medley scale for hostility. Functional status was assessed using a combination of the NYHA classification (shortness of breath) and CCS (chest pain) scales. Socio-economic position was measured by education and income. Linear regression models were then used to analyse the data; with age, gender, socioeconomic status, psychological factors, functional status and baseline HRQL entered as independent variables. Changes in the SF-36 (scores at follow-up minus scores at baseline) were used as the outcome variable.

#### Results

Significant baseline predictors for change in the physical component of the SF-36 were psychological well-being ( $\beta=-0.37$ ; 95% CI  $-0.90$ ,  $-0.09$ ) and the baseline physical component of the SF-36 ( $\beta=-0.57$ ; 95% CI  $-0.81$ ,  $-0.09$ ). Predictors of change in the mental component of the SF-36 were vital exhaustion ( $\beta=-0.27$ ; 95% CI  $-0.83$ ,  $-0.03$ ), psychological well-being ( $\beta=-0.35$ ; 95% CI  $-0.96$ ,  $-0.04$ ) and the baseline mental component of the SF-36 ( $\beta=-0.75$ ; 95% CI  $-0.99$ ,  $-0.40$ ). There were no differences in the predictors of change of quality of life between patients that underwent coronary-artery bypass grafting (CABG) and percutaneous transluminal coronary angioplasty (PTCA).

#### Conclusion

Psychological well-being (anxiety, depression) and vital exhaustion were significant predictors of change in the quality of life among patients after coronary revascularization.

### Functional disability, pain and depression in early rheumatoid arthritis patients

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### Background

Depressive feelings are often experienced by rheumatoid arthritis patients and may impair the treatment and worsen their quality of life. It has been supposed that depression is closely associated with pain and functional disability, but recent studies show the importance of initial depression also as a risk factor. The aim of this study was to examine the associations between functional disability, pain and depression and explore the role of initial depression in the early stages of the disease.

### Methods

The data were collected annually via a structured interview over a 4-year period in the European Research on Incapacitating Diseases and Social Support (EURIDISS). The sample consisted of 124 patients with recently diagnosed RA (85.5% women; mean age 48.1 years; mean disease duration 21.9 months). Functional status was measured with the Groningen Activity Restriction Scale (GARS) and pain with the Nottingham Health Profile (NHP). The dependent variable depression was assessed using the General Health Questionnaire (GHQ-28) Data from the baseline and 4th measurement were used. The association between pain, functional disability and depression were explored using hierarchical regression model controlling for demographic and disease variables.

### Results

Pain was significantly associated with depression ( $P \leq 0.001$ ) explaining 15% of the variance. Similarly, functional disability was significantly associated with depression ( $P \leq 0.001$ ) explaining 8% ( $P \leq 0.05$ ) of the variance. Initial depression explained additional 15% ( $P \leq 0.001$ ) of the variance, moreover, after entering initial depression into the model all other variables ceased to be significant. Together the whole model accounted for 38% of the variance.

### Conclusions

Results of this study suggest the importance of initial depression which may serve as the main risk factor for developing depression later. Early recognition and treatment of depressive feelings can be beneficial for the patients by decreasing the risk of experiencing depression as the disease progresses.

## Support tool for professionals addressed to integrate Gender Perspective into Health Comprehensive Action Plans

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### Issue/problem

In the Autonomous Community of Andalusia, specific health issues are tackled by Comprehensive Action Plans (CAPs). These plans, with equity, quality and efficiency criteria, act on all important aspects concerning the management of such issues, from preventive and medical care to these related to training, research, information systems and others. In accordance with WHO directives and the III Andalusian Health Plan, one of the requirements is the introduction of the Gender Perspective (GP), meaning the admission of health existing differences between men and women (and the needs of acting on), which spread to biological causes and are due to socially built factors.

### Description of the problem

Seven CAPs have been developed and implemented in Andalusia: Oncology, Mental Health, Diabetes, Heart Disease, Smoking, Accidents and Child Obesity (publicly available: <http://www.juntadeandalucia.es/salud/principal/>). When analysing the GP in current CAPs, a need of an effective

implementation improved have been noted. In order to reach it, it has been considered useful to have a practical methodological tool adapted to the context and framework of such CAPs

### Results (effects/changes)

Final recommendations, including contributions from experts in gender and health field, were drawn up from common elements in different documents obtained from a documentary research (priorizing those from well known organizations in the field of gender mainstreaming) and which were better adapted both to the needs and the format of CAPs. Recommendations included are related to: work teams configuration, documents drawing up (language and images), situation analysis with GP (magnitude, resource analysis and expectancy analysis), aims and action lines (communication, health promotion, prevention, early detection, health care, suitability of resources, citizen participation, training, research, quality, information and evaluation systems).

### Lessons

In addition to the explicit political commitment and the contribution of resources and means needed to achieve it, another requirement concerning the GP incorporation is to count on professionals being aware of the need of implementation and trained to do it. This tool is useful for helping professional community involved.

## Change in social life is associated with non-compliance in patients after kidney transplantation

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### Background

Kidney transplantation (KT) is the best treatment modality for patients with end-stage renal disease although it is associated with lifelong medication. Identification of non-compliant patients may prevent graft loss and consequently also decrease in quality of life. Most of the relationships between socio-demographic and medical correlates of non-compliance have already been explored. We focused on the role of changes in social life after transplantation and their association with non-compliance.

### Methods

A cross-sectional study with 114 (64% male;  $48.5 \pm 12.3$  years) patients after KT in the Kosice Transplantation Center (Slovakia) was carried out. Socio-demographic data (age, gender, education and socio-economic status), medical data (Davies co-morbidity index, time from KT and current immunosuppression protocol) and self-perceived change in social life after KT were collected. Self-perceived change in social life was assessed as a summarisation of perceived changes after KT in the following domains: housework, family life, socio-economic status, sports activity and hobbies. Non-compliance was assessed with a combination of patients' self-evaluation and the evaluation of their nephrologist. Binary logistic regression was used.

### Results

The only significant predictors of non-compliance found were the Davies co-morbidity index—patients with 1 or 2 co-morbid diseases were more non-compliant than those with no co-morbidity (OR 0.2; 95% CI 0.08–0.54;  $P \leq 0.01$ ) and change in social life—the less improvement in social life after transplantation patients perceived, the less compliant they were (OR 2.1; 95% CI 1.04–4.2;  $P \leq 0.05$ ).

## Conclusion

Improvement in social life for patients after KT is significantly associated with compliance even when the analysis is controlled for relevant socio-demographic and medical variables. These findings suggest that by enhancing social participation and involvement in leisure time activities among patients after KT the non-compliance could be decreased and the quality of life increased accordingly. This could be applied in intervention programs focused on decreasing non-compliance by including stimulation of social life into their scope.

## Is self-rated health related to the employment status of patients with multiple sclerosis?

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### Background

Multiple sclerosis (MS) is the most common cause of neurological disability in young adults. Higher levels of disability and longer disease duration have negative consequences on health, and an enormous impact on young adults' working ability. The aim of this study was to explore the association between self-rated health and employment status in MS patients.

### Methods

One hundred and eighty four MS patients (65.7% female; mean age 40.5 ± 9.7 years; mean disease duration 6.4 ± 5.2 years) completed questionnaires focusing on age, employment status (employed fulltime or part-time vs non-employed or disabled), education, disease duration, anxiety and depression (HADS; higher scores indicate more anxiety and depression), and self-rated health (SF-36, 1st item; 1–3 'good health' vs 4–5 'fair health'). A neurologist assessed functional disability (EDSS; higher score means worsened disability). To analyse the data, t-tests and logistic regression analyses were performed.

### Results

Patients with higher EDSS scores were 0.49 times less likely to be employed (95% CI 0.33–0.70). MS patients without anxiety had 2.64 times greater chance of being employed (95% CI 1.23–5.67). MS patients who reported good self-rated health had 2.46 times greater chance of being employed (95% CI 1.08–5.59). Age, gender, disease duration, presence of depression did not show increased chance of patients being employed.

### Conclusions

MS patients with good self-rated health are more likely to be employed, even after adjusting for age, gender, education, functional disability, disease duration, depression and anxiety. Data collected from MS patients about their self-rated health could provide useful information on the future employment status of these patients.

## Structured primary care for type II diabetes: effects on clinical outcomes and patient education.

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### Background

The prevalence of diabetes mellitus type 2 is high and increasing. Patients with diabetes mellitus type 2 (DM2) have

an increased risk of developing microvascular and macrovascular complications. Care should be aimed at reducing total cardiovascular risk by strict control of blood sugar and lipids, blood pressure, weight as well as changes in life style. It is evident that because of its many elements and increasing prevalence, diabetic care is complex and time consuming. In the Northern regions of the Netherlands a group of general practitioners organises diabetes care according to the protocol of the 'Diabetesproject Friesland Noord' (DFN). The DFN protocols consist of guidelines for multidisciplinary cooperation, patient education, care giver education and provide a structured registration program.

The aim of this study is to compare the effect on clinical and non-clinical outcomes of care according to the DFN protocol with that of 'usual care'.

### Methods

This study was a quasi-experimental study with a pre-post comparison and a control group comparison. The outcomes measured consisted of changes in clinical outcomes (e.g. HbA1c and blood pressure) and information from questionnaires (e.g. received education). Baseline data and data after 1 year could be collected for 581 DFN patients and 152 control patients.

### Preliminary Results

Comparisons showed a significant decrease of systolic blood pressure in the DFN group. Also the percentage patients that did not reach target values in HbA1c, BMI and cholesterol control was significantly lower in the DFN group compared with the control group. Results from the questionnaire shows that DFN patients report more often knowledge of their HbA1c level, and more often that they had received good education about diet and foot examination.

### Conclusion

According to these results DFN has a positive effect on primary diabetes care.

## Varicose veins surgery assessment in national health services: a comparison between Italy and England

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### Background

Varicose veins (VV) is a major topic for National Health Services because of high prevalence of this disease: in Europe ranged from 2% to 76% (females) and from 2% to 56% (males) in 2003. The disease is faced by National Health Services thanks to the development of minimally invasive VV surgery allowing the treatment as a day case (DC) in a hospital setting. Our study underlines the differences between Italian and English Health Systems about day hospital and ordinary interventions for VV surgery.

### Methods

We selected data for the period from 1999 to 2005 from Italian Minister of Health and England Hospital Episode Statistic websites, searching by operation codes and type of admission (DC, Ordinary) and for population from Italian National Institute of Statistics and UK Statistical System. Proportion of VV interventions on total population and the proportion of DC in Italy and in England on total of VV interventions was calculated.

### Results

The proportion of VV interventions for 1000 habitants ranged from 1.97 to 1.84 in Italy and from 0.93 to 0.74 in England. The proportion of DC for VV surgery ranged from 19.4% (95% CI 19.2–19.6) to 58.9% (95% CI 58.6–59.2) in Italy and from 52.6% (95% CI 52.1–53.0) to 63.4% (95% CI 62.9–63.9) in England. Differences between England and Italy for proportion of intervention on total population were not significant ( $P=0.12$ ), while differences of DC proportion were

significant in 1999 ( $P < 0.001$ ) and not significant for 2005 ( $P = 0.07$ ). The variation in DC trend (1999–2005) was significant for Italy ( $P < 0.001$ ).

#### Conclusions

Even if there are not differences in term of number of VV interventions for 1000 habitants between England and Italy, there is a different growing of day surgery for the analysed surgical procedures, due to the impact of regulatory level planning and different managerial and clinical skills in hospital setting.

### Mortality of diabetes patients in Latvia, 2006

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#### Background

People with diabetes have increased risk of death compared to the population without diabetes. The aim of the study was to examine mortality rates among diabetes patients registered in the Latvian Diabetes Register and to evaluate excess mortality of diabetes patients compared to the general population of Latvia in 2006.

#### Methods

Study population—diabetes patients registered in the Latvian Diabetes Register. Mortality rates for diabetes patients were calculated as number of deaths in 2006 divided by the total person-years—the average number of registered patients in that year. The ratio between mortality rate of diabetes patients and mortality in the general population of Latvia was estimated.

#### Results

Mortality rate of diabetes patients was 54.98/1000 per year (95% CI 52.92–57.04) in 2006. Mortality was higher among men than women: 60.98/1000 per year (95% CI 57.17–64.78) and 52.11/1000 per year (95% CI 49.67–54.55), respectively; and substantially increased with age of the patients: from 12.64/1000 per year (95% CI 6.24–19.03) among men at the age of 0–39 to 170.05/1000 per year (95% CI 144.63–195.46) among men over 80 and from 5.99/1000 per year (95% CI 1.19–10.78) among women at the age of 0–39 to 143.52/1000 per year (95% CI 132.37–154.66) among women older than 80. However, the difference in mortality between diabetes patients and general population was higher in the younger age groups and for women: e.g. mortality rate ratio was 5.94 (95% CI 2.93–8.98) for men and 7.90 (95% CI 1.60–14.33) for women in the age group 0–39, but only 1.07 (95% CI 0.90–1.24) for men and 1.12 (95% CI 1.03–1.21) for women at the age of 80 and older. Overall, age-adjusted mortality ratio for people with diabetes, using general population as a reference group, was 1.75 (95% CI 1.73–1.78).

#### Conclusions

Diabetes patients have significantly higher mortality than general population in Latvia. The risk of dying is particularly increased among young people and women with diabetes.

### Chronic illness and exclusion from the Swedish labour market 1978–2005

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#### Background

Health-related exclusion from working life generates social and economic inequalities, and imposes a heavy economic burden on the individual and on society in most European countries. The rate of exclusion varies between men and

women, between different diagnoses and has a strong social gradient.

#### Aim

To study trends in health-related exclusion from the labour market in Sweden 1978–2005 in relation to changes in economic cycles, in the labour market, and in social security systems.

#### Methods

Age-standardized prevalence rates of employment, unemployment and disability pension were calculated, using data from the Swedish Survey of Living Conditions (ULF) 1978–2005, including 105 882 individuals aged 25–59 years. Separate analyses were performed for women and men, comparing persons with and without longstanding limiting illness (LLSI). Logistic regression analysis was used to study the effect of interaction between illness, age, gender, and class on labour market attachment.

#### Results

The Swedish labour market and the social security systems underwent several major changes during the 1990 following the recession at the beginning of the decade. A decrease in employment rates were seen during this period, with significantly lower employment rates among persons with LLSI compared to healthy individuals. The rate difference in employment and unemployment between these groups increased during the 1990s. Rates of disability pension increased over time, particularly among women and in lower socioeconomic groups.

#### Conclusions

Health-related exclusion from the labour market increased in Sweden, especially following the economic recession in the early 1990s. From the mid-1990s, social differentials in labour market participation rates increased among persons with LLSI, with slightly different patterns for men and women. Persons with LLSI are more vulnerable to labour market exclusion during economic recessions.

### Chronic pain in the Portuguese population: results from the Fourth National Health Interview Survey

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#### Introduction

Pain is a subjective and complex phenomenon, difficult to apprehend, define, explain and measure. Most studies define chronic pain as a persistent pain during 3–6 months, and acute pain, generally with 1 or 2 days of duration. The Portuguese Fourth Health Interview Survey (HIS4) was conducted between 2004 and 2005 on a representative multistage, stratified, cluster and probabilistic sample of the Portuguese population living in private households. HIS4 is an initiative of the National Institute of Health in partnership with the National Statistics Institute, and with the cooperation of the Directorate General of Health. HIS4 also included for the first time the Autonomous Regions of Madeira and Açores.

#### Objective

To determine the prevalence of chronic pain in Portuguese population, and study its distribution by sex, age group, region, occupation and level of education. Therefore study the association with medicament consumption, days lost to work/school and number of visits to doctor.

#### Material and Methods

The population prevalence (weighted prevalences) of chronic pain are presented, stratified by sex, age group, region, occupation and level of education.

#### Results

A total of 41 193 individuals were interviewed (48.3% men and 51.7% women). The national prevalence of chronic pain was 16% (1 685 501 persons). Back pain was the most frequently mentioned (36.1%), while headache was mentioned by 6.8% of the population. Chronic pain was more frequent in women

(62.5%), individuals aged 55–64 years (20.3%), individuals living in Lisbon and Tejo Valley (43%), individuals with less than 5 years of instruction (64.6%) and inactive workers (43.3%). One-fifth (21%) of individuals with chronic pain reported at least 1 day of work lost, while 44.3% stayed in bed at least one day. On the other hand 17.1% of the population reported having lost 8–14 days to work or to the school. Only 25.8% of individuals with pain did not visit their doctor in the 3 months previous to the interview, while 79.9% reported

having used prescribed medicines and 11.3% took non-prescribed medicines.

### Conclusions

Preliminary results suggest that 16% from Portuguese population suffers from chronic pain. Like other studies the most affected were women, elderly and in individuals less instructed. Use of prescribed medicines and visit to the doctor were the most frequent attitudes. Further analysis will use standardization by age and statistical modelling.

## ENVIRONMENT-RELATED DISEASES

### Particulate matter less than 2.5 $\mu\text{m}$ over daily mortality in Madrid, Spain (2003–2005)

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#### Background

Epidemiological studies about air pollution have consistently shown adverse respiratory and circulatory health effects. Prolonged exposures to particulate matter <2.5  $\mu\text{m}$  (PM<sub>2.5</sub>) has been associated with health indicators (mortality, hospital admissions) than other traditional pollutants. Increases in PM<sub>2.5</sub> concentrations have been linked to losses in life expectancy. The aim of this study is to analyse and quantify the influence of PM<sub>2.5</sub> over daily mortality in Madrid.

#### Methods

The dependent variable was a time series of daily number of deaths occurred in Madrid from 1 January 2001 to 31 December 2005. The causes analysed were: respiratory (ICD-IX: 460–519) and circulatory (ICD- IX: 390–459). The independent variables were daily records of PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub> and O<sub>3</sub> mean concentrations obtained from Madrid's municipal air-pollution monitoring grid. Seasonalities and trend were controlled, flu epidemics, noise and pollen concentrations were utilized. Poisson Regression Models were performed to calculate the relative risk (RR) and the attributable risk (AR).

#### Results

The function relationship between PM<sub>2.5</sub> concentrations and daily mortality was lineal and without threshold. The RR for an increase of 25  $\mu\text{g}/\text{m}^3$  in PM<sub>2.5</sub> concentrations for circulatory causes was 1.083 (95% CI 1.043–1.124) and for respiratory was 1.074 (95% CI 1.016–1.131). The AR was 7.7% and 6.8%, respectively. These values were significantly higher of the results obtained for PM<sub>10</sub>.

#### Conclusions

The influence in health of PM<sub>2.5</sub> concentrations are an important risk factor over the daily mortality in Madrid. The need to implement measurements to reduce the concentrations of PM<sub>2.5</sub> is a priority goal for health in this city.

### Impact of noise levels over daily mortality in children in Madrid, Spain (2003–2005)

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#### Background

In the city of Madrid, people are exposed to road traffic noise with an equivalent sound pressure level exceeding 55 dB (A) the 100% of the nights and 65 dB (A) about 55% of the days. These noise levels surpass the limits established by the World Health Organization (WHO) guidelines. The aim of this study is to analyse and quantify the influence of noise over

daily mortality in people less than 10 years in the city of Madrid.

#### Methods

The dependent variable was a time serie of daily number of deaths in people less than 10 years occurred in Madrid from 1 January 2003 to 31 December 2005. The causes analysed were all except accidents (ICD-IX: 1–799). The independent variables were diurnal noise equivalent level (08:22 h period), night noise equivalent level (22:08 h period), noise levels for the 24 h period, and these same variables delayed by days, from 1 to 4. Seasonalities and trend were controlled, flu epidemics, daily mean concentrations of air pollutants (PM<sub>2.5</sub>, PM<sub>10</sub>, NO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, O<sub>3</sub>) and pollen mean concentrations were utilised. Poisson Regression Models were performed to calculate the relative risk (RR) and the attributable risk (AR).

#### Results

The cross-correlation functions showed a significant statistically association between mortality and diurnal noise equivalent level in lag 2. The RR for an increase of 1 dB (A) was 1.25 (95% CI 1.13–1.37). The AR was 20.2%.

#### Conclusions

The influence in health of noise levels is an important risk factor over the daily mortality in children in Madrid. The need to implement measurements to reduce the noise levels must be a priority goal for health in this city.

### Mid long-term effects of ventilation-study and advice to improve indoor air quality in primary schools

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#### Issue/problem

The school is an important indoor environment for school children. In classrooms occupant density per cubic metre is often high, compared to homes. Pupils emit bio-effluents and increase indoor levels of allergens, microbiological factors, odour, particulate matter (PM) and CO<sub>2</sub>. Indoor air quality is mostly very poor. Several studies suggest that improved classroom ventilation reduces asthma symptoms and respiratory infections. Different studies suggest an association between ventilation and school attendance, and attention and short memory of the pupils.

#### Description

Indoor air quality in schools in the Netherlands is mostly very poor. This is caused by the low capacity or usefulness of ventilation systems and by poor ventilation behaviour of the teachers. Studies have shown that ventilation behaviour can be improved by giving class-specific-ventilation-advice and a CO<sub>2</sub> signal meter. In preliminary research, 87 primary schools in the Netherlands were visited. The CO<sub>2</sub> level in one classroom was measured during one day. All classrooms were inspected, the ventilation capacity was calculated and a class-specific-ventilation-advice was given. A CO<sub>2</sub> signal meter was left

behind in the school to raise the teachers' awareness for a longer period of time. In all schools, the influence of the intervention on teachers' behaviour was evaluated by a questionnaire. In 20 of the visited schools, the method was evaluated by a measurement of CO<sub>2</sub> concentration a few weeks after the intervention. In the current study, 12 primary schools were visited using the same intervention as mentioned above but the method is also evaluated after 2 and 3 months. Nine primary schools were used as control group. In this presentation, the results of this intervention are discussed.

#### Results (effects/changes)

The preliminary research showed that the indoor air quality improved significantly 4 weeks after the intervention. The average exceeding of the CO<sub>2</sub> concentration of 1400 ppm decreased from 36% to 18% of the time. Also, teachers are contented with the intervention; the evaluation showed the average mark of 8 (scale 1–10). More results on mid long-term effects of the intervention will be published in June 2008.

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

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#### Background

The role of environmental factors in children's health is widely recognized but not addressed in the training and practice of paediatricians.

#### Objectives

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

#### Method

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

#### Results

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

#### Conclusions

The paediatric associations and institutions should warrant the inclusion of EH in the syllabus of pre-graduate, graduate and continuing education of paediatricians.

### The effect of air-conditioning (AC) on the in hospital mortality during the 2003 heat-wave in Mainland Portugal

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The August 2003 heat-wave accounted for an excess of more than 1900 deaths in Portugal. At the European level it is acknowledged that this heat-wave was responsible for an excess of about 70 000 deaths. In both situations a considerable number of deaths seem to have occurred in hospitals

The aim of this study was to evaluate the association between hospital existence of AC and the in hospital mortality rate during the 2003 heat-wave in Portugal mainland.

A historic cohort design was used, including all patients with aged 45 or more, hospitalized during the last 7 days before the beginning of 2003's heat-wave, and, therefore exposed to excess heat only in hospital. The study endpoint was the survival of patients in the 18 days of the heat-wave plus 2 days. This endpoint was compared between patients in services with air-conditioning (AC+) against patients in services without air-conditioning (AC-). Data was obtained from the National Hospital Discharge Database. Information on the AC existence was obtained by a survey of hospital administrations during 2007.

The association between the survival of patients and being hospitalized in AC+ services was assessed with a Cox regression model that has included the covariates sex, age, hospital region, type of service, and main diagnosis at discharge as potential confounders. From all the hospitals of Portugal mainland 41 (54%) participated in the study (2093 patients). Of all the participating patients 633 (30%) were hospitalized in AC+ services. The hazard ratio of death for patients in AC+ services versus patients in AC- services was 0.60 (95% CI 0.37–0.97).

Our study indicates that patients ( $\leq 45$  years) hospitalized in a service AC+ were protected from the heat excess effect with a 40% risk reduction of death. These results support the recommendations of hospital acclimatization issued by the Portuguese Heat Wave Contingency Plan.

### Environment and public health: nitro-compounds role evaluation on the mutagenicity due to urban PM10 air pollution in Torino

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#### Background

Particulate matter (PM) pollution is one of the most important environmental issues in Europe, especially in the Mediterranean area. PM10 is inhalable fraction of the PM and it is implicated in chronic adverse health effects such as the decrease of respiratory functionality and cancer. Today is clear that some of the most carcinogen compounds vehicled by the PM10 are nitro-compounds such as nitro arenes moreover the nitro-compounds contribution on the mutagenicity burden is not understood.

#### Methods

PM10 air pollution was daily monitored, during the 2007 in TORINO and a consolidated *in vitro* test—the Salmonella assay—is conducted with PM10 organic extracts to define the nitro-compounds burden on the mutagenic properties. The mutagenic properties were assessed for each week of sampling. *S. typhimurium* strains used in this study were TA98, nitroreductase-less mutant TA98NR and YG1021 carrying a nitroreductase-producing plasmid.

#### Results

The annual mean concentration of PM10 measured in TORINO was  $47 \pm 23 \mu\text{g}/\text{m}^3$ . The Salmonella assay showed  $3.8 \pm 5.7$  TA98NR net revertens/ $\text{m}^3$ ,  $11.7 \pm 13.8$  TA98 net revertens/ $\text{m}^3$ ,  $28.1 \pm 28.3$  YG1021 net revertens/ $\text{m}^3$ . There is statistical significant seasonal difference both in the gravimetric analysis than in the mutagenicity results, with the highest values recorded during the winter. Moreover bioassays results showed a statistical significant amplified response (6-fold) in the YG1021 strain and a statistical significant reduced response (37–100%) in the TA98NR strain.

#### Conclusions

These results highlight the critical role of the urban PM10 pollution and show up the predominant role of the bacterial nitroreductase. The ability to reduce the NO<sub>2</sub> functional



groups and to generate intermediates such as nitroso and N-hydroxylamines, protonated or acetylated N-hydroxylamines is fundamental to produce DNA interactions. These findings can describe a relevant role of the nitro compounds and they underline a primary prevention improvement in order to reduce nitro compounds air pollution.

### Seasonality and periodicities of Rickettsial diseases' hospital admissions in Portugal mainland

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#### Background

Rickettsioses (ICD9: 080–088) are vector-borne diseases transmitted by ticks, lice and fleas. This group seems to represent the most important zoonoses with public health impact in Portugal. However, Mediterranean spotted fever (MSF-ICD9: 082) caused by *Rickettsia conorii* is unequivocally the disease with the highest number of notifications and hospital admissions coded as rickettsioses. The aim of this study was to describe the seasonal and periodical patterns of hospital admissions coded as rickettsioses and compare it with other causes of hospital admissions coded by ICD-9 list of tabulation.

#### Material and Methods

Daily hospital admissions records age group from 1998 to 2003 were used. Fourier spectral decomposition analysis was performed to determine periodicities and the Priestley test was used to evaluate their significance.

#### Results

The analysis showed that hospital admissions coded as rickettsioses are strongly seasonal (365 days periodicity), revealing also the presence of 6- and 4-month periodicities (182.5 and 121.67 days, respectively). In fact, the seasonal/yearly pattern was associated with the highest values in summer. Six-month periodicity corresponded to secondary increase of hospital admissions both in winter and summer. This periodicity was present in all age's groups; in groups aged below 15 and above 64 years old. The 4-month periodicity corresponding to secondary increases of hospital admissions in April, August and December was present in all ages group, and in individuals aged 45–54 and older than 64 years old.

#### Discussion and Conclusion

The 4-month periodicity seems to be compatible with holiday's periods. When on vacations, people tend to embark on outdoor recreational activities, increasing the probability of the tick exposure. However, this needs to be explored further. The observed pattern was particular to rickettsioses comparatively to all other groups of diseases with same 4-month periodicity. In other diseases this periodicity always corresponded to a decrease of the number of admissions.

### Toxic cyanobacteria blooms in Portuguese freshwaters—a summarized overview

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Toxic cyanobacteria are common in Portuguese freshwaters and are a cause of concern, given that exposure to subacute levels of cyanobacterial toxins through drinking and recreational water might have deleterious effects on human health. Since 1996 several laboratories have been involved in the screening of cyanotoxins in different freshwater bodies, some on regularly basis and others more sporadically. Here we summarized the main data obtained by our laboratory during the last years, in order to give a simplified overview of the quality and diversity

of our freshwater resources in terms of cyanobacteria occurrence. The seasonal dominance of cyanobacteria during warmer periods is not a general pattern since cyanobacteria blooms have been recorded during winter months in several reservoirs, same being persistent for the all year round. Although *Microcystis aeruginosa* seems to be the major species responsible for the toxic occurrences detected, other bloom forming species like *Anabaena* spp., *Aphanizomenon* spp., *Planktothrix rubescens*, and *Cylindrospermopsis raciborskii*, have also been found with an increasing frequency. In some cases the cyanobacteria bloom communities are formed by a cocktail of cyanobacteria producing simultaneously different types of hepato and neurotoxins, in different quantities and at different rates, with some strains being non-toxicogenic. Although the underlying factors that trigger cyanobacteria blooms in freshwater resources are still poorly understood, the unpredictable nature of these blooms in what respects to their occurrence, their composition, their intensity and persistency, as well as to their overall toxicity, demands careful attention in assessing risks for human health.

### Evaluation of oxidative stress in acute and chronic exposure to nitrates/nitrites in South-Western Romania

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Usually water is a minor source of nitrates for humans, the hydric concentration of nitrates being less than 10 mg/l. However, alarmingly high concentrations of nitrates in groundwater could be found all over the world, in areas with intensive agriculture. In this context, the water becomes the main source of nitrates for humans; the ingested quantities could get dangerous for the health of adults, children and especially babies.

This situation, a real public health issue in South-Western Romania, made us to seek to evaluate the oxidative stress in acute and chronic exposure to nitrates/nitrites. Since September 2007, our research has included 73 subjects—10 (13.7%) babies, hospitalized for infant methaemoglobinemia and 63 members of their families – 8 (10.9%) children and 55 (75.4%) adults. We collected water samples from the wells of these families (for nitrates concentration determination) and blood samples from all the subjects, in order to measure the methaemoglobin level, the superoxide dismutase (SOD) and glutathione peroxidase (GPx) activities and the plasma concentration of malondialdehyde (marker of lipid peroxidation).

The maximum accepted level for nitrates (50 mg/l) was exceeded in all well water samples (152–812 mg/l). Important alterations of the analysed parameters were found in babies: the average concentration of methaemoglobin was  $23 \pm 5.1\%$  of haemoglobin; the enzymes registered a decreased level in seven subjects (for GPx), respectively ten cases (for SOD); malondialdehyde level was increased in seven subjects.

These preliminary results suggest acute exposure of babies to nitrates/nitrites could generate a decrease in the activity of the antioxidant enzymes and an increased level of other markers of the oxidative stress. These alterations seem not to be present in the chronic exposure of adults.

### Assessment of foetal exposure to lead through biomonitoring in the blood of pregnant women residing in Central Portugal

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## Background

Pregnant women should not live in conditions that expose them to subtoxic levels of lead (Pb), previously considered safe but newly evidenced as hazardous. The latest US Centers for Disease Control recommendation points to the importance of primary prevention efforts, meaning that appropriate communitywide interventions should be considered if 12% or more of children and/or pregnant women in each community have blood lead levels (BLL) equal to or greater than 10 µg/dl. Previous biomonitoring studies in moss identified higher environmental Pb levels in the Central Region of Portugal, suggesting a likely increased exposure to lead of resident populations. Therefore, a study has been designed aiming to determine human exposure to Pb through BLL in pregnant women in order to verify if the higher environmental levels detected in moss are reflected in the populations of these areas.

## Methods

The study protocol used in the 12 maternities/hospitals in the Central Region, includes the selection of pregnant women ( $n=282$ ) recruited by parish of residence, distributed by a network of points identified in the moss study, in a ratio of three women for each of the points. The collaboration of health professionals from each institution is indispensable, in order to identify eligible women and to collect venous blood, after written informed consent is obtained. For gathering relevant information on study participants and their newborns, a questionnaire is applied. Multivariate analyses are conducted on individual BLL and the data collected by questionnaire.

## Preliminary Results

Up to now, 80 blood samples have already been analysed for Pb. Results show a mean value of  $1.35 \pm 1.28$  µg/dl, ranging from 0.1 to 8.2 µg/dL. No statistical association has been found between BLL and age of pregnant women.

## Conclusions

The preliminary results for BLL are well below the maximum permitted levels. Although obtained data are only preliminary and do not yet allow definite conclusions, they are suggestive of a strong likelihood that the high environmental Pb levels are not reflected in human exposure as determined by BLL of pregnant women.

## Statistic analysis of the prevalence of Legionella pneumophila in water samples from Portugal in the period of 2000–2007

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Legionella species are ubiquitous bacteria, capable of survive in adverse conditions, frequently associated with biofilms, for long periods of time. Water is the major reservoir for Legionella. They are found in freshwater environments worldwide and in man-made aquatic environments, including sanitary water systems, drinking water systems and conduits, air conditioning equipments, humidifiers, cooling towers and evaporative condensers.

Legionella pneumophila is associated with Legionnaires' disease and Pontiac fever which incidence depends on water contamination levels and susceptibility of the person exposed. This study included a statistic analysis of almost 2000 water samples for the detection and quantification of Legionella pneumophila and Legionella spp. not pneumophila during the years 2000–2007. The results were analysed according the sampling area, point of source, seasonal variation and chemical environment.

Through the analysis of the laboratory results, we can notice a gradual decrease of the positive samples in hot spring waters and an increase of the positive cases in hospitals, hotels and shopping centres in the last 2 years.

The analysis of the results according to the point of source showed a great prevalence of Legionella pneumophila in cooling towers. We can also see that Legionella pneumophila

predominates in positive samples rather than Legionella spp. with an equal incidence of Legionella pneumophila serogroup 1 and 2–14. According the monthly distribution of positive samples we can observe, contrary to what was expected, an incidence in February, March, October and November.

For its importance, the problem of Legionnaires' disease implies more public information about places and conditions favourable for Legionella pneumophila proliferation and may also be reinforced by laboratory analysis of the environmental sources. The competent authorities must promote legislation and guidelines to reduce the contamination of water systems and to threat efficiently the contaminated ones, giving their contribution to a considerable improvement of our public health system.

## Pesticide exposure in greenhouses

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## Background

A wide range of chemical products known to be acutely toxic is nowadays used in the agriculture. Cytological changes that may originate cancer and degenerative diseases can occur, which mechanism is not yet clarified. Scientific evidences associate few kinds of cancers and pesticide exposure. However information respecting the identification of chemical groups involved in those processes and possible synergisms between them is still scarce. It becomes thus relevant to explore the mechanisms involved. Main objective was to evaluate potential genotoxic damage in individuals occupationally exposed to pesticides in greenhouses.

## Methods

Study population comprises 33 farmers of Oporto district (Portugal) exposed to pesticides that was evaluated by means of micronuclei (MN), sister chromatid exchange (SCE) and chromosomal aberrations (CA). In addition, effect of polymorphic genes of xenobiotic metabolizing enzymes (GSTM1, GSTT1, GSTP1, CYP2E1 and EPHX1) was also evaluated. A non-exposed group from the same area and with same demographic characteristics was also studied.

## Results

MN and SCE frequencies were significantly higher in the exposed group ( $P < 0.005$ ) but not for CA. It was possible to relate a specific working environment (greenhouses) with higher levels of genetic damage. Use of personal protective equipment revealed to be important to prevent exposure. Allele frequencies of studied polymorphic genes obtained in this study are similar to the ones described in previous studies. Despite the low number of subjects, results suggest that low mEH (microsomal epoxide hydrolase) activity as well as GSTT1-positive genotype are associated with increased cytogenetic damage.

## Conclusions

Results confirmed an association between cytogenetic damage and occupational exposure to pesticides. Implementation of security and hygiene measures in this sector as well as good practices campaigns may be crucial to decrease risk. Results show that workplace, use of individual protective measures and exposure type are factors to be considered when these measures are chosen.

## Simultaneous analysis of endocrine disruptors in environmental waters by chromatography/mass spectrometry

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Many chemicals of natural or anthropogenic origin are suspected to be endocrine disruptor compounds (EDCs), which can influence the endocrine system of wildlife and humans, causing form malfunction and, ultimately, health problems. Endocrine disruption in wildlife evaluation has been focused on aquatic organisms, as the aquatic environment is particularly susceptible to pollution since there is considerable release of chemicals into rivers, lakes and the sea. As a result, some official environmental organizations and scientific groups have devoted their concerns to the development of appropriate analytical methods for the determination of EDCs in water. The main objective of this work is to develop a sensitive and selective methodology to detect and quantify several EDCs, simultaneously, in environmental water samples using solid-phase extraction (SPE) and Liquid and Gas Chromatography tandem Mass Spectrometry (LC-MS and GC-MS). The selected disruptors were some pesticides, natural and synthetic

estrogens and bisphenol A. The GC-MSn determinations were performed in a Thermo Polaris Q with an ion trap mass spectrophotometer and a temperature-programmable injector (PTV). The LC-MS<sup>n</sup> determinations were performed in a Waters 2795–2996-ZQ 4000; Empower Software. Linear calibration curves were obtained to the EDCs for concentrations ranging from 25 to 1000 µg/l. Strata X and Lichrolut EN/RP-18 100/200 mg SPE cartridges were used. The SPE optimization, recoveries and the pH of samples were evaluated. Preliminary results suggest that using SPE methodology associated with chromatographic techniques, accurate, good recoveries and agreeing results were obtained. In a single step of sample preparation it is possible to achieve good recoveries for EDCs with a large range of solubilities. Taking account the Portuguese legal value for one individual pesticide (0.1 µg/l), this method allowed a lower quantification of them and so it is suitable to do water analysis.

## FOOD AND NUTRITION

### Food poverty and eating habits among adolescents in Europe: does the West-East gap exist?

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#### Background

Tackling health inequalities requires a special focus on determinants of health. However, the contribution of nutrition to inequalities across Europe is widely uninvestigated. In order to reduce a significant gap in knowledge the aim of this study was to examine the association between food poverty and eating habits among adolescents in Europe.

#### Methods

The analysis was based on 173 256 adolescents aged 11, 13 and 15 from 31 European countries, participating in the WHO/EURO collaborative cross-national study 'Health Behaviour in School-aged Children 2005/06'. The countries were grouped into two areas for regional analysis, representing Western and Eastern Europe. Food poverty and eating habits, including having breakfast and daily consumption of fruits, vegetables, sweets and soft drinks were analysed. Logistic regression was used for analysis.

#### Results

Reported food poverty ranked from 5.7% (Portugal) to 28.5% (France) and from 7.2% (Hungary) to 26.0% (Macedonia) in West and East Europe, respectively. Adolescents reporting food poverty were less likely to eat fruits and vegetables in all Western and Eastern European countries although with some variations between countries. Sweets and soft drinks consumption was associated with food poverty in the West, notably in all Scandinavian countries and Spain [OR (95% CI) 1.35 (1.15–1.59) and 1.36 (1.16–1.58)]; 1.44 (1.20–1.73) and 1.28 (1.08–1.51), respectively], whereas in the East the consumption of these foodstuffs was higher among adolescents who not reporting food poverty, notably in Ukraine, Bulgaria, Russia, Romania and Macedonia. Adolescents reporting food poverty were more likely to miss breakfast on weekdays with the significant West-East difference [OR (95% CI): 0.71 (0.68–0.74) and 0.88 (0.84–0.93) in the West and East, respectively].

#### Conclusion

Strategies to tackle food poverty and inequalities in nutrition should focus both on promoting healthy eating habits and improving socioeconomic conditions in West and East Europe.

### Monarchal nutrition and life habits, advantages concerning health

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#### Background

Innovating new ways of healthy living are keys of a high in quality and prolonged life. But to a certain extent, re-discovering some of the traditional habits might be a great success, especially when targeting more traditional and religious groups of population. Living in a Romanian traditional Christian orthodox monastery signifies a pattern of life which has a bunch of good nutrition and behavioural habits (eating natural food, especially of vegetal origin. making daily more physical effort, maintaining a general state of inner peace and dealing in a positive way with stress). We tried to find out if monastery life has some advantages, especially concerning cardiovascular risk factors and pathology

#### Material and Method

We worked on two groups, each of 72 persons, one made of nuns from four isolated monasteries, and one, of women with same ages from Bucharest. Each person had to answer to a food frequency questionnaire, was clinically investigated, had BP measured and BMI calculated. The results were statistically processed.

#### Results

We found big differences between lifestyle in the two groups, especially concerning eating habits. The main was that nuns almost never eat meat (never red meat, only a small amount of fish). They had statistically longer periods of religious fasting ( $P < 0.05$ ), ate greater amounts of vegetables and whole grains, especially from their own crop ( $P < 0.05$ ), and less eggs, sugar and fats. The level of daily effort was greater in the monastery. The pathological profile was also different, the prevalence of cardiovascular diseases, high blood pressure and overweight being greater in controls

#### Conclusions

Extending life span means that we have to preserve our health for a longer period of time, efficient prevention methods for chronic degenerative diseases being needed. Life in a monastery cannot be, as a whole, adopted by a person from big city, but assuming some of the monarchal ways of living might be useful. It is also important to take in account the fact that such models could receive a better acceptance in countries in which confidence in church is high, like Romania.

### Food quality assessment in kindergartens

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## Background

In 1999, the Conference of Health Ministers decided to concentrate on specific targets of the German health policy. Nutrition- and health-promoting activities were implemented in Saxony addressing preschool children and their responsible person groups. Although, about 95% of all children aged three to six attend a kindergarten and take part in its catering, no basis data has been collected to assess the present situation of the nutrition and catering situation. Aim of the underlying study was to assess this situation with special emphasis on lunches that were offered.

## Methods

Representative data were collected within 4 weeks from  $N=86$  regional catering services of  $N=130$  kindergartens in Saxony, Germany. A qualitative analysis of  $N=568$  menus and of  $N=357$  recipes were carried out. Selected statements of parents and teachers were implemented in the analysis.

## Results

With the exception of two children on average all children eat lunch at kindergartens. Most kindergartens (74.6%) do not have own facilities for preparing daily meals and are served by catering services. Less potatoes, vegetables or sea fish and too much meat and deep-fried products were offered. Reference values for vitamin E ( $P=0.079$ ), folic acid ( $P<0.001$ ), vitamin D ( $P<0.001$ ), calcium ( $P<0.001$ ) and iodine ( $P=0.593$ ) were not achieved. Despite these insufficient circumstances teachers and parents declared to be completely satisfied with the present situation.

## Conclusions

The underlying results do not reflect the main requirements to promote the children's health and show a great demand for intervention programmes in the field of health promotion, especially nutrition related topics in kindergartens. As an adequate nutrition is essential for the child's development, responsible person groups have to link their work as a main part in the prevention of nutrition related diseases. Future activities should focus on education and information because knowledge of responsible person groups is insufficient. Furthermore, recommendations and quality criteria for a balanced and adequate diet should be an integral part in kindergartens.

## Acknowledgements

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## The association of parents' Sense of Coherence with eating patterns of their children aged 10–11

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## Background

From previous studies we know that family characteristics determine children's eating patterns. Adults internal health resources, measured as Sense of Coherence (SOC), are associated with their own eating pattern. Our aim is to examine whether an association between parents' SOC and their children's eating patterns can be found.

## Methods

Finnish schoolchildren ( $n=1271$ ), aged 10–11, filled in, in autumn 2006, in class, a questionnaire measuring their meal pattern, having breakfast, lunch, and dinner and the frequency intake of energy-rich foods like sweets, chocolate, soft drinks, ice-cream, cookies, crisps, hamburgers, pizzas and hot dogs, and nutrient-rich foods like fruits, raw and cooked vegetables, and dark bread. At the same time parents filled in a questionnaire measuring parents' SOC comprising of three dimensions; comprehensibility, meaningfulness, and manageability of life, and their own eating pattern ( $n=860$ ). Data from both children and parents could be found for 722 observations and

we tested the associations by univariate analysis of variance and chi-squared test.

## Results

Among parents poorer SOC compared to stronger SOC, was associated with a more frequent energy-rich food ( $P=0.006$ ) and a less frequent nutrient-rich food ( $P=0.025$ ) intake among children. A poorer parents' SOC was associated with a more irregular meal pattern, both at weekdays ( $P=0.013$ ) and weekends ( $P=0.005$ ) among children.

## Conclusions

We showed that parents' SOC was associated with children's eating pattern. We will further study whether parents' own eating pattern, as a model, or parenting style, food availability and accessibility at home, or having meals together with family are mediating factors for the association between parental SOC and children's eating pattern.

## An assessment of the dietary intakes of 3-year-old children—study in Krakow

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## Background

A correct diet incorporates the variety of ingredients a child needs for normal growth and development. Nutrition in the childhood plays also an important role for the health in later adulthood. The aim of this study was to assess dietary habits of preschool children.

## Methods

This is a part of an ongoing comparative longitudinal investigation being conducted in Krakow and New York City. Study population consisted of 3133-year-old children. Intakes of energy and nutrients were assessed on the basis of 24h dietary recall for 3 consecutive days. These intakes were compared with Polish RDA at safe level. Dietary deficiencies was define as <90% of guidelines.

## Results

We observed a high prevalence of children with nutritional deficiencies; more than 30% of them did not meet guidelines for energy and about 50% for fat. We found also deficiencies of vitamins; most children did not meet recommendations for vitamin D and PP. Especially low intake was observed for vitamin D—almost whole population consumed too small amount of this vitamin. Intake of mineral components was very low in the children; about 90% of them did not meet the recommended intake for calcium and iron, and 60% for phosphorus. There were no statistically significant differences in energy and nutrients intakes in relation to gender.

## Conclusion

The study demonstrated that there are significant deviations from the optimal recommendations for the intake of nutrients in preschool children. Results suggest a potential need for nutritional education for parents.

## Acknowledgement

The study received funding from an RO1 grant entitled 'Vulnerability of the Fetus/Infant to PAH, PM2.5 and ETS' (5 RO1 ES10165 NIEHS; 02/01/00–01/31/04) and The Gladys and Roland Harriman Foundation, New York. Principal investigator: Prof. FP Perera; Polish part of study: Prof. W. Jedrychowski.

## Children with food allergies and possibilities of care in Lithuanian schools

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**Background**

Food allergy reactions and anaphylaxis may occur in children, when they while at school. Unfortunately school personnel often have no information about child food allergy.

**Objectives**

To identify allergic reaction to food in school children and to evaluate attitude of staff towards care of them.

**Method**

A questionnaire assessing food allergy awareness, avoidance and treatment strategies was used to a random sample of secondary schools in Lithuania. Two hundred and eighty nurses, working at schools completed questionnaire. Information about children allergy and medical tests were received from child therapists.

**Results**

There were 130 565 children in the sample. Total 1.2% of self-reported prevalence of food allergy was established. These were children under 16 years of age, median time of allergic reaction was 6.5 years. More girls reported allergic reaction to food than boys ( $P < 0.05$ ). The most common allergens were cow milk, hazel nut, hen egg, chocolate, coca cola and apples. About 20% of children were allergic to apples, allergic reaction manifested in spring time, in birch pollen season. Skin prick tests to birch pollen were positive, the level of specific serum IgE to birch pollen was from  $>300$  to 154 IU. Children with persistent allergic symptoms (rhinitis, rhinoconjunctivitis) and reaction to food had significantly higher total IgE compared with those without persistent allergic symptoms ( $P = 0.02$  and  $P = 0.008$ , respectively). Only 10% of all allergic children to food had a salbutamol aerosol and antihistamines in the school bag, and none of them had a self-injector with adrenaline.

**Conclusions**

It is essential to detect all allergic children in secondary school, especially those with allergic reaction to food. There is an obvious need for schools to educate staff about food allergy, to establish immediate access to emergency epinephrine and train staff for epinephrine use.

### The assesment of dietary behaviour and physical activity as risk factors in the developing of coronary heart disease

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**Background**

Diet is thought to be a contributory factor in the developing of coronary heart disease. Saturated fat in the diet is linked with high blood cholesterol levels. So with a diet low on LDL and regular exercise the risk of getting coronary heart disease would be greatly reduced. We performed a survey on these two factors in Canton Sarajevo in order to evaluate them. We found out that a large portion of the population is disregarding such preventive measures. We suggested measures to improve the situation.

**Methods**

The methodology is based on the Countrywide Integrated Non-communicable Diseases Intervention (CINDI) Health Monitor (CHM) methodology. This was a cross-sectional study with 630 citizens. The subjects' dietary intake and physical activity was assessed using a special questionnaire. The data was recorded in a database. Further statistical analysis was done with MS Excel and it includes descriptive statistic and analysis, a *t*-test and chi-squared test.

**Results**

We found out that most of the people involved do not know what a proper healthy diet should look like. Many are overweight and obese. Changes in levels of physical activity are also required. We found out that most of people consume too much saturated fat because of the increased red meat consumption. Use of visible animal fat is not too high. Cereals, fruits and vegetables are used only moderately.

The physical activity of most subjects is modest and life style is sedentary.

**Conclusions**

Various segments of the society must be involved in the efforts to promote a healthier, active lifestyle. We intend to identify harmful and problematic dietary intake and alert the physicians whose patients who require further nutrition counseling. This study proved to be a good tool in developing effective healthy nutrition and physical activity intervention programs.

### Meta-analysis on body weight changes following childbirth

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**Background**

The extent to which childbearing contributes to the development of obesity is not entirely understood. Published studies on body weight changes following childbirth have focused on risk factors and clinical interventions. Pooled estimates of postpartum weight retention have not been reported, so that we summarized the existing evidence and estimated the course of weight changes after delivery.

**Methods**

We searched MEDLINE for published observational studies and control groups of randomized controlled trials between January 1995 and August 2005 as well as the bibliography of candidate studies. Data abstraction and judgement on qualitative homogeneity was done by two reviewers. The meta-analysis (inverse variance method) focused on average body weight changes at different points in time after childbirth. Sensitivity analysis for study-specific covariates was performed using meta-regression.

**Results**

Sixteen studies including 5796 women were judged homogeneous enough to be included in the meta-analysis. Average postpartum weight retention decreased continuously until 12 months postpartum (6 weeks: 6.33 kg (95% CI 6.07–6.60), 6 months: 2.86 kg (95% CI 2.59–3.14), 12 months: 1.23 kg (95% CI 1.02–1.44). Postpartum weight retention was significantly lower in studies with follow-up rate  $\geq 80\%$  at 6 weeks postpartum compared to studies with lower follow-up rate ( $P < 0.01$ ).

**Conclusions**

Considering underestimations in baseline weight and weight gain among non-pregnant women, the female population on average lost all pregnancy-related weight gain by about 12 months postpartum. Thereafter, the published evidence suggests a re-increase in body weight, but data on body weight changes later than 12 months after childbirth are scarce. Pregnancy should not be considered a global risk factor for the development of obesity.

### The sensitivity of body mass index calculated from self-stated weight and height values

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**Objectives**

To determine the sensitivity of body mass index (BMI) calculated from self-stated weight and height values.

**Method**

The study group of this methodological study was 227 adults (20 years or older) applied to a health center within 3 days in the city center of Ankara province of Turkey. The data were gathered via a pre-tested questionnaire. Weight measurements were done by using a portable scale and height by a 150 cm tapeline which was fixed to the wall 50 cm from the floor.

Weight was measured without shoes and with light dresses. Height measure was made in a straight position with eyes looking at a straight point in front. All measurements were done by the same researcher. Data analysis was done by using SPSS 15.0 statistical package program.

#### Findings

Sixty-three percent of the participants were female. One-fourth of them were college/university graduates; 45.9% were under the age of 40 while 13.2% were 60 or more. Almost half of the subjects (43.2%) had at least one chronic disease. Of the participants, 72.6% stated that they know both their height and weight. To determine the sensitivity of self body

mass index (BMI) calculated from self-stated weight and height, the real weight and height values were measured in the health centre. The total consistency of the BMI calculated from self-stated and real weight and height was 80.6%. When BMI was evaluated in groups, the sensitivity for under 25 group was 89.1%, for 25–29.99 group 76.7% and for 30+ group 71.4%.

#### Conclusion

Although the total consistency and the sensitivity by groups is in acceptable levels, BMI calculations from self-stated weight and height values should be used carefully in determining the level of obesity.

## HEALTH PROMOTION

### Driving under the influence of drugs: a register-based study of trends in Finland during 1977–2007

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#### Background

Driving under the influence of drugs (DUID) is a significant public health and traffic safety related problem. Illicit drugs and some psychoactive medicines have been shown to impair driving skills and increase the risk of traffic accident. The aims of this study were to describe the incidence and trends of DUID and to examine the main drug findings and their trends in suspected DUID cases over the last three decades.

#### Methods

A longitudinal, retrospective, register-based study was conducted concerning all apprehended DUID cases in Finland during 1977–2007. Cases with a positive finding of illicit/licit drug impairing driving performance were included in the study ( $N = 32\,259$ ). Toxicological results analysed from blood and/or urine specimens in one central laboratory.

#### Results

The incidence of DUID suspects increased 18-fold during 1977–2007. Majority of suspected DUID cases were men (89.7%), but the proportion of women has increased during the study period. The mean age of DUID suspects decreased from 36.2 years in 1977 to 29.1 years in 2001 but has since reincreased being 32.1 years in 2007. Most often found substances were benzodiazepines (75.7%), amphetamines (46.0%), cannabinoids (27.9%) and opioids (13.8%). In 60.8% of the cases two or more different substances were found in blood and/or urine. Most common illicit drugs, amphetamines and cannabinoids, started to appear at the end of 1980s. After the introduction of a zero tolerance law in February 2003 there was a sharp increase in suspected DUID cases, especially in regard to amphetamines.

#### Conclusions

DUID seems to be increasing, partly because legal acts and police activity make it more visible. Driving under the influence of drugs is a problem that needs serious attention.

### Smoking and occupation: a cross-sectional study among 4024 young workers from Central Italy

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#### Background

Although tobacco prevention policies focus on avoiding or controlling smoking at young age, little is known on the

relationship between type of occupation and smoking during early adulthood. We performed a cross-sectional study to evaluate prevalence and predictors of current and former smoking in young workers from Abruzzo, Italy.

#### Methods

We enrolled subjects aged 18–35 years employed in randomly selected companies in the Abruzzo Region, Italy, stratified by size, location and sector. All subjects compiled an anonymous questionnaire containing socio-demographic data and items from previously validated questionnaires on health status (SF-12), addictive behaviours (CAGE, EUDAP), and job-related strain (Siegrist-Karasek). Occupation was defined according to Italian standards (Istat) and classified in seven categories. Multivariable logistic regression models were used to investigate predictors of current and former smoking.

#### Results

After the exclusion of 162 invalid questionnaires, the final sample was composed of 4024 young workers. Overall, current smokers were 46.4% and former smokers 11.9%. Adjusting for age, gender, education, marital status, location, alcohol and drug use, the OR of current smoking for a manual compared to a intellectual worker was 1.65 (95% CI 1.21–2.24). A positive association with current smoking was also found for technical jobs (OR 1.43; 95% CI 1.09–1.89) and call-centre operators (OR 1.56; 95% CI 1.13–2.15). Perceived job demands, rewards and stability did not alter the relationship between occupational status and current smoking. Manual workers and call-centre operators showed a lower likelihood of quitting smoking compared to other workers, but the association disappeared adjusting for job-related strain.

#### Conclusion

Despite recent laws against tobacco usage in public places and worksites, we observed a very high smoking prevalence among young workers from Central Italy. A significant independent association between current smoking and some job categories was documented for the first time in Italy.

### The self-system as predictor of engagement in risk-taking behaviour among adolescents

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#### Background

The self-system is considered as a dynamic, changeable, and multifaceted product consisting of cognitive, affective and behavioural domains. Previous research confirms each of these domains as a possible predictor in the field of risk-taking behaviour among young people. Less is known however about their congruent influence. The aim of this paper, therefore, was to assess whether the self-system dimensions in one model

predict the engagement in several forms of risk-taking behaviour among adolescents.

#### Methods

A total sample of 501 elementary-school students (mean age  $14.7 \pm 0.9$  years, 48.5% males) from Slovakia and Czech Republic completed the Self-concept scale measuring cognitive aspects of the self-system, the Self-competence/Self-liking Scale, and Rosenberg's Self-esteem Scale (positive and negative self-esteem subscales) measuring affective aspects, the Self-efficacy Scale (general and social self-efficacy subscales), and the Self-regulation Scale measuring behavioural aspects of the self-system. Questions about their engagement in risk-taking behaviour (thrill-seeking, rebellious, reckless, antisocial behaviour) were assessed as well. Data were explored with hierarchical linear regression separately for girls and boys.

#### Results

Engagement in thrill-seeking behaviour was predicted by self-liking ( $P < 0.05$ ) and social self-efficacy ( $P < 0.05$ ) among boys and by self-regulation among girls ( $P < 0.001$ ). Rebellious behaviour was predicted again by self-liking ( $P < 0.001$ ) among boys as well as by positive self-esteem ( $P < 0.05$ ). In contrast, rebellious behaviour among girls was predicted by social self-efficacy ( $P < 0.001$ ). Similarly as thrill-seeking and rebellious behaviour, reckless behaviour was predicted by self-liking ( $P < 0.01$ ), but only among boys.

#### Conclusion

Our findings suggest different dimensions of the self-system as being essential in predicting engagement in risk-taking behaviour among boys and girls. For boys the affective part of the self-system and for girls the behavioural part of the self-system should be considered as target variables in health-promotion interventions, regarding personality factors.

### Children's knowledge of the role of environment in health and illness

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#### Background

The study reported here describes 9–11-year-olds' lay beliefs and knowledge about harmful environmental effects and environment-borne disease.

#### Methods

Data were collected among Hungarian children aged between 9 and 11 years ( $N = 448$ ; two primary schools from the capital of Hungary, Budapest and four others from small towns). These samples were collected based on their residential location (metropolitan, small town; suburban, block of flats) which presents our intention to interpret the role of location in children's lay concepts. The 'draw-and-write' technique was used in the data collection.

#### Results

Most respondents clearly described the man-made environmental risks (such as car transportation or noise pollution) as direct effects, however, in their interpretations, lifestyle (e.g. smoking) and other effects (e.g. pollen pollution) also received considerable emphasis. Although many of them did not describe a specific disease, among the environment-borne diseases, most of the children mentioned infectious diseases which were followed by allergy. On the other hand, a great number of them did not mention a specific disease but trivial symptoms.

#### Conclusions

The qualitative and quantitative data justify that children's location has a significant influence on their knowledge of the harmful environmental factors. With this study, we would like to draw the attention to the relationship between health and

environmental consciousness which would help develop more effective health promotion programs.

### Surveys of public attitudes towards smoking and tobacco control policy in Russia

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#### Background

Since the political transition in 1991, Russia has been targeted intensively by the transnational tobacco industry. High smoking rates among men have increased further and currently among the highest in the world; traditionally low rates among women have more than doubled. The tobacco companies have so far faced little opposition as they shape the discourse on smoking in Russia. This article asks what ordinary Russians really think about possible actions to reduce smoking.

#### Methods

A representative sample of the Russian population (1600 respondents) was interviewed face-to-face in November 2007.

#### Results

Only 14% of respondents considered tobacco control in Russia adequate, while 37% felt that nothing was being done at all. There was support for prices keeping pace with or even exceeding inflation. Over 70% of all respondents favoured a ban on sales from street kiosks, while 56% believed that existing health warnings (currently 4% of front and back of packs) were inadequate. The current policy of designating a few tables in bars and restaurants as non-smoking was supported by less than 10% of respondents, while almost one-third supported a total ban, with 44% supporting provision of equal space for smokers and non-smokers. Older age, non-smoking status and living a smaller town all emerged as significantly associated with the propensity to support antismoking measures. The tobacco companies were generally viewed as behaving like most other companies in Russia, with three quarters believing that they definitely or maybe bribe politicians. Knowledge of impact of smoking on health was limited with significant underestimation of dangers and addictive qualities of tobacco. One-third believed that light cigarettes are safer than normal.

#### Conclusion

The majority of the Russian population would support considerable strengthening of tobacco control policies but there is also a need for effective public education campaigns.

### The importance of general, social and drinking refusal self-efficacy for alcohol drinking patterns among Slovak university students

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#### Background

Excessive use of alcohol by university students is a significant health problem. Quantity and drinking frequency are two important factors in determining drinking patterns. The aim of this study was to investigate how different types of self-efficacy contribute to these drinking patterns among university students by gender.

#### Methods

The sample consisted of 934 Slovak university students (First to fourth year; mean age  $21.1 \pm 1.8$ ; 63.8% female).

Binary logistic regression was performed separately for both genders to assess the impact of five predictors (social self-efficacy and general self-efficacy as factors of the Self-efficacy Scale; self-efficacy for avoiding drinking under social pressure, for emotional relief and opportunistic drinking as factors of the Drinking Refusal Self-efficacy Scale) on drinking frequency (<1 drinking days per week versus >1 day) and quantity (at least once >5 drinks on one occasion in the preceding month versus <5 drinks).

#### Results

C-statistics confirmed the discriminative power and the adequacy of the drinking frequency model ( $c$  0.75; 95% CI 0.69–0.81) for men and ( $c$  0.75; 95% CI 0.68–0.82) for women, as well as the drinking quantity model ( $c$  0.73; 95% CI 0.67–0.79) for men and ( $c$  0.74; CI 0.67–0.81) for women. Low level of self-efficacy for avoiding drinking under social pressure significantly increased the probability of drinking frequency among men (OR 0.89; 95% CI 0.85–0.94) and among women (OR 0.88; 95% CI 0.83–0.93), and also drinking quantity among men (OR 0.73; 95% CI 0.66–0.81) and women (OR 0.86; 95% CI 0.83–0.9). In addition, higher levels of social self-efficacy significantly predicted higher drinking quantity among men (OR 1.18; 95% CI 1.07–1.3) and also among women (OR 1.06; 95% CI 1.01–1.13). General self-efficacy was not associated with alcohol frequency (OR 1.03 for men, OR 0.99 for women) or drinking quantity (OR 0.99 for men, OR 1.00 for women).

#### Conclusions

Our findings confirm that social situations and peer pressure play an important role in drinking behaviour. Drinking refusal self-efficacy was a strong predictor of alcohol drinking among university students. Intervention programs focusing on enhancing refusal skills, which may influence individuals' abilities to resist peer pressure, look promising.

### What is new about new public health? Focus and governing technologies

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#### Background

The Ottawa declaration from 1988 on health promotion is by many researchers and health promoters considered to be a landmark in the history of public health indicating a fundamental change in the approach to improving the health of populations. The change is said to imply a focus on health rather than disease and to be performed through less directive governing activities from the authorities leaving more the decisions to empowered individuals. The era after Ottawa has by some been labelled new public health.

#### Methods

The material studied is mainly Danish and Swedish textbooks on health promotion and material issued by the authorities to inform and influence the behaviour of the population.

#### Results

In the presentation the above mentioned assumptions are discussed by looking at the history of public health, were the focus on health rather than on disease can be dated way back, in Denmark and Sweden at least to the 18th century. The idea about less directive governing is questioned by analysing the governing technologies in health promotion activities such as empowerment and 'motivating interviewing' and by comparing recent governing methods with those used in the mid-20th century.

#### Conclusions

The conclusion is that new empowering governing technologies have been introduced, while old more openly directive methods are also still in use, and that focus on disease is still prominent alongside the focus on health. The governing ambitions of the health authorities have increased

substantially, involving more people and more areas of people's lives. It is thus justified to talk about a new public health, but the novelty could neither be characterised by a stronger focus on health and nor as being non-directive.

### Analysis of doses received through radio-diagnosis by patients in South-Western Romania

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#### Background

Using ionizing radiations more and more frequently in the diagnosis of many diseases is two-sided: one side is damaging, being a health-risk because of their carcinogen role, and the other one is beneficial. A previous research we carried out in 2005–2006 suggest physicians take into consideration more the benefits of modern technology in examining patients comparing to its risks. In this context, the present study is intended at estimating the effective doses received by patients when investigated like that.

#### Methods

Between 2007 and 2008 we recorded the doses at the entrance surface during radiological investigations for seven types of procedures: antero-posterior (AP) and lateral (LAT) lung radiographies, AP thoracic spine, AP lumbar spine, AP pelvis, AP skull, and AP cervical spine. A number of 165 patients have been examined, 130 (79%) adults and 35 (21%) children, living in the four counties of South-West Romania. The effective doses have been calculated using the conversion factors obtained through the Monte-Carlo method and published in the National Radiological Protection Board (NRPB). The statistical analysis has been done comparing the mean values calculated for the dose at the entrance surface with the reference values published by NRPB, using the Student test.

#### Results

Comparison of our results with the reference values show, for both children and adults, statistically significant differences ( $P < 0.001$ ) only in pulmonary examinations, the values we calculated being three times higher than the reference values. These differences could be explained by the fact that, in establishing the reference values, a 'high voltage' technique was used, while in the radiological services of our study the 'low voltage' technique was implied, which naturally led to an increased dose at the entrance surface.

#### Conclusions

An increase of doses taken by patients is the most worrying perspective and suggest the reduced concern regarding the level of patient protection in radiological services.

### Commissioning 'community well-being' for older people

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#### Background

In the UK, successive government policies about older people's health and well-being aim to improve care by raising standards and promoting independence. Improving access to information and services that can improve health and well-being and



reduce health risks is central to the modernisation of health and social care. Tailored and person-centred approaches with a strong emphasis on promoting health and wellbeing remain central to policy and have included a recent emphasis on commissioning 'community well-being'. However, the optimal method for delivering such policy remains uncertain and untested.

#### Methods

To identify the key aspects of social situation that affect health and well-being, from the perspectives of older people and key stakeholders, in order to enrich and expand an existing health risk appraisal tool, so that it could be used for self-assessment of health and social well-being. A qualitative study was conducted with focus groups and interviews. Two primary care/social services areas in suburban London. Older people and carers, health and social care practitioners, managers and commissioners, local government and voluntary organisations (total  $n = 130$ ).

#### Results

The social factors determining health that were prioritised and recommended for inclusion in the existing tool were recent life events, housing & garden maintenance, transport, both public and private, financial management, carer status & needs, the local environment and social networks and social isolation. These social dimensions have been developed into questions and options for response, with input from study participants, into new sections for the existing tool. These will be presented.

#### Conclusions

This study has identified key social determinants of health that could usefully be added to an existing health risk appraisal tool for older people, and that could also inform the commissioning of 'community well-being'. Further evaluation of the enhanced instrument, either in the field or in further prospective controlled studies, would now be appropriate and timely.

### Health of juvenile and adult prisoners in Romania

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#### Background

The evaluation of the state of health of the juvenile and adult prisoners, the respect of their rights to medical care during their detention and the development of the medical services, by optimising the medical and social ones represent a major public health problem.

#### Methods

The survey (epidemiological) research was made between 2006 and 2007. We wanted to see the frequency of the chronic diseases among the prisoners from three penitentiaries from Romania ( $n = 2400$ ), on the other hand we have evaluated the perception of the imprisoned towards the health services from the prisons. Data were collected through a self-completed questionnaire, secondary analysis of the official statistics and focus-group with professionals from the prisons (physicians, psychologists, social workers).

#### Results

From the total sample (2400), 716 (29.8%) had chronic diseases, the majority 69.5% (498 cases) had psychic problems. The following on the list are: cardiovascular, liver diseases, diabetes and chronic pulmonary diseases. The perception of the quality of the medical services shows the following significant problems, among the chronic ill (716 cases, 100%), 32.7% did not receive proper medication, for 28.6% requested medical services was refused, 11% did not receive proper alimentary diet, and 7.7% consider that life conditions in the prison must lead to change in their status.

#### Conclusions

A proper national strategy should be made for all and especially the psychically ill from the prisons and medical services in prisons should improve.

### Brief intervention in changing adults' nutrition behaviour: results from the EVI study conducted in Central Finland during 2006–2007

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#### Background

Diseases based on health behaviour are a common threat to the health of Finns. Using brief interventions in primary health care would save time and costs. Whether the method is effective enough still needs to be investigated. The purpose of this study was to investigate the potential of brief interventions in changing nutrition behaviour.

#### Methods

The data was collected during 2006–2007 in the Central Finland Health Care District by a structural questionnaire. In 2006, 1211 volunteer adult customers, of whom 1020 gave permission to contact them for follow-up, completed the questionnaire. In 2007, 59% ( $n = 599$ ) of the latter responded to a follow-up enquiry. Brief counselling was conducted to 48% of them ( $n = 266$ ) during usual care in 2007. The data was analysed using Logistic regression, McNemar Test, and General Linear Model.

#### Results

The data showed no significant change in the dietary fat use or the consumption of low-fat cheese and milk products, fish, wholegrain products, and fruits and vegetables during 2006–2007. The regularity of meals, daily nibbling, and the use of fast food remained the same over time. Among women, the use of added salt, ketchup and soya sauce decreased by 10% ( $P = 0.001$ ). Also the women's perception about their weight and desire to reduce weight or change dietary habits changed during the follow-up ( $P < 0.05$ ), but the change was not consistent: there was movement towards more positive and more negative behaviour. The responses did not differ by age, work situation, Body Mass Index, desire to reduce weight or change nutrition habits, or whether the person received counselling or not. Considering the diet as a whole, overweight men did change their habits in a positive way, though the change was not significant, while women and normal weight men changed their habits in a negative way ( $P = 0.035$ ). Also the person's work situation caused some change ( $P = 0.001$ ). Again, those willing to change their nutrition habits had a more unhealthy diet from the beginning than those not willing to change their habits ( $P < 0.001$ ).

#### Conclusions

According to the results, brief counselling has little or no influence on nutrition habits. More studies with longer follow-up times are needed to evaluate the potential of brief interventions in changing nutrition behaviour.

### Relationship of harmful life habits and work environment with the myocardial infarction among women aged 35–64 in Kaunas

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#### Objective

To determine influence of the labour factors and lifestyle on the risk of first myocardial infarction among Kaunas women aged 35–64.

## Methods

We conducted the population-based case-control study among 35–64-year-old women in Kaunas, Lithuania. The study was conducted in 1997–2005 with the participation of all Kaunas hospitals. Cases of the first myocardial infarction ( $N=368$ ) were recruited from the hospital register. Controls ( $N=848$ ) were randomly selected from the study base. The group contained first hospitalized non-fatal myocardial infarction patients (code I21 according to the International Classification of the Diseases). Cases and controls were interviewed using a standardized questionnaire about the demographics, psychosocial characteristics, behavioural, physiological risk factors, occupational and residential exposures. We used SPSS 10.0 software for Windows for the statistical analysis. To adjust for potential confounding effects of the selected risk factors logistic regression analysis was performed. Potential confounders included in the models were factors, such as arterial hypertension, smoking, stress, obesity, education and employment duration. Crude OR along with their corresponding 95% CI were calculated. The adjusted OR along with their 95% CI for each risk factor relative to the reference category was assessed, and the effect of the risk factors on MI risk among women 35–64 years old.

## Results

We have determined: stress has the greatest influence on the risk of the first myocardial infarction among women aged 35–64 (RS 11.46; 95 proc. PI 7.39–17.79). Women included in the case group were older than those in the control group (RS 1.77; 95 proc. PI 1.36–2.31). Vibration in the work environment increased by 58% the risk of the first myocardial infarction among women aged 35–64, increased blood pressure—4 times, body mass index 54%. Total suspended particulate in the work environment increased the risk by 16% among women aged 35–64.

## Conclusions

Low education, stress, smoking, increased blood pressure, body mass index significantly increased the risk of the first myocardial infarction among women aged 35–64.

## Unplugged: a European school-based programme effective in preventing tobacco, alcohol and drug use among adolescents

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## Background

In the school-based drug abuse prevention field, a large number of programmes have been developed. However, in most cases the effectiveness of the programme in reducing drug use has not been evaluated. Moreover, most of the programmes come from the United States. For this reason the EC funded in 2003 the EU-Dap multicentric study.

## Methods

'Unplugged' is the first school-based prevention programme developed in Europe. It was designed by an international group of expert experimented in drug prevention in the frame of EUDAP study. It was then implemented and evaluated

through a randomised controlled trial conducted between 2004 and 2006. In the second phase of EU-DAP the teacher handbook was largely revised, namely based on teacher feedback. Moreover, to complement the new teacher handbook a students workbook was developed intended as a personal workbook for the student and containing activities that students are to work through during the 'Unplugged' units. The quiz cards, a set of cards used to teach the risk of drug use have also been revised. A part from the revision of the content a new appealing graphic version was developed.

## Results

'Unplugged' is a strongly interactive programme and consists of 12 units, each one with a standard structure. The results of effectiveness evaluation showed at post test, 3 months after the programme, a statistical significant reduction of daily smoking, drunkenness episodes and cannabis use among the intervention students towards the control. The effect on drunkenness and cannabis was maintained at 1-year follow-up. The programme is based on the comprehensive social influence approach, and includes a training of personal and social skills with a specific focus on normative beliefs. Unit 1 introduces the programme to the pupils. Units 3, 5 and 9 are designed to deal mainly with adolescents' knowledge and attitudes. Units 2, 7 and 8 deal with interpersonal skills. Unit 4 includes activity on normative beliefs. Units 6, 10, 11 and 12 deal with intrapersonal skills.

## Conclusions

The 'Unplugged' programme has a high degree of standardization: this makes it suitable to be disseminated in the different contexts of the European schools as well as to be adaptable to several language and culture-specific settings.

## Socioeconomic inequalities in preventing cardiovascular risk factors among Italian adults in 2004–2005

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## Background

Equal access to preventive health care is identified as one of the major challenge for health care systems. Reducing socioeconomic inequalities in healthcare is a public health priority. This study assessed socioeconomic disparities in individual health behaviours and utilization of medical services to prevent cardiovascular diseases in Italy.

## Methods

A cross-sectional analysis of a nationally representative sample of 47 391 adults aged 40–69 years was carried out using data from the national survey 'health conditions and health care services use' conducted in Italy in 2004–2005. Multiple logistic regression models were performed to assess the association of socioeconomic status (SES) with regular controls of blood pressure, cholesterol, body mass index and glycaemia. SES was estimated from educational level and occupational class. Results are reported in the form of OR and 95% CI.

## Results

Analyses were adjusted for age, gender, region of residence, educational level, occupational class, history of hypertension and diabetes, cigarette smoking status, body mass index. Blood pressure and cholesterol control increased in high occupational class versus unemployed class respectively with an OR of 1.20 (95% CI 1.10–1.32) and an OR of 1.16 (95% CI 1.06–1.26). Middle class individuals were more likely to control weight than unemployed ones with an OR of 1.41 (95% CI 1.30–1.53). Individuals with upper educational level had a higher likelihood to self-monitor their weight than those with low education (OR 1.23; CI 1.16–1.29). No significant disparities were found in the control of glycaemia among socioeconomic groups.

## Conclusions

The study showed that cholesterol measurement, blood pressure and weight control were inequitably used, generally favouring higher socioeconomic groups.

## Evaluation of a national information and prevention campaign on drug and alcohol use in Belgium

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### Background

Between 29 January and the 25 February 2008, a national information and prevention campaign was launched on television, big commercial pallets in the streets, newspapers and postal cards. By means of a True-False concept the campaign tried to make the theme ‘drug and alcohol’ more discussible in the general public. Furthermore, it tried to make people think about it and prompt the public to inform themselves by exploring the suggested sources of information: a dedicated telephone line and a website. The campaign was evaluated to assess its effectiveness.

### Methods

The first phase is the evaluation of the campaign in the general public. Following a detailed scenario, a telephonic questionnaire was held, proportionally spread over the different regions in Belgium. A CD-rom with 4 500 000 fixed phone number subscribers in Belgium was used to obtain a sample of 1000 Belgians. To obtain a more representative group spread over all age groups, extra mobile phone numbers were added and 50 young people were interviewed on the street in Brussels and Antwerp.

In the second phase we performed Focus Group Discussions to evaluate the promotion material of the campaign in people from health or youth sectors who used the material.

### Results

Response on telephonic questionnaire: of the 2687 called numbers 864 (32.2%) people responded, 1295 (48.4%) could not be reached and 446 (16.5%) people refused to participate. Of the 1000 successful conversations, 191 (19.1%) saw the campaign. For 37% of them, the campaign incited them to think about their drug and alcohol use and that of their environment. Of the people who saw the campaign, 24.1% were incited to talk about their alcohol and drug use and that of their environment. Some first results from the focus groups: the campaign is not enough goal-group oriented and should be more eye-catching.

## A multidisciplinary team assesses the potential effects of local policies on the health of the population of Ragusa through Health Impact Assessment tools

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### Problem

Politicians and administrators generally proclaim that citizens and their well-being are the heart of their work but this is not always evident. They often underrate the impact of their decisions on the health determinants of their communities and public administrations may undertake or approve projects that undermine the health of the population they mean to help. The Health Impact Assessment tool (HIA) assesses the influence of policies and programmes on the health and on the quality of life of the target population.

## Objectives

To create an operational platform for alliance negotiation and synergetic development and to evaluate Province and Town determinations that may have an impact on local population's health.

### Description of the policy

CEFPAS has implemented a 2-year HIA project in the Province of Ragusa, Sicily, through a multidisciplinary teamwork composed of two politicians, one economist, one general practitioner, one hygienist, one veterinarian, one environmentalist, one representative of citizens groups and one representative of CEFPAS.

### Design

The project consists of a preparatory phase, to identify and map the determinations' flow, and five operational stages: screening, scoping, assessment, reporting and monitoring.

### Results (effects of change)

A set of instruments was developed tested and validated. A retrospective evaluation was carried out on two deliberations dealing with waste disposal, purchase of an electromixer. Documents with HIA recommendations have been provided to the administrators.

### Lessons

- Politicians and administrators are now concerned about all health determinants—not only about those strictly concerning health services. Also, they start to appreciate the possibility of taking evidence-based decisions that put population's health at the centre of their work.
- Public health professionals are enthusiastic to participate in truly preventive community efforts.
- The population starts to recognise the benefits of evidence-based information for possible lobbying and to protect their personal and their community's health.

## Woman and smoking: public health insight

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### Background

Smoking in women is a growing public health concern in Eastern Europe. This study investigates the influence of different demographic, socioeconomic factors, predisposing Armenian women to cigarette smoking.

### Methods

The American University of Armenia (AUA) conducted a cross-sectional survey of 360 men and 360 women, aged 18–60 years in capital city Yerevan and two provinces. The study looked at the sub-sample of women analysing age, education, marital status, income, employment status, place of residence and knowledge of health consequences of smoking as potential predictors of smoking in women. Stepwise logistic regression analysis provided estimates of OR and CI.

### Results

The prevalence of cigarette smoking was 8.4% in women aged 25–45 years, 6.3% in women who were 18–25 years old, and 4.4% in women aged 45 years or older. Logistic regression analysis of the most important independent factors revealed that being divorced or single, living in province of Shirak, having university degree or higher, being employed and knowledge of harmful effects of smoking were associated with smoking in women ( $P < 0.05$ ). Knowledge of health consequences of smoking was the main significant protective factor against smoking in women after controlling for potential confounding variables (OR 0.19, 95% CI 0.04–0.97). Respondents were more likely to agree that smoking causes lung cancer than coronary heart disease or stroke; less than half of women—smokers believed that smoking caused stroke or coronary heart disease (45.8% vs 83.3% for lung cancer).

## Conclusions

This study suggests that educating women about health hazards of cigarette smoking could be an effective tool. Place of residence, marital status, educational level and employment status should be considered when choosing target groups for these interventions.

## Health promotion priorities within local authorities: comparative analysis in four municipalities

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### Background

Today there is increasing interest in of one of the action strategies in the Ottawa Charter (WHO 1986): building healthy public policy. Commitment to health promotion requires that health is high on the agenda of policy-makers, and local governments have a decisive role in shaping opportunities for different actors to engage in health promotion. In Finland, however, we know little about how health promotion is emphasized within local authorities. The aim of this study is to compare health promotion priorities of local governments in four municipalities in Finland.

### Methods

The data reported are from a questionnaire survey of all members and deputy members of the municipal councils, the executive boards, and the boards of social and health services in four municipalities in Finland in 2004 ( $N=195$ ). The response rate was 52%.

### Results

Less than half of the politicians reported that any of the surveyed health promotion activities were emphasized quite or very much in their municipality's budget and operational plan. The preliminary results show some differences between municipalities regarding priorities, but also opposite views in some issues between politicians in the same municipality. In all municipalities promotion of the health of especially children and youth, but also the elderly seem to have been emphasized the most. About one third of the respondents reported that prevention of drug use was much emphasized in their municipality as well as promotion of physical activity in three of the municipalities. Other healthy lifestyle issues were given relatively little emphasis. Furthermore, only about one fifth of the respondents reported that psychosocial health issues and supportive environments were much emphasized in their municipality.

### Conclusions

Less than half of the central politicians were of the opinion that health promotion activities were given much emphasis in their municipality's policy. Health promotion needs to be highlighted more in local governments.

## Smoking and quitting patterns in Armenia

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### Background

Limited data exist on smoking and quitting patterns in post-soviet countries, including Armenia. The aim of this study was to explore smoking and quitting patterns in Armenian adults using data from a population-based survey conducted in May–June 2007 in three provinces of Armenia, including the capital city.

### Methods

The study utilized a multi-stage cluster sampling method. Data on smoking related knowledge, attitude and practices

were collected from 18- to 60-year-old 720 men and women (1:1) in selected households by trained interviewers. Descriptive statistics and chi-squared test for differences between proportions were used in the study.

### Results

Smokers, defined as persons who currently smoke and smoked over 100 cigarettes over lifetime, comprised 35.8% of respondents, 55.7% were non-smokers, and 8.6% were ex-smokers. The proportion of smokers was 12 times higher in men compared to women (67.4% vs 5.2%, respectively). Similarly, majority of ex-smokers were men (88.5%). No statistically significant difference was found between the smoking status and respondents' education, income and place of residence. High level of nicotine dependence was reported by 56.4% of the current smokers. About 70.0% of smokers intended to quit in the future, including 29.4% who were likely to make a quitting attempt in the next 12 months. Ex-smokers did not report using nicotine replacement therapy or other pharmacological aids as a quitting method. 'Cold turkey' was most commonly used.

### Conclusions

By demonstrating high smoking and very low quitting rates among men, our study suggests that Armenia is still in the second stage of the tobacco epidemic. Future interventions should focus on raising awareness and use of modern smoking cessation methods along with other essential strategies. While cost could be a major obstacle, research is needed to recommend cost-effective options for smoking cessation interventions in 'transition' countries, including Armenia.

## Mapping health promotion

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### Background

The last years' health promotion has won a place in the public agenda. There has been a remarkable increment in the number of scientific products and plan and program development related to health promotion in its widest meaning. It is frequent to find health promotion statements in public administrations, NGOs, private institutions and industry. In the public sector, legislation and regulations refer to health promotion phenomenally often. Taking in account the previous statements, the question this works tries to answer is who is promoting health in our territory and how is health being promoted?

### Method

Observational transversal study of health promotion programs being developed in the Basque Autonomous Community, Spain. For each program the collected variable were: issue (physical activity, healthy eating, tobacco, alcohol, etc.); scenario (school, hospital, etc.); target population; institution in charge; type of intervention (education, empowerment, etc.); collaborations; founding (amount, source, etc.); continuity; existing evaluation; geographic influence. Data were obtained from existing data bases and through active search of web pages and published brochures and memoirs. These data were analysed under three different perspectives: using descriptive methodology to characterize identified programs; mapping to observe geographic distribution; and applying network analysis methodology to assess relationships between health promotion-related actors.

### Results

A total number of 137 interventions were identified. The most frequent issue was drug consumption prevention (60%), focused in young people and children (80%) in school based programs (73%).

The geographic distribution of interventions was not regular through the territory. The network map of actors, showed

interesting patterns and allowed the identification of relevant and central nodes, cohesion and clustering patterns.

### Conclusions

Health promotion takes place in complex scenarios. In order to avoid inequity in health promotion access, it is crucial to know the ongoing reality and to identify strategies to better integrate all the initiatives.

## Pattern in socioeconomic inequalities and drinking behaviour in Belgium, from 1997 to 2004

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### Background

Previous studies have comprehensively documented a clear a persistent social gradient in alcohol-related mortality and that socioeconomic status (SES) contributes to unequal rates of alcoholism-related diagnoses. In industrialized countries higher SES groups tend to drink more frequently but smaller amount whereas those in lower SES groups have a higher prevalence of abstainers but those who drink, drink more often in a problematic way. The aim of this study is to investigate how social inequalities operate with regard to heavy drinking behaviour over time in the Belgian adult population.

### Methods

Data were obtained from three consecutive Health Interview Surveys (1997  $n = 5486$ , 2001  $n = 6286$  and 2004  $n = 5770$ ). The age range was 25–64 years. SES was measured by educational level. Multiple logistic regression were employed to calculate age-adjusted OR for men and women by educational level for heavy episodic drinking ( $\geq 6$  glasses/day once or more in the past 6 months).

### Results

Over time men report in average two times more excessive episodic drinking than women (53% vs 21%). For both gender we observed an unquestionable SES gradient on heavy drinking behaviour: people with higher SES are more likely to drink heavily than those with lower SES. This gradient decreased statistical significant between 1997 and 2001 for finally become stable in 2004, from 2.2 (95% CI 1.7–2.8) to 1.1 (95% CI 0.8–1.4) and from 3.4 (95% CI 2.0–5.6) to 1.3 (95% CI 0.9–1.9), respectively for men and women.

### Conclusions

This study reveals unlike prior studies that people with higher SES are at greatest risk for problematic drinking. From 1997 to 2004, the SES gradient in alcohol consumption has significantly decreased especially for women. Further analysis should look at the reasons behind such an evolution in the effect of SES on drinking behaviour and provide more information on alcohol-related problems in order to describe more clearly where and how SES contribute to differential risks for alcohol misuse and help, in a more efficient way, to better tailor preventive actions.

## Tackling male obesity: a group-based weight management intervention for men in a deprived area of Scotland

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### Background

The prevalence of obesity has reached epidemic proportions. The World Health Organisation estimates that over 300 million adults worldwide are clinically obese. Overweight and obesity are associated with long-term health conditions (e.g. type 2 diabetes, hypertension, heart disease,

stroke, osteoarthritis, cancer) and with socio-economic deprivation. Despite the well-established links with poor health, obese and overweight men often appear unwilling to engage in weight loss programmes. Their reluctance may reflect the failure of most interventions to take account of gender differences in approach to weight management. We present an evaluation of a novel community nurse led, gender-specific, weight management group programme in a deprived area of Scotland.

### Methods

Existing anonymized databases were consulted to determine the reach and effectiveness of the weight management programme (hereafter referred to as the Camelion model). Focus groups discussions were analysed to obtain the views of men who had attended a weight management group and of their spouses.

### Results

Eighty (76.2%) of the 105 obese men who enrolled in a weight management group completed the 12-week programme. 36 (45%) out of the 80 completers lost at least 5% of their original body weight. These outcome measures compare favourably with similar (but mixed-gender) programmes; however, as for other programmes, the Camelion model's reach (at 11.4% of those eligible) was relatively low. Health concerns and being labelled obese were the men's main motivators for joining, and they appreciated the programme's flexible approach to weight management; the emphasis on healthy eating, exercise and alcohol rather than purely on weight loss.

### Conclusions

The Camelion model appears to offer a successful intervention for male obesity with many completers achieving recommended weight loss targets. However, the programme's reach could be improved.

(1) World Health Organization (2000). Obesity: Preventing and Managing the Global Epidemic. Geneva: World Health Organization.

## Prenatal care and behavioural risk factors for pregnancy evolution in Romania

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### Background

The goal of this article is to identify consistent estimates of the prenatal care, psychosocial and behavioural risk factors in the adverse pregnancy outcomes like pregnancy complications and low birth weight.

### Methods

The 2004 national survey 'Sexual Reproductive Health in Romania' included over 50 items regarding prenatal care and pregnancy outcome. A number of 2984 women who gave birth to one or more children were interviewed. The role of prenatal medical care (the age of pregnancy when prenatal care began and the number of prenatal visits), of behavioural risk factors (smoking and alcohol drinking during pregnancy) and of psycho-social factors on pregnancy evolution has been statistically analysed using logistic regression and factorial latent classes analysis.

### Results

Low birth weight events are significantly related to pregnancy complications history ( $\chi^2 = 4.372$ ,  $df = 1$ ,  $P = 0.037$ ). Logistic regression indicates a 3.6 times greater risk (95% CI 2.38–5.45) of having a pregnancy complication in case of low number of prenatal visits to the physician (under seven visits) and a 1.9 times greater risk (95% CI 1.32–2.87) in case of 7–13 visits. Smoking of 11 cigarettes or more during pregnancy increase by 3.08 (95% CI 1.41–6.72) the risk of a low birth weight.

### Conclusions

Pregnancy adverse outcomes can not be straightforward explained only by specific care indexes (Kessner and Kotelchuck). Behavioural risk and psychosocial factors must be considered in more complex models.

### Home-based cardiac rehabilitation: adopting a behaviour change approach to encourage independent exercise

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#### Background

Regular physical activity is crucial to slowing down the progression of coronary heart disease (CHD) and is a core component to cardiac rehabilitation (CR). Hospital-based CR is poor in maintaining participation rates with many limiting factors, preventing optimal uptake. It is established that physical activity is a complex behaviour that is influenced by a number of internal and external factors. Current research (non-physical activity related), examining physical activity have begun to apply behaviour change models such as the social cognitive model in an attempt to identify the barriers to physical activity.

#### Aim

To determine if a home based walking intervention, incorporating behaviour change techniques, can increase physical activity levels in people with CHD.

#### Methods

Twenty-eight patients were screened for eligibility and then randomized to one of three groups; fixed design, flexible design and control group. Intervention groups participated in a 12-week pedometer (home)-based walking intervention that incorporated educational sessions and self monitoring methods. Participants completed pre, mid and post intervention testing including; physical measurements, current physical activity behaviour and physical activity self efficacy (PASE).

#### Results

There was no significant difference between all sample groups at pre intervention. At post-intervention, there was no significant difference in number of days active a week between sample groups [ $F(1,11) 2.039, P=0.181$ ], intervention groups were active for more days a week (6.35 days compared to 5.67 days). There was a significant increase in changes in step count at post intervention for intervention groups [ $F(2) = 44.7, P < 0.001$ ].

#### Conclusions

All groups experienced a significant increase in exercise capacity. Both intervention groups were successful in significantly increasing their step count, indicating the intervention was effective in promoting greater physical activity levels in the intervention groups. By week 12 participants were able to set their own physical activity targets which are an indication that the participants were enabled to manage their own physical activity programme.

### The awareness and usage of female condom among registered sex worker in Ankara, Turkey

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#### Background

Female condom (FC) is an unknown contraceptive method in Turkey. The aim of this study is to determine the awareness and usage FC among registered sex workers at the capital city of Turkey.

### Methods

There are 190 registered women at the Municipality Hospital of Dermatology and Venereal Disease. Gynaecological examination is done to them and cervical specimens are taken at the hospital every week. This descriptive study was performed between 01 March and 01 May 2007. After verbal consent was given, 186 women replied questionnaire face to face method. Participation rate was 98%. SPSS 11.0 packet programme was used for statistical analysis. Chi-squared test was used.

#### Results

The mean of age was  $40.04 \pm 9.33$  years, the mean of duration in this work was  $12.32 \pm 7.36$  years, half of women were graduated primary school, 42.5% of women had STI any time of life, intercourse a day was  $12.30 \pm 6.66$ , 66.7% of women denoted that every client used male condom, 79% of women used any contraceptive method (59.8% oral contraceptive, 30.6% male condom, 5.5% tube ligation, 3.4% IUD), 61.3% of women were familiar about FC, half of women's knowledge resource was health workers' commission of venereal disease, only eight women used FC, 69.4% of them stated that FC use was possible if counselling is given about FC. Age, education level and working duration had association with awareness of FC.

#### Conclusions

While one-third women was awareness of FC, only 4% of women used it before and none of women used FC during the period of the study. After this descriptive study, education intervention programme for FC was planned at this high-risk group.

### Citizen's centred health information: a critical change engine?

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#### Issue/problem

Health systems are clearly shifting their focus from acute to long term. This provides a new emphasis on disease prevention and health promotion. Over the last decade there is been a massive increase in health information use. Through the Internet health information navigation has become common. A new trend can now be observed in the health information domain: a massive customization of health information is taking place. From a citizens perspective electronic personal health information systems (ePHIS) need to offer everyone the possibility of organizing and managing health information in a secure, precise and sustainable way for health care, disease prevention and health promotion. It also should facilitate communication with health care providers, family members, and other persons with similar problems (within or outside patient associations). ePHIS are also meant as important tools for health literacy and citizens empowerment. In this context, a critical question is how to ensure that current initiatives, whether initiated by public institutions, industry, professional organizations or patient groups respond well to the objectives outlined above.

#### Description of the practical intervention

In partnership with General Directorate of Health, Regional Health Administration, Barreiro's Diabetic Association and Barreiro Primary Care Center, the Portuguese School of Public Health developed a ePHR prototype in order to study under which circumstances the information management, communication, literacy and empowerment objectives above indicated could be attained (i-citizen project). This knowledge based innovation involves the analysis of citizen's response and collaboration in this development exercise, the understanding of health profession's perceptions and attitudes in this domain,

studying the possibility of engaging the local community and technologic industries as well as those responsible for health information governance in the Portuguese health system.

### Results

Independently of its final results, the i-citizen project is bringing into the local and national health agenda a new debate on issues involved in the mass customization of health information now taking place: What management model, with what kind of citizens and professional involvement? What kind of servicing from the knowledge industries and academia (what underlying business model)? What sort of 'local innovation systems' is necessary to pursue the health and digital literacy agendas?

### Asthma and the new smoke-free law: what has changed?

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In January of 2008, Portugal implanted new legislation that restricts indoor smoking in collective places. As second-hand smoke results in exacerbation of Asthma's symptoms, it became

pertinent to know the perception of asthmatic patients about the repercussions of this new law in their well-being.

A descriptive cross-sectional study was conducted, in a convenience sample, formed by 96 asthmatic patients of the Pulido Valente's Hospital and Santa Marta's Hospital Pneumology appointments. All data was collected from a standardised questionnaire with volunteer, anonymous and confidential answers. Epi Info™ software was used for statistical processing purposes, and the results analysed by Qui-squared test ( $\alpha = 5\%$ ).

From the patients polled, the percentage of those exposed to second-hand smoke until December 2007 was 67.7%, with higher prevalence in the actively working individuals subgroup. A considerable percentage (39.6%) stated positive changes (measured by improvement of the performance in daily life activities, decrease in symptoms and lesser usage of SOS medication), even though the majority did not recognize any improvement. From those who marked positive changes, 81.6% said they were no longer exposed to second-hand smoke after the new law, and 65.8% referred the smoking ban as the responsible factor for those changes.

These results, only 2 months after the law's implementation, strengthen the importance of approving effective measures to create and enforce smoke-free environments, therefore reducing the exacerbation of symptoms and improving the asthmatic patients' well-being.

## HEALTH SERVICES RESEARCH

### Psychosocial work environment and work commitment of primary health care personnel in 2000–2002 in Finland—does the service provision model play a role?

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#### Background

The effectiveness of different service providers is discussed, yet little is known about how the change of the service provider affect well-being and work commitment of the personnel and ultimately clinical outcomes. Despite the recent layoffs in the public sector, a shortage of work force is expected in the near future due to the retirement of the aging work force.

#### Methods

This panel mail study investigated the link between the service provision model, psychosocial work environment and work commitment (job involvement and organizational commitment) among primary health care personnel in 2000–2002 ( $n = 369$ ) in four Finnish municipalities. In the 'Southern Municipality' (SM) all primary health care services (including services for elderly people) were provided by a non-profit third sector organization. In the comparison municipalities (M1, M2, M3) they were provided by a municipal organization. Multivariate linear and logistic regression models were the main analysis methods.

#### Results

Job involvement decreased most in the SM ( $P < 0.01$ ), which faced big organizational changes, and in the M3 ( $P < 0.05$ ), where the psychosocial work environment deteriorated most. Moreover, organizational commitment was at its lowest level in the M3 in both years ( $P < 0.01/P < 0.05$ ). Job involvement was predicted by high baseline level of interactional justice and work control, positive change in interactional justice, higher age and organizational stability. Organizational commitment was predicted by good baseline level of work climate,

reasonable work demands, positive change in these work variables, belonging to the Swedish speaking minority, working in inpatient care and increased support from close persons.

#### Conclusions

The effect of the service provision model on work commitment was mediated by the ability to provide a favourable and stable psychosocial work environment. Differences and changes in work commitment could not be attributed to the production model but rather to baseline level and changes in the quality of psychosocial work environment.

### What do we do in public health research: a thematic factorial correspondence analysis of a bibliometric database

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#### Background

The Strengthening Public Health Research in Europe (SPHERE) project aimed to map public health research. A bibliometric approach was used to build a database of 200 000 public health research articles from 1995 to 2004. The aim of the present study was to investigate themes addressed by Public Health research, using the references of this SPHERE database.

#### Method

A subset of the SPHERE Database (48 005 references from the period 2003–2004) were included in the analysis. Most frequently-used words were identified from the title and abstract. Nine hundred words were used to undertake successive factorial analysis and ascending hierarchical clustering (FA&AHC) in order to obtain themes of public health publications. The most frequently occurring words were used to assign a meaningful summary label to each category.

#### Results

Nine specific categories were identified following the first FA&AHC process: mental health disorders & addictions

(20% of references), health services research (19%), weight & obesity (6%), cancer (5%), HIV (4%), smoking (3%), diabetes (3%), injury & trauma (2%) and pain (1%). Four more categories were identified after the 2nd FA&AHC process: ageing (4%), perinatal health (3%), asthma (3%) and osteoporosis (1%). The last FA&AHC process classified the remaining 22% of references into 12 further categories, more closely related to discrete clinical themes (e.g. stroke).

#### Conclusion

This analysis shows that it is possible to use bibliometric methods to classify public health research publications into clear and meaningful theme categories. Mental health and health services research together accounted for 39% of the references in the database. In contrast, other important public health issues such as 'injuries' received much less attention. These findings will be of particular interest to research funders. They should allow for assessment and prioritisation of research on the basis of population need.

### The effectiveness of primary care after reforms in Poland

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#### Description of the problem

In 1989 Central European Countries started process of political, economic and social reforms. The health care system transition became also necessary. The primary care was the key sector to reorganization. Polish government began the transformation of whole health care in 1999, introducing the insurance system. From this moment all health care institutions could act exclusively basing on the contract agreement with National Health Fund. During socialism, family doctor was represented by four specialists: internist, dentist, gynaecologist and pediatric. In 1993 was introduced the specialization of family physician, while finally after 1999 family doctors became an important group in health care system in Poland. The aim of the study was to explore the effectiveness and organizational aspects of reformed primary care and the answer if the purposes of primary care reform project have been achieved.

#### Results (effects/changes)

The analysis of macroeconomic data has showed an increase of hospital services and specialists visits during last few years in Poland. It has been also observed the decrease of finances sources spent by public provider NHF on primary care contracts. Ninety percent of practices are individual ones, while WHO recommended group practices. Qualifications of the primary care employers are very different.

#### Lessons

There are positive and negative prerequisites of primary care sector reforms. There is need of more effective and careful financial policy by the institution of public provider. There is need of educational support for family physicians and their staff. There is no collaboration between family doctors and other levels. There is problem of delegation of competences in primary care institutions.

### Gender aspects in the intensive care of geriatric patients (Carinthia, Austria, 2003)

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#### Background

The number of geriatric ( $\geq 75$  years) patients, treated in intensive care units (ICU) is rising continuously. We know from other fields of medicine that women receive interventional care less often than men.

#### Methods

Analysis of the DRG (Diagnosis Related Group)—Data, Year 2003, State of Carinthia, Austria. The daily provision of typical intensive care treatments, which were documented in the TISS (Therapeutic Intervention Scoring System), were chosen as dependent variables. Differences according to gender and age (75–79, 80–84 and  $\geq 85$  years) were looked for.

#### Results

Ventilation rate decreased with age. In the age group 75–79 it amounted to 56.5%, in the group 80–84 to 48.2% and in the oldest group to 41.9%; ( $P < 0.01$ ). The decline was more pronounced in men. The gender related differences decreased with age, but remained significant to the age of 85 (75–79:  $P < 0.01$ ; 80–84:  $P < 0.05$ ;  $\geq 85$ :  $P = 0.058$ ). Artificial airway: Old patients were less likely to receive an artificial airway ( $P < 0.01$ ). The gender related differences remained highly significant up to the oldest patient group ( $\geq 85$  years), with women being less likely to have an artificial airway ( $P < 0.01$ ). Use of vasoactive drugs did not decrease with age, irrespective of gender. Women of all age groups, however were less likely to be treated with vasoactive drugs than men ( $P < 0.01$ ).

#### Conclusion

Our analysis shows considerable differences in the use of intensive care treatment options between elderly men and women. These differences can be observed up to the oldest age group. Our results should sensitise health care providers and lead to further investigations.

### Opening the 'black box': a study of the implementation process of nationally agreed clinical guidelines

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#### Background

It has been argued that evidence-based implementation is required in order to introduce healthcare interventions into practice, as implementation strategies have costs, which may outweigh the benefits of the interventions. This study informs 'evidence-based' implementation by using an innovative methodology to provide further understanding of the implementation process of nationally agreed clinical guidelines (obesity/chronic heart failure) in the British National Health System

#### Methods

The process was tracked retrospectively and prospectively beginning when the guidelines were introduced into primary care and hospital settings and followed-up at different phases of the process. The snowballing sampling technique was used to identify key informants (primary care trust managers and clinicians) for informal face-to-face interviews. Analysis was facilitated by thematic analysis and constant comparison and was complemented by construction of case studies from individual narratives.

#### Results

Early results suggests that the implementation process might be characterized as strategic and staged to begin with, but becomes 'messy' as it moves from the planning phase to adoption in everyday practice. A similar type of process was evident for both guidelines, even though they were markedly different in terms of scope. While national priorities determine the context for implementation in primary care, general practitioners have a substantial degree of autonomy and the developments taking place in practice suggest that the adoption of the guidelines is a form of negotiation rather than a top-down process. Clinicians and managers have different and often competing values and interests and different levels of influence, which result in inevitable tensions and sometimes conflicts.



**Conclusions**

Early results from this first case study has presented some evidence from a single health care organization about the implementation process; however, there is the need for further investigation into why the process may vary in different healthcare settings.

**The decision to perform caesarean section in Russia**

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**Background**

Clinical practice in Russia is set out in a series of centralised guidelines. However, many of these guidelines are not supported by evidence and, despite their existence, there is considerable unexplained variation in practice. This study examines the decision to recommend a caesarean section, an intervention for which there is a solid evidence base, but whose use varies considerably among facilities in Russia.

**Aim**

To identify the factors that Russian obstetricians take into account when recommending a caesarean section.

**Methods**

Conjoint analysis was performed. Ninety two obstetricians from three regions were asked to state whether they would recommend a caesarean section in each of 30 vignettes (including three for validation) combining 10 medical, social and organizational factors previously identified as contributing to the decision to intervene, including some absolute indications to intervene or not to, on the basis of international evidence.

**Results**

Checks for consistency within ratings by individuals gave no cause for concern. However, there was wide variation in the probability of intervening among obstetricians, with six recommending intervention in only one scenario while one in 27 scenarios. Some factors were consistent with evidence but others were not, such as myopia or previous abortions. Intervention was more likely at 11 p.m. than at noon. Male obstetricians were more likely to intervene than females.

**Conclusion**

This study highlights the importance of understanding clinical decision-making in Russia as a prelude to changing it.

**Are there regional differences in mortality amenable to health care in Finland?**

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**Background**

Amenable mortality—deaths that should not occur in the presence of effective and timely health care—has been proposed as an indicator of weaknesses of health care. This study examines regional differences in amenable mortality in Finland in the early 2000s and changes from the early 1990s.

**Methods**

Data for persons aged 25–74 years from 1992 to 2003 and having a cause of death indicated as an amenable cause were drawn from the Causes of Death Register. We grouped deaths by whether they were mainly amenable to detection and treatment in primary or specialist care. Individual socio-demographic data from employment statistics were linked using unique personal identifiers. Differences between hospital districts were analysed using multilevel Poisson regression

adjusting for sex, age and family net income. Regional differences in amenable mortality were compared to mortality from all causes and trends examined over three time periods.

**Results**

Clear hospital district differences were detected in amenable mortality in the early 2000s. Rates of total amenable mortality for hospital districts varied by up to 10% from the country average. Hospital district differences were smaller for mortality amenable to secondary care than for those for mortality amenable to primary care. Part of these differences could be explained by hospital district differences in population structure. Amenable mortality declined throughout the country from the early 1990s, and the decline was faster than for total mortality. There appear to be regional differences in the rate of decline in amenable mortality.

**Conclusion**

There were persisting differences in mortality amenable to health care in Finland in the early 2000s unexplained by regional differences in population structure. Characteristics of healthcare delivery remain among the potential factors that might explain these differences.

**Municipal variation in health and social service use in the last 2 years of life among old people**

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**Background**

Age and closeness of death are important determinants of health and social service use in old age. However, supply side factors, such as municipal service structures, may play a role in service use.

We compared health and social service use in the last 2 years of life and their associations with age between Finnish municipalities. The aims were to describe, how health and social service use in the end of life varies between municipalities, and to find out factors associated with this variation.

**Methods**

The data were derived from multiple national registers. The sample consisted of 67 027 persons, who died during years 2002 and 2003 at the age of  $\geq 70$ . The data contain use of hospitals, long-term care and regular home care. Service use within 2 years before death was assessed in three age groups (70–79, 80–89 and  $\geq 90$  years). The smallest municipalities (<2500 inhabitants) were excluded from the analyses. Variables describing municipalities' characteristics were e.g. population, population structure, hospital district and economic parameters.

**Results**

Three hundred and fifteen municipalities were included in the analyses. The proportion of those admitted at least once to a university hospital in their last 2 years of life varied greatly: 1.3–68% (5 and 95% percentiles) of the sample in each municipality. The number of inpatient days varied between 0 and 12 (5 and 95% percentiles). The proportion of those who used general hospital was 0.9–82.1% (days 0–23), long-term care 41.9–71.3% (days 162–287), and home care 7.2–30.4%. In preliminary analyses municipal factors were not systematically associated with service use.

**Conclusions**

There is a considerable variation in end-of-life service use between municipalities. Further research is needed to find out the factors that are affecting this variation, and the possible risks it causes for equity in access to health and social services.

**Potential reduction of length of stay in Dutch hospitals**

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### Background

Market forces begin to play a larger role in the financing of Dutch hospitals. Hospitals feel the growing pressure of working more efficiently. This study determines the potential reduction of length of stay that could be achieved if all hospitals were as efficient as the benchmark hospitals.

### Methods

The potential reduction was calculated using data obtained from 69 hospitals that participated in the National Medical Registration (LMR) available at Prismant. We adjusted for differences in the policy of admission (clinical or day-care admission) and casemix (age, diagnosis and procedure). We calculated the number of hospital days that could be gained (i) by substituting clinical admissions to day-care whenever possible and (ii) by treating the other clinical patients as efficiently as the benchmark (15th percentile hospital).

### Results

In 2006 the length of stay ranges from 5.1 to 8.7 between the 69 hospitals. If the LOS of the 15th percentile hospital in 2006 is taken as the norm that other hospitals can reach, our results show that (adjusted for casemix) an efficiency gain of 14% of hospital days can be attained. There is a huge variation in this percentage across medical specialties (e.g. internal medicine 11% and ENT specialism 24%).

### Conclusions

Extrapolating the potential efficiency gain of the 69 hospitals (that participate in the LMR) to all 98 Dutch hospitals yields a total gain of 1.8 million hospital days. The coming years the financing system in Dutch hospitals will more and more be based on market forces. That's why we expect hospitals to try to realise this profit in the short term.

## How do consumers process and evaluate comparative health care information? A qualitative study using cognitive interviews

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### Introduction

Today, there is considerable interest in how consumers use comparative information on the quality of health care. This qualitative study aimed to identify themes related to consumers' cognitive processing and decision strategies when using this kind of information that is published on the Internet. Given the results, recommendations for improving web pages will be formulated.

### Methods

Semi-structured cognitive interviews with 20 consumers were used to get insight into the thought processes of people as they sort through information and make choices in health care. Participants were prompted with three Dutch web pages containing comparative health care information. Interviews consisted of (a) think aloud section; (b) section with questions (probing) on the interpretation and use of information; and (c) section on the purpose of the information. Thematic data-analysis was characterized by open coding and axial coding.

### Results

We found the following: (a) consumers want to scan the information quickly, preferably applying user-friendly web-options; (b) consumers immediately give meaning to the information by deciding what is important to them and what is not, and by relating information to their own experiences and ideas; (c) consumers find the information complex and

difficult to use in their decisions; (d) wide variation exists concerning consumers' willingness to use the information in daily life; (e) consumers were capable of grasping the purpose of the information.

### Conclusion

Comparative healthcare information should include both conceivable summaries of information and options to get more detailed information. Preferably, web pages combine high usability with options to have information in relation to one's own reference points. Future research should focus on the use of Internet to affect consumers' cognitive processing and on further development of theory on consumer decision making in health care.

## Induced abortion counselling at public sector women's clinics in St. Petersburg, Russia, in 2005

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### Background

Termination of pregnancy was the main method of birth control in the Soviet Union, as access to reliable contraception was limited and induced abortion easily available. Since the beginning of 1990s, the use of reliable contraception has increased in Russia, but so called natural methods are still used by many women, and induced abortion remains common. Due to the organization of health services, gynaecologists could have potentially significant role in reproductive health promotion in urban areas. Yet little is known about their role in promoting contraception and preventing induced abortions. This study examines gynaecologists' perceptions of and clinical practices related to termination of pregnancy at public sector women's clinics in St. Petersburg, Russia.

### Methods

Qualitative research methods were chosen, because flexibility was needed in exploring a sensitive topic and qualitative methods allowed grasping the informants' perspectives as authentically as possible. The data consist of observations with twenty gynaecologists at their daily work and semi-structured interviews with sixteen gynaecologists in 2005. The method for data analysis is content analysis.

### Results

Informants shared a negative attitude to termination of pregnancy and emphasised the role of reliable contraception in family planning. They regarded induced abortion as a significant risk factor for a woman's reproductive health, and maintained that it may cause infertility or problems in future pregnancies. In interviews, the informants explained how they give contraception counselling and tell about the somatic health risks of induced abortion to every woman who seeks referral to abortion. They also described their active attempts to persuade women into keeping the baby. In practice, contraception counselling remained shallow and somatic health risks of induced abortion were not discussed. A woman's decision was not discussed in-depth and the informants did not try to change her mind.

### Conclusions

The results reveal interesting gap between interview and observation data. This is likely to reflect differences between ideal and actual counselling practices. The results suggest that gynaecologists in St. Petersburg need more training in abortion counselling.

## A set of three indicators on Femur fracture treatment based on routinely collected data: results from four Italian regions (1999–2006)

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**Background**

Femur fracture is a frequent event among elderly, affecting both mortality and quality of life. Standardized performance and outcome indicators are essential to evaluate quality of care. This study was aimed at testing a standardized procedure to calculate a set of indicators on Femur fracture.

**Methods**

Four Italian regions (Veneto, Tuscany, Lazio, Puglia) were enrolled in the project. Incident cases of Femur fractures were identified from hospital discharge records of elderly subjects (aged 65 and over, Principal Diagnosis ICD-9 CM: 820–821 with no similar episode in the previous year) data collection years ranged from 1999 to 2006. Computed indicators were: proportion of subjects with surgery; proportion of surgery within 2 days from admission (among patients with surgery); mortality within 180 days from admission. Mortality was assessed through record-linkage with mortality registers and adjusted for record-linkage error. Age-standardized proportions were compared in terms of temporal trends and geographical variability.

**Results**

Total 101 502 incident cases of femur fracture were analysed. All regions report an increasing temporal trend for proportion of subjects with surgery (Veneto ranging from 85.5% to 89.6%, Toscana from 81.6% to 86.1%, Lazio from 78.4% to 81.7%, and Puglia from 76.3% to 78.8%). Proportions varied significantly across regions, showing a clear geographical trend [highest prevalence in the most northern region (Veneto)]. Proportions of surgery within two days are still low, especially in southern regions [Veneto (2006): 40.2%, Toscana (2005): 27.5%, Lazio (2005): 11.7%, Puglia (2004): 19.6%]. Mortality patterns don't suggest any temporal trend. Mortality in the northern regions [Veneto (2006): 10.7%, Toscana (2005) 12.1%] is lower than in the southern regions [Lazio (2005): 16.5%, Puglia (2005) 16.3%].

**Conclusions**

Standardized procedure based on administrative data proved to be a useful tool to explore quality of care. Geographical heterogeneity and temporal trends in the four regions suggest that further efforts on organizational factors may improve performance.

**Disease management in Europe. Position paper of the European Forum for primary care**

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**Background**

This article is an example of the methods used by the European Forum for primary care to collect and disseminate information.

**Research question**

How is disease management put in practice throughout Europe and what are the advantages and the disadvantages of different approaches for the delivery of care to patients from a public health perspective?

**Methods**

The aim of the position paper is to provide health care professionals as well as policymakers with evidence and arguments which allow them to support and promote disease management for chronic diseases in primary care. In addition the position paper aims to facilitate the exchange of evidence and experience for the benefits of supporting patients from different countries, to recommend policy measures on national and European level and to identify areas for further research.

**Results**

Although disease management is an important and well known tool from the US-managed care toolbox, the application of disease management to the European context is a rather new development. Disease management is developed by a number of European countries in order increase the quality as well as the efficiency of services for patients. To that end, countries use a variety of financial incentives for providers, patients and third-party payers. Strengthening primary care is an important strategy to offer comprehensive disease management. The performance of disease management in addressing a variety of chronic diseases is promising. Reliable information on effective disease management interventions is important to identify good practices.

**Conclusion**

Active sharing of information on primary care sub-themes and between different professions is needed to prepare stand-points towards policy makers within the European health care services.

**A review of the studies on genetic screening**

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**Background**

In the recent decade the interest on new genetics by scientific circles has grown intensively thanks to the progress of biomedical treatments and the rapid advances in molecular biology. The importance of population screening is related with the possibility to identify people with a genetic risk and with the risk of having a child with congenital or genetic disorder. The purpose of this study is to review the scientific literature related to new genetics screening programmes.

**Methods**

This work is based on a bibliographic research related to the genetic screening.

**Results**

Scientific literature has produced several tools in order to evaluate genetic screening programmes, mainly considering the impact of the new genetics on health policy. The main focus found is concerning: the attention on the ethical implications of genetics screening. As far as genetic screening is concerned, it is not possible to ignore the ethical implications that such controversial issue implies. A further consideration is answering the following question: 'who should be tested and when?'. People belonging to a high-risk category should be able to choose whether or not to be informed of a test-result and to perform the genetic test. In this case it is clear the existence of a conflict between respect of decisional autonomy or responsibility towards future generations. An even stronger argument that is worth considering in a public health perspective is the principle of equity (in socioeconomic terms) that the State should follow in testing population groups.

**Conclusions**

To conclude, the introduction of genetic screening technology requires a more general context of evaluation in order to develop accurate guidelines for their use in the population. Government and health authorities have, in fact, an undiscussed role and responsibility in ensuring that screening services would be provided in a right and equitable way.

**Development and validation of a set of quality indicators for comprehensive care in cardiovascular disease in Argentina**

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### Background

Wide variations in the quality of care of cardiovascular diseases are common in Argentina and the region, where frequently the minimum standards are not met. To date there has not been a local systematic evaluation to measure this phenomenon and a validated set of quality indicators is lacking.

### Objective

To develop a set of quality indicators (QInd) for comprehensive secondary prevention for cardiovascular disease in Argentina.

### Methods

An initial set of potential QInd was identified through a comprehensive literature review and presented to a panel of 16 cardiovascular disease experts. To assess their opinions, we used a modified version of the RAND/UCLA Appropriateness Method with two rounds of anonymous ratings and a face-to-face group discussion. The domains evaluated were: level of evidence, impact in clinical practice, acceptability for patients, validity of the indicator and local feasibility of implementation.

### Results

After the literature review a first set of 81 QInd was selected. Agreement was reached for 34 indicators after the first round of scoring and this increased to 53 after the second round following the face-to-face discussion. Of these 53 QInd, 49 were finally selected for having no disagreement and an average score above 7 out of 10. The final set of 49 indicators (85% cardiovascular, 15% cerebrovascular) included the following categories: lipid control (6), control of hypertension (11), tobacco control (4), interventions for diabetes (6), other pharmacological (15) and non-pharmacological interventions (7).

### Conclusions

A set of 49 indicators was developed and considered by a panel of cardiovascular disease experts to be valid and applicable in the local context. These will be available to evaluate the quality of care in Argentina.

## Socio-economic differences in utilization of healthcare services by the elderly in Belgium

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### Background

An exploration of socioeconomic differences in utilisation of health and long-term care services by the elderly in Belgium.

### Methods

Data from the Belgian Health Interview Survey (1997, 2001, 2004;  $n=7414$ ; age  $\geq 65$ ). We used logistic regression and developed a model of individual level determinants of healthcare utilization based on the Andersen framework, with income and education indicating the socioeconomic position.

### Results

Lowest socioeconomic status groups (SES) more often rely on GP, home nursing, home care and meals-on-wheels than higher SES groups, even after controlling for age and gender. Taking into account demographic determinants (age, gender, household type, region) and health status (self-assessed health, functional limitations, comorbidity), socioeconomic differences persist.

Compared to elderly without diploma or only primary education, a lower probability of a contact with a GP is found among elderly with lower secondary (LS) [OR 0.65 (95% CI 0.48–0.87)]; higher secondary (HS) [OR 0.68 (95% CI 0.50–0.92)]; and post secondary education (PS) [OR 0.61

(95% CI 0.43–0.87) ( $P=0.012$ ). Elderly with PS education are more likely to consult a specialist [OR 1.30, 95% CI 1.17–2.18,  $P=0.012$ ]. Higher educated elderly are less likely to rely on home nursing: LS [OR 0.59 (95% CI 0.43–0.80)]; HS [OR 0.61 (95% CI 0.44–0.85) ( $P=0.002$ )]. The highest income group ( $>€2500$ ) is less likely to rely on home nursing than the middle category ( $€1000–1500$ ) [OR 0.36 (95% CI 0.20–0.64) ( $P=0.011$ )]. The two lowest and highest income categories report more use of meals-on-wheels than the middle category [OR 2.52 (95% CI 1.12–5.71); OR 2.22 (95% CI 1.04–4.76), and OR 4.65 (95% CI 1.15–18.79), respectively ( $P=0.010$ )].

### Conclusion

There are important socioeconomic differences in the utilization of healthcare services by the elderly in Belgium, even when demographic variables and health status are taken into account. These findings are of relevance for informing care policy, especially with regard to guaranteeing accessibility of services.

## Mental healthcare in Spain: is necessity driving variations in hospitalization rates?

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### Background

Mental health problems might benefit of acute hospital care when uncontrolled acute symptoms occur. However, mental health admissions can also be driven by other factors unrelated with need.

### Methods

Ecological study of 2003–2004 hospital admissions due to psychosis (substance abuse, schizophrenic, affective), neurosis, substance abuse or dependence and anorexia nervosa registered in 156 health areas of Spain were examined. Standardised hospitalisation rates were calculated and their association with demand factors (age, sex, social gradient), supply factors (hospital beds, doctors) and propensity to be hospitalised were analysed. Regression models were used for each variable and a multilevel model was built to take into account the effect of province of residence, as a proxy of policy for mental health attention.

### Results

Total 105 358 admissions were studied. Availability of resources was related with higher admission rates for substance abuse ( $r=0.42$ ;  $P=0.0006$ ), schizophrenic ( $r=0.41$ ;  $P=0.01$ ) or affective ( $r=0.36$ ;  $P=0.02$ ) psychosis, as well as by neurotic disorders ( $r=0.39$ ;  $P=0.01$ ). The propensity to be hospitalized explained a high percentage of variation in all groups (ranged from 22% to 53%) except in anorexia (6%). With regard to demand factors, rates were higher in men (5.5 times in substance abuse psychosis, 3.6 times in substance abuse and dependence and 1.5 times in schizophrenia), except for affective psychosis (1.25 times higher in women) and anorexia (20 times higher). Income and educational level were directly associated with higher rates in substance abuse ( $P<0.001$ ) or anorexia ( $P<0.05$ ) while unemployment rates were related with higher risks in substance abuse psychosis. The multilevel analysis revealed that the province of residence explains between 13% and 58% of the variance unexplained by the other factors studied.

### Conclusions

The dramatic variations found are partially explained by necessity. On the contrary, the place where a person lives seems to drive the way acute mental health problems are managed.

## Use of conventional, complementary and alternative treatments by patients facing chronic illness: a model for patient-centred care?

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### Background

Complementary and alternative treatments are especially popular amongst people living with chronic illness. The percentage of users is increasing, and has been linked to post-modern values like holistic care, individualism and personal responsibility. Focussing upon homeopathy, the study aimed at exploring motives and experiences of users and providers in the treatment of chronic illness in an outpatient setting in Austria.

### Methods

Grounded theory was used, encompassing literature research, three expert interviews, 20 semi-structured interviews with users and homeopaths, and a group discussion with homeopaths. The data presented focus on the patients' perspective.

### Results

People living with chronic illness confront several challenges in health care, namely a lack of communication with health care providers, leaving them with the feeling of not being respected and disempowerment, a lack of information especially on medicines, and insufficient coordination of care. These experiences were mostly linked to conventional care settings. Homeopaths seem to provide a supportive setting through enhanced communication during case-taking, which fosters illness integration and empowers patients for self care. They also figure as family doctors in a fragmented system of care. Nevertheless, patients face challenges when using homeopathy, e.g. the need for self-monitoring, the need to organize care, and being confronted with costs for treatment and a sometimes repellent view on homeopathy in the general public. Although patients' views on conventional care are critical, it is still used, figuring as a safety net in emergency situations and for serious conditions.

### Conclusions

Mixed use of conventional, complementary and alternative treatments has been neglected in public health research so far. However, this phenomenon seems to shed light on important issues and their interconnectedness in care for chronic illness, e.g. on issues like trust, empowerment, self-care, patient safety and patient-centred care. A model integrating these aspects will be presented. Furthermore, the impact on research concerning patient-orientation will be discussed.

## Inappropriate emergency department (ED) use: physician point of view and patients outcomes.

### A study in four emergency departments in France

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### Objective

To assess the appropriateness of ED admissions, based on the senior physician justification and to identify factors associated to inappropriate ED admissions.

### Methods

Between September 2003 and June 2004, a cross-sectional study was carried out in four ED of public reference hospitals in Upper Normandy region (France). Inclusion criteria were patients 18 years old or older, volunteers and very low vital risk (without emergency procedures). For each patient, the outcomes collected were medical consumption during the last 6 months, socioeconomic characteristics, referred to ED by a general practitioner (GP, diagnosis and care in ED, visit appropriateness according to ED senior physician point of view. The sensitivity and the specificity of being referred by

a GP or being self-referred were estimated, the senior ED physician point of view was considered as appropriate or not visit.

### Results

A total of 485 patients were included. The mean age was 43.4 years (SD = 18.9); 307 patients (63.3%) were self-referred; 243 senior physicians assessed the visit as appropriate, 227 as inappropriate and 15 seniors were without opinion (excluded from the analysis). After adjustment (logistic regression), the patients whose visits were judged as inappropriate were self-referred (AOR 1.78, 95% CI 1.08–2.94,  $P=0.02$ ), already done a visit to the ED in the last 6 months (AOR 2.31, 95% CI 1.36–3.91,  $P=0.002$ ) and without hospitalization after ED visit (AOR 12.82, 95% CI 6.23–26.37,  $P<10^{-4}$ ). The specificity of the referred status was 76.7%, and the sensitivity 48.6%. The positive predictive value was 69.0%.

### Conclusion

In the context of an increasing number of patient admissions to the EDs in France, inappropriate use was characterised mainly by iterative recourse to ED for consultation. Our study shows that an emergency department adaptation, such as triage and ambulatory consultation, could be a solution to overcrowding. The availability of primary health care at the ED, providing continuity of care outside, might be evaluated.

## The influence of news events on health after a disaster: a longitudinal study in general practice

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### Background

It is often argued that news in the media may influence the health and quality of life of survivors of a disaster. We determined longitudinally whether news-events influenced health care utilization and/or morbidity presented to the general practitioner (GP).

### Methods

A study was conducted, using 2845 survivors of a major disaster in the Netherlands and matched references, using baseline utilization figures and health problems presented to the GP up till 5 years post-disaster. The electronic medical records of the GPs were used and symptoms were classified using the International Classification of Primary Care. Twelve local news events were chosen, concerning the specific disaster (especially about who caused the disaster) and news about seven worldwide disasters (9/11, Madrid, Toulouse). Changes in utilization and morbidity were compared between the week before and the week after the news-event. Logistic regression analyses were carried out.

### Results

An increase in GP utilization was found after three local news-events for both survivors and the reference group and a decrease in utilization after two worldwide news-events. Survivors showed an increase in health problems concerning skin, locomotive and respiratory system and chronic diseases after local news events, while after the terrorist attacks in New York more chronic diseases and medically unexplained symptoms were presented to the GP compared to the reference group.

### Conclusions

Local news events have a stronger effect on GP utilization and health problems presented than worldwide news events. No statistically significant increase was found for psychological problems as was expected before. An influence of the news on utilization and health problems presented to the GP was hardly proven, while especially after 9/11 it was argued that the health of people living far away from New York was negatively influenced. However, these findings were based on self-report and not objectified in a clinical setting.

## Underlying risk for 30-day in-hospital mortality among patients admitted with acute myocardial infarction in Portugal (2005–2006)

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### Background

We aimed to examine whether individual characteristics and measured and unmeasured hospital factors are associated with 30 days in hospital mortality among patients admitted with acute myocardial infarction (AMI).

### Methods

Using hospitals' diagnostic related groups (DRG) database (2005–2006), we identify 18 740 discharges with main diagnosis of AMI (ICD-9CM: 410.01–410.91) urgently admitted to 48 Portuguese public hospitals. During this period, only the first admission was included. The outcome measure was in-patient 30-day survival time. Individuals covariates were gender, age, Charlson comorbidities index (CCI), cardiac procedures [diagnostic cardiac catheterization (DC) and/or percutaneous transluminal coronary angioplasty (PTCA)]. Hospital characteristics included emergency department (ED) level and administrative region. The multilevel analysis was conducted via shared-frailty survival model to take into account unmeasured hospital characteristics and heterogeneity.

### Results

The median age of AMI patients were 70 years (range 21–100) and 35.6% were female. During the study period, 30-day mortality was 12.4% (17.1% female, 9.8% male). After AMI, in-hospital survival was significantly lower for older patients, female, increasing CCI and no procedure performed. The shared-frailty model suggests that patients who performed DC/PTCA reduce the 30-day mortality risk to 84% (95% CI 82–86). CCI level risk increases from 17.6 (moderate) to 22.8 (very severe) for 55 years old patient and 22.0–24.8 for 70 years old when compared to control level (CCI=0). There were also differences according to hospital ED level and administrative region. Frailty effects among hospital were present, with relative risks varying from 0.53 to 2.26 (three hospitals were below and five were above the average risk with statistical significance), and estimated variance of 0.17 ( $P < 0.001$ ).

### Conclusions

Gender has not been associated to in-hospital mortality after adjustment to other characteristics. Age and CCI level present an important interaction. Multilevel modelling allowed estimation of variation in risk between hospitals not ascribed to any measured covariates. This work encourages more specific additional studies related to cardiovascular disease.

## Reasons for heavy use of dental services in a Metropolitan Public Dental Service in Finland

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### Background

In 2002, age restrictions limiting adults' access to the Public Dental Service (PDS) were abolished in Finland. The high demand for care by increasingly dentate adult population generated pressure to overlook treatment routines, especially in big cities where the PDS had previously offered little treatment for adults. Our aim was to study reasons for heavy use of dental

services and compare treatments provided between heavy and low users in the PDS of one of the biggest cities in Finland.

### Methods

All patients having had six or more ( $n=5458$ ) and those having had three or less visits ( $n=50777$ ) during 2004 were selected from the patient register of the PDS in Espoo. A sample of 245 1–17-year olds and 300 adults were randomly selected from both groups. Information on age, sex, number and types of visits and patient fees were collected from their treatment records.

### Results

Seven percent of the 1–17-year olds and 10% of the adult patients were heavy users. The heavy users had significantly more carious lesions and periodontal disease than the low users. The mean total treatment time for adult heavy users was 5 h and 30 min and 2 h for low users. For children the corresponding treatment times were 3 h and 30 min and 40 min. Adult heavy users paid on an average EUR 213 and low users EUR 36. The most often provided treatments for 1–17-year old heavy users were simple orthodontic treatments (45%), fillings (19%) and prevention (16%) and for low users prevention (37%), examination (24%) and simple orthodontics (12%). The adult heavy users had significantly more often restorations (36%), endodontics (16%) and prosthetics (7%) compared to the low users (31%, 4%, 2%). There was no significant difference in periodontal treatment between the adult heavy and low users though the heavy users had more disease.

### Conclusions

Heavy use of dental services in 1–17-year olds was explained by high numbers of orthodontic treatments by general practitioners and in adults by complicated endodontic and prosthetic treatments. To increase productivity orthodontic care must be provided more efficiently, and preventive care needs to be targeted more carefully. A referral system offering specialist services in difficult endodontic, periodontal and prosthetic cases needs to be organized.

## Effect of waiting time reform on the provision of operations

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### Background

Long waiting lists for elective surgery were typical in Finland during the early 2000s. A waiting time reform, effective from March 2005, aimed to guarantee equal access and care criteria to non-urgent care to all citizens. Our study aimed to evaluate the effect of the reform on the provision of operations with the longest waiting times.

### Methods

Data obtained from the Finnish Health Care Register covered the number of operations from 14 operation groups. The operation groups were defined using criteria in non-urgent care and the number of patients that had longer waiting-time than 6 months. Panel data was established on the age and sex standardised procedure ratios in 1998–2006 for 20 hospital districts ( $N=20$ ,  $T=9$ ). Panel data methods were used to capture a trend effect and an effect of the reform on the number of operations.

### Results

The reform increased the number of operations in 6 of 14 operation groups. The reform caused the largest increase in shoulder operations (+34%), knee replacements (+29%) and foot bone operations (+26%). The reform decreased operations in four operation groups, e.g. in operations of urinary incontinence (–36%). In four operation groups the reform effect was not statistically significant.

### Conclusions

Our study showed that the provision of surgical operation groups with the longest waiting times was prioritized. In some

operation groups the effect of the reform was temporary concerning only the first reform year. In some groups a median waiting time decreased without an increase in operations. Thus, the increase in the provision of operations was not the only way to reduce a waiting time. Controlling waiting lists and using more tight criteria for surgery seemed also to reduce the number of waiting patients and therefore decreasing the median waiting times.

### Operational effects of waiting time reform in specialized care

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#### Background

In Finland and Sweden long waiting lists for elective surgery were a driving force to reform specialized medical care during 2000s. In Finland, public specialized care is provided by 20 hospital districts including five university hospital districts. A waiting time reform in Finland, effective from March 2005, aimed to guarantee equal access and care criteria to non-urgent care to all citizens. Our study aimed to evaluate operational effects of the reform on incentive methods, treatment practices and resource allocation in specialized care before and after the reform.

#### Methods

A questionnaire survey 2007 provided qualitative data on changes in implementation and actions taken by hospital districts to reach targets of the reform. Data from Finnish Health Care Registers 2004–2006 including several indicators on hospital production was used in statistical analyses. Comparative analyses were carried out between university hospital districts ( $n=5$ ) and others ( $n=15$ ). Variance analyses, independent sample test and paired sample tests were used to describe and measure the impact of the reform.

#### Results

Hospital districts used various financial and educational incentives to reach the targets of the reform. Overtime compensations and fee-for services were the most typical incentives. Most hospital districts utilized care criteria in prioritization and management. Co-operation between primary care increased. After the reform the share of outpatient care increased ( $P<0.05$ – $0.005$ ) in others than university hospital districts. Among MBO units (management by objective) additional resources were allocated to surgery.

#### Conclusions

The reform targets would not been reached without extra payments to the staff in hospital districts. It seemed that other MBO units, e.g. internal and gynecological diseases did not suffer from the prioritization of surgery. In addition, urgent care was not reduced even extra resources were allocated to non-urgent care.

### Physicians' views support in the sick listing process as positive

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#### Background

In most western countries physicians are the gatekeepers in the sick listing process by many considered as a problematic chore. The aim was to improve understanding of the sick listing process and associated problems and to study the attitudes to sick listing guidelines.

#### Methods

A web-based questionnaire concerning sick listing practice and associated problems was sent to all physicians (1074) working in primary care ( $n=691$ ), psychiatry ( $n=204$ ), orthopedics ( $n=143$ ) and rheumatology ( $n=36$ ) in the southern region of Sweden. Physicians were also asked to relate to the last three patients who received a sickness certificate.

#### Results

The response rate was 58% ( $n=621$ ); primary care 56%, psychiatry 61%, orthopedics 56% and rheumatology 66%. Eighty-five percent of the respondents were specialists and 15% were specialists in training, 76% had been in the profession 10 years or more and 49% were women. The physicians' sick listed a median of 4.1 patients per week in primary care and 0.6 patients per week in hospital care. Of all sick-listed patients psychological diseases accounted for 44%, joint diseases for 43% and 13% were other diagnosis. Every fifth case of sick listing was considered as problematic concerning work ability, and in every second case other than medical reasons contributed to the sick listing. Thirty-eight percent of the physicians could never or seldom allocate extra time to handle problematic cases in sick listing. Other specialists and allied health professionals were considered important for support in the sick listing process by 72% of the studied physicians. Every second physician did not have guidelines or policies for sick listing practice but 69% of them considered guidelines to be important

#### Conclusion

The sick listing process is considered as problematic by many physicians dealing with patients with musculoskeletal and psychiatric diseases. They are positive to get support in the sick listing procedure by other health care professionals and value the existence of guidelines which will now be generally implemented in Sweden.

### Health and social carers' strategies of coping with domestic violence against older people in Poland—study among organizations that provide services to victims of abuse ('Breaking the taboo' European project)

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#### Background

According to the WHO, abuse is a significant risk factor of mortality, morbidity and health-related quality of life in older people. The European project 'Breaking the Taboo', within the framework of the DAPHNE II program, deals with a number of problems related to violence against older people and quality of life in an aging Polish population.

#### Aim and Method

The aim of the study carried out within the project was to learn whether organizations which provide general services to victims of violence have provisions (e.g. guidelines, trainings) on how to deal with violent situations against older people in families. A survey questionnaire (420 questionnaires) was sent out via e-mail to groups affiliated with the 'Blue Line', a National Polish Center for People, Organizations, and Institutions Helping Victims of Abuse. Select participants (social and healthcare workers) were recruited for in-depth interviews.

#### Results

In so far as social workers and Police have an algorithm to follow in cases suspect for domestic violence, healthcare workers do not. Identifying and effectively intervening in situations of domestic violence is difficult without prior preparation. Unfortunately, almost half of all organizations taking part in this study employed workers not adequately educated for dealing with cases of violence. Professional nursing or medical education lacks any training in terms of domestic violence. Even when such training is available, healthcare workers

seldom participate. Part of the problem lies in the minimal involvement of healthcare workers in reacting to cases of domestic violence. Also, there is an unsatisfactory exchange of information between healthcare workers and workers from other institutions in the interest of adding options for dealing with cases suspect for violence. The need exists to create more institutions which may support both the worker dealing with cases of violence as well as the victims themselves.

### Health care in Poland in elderly patients' opinion

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#### Background

Political transformations in Poland affected the National Health Sector. However, little is known about the feedback and estimation of the health care from elderly patients who are the greatest beneficiaries. Their opinion will be mostly helpful to estimate the effectiveness of the health care.

#### Methods

A semi-structured questionnaire was given to the group of 50 community-dwelling respondents. The mean age of the respondents was 73.77 ± 7.45. The questions concerned the difficulties in reaching general practitioners, the way the patients were treated during the visit, the problems in calling the doctor or the ambulance home, the difficulties in reaching the specialist.

#### Results

Sixty percent respondents said that they have no difficulties in making an appointment with their general practitioner, 89% of these estimated the quality of the doctor's examination as very good. The lack of difficulties in making the appointment was a good predictor of the patient's satisfaction from the visit ( $P=0.004$ ). Unsatisfactory care claimed 53% of respondents, but only 19% of these admitted difficulties in reaching the specialist. The difficulties in reaching the specialist was therefore not a good predictor of the patient satisfaction ( $P=0.07$ ). Moderate satisfaction with the health care system showed 80% of respondents, 92% of them were satisfied with the way they were treated by their doctor. The doctor's attitude towards the patient was a very strong predictor of the satisfaction with the health care system ( $P<0.0001$ ).

#### Conclusions

The lack of difficulties in making the appointment and the way the patients were treated by the doctors were the most important predictors of the patient's satisfaction.

### Health services utilisation by patients with eczema. Analysis of a population-based administrative health-care and prescription database from Germany

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#### Background

Atopic eczema is a highly prevalent chronic inflammatory skin disorder. Data on health services utilisation and treatment of children and adults with eczema is scarce.

#### Methods

This study used an administrative health care database from Germany that contains complete information on outpatient health services utilisation and prescriptions of 2.2 million individuals from the general population. Patients diagnosed as having atopic eczema (ICD-10 L20) at least twice between 2003 and 2004 were included in the analysis. We analysed the proportions of patients with atopic eczema consulting

general practitioners, dermatologists, and paediatricians within 2 years, as well as diagnostic procedures and treatment of patients with eczema by these medical disciplines.

#### Results

With a 2-year prevalence of more than 20% in infants and 3–4% in adults, atopic eczema was among the most frequent reasons for outpatient healthcare utilisation. Thirty-two percent of children were treated exclusively by paediatricians, 18% exclusively by dermatologists, 11% exclusively by general practitioners and 23% jointly by dermatologists and paediatricians. Forty-seven percent of adults with eczema exclusively consulted dermatologists, 30% exclusively general practitioners, and 12% both dermatologists and general practitioners. Independent of age, female patients were more likely to consult dermatologists. Independent of age, gender and consulted discipline, most patients received topical treatment with potent corticosteroids. Children treated by paediatricians were most likely to receive topical calcineurin inhibitors. Independent of the discipline consulted, almost 10% of adults received systemic corticosteroids. Cyclosporine was prescribed to less than 0.1% of adults with eczema. Diagnostic procedures to detect individual trigger factors were most frequently performed by dermatologists.

#### Conclusions

Atopic eczema is among the most frequent reasons for health services utilization in Germany. Most patients with eczema consult only a single medical discipline. Medical treatment by general practitioners, dermatologists and paediatricians seems to be quite similar. Dermatologists are most likely to perform specific diagnostic procedures.

### Regional differences in human resources of school welfare services

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#### Background

The key preventive services for school-aged children in Finland have been provided by the school health care in terms of services of school doctors and nurses from the 1960s and, additionally, by the school social work and psychological services since the 1980s. Today, the municipalities (about 400) are responsible for delivering these School Welfare Services (SWS). Since regional equality has been among the main topics of the national primary health care policy, this study aims to examine the regional differences in human resources of the SWS.

#### Methods

Data was obtained from a nationwide survey to 1016 comprehensive schools with grades seven to nine in April–June 2007. In Finland, the volume of teaching resources is measured by the number of weekly working hours (WWH). This study applies the same principle: WWH at school per 100 pupils for nurses, doctors, social workers and psychologists serve as indicators. All schools which reported Human Resources for all four personnel groups were included in the study ( $N=265$ ).

#### Results

There were notable differences between the schools. The median WWH per 100 pupils for nurses was 6.3 (50% of schools ranged from 4.9 to 8.5), for doctors 0.5 (0.2–0.9), for social workers 2.9 (0.5–5.8) and for psychologists (0.0–1.6). The regional differences between the five provinces were large. In the Province of Southern Finland the WWH in all four professions combined was almost two-fold (11.9) compared to Lapland (7.0).

#### Conclusions

These results indicate inequality in delivering SWS, which may contribute to health differences.



## Public knowledge and opinion on organ donation in Hungary

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### Background

In 2002 a research project called MADO (for MArrow DOnor) was organized for evaluating optimization of bone marrow donor registries in Europe. In 2003 a national opinion survey was conducted in Hungary with the aim to explore the common knowledge and the opinion of the Hungarian population on organ transplantation as part of the larger international study. The authors intended to check the basis of a presumption often expressed by health care actors that more public knowledge on transplantation issues would decrease the willingness to donate.

### Methods

The basis of the study was a representative national survey conducted on a sample of 1000 people. Significant differences in the attitudes towards organ donation were analysed using the Background variables of gender, age, education, family situation, place of residence, self-rated health and religious beliefs. To explain the differences in the willingness to donate were explored with the method of binomial regression. Logistic regression was used to analyse the strength and direction of the linear relationship between dependent and predictor variables. The probability of willingness in a given group was represented by odds ratios.

### Results

The respondents' knowledge level differed by gender, age and education. The greater part of the population was not knowledgeable about the regulatory enactments of the transplantation of cadaver organs but after getting accurate information they agreed with the regulations. The odds of the motivation to donate organs after death differed significantly by age, education, family situation and self-rated health. The motivation to be living donors was influenced by age, place of residence and the level of altruism.

### Conclusion

The concerns expressed on the decrease of donation willingness due to the increase of the knowledge level of the population seem to be unfounded. Three quarter of the population concurred with the current legal principles of the organ harvest and even more people indicated acceptance of after-death utilization of their organs.

## Bone marrow donation: the donors' perspective in a European joint study

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### Background

In 2002 a research project called MADO (for MArrow DOnor) was organized for evaluating optimization of bone marrow donor registries in Europe. The aim of the present study is to summarize MADO data on donors' decisions in order to make proposals for a follow-up project called POSEIDON that was launched in 2007.

### Methods

Ninety-six donor interviews were collected in five European countries. In the first phase, unfocused non-directive interviews were conducted to identify significant themes. In the second phase, the key issues were further explored in semi-structured qualitative interviews. In the last phase, core elements were established in focus-group interviews for construction of internationally applicable questionnaires.

### Results

Despite of the different methodological approaches and the diverse national organizational devices, the donor interviews

revealed more similarities than dissimilarities. One of the most important aspects of the surveys was the information on the motives of donation: empathy, reciprocity, self-identity and self-representation were recurrent key themes.

### Conclusion

The interviews revealed a network of motivational factors that had prompted the donors' decision to register and donate. Building on these issues reasonable proposals can be formulated for donor registries to further develop recruitment strategies.

## Service expenditures of school health care in Finland

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### Background

Although the government policy programmes for health promotion and for wellbeing of children, youth and families emphasize preventive services, the lack of financial resources are seen as an excuse for not developing preventive services like school health care (SHC). Since 1993, expenditures on SHC have not been systematically followed and the level of the expenditure is poorly known in municipalities. In Finland, municipally run health centres are responsible for organizing SHC, which is part of the obligatory welfare services for comprehensive and upper secondary schools supporting pupils' learning and well-being. Until 1993, SHC was tightly steered by rules, but since then the role of state is limited to steering by information. The aim of this nationwide study was to examine the current SHC expenditures.

### Methods

A web survey in 2007 targeting health centre managers ( $N=231$ ) included a question on SHC expenditures in 2006. The response rate was 81%.

### Results

Only 11% of health centres knew their expenditures on SHC. The median SHC expenditure was €68/pupil/year in 2006. Half of the reported expenditures varied between €61 and €97. Thirty percent of the health centres could report only the combined expenditures on SHC and student health care, which was €51/pupil/year in 2006. Half of these reported expenditures ranged between €48 and €64/pupil/year.

### Conclusions

Only few municipalities were able to separate the SHC expenditure from the total expenditure for health care/preventive services. Variations in the expenditures were large and the expenditure levels were unexpectedly low. The lack of cost awareness is a hindrance for developing services.

## Health care coordination mechanisms. Opinions of managers and health professionals of integrated health care organizations

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### Background

Healthcare coordination has become a priority of most health systems, reflected, among others, in the increasing introduction of coordination mechanisms in health services. Their evaluation, however, has been scarcely developed and does not usually include main actor's opinions. The objective is to

analyse professionals and manager's opinions on the healthcare coordination instruments developed in their organizations.

#### Methods

A qualitative and descriptive case study was conducted. Six integrated healthcare organizations—the cases—of Catalonia were selected and for each a criterion sample of informants. Individual semi-structured interviews were conducted to 36 managers and 23 professionals of different health care levels. A narrative content analysis was carried out, with mixed generation of categories and segmentation by cases, groups of informants and themes.

#### Results

Informants coincided in positively valuing the potential role of different mechanisms for improving coordination. However, in most cases, professionals consider the tools developed in their organizations as mostly inadequate, unknown or little used. In organizations that implemented shared medical records (SMR) respondents agreed that facilitated access to patient information from different care levels. However, some professionals identified several problems in its use: little agility of the system, absence of unified criteria for writing in SMR and lack of access for some services. Informants of most cases consider the phone and e-mail as important tools for communicating and resolving doubts about patients, but with diverting views in relation to accessibility, speed of response and level of use. In some cases, managers and professionals consider that a number of clinical guidelines had been developed, but they were rarely used due to implementation and dissemination failures.

#### Conclusions

Despite recognizing mechanisms relevance for improving coordination of care within their organizations, informants identified various limitations on their use. For most instruments, the difficulties were present in all studied cases, but differences emerged in relation to communication and information systems associated with different levels of implementation.

#### Acknowledgement

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### Adding the view of citizens, professionals and managers to the health service planning in Catalonia (Spain)

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#### Background

Citizens, professionals and managers interact daily in the health system. Their exceptional viewpoint about healthcare services is very important for making further improvements. The health policy is often circumscribed to the technical and political approach. In order to add the view of citizens, professionals and managers to the new process of planning of health services in Catalonia, a study has been carried out with the following goals:

- To identify experiences, perceptions and evaluations of the agents involved in health care in order to define actions for improving health services.
- To investigate the key issues, practices and concepts about health care as expressed by the involved agents.

#### Methods

Qualitative methodology (interviews, focal groups and biographical narratives) have been used. Two hundred and fifty four people have participated in this study.

#### Results

The results of each collective have been analysed separately. The view of the three groups has then been compared. The main results are:

- All agree that health system is of an acceptable quality, in spite of the limitation of resources. However, there are some points that can be improved.

- Citizens and professionals place on a high value all aspects related to communication (listening, information, advice, etc.).

- The problem of overmedicalization is seen differently by citizens, professionals and managers.

- The medical itineraries that patients often have to follow are seen as too long and complex.

- Time is a critical variable, especially time as a condition of good practice and the waiting time.

- Divergence between the criteria of evaluation of the health authority and those of the professionals.

#### Conclusions

The implications derived from the results have been a useful reference to formulate strategies to guide services in a future prospect.

### Moving towards multidisciplinary primary care collaboration

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#### Background

In Europe, many primary care professionals were traditionally organized in small-scaled practices. Nowadays, they are working more often in larger practices. This applies to general practitioners, but also to other professions, such as midwives or physical therapists. In addition, primary care professions are teaming up in multidisciplinary practices more and more, which should improve collaboration and coordination within the wider scope of primary care. In this study we investigate the extend to which general practitioners share a practice location or collaborate with various other primary care professions, and which conditions affect the chances of multidisciplinary collaboration in primary care.

#### Methods

We sent a questionnaire to general practitioners in all 4300 registered general practices in the Netherlands, of whom 76% responded. The questionnaire contained questions concerning the general practitioners working in those practices, their collaboration with other disciplines and an inventory of any additional services the practice might provide, such as opening hours during night time, e-mail consults etc.

#### Results

Preliminary results show that being located in the same building or practice relates to more collaboration between the general practitioner and other disciplines. This interconnectiveness is stronger for some disciplines than for others. Also, differences occur in the types of practices that employ such linkages. For example, larger scale practices work more often with other disciplines than solitary working general practitioners. Currently, we are investigating whether characteristics such as age and practice innovations are related to multidisciplinary collaboration.

#### Conclusions

The possibilities for collaboration appear to be growing, partly because of the longer trend towards scale enlargement of general practices, but also because these developments are part of an increasing policy approach, in which the position of primary care is reinforced, enabling it to maintain its central role in the healthcare system.

### A Franco-American comparison of the nurse practitioner role

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#### Background

The healthcare system in France is undergoing an evolution in response to several factors, including the augmentation of

chronic illnesses, a worsening health insurance deficit and the approaching shortage of physicians. The potential introduction of nurse practitioners is being examined, however there has not yet been a Franco-American and international comparison of the current research concerning their quality of care.

#### Methods

An analysis of the current international research regarding nurse practitioners was performed utilizing the NIH and CINAHL databases. The keywords 'nurse practitioner', 'quality of care', and 'comparison with doctors' were employed. French studies were consulted that have not yet been internationally published, especially from the 'Berland Report' of 2003. Also, participation in a working group in collaboration with the French Minister of Health supplemented these studies.

#### Results

French studies from the Berland Report showed that nurses with advanced training offered safe and efficient health care in the management of patients with Hepatitis C and chronic kidney disease (undergoing renal dialysis). American studies, for both acute and chronic illnesses, usually showed that nurse practitioners offered an equal or higher quality of patient care when compared to physicians. Other international studies also supported these findings.

#### Conclusions

A growing amount of research exists regarding the quality of care of nurse practitioner practice. Studies are rather newly emerging in France, partly due to the longer history of nurse practitioners in other countries. There can be mutual learning from the varying approaches to nurse practitioner and health care systems research.

### The variance of severity adjusted mortality rates of intensive care units and its relevant factors in Korea

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#### Background

Mortality rate is one of the most common outcome measures in medical quality, especially in Intensive care unit (ICU) quality management. Severity adjusted mortality rate is useful indicator to demonstrate the variance of quality levels of each ICU and find out which factors are related to. In this study we assessed the severity adjusted mortality rates of 18 ICUs in Korea and compare the outcomes to explain the relevant factors of the variance.

#### Methods

We adopted retrospective multicenter study. Eighteen adult ICUs of tertiary hospitals over size 500 beds in Korea were selected according to their location. In each ICU, the medical records of 30 consecutive patients who discharged from September 1 to November 30 in 2006 were collected. In addition, telephone survey was carried out to get the information about the locations, ICU structures, subdivisions, intensivists, nursing staffs. We predicted the risk of hospital death for 1025 ICU admissions through the APACHE III prognostic system, then calculate the standardized mortality ratios (SMRs) for each ICU and for ICU structures.

#### Results

Overall crude mortality rate for Korean ICU patients was 20.3%, and severity adjusted mortality rate was 19.9%. SMR is average 1.02, range from 0 to 3.39. It means considerable variation in quality of ICU patient management. SMR of metropolitan ICUs was lower than non-metropolitan ones, but another ICU structures did not make differences in SMRs.

#### Conclusions

The variance of SMRs in ICUs reflects the quality levels of ICU patients management in Korea. Quality improvement efforts should be paid to decrease the variance.

### Is health care in Eastern Europe privatising? An overview of health care delivery privatisation in Bulgaria and Romania

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#### Background

In the end of 1980s and beginning of 1990s of the previous century, the socialist countries had undergone political changes which had great impact on health care. Privatization was seen as a solution to the problem with the belief that everything that is decentralized is essentially better than everything centralized.

#### Methods

The article provides an overview of private health care developments through the years, the establishment of legal instruments to regulate private care; and the impact of privatization on health care systems and consumers.

#### Results

Bulgaria and Romania adopted several measures for health care reform and privatization as a reaction to the decades of centralism and authoritarianism from the communist period. Privatization is fully introduced when it comes to primary care, dental care and pharmacies. There are also a large number of private clinics, but, however, the privatization of hospitals in the two countries was slow.

#### Conclusions

The authors examine the current state of private health care in the two countries, the regulatory framework in the field and some possible directions for future developments, concluding that health care delivery is obviously going through privatization in Bulgaria and Romania, though some government leaders still find it more socially acceptable to call the process 'a reform'. Nevertheless, this is a demand-driven process since most people believe that private establishments perform more efficiently and provide better quality care compared to public ones, and they would rather choose the private to the public provider. Those are some developments that have encouraged and enhanced demand-driven privatization in health care delivery. Governments have reacted postfactum to those processes by establishing laws to justify and regulate market developments in health care sector. Privatization in health care delivery is overall beneficial to patients since it enhances competition among providers and improves the quality of care. Yet governments cannot afford to leave everything up to the market, and have to play a strong regulating part in health care, because there are still many vulnerable and poor groups that would suffer from health care gone completely private.

### The Manchester Blood Borne Virus Research Partnership, Manchester, UK

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### Issues

In health protection, multi-agency partnership working is essential but becomes vital when dealing with vulnerable groups such as intravenous drug users, homeless people, prisoners, immigrants and asylum seekers. This is particularly true for blood borne viruses (BBV) including Human immunodeficiency virus (HIV), hepatitis B (HBV) and hepatitis C (HCV) which affect many vulnerable groups

### Description

The prevalence of BBV within the Greater Manchester urban area is estimated to be considerably above the national average and continues to rise. This increase is partly explained by the large numbers of people in the high risk groups for BBV, with intravenous drug use remaining a high risk factor. In addition to the difficulties common to all individuals with BBV infection, such as stigmatization, individuals from vulnerable groups diagnosed with a BBV often face additional problems such as access to care, acceptance onto treatment programmes and problematic follow-up arrangements.

### Results

Specifically commissioned by Manchester City Council Drug and Alcohol Strategy Team (DAST), the BBV Research Team (BBVRT) is a multiagency partnership created to address these issues by undertaking an epidemiological healthcare needs assessment at local authority level. It incorporates an evidence-based systematic methodology to map and evaluate the prevention services available including a gap analysis. The work is hypothesis-generating. The multiagency work operates within a unique model of partnership between the University, Health Protection Unit, Manchester DAST and the NHS. This approach is essential to provide a comprehensive map of all services and identify health needs in order reduce inequalities and improve health outcomes. Our long-term aim is to reduce the incidence of BBV infection across Manchester. The BBVRT has successfully recruited a number of national and international experts in this field to help with the work for the benefit of the local population. By ensuring generalizability, other populations will benefit from our work.

### Lessons

For complex medico-social conditions, partnership working with all stakeholders is essential in ensuring participation, agreeing recommendations and implementation.

## Sociological assessment of stationary aid in the Republic of Kazakhstan

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### Background

Significance of stationary aid in the world public health comes out from several reasons such as considerable part of healthcare budget spent into stationary aid; specialized medical services access in hospitals exerts significant influence on public health on the whole; senior staff works in hospitals. Determination of key directions for stationary aid improvement in the Republic of Kazakhstan.

### Methods

Socio-hygienic, information and analytical, sociological, statistical methods were used.

### Results

A questionnaire design of 681 respondents was conducted: 247 (36.3%) patients and 434 (63.7%) medical staff. Analysis made it clear that 77.3% of patients support state public health system. The main reasons of patients' dissatisfaction are down level of treatment and diagnostic process—39%, lack of medicaments—38.9%, refusal of hospitalization—12.5%,

sanitary-hygienic conditions—10.9%, down level of treatment quality—10.1%. Of the medical staff, 57.6% considers that the down level of stationary aid organizations is owing to lack of medicaments and unsatisfactory conditions, 43.3% owing to shortage of financing, 38.7% owing to reduction of bed fund and staff. In their proposals on healthcare development and improvement 43.1% of medical staff recommends primary medical aid strengthening and development, 53%—hospital services development and improvement, 31.1%—emergency services development and improvement.

### Conclusions

Results of the working prove special choice of directions for further phase of development of recommendations on stationary aid improvement.

## Activity-based costing as a practical method for clinical governance: the setting of Radiotherapy at the Campus Bio-Medico University Hospital in Rome

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The issue of an accurate cost data collection in radiotherapy (RT) was addressed. Traditional methods have shown the limits of not giving a detail of different steps of RT care process. With the aim of performing more complete resource cost estimates, activity-based costing (ABC) method was chosen. ABC is a cost-accounting system that allocates the resource costs to the products using a multistep allocation procedure on the basis of activity consumption. An ABC model was developed for RT at the 'Campus Bio-Medico' University Hospital in Rome by using activity data of the year 2006 and 2007. An iterative approach was applied to define activity as well as cost categories and products at the most level of detail, finally applying cost drivers to allocate indirect costs to products. Activity analysis was performed through medical audit obtaining a total number of 40 types of activity. The distribution of the cost inputs of the RT was: treatment simulation (11.7%), planning (10.9%), quality assurance (4.2%), treatment delivery (55.6%), care-related support activities (17.7%). A cost per clinical pathway analysis was also performed, focusing on: breast cancer, prostate and intestinal cancer (rectum). Within each clinical pathway, further distinction was made among specific treatment protocols, by defining different target volumes as separate products. Differences were calculated between costs of activity and public reimbursement for any given procedure by the National Health System. Differences between costs and public financing rates were positive for all six breast treatment protocols (mean value 290 euros) as well as three prostate protocols (mean value 265 euros), whereas the rectum treatment protocol showed a negative difference (difference 249 euros). Obtained results show that the use of an ABC model for RT allows to solve questions on product costs and activity patterns and to direct decisions of clinical governance through an appropriate case-mix selection.

## Hesitative introduction of e-mail consultations in general practice

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### Background

The Dutch Council for Public Health and Health Care reported in 2005 that 70% of internet users would want to have the opportunity to consult their own general practitioner by e-mail. Since 1 January 2006, general practitioners in the

Netherlands are reimbursed 4.50 euros for e-mail consultations, on the condition that it does not concern a new health problem and that it substitutes for a normal practice consultation. In this article we will investigate how doctors and patients actually use e-mail consultations and how often.

#### Methods

Data are derived from routine electronic medical records of 100 GP practices that participate in the Netherlands Information Network of General Practice (LINH). The dataset comprises all 1902902 contacts of all 271509 patients listed in these practices in 2006.

#### Results

Only 1159 e-consultations were claimed, pertaining to 777 patients. E-mail consultations were claimed at least once in 30% of the practices. Most of these claimed less than 25 e-mail consultations. For most patients (74%) an e-mail consultation was claimed only once. Men and people between 25 and 44 years of age were overrepresented. Metabolic diseases such as diabetes, pregnancy, etc. and diseases/complaints of the male reproductive system were recorded more often than in normal practice consultations. Cardiovascular problems and respiratory problems seemed to be less suitable for e-mail consultations. Among users of e-mail consultations, the contact frequency for the GP was 65% higher than among other people who consulted their GP in the study period. Relatively many users of e-consultations had a normal consultation in the days before and after the e-consultation.

#### Conclusion

Though many people seem to be interested in e-consultations, still very few are people using it. E-mail consultations are an interesting option for those who have a close relation with their GP.

### Job satisfaction among doctors and nurses working in primary health care in Serbia in 2007

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#### Background

Job satisfaction is related to the nature of work, quality of management and working environment. Not only does it influence performance, it also maintains good employee health and longevity.

#### Objective

To explore what domains of work are important for job satisfaction among doctors and nurses working in primary health care (PHC) in Serbia.

#### Methods

A cross-sectional study was undertaken in 158 PHC in Serbia in December 2007. The main outcome measure was the level of satisfaction of doctors and nurses and it was measured on a 5-point scale, using an anonymous and self-administered questionnaire. Correlation between overall satisfaction and the following domains of work was analysed: structure, organization, motivation and communication.

#### Results

Total 34580 employees completed the questionnaire. Among them were 9845 doctors (30.86%) and 34580 (69.14%) nurses. Overall job satisfaction for doctors was 3.08 and for nurses 3.047 ( $P < 0.001$ ). Concerning the structural domain, satisfaction was 2.99 for doctors and 2.96 for nurses ( $P < 0.001$ ). For the motivational domain, satisfaction was 2.92 for doctors and 2.83 for nurses ( $P < 0.001$ ). For communication, satisfaction was 3.38 for doctors and 3.37 for nurses ( $P = 0.052$ ). The survey showed that the respondents were most satisfied with their relationship with colleagues (doctors 3.72, nurses 3.68), line of responsibility (doctors 3.64, nurses 3.67), availability of time (doctors 3.39, nurses 3.34), while compensation (doctors 2.63, nurses 2.47) and continuous education (doctors 2.86,

nurses 2.73) turned to be causing highest dissatisfaction among the respondents. Strong correlation (Spearman's ratio) was observed between overall job satisfaction and organizational factors—0.853, motivational factors—0.892, communicational factors—0.880 and structural factors—0.698.

#### Conclusion

Overall job satisfaction of doctors and nurses working at PHC in Serbia is relatively low. Increased pay rate and more adequate equipment, as well as possibilities for education and career improvement would enhance job satisfaction among employees in PHC in Serbia.

### The evaluation of associations between health and performance metrics using the Corporate Health and Performance Group (CHAP)

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#### Background/Methods

Corporate Health and Performance (CHAP) conducted cross sectional studies in two large organisations looking at over 9500 and 5000 employees in a wide range of jobs using objective measures of health and workgroup performance. Potentially important social and workplace confounders were considered.

#### Results

A worker of healthy weight had 6 days sick leave per annum, an obese employee 9 days and a very obese employee 11 days. Increased long-term sickness absence appeared to be due to related chronic medical conditions, short-term sickness absence amongst obese employees remains unaccounted for by known risk factors. The more medical problems, the more days sickness absence required. High levels of short-term sickness absence were independently associated with poor workgroup performance. Using objective measures of workgroup performance we were unable to find any evidence of presenteeism, including safety critical events, due to either diagnosed medical problems or obesity. There was a relationship between increased symptoms of depression and poorer workgroup performance.

### Tuning primary care services to demand of local populations

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#### Background

Tuning primary care services to demand of local populations is a major challenge for health systems. Research shows substantial variations between neighborhoods in expected demand as a result of variations in demographic and socioeconomic composition. Although general practices are geographically well-distributed patients experience large variations in accessibility between practices. Our research goal is to compare actual utilization of general practice with expected demand thus identifying potentially under- and overserved populations. Explaining factors for differences are explored in practice organization.

#### Methods

Data are derived from the Netherlands Information Network in General Practice, a national representative network of about 80 practices. ICD-coded diagnosis and consultations are

registered routinely in electronic medical records. Multilevel regression is performed on the overall consultation rate and consultation rates for specific chronic diseases with demand characteristics of the listed population (demographic and socio-economic) as independent variables. With the regression coefficients expected demand is computed per practice. Expected demand is subsequently compared with actual consultation rates. Differences are linked to practice characteristics.

#### Results

Results show statistically significant effects of demographic (age, sex, degree of urbanization, percentage single households, percentage low income and percentage non-Dutch origin in the practice area). These effects result in substantial variation

between practices in expected demand. Comparing expected demand with actual consultation rates reveals differences especially for chronic illness like diabetes and asthma. The presence of a practice nurse appears to be an important explaining factor.

#### Conclusions

There is substantial variation in the degree in which actual general practice care is tuned to the demand of local populations, especially with respect to chronic illness. Due to lack of a gold standard it is difficult to interpret differences in terms of over- and underuse. Other literature suggests however that practice nurses have contributed to better quality of care for chronically ill.

## INFECTIOUS DISEASES CONTROL

### Registration during major outbreaks of infectious diseases

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#### Issue

During an outbreak of Avian Influenza (AI) in the Netherlands in 2003 the registration and monitoring system of local Outbreak Control Authorities appeared to be inadequate. In the evaluation of this outbreak the Dutch Inspectorate (IGZ) noted that the current systems contained insufficient information on patient's level as well as information on progress of the outbreak. Therefore, it was the aim of this project to develop a digital system for registration and monitoring patient and contact information during large outbreaks of infectious diseases.

#### Description of the process

The development of the registration system was based on the recommendations from the evaluation report on the 2003 outbreak of AI and the demands from the Inspectorate. For the development of the system a Working Group was installed, with representatives of the following organizations involved in AI outbreak control: local health authorities, RIVM/Cib and LNV. Through discussion meetings consensus was reached on the data set to be entered in the system. A preliminary version of the registration system was tested during a multidisciplinary exercise. Currently the registration system is under construction by the RIVM/Cib.

#### Results

A web-based registration system on patient information during infectious diseases outbreaks has been developed. The system is of use for multiple parties, being: local health authorities, the agriculture department and the RIVM/Cib. Although the system is especially developed for AI outbreaks, it can be used for other mayor outbreaks with minor changes.

#### Lessons

- Be sure to involve all the stakeholder from the beginning.
- Stimulate exercises on outbreaks with testing of the registration system

### Knowledge and attitudes of health care provider toward aids

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#### Background

Although applying universal precautions is a strategy to protect health workers for the risk of HIV transmission through occupational exposure, AIDS can call out irrational emotions in health care providers. The objective of the study was to assess HIV-related knowledge, attitudes and risk perception among health care providers in Izmir, Turkey.

#### Methods

A cross-sectional study was conducted in 2007 among health care providers participating in training course on HIV/AIDS and universal precautions. The sample consisted of 158 health care professionals from seven public hospitals and two public dental clinics in Izmir. Information was collected regarding demographic details, HIV-related knowledge and attitudes and risk perception at the start and end of their course.

#### Results

The sample was 72.6% women, ages range from 21 to 59 (mean 39.44 years). Only 30.0% of respondents reported a scalpel or needle stick injury at least once last year. Almost 15% of participants believed that HIV was transmitted from a patient to them more easily than HBV and HCV. Some of the participants (40%) thought that it was necessary to take extra infection control precautions for patients with HIV. Knowledge concerning post-exposure prophylaxis was insufficient. The mean score of at start of the course on attitudes towards AIDS patients and knowledge concerning virus transmission routes, methods allowing to reduce the risk of infection and prophylactic measures used after occupational exposure to HIV was  $47.39 \pm 6.52$  and  $54.35 \pm 7.90$  for questionnaire at the end of the course. There were significant differences in mean scores of the knowledge responses given pre- and post-test ( $P < 0.001$ ).

#### Conclusions

There was some improvement in knowledge and opinion on AIDS patients at the end of the training. If health care provider contagion fears are reduced, discriminatory behaviours by health care providers against persons with HIV would be eliminated.

### Successful implementation of opting-out strategy for HIV testing; evaluation of 4 years of standard HIV testing in an STI clinic

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#### Background

HIV test rates are low in the Netherlands. Consequently, a high proportion of HIV infected individuals is unaware of infection.

They miss the opportunity for timely treatment. Our STI clinic recognized the need to increase test rates and implemented opting-out for HIV testing in 2004/5. This means that a HIV test is standardly performed during each STI consultation unless the client refuses. We evaluated its effectiveness.

#### Methods

We used anonymized data from our STI clinic (South Limburg, The Netherlands) from 2003 to 2007 to assess trends in HIV testing and (reasons for) test refusal using multivariate analyses and interview.

#### Results

The number of HIV tests increased strongly from 1615 in 2003 to 4548 in 2007. Refusal rates declined from 15%, 17% and 16% (in 2003) to 3%, 3% and 2% (July to December 2007) for women, heterosexual men and homosexual men (HM), respectively. Overall, 0.2% of heterosexuals and 2.2% of HM tested HIV positive; this proportion did not decrease over time suggesting that not merely 'worried well' are tested. However, those who did not test were more likely to have STI-related complaints. Other determinants for not testing were older age (HM) and a previous HIV negative test or reported low risk behaviour (heterosexuals). Main self reported reasons were: low perceived risk, fear and being in window-period. These findings are now used to develop more effective and tailored HIV/STI counseling in order to further optimize HIV testing practice.

#### Conclusion

Timely care is essential for best HIV treatment results. In our area the time lag between diagnosis and care is very short. Standard testing on HIV in an STI clinic is feasible and effective in increasing awareness of ones HIV status. It should be essential part of STI screening in STI clinics and should be considered in other health care settings for specific risk groups as well. Analyses of integrated STI-HIV laboratory surveillance data is currently undertaken to shed light on the potential gain of standard HIV testing in other locations, such as general practitioners.

### High performance and acceptability of self-collected anal swabs for diagnosis of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in men and women

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#### Objectives

Identification of sexually transmitted infections (STI) is hampered by limited compliance to undergo anal STI testing. Alternative non-invasive diagnostic procedures are needed. This study assesses usability of self-collected anal swabs (SAS) in diagnosing anal *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) in two regions of the Netherlands with different level of urbanization and risk group composition.

#### Methods

In 2006–2007, men who have sex with men (MSM) and women who attended Amsterdam and South Limburg STI clinics were asked to fill in a questionnaire and provide SAS in addition to standard provider collected anal swab (PAS). Swabs were tested for CT and NG. SAS performance was measured by sensitivity, specificity and kappa (>0.8 good test agreement) of SAS compared to PAS. Positive and negative predictive value (PPV, NPV) was calculated for SAS.

#### Results

Of the participants (1411 MSM, 715 women), CT prevalence was 11% (MSM) and 9% (women) and NG prevalence was 7% and 2%. In 2% of MSM and 2% of women there was discrepancy between SAS and PAS test results. For NG this was

2% and 0.6%. SAS performance for CT and NG diagnosis was good in MSM and women and was comparable for both study regions. For example, PPV was 90% for CT and 80–85% for NG, all kappa were greater than 0.8. Most (78% of MSM and 85% of women) preferred SAS in stead of PAS or had no preference. Ten percent of MSM and 14% of women found SAS uncomfortable. Only 3% would not visit the STI clinic again when SAS was the standard test.

#### Conclusions

Considering that anal sex is a common practice (reported by 10–20% of STI clinic attendees) and anal STI is frequently present, anal screening should be essential part of an STI consultation. Self-collection of anal specimens is feasible, valid and acceptable for MSM and women in STI clinics. It may be a valid method for anal screening (especially for CT) in other settings as well.

### Rational vaccination policies—results of an immunization experts' DELPHI Discussion

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#### Background

The observed lack of standardized measures and defined criteria currently hinders rational decision making on vaccine introduction. Aim of this study was to reveal unpublished knowledge and to discuss our model of a stepwise approach in decision making that has been introduced in a previous decision support paper.

#### Methods

Forty international immunization experts in 16 industrialized countries were invited to participate in a DELPHI discussion. Sixteen experts agreed to participate and received a questionnaire by e-mail. Data were extracted into an excel sheet. By providing an anonymous summary participants were encouraged to revise their earlier answers in the final second DELPHI round.

#### Results

Some unpublished national guidelines for vaccine introduction exist. Preliminary results show that our model seems to cover core decision criteria, yet some of them require additional features. Experts overall agree on the influence the criteria should have. There is no consensus whether a stepwise approach enhances feasibility of decision aids or not. Strengths of the model were seen in the structure that may help to avoid mistakes and to generate reproducible results.

#### Conclusions

The summary and publication of the final shared expertise might be used by other countries and therefore further enhances international discussion on rational vaccination policies.

### Social factors and compliance to TB active surveillance in homeless people in Rome

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#### Problem

Together with other deprivation social factors, homelessness is one of the greatest risk factors to contract LTBI (latent tuberculosis infection) and TB (tuberculosis). In the last years few surveys were carried out in Europe to evaluate the LTBI and TB prevalence in homeless people (LTBI prevalence: Rotterdam 29%, Barcelona 75%; TB prevalence: London 0.5%), showing

that adequate screenings and treatment pathways are needed to reduce the spreading of the *Mycobacterium tuberculosis* in these overcrowded shelters and in the community.

#### Description of the problem

As the LTBI treatment is an important measure to control the TB incidence, this study is aimed to assess the Mantoux reading compliance and the survey pathway adherence of the recruited homeless subjects, in two shelters in Rome. Moreover the associations between social risk factors and the compliance to the Mantoux reading and to the survey were investigated. During November 2006 to November 2007, 288 suitable subjects (immigrants and Italian people) were recruited. The reading compliance was calculated among people who returned after 72 h; the survey adherence was calculated among people with positive Mantoux test, who performed three sputa collection, and the chest X-ray. 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 of the reading compliance and the survey adherence.

#### Results

The reading compliance was 89.6% (258 of 288 subjects returned for the Mantoux reading) and the survey adherence was 82.2% (97 of 118 positive Mantoux subjects completed the survey pathway). According to the multivariate analysis, as regard to the reading compliance, the significant results are: smokers OR 2.64 (95% CI 1.14–6.10), married OR 0.39 (95% CI 0.17–0.85). Concerning the immigrants survey adherence: OR 0.14 (95% CI 0.02–1.10).

#### Lessons

Our study shows a generally acceptable compliance to TB active surveillance; therefore TB survey and public health policies should be enforced to give answers to unexpressed health needs in these disadvantaged social groups.

### Is it proper to evaluate the effectiveness of operating rooms' sanitation?

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#### Background

Organizations such as CDC, Society for Health Care Epidemiology of America, NHS of Great Britain emphasize the importance of environmental cleaning and disinfection activities in health care facilities, but provide no directives regarding the means by which hospitals are to assess their ability to comply with or 'ensure' the effectiveness of such activities prospectively. The present study was designed to evaluate the effectiveness of disinfection surfaces procedures in operating room, by using *Staphylococcus aureus*, MRSA and MRSA hGISA (Methicillin-Resistant *S. aureus* with reduced susceptibility to glycopeptides) as specific 'indicators' of contamination by humans.

#### Methods

One hundred and forty four sanitized operating rooms were monitored in Italian hospitals in a period of 1 year. Direct-contact sampling was carried out on three representative surfaces in proximity of the operating field (scalytic lamp, anaesthetic machine and anesthesia trolley), using a RODAC Weight applicator (PBI International®) for contact plates (surface area of 24 cm<sup>2</sup>). An antibiogram was performed to assess methicillin resistance of *S. aureus*. A standard E-test and a macromethod E-test were then carried out, in order to evaluate glycopeptide resistance.

#### Results

In the overall operating rooms, the percentage of positivity to *S. aureus* was 14%. With regard to positive samples, the mean

value of *S. aureus*, MRSA and hGISA was 3.4 ± 4.0 CFU/plate, 2.8 ± 4.3 CFU/plate and 0.9 ± 1.50 CFU/plate, respectively. The highest mean concentration was recorded on scalytic lamp: *S. aureus* (4.75 ± 5.6 CFU/plate), MRSA (4.5 ± 5.8 CFU/plate) and hGISA (1.6 ± 2.4 CFU/plate).

#### Conclusions

The results revealed the persistence of a contamination by microorganisms involved in severe surgical wound infections. This situation could be attributed to inadequate sanitation procedures or to a microbial resistance to disinfectants. Data suggest that after cleaning has taken place, periodic microbial measurements should be obtained to ensure that the cleaning has been carried out correctly.

### Pandemic influenza preparedness—interoperability between the autonomous region of Galicia and Northern Region of Portugal

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The threat of a pandemic influenza is an opportunity to strength the cooperation between different national and international institutions, specially between neighbour countries. In order to achieve the most effective and efficient response and reduce the possible damages in the context of global emergency situations, the process of pandemic planning should be based on joint activities between borders regions of Portugal and Spain.

The aim of this work was to share and discuss the health system organization and develop a System of Alert and Communication between Health Authorities of Northern Region of Portugal and Galicia to adequately control public health emergency situations that could affect them, as avian and pandemic influenza.

The methodology was divided in two phases: organisation of meetings between Northern Region of Portugal and Galicia Working Groups for Pandemic Influenza Preparedness and the design and carry out of a Simulation Exercise.

Although the global aim of this cooperative work was not yet completely achieved, the shared experience and knowledge were considered very positive for both Health Authorities, and should be improved. Were identified some aspects that need to be reviewed, namely to establish standard guidelines for the different interveners and to clarify and improve the distribution procedures and the prescription criteria of chemoprophylaxis. The need to reinforce the cooperation through borders was considered important, also for other Regions and other Public Health problems.

### Preventing seasonal influenza 2007–2008, Viana do Castelo, Portugal: non-pharmacological public health measures

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Non-pharmacological public health measures are supposed to be an effective strategy to limit the dissemination of the infection of Influenza in the community. Respiratory etiquette is one way of doing it. Is it possible to change behaviour with local interventions?

Alto Minho Public Health Service, in Viana do Castelo, Portugal, developed a Seasonal Influenza 2007/2008 project in



order to minimize the incidence of this viral disease in the 250 000 district inhabitants. One of the objectives was to get the population informed about respiratory etiquette.

The local media was used, posters were posted in public places, schools and health services to inform people what a seasonal Influenza is and how to avoid the spreading of disease. Five thousand umbrellas with the respiratory etiquette drawings were offered in health centre to the elderly that came to get the influenza vaccine.

A phone questionnaire was made to a random sample of 250 households before and after the project. Only persons with 18 years or more of age were selected. No significant statistical difference was found in knowledge about Influenza disease. A significant statistical difference was found in knowledge about the behaviour to prevent the dissemination of influenza. While national authorities don't use massive education to change behaviour we show that it is possible to change, in a slowly way, the preventive knowledge for influenza.

### Surveillance of school absenteeism in the Northern Region of Portugal—a pilot study

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Influenza is an important public health hazard with implications on the rendering of health care services. Nowadays, influenza still remains as one important cause of morbidity and mortality. During the periods of major influenza activity there is a significant rise in working and school absenteeism, in the number of medical consultations, of emergency episodes and of hospital admissions. A factor which easily leads to the influenza virus' transmission is the gathering of people in enclosed areas. Schools are therefore places which gather excellent conditions for the dissemination of influenza and other respiratory infections.

Integrated in the Contingency Plan for Pandemic Influenza Preparedness of the Northern region, the Public Health Department of the Northern Regional Health Administration, intends to create a school absenteeism monitoring system in elementary schools (6–10-year-old students) and middle schools (11–15-year-old students) of the North region and compare school absenteeism with the incidence of seasonal influenza, in order to evaluate if these phenomena occur in parallel in time and space.

The number of children under surveillance was 4825, representing 1.57% of the total number of children in the Northern region elementary and middle schools. The maximum school absenteeism rate was 3.25% observed in the fifth week. Only four schools presented a significant ( $P < 0.05$ ) and a strong positive linear association (Pearson's Coefficient  $> 0.700$ ) between the weekly rate of school absenteeism and the provisional Influenza like illness rates.

The gathered data on absenteeism has the potential to detect outbreaks/diseases more precociously. However, it has some limitations:

- Lack of specificity: one does not know the reason why some students miss school;
- There isn't a consistent record throughout the year: there is no record of absences during weekends, school holidays and national holidays.

### Surveillance for influenza pandemic preparedness in Portugal, 2007

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### Issue/problem

The General Directorate of Health (DGS) in its strategic guidelines for influenza pandemic preparedness considered health information as a main operational area to be developed. Surveillance before and during pandemic is crucial in order to develop the adequate health services response. Risk analysis can only be performed if the necessary information exists. Indicator-based surveillance tools do not respond to the demand of information during pandemic: health services capacity decreases, resources are scarce and overloaded and decision makers need urgent information.

### Description of the practical intervention

The goals of surveillance for pandemic are early detection of cases, monitoring impact on health and health services, supporting public health measures and monitoring their effectiveness. The European Centre for Disease Prevention and Control (ECDC) proposed a framework for the epidemic intelligence process. The authors suggested the development of the Influenza Integrated Information System (SIIG). Epidemic intelligence is the process of early detection of health threats, their verification, assessment and investigation to support control measures. The SIIG is an information technology platform which stores, processes and analyses data from different pre-existing primary sources, such as indicator-based and event-based surveillance tools. The platform organizes and produces coherent information and outputs during pandemic phases, allowing risk analysis and an integrated response involving local, regional and national levels.

### Results (effects/changes)

The SIIG is being developed by the DGS. Some primary sources like traditional surveillance systems already exist and need enhancement, others are under construction. The Public Health Emergency Unit received support from the ECDC and is producing and posting periodic reports on the internet. The software for the Information System for Influenza Patient Care and Prescription during the pandemic is ready and was tested.

### Lessons

The concept behind the SIIG could be useful to the broader aim of public health surveillance considering the challenge of global public health.

### A national program for TB screening in Dutch prisons

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### Issue/problem

Tuberculosis is a contagious disease and overall one-third of the world's population is currently infected with the TB bacillus. The Ministry of Justice (DJI) contracted the Municipal Health Services (GGD's) to implement a national program on TB screening for detainees (55 000 newly convicted each year) by using Mobile Rontgen Unit (MRUs). The MRU's are driven onto the prison sites after following local safety procedures. The digital X-rays photographs are sent to and examined by the TB specialists of the GGD within 24 h. The last 10 years good results were achieved due to obligatory screening of all convicted persons and the consistent MRU timetable for weekly visits of prisons. This has led to continuity, efficacy and efficiency. The prevalence of TB has slowly declined from 368/100 000 in 1993 to 94/100 000 screened prisoners in 2006. Remaining constraint was the issue of tracking the convicted prisoners who were released or transferred to another prison. Losing these (presumed) patients can lead to inconsistent and partial treatment and eventually can cause drug-resistant TB.

### Description of the policy

To resolve this problem, 2 years ago KNCV Tuberculosis Foundation developed a guideline for TBC prevention in prisons which has led to better cooperation between GGDs and

the medical staff in prisons. Furthermore, the digital registration system of DJI (registration of all new convicted persons) and GGD's digital registration system (registration of screened persons) will be connected end of 2008. Due to this, prisoners will be easily recognized in the system and unnecessary double screenings will be avoided.

#### Results (effects/changes)

In the coming years about more than 60 prisons will be visited weekly by one of the nine MRUs. Yearly about 42 000 prisoners will be screened for TB. Due to changes in policy unnecessary screenings are past time and less prisoners will receive inconsistent or partial treatment.

### Social response in preparing for Pandemic Influenza in Portugal: awareness, risk perceptions, and attitudes towards a pandemic threat in five large private organizations

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Following the pandemic alert declared by the World Health Organization in 2004 a large number of initiatives were taken in Portugal as part of the pandemic preparedness effort. Recognizing that the success of pandemic preparedness is determined both by the technical quality of contingency planning adopted and the nature of the social response to the pandemic threats, a project aimed at understanding and promoting appropriate community responses in the country was designed and implemented. This project, lead by National School Public Health—New University of Lisbon, in association with Portuguese Directorate General of Health and National Institute of Health Dr. Ricardo Jorge included a study of the awareness, risk perceptions, and attitudes towards a pandemic threat in five large private organizations. These were selected out of a pool of large private organizations that were engaged in preparing pandemic contingency planning and manifested interest in participating the 'social response' project.

#### Methodology

In analysing pandemic awareness, risk perceptions and attitudes towards a pandemic threat in this five large private organizations the sorts of information were used:

- (i) Organizational and managerial features of each the participating entities
- (ii) Meeting records from meetings with contingency plan coordination teams and related documents
- (iii) A online questionnaire (presented as part of a learning process, and therefore associated with a 'right answers' component to be accessed after the completion of the questionnaire).

The online questionnaire was applied, between August and December 2006, to two groups of persons: (a) a 25% sample of selected groups within each organizations—4052 respondents, corresponding to a response rate of 41%; (b) any person within the selected groups, who wanted to respond.

The key research findings were:

- The critical importance of organizational cultures in social response
- The need to introduce more target communication strategies, more specific to specific to staff's knowledge and information utilization profiles
- Difficulties in relating to the 'social distancing' concepts
- Tendency to favor the use of pharmaceutical drugs for 'preventive' and curative
- Dissatisfaction with information concerning access/use of masks and medications
- Limited confidence on overall preparedness efforts.

In interpreting these results in terms of influenza pandemic preparedness its particularly important to point out the

population studied is likely to be among the most favorably placed (education, professional skills, and access to information) in the Portuguese society.

It can be concluded that a an approach to pandemic preparedness that places greater emphasis on existent social response patterns and that takes more effectively advantage of the pandemic threat to invest in better and more innovative health governance is needed in order to overcome the limitations identified in this study.

### Pandemic influenza preparedness in the Northern Region of Portugal—intersectorial simulation exercise

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The regional and local pandemic influenza preparedness is a matter of great importance, as it enables to minimize the social impact of a pandemic, and to improve the early detection and diagnosis in order to contain the number of cases as much as possible. Preparedness requires training of all healthcare workers involved in this process. The simulation exercise that is proposed here was developed for WHO phase three pandemic influenza alert.

The principal objectives were training the communication between posts of command and leadership, testing the skills of the different stakeholders to answer the incidents produced, exercising the planning and the response to an emergency and exercising the terminology, the methodology and the procedures of operational planning.

It was used a simulation exercise that occurred under the responsibility of the Public Health Department of Northern Regional Health Administration with the collaboration of the Transmissions Command of Defence Ministry that designed the methodology of the exercise.

We observed: reasonable coordination of the entities involved; difficulties in obtaining the identification and contacts of passengers of the plane; need of the definition of the main circuits of passengers inside the Airport; need of more training of some healthcare workers in the use of Individual Protection Equipments and the answers obtained showed insufficient training in the procedures. For the future we proposed an annual planning of a simulation exercise on pandemic influenza.

### Meningococcal C vaccination: a strategy to immunise adolescents

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Portugal has one of the world's best vaccination coverage. In 2006 MenC vaccine was introduced into the Portuguese National Vaccination Programme. During 2006 children between 16 months and 9 years of age were vaccinated with no problem because they usually go to health centres to get immunized. During 2007 it was supposed to vaccinate all adolescents between 10 and 18 years of age. Concerns were showed because they do not go so often to health centres for immunization. To guaranty the highest coverage in Viana do Castelo district (14 512 adolescents) a new strategy was set. Local media was used, posters were distributed in schools, pharmacies and public places and a call system for immunization was set up.

Coverage with MenC vaccine was assessed before and at the end of the campaign, and compared with other

three districts' coverage that used the traditional strategy. Viana do Castelo had 95.2% of the target population immunized, a better result than the other districts (the

difference was statistically significant). In a normal epidemiological setting this new strategy is a good one to catch adolescents to a new vaccine.

## INJURY PREVENTION AND SAFETY PROMOTION

### Parental awareness and knowledge regarding home hazards and their strategies to prevent childhood injuries

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#### Background

The Austrian committee for injury prevention in childhood 'Safe Kids Austria' was investing more attention in raising the parental awareness to prevent and reduce childhood injuries. The Austrian government in Styria was supporting the Committee in distributing safety kits box free of charge for 5 years to families with children under 5 years of age to decrease home hazards for child injury.

#### Objectives

- To assess the parental awareness regarding home hazards.
- To estimate parental knowledge about strategies and safe practices in order to prevent childhood injuries in the home environment.

#### Methods

During the paediatric on-call visits services a total of 500 households were voluntarily selected and their homes were inspected. A questionnaire was used to interview the caregivers. Five rooms were observed, as well as outdoor. According to the checklist for the risk factors at each household, an awareness score and safety score were developed and their percentage were divided to ten categories. The results of the questionnaire were analysed by EPI Info 5 and  $P \leq 0.05$  were considered as a statistical significant.

#### Results

The study population were mainly traditional families (92%). It was found that the parents were more aware of child dressing-table, swing time in a seesaw and swimming pool as hazards for their children but they were less aware of hygienic articles and detergents, tobaccos and medicine as hazards to their children. The highest peak of the awareness score was 7 in 20% of the households although the highest peak of the safety score was 5 in 30% of the households.

#### Conclusion

Caregivers should give more attention not only to be aware of the hazards but also to practice safety interventions to prevent childhood injuries.

### Violence against women in Romania—classifications and patterns

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#### Background

Violence against women is a term of art used to collectively refer to violent acts that are primarily or exclusively committed against women. Worldwide governments and organizations actively work to combat violence against women through a variety of programs. Such programs aim to identify violence risk factors to classify forms and patterns of violence.

#### Methods

The 2004 national survey 'Sexual Reproductive Health in Romania' included 15 items regarding the violence and rape occurrences against women and the men violent behaviour. The violence against women was approached in the context of violence acts, experienced in the childhood or adolescence, and of individual socio-demographic characteristics. Classification tree and latent classes analysis were employed for exploratory statistical investigation.

#### Results

In the group of 4441 interviewed women, 1279 (28.8%) reported they had suffered one or more violence forms and 195 (4.4%) reported they had been victims of a rape. The risk of a violence experience is highly influenced by the previous violence history occurred in the family; the classification tree analysis indicates a statistically significant association ( $P < 0.001$ ) between fights among parents and violence against the respondent in her childhood. The social factors, like educational level ( $P < 0.001$ ) and employment status ( $P = 0.035$ ), are also significant discriminators of the violence risk.

#### Conclusions

Violence against women is one of the most widespread violations of human rights in Romania. Close partnership of the organizations involved in women protection must establish protective laws and national prevention actions, especially for the risk groups.

### Injuries in childhood and its association with the socioeconomic and gender inequalities

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#### Background

Non-fatal injury rates in childhood vary within a region. We investigated if the municipal variation had relationship with the distribution of economical resources and the gender distribution at the labour market and at the political sphere.

#### Methods

Mean annual injury and fracture rate from 14 Swedish municipalities (2000–2005) was calculated by sex, age group (0–5, 6–12 and 13–17 years) and three level of percentile (<P25, P25–P75 and >P75) from an index calculated using principal component analysis (PCA) for income spread (Gini coefficient, percentage millionaire, percentage children under poverty, percentage unemployment and percentage people with low education) and gender distribution (sex ratio at leading and at unskilled position at work, and proportion of women at the municipal political council).

#### Results

Four index dimensions ('low income', 'high income and unequal', 'gender equality at unskilled work' and 'male leaders at work and gender equality at politics') were obtained from the PCA. The index 'high income and unequal' showed that municipalities with higher income equality and less economically develop had 1.14–1.35 times higher injury rates than the more unequal and more economically develop municipalities. The pattern was observed in the three age groups and in both sexes. The 'gender equality at unskilled work' index showed that municipalities with higher gender equality at unskilled

work had 1.14–1.51 times higher fracture rates than the municipalities with more female dominance at this working position. The pattern was observed in the three age groups and in both sexes.

### Conclusions

It is possible that the local inequalities in the distribution of economical resources and the female dominance at unskilled working position may be negative associated with the local occurrence of non-fatal injuries in childhood.

### Drinking and injury in the light of emergency admissions: interview-based study in a Swiss Emergency Department

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### Objective

This study describes the distribution of usual and prior to injury (i.e. acute) alcohol consumption among injured patients treated at a hospital emergency department (ED). Furthermore, it explores the contribution of usual and acute alcohol consumption to typical injury patterns.

### Methods

A representative sample of 486 trauma patients were interviewed about their alcohol consumption and injury circumstances in the ED of the Lausanne University Hospital between

September 2005 and July 2006. Four individual attributes (sex, age, educational achievement and occupational status) and six variables of injury circumstances (activity and place of occurrence, mechanism, nature of trauma, implication of other protagonists, day of the week and time of day) were simultaneously analysed by mean of cluster analysis. Drinking types were considered through a five categories typology derived from the combination of usual and acute alcohol consumption (i.e. no/low volume drinkers with no acute alcohol consumption, high volume drinkers with no acute consumption, risky single occasion drinkers with no acute consumption and low risk and high risk drinkers with acute alcohol consumption).

### Results

Acute consumption varied across groups with different usual drinking patterns. Six typical injury patterns were identified, two of which were strongly associated with acute consumption: injuries related to interpersonal violence (acute consumption among high risk drinkers) and miscellaneous injuries (acute consumption among both usual low risk and high risk drinkers). An additional pattern that of sports injuries, was also characterized by an over-representation of risky single occasion drinkers reporting no acute consumption. The three remaining patterns showed an overrepresentation of no/low volume drinkers with no acute alcohol consumption (traffic related injuries, injuries among older people and work-related injuries).

### Conclusions

Various drinking types are found among the injured. Acute alcohol consumption is associated with some—but not all—injury patterns presenting at an emergency ward.

## MIGRANT HEALTH

### Educational inequalities in metabolic syndrome vary by ethnic group in the Netherlands: evidence from the SUNSET study

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### Background

Evidence indicates that the prevalence of metabolic syndrome is higher in ethnic minority groups than in White people. The reasons for these ethnic inequalities in health are incompletely understood. Most studies, although not all, have shown inverse relations between socioeconomic position (SEP) and metabolic syndrome. However, it is unknown whether the relationship between SEP and metabolic syndrome differs between ethnic groups in Europe. The main objective was to examine whether SEP (as indicated by education) was related to the prevalence of metabolic syndrome in different ethnic groups in Amsterdam, The Netherlands.

### Methods

A random sample of healthy adults aged 35–60 years. SEP was measured by educational level [secondary school and below (low), and vocational school and above (high)]. Metabolic syndrome was measured according to the International Diabetic Federation guidelines.

### Results

Low education was related to metabolic syndrome but only in White-Dutch people. Among White-Dutch men, the age-adjusted prevalence ratio (95% CI) for low education was 1.46 (95% CI 1.01–2.10) versus high education. Among White-Dutch women, the adjusted odds ratios for low education was 2.26 (95% CI 1.39–3.68) versus high education. In both White-Dutch men and women, low education was related to several

components of metabolic syndrome. However, among African-Surinamese and Hindustani-Surinamese, no significant associations were found between low education and metabolic syndrome and its components.

### Conclusion

Low education is associated with increased risk of metabolic syndrome among White-Dutch people but not among other ethnic groups. Community-based strategies to improve metabolic profiles may have to be ethnically devised. Among White-Dutch, targeting people with lower SEP may have an impact. However, among ethnic minority groups, both low and high socioeconomic groups may have to be equally targeted to have an impact in reducing ethnic inequalities in health.

### Perceived health among Roma and non-Roma adolescents: does socioeconomic status explain the differences between the ethnic groups?

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### Background

Improving the health of the Roma population is a great challenge for public health. The few available studies report the health of adult Roma to be worse than that of the indigenous population. Nothing is known about the health status of Roma adolescents. We compared perceived health outcomes of Roma adolescents living in Roma settlements with adolescents from the majority population and assessed the influence of socioeconomic status.

**Methods**

We performed a cross-sectional survey among Roma adolescents ( $N=330$ , mean age 14.5) and non-Roma adolescents ( $N=722$ , mean age 14.9) in an elementary school setting. Roma adolescents were selected from segregated and separated Roma settlements. We obtained data on the highest education level of parents, self-rated health, the occurrence of accidents and injuries during the last year, healthcare utilization during the last year, health complaints, mental health (Strengths and Difficulties Questionnaire, SDQ) and social desirability. We analysed ethnic differences crude and after adjustment for parental education using linear regression.

**Results**

Roma adolescents reported worse self-rated health (OR 3.01, 95% CI 2.25–4.01), more accidents and injuries during the last year (OR 1.57, 95% CI 1.14–2.17), and the use of healthcare more often (OR 2.77, 95% CI 2.09–3.66), but fewer health complaints (B  $-1.01$ , 95% CI  $-1.44$  to  $-0.58$ ). Furthermore, they reported more prosocial behaviour on the SDQ than non-Roma (OR 0.19, 95% CI 0.10–0.35). No differences appeared in the total difficulties score on the SDQ (OR 1.04, 95% CI 0.74–1.45). Socio-economic status notably decreased the differences between the ethnic groups in health outcomes. Adjustment for social desirability had a significant effect on the differences for all outcomes except for accidents and injuries during the last year.

**Conclusion**

Roma adolescents perceive their health as worse than non-Roma. Socioeconomic status explains a part of the health differences between the ethnic groups in health, showing its importance in the explanation of these differences. Interventions to improve the health status of Roma should also address their socioeconomic status.

### Medical intervention of the Office for Mobile Population of Hellenic Center For Diseases Control And Prevention at immigrant camps from 9 January 2007 to 22 December 2007

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**Issue/Problem**

Registration and evaluation of typical medical screening of migrating populations, with emphasis on epidemic infectious diseases, at camps where illegally arrived immigrants, at first stay.

**Description of the practical intervention**

The staff of the Office for Mobile Populations of the HCDCP conducts medical intervention regarding health inspection of illegally arrived persons in Greece, in specific places where these persons are kept temporarily after they are arrested. The typical screening of the intervention involves physical examination, obtaining the immigrant's medical and social history. Information is registered in the data base of the HCDCP. Data analysis is based on descriptive statistics.

**Results**

The screening conducted on 4505 persons (4020 male and 485 female) during the period of 9 January 2007 to 22 December 2007. Mean age was 24.21 years ( $\pm 8$ ). In reference with the declared countries of origin, 1123 (24.92%) immigrants were from Afghanistan, 1180 (26.2%) from Iraq, 338 (7.50%) from Pakistan, 626 (13.9%) persons were from Palestine, 706 (15.67%) from Somalia and 532 (11.80%) from other countries (India, Bangladesh, etc.). Health problems were detected at 1029 (22.84%) cases. 365 (8.1%) cases of dermatological diseases, 310 (6.89%) cases of respiratory diseases, 120 (2.66%) cases of gastrointestinal system diseases, 77 (1.71%) cases of myoskeletal system diseases, 61 (1.35%) cases of urinary system diseases, 23 (0.51%) cases of cardiovascular system diseases

and 73 (1.62%) cases of other systems were registered. Fifty three (1.18%) persons were referred for further clinical assessment by specialists, 40 persons (0.89%) for laboratory tests and treatment was given to 438 of them (9.72%).

**Lessons**

In case of mass arrival of immigrants, the aim is the safe treatment of them with respect to international humanitarian principles. Main priority is the immediate intervention, so the state mechanism for immediate interference is activated, if cases of emergence infectious diseases are detected.

### Medicine use among ethnic minorities in Denmark

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**Background**

To reinforce health planning, a comprehensive knowledge of the health of ethnic minorities is necessary. To date, studies regarding medicine use among minority groups in European countries have been a neglected research area. The objective of this study was to compare use of medicine in relation to cardiovascular disease among the native population in Denmark with that of Turks, Pakistanis and persons from former Yugoslavia living in Denmark.

**Methods**

Medicine use in the native population ( $n=2\,268\,613$ ) was compared with three large ethnic minorities with Turkish ( $n=23\,530$ ), former Yugoslavian ( $n=10\,170$ ) and Pakistani ( $n=11\,212$ ) origin. The individuals were drawn from the Civil Registration System and included persons >18 years of age living in two regions in Denmark on 1 January 2001. The cohort was followed from 2001 to 2005. Data on use of medicine were obtained from the Register of Medicinal Product Statistics. The analyses were adjusted for age and migration history.

**Results**

When compared with the native population in Denmark, both men and women with Turkish, former Yugoslavian and Pakistani origin had significantly decreased odds of using cardiac medicine. The associations were strongest among women from Turkey and Pakistan (OR 0.39; 95% CI 0.34–0.44 and OR 0.36; 95% CI 0.29–0.44). Among those with a medicine use, the relative use was also significantly lower among the minorities. Detailed results, linking diagnosis with medicine use, will be presented at the conference.

**Conclusions**

The decreased use of cardiac medicine among ethnic minorities could be explained by bad compliance and/or poor medical treatment of minority groups compared with the native population in Denmark. However, it should be recognized that ethnic groups might differ from the native population in Denmark in history, genetics, socioeconomics, life style and perception of disease.

### Non-participation in breast cancer screening in Flanders, Belgium

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**Background**

Every 2 years a free mammography is offered by the Flemish Government to women aged 50–69 years. Participants are recruited by a GP or gynaecologist, or through a personal invitation letter from their regional screening centre. Currently, only 37% of all eligible women take part in

this programme. Migrant women and women with a low socioeconomic status (SES) tend to participate even less. This study explores their (non)-participation.

#### Methods

First, we performed a follow-up of an earlier (2003) intervention study in which women of Moroccan origin living in Antwerp, Belgium were visited at home, to report on their long-term participation. Secondly, we organised focus group discussions (FGDs) with migrant women and women with a low SES to study the factors determining their non-participation in depth.

#### Results

In the 2003 intervention study, 75 (37%) of the visited women enrolled in the official screening programme. In a similar neighbourhood, where no intervention took place, the 2003 participation rate was 11%. The intervention group was followed up in 2005 and 2007, resulting in 10% and 4% participation, respectively. Three FGDs with low SES women and one with women of Moroccan origin were assessed. Common factors determining non-participation in the low SES groups were lack of information, fear, no need for medical examination in the absence of pain, no time, preference for choosing their own doctor, the invitation letter is impersonal and mammography is not precise enough. Factors determining non-participation of migrant women were lack of information, embarrassment, presence of male medical staff, preference for group participation and no need for medical examination in the absence of pain.

#### Conclusions

A home visit is successful in the short term. In the long term, however, this single intervention is not enough to keep women motivated to participate. A more continuous strategy and delivery of more information is needed.

### A pilot study of the migrants' satisfaction and knowledge of the Finnish health services

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#### Background

The number of migrants in Finland is rather small compared to most other countries in Europe. However, migrants and their special needs for health services pose new demands for health care. In this pilot study, we explore patient satisfaction in and knowledge of health services among the first generation migrants in Finland.

#### Methods

The migrant groups were chosen based on their size and ethnic background. Migrants' ethnicity and generational status were determined by country of birth and mother tongue. Eighty five questionnaires were collected out by using a snow-ball method. The sample included 68 migrants of Russian, Somali, Kurdish and Arabic origin and 17 Finnish native citizens.

#### Results

The majority of migrants considered that health services in Finland are relatively good, but also thought that the quality of health care services could be improved. Of the migrant groups, Russians were most unsatisfied to service quality. Most migrants reported communication problems with a medical staff. Only a few migrants had received a leaflet with information about Finnish health services in their mother tongue. Over two thirds of the migrants were not aware of their rights as a patient. Only 5% of migrants knew how to express a complaint. The migrants reported difficulties to know how to get an appointment with a physician, while the most native Finnish did not experienced such difficulties.

#### Conclusion

Our pilot study shows that migrants are relatively satisfied with health care services but they lack information on services and

their organization. The migrants' specific needs in different levels of the health service delivery are poorly recognised. As a minimum requirement, the availability of interpretation services should be substantially improved.

### Inequalities and health: the Latino American community in Genoa

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#### Background

The influx of immigrants into Italy has increased markedly in recent years. Such a high level of immigration demands on public health authorities with regard both to the state of health of these people and to the management of foreigners within healthcare facilities. The Italian National Health Service (NHS) assures urgent and essential treatment to persons present on Italian area. The aim of the present study was to analyse the demand of ED services in a Italian city (Genoa) where lives about half of Ligurian immigrants. We have assessed the Latino-American users given their considerable presence in Genoa.

#### Materials and Methods

We have examined 1 year of activity of an ED and in particularly data from 3832 Latino-American patients were compared with data from Italian population. Data were analysed by statistical software STATA SE9™.

#### Results

The ED is located close to Genoa's historical centre, where many of the city's immigrants live. The 7.51% of ED users are Latino-Americans. Of these, 50.91% had no stay permit. With regard to the triage codes assigned, the results show that 19.75% of Latin American patients were assigned a white code, 69.81% a green code, 10.07% a yellow code and 0.37% a red code. The white code is statistical different from the same registered for Italian population (7.74%). The 7.23% of the foreigners walked out without being seen (5.14% Italian), 4.46% were hospitalized (16.26% Italian) and the discharge rate was 88.31% (77.80% Italian). These patterns indicate that the ED tends to be used by the foreigners as a source of generic, rather than emergency, medical treatment.

#### Conclusions

The study brings to light a nationwide public health problem, in that it underlines the need for legal reform aimed at ensuring that foreigners with a temporary stay permit have access to a family physician in facilities independent from EDs.

### Accessibility of migrants by means of information events regarding addiction prevention using active and passive recruitment strategies in Hannover (Germany)

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#### Background

Even though there is no reliable data concerning misuse of drugs by migrants in Germany, some studies show that fewer migrants seek for help in addiction advice centres than statistically expected. In this regard migrant-specific recruitment strategies may be helpful to provide information. In Germany, the Ethno Medical Centre Hannover applied the concept of native-speaking prevention advisors. Prevention advisors are 'key persons', who organize culture sensitive information events.

The project 'Effectiveness and cost-effectiveness of the recruitment path using native speaking prevention advisors to improve the health behaviour of migrants' (2005–2008,

sponsored by the Federal Ministry of Education and Research) examines different recruitment strategies.

#### Methods

Between November 2006 and July 2007, 34 Russian and 28 Turkish language information events regarding addiction prevention were organized. Forty nine of them took place in settings of the respective cultural community (e.g. mosques, Russian associations) or institutions (e.g. vocational schools), the so-called 'approach-structure'. Twelve events were announced via poster/flyer throughout the city and conducted in public buildings ('come-structure'). The participating migrants were interviewed on their information and prevention behaviour with bilingual questionnaires. Three hundred and eighty six Turkish and 436 Russian questionnaires are analysable.

#### Results

First results show that accessing migrants via approach strategies is more effective, because recruiting via 'come-structure' resulted in two interested persons, only. First analysis of both language groups shows that participation is motivated more often by a common interest than a certain purpose to help an endangered/addicted person. A characterization of the migrants effectively reached by means of demographical structures or occurred acculturation will be presented in November.

#### Conclusions

The analysis gives information about the characteristics of migrants that respectively cannot be reached by different access paths. It contributes to a systematic development of migrant-specific recruitment strategies. Clearly unsuitable are publicly announced information events in facilities without any references to migrants.

### Preventive behaviour of Russian- and Turkish-speaking migrants in Hanover (Germany) and its impact on their quality of life

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#### Background

There are few studies dealing with health-related quality of life of migrants in conjunction with their preventive behaviour. This question and the comparison to quality of life of non-migrant Germans will be explored by the project 'Effectiveness and cost-effectiveness of the recruitment path using native-speaking prevention advisors to improve the health behaviour of migrants' (2005–2008) sponsored by the Federal Ministry of Education and Research, Germany.

#### Methods

Out of a random sample of 30 000 citizens of Hanover—drawn by the registration office—3909 Russian- and Turkish-speaking migrants were identified with the help of an onomastic method. Six hundred randomly drawn persons between 16 and 64 years were interviewed by native-speaking interviewers from January 2007 to June 2007. The questionnaire contained mostly standardized items and was translated in an elaborated procedure concerning e.g. quality of life between physical activity, alcohol and tobacco consumption. Two hundred and ninety nine Turkish and 300 Russian language questionnaires are analysable.

#### Results

First results show migrant prefer bilingual prevention information. The evaluation (which will be presented in November) allows conclusions about the differences between the quality of life of migrants and non-migrants in Germany. Second quality of life will be differentiated by socio-demographical measures. Another analytical level is the degree of acculturation, measured by time of stay in Germany, language competence, intensity of contact to German non-migrants and relatedness

to cultural origin. Last but not least the influence of preventive behaviour like smoking and drinking habits, nutrition and physical activity on quality of health can be analysed.

#### Conclusions

The results will provide details for the subjective experienced health of the Russian- and Turkish-speaking population in Germany for the first time. Conclusions about the effect of preventive behaviour will also be possible.

### Hypertension awareness, treatment and control among African and Brazilian immigrants in Portugal—a population-based study

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#### Background

Immigrants are more vulnerable to the effects of hypertension, evidencing differences in morbidity and mortality. In Portugal, no studies about hypertension treatment and control in immigrants were found. This study aimed characterizing hypertension awareness, treatment and control in African (ex-colonies) and Brazilian immigrants.

#### Methods

Individuals aged  $\geq 30$  years were selected through random cluster geographical sampling. Hypertension was defined by systolic blood pressure (SBP)  $\geq 140$  mmHg and/or diastolic BP (DBP)  $\geq 90$  mmHg, or current antihypertensive medication; awareness by the question 'Have you ever been told that you had high BP'; treatment by current use of antihypertensive drugs; control by SBP  $< 140$  mmHg and DBP  $< 90$  mmHg, determined by direct measurement.

#### Results

Three hundred and seventeen individuals were examined: 61% were women; mean age was  $45 \pm 10.9$  years; 77% were African and 23% Brazilian; mean years in Portugal was  $13 \pm 9.3$ . Overall 45.6% had hypertension. Hypertension prevalence was higher among men (54.7%) than women (39.8%) ( $P < 0.05$ ); increased with age: 19.1%, 47.8% and 81%, in individuals aged less than 35, 35–64 and 65 years or more, respectively ( $P < 0.001$ ). Prevalence of hypertension was higher among African (52.7%) than Brazilian (24.3%) ( $P < 0.001$ ). In African, prevalence varied by sex ( $P < 0.01$ ) and age ( $P < 0.001$ ). In Brazilians, these differences have no statistical significance. Overall, 42% of hypertensive were aware of their diagnosis, more Brazilian (61%) than African (31%) ( $P < 0.05$ ). Around 47% of those with hypertension were medicated, more African (50%) than Brazilian (33%) ( $P < 0.05$ ). Mean years of diagnosis is  $11 \pm 10.8$  and of medication,  $10 \pm 9.6$ ; with no differences between African and Brazilian.

Only 19% of hypertensive and 59.7% of hypertensive medicated achieved blood pressure control.

#### Conclusions

Some migrants seem to be at higher risk for hypertension, of being unaware having this disease and therefore not being treated. This data highlights inequalities among immigrants, which should be subject to further studies.

### Breastfeeding initiation and duration in African and Brazilian immigrant women in Portugal

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## Background

International research revealed an association between ethnicity and decision to breastfeed and that acculturation is associated with lower breastfeeding duration rates. To characterize breastfeeding practices in African Portuguese Speaking Countries and Brazil women we analysed data from 'Evaluation of Health and Health Assessment of African and Brazilian immigrants in Portugal' study. Study was conducted in 2007 and sample includes 1603 women of 15–55 years old.

## Methods

Individuals were selected through random simple cluster geographical sampling. Data was collected during a home visit by trained interviewers. Questions about breastfeeding were asked to women that had delivered in the last 5 years of the interview. Every-breastfeeding rates and duration rates for at least 6 months were calculated and computed by socio-demographic and cultural factors, and chi-squared statistic was used to test association with breastfeeding prevalence.

## Results

Our sample is constituted by 72% of African community and 28% of Brazilian community. Of the 374 mothers that had delivered in the last 5 years, 14% were born in Portugal, 57% in an African Country and 29% in Brazil. Every-breastfeeding was 94% and duration rate for at least 6 months was 34%. Foreign-born women (38%) are more likely to breastfeed at 6 months than Portuguese-born (14%) ( $\chi^2 = 10.094$ ;  $P < 0.005$ ). Breastfeeding for at least 6 months was also inversely associated to the number of years in Portugal ( $\chi^2 = 11.498$ ;  $P < 0.01$ ). Every-breastfeeding and breastfeeding for at least 6 months rates did not differ statistically in African-born (94% and 36%) and Brazilian-born mothers (96% and 42%). Breastfeed was also related to education level: women with higher education levels are more likely to breastfeed ( $\chi^2 = 6.323$ ;  $P < 0.05$ ); but breastfeeding for at least 6 months was not.

## Conclusions

Our study contributes to breastfeeding literature in two ways: first, no previous study analysed how immigration status affects breastfeeding practices in Portugal, despite the contribution of immigrants to the raising of births in Portugal. Second, we compared the influence of nativity and other cultural predictors to better understand determinants of breastfeeding.

## Existence of probable psychological distress in African and Brazilian immigrants in Portugal

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## Background

Immigration is a complex social phenomenon which at an individual level leads to a number of changes and difficulties, often identified as additional risk factors for the development of mental pathologies. In Europe there are some studies that address the prevalence of mental illnesses, suicide, alcohol and drugs consumption and the access and use of mental health services. However, in Portugal this is an area which we feel that has not been adequately explored.

## Methodology

A geographical random cluster sampling was carried out. Study population was constituted by 2485 migrants belonging to the African Portuguese Speaking Countries (69%) and Brazil (31%), older than 15 years. Data were collected from a main study called 'Evaluation of Health and Health Assessment of African and Brazilian Immigrants in Portugal' which was conducted in 2007, and was based on face-face interviews during a home visit by trained interviewers. Mental Health Inventory 5 (MHI-5) index, that evaluates the existence of probable psychological distress, was applied.

Cross-tabulations were used to illustrate the distributions of demographic and immigration variables according to the MHI-5, and chi-squared were used to test the association between them.

## Results

Thirty-one percent of the total sample revealed probable psychological distress. Brazilians (36%) are more likely to suffer from this condition than Africans (30%) ( $P < 0.05$ ), and women (35%) than men (26%) ( $P < 0.001$ ). Being in a legal situation is important, once the undocumented are more likely to show this problem (38%) ( $P < 0.05$ ). The same tendency seems also to be related with a recent stay in Portugal ( $P < 0.001$ ), but on the other hand Portuguese-born seem to be less vulnerable (8%) ( $P < 0.001$ ). This condition seems also to increase with the age of arrival in Portugal ( $P < 0.05$ ).

## Conclusions

It seems that, among others the age of arrival in Portugal, legal situation and recent stay are variables related with the existence of probable psychological distress. This may lead us to think that this condition is probably associated with the difficulties faced along the process of integration. More studies should be conducted in this area in order to achieve a better understanding of the factors that relate ethnicity with this condition.

## Migrants: health problems—pathologies and risk factors

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A research Public Health Project was implemented in the geodemographic area of Venda Nova, Amadora City, concerning the migrants' communities, living in city slums. They live in the suburbs, away from the centre (socio-spatial exclusion), they fit in the lower social positions and they have a low reivindication power. The goals were to identify the main health problems, in order to adequate strategies of prevention, to raise the health services efficiency and reduce inequalities. The main health problems identified were: the usual pathologies presented by the first generation migrants repeat the most commons pathologies of their origin countries; the following generations usually show the ones typical in the homecoming country; the social/ethnic minorities in each country display a health profile that is usually worse than the sanitary pattern typical in the homecoming country; ethnic minorities usually create sanitary 'islands' which, not only emphasize social inequalities, but also reproduce the dynamics of social exclusion; low enrollment in the public health vigilance projects, especially in maternal and infant health; high incidence and prevalence of transmissible diseases; school-insuccess, school-abandon and repeating; narcotrafic and drugs addiction; prostitution; and some specific diseases. This knowledge is very important to understand the main health problems of these communities, to adopt the correct attitudes and adequate measures, raising the health services efficiency and quality of health care. So, it is possible to reduce inequalities between migrants and host communities.

## Comparative description of health status, determinants and health services use among migrant population in Portugal in the National Health Interview Survey (2005/2006)

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## Background

The 4th National Health Interview Survey (NHIS4) a general multipurpose survey of a probabilistic multi-stage sample of



family households promoted by the Ministry of Health, conducted (2005/2006) by the National Institute of Health in partnership with the National Statistics Institute and the General Directorate of Health.

#### Objective

Compare immigrants, returned emigrants and Portuguese residents on health status, health determinants, health services use.

#### Methods

Data analysis from NHIS4. Age-standardized and gender-stratified prevalences.

#### Results

Data of 41 193 persons in family households in Portugal among which 1694 born outside Portugal and 3894 returned Portuguese-born emigrants were studied. A 'good or very good' perceived health status and quality of life was more frequent among immigrants. Smoking was more frequent among immigrants (men 27.7%; women 16.4%). Daily drinking high alcohol content drinks during the previous week was more frequent among returned Portuguese male emigrants (6.6%), than among immigrant (5.4%) or Portuguese never migrant men (5.1%). The National Health Service was

mentioned by more than 80% of persons in all three populations both as 'provider of health care' and 'more frequently used provider of health care'. Not using health care was more frequent among immigrant men (2.7%). No medical consultation during the previous 3 months was more frequent among immigrants (men 53.8%; women 46%). Four or more medical consultations during the same period was less frequent among immigrants (men 3.9%; women 6.4%). On average a lower proportion of immigrants reported a waiting time of more than 14 days for the last medical appointment. A 'good or very good' quality for the last medical appointment was more frequent in immigrants (89.8%) than Portuguese never migrants = 81.2%; returned Portuguese emigrants = 78.3%. Dental care use the previous year was higher in immigrant women (50.5%). Use of at least one contraceptive method was lower among immigrants (84.5%) than Portuguese never migrants (85.8%).

#### Conclusions

Evidence of a healthy immigrant effect; no evidence of lower health care accessibility by immigrants and returned Portuguese emigrants have specific characteristics.

## PUBLIC HEALTH ECONOMICS

### Beyond socio-economic health inequalities: infant mortality in Western Europe

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#### Background

The inverse relationship between infant mortality rates and the wealth of a country as expressed in the GDP per capita (PPP\$) is so robust and universal that it can be considered as the nearest thing to a law of nature in public health research. The relationship is strongest (inverse quadratic even) in developing countries but was also found in the developed part of the world albeit in a weaker form.

The aim of our study was to establish whether this is still the case.

#### Methods

Infant mortality rates and GDP per capita in PPP\$ were retrieved from the WHO Health For All database for Europe, Central Eastern European countries, Former Soviet Republics, Iceland, Norway and Switzerland. Regression lines were estimated for all countries in our sample and for the EU-15 (EU member states before 2004) and Iceland, Norway and Switzerland (EU15+), both for 1997 and 2004.

#### Results

For the total group of countries the inverse quadratic relationship between GDP per capita and infant mortality still existed in 2004, although the explained variance had decreased ( $R^2=0.81$  in 1997 and  $R^2=0.70$  in 2004). For the EU-15+ countries, an inverse linear relationship was found in 1997 ( $R^2=0.42$ ). In 2004, however, the relationship disappeared ( $R^2=0.02$ ).

#### Conclusions

In Western Europe we seem to be beyond socio-economic health differences at country level; for infant mortality, at least. That is a positive and hopeful observation for a classic element of public health policy. Two comments can be made: (1) although infant mortality rates diminished substantially over the last 50 years in Western Europe, they are not equal to zero and there are still (small) international differences and (2) socioeconomic differences in infant mortality rates may have disappeared at country level; they are still present

at individual level, so they remain a valid target for local public health policy.

### The missing public health perspective in health economics

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#### Background

The biomedical model of disease has been criticized for 'overrating' the effectiveness of modern medicine because of iatrogenesis. The purpose of this study is to evaluate the proposition that also health economic analyses based on a bio-medical model tends to overrate the economic advantages of scientific medicine.

#### Methods

Population screening for abdominal aortic aneurysm was selected as an explanatory case study. AAA can be defined narrowly from a bio medical perspective as an enlargement of the aorta, which can be diagnosed through ultrasound screening and repaired surgically. From a broader perspective AAA is in most cases also a life-style-related chronic cardiovascular disease where more than 90% of the patients have a history of smoking. A systematic search for health economic evaluations was made in Medline, Cochrane, Embase and HTA databases. Only peer-reviewed work in English or Scandinavian was included. The search period was March 1988 to March 2008. A checklist for the critical evaluation of the underlying model of disease embedded in the health economic evaluation was developed from a sociological perspective on medicine.

#### Results

Twenty-one relevant studies were identified [12 cost-effectiveness analyses (CEA), eight cost-utility analyses (CUA) and one cost-analysis (CA)]. All studies applied a bio medical model of disease, however there were some variations. All but one found screening to be cost-effective. Our analysis was not finished at the time the abstract was written.

#### Discussion

The use of a 'narrow' bio-medical model was associated with several simplifying assumptions in favour of the scientific medicine. Among other things long term costs after elective

repair were ignored, and life expectancy and quality of life for patients operated for AAA were assumed to be equal to the general age-matched population.

### Health costs evolution in Brazil: an analysis utilizing the model of components price and quantity

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#### Background

The increasing of health expenditures is one of the main questions in Health Economics. This question is genuinely relevant in Brazilian health insurance market, that deals with about one-fourth of the population of the country and that had developed the regulation since 1998, by means of Regulation Agency of Health (ANS). Theoretically, two components due cost evolution: (i) price variation (or inflation in health), that represents increasing of unitary costs and the cumulative technological incorporation; (ii) quantity variation (rising of utilization), that could be explicated by the popularization of health methods and seniorization. The aim of this study is to analyse Brazilian health insurance cost evolution, divided in

these two theoretical components, considering some market segmentation.

#### Methods

The methodology applies the concept of index number, to estimates variations index of price, amount and value. Considering the actuarial definition, product cost (value) can be separated in frequency of use (amount) and event cost (price). The source is ANS's database (2002 until 2006), that presents the market segmentation according to assistance (medical or dental plans) and to the category of the contract (collective or individual).

#### Results

Price variation shows higher evolution than quantity component, principally in individual medical plans.

#### Conclusions

In the cost evolution at Brazilian private health, the component health inflation was more intense than rising of utilization. This differentiation is more severe in individual medical plans, and one of its determinants can be the fact that this segment presents more children and old-aged people in composition of demand, in comparison to the collective ones. Considering the importance to evaluate the determinants of increasing expenditures in health, this research should be developed, investigating other segments of health and countries.

## PUBLIC HEALTH EPIDEMIOLOGY

### Adapting a Markov simulation model for forecasting the requirements of CARPs and assessing scenarios for implications of drug eluting stents and changes in trends for CHD incidence

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#### Background

Treatments for CHD have evolved rapidly over the last 15 years with considerable change in the number and effectiveness of both medical and surgical treatments such as coronary artery revascularization procedures (CARPs). Also, CHD incidence has been declining in the population mainly due to reduced overall levels of CHD risk factors and/or improved medical care for those at higher risk of heart attack. However, the 'obesity epidemic' may have slowed down this decline.

#### Methods

In this article, we expand on the use of a well validated Markov Monte Carlo simulation model for forecasting CARPs in Western Australian population during the mid-1990s (when actual numbers of CARPs are known) when there were considerable changes to CARP technology and implementation policy. Also, we develop scenarios to explore a range of reasonable forecasts for CARPs for 2001–2010 (when actual numbers of CARPs are not known) in the same population, by varying transition probabilities which may be influenced by induction of drug eluting stent (DES) and changes in trends of CHD incidence as might be caused by the 'obesity epidemic'. These objectives are obtained by examining trends in key CARP/CHD model probabilities over the 1990s, considering the improved effectiveness of CARPs from clinical trial evidence, an awareness of trends in policy and practice of CARPs and modifying the projected model probabilities of key CARP events accordingly. These model probabilities and the ones obtained by standard extrapolation methods are used as simulation inputs.

#### Results

The projected numbers of CARPs for 1995–1999 improve substantially when in addition to decreasing risks of a repeat PCI and CABG given PCI, the risks of a PCI is increased and

that of a CABG is decreased, the latter two changes to reflect changes in health policy due to the introduction of stents with PCI operations. Sensitivity analyses show that the projected numbers of CABGs and PCIs for 2001–2010 are not sensitive to the changes in transition probabilities which are likely to be influenced by DES or changes in CHD incidence. For the latter only the projected numbers of CABGs were sensitive when the risk of CHD admission for those with 'no history' of CHD was increased by 20% and the trends in all other risks continued.

#### Conclusion

The introduction of DES with PCI operations has not resulted in any substantial change in the requirements of CABGs and PCIs. CHD incidence has not increased by as much as 20% since 1998–2000 until now and thus the obesity epidemic has no imminent effect on requirements of CARPs.

### Emergency data-based syndromic surveillance in Europe

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#### Background

The European Commission funded project SIDARTHa (Grant Agreement No. HT 100953) aims at improving timeliness and cost-effectiveness of European and national health threat detection by providing for the first time a basis for systematic syndromic surveillance in Europe. The project group conceptualizes, develops, implements/tests and evaluates a real-time web-Geographic Information System-based syndromic surveillance system that automatically monitors routinely collected emergency department and ambulance service data. The paper presents the project's approach and initial results.

**Methods**

During the conceptualisation phase, international state-of-the-art and the specific European possibilities and needs are analysed. On this basis the surveillance system is implemented during the second phase. International policies and best practice in health threat detection and European (national and regional) policies and practice of health surveillance are assessed during the first work package using internet search, literature review and guided expert interviews. By applying a standardized online survey, the possibilities of data provision by the participating emergency care providers are analysed.

**Results**

A systematic classification of health threat surveillance systems including a strengths-weaknesses-opportunities-threats evaluation is developed. Suitable links for the intended surveillance system to existing ones are identified. The first broad set of health threat syndromes is selected and the consortium prepared a detailed coding manual consisting of definitions of terms, an explanation on the data structure and the coding principles, a case definition for each syndrome, and inclusion/exclusion criteria.

**Conclusions**

The evaluation results on international state-of-the-art and European practice and data reality form two parts of the standardised information basis for the conceptualisation of the syndromic surveillance system. In the next step, this will be brought together with the public health authority needs at local/regional, national and European level to be investigated using a Delphi-type study.

**How can public health reporting contribute to 'health in all policies'?**

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**Issue/problem**

Because many of health determinants are beyond the control of the health sector, intersectoral cooperation between health and other sectors is crucial to improve health. Intersectoral action for health can be supported by a health information system that takes into account the broad determination of health. Health reporting that connects health and other sectors has been suggested as a tool for intersectoral policy making.

**Description of the problem**

The aim was piloting a method for public health reporting to support and monitor intersectoral cooperation. First of all, commitment at the highest political level was ensured. Semi-structured interviews were conducted with ministers and heads of departments across sectors.

**Results (effects/changes)**

Preliminary results suggest that decision makers in other sectors already have a good understanding of the impact of their activities on health and that cooperation already exists between the health ministry and most other departments. Building on these links was identified as the most potential approach for future work. However, specific and clearly formulated ideas for cooperative measures benefiting health were rare. Furthermore legislative authorities did not see benefits of intersectoral cooperation.

**Lessons**

Political commitment, intensive involvement of public health officials and interviewee oriented preparation of examples of intersectoral cooperation were of crucial importance. The process has shown a way to build a common understanding of healthy public policy and to encourage participation of decision makers. However, initial ideas and proposals for cooperation between the sectors need further development and clarification. Furthermore, the awareness of legislative bodies about their contribution to health needs special attention.

The health sector needs to continue its advocate role and to initiate and coordinate further activities. Particularly important is to communicate about the impact of health and equity in health on social and economic development as a motivator to other sectors.

**Effect of smoking on life expectancy in Lithuania**

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**Background**

Smoking is well-known risk factor, causing or aggravating more than 20 diseases. The aim of this survey was to estimate the effect of smoking on mortality and life expectancy of Lithuanian males and females.

**Methods**

The effect of smoking on life expectancy was assessed using the method of indirect estimation by R. Peto (1992) from national vital statistics database for the year 2006. Total Lithuanian population over 35 years old was included in the analysis.

**Results**

5727 persons (5162 males and 565 females) died in Lithuania due to smoking-related diseases in 2006. One smoker, who died from smoking-related diseases, lost about 15 years of life in average. For males, the number of years of life lost due to smoking-related causes was higher if compare to females (15.3 years and 12.1 years, respectively). During the year 2006, 79 171 year of life in males and 6825 years in females population were lost due to smoking-related causes of death. The proportion of deaths caused by smoking-related diseases in males was more than seven times higher than that of females (22% and 3%, respectively). The study revealed that smoking shortened the life expectancy at birth of Lithuanian population by nearly 2 years (3.2 years in males and 0.3 years in females, respectively). About 26% of the difference between life expectancy of males and females were caused by smoking-related diseases.

**Conclusions**

These findings provide strong evidence that refraining from smoking is extremely important for reducing males/females life expectancy gap and improving health situation in Lithuania.

**Determinants of self-rated health in women: a population-based study in Armavir marz, Armenia, 2001 and 2004**

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**Background**

The study identified the determinants of poor self-rated health as an indirect measure of health status and mortality prognosis in an adult female population during a period of socioeconomic transition in Armenia induced by a number of natural and man-made cataclysms.

**Methods**

The study used data generated from cross-sectional household health surveys conducted in Armavir marz (one of Armenia's eleven administrative subdivisions) in 2001 and 2004. The surveys utilized the same instruments and study design (probability proportional to size, multistage cluster sampling with a combination of interviewer-administered and self-administered surveys) and generated two independent samples of households representative of Armavir marz. The differences in self-rated health in women respondents were analysed by three main dimensions: social, behavioural/attitudinal and psychological. Binary logistic regression models with self-rated

health as the outcome were fitted to the 2001 and 2004 datasets and a combined 2001 and 2004 dataset.

### Results

Overall, 2038 women aged 18 and over participated in the two surveys (1019 in each). The rate of perceived 'poor' health was high in both surveys: 38.1% in 2001 and 27.0% in 2004. The sets of independent predictors of poor self-rated health were similar in all three models and included severe (95% CI 2.93–5.98) and moderate (95% CI 1.29–2.39) material deprivation, probable (95% CI 1.82–3.71) and possible (95% CI 1.30–2.96) depression, low level of education (95% CI 1.06–2.58), and having ever smoked (95% CI 1.30–4.42). These predictors mediated the effect of women's economic activity (including unemployment), ethnicity, low access to/utilization of healthcare services and living alone on self-rated health.

### Conclusions

Material deprivation was the most influential factor underlying perceived poor health and largely explained the differences in self-rated health. Based on these findings, social reforms to decrease the gap between the rich and poor were recommended as a powerful tool for reducing health inequalities and improving the health status of the population.

### HAPIEE study: predictors of impaired overall quality of life and poor perceived health among Lithuanian women of Kaunas city

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### Background

Studies have frequently shown that women with obesity-related conditions have a reduced quality of life (QOL) and perceived health. We examined the association of QOL and perceived health with glucose tolerance status, body weight and factors linked to body weight to determine predictors impairing subjective health status.

### Methods

The HAPIEE study (Health, Alcohol and Psychosocial factors In Eastern Europe) comprises four random samples from Russia, Poland, the Czech Republic and Lithuania (Kaunas city). Lithuania joined the project in 2006. Study sample was randomly selected from the National Population Register Service. Planned size of the total sample is 7000 men and women aged 45–72. In this study we used the data of 2374 women examined up to June 2007. Response rate for this period was 55.2%.

Global questions about the respondents' QOL and perceived health were used in the logistic regression models to identify factors predicting them. Dichotomized variables QOL and perceived health were settled as independent variables whereas categorized body mass index, blood pressure, physical activity, smoking and fasting blood glucose level were involved as independent variables. Models were adjusted for age, education and marital status.

### Results

Of the women, 16.4% were inadequately physically active, 7.3% smoked regularly, 6.8% were quit smokers, 46.2% were obese. In 48.3% of women blood pressure was found  $\geq 140$  and/or 90 mmHg and in 29.3% fasting blood glucose  $\geq 6.1$  mmol/l. Obesity (OR 1.75, 95% CI 1.12–2.73), impaired glucose tolerance (OR 1.56, 95% CI 1.10–2.20) and inadequate physical activity (OR 2.75, 95% CI 1.83–4.14) were statistically significant predictors of poor perceived health. Inadequate physical activity increased the odd of impaired overall QOL by 38% as compared to adequate.

### Conclusions

Obesity, impaired glucose tolerance and inadequate physical activity were factors predicting poor perceived health and QOL among women aged 45–72 years. High prevalence of obesity among women should receive more attention of health policy

as a factor predicting poor subjective status and related to large number of conditions linked to reduced objective physical statement.

### Alcohol-related mortality and years of life lost in Lithuania—inequalities by age, sex and place of residence

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### Background

Alcohol-related mortality can respond strongly to control measures. The aim of the study—to evaluate alcohol-related mortality and years of life lost due to alcohol by age, sex and place of residence in Lithuania.

### Methods

Data on mortality by age, sex and place of residence (urban/rural) for the year 2006 was obtained from the Lithuanian Department of Statistics. Alcohol-related mortality (all alcohol-related deaths, alcohol-related diseases, and alcohol-related injuries) and its impact on years of life lost (YLL) was defined following the National Institute on Alcohol Abuse, USA (1996) definitions.

### Results

Alcohol-related deaths composed 8.1% of all deaths that occurred in Lithuania in 2006 (10.5% in men and 5.4% in women). The biggest proportion of alcohol-related deaths was found between 15 and 50 years of age with the highest level (23.1%) at age 15–19. One descendent due to alcohol consumption lost in average 24.2 years of life. There were no significant differences in alcohol-related deaths by place of residence. Alcohol-related YLL/1000 for the able-bodied population (15–64 years) was 32.2, reaching the highest rate of 52.2 for men in rural areas. Alcohol-related diseases composed 6.0%, while alcohol-related injuries—2.1% of all deaths with twice higher proportions for men in comparison to women. The biggest proportion of alcohol-related injuries was estimated at age 15–19 (22.6%), while alcohol-related diseases composed the biggest part (16.5%) at age 40–44. One descendent due to alcohol-related diseases lost in average 21.9 years of life and due to alcohol-related injuries—30.7. YLL/1000 due to alcohol-related diseases was 21.3, and due to alcohol-related injuries—10.9 for the population aged 15–64 with the highest rates for rural men (30.9 and 21.3, respectively).

### Conclusions

Alcohol plays a substantial role in premature mortality in Lithuania. Public health measures should be taken to reduce alcohol-related burden, particularly in early adulthood and among men, especially in rural areas.

### Mortality from infectious diseases in Lithuania: critical points in time and place

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### Background

Until recently, mortality from infectious and parasitic diseases did not deserve particular attention in Lithuania. The aim of this study was to analyse trends in mortality from infectious diseases, and to detect urban/rural inequalities by cut points over the period of 1989–2006.

### Methods

Information about the population and the deceased from infectious diseases in 1989–2006 was obtained from Lithuanian Department of Statistics. Mortality rates were age-standardized using the European standard. The regression model (Joint-point analysis) was applied to identify the best-fitting points

wherever a statistically significant change in mortality occurred. Coefficients of regression multiplied by 100 were presented as average annual changes, which were considered statistically significant at  $P < 0.05$  level.

### Results

Mortality from infectious diseases was 3.1–5.6 times higher among males compared to females during 1989–2006 ( $P < 0.05$ ). Considerable changes in infectious disease mortality for males occurred in 1995 and 2002 (annual increase by 12.6% in 1989–1995, followed by 4.1% decline in 1995–2002 and tendencies for increase in 2002–2006). Trends of female mortality were similar but with no significant cut points. Infectious disease mortality of rural population exceeded that of the urban, nevertheless, in recent years the urban/rural differences in males mortality became not statistically significant due to more rapidly increasing mortality in urban areas, while for females trends were considerably more unfavourable in rural areas, causing increasing mortality differentials. The cut points were statistically significant both in urban and rural areas in males, differing from the females, where cut points were not significant neither in urban nor rural areas. Tuberculosis contained the major part (68.5–82.3%) in mortality from infectious diseases, and determined the trends and cut points of mortality from infectious diseases.

### Conclusions

Infectious diseases, and particularly, tuberculosis, should be of the grave concern in Lithuania, requiring multisectoral effort in prevention and control, especially among males.

## HAPIEE study: high prevalence of arterial hypertension among Lithuanian urban population

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### Background

Epidemiological studies have frequently shown that arterial hypertension is one of main risk factors of cardiovascular disease. We examined the prevalence of arterial hypertension (AH) among elderly Lithuanian urban population.

### Methods

Data from the survey performed in the framework of the international HAPIEE (Health, Alcohol and Psychosocial factors in Eastern Europe) study are presented. A random sample of Kaunas city men and women aged 45–72 years old at baseline, stratified by gender and 5-year age groups, was selected from Lithuanian population register. The total planned sample size is 7000 persons. In this study we used the data of 1923 men and 2374 women examined up to June 2007. Response rate at the baseline survey for this period was 55.2%. Prevalence rates were age-adjusted using European standard population. Data on health, self-rated health status, life style, diet, socioeconomic circumstances, psychosocial factors and other data were collected using face-to-face computer assisted personal interviews (CAPI). Blood pressure was measured three times, with a 2-min interval, using an Omron M-5 digital blood pressure monitor. AH was determined in case when blood pressure (BP) was found: systolic  $\geq 140$  mmHg and/or diastolic  $\geq 90$  mmHg.

### Results

The mean values of both systolic and diastolic BP were significantly higher among men than among women ( $P < 0.001$ ). The prevalence of AH among Kaunas population was high—67% (73.1% among men and 62.1% among women,  $P < 0.001$ ). The prevalence of AH increased among both men and women. 33.5% of men and 29.3% had mild AH. The prevalence of moderate AH was significantly higher among men compared to women (20.2% and 12.8%,  $P < 0.001$ ). Severe AH was determined among 12.0% men and 6.3% women ( $P < 0.001$ ). 7.4% of men and 13.7% of women had normal BP

but they were on antihypertensive treatment during last 2 weeks.

### Conclusion

High prevalence of arterial hypertension in the urban Lithuanian population aged 45–72 years should receive more attention of health policy as a factor predicting poor subjective status and number of chronic non-communicable diseases.

## Psychosocial work environment and symptoms of angina pectoris: comparing British and Finnish middle-aged white-collar employees

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### Background

Psychosocial work stress is linked with CVD outcomes. This study aimed to examine whether work stress and working overtime are associated with angina pectoris (AP) symptoms among British and Finnish female and male employees. Previous comparative studies and evidence among women are sparse.

### Methods

Pooled data derived from postal questionnaire surveys among 45–60-year-old female and male employees of the Whitehall II Study (in 1997,  $n = 4551$ , 27% women) and the Helsinki Health Study (in 2000–2002,  $n = 6070$ , 82% women) were analysed. AP symptoms (Rose Questionnaire) were examined as outcome. Independent variables were Karasek's job strain, job demands job control, and working overtime. Logistic regression analysis was used, stratified by cohort and gender. Models were adjusted for age, marital status, occupational class, smoking, drinking, physical inactivity, unhealthy food habits and obesity.

### Results

AP symptoms were reported by 5% of women and 3% of men in the Whitehall II cohort, and by 6% of women and 4% of men in the Helsinki Health Study cohort. Older men reported AP symptoms more often than their younger counterparts, while among women this was not observed. High job strain was strongly associated with AP among men in London (OR 2.12; 95% CI 1.09–4.13) and women in Helsinki (OR 1.92; 95% CI 1.34–2.75). A similar pattern was suggested among men in Helsinki, but not among women in London. Additionally, low job control, high job demands, and working overtime were associated with AP symptoms among women in Helsinki. The patterns were similar among men in London. All found associations were independent of socio-demographic factors, occupational class, health behaviours and obesity.

### Conclusions

Psychosocial working conditions, particularly job strain, were associated with AP symptoms. The findings could not be explained by behavioural risk factors. These results emphasize the importance of psychosocial job strain to AP symptoms across national contexts.

## Social vulnerability and victims of interpersonal violence

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### Objectives

To measure the relations between social vulnerability and the risk of being victim of interpersonal violence.

### Population and Methods

The population of interpersonal violence victims was composed of 275 subjects attending, between June 2006 and February 2007, the Saint Etienne's hospital department for assault victims. This population was compared to a reference population of 7553 men and 6002 women, aged more than 16, living in the Rhône-Alpes region and examined in 2005 in the Health examination Centres (HEC) of the French General Health Insurance System. Social data were collected by questionnaire. Social vulnerability was measured by an individual index (EPICES) calculated on the basis of 11 weighted questions related to material and social deprivation and validated in many clinical situations.

The two populations were compared after standardization of the population of the HECs on various socio-demographic data of the Rhône-Alpes region. The relations between violence and the study variables were measured by odds ratios adjusted on age and sex.

### Results

The population of the victims was younger than the reference population ( $P < 0.001$ ), had a lower level of education ( $P < 0.001$ , 15% in the higher education level vs 23%) and the categories Employees and Manual workers were more frequent ( $P < 0.001$ ). Employment status was also different between the two populations, unemployment rate being higher (OR 2.25) and the retired being fewer (OR 0.41) in the victims. Subjects in social vulnerability are more frequent in the victims (57% vs 36%). The context of the aggression (family, public area or at work) varied significantly according to social vulnerability. On the other hand, most of the other assault's characteristics were not different according to social vulnerability.

### Conclusion

Social vulnerability was associated with interpersonal violence, in particular with violence in the public and family area.

### The prevalence of smoking among males in Kaunas City and its prognostic value for survival

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### Background

Smoking is one of the main controllable risk factors affecting morbidity, mortality, and survival in the population.

### Methods

For the study, we used the Automated Information Data Processing System (Automatizuota Informacinė Duomenų Apdorojimo Sistema—AIDAS) created at the Institute of Cardiology of Kaunas University of Medicine. Using the technique (a random sample) designed at the Institute, 12 241 male inhabitants (16 years and older) of Kaunas city were selected for screening. During the check-ups, document and anamnesis data were collected, the main risk factors (including smoking) were registered, and all necessary studies for the substantiation of diagnoses were performed. According to the recommendations of the WHO, all individuals who smoked at least one cigarette per day were classified as smokers. The subjects were observed since 1988 until 1998. The prognostic value of the population's survival was determined using Cox's regression model.

### Results

The study showed that smokers comprised 9.7% of 16–17-year-old male population of Kaunas city, over a quarter of 18–19-year-old males, and over 50% of 30–39-year-old males. In older age groups, the percentage of smokers tended to decrease, with only 9.0% of males at or over the age of 75 smoking. The application of Cox's regression model helped determine the prognostic value of significant attributes for the

prognostication of the studied males' survival. The evaluation of the prognostic value of significant attributes showed that the prognostic value of smoking concerning survival was greater, compared to that of ischemic heart disease or arterial hypertension (respectively, RR 1.53, 95% CI 1.33–1.76, RR 1.33 95% CI 1.15–1.53, and RR 1.32, 95% CI 1.15–1.53).

### Conclusions

Over 50% of 30–39-year-old males in Kaunas city are smokers. The prognostic value of smoking for the survival of the male population of Kaunas city proved to be greater compared to that of ischemic heart disease or arterial hypertension. Smoking is one of the main controllable risk factors conditioning the development of pathological processes, which allows health-care organizers to plan health-improvement programs.

### Relationships between job insecurity, unemployment and health

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### Background

Job insecurity has increased over the last 30 years. Socio-economic changes have led to various insecure employment categories, including fixed-term employment, part-time employment and government-sponsored jobs. This study was aimed at investigating relations between employment status and health.

### Methods

The study population was composed of 842 672 people, 26–59 years, examined between 2003 and 2005 in the Health Examination Centers of the French General Health Insurance. Employment status was defined using insecure employment (combining permanent/fixed-term contracts and part-time/full time), government sponsored jobs, and duration of unemployment (from <6 months to  $\geq 3$  years). Health indicators were poor perceived health, lack of gynecological follow-up, obesity, untreated caries and high blood pressure. Data were analysed by logistic regression adjusted on age and occupational social class.

### Results

Significant level-dependant relations with health were observed between non permanent vs permanent employments, part time vs full time and with duration of unemployment. Most odd ratios (ORs) of unemployed people were 1.5–3-fold higher than those having permanent full time contracts (reference category) and increased with duration of unemployment. For example, for poor perceived health, ORs were of about 1.5 for men with unstable contract and of about 2–3 for unemployed men. For obesity, ORs increased from 1.00 to 1.62 (95% CI 1.51–1.74) in active women and from 1.41 (95% CI 1.33–1.49) to 1.93 (95% CI 1.86–2.00) in unemployed women.

### Conclusions

This study showed that types of employment and duration of unemployment were major determinants of health inequalities. These results may suggest the need for public policies to improve health status of 'poor workers' and of long time unemployed people.

### Spatial analysis of the determinants associated to death rates by ischemic heart disease in mainland Portugal (2000–2004)

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Ischemic heart disease is one of the major causes of death in Portugal. In this study, the authors examined the spatial

patterns of death rates by ischemic heart disease and their association with the spatial distribution of some plausible determinants of the disease. Therefore, ischemic heart disease deaths, that occurred in mainland Portugal during 2000–2004, were aggregated by municipality of residence and age adjusted annual average death rates were then calculated. The spatial patterns of these rates were revealed by the evaluation of local and global Moran statistics. This analysis enabled the identification of spatial clusters associated to low or high ischemic heart disease mortality risk.

The identification of potential factors associated to the geographic variability of ischaemic heart disease death rate was accomplished through the evaluation of spatial and non-spatial regression models, using environmental, social, economic and life-style predictors.

Preliminary results indicate relevant geographic variation of ischaemic heart disease death rates by municipality, with high-risk areas located at the centre and south of mainland Portugal. The geographic variation of the Log Transformed Age Adjusted Ischemic Heart Disease Death Rate (LAAIHDDR) by municipality showed moderate but significant spatial dependence (Moran's I statistic = 0.49;  $P = 0.001$ ), suggesting the application of a spatial regression model.

LAAIHDDR revealed significant linear association with the following log transformed variables: age adjusted smoking prevalence in 1998 ( $r = 0.561$ ;  $P < 0.01$ ), annual average daily temperature ( $r = 0.536$ ;  $P < 0.01$ ), unemployment rate in 1991 ( $r = 0.403$ ;  $P < 0.01$ ), minimum distance to main hospital ( $r = 0.150$ ;  $P = 0.012$ ) and proportion of municipal surface occupied by forest ( $r = -0.350$ ;  $P < 0.01$ ). A linear multiple regression model including former variables, explained 41.5% of the observed geographical variation of LAAIHDDR by municipality. Since there is evidence of a significant spatial dependence, a spatial regression model should provide better results, to be shown in our final presentation.

### Economic difficulties and common mental disorders among Finnish and British employees: the contribution of social and behavioural factors

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#### Background

Economic difficulties are associated with common mental disorders but the explanations for these associations have not been adequately investigated. This study aims to examine the contribution of social and behavioural factors to the associations of current economic difficulties with common mental disorders (CMD) in employee cohorts from Finland and Britain.

#### Methods

We used cross-sectional survey data from the Helsinki Health Study ( $n = 3949$ ) and the Whitehall II Study ( $n = 3116$ ). Participants were white-collar public sector employees aged 45–60. CMD were measured with the GHQ-12. Inequality indices from logistic regression analysis were used to examine the association of current economic difficulties with CMD, and the contribution of other past and present socioeconomic circumstances, health behaviours, living arrangements and work-family conflicts to this association.

#### Results

Clear associations between current economic difficulties and CMD were found. Adjusting for work-family conflicts attenuated the associations by ~30–70%. Adjusting for indicators of past and present socioeconomic circumstances, health behaviours and living arrangements had generally negligible effects on the associations. The results were very similar among both sexes in the two cohorts.

#### Conclusions

Conflicts between work and family contribute to the association between economic difficulties and CMD among white-collar employees in both Finland and Britain. Supporting people to cope not only with everyday economic difficulties but also with work-family conflicts may be important for reducing inequalities in mental health.

### Educational inequalities in the amount of alcohol consumption in different European regions

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#### Background

Alcohol abuse has been identified as a main contributor to socioeconomic inequalities in male mortality in Europe. Evidence from mortality studies suggested this contribution to be larger in southern and eastern European countries as compared to western and northern countries. However, there is yet no direct evidence from alcohol prevalence data to support this suggestion. The objective of this analysis is to compare countries from different European regions with regards to educational inequalities in average alcohol consumption.

#### Methods

We collected and harmonized data from national health interview surveys carried out after 2000 in the south of Europe (Italy, Spain), the west (Belgium, Germany, England), the north (Denmark, Finland, Norway), the Baltic (Lithuania, Latvia, Estonia) and the east (Hungary, Slovak and Czech Republics). For each of these countries, estimates of average weekly alcohol consumption were made on the basis of detailed questions on alcohol consumption patterns during the past week. Associations with educational level were assessed using age-standardized prevalence rates and the Relative Index of Inequality.

#### Results

We found important variations by gender and country in the relationship between educational level and mean alcohol consumption. Among men in the south and east, alcohol consumption was higher among lower educated men (ca. 50% difference), while in western and northern countries, alcohol consumption was higher among high educated men (ca. 15–35% difference), with the Baltic in-between. Among women, all countries showed a similar pattern of higher alcohol consumption among high educated (ca. 25–50% difference). Different patterns were observed with regards to binge drinking.

#### Conclusions

The results support the suggestion from mortality studies that regular alcohol consumption made a large contribution to inequalities in mortality among men, especially in the southern and eastern countries. Prevention of excessive alcohol consumption among lower socioeconomic groups is an essential part of policies to reduce inequalities in mortality among men especially in these countries.

### The impact of sleep complaints on sickness absence

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#### Background

Sleep complaints are a prevalent public health problem, but their determinants and consequences are poorly understood. Medically confirmed sickness absence, reflecting general health and work ability, may partly be due to poor sleep. This study

examined whether sleep complaints predict subsequent sickness absence of various lengths among middle-aged women and men.

#### Methods

The data included 5470 female and 1464 male employees of the City of Helsinki surveyed at baseline in 2000–2002. Questionnaire survey data were linked to the employer's sickness absence register data until the end of 2005, providing a mean follow-up time of 3.5 years. Associations between sleep complaints and self-certified (1–3 days) and medically confirmed absence spells of various lengths (4 days or more, 14 days or more) were examined using Poisson regression. Self-reported sleep complaints during previous month included troubles falling asleep and staying asleep, and waking up several times per night. Respondents were categorised into those with frequent sleep complaints, moderate sleep complaints and good sleepers. Data about use of sleep medication (hypnotics) were derived from the Finnish Social Insurance Institution's registers of reimbursed medication. Additionally, questionnaire data provided information about working conditions, shift work, socio-demographic and socio-economic indicators, health behaviour, pain as well as mental and physical health.

#### Results

Sleep complaints were strongly associated (RR 1.70–2.00) with sickness absences of various lengths among women and men. Adjusting for sociodemographic, socioeconomic, work-related factors, health behaviour and obesity did not affect the association. Adjusting for pain and use of sleep medication slightly attenuated the association but it remained statistically significant. The results were similar for women and men.

#### Conclusions

Sleep complaints were an independent predictor for sickness absence among middle-aged women and men even after other pertinent risk factors were accounted for. Thus, sleep complaints need more attention in occupational health care.

### Ethnic differences in subjective health and health behaviour among Lithuanian adult population.

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#### Background

Information of ethnic differences in life style is important since some ethnic groups may be particularly vulnerable to the adverse health effects associated with health behaviour. The objective of this study was to evaluate ethnic differences in subjective health and health behaviour among various ethnic groups in Lithuania.

#### Methods

In 1994–2006 seven cross-sectional surveys have been carried out within the international Finbalt Health Monitor project. For every survey random sample of 3000 Lithuanians aged 20–64 was taken from the National Population Register. The response rates varied from 59.2% to 74.4%. The majority of respondents were Lithuanians (85.3%), 6.2% Russians, 6% Poles and 2.5% other nationalities. The study material was collected by mailed questionnaires. Multiple logistic regression was used for evaluation of relationship between ethnic group and lifestyle factors.

#### Results

Lithuanian women evaluated their health better than Russian women did (39.4% and 31.9% respectively;  $P < 0.05$ ). The proportion of daily smoking Russian women was higher (18.4%) compared with Lithuanian women (12.9%). No ethnic differences were found in prevalence of daily smoking among men. Drinking of strong alcohol at least once a week was reported by 41.5% of Polish, 33.1% of Russian and 28.4% of Lithuanian men ( $P < 0.05$ ). Differences in physical activity by ethnicity were found only among women. Nutrition habits were related with ethnicity. Russian people compared with

Lithuanians drank less high-fat milk, consumed less meat and meat products, however they more often used vegetable oil for cooking.

#### Conclusions

The obtained data on ethnic differences in self-reported health should be taken in to account when planning interventions designed to eliminate these disparities.

### Physical nicotine dependence among Lithuanian adult smokers

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#### Background

In Lithuania tobacco is the most important preventable cause of premature mortality. The main health hazards of smoking can be reduced when smokers quit. The smoking cessation methods are related to the level of nicotine dependence. The aim of the study was to evaluate nicotine dependence among Lithuanian adult smokers, according to social factors and former attempts to quit.

#### Methods

Since 1994, seven health behaviour surveys have been carried out within the international Finbalt Health Monitor project. An independent national random sample of 3000 inhabitants aged 20–64 was drawn from National Population Register for every survey. The data were collected through mailed questionnaires. The response rate varied from 59.2% to 74.4%. Physical nicotine dependence was assessed using Fagerström test. Three levels of dependence were defined: low 0–3 scores, moderate 4–7 scores and high 8–10 scores. The data of 2326 smoking men and 706 women were analysed.

#### Results

In 2006, the prevalence of smoking was 43.4% among men and 14.5% among women. Since 1994, it has more than doubled among women and has not changed among men. However, the proportion of smoking men with university education has declined significantly. Nicotine dependence of smoking men was higher than that of women. The majority of women (72.1%) and 44.6% of men were moderately dependent on nicotine. High level of nicotine dependence was found only in 3.1% of smoking men and 0.4% of women. Nicotine dependence increased with age. Three quarters of smokers reported serious attempts to give up smoking. Highly and moderately dependent persons made serious attempt to quit smoking less often compared to those with low level of nicotine dependence.

#### Conclusion

The obtained data on the nicotine dependence among adult smokers should be taken into account in the elaboration and implementation of national smoking cessation and treatment strategy in Lithuania.

### Salutogenetic and pathogenetic factors of equal importance to predict mortality in a Swedish general population

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#### Background

Pathogenetic factors are by definition supposed to have negative impact on health and often on survival. On the other hand studies of different populations have demonstrated the importance of social factors, such as support and social capital, as well as lifestyle factors as salutogenetic for perceived health. The relationship between pathogenetic and salutogenetic factors in relation to mortality is, however, less investigated. The aim of this study was to compare the impact of pathogenetic and salutogenetic factors in predicting mortality.



**Methods**

A random sample of an adult (age 35–74) Swedish general population ( $n=1498$ ) responded to a comprehensive questionnaire on health, diseases, lifestyle, work and socioeconomic factors in 1988. Mortality data for this cohort between 1988 and 2002 was obtained from the national register of causes of death. Cox proportional regression analyses were used to study initially reported factors influencing survival. A final analysis was performed with factors bivariately related to survival ( $P<0.20$ ). Results were expressed as hazard ratios (HR) for death, adjusted by age and sex.

**Results**

In the multivariate analysis the significant ( $P<0.05$ ) salutogenetic factors were social support from friends (HR 0.64) and regular physical exercise (HR 0.63). Daily smoking (HR 1.78) and chronic illness (HR 1.65) were the significant pathogenetic factors in the same analysis.

**Conclusions**

Social support and physical exercise seem to be salutogenetic factors of equal importance for survival to balance traditional risk factors such as smoking and defined diseases. The results support health promotion initiatives focused on salutogenetic factors and not only on traditional risk factors and diseases.

**Drunk driving in Finland between 1989 and 2007**

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**Background**

Driving under the influence (DUI) of alcohol is considered a serious road safety problem. People with DUI arrests are often associated with alcohol dependence and health problems. The aims of the study were to investigate the incidence and trends of suspected drunk driving during 19 years between 1989 and 2007 by age and sex in Finland.

**Methods**

The data included all suspected drunk driving cases ( $N=440\,000$ ) in Finland between 1989 and 2007. Cases involving illicit or medical drugs were excluded. The data were limited to motorized road traffic. The annual incidence per 1000 population by sex and age was calculated.

**Results**

The changes in the number of drunken driving cases followed turns in the trends of economic development and changes in overall alcohol consumption. These changes were strongest amongst 18–19-year olds whose incidence rate was halved from 20.5 to 10.2 per 1000 population between 1990 and 1994. The proportion of women among drunken drivers was almost doubled from 6.5% to 11% of all cases. The incidence of drunk driving among those over 50 years increased 2.5-fold. Most events took place during the weekend nights.

**Conclusions**

The proportion of women and the aged among drunk drivers has steadily increased. Still, young men aged 18–19 years are at the highest risk of committing drunken driving offences. Alcohol consumption shapes drunk driving more among the young than other drivers. Preventative measures in healthcare should be targeted for youths close to the legal age of driving. Traffic control is needed, especially during weekends, national holidays and late hours.

**Socioeconomic differences in the association between sickness absence and mortality**

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**Aim**

To examine duration of sickness absence as a risk marker for future mortality by socioeconomic position among all private sector employees in Denmark 1998–2004.

**Methods**

This prospective cohort study studied all private sector employees receiving sickness absence compensation from the municipality in 1998. A total of 236 207 persons (38.2% women, 61.8% men, age range 18–65, mean age 37.8) who were still alive 1 January 2001 were included in the study. Mortality during the period 1 January 2001 through 31 December 2004 was assessed using national register data. Deaths in 1999 and 2000 were excluded to determine the status of sickness absence duration as an early risk marker.

**Results**

A total of 3040 persons died during follow up. The age-adjusted risk of future mortality increased by duration of sickness absence in a graded fashion among men and those in non-blue-collar occupations. Among women and blue-collar workers, there was no association of mortality with duration of sickness absences below 6 weeks. However, employees with >6 weeks of absence compared to those with 1 week of absence had a substantial excess risk of death in all groups; adjusted hazard ratio 2.2 (95% CI 1.8–2.7) for women; 2.1 (1.8–2.4) for men; 3.7 (1.9–7.2) in white collar occupations; 3.3 (2.1–5.0) in intermediate grades; and 2.0 (1.7–2.3) in blue-collar occupations.

**Conclusion**

A clear graded association between increasing length of absence and increasing risk of future mortality was found for men and all occupational grades except blue collar workers. Experiencing more than 6 weeks of sickness absence identified a group at considerable excess risk of death among men and women and in all occupational grades including blue collar occupations. The use of information on sick leaves may improve the effectiveness of secondary prevention interventions by policy makers, case managing authorities, employers and physicians.

**Seniors dental health between 1999 and 2004 in France**

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**Introduction**

The increasing aging of the population puts the question of access to health care, especially in dental care. In order to identify specific dental health problems and individuals at higher risk, this study aimed to analyse seniors' dental health according to social and behavioural factors.

**Methods**

The study included 199 381 seniors aged 65–74 years, examined between 1999 and 2004 in the Health Examination Centers of the French General Health Insurance. We used five dental health variables: DMFT (number of decayed, missing and filled teeth), presence of at least one untreated decayed tooth, number of present tooth, insufficient masticatory surface, and total edentation. Analyses were stratified by gender. Multiple logistic regression analysis was used to estimate effects of cofactors on dental health variables: age, residence, occupational class, social deprivation, dental consultation, body mass index, tobacco, alcohol, dental plaque, tartar, ageing indicator. Evolution of dental indicators was described between 1999 and 2004.

**Results**

This study showed that several characteristics increased risk of dental illness: social status, no dental visit since 2 years, tobacco smoking, presence of dental plaque, premature aging.

Manual workers presented a risk to have less than ten teeth increased by 1.8 in comparison to executives. Smokers had a higher CAO, a risk of insufficient masticatory surface multiplied by 1.7 and 3.6 times more risk being toothless. Having theoretical age 10 years older than civil age multiplied by 4.6 the risk to be toothless. Most deprived seniors had a threefold risk of insufficient masticatory surface.

#### Discussion

Despite a light decrease of some dental health's problems between 1999 and 2004, the seniors' dental health remains worrying and highly dependent on several cofactors upon which preventive measures can be used.

### Conceptual framework of sickness absence and return to work, focusing on both the individual and the contextual level

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#### Background

In order to facilitate sickness absence and return-to-work research design in an efficient way, a conceptual framework focusing on both the individual and the contextual level is needed. Categorizing the individual and workplace level factors in a conceptual framework encompasses both sickness absence and return to work. Testing the practical use of the conceptual framework 'The Dynamic Work Disability Model' in study design and interpretation of five studies in a Danish context.

#### Methods

The project features five prospective cohort studies focusing on associations between work environment and different sickness absence and return to work outcomes. These five studies utilize two different work environment cohorts and a national sickness absence register data. The following analyses were performed: Logistic, Cox, multilevel logistic and Poisson regressions.

#### Results

The overall results describe and specify the basic epidemiology of sickness absence in the Danish labour market context. Results show that 20% of the employees account for 80% of total days of sickness absence. The project identified high-risk job groups, employer characteristics, and risk according to educational level. Obesity, current or former smoking, poor self-rated health, female gender and increasing age were associated with sickness absence and employees with sickness absence have lower self-efficacy than the working population in general. Furthermore, several psychosocial and physical work environment risk factors were identified and interaction effects were found between individual and workplace level dimensions. Intervention towards reducing sickness absence may be more effective if it simultaneously addresses both the individual and contextual level of the workplace.

#### Conclusions

Due to the complexity of work disability, this study adds only limited knowledge in understanding this multidimensional problem as a whole, in contrast the results add knowledge about risk factors associated with the different phases of the dynamic work disability process.

### Inequalities in HIV: findings from enhanced surveillance of HIV/AIDS in the North West of England

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The strong relationship between ill health and poverty has been well documented. However, little has been done to map HIV prevalence by deprivation in the UK or to investigate the effect

of poverty on a person with HIV. Enhanced surveillance data collected by the HIV/AIDS Monitoring Unit (Centre for Public Health, Liverpool John Moores University) was linked to the Index of Multiple Deprivation and a population segmentation tool (P2 People and Places, Beacon Dodsworth). Age standardised population prevalence and incidence of HIV was calculated for each deprivation quintile and P2 category using 2003–2005 data. Additionally, adverse health outcomes of individuals with HIV (measured by hospital admission) were compared by deprivation category.

The prevalence of HIV in the most deprived quintile (83 per 100 000) was 6.6 times higher than that of the least deprived (12 per 100 000), while the prevalence of new cases was 13.3 times higher (<2 compared to 21 per 100 000). The prevalence among P2 categories generally increases with deprivation, but some categories ('qualified metropolitans' and 'new starters') had relatively high prevalence and one of the most deprived groups, 'disadvantaged households' had a relatively low prevalence. Those from poorer areas were more likely to be admitted to hospital (adj. OR 1.5, 95% CI 1.083–1.955;  $P=0.013$ ) after controlling for ethnicity, route of infection, stage of disease, age and gender. Non-UK nationals were most likely to live in the poorest areas.

HIV is strongly related to poverty. Population segmentation allows us to describe those most at risk (e.g. new starters are young adults, including students, who are interested in politics and read broadsheets) and design appropriate prevention messages. HIV-positive people from less deprived areas are less likely to suffer HIV-related ill-health. Health networks in the most deprived areas not only provide HIV services to a greater number of people, they also provide a disproportionately high rate of inpatient care.

### Effects of the Danish iodine fortification programme on the use of thyroid medication

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#### Background and aim

Before iodine fortification (IF) Denmark was an area of mild to moderate iodine deficiency with the more severe deficiency in the western parts of the country. To prevent goitre and the following hyperthyroidism a voluntary iodine supplementation programme was started in 1998, and in 2000 changed to a mandatory. The aim of this study was to monitor the effect of IF on the use of thyroid medication. A temporary increase in the use of antithyroid medication was expected, as seen in other countries following introduction of iodine supplementation, but the quantity and duration was unknown.

#### Methods

Information about nationwide use of thyroid medication was extracted from the National Register of Medicinal Product Statistics (1995–2006) and linked on a personal level through the Danish civil registration number to gain information on place of residence, age and gender.

#### Results

An increase of 43% in the number of new users of antithyroid medication was seen among elderly women in Western Denmark in the first years of IF (1998–2001). In Eastern Denmark the increase was only 9%. After 2001 a decrease was seen, reaching beyond pre-fortification level in 2006. Total use of antithyroid medication also decreased, but without reaching pre-fortification levels.

#### Conclusions

A large increase in the number of new users of antithyroid medication was seen in the first years of IF, especially in Western Denmark with the more severe iodine deficiency prior to IF. Even though the number of new users reached pre-fortification levels for the largest patient groups in 2006, total use remains markedly elevated and it may take many years

before a net gain is reached. This study shows that even careful introduction of iodine supplementation has profound effect on the occurrence of thyroid diseases and thereby the use of thyroid medication.

### Death attributable to tobacco smoking in Italy

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#### Background

Tobacco smoking is currently the predominant health burden in developed countries. In the European Community smoking is responsible annually of 520 000 deaths. Though health consequences are well known, millions of people keep on smoking, and annually millions of adolescents start smoking cigarettes. Smoking prevalence, attributable morbidity and mortality have to be carefully monitored in order for the policy makers to plan prevention and cessation campaigns.

#### Methods

Data on smoking prevalence were collected through standard surveys administered to a representative sample of the Italian population (>14 years old) every 3–5 years between 1980 and 2005 by the Italian National Institute of Statistics (ISTAT). Data were stratified by sex and adjusted by age to allow comparisons among years. The proportion of death due to tobacco smoking (attributable mortality) was estimated applying Relative Risks of smoking related death obtained from the literature to mortality data 1996–2003 taking into account the prevalence data of smoking with 15-year latency.

#### Results

The prevalence of tobacco smoking in Italy was 36% in 1980 and 23.2% in 2005. The reduction is observed among men only, particularly the elders and those with high education. The proportion of smokers among females is stable around 18%. In the year before the 2005 interview, 29.8% of smokers tried to quit but only 9.6% of them were successful. Most of the attempts were done without help (90.5%), though a higher proportion of cessation was obtained when a doctor was consulted. In 2003 12.0% of deaths among people over 35 years old were related to tobacco smoking, with a decrease among men (–11.8% compared to 1996) and an increase among women (+26.5%), with cancer of trachea, bronchus or lungs as the main cause, followed by heart attack. When considering people 35–74 years old the attributable proportion rises to 17.7%.

#### Conclusions

In Italy about 69 000 deaths are attributable annually to tobacco smoking. These deaths could be prevented if the smoking habit was avoided. Policies for prevention and cessation of smoking habit should be implemented; their effectiveness can be evaluated monitoring the annual statistics.

### Exposure and selection mechanisms in the disability pension process: a comparison of two Swedish groups of disability pensioners

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#### Background

Research emphasizing mechanisms of the disability pension process are very rare. The aim of this study was to

identify similarities and differences in work and health history between persons who, prior to disability pensioning, changed jobs for health-related or non-health-related reasons.

#### Methods

A retrospective cohort study was performed on a random sample of all individuals in Sweden who, in 1998, were under the age of 65, lived in Norrbotten, Örebro or Dalarna County, and had been granted disability pension. A questionnaire was administered in 2000 ( $n=917$ , response rate 52%), and the questionnaire data and register data on sickness absence in 1990–1998 and disability pension diagnoses were analysed statistically ( $P<0.05$ ).

#### Results

The health selection group had lower self-perceived health in general and for a longer time, with a diagnostic panorama that often included musculoskeletal and psychiatric disorders, and more partial sick days during the 8 years before disability pension. The two groups did not differ regarding number of full-time sick days or occupational affiliation before the last job. However, there were differences related to the final job: more subjects in the health selection group had changed jobs but not employer, and had switched to jobs entailing less physical strain, particularly customer service work. Distribution of work history also differed between the groups, e.g. regarding physical work demands, and length of the final job.

#### Conclusions

The findings pinpoint the importance of studying disability pensioning as a process over time regarding variations in paths to disability pension, in order to identify and elucidate how exposure and selection interact and contribute to early exclusion from the labour market. Particularly important in that context is the impact of health problems on job change. Further longitudinal, and preferably prospective, studies are required to explain the complex phenomenon of disability pension and thereby facilitate preventive actions.

### Oral health-related quality of life in Czech population

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#### Background

Oral diseases such as dental caries or periodontal disease are highly prevalent. The consequences of oral problems are not only physical; they are also economic, social and psychological. They seriously impair quality of life in a large number of individuals and can affect various aspects of life, including oral function, appearance, and interpersonal relationship. The purpose of this study was to use the Oral Health Impact Profile questionnaire (OHIP-14) to evaluate oral health-related quality of life in Czech population.

#### Methods

A total of 1380 respondents aged 30–69 participated in the study. Oral health related quality of life was measured with OHIP-14 that was translated to Czech. Data was collected from March 2006 to September 2007. Statistical analysis was performed using the chi-squared, Mann–Whitney and Kruskal–Wallis ANOVA tests.

#### Results

Internal reliability for the 14 items overall was very high (Cronbach's  $\alpha=0.92$ ). Report of 'uncomfortable to eat' and 'painful aching' were two most highly scored items. OHIP-14 scores were significantly correlated with age, income level, the use of mouthwash, frequency of preventive check ups, dental status, self-assessment of both dental and general health, smoking, and alcohol intake.

### Conclusions

The OHIP-14 in Czech had a high internal reliability, was significantly associated with dental status and comparable ranking for items when compared with studies from other counties.

### Acknowledgements

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### The EUPHORIC project: outcome indicators collection in Europe. Results of the second phase (pilot)

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### Background

The EUPHORIC project ([www.euphoric-project.eu](http://www.euphoric-project.eu)), funded by the EC (DG SANCO—Public Health Programme 2003–2008), is a consortium of 16 institutions from 10 countries whose aims are to define and test outcome indicators in some relevant areas of pathology as well as to produce protocols to collect, harmonize and analyse data by integrating the ECHI list.

### Methods

Based on the results obtained during the survey phase, it was feasible and more efficient to use existing recent population-based registers and routinely collected hospital discharge data rather than ad hoc active data collection. Orthopaedic and cardiovascular areas of pathology were taken into consideration for the pilot because of their high clinical and political relevance and also because all the participants were able to provide information in these areas. An electronic questionnaire was developed to input and validate the information collected during the survey phase.

### Results

The cardiovascular pilot defined a simple set of factors that determine quality of health care outcome in myocardial infarction patients who underwent CABG, coronary angiography, or percutaneous revascularization. The orthopaedic pilot findings describe how to develop outcome indicators for arthroplasty based on the existing national projects according to the requirements of ongoing European Commission projects. A browsable web-based database which includes the data from the questionnaire was developed.

### Conclusions

The indicators for the cardiovascular pilot were analysed in the context of characteristics at individual, hospital and country levels in order to benchmark hospitals according to their adjusted risk. The orthopaedic pilot resulted in defining best practice procedures so as to develop and operate arthroplasty registers. The web-based database will give an overview of what is currently available in the participating country regarding the selected 54 outcome indicators.

### A web-based system for dynamic access to health data and indicators

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### Issue

Recent evolutions of the ICT methods and tools allow the definition of a new generation of systems able to access a wide range of health data from current sources. For several years in Piedmont (Italy) web applications to access demographic data and the most important static health and epidemiological indicators have been available. With the effort to make the information available and shared between local communities, their representatives and decision makers, the need of new systems to describe the territorial distribution and the temporal evolution of health problems and resources has become visible.

### Intervention

To address these needs, a new application 'MADEsmart' has been defined and designed. The main requirements of the application are the following:

- web access to registered and authorized users;
- integrated access to several data sources;
- dynamic selection of the population to be analysed, according to the value of every single available variable; by this way, the system is not only a browser of pre-computed indicators but a true analysis engine;
- use of a library of indicators whose algorithms are defined in the system and opportunity to create new indicators;
- faculty to define new aggregations of the available values, allowing for instance the definition of new territorial areas and new pathologies aggregations;
- possibility to use the values of the computed indicators as selection criteria for new queries;
- production of the results in the form of tables, maps and charts exportable in personal productivity tools.

### Results

As of April 2008, MADEsmart contains data about mortality (1992–2002), demography (1992–2006) and hospital discharges (2000–2006). Presently the size of the stored data is about 1.6 gigabytes. The system has been implemented using version 9.1.3 of SAS System for the back-end features in connection with Java/JSP language for the front-end.

### Lesson

More than 100 users have been instructed to the application and an assistance support service has been activated. MADEsmart is able to support users to compile reports on health status at the subregional level.

### The effects of wealth and income on self-rated health

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### Background

Income inequalities in health have been documented by many studies, but less is known about wealth as a determinant of health. Wealth is likely to better capture long-term accumulation and stability of material resources than income. Thus we aimed to study the mutual effects of wealth, income and employment status on health.

### Methods

The data were collected with a mail questionnaire in 2007 and the participants of the study were 45–67-year-old men and women who had been employed by the City of Helsinki in 2000–2002. The study was limited to married or cohabiting participants ( $n=3929$ ). We used the relative index of inequality to measure the association of both household income and wealth with less than good self-rated health in logistic regression models.

### Results

The relative indices of inequality for wealth and income as determinants of less than good self-rated health were 3.38 and 3.91, respectively, when adjusted for age and gender only. When simultaneously adjusted for each other, current

employment status and work conditions 6 years earlier, the associations were reduced to 2.32 for wealth and 1.72 for income.

### Conclusions

The results suggest a marked effect on health for wealth independent of current household income. The health-effect of wealth is somewhat less likely to be caused by reverse causation than that of income, and thus our results support the hypothesis of a causal effect of material welfare on health.

## The association between oral health and income inequality, according to income levels, in Brazil 2003

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### Background

Relative and absolute income may act through different mechanisms. Their relative importance may change as absolute income increases. Our aim was to evaluate the association between income inequality and oral health and to assess whether measures of absolute income, at city and individual levels, modify this association.

### Methods

We used data from a national oral health survey designed to assess dental caries in Brazil in 2002–2003. We increased income and Gini range by adding a sample enlargement from two rich states (RS and SP). Data collection included oral exams and a questionnaire on sociodemographic characteristics, access, and use of dental services. The present analysis included 23 568 15–19-year-olds and 22 839 35–44-year-olds. Individuals were nested in 330 municipalities. The outcomes analysed were the number of untreated dental caries (count), having at least one missing tooth (dichotomous) and being edentulous (dichotomous). Different models were tested using multilevel analysis. To assess interaction as a departure from additivity we used the Synergy Index and dichotomised the Gini coefficient in the median value and the income in the point beyond which it showed roughly no effect.

### Results

The rate ratio of mean untreated dental caries, respectively for the 15–19 and 35–44 age groups, was 1.16 (95% CI 1.08–1.26) and 1.17 (95% CI 1.09–1.26) for each 10 points increase in municipal Gini coefficient (Gini was set to vary from 0 to 100) after controlling for potential confounders. The odds ratio of a 15–19-year-old having at least one missing tooth or a 35–44-year-old being edentulous was, respectively, 1.19 (95% CI 1.05–1.35) and 1.01 (95% CI 0.86–1.17). Living in a big income inequality city had a synergistic effect with being poor or living in a poor city for most outcomes analysed; however none of the coefficients were statistically significant.

### Conclusions

Bigger city level income inequality was associated with worse oral health even after controlling for individual level variables. City level income inequality showed no additive effect on the risk scale with either individual or municipal absolute income. City level income inequality had a similar, detrimental effect, among individuals with lower or higher income.

## Mortality risk in relation to select dimensions of psychological health in a population sample of elderly residents in Kraków

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Attempts at defining psychological dimensions of health in older people usually reference not only psychological wellbeing or positive emotions, but most especially symptoms of depression as well as being oriented to time and place. The significance of these dimensions for healthy aging and longevity constitute the basis of this attempt to examine how select dimensions of psychological health may determine mortality risk in older age.

The baseline study—part of the Central European Network on Health Aging, conducted in cooperation with the Northern Center for Health Care Research (University of Groningen in Holland)—was completed in 1999–2001 in a randomized sample of 552 Kraków residents, aged 65–85 years. This analysis used the SF-20 test to measure psychological health, the HADS-D scale to measure depression, and the MMSE to measure mental functioning.

Cox multivariable proportional hazard model found that level of depression symptoms were a significant predictor of mortality, increasing mortality risk in males (HR1.09, 95% CI 1.01–1.19). Frequency of contact with one's adult children was found to be an independent predictor, decreasing mortality in men (HR 0.78, 95% CI 0.62–0.99). In relation to women, no elements of psychological health were found to act as independent predictors of mortality. However, level of self-mastery was found to be a significant predictor of mortality in women (HR 0.93, 95% CI 0.89–0.98). Noteworthy is that in unidimensional analyses connected with social relationships (e.g., one's children, others), support leading to a feeling of self-worth and self-control were found to be protective factors, restricting mortality risk. However, in further multidimensional analyses, certain factors lost their significance.

## Patterns of alcohol consumption in the elderly: trends (1998–2006) in France

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### Background

'Baby-boomers' grew in social acceptance of alcohol consumption. However the misuse of alcohol could lead to serious health problems in the elderly. The aim of this study was to describe the patterns of alcohol consumption in the elderly and to estimate the trends from 1998 to 2006.

### Methods

We carried out a repeated cross-sectional study. Data collected during the periodic health examination (PHE) among people aged  $\geq 65$ , referred to the 85 Centers for health prevention of the French health insurance were used. The PHE included clinical examinations, several tests and autoquestionnaire. Alcohol use was assessed using the autoquestionnaire. Alcohol users were classified as: non users, former users, episodic users and regular users. The outcome measure was the annual prevalence rate of alcohol consumption. The Joinpoint regression analysis was used to compute temporal changes in alcohol use.

### Results

330 948 participants were included in the study. 50.2% were men and the mean age was  $70.02 \pm 4.5$  years [65–98]. 68.2% live in couple. 71.6% of participants used at least one medication. 34.8% (48.6% of men and 20.7% of women) were regular alcohol consumers. The annual rates of regular users decreased significantly from 38.2% in 1998 to 28.9% in 2006. The Annual Percent Change (APC) was  $-3.9\%$  per year [ $-4.9, -2.9$ ];  $P < 0.000$ . About 2% of participants were former users. The trends in this group were unchanged. There was a generational effect on the trends of alcohol use: participants born in 1923 consumed more alcohol than those born in 1933 at equal age.

## Conclusions

This study showed a decrease in alcohol consumption in French elderly from 1998 to 2006. However, the prevalence rate remained high and the fact that there was no change in the trends of former users for the observed period suggests that improvements in health prevention programs in this topic are still needed.

## Sexual behaviour of undergraduate students from Timis County, Romania

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### Background

In early 1990s, after a long period of a communist regime, Romania managed to adapt to a market-oriented system. During this post-communist period, changes in sexual behaviour have been prominent. However, little has been reported on sexual behaviour and practices of sexually active groups in Romania, especially youth.

### Objectives

The aim of this study is to analyse sexual behaviour among undergraduate students studying in Timis county area.

### Design and Methods

This study is part of a type A grant financed by the National University Research Council. We conducted a cross-sectional study using a stratified cluster sample design to produce a representative sample of undergraduate students for Timis county, Romania. A 126-item questionnaire was developed to investigate health-risk behaviours of young adults and 12 items were dedicated to sexual behaviour. The study was carried out between May and June 2005. The selected Universities Boards approved this study. Only students present the day of the survey were eligible for participation. Anonymity was assured.

### Results

A total of 2076 students (aged 18–25) were included in the analysis. Majority of the students (79.0%) reported having current or past sexual relations vs 21.0% students who had never engaged in a sexual intercourse. Men had a significantly higher prevalence of sexual relations than women (84.1% vs 75.9%,  $P < 0.001$ ). Among 1616 students who reported having sexual experience, 22.6% experienced one-night stands and 61.9% used condoms always when having sex with an occasional partner. Unwanted pregnancies were reported by 6.3% of women. When asked about sexually transmitted diseases (STD), 6.3% of women and 6.9% of men reported having had at least one STD during previous 12 months.

### Conclusion

Based on our findings, we recommend sex education measures to reduce the risks of potentially negative outcomes from sexual behaviour like unwanted pregnancy and infection with STD.

## Smoking and risk of stroke mortality in Lithuanian urban male population

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### Aim

The present study was designed to assess prognostic role of smoking on mortality from stroke.

### Material and Methods

The data of 29-year prospective cohort study (random sample  $n = 5936$  male; age 45–59 years) of Lithuania urban (Kaunas) population was analysed. During 132 000 person-years of follow-up between 1977 and 2006, 183 deaths from stroke

(ICD codes 430 through 438) occurred. Information about smoking was assessed using epidemiological questionnaire. Smoking status was a derived variable categorized as current or noncurrent (former smokers and those who had never smoked). Multivariate Cox regression analysis was used to evaluate the effect of smoking status on stroke mortality while simultaneously adjusting for age, systolic blood pressure, and previous history of coronary heart disease (CHD), presence of diabetes mellitus or intermittent claudication (IC) at baseline. All interactions of smoking status with independent variables were included into model. Relative risks (RR) of stroke mortality and 95% confidence intervals (CIs) were obtained by fitting Cox proportional-hazards model, forward conditional stepwise method.

### Results

There were 46% current smokers at baseline. After forward stepwise regression was conducted, age, systolic blood pressure, coronary heart disease, smoking status and interaction between smoking status and intermittent claudication at baseline occurred as statistically significant predictors. RR for male with previous history of CHD at baseline was 1.7, (95% CI 1.2–2.5) controlling for other variables in model, regular smoking was related to increased risk of death from stroke: RR 1.4 (95% CI 1.1–1.9) and RR 4.1 (95% CI 1.3–12.9) for smokers with IC at baseline.

### Conclusion

This study material proved that smoking was strong and independent risk factor for deaths from stroke in middle aged urban male population. These data may guide prevention strategies.

## Shift-work and insomnia in a Portuguese sample of policemen

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### Background

Insomnia is the most common of sleep disorders and is associated with work characteristics. The aim of this study was to determine the association between shift-work and insomnia in a Portuguese sample of policemen.

### Subjects and Methods

We used a cross-sectional study to evaluate all members of a police corporation (Guarda Nacional Republicana) from the district of Viseu, Portugal. Policemen (all male) completed a self-administered questionnaire at the workplace. We sent 177 questionnaires and received 159 with complete information (89.8%). According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), insomnia was defined as the presence of one or more of the following symptoms: (a) difficulty initiating sleep, (b) difficulty maintaining sleep, (c) early morning awakening and difficulty getting back to sleep. Sleepiness was measured by the Epworth Sleepiness Scale (ESS). Prevalence was expressed in proportions with 95% confidence intervals (CI), and compared by the chi-squared test.

### Results

The prevalence of insomnia at least once a week in the previous month was 23.2%. Insomnia was associated with educational level ( $\leq 9$  yrs, OR 2.5, 95% CI 1.4–4.5), military degree (soldiers, OR 1.0; corporals OR 1.3, 95% CI 0.7–2.3; sergeants and officers OR 0.3, 95% CI 0.1–0.8) and shift working (OR 5.2, 95% CI 1.8–14.9). Those with insomnia presented more frequently dissatisfaction with their sleep (OR 12.7, 95% CI 5.9–28.0), excessive daytime sleepiness (OR 1.7, 95% CI 1.0–3.0), use of sleep medication in the previous 12 months (OR 5.7, 95% CI 2.1–16.1), and lack of practice of any sport (OR 1.3, 95% CI 0.9–2.1). After adjusting by unconditional logistic regression for age, education level and military degree, shift-work was associated with insomnia (OR 3.7, CI 1.2–11.7).

**Conclusion**

Insomnia is associated with shift-work. Occupational strategies and health promotion measures, such as providing sleep hygiene advice and social support at workplace, should be implemented in order to decrease the prevalence of insomnia and associated morbidity.

**Risk factors for low birth weight in Gabrovo Regional Hospital, Bulgaria (2005–2006)**

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**Background**

Low birth weight (LBW), defined as a birthweight of less than 2500 g, remains a major public health problem as the most important risk factor for infant mortality and morbidity in all countries. While in developed countries the percentage of LBW infants is 5–6%, in less developed countries it is above 10%. In Bulgaria it has increased from 6% in 1980s to 9.3% in 2006. The objective of this study was to determine the incidence of LBW and its association with risk factors among newborns at the Regional Hospital of Gabrovo over a two-year period.

**Methods**

A retrospective case–control study was conducted from September 2006 to March 2007. The observational period was January 2005 to December 2006. Data was extracted from the hospital records using preformed data collection format. All 134 mothers of LBW newborns were compared with 134 parturients of normal birth weight infants. Information on 12 medical, social and demographic variables was collected.

**Results**

The incidence of LBW was 10.2% for 2005 and 12% for 2006, which is above the average for the country (8.9% and 9.3%). We found the strongest associations of LBW with the absence of prenatal surveillance (OR 28.1), extragenital disorders (OR 21.6), low education (OR 13.0), unemployment (OR 10.9), complications of pregnancy (OR 8.8), interpregnancy interval less than 2 years (OR 5.8), marital status (OR 3.7). All risk factors were highly presented in Roma ethnic group.

**Conclusions**

The findings of this study will be used to plan special interventions for pregnant women who possess characteristics associated with a higher risk for LBW infants.

**Lumbar supports for secondary prevention of low back pain in exposed workers: a systematic review**

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**Background**

Low back pain (LBP) is a common health problem in industrialised countries and it is related to several occupational risk factors. Different interventions are available trying to reduce its burden and recurrence. Workers use different types of lumbar supports but their effectiveness in avoiding recurrences is under debate. The aim of this review is to produce an overall evaluation of the effects of lumbar supports for secondary prevention of LBP in exposed workers.

**Methods**

Only RCTs published after the year 1985 were included. The study population had to consist of workers aged 18–65 years old with a history of non-specific LBP. Any type of device designed to support the lumbar spine was included. The following outcome measures were considered: incidence and/or duration of LBP, absenteeism, back pain specific functional status. RCTs quality was evaluated using the criteria

recommended by the Cochrane Back Review Group for Spinal Disorders.

**Results**

Only four papers (two from the Netherlands, two from USA), for more than 1100 workers, were included in the review. The follow-up duration was between 6 and 12 months. Back supports were associated with educational intervention and they were compared with education alone or with no intervention.

Two papers revealed a significant decrease in days with LBP in the intervention group, respectively 5.3 ( $P=0.03$ ) and 4.3 days per month ( $P<0.001$ ). Another study showed a significant increase in productivity [+5.4% per year ( $P<0.05$ )] and significant reduction in days of absenteeism [–5.9 days per month ( $P=0.02$ )]. In the last study, there was no difference between the study groups with respect to the self reported outcome measures. All relevant public health variables will be discussed.

**Conclusions**

All papers but one found significant benefits of lumbar supports. The results of the review show strong evidence towards the effectiveness of these devices in secondary prevention of occupational LBP, although the limited number of papers on this international public health topic needs to be discussed.

Further research is still needed. The recommendation is to perform high quality RCTs including larger populations and planning longer follow up, in order to confirm our conclusions.

**Measuring the dimensions of social exclusion in public health research**

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**Background**

Traditionally public health research paradigms separate out area (contextual) and individual level (compositional) variables to estimate the effect on health of one set of variables whilst controlling for the other. Social exclusion is however the consequence of a combination of area level influences and individual circumstances. We have developed a methodology for measuring the dimensions of social exclusion using both individual and area attributes to reflect their interdependence in predicting health outcomes.

**Methods**

A data set was constructed using individual level indicators of social exclusion derived from seven surveys covering 20 000 individuals in North West England (2005–2007) and area level indicators collected from routine statistics. Latent Class Analysis was used to derive 'social exclusion' clusters from these indicators and to assign a probability of cluster membership to each individual in the surveys. The relationship between cluster membership and self reported health outcomes was then examined.

**Results**

Four 'social exclusion' clusters were derived from the data, each one composed of 11 variables that reflected housing, income, employment, education, social capital, personal social support, ethnicity and access to primary care. Probabilities of cluster membership suggested a gradient from social inclusion to 'deep' social exclusion from cluster one to cluster three. The fourth cluster had ethnic minority status combined with social exclusion as defining characteristics. Membership of clusters three and four was associated with poorer health outcomes. Membership of these two clusters reflected a difference in the spatial distribution of white and ethnic minority populations in the surveyed areas.

**Conclusions**

It is conceptually important to consider the interdependence of area and individual level attributes of social exclusion when measuring its effect on health. Latent class analysis produced

a robust method for deriving dimensions of social inclusion/exclusion which were predictive of health outcomes and reflected the spatial distribution of the study population.

### Evaluating the use of respondent driven sampling among sex workers and injecting drug users in Tallinn, Estonia

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#### Background

Convenience sampling approaches are often best suited to sample hidden and hard-to-reach populations but are usually not generalizable. Respondent driven sampling (RDS), a variant of chain-referral sampling, is being increasingly used to gather representative data from difficult to access populations that form social networks.

#### Aim

To explore why RDS recruitment functions differently among populations we report comparison on two studies that used similar research designs to sample injection drug users (IDU) and sex workers (SW) in the same location (in Tallinn, Estonia).

#### Methods

Cross-sectional studies to sample IDU (in 2007) and SW (in 2005/2006) collected (i) data on demographics, sex work and drug use history, HIV risk behaviour, and harm reduction service utilization using interviewer-administered surveys; (ii) biological samples for HCV and HIV testing; and (iii) social network sizes. In addition, field notes were taken by interviewers and site supervisors to assess recruitment progress and sampling challenge. Statistical analysis included calculation of unadjusted means, medians, percentages, proportions, and standard deviations. Differences were tested using t-tests, rank tests, and Chi-square tests, exact tests and/or 95% confidence intervals. We used RDS analysis Tool v. 5.0.1 to weight the sample to control for differences in network sizes and homophily to provide population-based estimates of study population characteristics.

#### Results

We recruited 227 commercial SW and 350 IDU. The sample (age, gender, ethnicity, drug use/sexual behaviour, HIV prevalence), recruitment (time, sample sizes, number of seeds, number of waves in the longest chains, reaching equilibrium for key variables of interest) and network (size, homophily) characteristics will be presented. Differences in the functioning of RDS in the two studies will be examined in terms of differences in the social structures of IDU and SW.

#### Conclusions

The findings from this evaluation should assist researchers to improve their understanding the barriers to successful RDS recruitment.

### Influence of smoking on oral health

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#### Aim

The aim of the study was to determine the influence of smoking on the periodontium and teeth. A cross-sectional study was targeted on adults in the age 30–69 years.

#### Methods

The subjects were patients attending the Department of Dentistry and three private dental practitioners. The study consists of two parts, a self reported questionnaire inquiry and clinical examination of teeth and parodont status. Clinical findings were assessed by Community Periodontal Index of Treatment Need (CPITN) and Decayed, Missing and Filled Teeth (DMFT) indices. From a total number of 1473 subjects participated in the study, 641 revealed positive smoking history of current/occasional/former smokers (364 males and 277 females; mean age 44.4 years), 832 were non-smokers (330 males and 502 females; mean age 44.2 years). The non-smokers (NS) had better oral hygiene habits: they brushed their teeth more often daily, abstained from eating anything after evening tooth brushing and participated in regular dental preventive check-ups more frequently compared to smokers.

#### Results

Clinical findings showed that the mean number of decayed teeth was significantly higher in smokers (1.05 vs 0.71;  $P=0.014$ ), as well as the mean number of missing teeth (5.54 vs 4.54;  $P=0.0058$ ). We did not find any significant difference in the mean number of filled teeth (9.73 in NS vs 10.2 in smokers;  $P=0.082$ ). Chi-squared test revealed a significant difference in max CPI values between smokers and NS. In smokers, there was significantly higher occurrence of sextants with CPI\_4 values (severe pocketing) than in NS (20.1 vs 14.1), whose revealed a higher frequency of sextants with CPI\_0 (1.3 vs 1.7) and CPI\_1 (11.1 vs 18.6). The percentage of CPI\_3 and/or four findings in all six sextants was higher in smokers (10.3% vs 6.7%;  $P=0.002$ ). When the selected variables/confounders were controlled in a multivariable logistic regression model, some factors like age, low participation in dental preventive check-ups or eating after evening brushing had higher odds ratios for CPI\_3.4 findings than the smoking itself (OR 1.26; 95% CI = 0.99–1.59).

#### Conclusion

Non-smokers had better oral hygiene habits and periodontal health compared to smokers.

#### Acknowledgements

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### The variation in the distribution of physical activity between municipalities in Denmark

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#### Background

Daily life physical activity constitutes of different kind of activities as physical activity at work and leisure time, and transportation at work. The aim is to determine the distribution of different physical inactivities; furthermore to examine the factors having an impact on the variation on the distribution between municipalities.

#### Methods

The study population comprises all adults living in the Capital Region (1.3 million). Demography and SES information derives from the Danish national registries. Information on physical activity derives from a questionnaire survey based on a random sample of the population (70 000 people). Physical inactivity is categorised into: inactive at work (sitting more than 6 h per day), No activity regarding transportation to work (0 min of walking or cycling to work) and leisure physical inactivity (sitting activities more than 4 h per day). The 38 municipalities are categorized in four social classes (SC) according to the distribution of income, educational level and vocation.

#### Results

Overall the prevalence physical inactivity is: 40% at work, 28% regarding transportation and 22% at leisure time. Within all



three activities, the prevalence varies substantially across the municipalities. Compared to the mean of the region the odds ratio of being inactive at work are 1.36(m) and 1.23(w) in the highest SC1 municipalities; for the lowest SC4 the ORs are 0.98(m), and 1.08(w). For leisure time physical inactivity the OR are: SC1: 0.67(m); 0.88(w); SC4: 1.67(m); 1.45(w). Regarding transportation activity no social gradient are seen in the variation of the prevalence. In the rural areas the prevalence of transportation inactivity is 40–55%, whereas in the urban areas prevalence is 7–25%.

#### Conclusions

The prevalence of physical inactivity and the variation of prevalence across municipalities are substantially high in the Capital Region of Denmark. The variation between municipalities in physical activity at work and at leisure time is mainly explained by social factors while the variation regarding transportation is explained by a rural/urban gradient.

### Prevalence of *Helicobacter pylori* infection in a Portuguese urban sample (1999–2003)

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#### Background

*Helicobacter pylori* infection has been classified as a human carcinogen and half of the world adult population is estimated to be infected, with prevalence varying with age and socio-economic status. In the last decades, the adult prevalence of infection declined to levels much below 50% in the more affluent countries from Europe and North America, in accordance to the steep decline in gastric cancer frequency. This study aims to quantify the prevalence of *H. pylori* infection and its association with socio-demographic factors in a Portuguese urban sample.

#### Methods

Porto dwellers were recruited by random digit dialing. All participants answered a structured questionnaire and a blood sample was drawn. Anti-*H. pylori* IgG antibodies were quantified in the serum by ELISA. Complete information was available for 1914 subjects, 62% females, with a median age of 53 years and median education of 8 years.

#### Results

The prevalence of *H. pylori* infection was 82.6% (95% CI 81.0%–84.4%), similar in females and males (82.2% vs 83.4%,  $P=0.525$ ). The prevalence was 73.0% in subjects in the 18–40 age group, 86.4% between 41 and 50 years, 84.7% between 51 and 60 years, 86.2% between 61 and 70 years and 82.8% between 71 and 92 years ( $P<0.001$ ). Regarding education, the prevalence was 88.5% in participants with <5 education years, 85.7% for those with 5–9 education years and 75.4% in subjects with more than 9 education years ( $P<0.001$ ). The proportion of infected subjects according to occupation was as

follows: blue-collar, 88.4%; white-collar, 79.6%; others groups, 81.1% ( $P<0.001$ ).

There was an increase in the prevalence of infection across age-groups in the more educated subjects ( $P$  for trend = 0.001) and a decrease in the less educated ( $P$  for trend = 0.004), while it remained similar in those with 5–9 education years ( $P$  for trend = 0.499).

#### Conclusions

The prevalence of *H. pylori* infection was high in this Portuguese urban population, being closer to the observed in the Eastern European and South American countries. Our results suggest that the prevalence of infection in Portugal will remain among the highest in Europe for the next decades.

### Risk factors for domestic violence against pregnant women

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#### Background

Domestic violence against pregnant women is recognized to be a key problem in maternal and fetal morbidity and mortality. The occurrence of violence is associated with certain characteristics of victims and offenders. The aim of this study was to determine the factors associated with violence against a sample of pregnant Portuguese women.

#### Participants and Methods

In a cross-sectional study we evaluated 432 postpartum women attending consultations in nine primary care centres of the district of Viseu. Data were collected in the first consultation after delivery through an anonymous self-administered questionnaire, distributed and collected on the day of consultation. The questionnaire comprised questions for socio-demographic characteristics, information about the last pregnancy and questions about domestic violence using the Portuguese validated version of the Abuse Assessment Screening (AAS), which includes physical, psychological and sexual dimensions. The mean age of the participants was  $27.6 \pm 5.6$  years, with a range of 15–44 years.

#### Results

The prevalence of any kind of violence (physical, psychological or sexual) during pregnancy in the total sample was 23.3%. The prevalence of physical violence, psychological violence and sexual violence was 5.2%, 21.6% and 1.7%, respectively. The prevalence of violence was associated with age (>30 years OR 1.5, 95% CI 1.0–2.5), marital status (single/divorced OR 7.0, 95% CI 1.9–28.7), residence area (urban OR 2.9, 95% CI 1.8–4.8), women's level of education (>9 years OR 1.7, 95% CI 1.1–2.8), husband's level of education (>9 years OR 1.5, 95% CI 1.0–2.5) and unwanted pregnancy (OR 1.8, 95% CI 1.1–3.0).

#### Conclusions

We found a high prevalence of domestic violence against pregnant women. Domestic violence was associated with socio-demographic and familial variables.

## PUBLIC HEALTH GENOMICS

### To what extent is CVD riskfactors associated with childhood and adulthood socioeconomic position? The Swedish 1969 conscription cohort

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#### Background

Coronary heart disease and mortality are unevenly distributed between social classes, the lower being disadvantaged compared to the higher. This association is found irrespectively of the measure of social class used. Adverse social circumstances in childhood and in adulthood have been related to an increased risk of coronary heart disease and mortality in adulthood. The present purpose was to investigate to what

extent socioeconomic position in childhood and adulthood, respectively, is associated with cardiovascular disease (CVD) risk factors measured in late adolescence.

#### Methods

Data on CVD risk factors (crowded housing in childhood, low body height, overweight, risk use of alcohol, smoking, blood pressure) was collected among 49 321 men, born in 1949–1951, who conscripted for compulsory military training in 1969/70, i.e. at age 18–20. Data on socioeconomic position in childhood in five levels (unskilled and skilled workers, non-manual employees of low, medium, and high level) was based on social position of the father collected in the 1960 census, when the subjects were 9–11 years of age. Data on achieved socioeconomic position, also in five levels, was obtained from the 1985 census, when the men were 34–36 years of age.

#### Results

Childhood socioeconomic position was associated with all CVD risk factors where the prevalence of each risk factor was more common in lower positions. Achieved socioeconomic position was also associated with all risk factors and for several risk factors the association with achieved socioeconomic position were somewhat stronger than with childhood position. All risk factors were associated with social mobility from childhood position to adult position.

#### Conclusion

The social gradient in CVD risk factors was evident for both socioeconomic position in childhood and achieved socioeconomic position. Risk factor associated social mobility contributed to establish the association between adult socioeconomic position and the risk factors.

## PUBLIC HEALTH PRACTICE AND POLICY

### National quality programme improving prevention; Collaboration in achieving high quality prevention: ten reasons for success

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#### Programme Objective

To systematically improve the quality of public healthcare in the Netherlands. For instance by gaining insight in what should be cherished and shared with others, and to achieve that something less useful has the opportunity to grow into something good or even perfect. Working with this programme brings success to those involved in their own line of business. Ten reasons for success; after attending the programme organizations will:

1. Have insight in results of their organization: what is going well and what needs improvement;
2. Have the ability to compare and learn from each other concerning resources, means and care results. In practice people like it and it encourages them to improve their results;
3. Learn that the investment in quality brings out the best in people. Employees will do their jobs with more fun and better quality of care ensures more satisfied and healthy customers;
4. Be able to use existing effective interventions instead of developing and testing new ones;
5. Be supported in implementing and adapting quality instruments, no invention needed;
6. Be equipped with interventions and quality standards, developed by or in cooperation with professionals, which are executable and motivating to work with;
7. Be able to live up to the lawful demands when it comes to having a quality system (Quality Law Care Organizations and the Law Collective Prevention Public Health);
8. Have a strong position when it comes to negotiations with local government concerning financing of the required care;
9. Be provided with rules and regulations, which can be used by the Inspection for Public Health when supervising. By applying organizations will be able account for their business in a clear and insightful way;
10. Save costs by profiting from a quality impulse financed by the national government.

The national quality programme for public health care is implemented by:

GGD Nederland (Netherlands Association for Community Health Services), ActiZ (a national home care organisation) and VNG (Association of Netherlands Municipalities). The programme is commissioned by the Ministry of Health, Welfare and Sports and directed by ZonMw.

### Knowledge transfer for health impact assessment: a case study in transport

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#### Issue

The validity of health impact assessments (HIA) depends largely on the extent to which the predictions can be supported by existing empirical evidence. Comprehensive reviews of social interventions can provide HIAs with valuable syntheses of research evidence, but often these reviews are both physically and stylistically inaccessible to practitioners.

#### Practical intervention

In consultation with the Scottish Health Impact Assessment Network (SHIAN) we produced a synthesis of best available cross-sectional and intervention research evidence on the health impacts of transport interventions. The synthesis was shaped around the expressed needs of HIA practitioners, and used the principles of systematic review to provide a comprehensive synthesis which reflected the relative weight of evidence available.

#### Results/effects

HIA practitioners were interested in both health and health-related impacts of transport interventions, as well as impacts on health inequalities. Specific impacts reviewed in the synthesis included: injury, general health, mental health, physical activity, pollution, community severance and social exclusion. A substantial volume of empirical work was available on the impacts of transport on injuries, in particular the effectiveness of injury reduction measures. There was far less empirical evidence on other unintended health impacts of transport interventions, or on differential impacts, e.g. by socioeconomic group. A list of questions was provided to guide HIA of transport interventions and pointing how the evidence could be used.

#### Lessons

Impacts of interest to HIA are often indirectly linked to health. In addition to considering research evidence, HIA practitioners need to think more carefully about the hypothesised pathways to eventual health impacts. This example of knowledge transfer raises important issues about the use of evidence to support HIA generally. In particular, the uncertainty of the predicted health impacts of social interventions. Further work to develop knowledge transfer using best available evidence and tailored for use in HIA is needed.

## Proposal for improving the effectiveness of HFE genetic test prescription

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### Background

Hereditary hemochromatosis (HH) is among the most common inherited metabolic diseases. It presents a progressive evolution and is associated with several serious co-morbidities, although the establishment of therapeutic phlebotomy following an early diagnosis reduces morbidity and significantly improves survival. Discovery of the HFE gene in 1996, and the observation that 60–90% HH patients are homozygous C282Y, opened up the possibility of genetic screening for HH.

### Methods

Retrospective, cross sectional study of HFE genotyping requests received from January 2000 to June 2006, by the Genetics Service of a University hospital in Madrid.

### Results

Six hundred and eighty-seven individuals, 413 males, with an average age of 53.00 + 16.59, were genotyped. 12.5% referrals had HH genotype (C282Y/C282Y or C282Y/H63D) and 36% suffered one or more of HH-associated pathologies, but there appeared to be no association between HH genotype and disease expression ( $\chi^2=0.615$ ). 84% and 70% individuals genotyped have increased values of ferritin and transferrin saturation, respectively, but there is no statistical association between these parameters and HH genotype ( $\chi^2=0.826$  and 0.554, respectively). In the hospital studied, genetic tests performed between 2000 and 2006 increased by a factor of ~7. However, this increase in number of individuals undergoing HFE testing was not accompanied by an increase in number of HH genotypes detected, almost 36% of study population carried these genotypes in 2000 compared to only 14% in 2006.

### Conclusions

Neither disease expression nor increased biochemical parameters are associated to HH genotype, indicating that in addition to HFE mutations, other factors need to be present for HH expression.

The decrease in the proportion of individuals detected with a HH genotype despite the increase in the number of individuals genotyped for HFE, suggests that both genetic screening and simple individual genetic testing should be undertaken in a more in depth diagnostic protocol framework which should include biochemical and exclusion studies.

## A policy to support the medical innovation strategies in hospitals in France

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### Issue/problem

DRG-based prospective payment system is effective for all French hospitals as of 2008. The ministry of health (MoH) wanted a mechanism that (1) allowed uptake of medical innovation and (2) ensured equity of access and appropriate use thereby limiting the financial burden to hospitals. Because innovation usually concerns only a portion of patients within a given DRG, the option of including the cost of innovation in the DRG price was not acceptable because of introduction cost heterogeneity within the DRG and the option of creating a new DRG was found exponential.

### Description of the policy

The MoH has established a list of expensive drugs and devices for which hospitals may claim reimbursement in addition to

the DRG-payment, conditional to evidence of their compliance with national guidelines. For innovations out of the list and before inclusion, the MoH has financed, each year as of 2000, post market approval medico-economic evaluations to facilitate implementation and monitoring of diagnostic, therapeutic and organization innovations (STIC program).

### Results (effects/changes)

Since 2000, 95 economic evaluations have been selected within the STIC program. The total amount invested from 2000 to 2007 was €204 millions. Median allocation per evaluation was 1.2 millions € (range [100 000; 18 300 000]). Each evaluation was funded for 2 years. All of them were multicentres. For 2007, the total allocation for drugs and devices in addition to the DRG-payment was approximately €12 millions.

### Lessons

The total amount allocated for this program supporting the diffusion of innovation in France was very high. The ultimate objective of both the STIC and the additional list programs was to ensure that public funds were directed to medically appropriate use. We found that the framework of medical evaluation resulted in delays due to the regulatory environment of clinical research but helped the dissemination of a culture of evidence-based medicine and economic evaluation. Evaluation of these policies is still based on intermediate indicators leading to a lack of specificity.

## Nanobiotechnology as a legal challenge to health innovation

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### Issue

Law as a policy instrument has the power to constrain or strive for health innovation. Nanobiotechnology despite bringing new hopes for human health represents one of the ultimate challenges in risk regulation, implying cross-border hazards which demand a global and multidisciplinary response.

### Description of the policy

The inexistence of a clear legal framework, concerning HSE (Health Safety & Environment) issues and an inconsistent terminology, jeopardize nanobiotechnology health innovative promises. This presentation aims to characterize existing regulatory answers concerning HSE raised by nanobiotechnology, based on the critical review of the existing European policies and regulations, along with international studies.

### Results

Different responses were found. A deep discrepancy exists between HSE regulatory concerns and related policies. The European Court of Justice has already applied the precautionary principle as a tool to prevent unknown risks related to health innovation. The EU (European Union) Commission has an action plan on nanosciences.

### Lessons

The regulatory balance between public health, safety and innovation is one elementary attribution of member States. Divergences were found in nanobiotechnology internal policies. Therefore we consider that the EU should stress its role in promoting the debate and implementation of national policies in health innovation processes.

## Formal and informal care among elderly in Italy: a cross-sectional study

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### Background

Previous studies conducted among European elderly have provided mixed evidence on the importance of possible aids—formal or informal—according to a north-south gradient. The aim of this study is to analyse the relationship between informal care, supplied by close relatives or neighbours, and formal care, supplied by health and social-care systems in Italy.

### Methods

An observational cross-sectional and ecological study, referring to Italy in 2004, was conducted using data from the multi-purpose survey system of Italian National Institute. Descriptive and inferential analysis were conducted on the prevalence—within 95% CI—of health status, health care, home care and informal aids, among Italian regions.

### Results

The health status analysis highlighted a North–South gradient from lower to higher values for the prevalence of disability, while prevalence of at least one severe chronic disease seems not to follow a specific geographic gradient. The percentage of elderly people with health problems treated at home is 6.2% (95% CI 5.8–6.7), with a peak of treatment in the Centre—Italy (7.56%, 95% CI 6.48–8.65) and a minimum in the North (5.6%, 95% CI 5.0–6.3). However the compared analysis of those results with the territorial distribution of the unsatisfied needs of home care point out a lack of this kind of service in the South of the country. The lack of home care services seems to be replaced by informal care provided by close relatives and neighbours (17.2% of older people, 95% CI 16.3–18.3) and sometimes by paid personnel, in fact, the recourse to informal care follows an opposite territorial gradient of the home care.

### Conclusions

Our initial results reflect variability in the relationship between formal and informal care in different Italian regions. A further analysis could focus on other supports the elderly could receive such as residential care institutions.

## Social inequalities in smoking habits across 38 municipalities in the Capital Region of Denmark

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### Background

The Capital Region is the largest of five administrative units in Denmark. In 2007–2008 the first health profile for the entire Region is made providing a comparable overview of the health and health behaviour of the population and acting as a basis for policy making and planning. A main focus of the health profile is social inequalities in health.

### Methods

The study population comprises 1.3 million adults in the Capital Region. Information on demography and SES derives from the Danish national registries. Information on smoking habits and Heaviness of Smoking Index (HSI) derives from a questionnaire survey based on a random sample of the population (70 000 people). The 38 municipalities are categorized in four social classes according to the distribution of income, educational level and vocation. The prevalence of smoking habits and HSI is calculated by municipality. OR of being a daily smoker in each municipality compared to the mean of the region is estimated.

### Results

Overall prevalence of daily smokers in the capital region is 24%. The prevalence is higher among men (25%), middle aged citizens (27%), the lower educated (37%) and the less wealthy (30%). Across the municipalities a wide range in the prevalence of smokers was observed in both men (m): 14–32% and women (w): 13–29%. Compared to the mean of the region

the odds of being a smoker are higher in the lowest social class municipalities [OR: 1.41(w), 1.60(m)], and lower in the highest social class municipalities [OR: 0.51(w), 0.49(m)]. Smokers in the lowest class municipalities generally have higher HSI.

### Conclusions

The health profile reveals social inequalities in smoking habits across the 38 municipalities in the Capital Region and enables the local committees and the health professionals to focus on the health inequalities in order to improve the health of the population.

## Public health doctors in Italian prevention departments: a proposal for future public health (2007)

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### Issue

Due to new strategies and tools for prevention and health promotion, an international and local rethinking is currently going on about public health (PH) and the future of related services.

Aim of this paper is to present an Italian proposal for future role of public health doctors working in prevention departments.

### Methods

In June 2007 a 3-day workshop was set in Camposampiero (Padua) by a regional section of Italian Society of Hygiene and Public Health (SItI), involving 30 professionals from North Eastern Prevention Departments (PD), Universities, Regional Authorities. The workshop focused on PH aspects linked to PD functions with respect to meet the needs of community, professionals and healthcare institutions together. We used Guilbert methodology and explored: functions, to describe the reasons why the professional figure exists (mission); activities, to describe contents that professionals must assure.

### Results

Ten essential functions have been identified:

1. Health status assessment and identification of risks in the community;
2. Health promotion;
3. Prevention (proactive intervention on health determinants);
4. Protection (reactive intervention, safeguard, surveillance, inspection);
5. Planning PH intervention;
6. Communication;
7. Professional training;
8. Partnerships and resources;
9. Crisis management;
10. Research.

Each function found has been analysed separately to identify essential activities that outline it.

### Lessons

Several key points emerged to be considered for future actions: Redefine interaction with primary care; update the 'protection' function considering new demands; implement a proactive approach in prevention and health promotion areas; consider a benchmark for performances; recognize as a core item communication skills; promote a continuous exchange between professionals and politics to effectively endorse PH.

## Towards the vaccination process accreditation in an Italian regional health service

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### Issues

In 2001 all six Friuli Venezia Giulia (North-Eastern Italian Region) Local Health Authorities (LHA) and their Vaccination Centres (VCs), 48 in 2001 and 41 in 2006, were involved in a voluntary accreditation programme and created a specific manual. This tool, aimed to improve quality in public VCs, consisted in 12 chapters (and related indicators): Policies and Strategies (15), Environment and Process Safety (6), Facilities and Technology (39), Staff Empowerment (12), Customer/Patient Involvement (4), Vaccine Supplies (3), Quality Assurance Programs (2), Procedures (41), Data Management (11), Customer Satisfaction (9), Staff Satisfaction (4), Outputs and Outcomes (11). In 5 years the global adherence to indicators increased from 55.6% (3234/5820) to 74.4% (3784/5085). In 2006 the regional government promoted a quality vaccination improvement programme, hence the previous manual was adapted. This article describes this evolution.

### Methods

Based on the 2006 results, through a consensus approach new standards were set up. Consensus participants included: Public Health doctors and nurses, general practitioners (GPs), paediatricians, regional authorities, hospital staff involved in vaccination.

### Results

The new indicators focused on the vaccination process concept and aimed to guarantee the same quality everywhere Regional Authority authorizes citizens to get vaccinated (VCs, GPs, Pediatricians, hospitals, etc.). The new manual consists of seven chapters: Policies and Leadership (26), Prevention and Education (10), Quality and Safety (33), Vaccination Process (39), Information Management (14), Performance (21), Crisis Management (9); applicable to various levels of responsibility (single centre, LHA, regional government).

### Lessons

The model recalls the web concept in public health, where actors and levels of responsibility intersect and Regional Authority guarantees to citizens quality of the process. The challenge is to make professionals be part of the same network sharing agreed quality standards.

## European public health advocacy at the regional level: the North West of England Health Brussels Office

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Almost 80% of all new laws are determined at European level, therefore engagement and understanding of the impact of the EU on local, regional and national policies is crucial for the public health agenda in the UK and other EU member states. The EU now presents both challenges and opportunities for health improvement, and it is vital for public health communities at all levels to engage in Europe.

In 2004, the regional public health team in the North-West of England took the initiative to establish a dedicated resource in Brussels, promoting the interests of the North West health community in Europe, facilitating lobbying on EU policies that

impact the NHS and on wider health issues, and assisting in developing European partnerships and projects for public health objectives. This was an innovative step, with none of the approximately 250 other European regional representations in Brussels focusing solely on health issues.

The North West Health Brussels Office has been successful through:

- Frequently accessing European information often before it is made public
- Keeping regional stakeholders up-to-date on the latest European information as an early-warning mechanism
- Increased capacity within the region through providing briefings, training and events to health service staff
- Advocating on behalf of regional health partners, thus ensuring the position of the North West region is represented in European policy-making
- Networking and joint working through relevant networks to raise the profile of the region and its assets
- Providing support to stakeholders for EU funding applications and project development.

The North West Health Brussels Office has demonstrated the value of regional health sector engagement in EU policy and funding. The Office has tackled practical issues around how public health communities across the EU can influence and engage in Europe. In the process the region has gained valuable experience in lobbying, pursuing funding, and learning from European partners on a wide range of issues. The region continues to increase its understanding of the relevance of European health policy to all European regions, and will look to gain further policy and funding successes through its engagement at European level.

## A qualitative risk analysis model to understand decision-making in obesity prevention

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### Background

Policy response to chronic diseases such as obesity is influenced by socio-political and cultural context. This research aimed to apply a qualitative risk analysis model to elucidate the influences on and dynamics of decision-making on soft drink consumption as a risk factor for childhood obesity in Latvia and Denmark.

### Methods

The traditional risk analysis model (risk assessment, risk management and risk communication) was expanded to include socioeconomic, political, and other non-scientific factors. Stakeholder analysis was used, where 20 stakeholders in each country were interviewed using a semi-structured interview guide. The interview sought to (1) assess stakeholders' position and influence with regard to soft drink consumption as a risk factor for childhood obesity, and (2) capture important framing assumptions and their impact on the policy response to childhood obesity in each country.

### Results

Non-scientific factors which emerged as important included the dynamics of stakeholder relations, the perceived legitimacy of State action, the extent to which childhood obesity is on the public agenda, and the perceived role and effectiveness of fiscal tools such as a soft drink tax. The qualitative risk analysis method made it possible to formally contrast obesity prevalence with perceived importance of obesity at the decision-making level. The method also provided a structure within which to consider non-scientific factors which shape scientific deliberations and policy options, whilst remaining flexible enough to re-evaluate the importance of these factors in light of new data.

## Conclusions

Obesity prevention is politically and scientifically complex. Using a systematic approach to disentangle important socio-economic, political, and other non-scientific factors and understand how they influence the policy response to obesity may contribute to the global effort to curb this epidemic.

## Application of the Neuman and the Omaha systems models in providing continuity Of care

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Continuity of care is that important component of providing comprehensive and quality health care, whereby healthcare and social services are provided to clients in hospital and in their places of residence after discharge, for the purpose of promoting, maintaining or restoring health. Continuity of care is achieved by its components of discharge planning and home healthcare. By achieving continuity of care, optimum potential for health and recovery is ensured, so experiencing difficulties in physiological, psychological, social and economical aspects is prevented; length of hospitalization is decreased; duplication of diagnostic testing repeated admission to hospital is prevented; and satisfaction of the patient and family is enhanced and then quality in care is assured. In developed countries the usage of Neuman and Omaha models is proved by making nursing care services more planned and more systematic through displaying nursing services efficiency and cost-efficient. The purpose of this quasi-experimental study was to determine the adequacy of using Neuman Systems and OCS Models in nursing care and the efficiency of this care through discharge planning beginning with admission to hospital and hospital-based home healthcare services of elder patients with cardiovascular diseases, and to decrease difficulties experienced by patients and their families. The research is conducted at Hacettepe University Hospital with participation of elder patients. The sample of the study is designated; with the aim to achieve discharge planning and home healthcare services through Neuman ve Omaha nursing models; on 65 age and over patients with cardiovascular diseases (MI, CAD) who have not difficulty in communication, not stay at hospital more than 2 weeks, stay in Ankara city, as 50. Because of the research procedure that consists of discharge planning services that begin with the admission to hospital and continue during hospitalization, and home healthcare services to 2 weeks following discharge, sample size is adequate for statistic analyses. It is concluded that NSM and OCS are usefull for guidance through hospitalization and home care taking care of clients with their family and in nursing interventions.

## The role of health examination surveys in determining priorities for diabetes and CVD prevention: experience from Krakow, Poland

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### Background

Recent scientific evidence has shown that cardiovascular diseases (CVD) and type 2 diabetes (DM2) 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 screening strategy for the identification of individuals with glucose tolerance disturbances or cardiovascular risk factors.

## Methods

Study population: 41 000 inhabitants of Krakow (38% men) aged above 25 years, without any history of DM2 and CVD events. A short questionnaire was developed to characterize individuals according to their future risk of developing DM2 and CVD. Diabetes Risk Score (DRS) and cardiovascular SCORE were used in detecting asymptomatic patients. Fasting cholesterol and glycaemia, anthropometric measurements and blood pressure were determined in all participants. The DRS cut-off point 9 and above was taken as an indication for advanced biochemical testing

## Results

DM2 was found in 4.5%, impaired glucose tolerance (IGT) in 3.6%, and impaired fasting glucose (IFG) in 4.9% of examined population. 16.2% men and 40.9% women ( $P < 0.05$ ) were CVD risk-free. Risk below 5% was present in 53.1% of women and 51.3% of men. The highest risk factor of 10-year risk of fatal CVD event (5% and over) was smoking over 10 cigarettes daily (men RR 12.4, 95% CI 10.3–15.0; women RR 9.1, 95% CI 7.5–11.1). Obesity increased significantly the risk at 60% in men and 68% in women. Glucose tolerance disturbances were also significant risk factors—in newly diagnosed DM2 RR was 1.57 for men (95% CI 1.25–1.98) and 1.43 for women (95% CI 1.14–1.79).

## Conclusions

Screening strategy based on simple inexpensive tools as diabetes and cardiovascular risk scores are able to discriminate those subjects who are more likely to present metabolic abnormalities. Moreover, our approach strongly emphasizes importance of preventable factors like smoking and obesity

## The promotion of (e)health literacy in the national strategy 'eHealth' Switzerland

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### Issue/problem

EHealth solutions have developed in a highly fragmented way in federalistic Switzerland.

Only in June 2007 the Federal Council has adopted the national strategy 'eHealth' submitted by the Federal Office of Public Health. The objective is to deliver by 2015 better and efficient health services in Switzerland.

### Description of the problem

Key elements of the strategy are a health portal with quality-assured health-information and services and on the other hand the gradual establishment of an electronic patient's file.

### Intermediate Results (effects/changes)

An eHealth coordinating body was set up by the Confederation and the cantons. Rapid reflexions about the necessary legal basis is undertaken.

### Challenges/Discussion

The presentation will mainly focus on the potential benefits and problems for the citizen/patient to increase his or her health literacy—i.e. the ability to make sound health decisions in the context of every day life as well as in the health care system and in the political arena. The definition of WHO says: A person must be able to get and to understand health information and to use it for improving her health and the health of their families or the communities. At least 25% of the population will have special needs therefore it is incumbent to provide information through a broad range of different media or to have public terminals in pharmacies or in medical practices or other services or other social services. This could support the discussion about health promotion, prevention, screening, therapy and rehabilitation but also adequate navigating the health and the social system.

## The small areas analysis in health planning. The Catalan Health Plan 2010 as an example

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### Introduction

The Health Plan for Catalonia (HPC) is the main instrument to implement health targets and policies among the Catalan population (7.2 million). This autonomous region in the northeast of Spain has full governmental responsibilities in health care policies and resources. After four planning periods, with their own proposals and impact evaluations, the current HPC for the year 2010 is designed with specific decentralised criteria, considering the health approach at local (small district), regional (greater district) and overall level.

### Description

In order to design the territorial analysis it is essential to establish the scale and the territorial division and to determine the indicators. The scale and the territorial division chosen were the areas of the 37 health territorial governments (HTG). The HTG are the health authorities at local level, expression of the decentralized administration of the Catalan health system. Using HTG level for the analysis, and according with the available information, we have established 60 indicators to monitor and evaluate the impact of the main health targets in relation to the 37 small areas that measure the main issues of social and demographic conditions, lifestyles, health status and care resources use. The selection criteria for these indicators were high level of appropriateness, usefulness, reproducibility, representativity and comparability.

### Results

This information and evaluation tool shows the geographical and demographical distribution of the 60 indicators. The territorial patterns aren't reiterative, and we don't observe areas that present systematically better or worse results in global health status. Some specific indicators shows significative deviations in some small areas from the average values.

### Conclusions

The differences observed between small territories in Catalonia are less than the intra territorial differences. Inequalities in health status and use of care are more related to social condition and gender than geographical differences. Health vulnerability in the population is less related to where people lived.

## Health Profiles: promoting health advocacy and health literacy

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'Health Profiles' is a project of the Portugal's Northern Region Health Administration, which aims to address several issues/problems: the difficult access to relevant and integrated information about health and its determinants, usually scattered amongst several data bases and sources (some of them only accessed by the national agencies) by the sub-national health services and agencies, at the regional and local (municipalities) levels; the need of having a permanently updated and available health profile of Portugal's Northern Region and of its 68 municipalities; the need of having information about health and its main determinants which can be easily communicated and accessed to by a wide and diverse audience—health professionals, decision makers, scientific and educational community and lay people in general, as a strategy of health communication and health literacy; the need to place health as a high priority in personal, professional and political agendas, as a strategy of health advocacy.

The 'Northern Region Health Profile', which was recently finished on February 2008, is already available at the Northern Region Health Administration's site and will be permanently updated. A 'paper version', also available on pdf at the site and annually updated, is already on its final printing stage and will be soon widely distributed; e-cards will be used to advertise this initiative. A marketing strategy is being developed in order to communicate efficiently the concept of 'Health Profiles' and its relevance for promoting public health and the public's health to a wide and significant audience. A special e-mail address was also created (perfisdesaude@arsnorte.min-saude.pt) in order to encourage the scientific and educational community to share relevant information about the Northern Region population's health, which will be used to update and further develop the Health Profiles. After this first stage, local health profiles will also be developed, helping the local public health services to further develop these profiles as well as to promote and advocate health at the local level.

As, at this time, we are still on the stage of implementation of the project, we haven't got any results concerning its impact. Nevertheless, the model and concept underlying the 'Health Profiles' project has been developed and the 'Northern Region Health Profile' is already completed, using a format and language that, we think, is innovative in Portugal. Finally, we are firmly convinced that the innovative 'Health Profiles' concept, model and practice has the potential to become a strong instrument of (Public) Health Promotion in any country/setting or region of the world—Europe included.

## Development of an urban health section in EUPHA

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Urban populations are characterized by a large diversity in socioeconomic status, cultural and ethnic background, family constitution and sexual orientation. This diversity translates into multiple, complex health problems in an environment where we observe increasing numbers living in urban areas with rapid population changes. Vulnerable groups (e.g. migrant populations, drug users and the homeless), environmental exposure to harmful agents (e.g. pollution) and specific chronic diseases (e.g. asthma) are over-represented in urban populations and may lead to increasing health inequality and inequity of services. These factors form a challenge for urban level policy makers who often have to rely on national level data which does not reflect the variation within cities and between cities on population demographics, exposure status, health needs and healthcare utilisation. Local, accurate and reliable data on the wider determinants of health, health inequality and inequity are required to make appropriate decisions to ensure health gain of urban populations. The European Urban Health Indicator System (EURO-URHIS www.urhis.eu) project has developed an indicator set for urban health monitoring and found which data are available at urban level across 60 cities in Europe. It has also lead to a large network of multi-agency, multi-disciplinary experts in the field of urban health and continuation of the project to actual data collection (EURO-URHIS 2). An urban health section of EUPHA would be an excellent platform in which to collaborate, share, disseminate good practice, benchmark, produce high quality research and publications to further European urban health issues. We would welcome collaboration with the other established EUPHA sections. We will present the new sections proposed aims, objectives, structure and priorities. The aim of the session is to stimulate debate and open discussion on all issues surrounding urban health. We would like to know what would make you join a section on urban health.

# PUBLIC MENTAL HEALTH

## Negotiating difference and belonging in families from mixed racial, ethnic and faith backgrounds in Britain: implications for mental health

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### Background

Families headed by parents from different racial, ethnic and religious backgrounds are increasingly visible in many European countries. Families with mixed parentage are often thought to be inherently prone to 'culture-clashes' and psychopathology. Very little is known, however, about how parents in these families negotiate cultural differences and create a sense of identity and belonging for their children. This article describes a British study on parents' every day negotiations of cultural differences and their approaches to fostering children's sense of identity and belonging.

### Methods

Qualitative individual in-depth interviews were conducted with 35 mixed parent couples (35 mothers and 30 fathers) who had at least one child between 7 and 12 years. We also carried out interviews with parents, children and both sets of grandparents in three inter-generational family case studies. An inductive analysis of the transcribed interviews was done.

### Results

Parents often described their families as 'ordinary' and 'normal'. Irrespective of race, ethnic or religious backgrounds, they adopted a range of approaches to deal with difference and to pass on a sense of belonging to their children. Three 'typical' approaches were identified as 'individualised open', 'collective mix' and 'collective single'. Though different approaches between parents or across generations within the family were observed, these were usually complementary and accommodative. Often, the most difficult issue for mixed families was the response of others to their mixedness.

### Conclusion

We found little evidence of inherent culture clashes or pathology in mixed families. Implications for policy and practice include (a) the need to focus more on professionals' ability and readiness to understand the variety of the experiences in mixed families in order to address mental health concerns in these families without fear or prejudice and (b) greater recognition of the potential impact of society's prejudicial lens on the mental health of members from mixed families.

## Sense of coherence in caregivers of the severely mentally ill—pathways for mental health promotion

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### Background

Consequences of caring for a loved one with severe mental illness are a public health concern, given prevalence rates and clinical/functional impact of psychotic disorders. McCubbin *et al.* hypothesized that health risks linked to the stressful burden of caregiving can be buffered by one's sense of coherence (SOC), within Antonovsky's salutogenic framework. To our knowledge, there are no related studies in families of people with psychotic disorders. We aimed to analyse the importance of caregivers' SOC as a protective factor to burden and psychological distress, using data from the Families of Psychotic Patients (FAPS) Project.

### Methods

FAPS is a prospective study of a convenience sample of 108 primary caregivers to patients with ICD-10 schizophrenia, schizo-affective or delusional disorders, in community mental health services (Lisbon, Portugal). Comprehensive caregivers' assessments include the Involvement Evaluation Questionnaire-IEQ, General Health Questionnaire-GHQ12 and Orientation to Life Questionnaire (SOC). Patients are given the BPRS (symptoms) and WHO-DAS II (disability). We present preliminary baseline data.

### Results

Regarding caregivers, 93 (86%) were female (mostly mothers) and mean age was 59.9 years (SD 12). Thirty-seven percent were GHQ positive. IEQ total scores were  $28.7 \pm 15.2$ , Likert GHQ  $14.1 \pm 6.5$  and SOC  $129.4 \pm 20.1$ . There were significant correlations between SOC and GHQ Likert ( $-0.599$ ;  $P < 0.01$ ) and IEQ tension scores ( $-0.278$ ;  $P < 0.01$ ).

### Conclusions

In spite of possible bias (non random sample and existence of heavy disabilities at patient level), these worrying results deserve public health policy consideration. Strength of inverse associations was especially evident between SOC and distress. SOC must be further tested as a predictor of significant caregiver strain and the OLQ may prove useful as a screening device. The FAPS prospective survey will probably enlighten some related issues. Stress-appraisal-coping paradigms have been prevalent in caregiving research, but their usefulness must not preclude testing salutogenic approaches, as is the case in positively focused family interventions.

## Cultural dynamics in sexual and reproductive health of immigrant women

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### Background

The limited data available suggest that immigrant women in Portugal are at high risk for negative sexual and reproductive health outcomes and underutilise health care services. The study aim to understand immigrant women perception and needs in relation to sexual and reproductive health and explore their perspectives of health care services related to these issues.

### Methods

Eight focus groups were conducted with a purposeful sample of 64 low income African and Brazilian immigrant women, aged 18–45 years, living in Portugal for at least 2 years. Content analysis was used to analyse the data.

### Results

We identified differences related to cultural beliefs and norms between African and Brazilian women that play an important role in the adoption of practices related to sexual and reproductive life. Participants described a dynamic process between the challenges they faced moving to a different society and cultural expectations that determine perceptions, attitudes and consequently choices that can make them more vulnerable to health. There is an interception of social, cultural, economic and personal factors that characterize diverse immigration's experiences. Women's discourses reveal that frequently they faced complex situations characterized by fundamental human rights violation that generates discrimination, gender and social inequalities and exclusion. The results showed that they faced reduced access to health care due to structural, administrative, social, economic and cultural barriers. Many of these problems are connected to a lack of migrant-oriented health services, an insufficient training for health professionals



in caring for those from different cultural Backgrounds, and a lack of sensitivity of health providers to multi-ethnic society.

### Conclusions

Our findings suggest that efforts must be tailored to the specific needs of immigrant women with different sexual and reproductive experiences and expectations, and must address the cultural, social, economic and psychological context in which they live. In order to ensure effective health care, providers must be sensitive to deal with different cultural and value systems that have impact on decision-making related to sexual and reproductive health and use of health care services.

## The prevalence of the diagnosis of depression in data of health insurances: does it reflect epidemiologic reality?

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### Background

Depression is an expensive disease and highly prevalent in the general population. The prevalence rate of depression diagnosis and treatment for depression in outpatient care in Germany is analysed using data of a statutory health insurance ('Gmünder Ersatzkasse'). We addressed the following questions in our study: (1) which individuals are diagnosed as depressed in outpatient care (ICD-10 F23/33)? (2) What are the risk factors for being diagnosed as depressed? (3) In what way do health insurance data correspond to results from epidemiologic surveys?

### Methods

Analysis of outpatient data of the year 2004 from the German health insurance Gmünder Ersatzkasse.

### Results

Within 3 months 70% of insured visit at least once outpatient care. Fifteen percent are diagnosed as suffering a mental disease, 7% as being depressed (ICD-10 F32/33). Women are twice as often diagnosed as depressed as men. The prevalence of depression diagnosis increases with age. However, between age 55 and 70 diagnosis rates drop. Most depressive diagnoses are given to the very old. Prevalence of diagnosis varies between East and West Germany. In East Germany diagnosis rates are consistently lower (minimum 20%) than in West Germany. Depression diagnosis rates also differ according to marital or work status as well as income.

### Discussions

The results are discussed in the light of findings from epidemiological findings. Our data show that depression is highly prevalent among patients of general practitioners in Germany. Especially high are the prevalence rates of depression among people aged above 65 years.

### Conclusions

In a health care system where 90% of the population is insured outpatient health insurance data depict the epidemiological situation more or less reliable. Depression should be more acknowledged as a disease of old age.

## The prevalence of deliberate self harm among 15–17-year-old Lithuanian adolescents

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### Background

Lithuania has been among the countries with the highest suicide rate for more than 10 years. Surveys of the recent years

show that suicidal ideation and behaviour is highly spread among Lithuanian school children.

### Aim

To evaluate the prevalence and the most frequent methods of deliberate self-harm among 15–17-year-old adolescents of Lithuania.

### Material and Methods

The anonymous lifestyle and Coping questionnaire was used for the research performed in 2006. The countrywide research involved 3848 respondents [2200 girls (57.2%) and 1648 boys (42.8%)] aged 15–17 from all 10 regions of Lithuania.

### Results

According to the data received, 7.3% of 15–17-year-old Lithuanian teenagers (9.9% girls and 3.8% boys) stated that they had deliberately overdosed drugs or tried to inflict self-injury in other ways. One third of respondents (34.2%) chose drug overdose, poisoning and other internal methods to self-harm, 26%—mentioned cutting or other external methods for self-injury, 11%—tried to harm themselves using combined methods and 28.8% did not describe the action. The survey demonstrated that adolescents who had tried to self-harm could be attributed to the high suicide risk group, because 43.4% among them affirmed that they were thinking about repetition of such behaviour in the future.

### Conclusions

Deliberate self-harm among Lithuanian adolescents is relatively frequent: 7.3% of 15–17-year-old school children confirmed that they had tried to self-harm deliberately during their life. The most frequent method of self-harm is to overdose. The research affirms the necessity of preventive activities and further examinations of this problem.

## How Lithuanian adolescents tend to explain the reasons of deliberate self harm?

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### Background

Studies of youth suicidal behaviour have described the main suicide risk factors and psychosocial conditions capable to facilitate auto destruction. Unfortunately, consistent patterns are of little help in particular situations where interacting risk factors develop a new and unique sense. It is still little known about young people's motives of deliberate self-harm.

### Aim

The study aimed at disclosing causes and motives of deliberate self-harm among 15–17-year-old Lithuanian adolescents.

### Methods

The analysis was based on the data of the survey conducted in 2006 according to the methods of the Child and Adolescent Self-harm in Europe Study (CASE). A stratified cluster sampling design was used to draw a representative sample of 15–17-year-old schoolchildren of Lithuania. The studied population consisted of 3848 respondents.

### Results

An intentional self-harm was reported by 7.3% of 15–17-year-old Lithuanian adolescents (9.9% girls and 3.8% boys). Depressive feelings were among the most common motives of such behaviour (40.2%). Girls, in comparison to boys, reported attempts to harm themselves deliberately twice more often (45.9% and 20.6% relatively), however, boys twice more rarely than girls did not disclose motives of self-injury (24.3% and 57.1%) Most of self-injuring adolescents (79.4%) stated, that they were not seeking help after self-harm and almost half of them (40.6%) denied necessity of help. Among the main reasons of help avoidance (48%) was mentioned lack of attention to adolescents' emotional problems in their surroundings.

### Conclusions

Discussing reasons of deliberate self-harm adolescents are prone to point out depressing feelings and experiences.

After self-injury about half of them do not seek help and deny its necessity. Lack of attention to adolescents' emotional problems is one of the main obstacles in help seeking motivation and suicide prevention among young people.

### Urban stress, health and quality of life in the Lisbon Metropolitan Area (2004)

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#### Background

The exponential growth of urban areas and the high number of stimuli, signals, barriers, and similar challenges that city dwellers encounter daily, makes the study of urban health determinants and their effect on the quality of life an imperative. Stress, as a product of such contact, has important consequences on the individual's life, affecting their personal, family, social and work life, among other areas. It is thus becoming a growing public health concern, which demands an analysis of the associated environmental, urban and social aspects, as well as the individual characteristics that affect this phenomenon.

#### Methods

In order to study the relationship between urban stress, health satisfaction and quality of life, a cross-sectional exploratory study was developed. The sample consisted of 668 subjects, male and female, aged from 18 to 75, from urban areas. The variables Health Satisfaction (HS) and Quality of Life (QoL) were measured with the World Health Organization Quality of Life Survey—Bref (WHOQoL Group, 1998). In order to assess the perception of US, a measure with four subscales—Physical Environment, Work Environment, Interpersonal Settings and Health Care and Social Provision—was developed, based on the concept of Urban Health, according to the definition by the World Health Organization, and on the Lazarus and Folkman's transactional model of stress.

#### Results

A negative and statistically significant correlation was found between the US scale and the scale measuring HS and QoL, not only when total scores were considered [ $r = -0.41$  ( $= 0.001$ ) for QoL and  $r = -0.31$  ( $= 0.001$ ) for HS], but also when subscales from both instruments were taken into account. The results suggest that subjects who experience overall high levels of US also experience less HS and have a worse perceived QoL.

#### Conclusions

The results highlight the potential impact of urban planning over HS and QoL, suggesting that a global intervention towards the reduction of US factors, including aspects such as public transportation, air quality, social support, residential and workplace crowding, etc., will have a positive outcome in terms of HS and QoL. These results also put highlight the contributions of mental health research on public health interventions.

### Mental health of medical students in Hungary

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#### Background

Mental disorders constitute a public health problem in the general population and in the medical profession as well. Medical doctors as professionals are not only helpers in matters of health and disease but also role-models for patients. Therefore the mental health and health behaviour of future

doctors is an important research issue. This was the focus of a health survey conducted among medical students at one university in Hungary.

#### Methods

A representative sample of all 1–5-year students filled a standardized self-administered questionnaire. The questionnaire included items on demographic data, self-perceived health, the 12-item version of the general health questionnaire (GHQ-12), a domain on social support, the abbreviated (13-item long) version of the sense of coherence scale, questions on body weight & height, physical activity, diet, smoking, alcohol & drug use and sexual behaviour.

#### Results

Eighty-one percent of invited students filled the questionnaire. Self-perceived health was good or very good according to more than three-quarters of the students. Mental health was measured by the 12-item general health questionnaire (GHQ) on which 19% of the students scored above the strict threshold indicating mental health problems. The prevalence of mental health problems was higher among medical students than in the same age group of the general population. The mean score of sense of coherence (SOC) measured by the abbreviated Antonovsky questionnaire was 62.5 (95% CI 60.3–64.7). SOC showed strong correlation with self-perceived health and mental health but not with health behaviour, specifically physical activity, diet and substance use.

#### Conclusion

The relatively high prevalence of mental health problems draws attention to the needs of future medical doctors to learn more about determinants of their mental health and to improve their stress-coping skills.

### Misclassification and the use of register based indicators for depression

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#### Background

Depression rating scales are the preferred instrument to measure depression in surveys, but their use is limited due to selection bias with respect to non-respondents, lack of statistical power, and misclassification. Some recent studies have used population register based information, such as hospitalization with diagnosis depression or prescription of antidepressants, as indicators for depression. These indicators address the first two limitations, but they may introduce misclassification.

#### Objective

To study how much depression indicators based on administrative register data on hospital and antidepressant treatment suffer from differential misclassification with respect to gender, age and social group.

#### Methods

Data about 7378 persons were obtained by linking a cross-sectional survey of Danish adults aged 40 and 50 years with population-based registers about hospital and antidepressant treatment. Misclassification was analysed and adjusted for by the method proposed by Rothman and Greenland; comparing register data on depression to survey data on depression.

#### Results

Differential misclassification was found. Adjustment for misclassification reduced women's ORs (compared to men) from 2.18 to 1.00 for hospital treatment and from 1.70 to 1.10

for antidepressants. For lower social group, the corresponding odds ratios increased from 1.18 to 3.52, and from 1.35 to 2.32, respectively, whereas odds ratios with respect to age remained almost unchanged.

### Conclusions

Differential misclassification should be considered, when register based information about hospital and antidepressant treatment are used as depression indicators.

## Factors affecting discrimination toward mental illness

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### Background

Discrimination and stigma toward mental illness decrease accessibility to mental health service. It is essential to improve discrimination to those who have mental illness for promotion of mental health. Therefore, we have to know which factors influence public discrimination to solve this problem. Knowledge, familiarity and prejudice about mental illness are well-known factors affecting discrimination in western society. However, few studies were done about this issue in South Korea. We made a study of investigating impact of knowledge, familiarity, prejudice about mental illness and demographic factors on discrimination toward mental illness.

### Method

To assess impact of knowledge, familiarity, prejudice about mental illness and demographic factor on discrimination toward mental illness, we conducted a telephone survey in South Korea with nationally representative people who are 18 years old or over ( $n=1040$ ). Independent samples *T*-test, one way ANOVA and linear regression analysis were done to analyse the results of the survey.

### Result

Discrimination toward mental illness was decreased when knowledge and familiarity were increased, but decreased when prejudice was increased. The impact of prejudice was the biggest among these factors. Female represented more discriminative behaviour than male. Higher education level affect negatively on discrimination.

### Conclusion

To solve discrimination problem in mental health, it should be necessary to increase opportunities to contact with those who have mental illness as well as educate in mental illness.

## What connects poverty and psychological distress? County level analysis in Croatia

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### Background

Poverty is a social construction described with many dimensions (socioeconomic determinants); lack of education, inadequate housing, social exclusion, unemployment, environmental degradation and low income are just some of those. Sex, age, employment status and education correlate with occurrence of psychological distress (PD) in a same way as with poverty. There is a large body of evidence from studies in industrialized countries demonstrating association between poverty and mental health status, also replicated in low and middle income countries with the most consistent association being with low levels of education.

Aim of this study was to determine whether there is significant correlation in Croatian population at the county level between poverty and bad mental health status described as psychological distress.

### Methods

Data used in this analysis comes from Croatia Adult Health Survey 2003, pooled 2002, 2003 and 2004 Household Budget Survey and county statistics from Central Bureau of Statistics for year 2003. As the mental health outcome measure we used the Mental Health Inventory (MHI-5) subscale of the SF-36 health status questionnaire, with the score lower than 52 determined as psychological distress. Socioeconomic determinants used in this study are unemployment rate, divorce rate, average years of education, population older than 65 years, criminality rate, alcohol consumption, and smoking. Data were analysed for each socioeconomic determinant fit into linear model with PD as analysis variable. Also, linear regression model is done with PD as dependant variable and all socioeconomic determinants as explanatory variable, controlled for poverty rate.

### Results

The only socioeconomic determinant showing statistical significance for both poverty and PD is education level (PD = 59.635094 - 3.5462554 average\_years\_of\_education,  $P=0.0054$ ). Linear regression model was not significant ( $P=0.2063$ ).

### Conclusion

Literature shows that determinants constructs for PD and poverty look much alike suggesting that there should be some correlation between them. Our study presented major differences between poverty and psychological distress constructs with the education as the only socioeconomic determinant significant for both.

## The mental health state among the children of the different orphanages in Georgia

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Significant socioeconomic and political changes taking place in Georgia in the beginning of 1990s.

Several reports indicate a direct association between the social cataclysms and the incidence of the psychiatric problems in the population. The number of children in the orphan's houses has grown considerably, as a consequence of the increasing proportion of refugees, internally displaced persons, disabled children, street children, single and unemployed parents, socially unprotected and dysfunctional families. Traditional relationships and attitude have changed.

We studied the mental health status among the children of the orphan's houses of different type within the network of the Public Health Department Program 'Study of Population Morbidity and Massive Preventive Examination of the Population'. Investigation was held in Tbilisi and the region in the eastern Georgia. Three different orphan's houses were examined: orphanages, special schools for mental retardation children and non-age rehabilitation school 126, 4-24 years old children were investigated.

We found that 45% of the children are because of economic problems of families, only 3.2% of them had no parents. More than 40% of the studied individuals among children of orphanage have different mental problems. Seventy three (8%) of children had concomitant diseases, 50 (5%) of them different pathology of thyroid gland.

Inmates of a special Children's Home because of hard economic, social and psychological condition committed different type of crime. As mentioned the tutors the children have much more good living and psychological condition than at home. The index of social desadaptation is higher among them. The budget itself is significantly poor.

There is no psychologist in the schools. Children in above-mentioned schools are without psycho-social rehabilitation, special art therapies, work therapies and living skills training, that is way they are not ready for independent living and integration in society.

The isolation is not the correct way. It is necessary to change traditional attitude toward this problem

### Risk factors for depression in a community sample of Portuguese adolescents

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#### Background

Depressive symptoms affect a high proportion of adolescents and can be related to socio-demographic variables. The objective of this study was to analyse the factors associated with depression in a community sample of Portuguese adolescents.

#### Methods

We designed a cross-sectional study involving all students, aged 12–18 years old ( $14.9 \pm 1.8$ ), from 26 randomly selected secondary schools of the district of Viseu. Data was collected using a self-administered questionnaire, answered by the adolescents in the classroom. We excluded those without information regarding gender and age. The final sample was constituted of 7447 adolescents (54.7% female). Depressive symptoms were assessed by the Portuguese validated version

of the Beck Depression Inventory for adolescents (BDI-II), and the cut-off point for depression was 16 points. Obesity was evaluated by the body mass index (BMI) calculated by ratio of self-reported weight and square of height ( $\text{kg}/\text{m}^2$ ), according to the Cole et al tables, and the cut-off point for 'overweight' was  $25.0 \text{ kg}/\text{m}^2$ . Prevalence was expressed in proportions with 95% confidence intervals (CI). Proportions were compared by the chi-squared test and continuous variables by the Kruskal-Wallis test.

#### Results

The prevalence of depressive symptoms was 20.6%. Depressive symptoms were associated with gender (female OR 2.1, 95% CI 1.9–2.4), age ( $>14$  years OR 1.4, 95% CI 1.2–1.6), residence area (rural OR 1.2, 95% CI 1.1–1.4), absence from school (yes OR 1.6 95% CI 1.4–1.8) overweight/obesity (overweight OR 1.4, 95% CI 1.2–1.6, obesity OR 1.8, 95% CI 1.4–2.5), sports practice (yes OR 0.8, 95% CI 0.7–0.9), smoking habits (yes OR 2.0, 95% CI 1.7–2.2), coffee consumption (yes OR 1.6, 95% CI 1.4–1.8) and alcohol consumption (yes OR 1.5, 95% CI 1.1–1.7).

#### Conclusions

Depressive symptoms amongst adolescents are associated with gender, age, residence area, absence from school, smoking habits, overweight/obesity, sports practice and alcohol consumption. Preventive programs should be aimed at young adolescents at risk, as early as possible, to prevent the depression-related morbidity.

## SOCIAL SECURITY AND HEALTH

### The impact of common health problems: a bio-psychosocial approach

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#### Background

Common health problems (CHPs) such as pain, depression and fatigue have a high prevalence in the general population. These are often mild and self-limiting complaints. However, they can become disabling and account for a high proportion of sickness absence and incapacity for work. This study set out to establish the prevalence and impact of CHPs in a non-institutionalized UK sample and investigate their association with psychosocial variables.

#### Methods

Five hundred and twenty women and 480 men took part in face-to-face interviews in England, Scotland and Wales during 2007. A quota sampling method was used to recruit a representative general population sample. Data was analysed using multivariate linear and logistic regression.

#### Results

The prevalence of CHPs was high; 66.4% of participants reported one or more CHP(s) over the last month using an inventory. The most common complaints were headaches (24.8%), back pain (13.5%), sleep problems (12.1%), feeling tired/lacking in energy (11.9%), and pain in other joints (10.8%). Women and people who were not employed were more likely to report CHPs, and mental health complaints in particular. The impact of CHPs, was associated with the nature of the complaint and individual differences rather than with social variables. The strongest statistical predictor of disability, time off work and seeking medical advice was report of fear and avoidance in relation to the CHP.

#### Conclusions

The high prevalence of CHPs and their association with work, health and well-being indicates that they represent a major clinical, social and economic challenge. Innovative strategies for improving the management of CHPs need to be

investigated both from a clinical and policy perspective, with a focus on lay perceptions, primary care and occupational settings.

### The prevalence of work-related stress, and its association to self perceived health and sick leave, in a cohort of employed Swedish women, in 2004–2005

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#### Background

In order to determine the need for preventive steps decreasing the development of sick leave in women it is of great concern to know more about women's work-related stress. The objective of this study was to investigate the prevalence of work-related stress and its association with self perceived health and sick leave in a population of employed Swedish women.

#### Methods

This cross-sectional population study of women comprised 424 employed, working women who answered questionnaires concerning work-related stress, self perceived health and sick leave. The odds ratio (OR) with 95% confidence intervals (CI) was calculated in order to analyse the association between the exposure variables of work-related stress and outcome variables of ill health symptoms, self-rated health and sick leave.

#### Results

Ten percent of the entire group reported an overall high perceived stress due to organization and conflicts and 25% an overall high perceived stress due to individual demands and commitment. Twenty-two percent reported low influence at work and 33% reported work to spare time interference. All categories of work-related stress was significantly associated with an increased odds of high level of symptoms of ill health,

with the highest OR for high perceived stress due to organization and conflicts and perceived stress due to individual demands and commitment with an OR of 3.17 (1.51–6.62) and 4.53 (2.71–7.56), respectively. High perceived stress due to organization and conflicts and low influence at work was significantly associated with sick leave with an OR of 3.85 (CI 1.59–9.30) and 2.54 (CI 1.17–5.48), respectively.

#### Conclusions

There was a strong association between on one hand work-related stress, on the other symptoms of illness and sick leave. These findings give us an implication that work-related stress is an important public health issue among a general population of Swedish employed women.

### Sickness presence is an important warning signal. A Swedish questionnaire study

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#### Background

Sickness absence has appeared to be a common phenomenon in many European countries and has been studied in different workplaces. Research on sickness presence however, is sparse. In Sweden there is a qualifying day of sickness before sickness benefits may be claimed. In the light of a demand for learning how to address different health issues in the workplace, the purpose was to focus on what characterizes persons with repeated episodes of sickness presence.

#### Methods

A questionnaire was sent to 1080 individuals working in a municipal administration. The participation rate was 68.4% (739/1080). High sickness presence is referred to here as going to work at least twice in a year yet not feeling healthy and judging sick leave was required. Logistic regression models were used to analyse the data, including various aspects of the workplace, spare time, behaviour and attitudes. Odds ratio (OR) was used as an outcome.

#### Results

High sickness presence was reported by 55%. The following variables were found to be significantly ( $P < 0.05$ ) related to high sickness presence: male (OR 1.1), high level of work effort (OR 2.6), positive general work attitudes (OR 1.7), high sickness absence (OR 2.7), many symptoms (OR 3.5)—especially headache, abdominal pain and numbness/tingling in arms and legs—low satisfaction with sleep (OR 2.0), and not having good subjective health (OR 2.9).

#### Conclusions

Even if causal conclusions should be drawn with care, it seems that persons with sickness presence see their job as important and demanding, and also report both physical and mental health problems as well as high sickness absence. As working life of today often requires great efforts, the combination of sickness presence and sickness absence is alarming. Ambitious employees with bad health may cause themselves more severe health problems in the future. However, further research is required to clarify the causality.

### New instruments for the assessment of motivational determinants of return to work after sickness absence

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#### Background

Sickness absence research is hampered by lack of specific assessment instruments. Return to work (RTW) after sickness absence is believed to be influenced by motivation and key actors' attitudes. In this study, existing theory was used to build a new motivational model for RTW after sickness absence. The model included absentee attitude towards RTW, perceived social norm with respect to RTW, RTW self-efficacy, RTW motivation, and the RTW attitudes of six types of key actors. The aim of the study was to construct new assessment scales for these variables and test their validity.

#### Methods

First, 95 items were developed on the basis of theory and 33 in-depth interviews with sickness absentees and occupational physicians. Second, a prospective study was conducted. At baseline, a sample of 119 absentees who had reported sick for more than 1 month completed the 72 absentee items. The absentees varied according to gender, age, educational level and work sector. The other 23 items were completed by these absentees' key actors (occupational physician, general practitioner, supervisor, colleague, partner and significant other). After 1 year, the absentees' levels of RTW were measured.

#### Results

Factor analyses and reliability analyses yielded seventeen assessment scales (2–14 items) with sufficient reliability (Cronbach's  $\alpha$  .60–.86). Validity was also sufficient. Absentee attitude towards RTW, social norm with respect to RTW and RTW self-efficacy correlated significantly with RTW motivation. Social norm with respect to RTW, RTW motivation and RTW attitude of the occupational physician were predictive for RTW level after 1 year.

#### Conclusions

The new scales appear to be valid and promising for future research on RTW after sickness absence. Lack of correlations between key actors' attitudes and RTW may be due to the small sizes of the key actor samples. Validation in larger samples is necessary.

### Variation and clustering of health and deprivation by small area in Helsinki in 1998–2006

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#### Background

The Nordic welfare model was designed to mediate between the effects of global economic and local health service restructuring. However, with the relaxing of the model during this decade, potentially contrasting influences on geographic patterning of health and deprivation are in effect. The aim of the study is to identify clusters of multiple deprivation by small area and to examine their secular changes from the late 1990s to mid-2000s in Helsinki, Finland.

#### Methods

Data for 33 small areas in Helsinki from 1998 to 2006 were drawn from the City of Helsinki Facts statistics. The data included indicators describing health and health service use, living conditions, socioeconomic, demographic as well as ethnic features of the population in the areas. We grouped standardised indicators using factor and K-means cluster analysis. We also explored changes over time in clustering by comparing the distribution of groups of multiple deprivation between time points. In other words, we compared the extent to which small areas belonged to same clusters in different periods of time.

#### Results

Clear clustering of health and deprivation by small area was observed in 2006. Three clusters characterising different types of small areas were identified. These were (1) affluent areas with low health service use, (2) deprived areas around the centre, (3) poor areas with high birth rate. An analysis of

trends in the cluster membership showed that this patterning by small area has changed in a way that may imply more complex social and health segregation.

#### Conclusion

There were clear small area differences by small area in Helsinki from the late 1990s to mid-2000s. Poor health and health service use cluster together with other forms of deprivation. The resulting spatial pattern illustrates multiple deprivation, which implies that policies aiming at reducing urban spatial variation should address several types of issues.

### Telephone use, social networks and health status.

#### A national survey on the elderly in Italy

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#### Background

There is growing evidence on the role of social networks in preserving and promoting health in the elderly, but few is known on the role of telecommunication as key component of social networks.

The aim of this study is to investigate the relation between social networks and Health Related Quality of Life (HRQL) among the elderly in Italy and, in particular, the role of telephone availability/use for social and healthcare support.

#### Methods

A sample of 25 183 elderly (65+) was extracted from the ISTAT national cross-sectional survey during 2004–2005 in Italy. HRQL was measured with the SF-12. Social networks variables were: marital status, living alone and a too long distance between own and relatives' home. We analysed the availability/use of telecommunication by using the variables: 'to have a telephone at home', 'the relatives' availability of a mobile', and 'medical consultations by phone'. We applied descriptive and inferential methods to test the relationship between a group of selected explanatory variables and both physical and mental health status.

#### Results

Among the sample, 43.10% of the elderly were unmarried, 27.70% were living alone and 20.70% with a too long distance between own and relatives' home. In addition, the descriptive analysis showed that 12.4% of elderly didn't have home telephone, 38.7% of their relatives didn't have a mobile and 80.7% didn't use medical consultation by phone. By applying the chi-squared test, we found a significative correlation between the availability/use of telecommunication and a HRQL above the mean value ( $P < 0.05$ ).

#### Conclusions

Shape and key components of social networks in Europe have been changing. As our study is one of the first investigating the role of telecommunications availability/use in social and healthcare support and its influence on HRQL of the elderly, further researches are needed to deeply investigate this relationships.

### Long-term sickness absence: gender divide is not explained by occupation, income, mental distress or health

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#### Background

Women have more sickness absence than men, and still very little is known about the factors behind this divide. We had

data from a health survey in Norway, and could link to official registers of high quality.

#### Methods

In a health survey in 2000–2001 of all Oslo inhabitants aged 40, 45 and 59/60 years, 11 072 (48.7%) participated. Former analyses of the whole population have shown that associations between social variables and social security grants, chronic diseases and lifestyle were unbiased, however. Survey data were linked to data from the National Insurance Administration and Statistics Norway for 10 421 participants. Of them, 8079 were eligible for sickness benefits. Long-term sickness absence (>16 days) was counted in 2001–2004 as cumulative incidence and length of absence. Occupation, working conditions, general health and mental distress were self-reported while income was from official registers.

#### Results

Cumulative incidence was 49.9% for women and 34.3% for men in the 4 years after the survey. An age-adjusted female overweight of 63% was only reduced to 50% by adjusting for occupation, working conditions, income, self-reported health and mental distress. Length of sickness absence was 16 days more for women than for men, and was not influenced by adjustments.

#### Conclusion

We have not explained why women have more sickness absence than men by adjusting for occupation, working conditions, income, general health and mental distress. Factors explaining the gender divide should be sought elsewhere.

### Workplace violence and its association with self-rated general health: a study among 9000 public employees in Sweden

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#### Background

The occurrence of workplace violence is the one of the most serious threats to employee safety and health. The aim of the study was to ascertain the extent of self-reported violence or the threat of violence and its association with general health among women and men in different occupations employed in the public sector.

#### Methods

The study population consisted of about 9000 women and men from different parts of Sweden employed in the public sector. A comprehensive questionnaire based on questions from mainly validated instruments was constructed covering aspects such as health status, lifestyle and physical and psychosocial work conditions.

#### Results

One out of three employees reported exposure to workplace violence with the highest proportion among psychiatric nurses (79%) and attendants in psychiatric care (75%). Workplace violence were more common in younger ages (<45 years), working <40 hours per week, working night time and among those reporting poor health. Regardless of gender, age, hours of work, working night time and type of occupation, associations were found between exposure to workplace violence and less-than good general health, with the strongest associations for psychiatric nurses with an odds ratio (OR) of 3.19 with 95% confidence interval (95% CI) of 1.28–7.98, physicians/dentists (OR 2.46; CI 1.35–4.49), compulsory school teachers (OR 2.14; CI 1.33–3.45) and other nurses (OR 1.87; CI 1.23–2.84).

#### Conclusions

Workplace violence was frequently reported among employees in the majority of the most common occupations in the public sector and it was generally, as well as specifically within several occupations, associated with self-reported poor health among both women and men.

## Occupational exposure to formaldehyde and genotoxic risk

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Nowadays, formaldehyde is classified as a human carcinogen by the International Agency for Research on Cancer and has determined that there is 'sufficient evidence' that occupational exposure to formaldehyde causes nasopharyngeal cancer in humans. It's also considered a genotoxic occupational agent.

A study was conducted to evaluate the genotoxic effect of occupational exposure to formaldehyde on an industry of formaldehyde and resins production. The environmental monitoring was made by two different sampling methodologies: video recording and exposure monitoring using Photo Ionisation Detection equipment which allows establishing the relation between measurements and worker activities, and by personal air sampling. The quantification of ceiling concentrations and the determination of time-weighted average were then obtained by direct lecture of the concentrations and by GC, respectively. The time-weighted average range was 0.22–6.3 ppm and ceiling values varied between 0.003 and 1.09 ppm. The micronuclei (MN) assay was performed in 34 exposed workers and 11 controls, both in buccal cells and peripheral lymphocytes. The number of cells with MN per 1000 cells in the exposed group was 2.9 in lymphocytes and 1.65 for buccal epithelial in 2000 cells observed. For the control group, and for the same number of cells observed, the frequency of MN in lymphocytes was 2.8 and null in the buccal cells. There was no significant difference between exposed workers and control individuals in MN frequencies of peripheral lymphocytes.

The collected data points to the need to develop safety and health programs in the industry of production of formaldehyde and resins.

### Electrocardiographic alterations

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In low-temperature working environment, physiological reactions aimed at adjusting thermal balance occur (peripheral vasoconstriction, an increase in heart rate and blood pressure), leading sometimes to cardiovascular overload.

This study's main aim is to identify electrocardiographic alterations in individuals working in a Meat Processing Center, facing low temperatures (0–5°C), through Holter's ambulatory electrocardiography.

The investigation showed that the sample is subject to a slight degree of hypothermia (35.7 ± 0.9), which can be due to the confluence of circumstances such as: the large amount of workers that wears additional clothing besides

the working clothes provided by the MPC, and the high metabolic rate inferred by the analysis of the cardiac frequency.

Nevertheless, the results of the study are different from those found in the bibliography used. Therefore, bearing in mind the hypothermic degree evinced by this study's sample and due to the fact that no evidence of thermic stress was found, no electrocardiographic expression of hypothermia has been found, particularly concerning the rhythm, the presence of dysrhythmias, the duration of the conducting intervals, the presence of the J wave and ventricular repolarization.

Although there are not electrocardiographic alterations it is important to include cardiovascular tests in workers' recruitment, as well as in periodical medical examinations, since refrigerated work can cause cardiac changes likely to come up or aggravate due to prolonged exposure.

### Electrocardiographic and ecocardiographic characteristics in body training system instructors

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#### Introduction

Several studies performed in athletes shows evidences, that when exercise is a continuously activity, it means morfofunctional adaptations in the cardiovascular system, subsequently and knowing that the Body Training System instructors are equally exposed to a continuously and intense physical activity, it was considered pertinent to evaluate what possible cardiovascular adaptations they may present.

#### Aim

Describe the echocardiographic and electrocardiographic characteristics in BTS instructors, using different diagnosis techniques, such as Electrocardiogram and echocardiogram.

#### Methodology

Fourteen subjects (six females and eight males) with ages comprehended between 26 and 38 years were submitted to cardiovascular diagnosis exams, to determine HR and left ventricle dimensions.

#### Results

It was observed in the electrocardiographic data, that 57% of the sample presented the HR within the range of [45–55] bpm; it was also observed that 43% presented earlier ventricular repolarization pattern and 57% presented an inversion of the T wave on V1. In the echocardiographic data it was observed in 21% of the sample an increased of the diastole left ventricle dimension.

#### Conclusion

In this sample it was possible to conclude that their professional activity stipulates electrocardiographic and echocardiographic alterations comparing with the normal pattern of healthy sedentary individuals.

## TRAINING AND EDUCATION

### Public health medicine education and training in the Netherlands

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### Background

Public health medicine is a medical specialty focusing on the relationship between societal conditions and the health of the population. The Dutch specialty-training programme for public health medicine takes according to European rules 4 years and combines medical knowledge, clinical experience and knowledge and skills of public health, administration and research. In 2005, 1070 doctors were registered as a public health physician.

### Objectives

The Royal Dutch Medical Association (KNMG) accepted the CANMEDS framework as a general framework for all postgraduate medical training in the Netherlands. The framework described the essential roles and key competencies of specialist physicians (medical expert, communicator, collaborator, manager, health advocate, scholar and professional). All specialty associations were asked to add specific competences and to define Entrustable Professional Activities (well described critical professional activities entrusted to a trainee). After these descriptions, the Netherlands School of Public and Occupational Health (NSPOH) was able to develop the training programmes.

### Results

A framework with general and specific competences was developed for public health medicine with a specific focus on prevention, monitoring, advice (solicited and unsolicited), cooperation, management and research in public health for individuals and population. Furthermore assignments for integrated theoretical and practical tutorials were developed, including assessment tools, like short assessment for practical skills, multiple source feedback and knowledge exams. Training sessions were organized for public health physician supervisors with a focus on role-modelling, giving feedback and counselling of the trainee. This new education program started in 2006.

### Conclusion

The competency framework of public health medicine gives a guideline for public health medical specialty training, and the new education program will lead to a new generation of public health physicians who are well equipped for the future challenges in public health.

In our opinion this framework could be used as a European Framework to compare and strengthen the different education programs for Public Health.

### Student conference as a social innovation in teaching public health

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We have used explorative and collaborative learning in the first course of the curriculum in the Medical Faculty of Oulu called 'Doctor and Public health'. This model of teaching has been developed during the last 10 years and it has succeeded well. The process of learning is the following: (1) teachers choose the main themes of the conference, topics for individual essays and for each small group (six students). (2) Students receive the topics 3 months before the conference with instructions on how to make the essay and how to write the abstract together. Teachers act as supervisors. (3) Students prepare an oral presentation and present it in a student conference. The purpose is to activate medical and dental students to express their opinions in groups, in discussions in a conference and by writing.

The model of student conference was modified and used in autumn 2007 in a pilot project between the Faculty of Medicine and the School of Health and Social Care, University of Applied Sciences. The participants ( $n=240$ ) were students of medicine, dental medicine and nursing and oral hygiene. In this pilot course the process of collaboration and interaction between students and teachers was organized through an asynchronous web-based discussion channel. The course was evaluated with a web-based inquiry.

### Results

Although the student conference was functional, almost all of the students expressed a wish for one or two face to face group meetings during the e-learning part.

### Conclusions

Development of information and communication technologies provides a splendid opportunity. However, face-to-face meetings are an important part of the interaction in e-learning, too.

### Healthy winter at workplace: measures of respiratory hygiene and social distancing: a case study

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### Background

The Program Healthy Winter is within the context of the Pandemic Influenza—social response—the Role of Innovation Project, the National School of Public Health—New University of Lisbon, in a joint venture with the Portuguese Directorate General of Health and the National Institute of Health Dr. Ricardo Jorge, with funding from the Calouste Gulbenkian Foundation.

This Program aims to address a medium sized bank organization who selects the units in order to implement the action of respiratory hygiene and social distancing measures.

### Objectives

The main objectives of the study aimed to: (i) prepare workers for a possible Pandemic Flu (drawing on the time of seasonal flu as test of action), (ii) reduce the transmission of the disease (explaining a number of measures which act on the transmission of respiratory diseases and translate the measures in specific protocols for the company); (iii) prevent influenza and the common cold respiratory diseases and (iv) assess the implementation of this action and support in the drafting and implementation of the Contingency Plan of the company. This prospective study, with a duration of 1 year, cover two flu seasons of 2006–2007 and 2007–2008.

The methodology involves the following stages: (i) Survey Health and Respiratory Diseases; (ii) Document Information; (iii) Survey; (iv) Training sessions; (v) Assessment of knowledge and risk perception (in each flu season).

### Results

The results show greater awareness of the issues of infection and transmission of influenza virus, level of social distancing, and preventive behaviour.

### Conclusions

The improvement in response to seasonal flu provides an important platform not only to advance the awareness for pandemic flu, but also to underline the importance of adopting measures to reduce the risk of infection.

### Information network on good practice in health care for migrants and minorities in Europe.

#### Wiki technology as a tool for developing a health information source

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Complexity of problems connected with health care provision for migrants and minorities in contemporary mobile Europe creates a big challenge for public health researchers and policymakers. Scientific evidence and other information is dispersed, often obscure, difficult to access, often in possession of closed circles of health and social care professionals. To gather and facilitate cross-national access to information, which enables grounded in data decisions and developments, a network of internet sites MIGHEALTHNET was created under the leadership of National Kapodistrian University of Athens and Prof. David Ingleby.

The network uses wiki technology, which belong to the Web 2.0 applications. This technology adds new interactive and social dimension to the task of creating and managing



health content on Internet. A goal of MIGHEALTHNET project was to create a comprehensive source of evidence and professional information regarding health of migrant populations in, for the beginning, 16 European countries. The novelty of the project lies in that, that development of the source was given in hand of those who should be most interested in it: researchers, policymakers, public health professionals, health and social care professionals, etc. Each country set its own national wiki, in common design and logic, connected, and in a way mirrored, by easily accessed wikis in other countries. Issues that are not specific to one particular country or information regarding non-European countries are covered in general wiki, by project co-ordinators <http://mighealth.net/eu/index.php/>. Information included in country wikis is partly translated into English for better communication.

The strategy of development of the MIGHEALTHNET wikis in each country was slightly different. In Poland, the professionals, well known for their expertise in the field, were invited to contribute basic material on migrant health and related issues. A 'snow ball' technique was used, beginning with just few experts. After the content of the wiki had been significantly enriched, to encourage further development, the project was extensively publicised in various circles of professionals, in and outside of health care field, and in May 2008 Polish wiki along with all other, was opened for public. Now, any professional preoccupied with migrant health and care, and with elementary understanding of wiki technology, can become a contributor and an editor of the particular national wiki or add material to general wiki.

The method of building a source in free peer collaboration and for mutual benefit is in accordance with some other initiatives of last decade (i.e. open access movement), which are built around an idea of professionals taking in their hands information rather than waiting for external publishers to do this. Using wiki technology gives also opportunity to build or reinforce ties and communication among researchers and professionals working in same field.

From May 2008 'migrant health wikis' and whole network live their own life, under a supervision of country administrators. Future will show whether the specialist network of wikis is to be as successful as Wikipedia, and whether are we ready to take information in our hands. If yes, MIGHEALTHNET can be a pattern to follow by researchers and professionals in other public health areas.

### Information literacy as an important component of health literacy

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Appropriate health literacy is one of important conditions of person's capability to take care of his/her health and health problems. To empower people and make them share responsibility for their health becomes therefore a very important issue on public health agenda. This is also because some studies and the analysis of knowledge and skills which together build health literacy leads to a conclusion that people, except those who are long term ill and therefore experienced in regard to their particular health problems, most probably have low health literacy. A solution is appropriate health education, and many theoretical and policy works list skills that such education should encompass.

A review conducted of literature dealing with problems of health literacy and health education shows surprisingly that not enough stress is put on an indispensable component of health literacy—information literacy. Information literacy is understood as a set of skills needed to find, retrieve, assess, analyse and use information. This component becomes especially important in present time of growing internet use.

Health information extensively provided and disseminated via this and other channels which generally escape quality control (Internet, mass media, cellular phones etc) reaches unprepared users. And the users themselves grow to be more and more independent in finding and using information related to their health. For some age groups in Europe Internet already is the first source of information and in near future this will apply to the whole European population. Growing independence in accessing health information, and decreasing role of intermediaries (doctors, nurses and trustful professionals) who can help, explain and correct, creates significant danger. Without appropriate information knowledge and skills, especially without understanding various aspects of quality of health information, active and passive users of health information may become vulnerable to unreliable, misleading, superficial and sometimes harmful messages.

The goal of the presentation is to show place of information literacy (including e-information literacy), component in general health literacy education, with special attention to knowledge and skills enabling assessment of information quality. Relevant and necessary elements of training aiming at information literacy are listed.

### Multimethod evaluation of the gender health policy framed in the Women's Health Plan of the autonomous community of Cantabria, Spain, 2008

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#### Background

The autonomous community of Cantabria integrated in its first Women's Health Plan 2004–2007 a new gender health policy to affect all health interventions. This priority public health policy had an umbrella approach that went beyond the scope of the plan, to challenge the entire health system.

#### Objectives

To evaluate (1) the conceptual framework of the policy, its validity, and significance; (2) the process regarding mainstreaming, efficiency, scope, and access; and (3) the results with respect to its effectiveness. Timeframe: October 2007 to December 2008. Subjects are the stakeholders involved. Sampling was carried out by theoretical representation with maximum variation.

#### Methods

Methaevaluation of main gender equality plans in Spain; selection and analysis of secondary information sources and databases available; questionnaire to health professionals; stakeholders analysis; in-depth interviews and discussion groups; consensus workshop with policy makers.

#### Results

The preliminary results obtained after triangulation of quantitative and qualitative data show that whereas the introduction of the gender health policy in the Women's Health Plan represented an opportunity for the health system to address gender health inequalities, its expected goals and ambiguity exceeded the scope and potential of the plan. However, 13 programs and protocols of the Plan integrated a gender perspective, including the gender-based violence and the natural birth programs. Moreover, policy makers, health providers and researchers are beginning to take a gender approach in their work.

#### Conclusions

Despite its limitations, this initiative represents today one of the few gender health policies in the country to address gender health inequalities. This participatory evaluation is contributing to give visibility and relevance to the policy as well as credibility to the practice of evaluating for equity and accountability.

## Differences in self reported morbidity by educational level: a comparison between the 1998–1999 and 2005–2006 Portuguese Health Survey Results

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### Background

Many studies throughout Europe have reported a higher level of morbidity for people with lower educational level. Some studies have analysed whether the size of these health inequalities varies between countries. One of the reasons for doing such comparative studies is that, in societies that differ with respect to the size of income inequalities and national living standards, these studies may shed more light on the causes of socioeconomic inequalities in health.

### Objectives

The main objective of this article is to provide, for the first time, at our knowledge, some empirical evidence on the relationship between self reported morbidity and education level for Portugal. We used national representative data obtained from the 1998–1999 and 2005–2006 health survey, provided by Instituto Nacional de Saúde Dr. Ricardo Jorge. To estimate the current differences in health by age and educational level we used logistic regression models. In the model considered in our framework, the dependent variable is health status ( $Y=1$  if the individual declares that it is in bad health and  $Y=0$  if it is in good or very good health). The explanatory variables were the following: age, educational level and the existence of certain disease typology. As usual we fit two separate models for men and women and we considered two distinct periods: 1998–1999 and 2005–2006.

### Results

As a whole, the estimation results suggested that, as expected, the educational level is negatively associated with health status, meaning that people with higher educational level have lower morbidity rates than people with lower educational level. These conclusions are similar to those obtained in other studies on this subject. Moreover, the estimated impact of education on health status is significantly higher for men than for women. As anticipated, our results also suggest that age is positively associated with health status. Older people have a higher probability of being declared in bad health than younger ones. With regard to this variable, the results between women and men are not so different, as those regarding the educational level. Comparing the results for the two periods, preliminary findings suggest that significant differences exist in the estimated odd ratios for most of the explanatory variables. This means that the relationship between socioeconomic characteristics and health status changed over time.

### Conclusion

Our study suggests that most of the individual factors considered were important to explain the probability of being in bad health. Furthermore, we also concluded that the impact of each factor change over time. Our findings are particularly useful not only for comparison purposes but also, for example, to analyse to what extent the expected rise in the educational level of Portuguese population can counterbalance the expected increases in ill-health resulting from the aging of the population. This is particularly useful to predict the future health burden associated with population ageing in Portugal.

## Salt consumption risk evaluation in a public school for food production

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### Background

Excess salt intake is a major public health problem worldwide. There are several studies that relate high salt intake with cardiovascular diseases, including hypertension, which is the major risk factor for stroke. Several studies have also shown that a reduction in salt consumption would reduce the burden of hypertension and related diseases. Portugal presents high prevalence of hypertension as well as high salt intake among the population, and cardiovascular disease is the major cause of death.

### Objectives

The purpose of this study was to analyse the amount of salt in meals served at a public school of restaurant, food production, tourism and hotels studies. It was also our purpose to describe the students' salt perception of the consumed meals. Salt was analysed through chemical analyses, performed by a certified laboratory and salt perception was evaluated using a questionnaire. We analyse 105 different meal components, including bread, soup and main meal.

### Results

The average salt amount of the whole meal was 5.85 g, which is very close to the daily recommended amount. Bread and soup have an average of 0.85 g and 2 g of salt. Seventy eight percent of the students consider the salt flavour as normal.

### Conclusions

Considering public health concerns, and that the school where the study was performed is related to food production and restaurant studies, this represents a major environment to take action, not only because of the students health, but mostly because these students will become future chefs in food production for all society, and will, most probably take their taste perceptions and salt use to their daily professional practice, hence influencing population salt consumption.

## Comparing the priorities in oral health with the existing evidence in the Cochrane Library

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### Background

Despite the different methods for setting priorities for health-care, their relevance to high quality evidence of the effectiveness of healthcare interventions is not yet well established.

### Objectives

To compare priority action areas in oral health with the evidence available in The Cochrane Library.

### Methods

We examined two major sources of priorities on oral health; the oral health priority action area of the World Health Organization ([http://www.who.int/oral\\_health/action/en/](http://www.who.int/oral_health/action/en/)) and the oral health priorities defined by Healthy People 2010. These were compared with the evidence provided in the Cochrane Library, Issue 4, 2007 in an attempt to identify gaps in the existing Cochrane Reviews (CR) as well as to clarify the issues that need to be considered in any priority setting exercise.

### Results

Two of the priority areas established in 'Healthy People 2010'; pit and fissure dental sealants for preventing dental caries in children and screening for oral cancer are not supported by high quality evidence. Except for the topic of the prevention of dental caries, which included six CR with sufficient evidence to reach a conclusion, in general the reviews on the treatment of dental caries and periodontal diseases provided limited evidence for the effectiveness of priority interventions. Both of the priority setting exercises focused on the need for oral

health services and the need to increase the accessibility to and attendance for oral health services. We only found three reviews relevant to oral health services or the specific usage of those services. The WHO also focuses on risks to oral health: diet, nutrition, fluorides, tobacco, HIV/AIDS. Although there are CRs addressing the other issues, there is no CR on nutrition and oral health, and none on water fluoridation.

#### Conclusion

Some of the known priority areas in oral health are not supported by high quality evidence. Health priorities can suggest areas where CRs and trials may be worthwhile. A closer collaboration between those tasked with setting priorities and the producers of evidence could provide a more integrated approach to the evaluation of appropriate priorities and the subsequent delivery of effective oral health care.

### Medical care of patients with chronic hepatitis B infections in Germany: high proportion of first generation migrants!

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#### Background

It is estimated that 0.5–1% of the total German population is chronically infected with the hepatitis B virus (HBV). This means that approximately 500 000 chronically infected individuals live in Germany and that around 10% of them need antiviral treatment. According to an epidemiological calculation, around 42% of them are migrants. The aim of our study was to get more information on socio-demographic features of

HBV patients and the sero-epidemiological status and treatment of these patients.

#### Objectives

Data collection was carried out in different hepatological practices and outpatient clinics in Germany. We collected data from adult patients with chronic hepatitis B by studying their patient records and interviewing the patients and the responsible physicians. The following data were collected: socio-demographic data (i.e. migration background), information on stage of disease, serological/virological status, current and former medical treatment.

#### Results

Data of 160 patients from 20 different facilities could be collected. 57.5% of them were male, mean age was 43.7 (range 19–81 years). Sixty one (38.1%) were Germans without a migration background, 82 (51.2%) were first generation migrants and 17 (10.6%) second generation migrants. Almost one quarter of the participants were born in Turkey, 3.1% in Russia and 2.5% in China. In 92.5% of all cases information on HBeAg status was available; 72.4% were HBeAg-negative. About 111 (69.4%) of all patients received a hepatitis-B-specific treatment at the time they were interviewed, most of them adefovir (41.5%) or lamivudin (35.4%) alone. In almost every case of antiviral treatment a considerable decline in the viral load could be observed.

#### Conclusions

Overall 62% of all participants were migrants, mainly first generation migrants confirming the estimated high prevalence of chronic HBV infection in migrants from high endemic countries. It is important to provide information materials on diagnosis, clinical course of disease, treatment and prevention also in foreign languages to ensure an adequate medical care for migrants.

## UTILIZATION OF MEDICINES

### Medication consumption in a sample of university Portuguese students

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#### Background

Self-medication is a major public health problem and might origin irreversible body damages, when consumed inadequately. In university students who are under great intellectual effort and stress, the possibility of consuming medication without medical counselling might rise.

#### Objective

To estimate the self-declared prevalence of self-medication (consumption of at least one medicine without medical counselling during the last month) in a sample of Portuguese university students.

#### Methods

This was a transversal study in which we evaluated 1004 students, 24.2% male and 75.8% female, with average age of 19.92 years. It was a convenience sample composed by health sciences students (nursing course) and other areas other than health (management, languages and administration courses). We used the ATC classification (Anatomical Therapeutic Chemical) from the WHO for the grouping of consumed therapeutic drugs. Among the total sample, 58.8% said they consumed at least one therapeutic drug during the month previous to the beginning of the research.

#### Results

The prevalence of self-medication in the inquired population was 52.4%. Self-medication was higher among female (53%)

and rural area residents (57.5%). Concerning age, we found that the participants from higher age groups registered higher prevalence of self-medication (17–21 years, 46.8%; 21–25, 54.7%; 25–29, 58.8%). Likewise, the prevalence of self-medication was significantly higher ( $P < 0.05$ ) among students from the nursing course (64.7%) and, among these, it was higher in female (55.0%). The most consumed therapeutic drugs were: Analgesics (N02)—31.3% followed by sex hormones and modulators of the genital system (G03—which includes oral anticonceptives)—15.9%; anti-inflammatory and anti-rheumatic (M01)—14.4%. The motives referred by the students were based upon having sufficient theoretical knowledge (56.0%); friend/familiar counselling (21.7%) and pharmaceutical counselling (15.0%).

#### Conclusions

We can conclude that the prevalence of self-medication among these students is high, especially if we consider that this is a young and healthy population.

### Comparison of outpatient utilization of psychopharmaceuticals between Zagreb and Scandinavian countries (2001–2006)

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#### Background

Neurotropic drugs account for 15% of total drug utilization in Croatia. The aim was to estimate outpatient consumption of

psychotropic drugs in Croatia in correlation with Scandinavian countries.

#### Methods

Data on drug utilization in Croatia were collected from all Croatian pharmacies and analysed for the 2001–2006 period. All drugs were classified according to Anatomical-Therapeutic-Chemical (ATC) drug classification system. These data were used to calculate the number of defined daily doses (DDD) and DDD per 1000 inhabitants per day (DDD/TID). Data of the Nordic Medico-Statistical Committee were used for Scandinavian countries.

#### Results

In Croatia, total utilization of psychopharmaceuticals of 115.4 DDD/TID in 2001, 104.5 DDD/TID in 2002, 106.9 DDD/TID in 2003, 101.2 DDD/TID in 2004, 95.5 DDD/TID in 2005 and 93.15 DDD/TID in 2006 was lower than that recorded in Scandinavian countries. The use of these drugs increased in Finland by 9.9% and in Denmark by 10.1%. In Croatia, a reduction of their consumption was recorded in 2006 relative to 2001 (19%). The utilization of psycholeptics (N05) was by 22% higher than in Denmark; in 2001 it was the same as in Finland whereas in 2006 it was by 28% lower than in Finland. In Croatia, the utilization of psycholeptics (N06), 90% of them antidepressants, was 2.3 times lower than the lowest rate in Finland, and 4 times lower than the highest rate in Denmark. Anxiolytics accounted for 90% of psycholeptic utilization in Croatia versus 29% in Denmark and 34% in Finland. The anxiolytic/antidepressant ratio decreased in Croatia by 35.19% (7.19 in 2001 and 3.83 in 2006), whereas in Scandinavian countries it showed a constant rate (0.7 in Finland and 0.4 in Denmark).

#### Conclusion

In Croatia, benzodiazepines as a symptomatic rather than etiologic therapy accounted for 86.9% of psychopharmaceutical utilization, pointing to the need of respective guidelines as a measure of rationalization.

### Outpatient utilization of nonsteroidal anti-inflammatory antirheumatic drugs (NSAID) in Croatia (2001–2005)

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#### Background

Nonsteroidal anti-inflammatory antirheumatics (NSAID) account for 10% of total outpatient drug utilization in Croatia. The aim of the study was to determine the pattern of NSAR utilization and prescribing quality during the 2001–2005 period.

#### Methods

Data on outpatient drug utilization were obtained from all Croatian pharmacies to calculate the number of DDD and DDD per 1000 inhabitants per day (DDD/TID). Drug Utilization 90% (DU90%) method was used to assess the quality of drug prescribing.

#### Results

During the study period, NSAR utilization decreased by 24.79% (from 66.85 DDD/TID in 2001 to 50.07 DDD/TID in 2005). Diclofenac, as the leading group M drug and one of the leading drugs in total prescription drug utilization in Croatia, accounted for 50% of overall NSAID utilization (33.5 in 2001 to 25.3 DDD/TID in 2005). During the study period, the utilization of diclofenac declined by 24.63% and of piroxicam by 44.07% (from 11.96 DDD/TID in 2001 to 6.69 DDD/TID in 2005). The utilization of ketoprofen was 9.77 DDD/TID in 2001, 11.70 DDD/TID in 2002, 9.66 DDD/TID in 2003, 8.39 DDD/TID in 2004 and 8.79 DDD/TID in 2005. The utilization of ibuprofen, a drug with the lowest rate of side effects,

ranged from 9.51 DDD/TID in 2001 to 7.75 DDD/TID in 2005. Comparison of outpatient utilization of NSAR in Croatia with professional guidelines showed highest compliance with the guidelines in 2004 and lowest in 2001. The decreasing tendency observed in the utilization of diclofenac could be considered favourable yet inadequate, since it still accounted for more than half of the NSAR utilization in 2005.

#### Conclusion

Overprescribing of diclofenac for any kind of pain or as an antipyretic is not founded on professional guidelines and is probably influenced by the Croatian pharmaceutical industry.

### Online pharmacies: innovation or threat to health?

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#### Background

E-commerce and online pharmacies (OPs) are innovations that shifted the potential impact of the Internet on the world of health from merely the spread of information to a real opportunity to acquire health services—especially drugs—directly. Aim of the study was to investigate the availability of prescription drugs in OPs, focusing on the level of consumer safety.

#### Methods

A survey of website offering prescription-only drugs was performed in August 2007 using the Google search engine, and analysing them using the content analysis method.

#### Results

The research led to an analysis of 118 OPs. Only 51 (43.2%) of them stated their precise location. Ninety six (81.4%) OPs did not require a medical prescription from the customer's physician; of these, 30 (31.2%) did not ask for any kind of medical information and 66 (68.8%) asked for a medical questionnaire to be filled in. A wide range of drugs with a high risk of being inappropriate and/or dangerous was offered. As regards marketing strategies, the selling arguments were analysed.

#### Conclusions

These findings show a worrying lack of consumer health safeguards on the part of OPs, leading to complex issues in terms of patient–doctor relationship, consumer empowerment, drug quality, regulation and policy.

### Drug information service for patients

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#### Issue

The growing number of drugs leads to a great complexity of the pharmaceutical market and increasing side effects and dangerous interactions. Due to the limited time during the physician consultation, patients do not receive adequate information about their medication. Many patients are insufficiently informed. Therefore, since 2001 a drug information service for patients has been established at the Institute of Clinical Pharmacology in Dresden, Germany.

#### Description of the problem

The advisory service is performed by phone, e-mail or letter. The callers were interviewed concerning their diagnosis, prescribed and currently used drugs. Pharmacists and physicians of the institute answer the enquiries related to drug use,

medication, side effects and drug interactions. This process is documented and stored in a database. The purpose of this study is a descriptive analysis of the enquiries from January to December 2007 in comparison with the enquiries of 2006.

### Results

In 2007, 1423 enquiries were registered, i. e. 31% more than in 2006 (855). The group of patients who used the service most frequently was women (60%) and the age of the patients ranged from 61 to 80 years (47%). In 946 enquiries (64%) the need for information about drugs and therapy was the reason for contacting.

### Lessons

The increasing number of enquiries and the satisfaction of the patients show the necessity of detailed knowledge about ingested medication, side effects and interactions. This leads to an effective treatment and minimizes follow-up medical problems. The evaluation of the drug information service reveals the effectiveness and success of the advisory work.

## Guideline adherence in general practice: trends over time

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### Background

Over the last decades, evidence-based working has become increasingly important in medical care all over the world. A growing number of clinical guidelines have been implemented in every health care sector. They are supposed to decrease inter-doctor variation. The aim of our study is to describe guideline adherence to 70 guidelines for medication prescribing of the Dutch College of General Practitioners (NHG) and to study inter-doctor variation over a 5-year period (2003–2007).

### Methods

We used data from routine electronic medical records from 60 to 80 representative general practices in the Netherlands, including around two million prescriptions per year. Per guideline we determined the percentage of prescriptions for the respective disease(s) that included a recommended drug. We calculated 95% CI to determine interdoctor variation. Because of the clustered data multilevel analyses was used. We tested whether there was a trend in guideline adherence over time.

### Results

For a minority of guidelines a trend (either upwards or downwards) was found in guideline adherence. Adherence levels varied considerably between guidelines. For example, while GPs chose a recommended drug in <5% of the prescriptions for acute bronchitis and incontinence, they chose >85% of recommended drugs for enuresis and constipation. Guidelines for the locomotor system generally have low adherence. Interdoctor-variation was large, but constant over time.

### Conclusions

Guideline adherence is constant over time, but varies across guidelines and GPs. Efforts to rationale prescribing should focus on a selection of diseases with a low level of guideline adherence combined with risks for patient safety such as diseases of the locomotor system.

## Differences in general beliefs about medicines among doctors and nurses in out-patient care

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The doctors' and nurses' communication with patients about medicines is important for the quality of care. Patient communication can be affected by beliefs about medicines and tension in the doctor-nurse relationship. The aim was to explore differences in general beliefs about medicines among doctors and nurses.

Questionnaires were sent to 306 private practitioners (PPs), 298 general practitioners (GPs) and 303 nurses in a county of Sweden. The questionnaire included sociodemographic questions and the general part of the Beliefs about Medicines Questionnaire (BMQ). The data was explored with independent t-tests, ANOVA analyses and multiple linear regression models.

The data collection resulted in 616 questionnaires (62.1% PPs; 61.6% GPs; 80.5% nurses). The majority of the PPs and 40% of the GPs were male but most of the nurses were female. The GPs mean age was 47 years, PPs 60 years and nurses 52 years. Few nurses originated from non-Nordic countries while 15% of the PPs and 25% of the GPs did. Nurses saw medicines as more harmful and less beneficial compared with PPs and GPs. These differences could not be explained by the included interaction variables. GPs declaring Nordic heritage saw medicines as more beneficial and less harmful compared with GPs with a non-Nordic heritage. Furthermore, GPs of non-Nordic origin were most likely to believe that medicines were overprescribed by doctors.

Doctors were more positive about medicines than nurses. An increased discussion including doctors and nurses about individual and other's beliefs about medicines may enhance understanding and awareness of each other's professions. This may further enhance their important teamwork. Heritage was also related to beliefs about medicines. The patient may receive more prescriptions from doctors with Nordic heritage compared if the patient consults doctors of non-Nordic heritage.

## Effectiveness of primary health care centers in controlling blood pressure in Navarra (Spain)

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### Background

There are many disparities in hypertension and cardiovascular disease care in ambulatory practices across Spain. The purpose of this research is to study the determinants of this disparities as well as the effectiveness of primary care in controlling the blood pressure.

### Methods

The records of 54 592 patients from the computerised database of five health centres (three urban and two suburban) in Navarra (Spain) were analysed. Data from 2004 and 2006 on treatment and diagnosis were drawn. Data were analysed with logistic regression and hierarchical cluster analysis.

### Results

The prevalence of hypertension diagnosis was 14.3% (95% CI 14.0–14.6) in 2004 and 16% (95% CI 15.7–16.3) in 2006. The control of the BP ( $\leq 140/90$  mmHg) was similar in both years (47.5 vs 47.4). There was a worst lipid profile, glucose, creatinine and BMI in hypertensive patients than in the general population in 2004 and 2006. Patients who were hypertensive in 2004 and 2006 showed a statistically significant improvement in LDL (11.6 mg/dl), HDL (4.1 mg/dl), blood glucose (1.6 mg/dl) and DBP (2.0 mmHg), but did not improve on weight, BMI or SBP. In 2006 the average SBP and DBP were 138.3 and 78.4 mmHg. In the logistic regression using BP and SBP control as outcome, stroke OR 0.593 (95% CI 0.44–0.80),

myocardial infarct OR 0.68 (95% CI 0.55–0.83) or peripheral vascular disease were bad predictors. Consumption of beta-blockers, ARBs OR 1.25 (95% CI 1.10–1.3), ACEI OR 1.21 (95% CI 1.10–1.36), or calcium antagonists or diabetes OR 1.29 (95% CI 1.11–1.49) were good predictors of BP control. Only age and peripheral vascular disease were predictors of

poor control of the DBP. Four different cluster of BP control practice in terms of drugs used and effectiveness of control were detected.

**Conclusions**

Antihypertensive drugs use and diabetes diagnosis are the best predictors of good control.