

*Public Health and Health Care in Greece and Bulgaria:
The Challenge of the Cross-border Collaboration*

Book of Abstracts

Editors:

Jeliazko Hristov, John Kyriopoulos and T.C. Constantinidis

Alexandroupolis, 8-10 May 2009, Hotel Thraki Palace

Organizers:



Centre of Diseases Control and Prevention
Athens



Medical School of Democritus University of Thrace
Laboratory of Hygiene and Environmental Protection
Alexandroupolis



Medical University of Plovdiv
Faculty of Public Health
Plovdiv



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Sofia



4th District Health Directorate of Macedonia and Thrace
Thessaloniki



Under the patronage of the Ministers of Health
Dimitrios Avramopoulos and **Evgeni Zhelev**

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Zekomir Vodenicharov

On behalf of the Organizing Committee, we would like to welcome you to the Conference on «*Public Health and Health Care in Greece and Bulgaria: the Challenge of the Cross-border Collaboration*», which is going to be held on 8-10 May 2009 in Alexandroupolis. The Conference is organised by the *Centre of Diseases Control and Prevention* (Athens, Greece), *Laboratory of Hygiene and Environmental Protection* of *Medical School of Democritus University of Thrace* (Alexandroupolis, Greece), *Faculty of Public Health of Medical University of Plovdiv* (Plovdiv, Bulgaria), *Faculty of Public Health of Medical University of Sofia* (Sofia, Bulgaria), and *National School of Public Health* (Athens, Greece).

The collaboration of these academic and research institutions will highlight common issues of interests in public health, health care and health policies and it will, consequently, contribute to the strengthening of the cross-border cooperation between the two countries. The topics to be discussed in this conference - such as health reforms and evidence-based health policy, chronic and infectious diseases, environmental risks factors, safety conditions at workplaces - are currently critical issues and will set the basis for a future agenda.

Participants are distinguished academics in their countries, who have a record of remarkable contribution to their scientific field as well as of an advisory role in health policy decision-making. The involvement of internationally renowned experts in the conference's sessions provides a unique opportunity to participants to identify and be better informed about the significant changes in the state of health and healthcare of both countries. The conference will, also, give the opportunity to participants to develop new links for future cross-border collaboration by adopting best practices in the various research fields.

We hope that in the course of this conference, we will be able to engage in constructive discussions, which will shed light on major aspects of public health and health care, and wish you an enjoyable stay.

The Organizing Committee

SESSION I

Management, Policies, Economics, Education

EVIDENCE-BASED HEALTH POLICY IN REPUBLIC OF BULGARIA

Jeliazko Hristov¹ and Tzekomir Vodenicharov²

1. Dean of the Faculty of Public Health, Medical University, Plovdiv, Bulgaria, 2. Dean of the Faculty of Public Health, Medical University, Sofia, Bulgaria

“High quality evidence is vitally important”. It has turned into an element of state policy and a subject of social, ethical and political discussion. (MJ McQueen, 2001). The evidence in health policy and healthcare is used for analyses and evaluation of system organization and management in general and of its components; for studying effectiveness, structural adequacy, cost/effectiveness and needs of reform etc. The purpose of evidence-based health policy is pursuit of the best medical, economic hence social effectiveness. This goal is of utmost importance in financial and economic crisis. The authors discuss the main aspects of evidence-based health policy in Bulgaria from the perspective of in depth socio-economic analysis. The areas of discussion are: achieving political consensus for sustainable development of healthcare; the introduction of 3Ds: democratization, decentralization, de-monopolizing; the development of health services market; the restructuring of hospital care, the privatization; the improved financing and the second pillar of health insurance; the voluntary health insurance and the creation of effective public/private mix; the implementation of European standards in healthcare; the analyses of costs of care in health institutions. The discussion of modern evidence-based policy in these areas should lead to optimal medical and economic effectiveness and guaranteed health care for every citizen. In authors' opinions the latter should be understood as development and verification of algorithms leading the patient through the various levels of the healthcare system assuring that he/she receives best treatment.

PREPARATION OF SKILLED CADRES FOR HEALTH MANAGEMENT IN THE FIRST FACULTY OF PUBLIC HEALTH IN VELIKO TARNOVO

Penka Ivanova and Romyana Yaneva

Medical University, Sofia, Faculty of Public Health, Bulgaria

For us, it is especially important the attempt and the experience of the first faculty of Public Health in Veliko Tarnovo, established in 1993. In this faculty the first educational curricula have been organized and created. The first textbooks in the specialties of health management and social activities have been written in the same faculty, as well. Among these are the masterpieces of useful knowledge, including titles such as: “Promotion of health” by *V. Borisov*, “History of healthcare” by *M. Apostolov*, *N. Zapryanov* and *P. Ivanova*. The authors exclusively use the interviews with the first, earliest builders of this faculty: honoured professors *Ts. Vodenicharov*, *V. Borisov* and *M. Apostolov*. The very succession in this field has been achieved after the consecutive foundation of a few more faculties of the same kind and by virtue of the active participation and co-operation between the honoured Prof. *Ts. Vodenicharov*, Prof. *V. Borisov*, Prof. *M. Apostolov* (in Sofia), Assoc.

Prof. G. Grancharova (Pleven), Prof. N. Zapryanov (Plovdiv) and others. The Faculty of Public Health in Veliko Tarnovo is the first to have set the commencement of the contemporary paramedicine education in Bulgaria after 1990.

DEVELOPMENT OF THE BORDER HEALTH CONTROL CONCEPT

Batselova H.¹, Yordanka Stoilova¹, Jeliazko Hristov² and Ani Kevorkyan¹

1. Department of Hygiene, Ecology and Epidemiology, 2. Department Management, Economy of Health Care and General Medicine, Medical University Plovdiv, Bulgaria

Border Health Control Concept (BHC) is in close connection with the spread of infectious diseases. *Our aim* is to analyze the development of the BHC concept and to point out the principles of the last international document. *Epidemiologic aspects of the problem*: The main task of border control is receiving and sending information for potentially dangerous events, early warning the national health authorities, responsible for all preventive activities, epidemic surveillance and therapeutic measures. Economic migration is a cause for a great number of imported diseases in the developed and the developing countries: morbilli, viral hepatitis A, B, C, brucellosis, Q-fever, HIV/AIDS, malaria, diphtheria and other. Intercontinental and intrastate trade with animals is very intensive nowadays, as well as food import and export. *Conclusions*: Data of variety and mutability of microorganisms, clinical polymorphism, dynamics of epidemic outbursts, huge process of world migration and different levels of social and economic factors as well as the system of epidemic control draw the great significance of the concept of border health control.

CHALLENGES TOWARDS THE GERIATRIC CARE IN BULGARIA

Polina Balkanska, Nikola Georgiev and Silvia Mladenova

Faculty of Public Health, Medical University of Sofia, Bulgaria

The article discusses several current issues, related to demographic aging and its impact on the healthcare system. The joining of Bulgaria to the European Union imposes harmonization of the criteria used by the EU and our country to govern the institutions dealing with the implementation of geriatric care. There are approaches to deal with the challenges to geriatric care in Bulgaria.

METHODS FOR COST-EFFICIENCY AND COST-EFFECTIVENESS EVALUATION

Doroteya Shtereva

Faculty of Public Health, Medical University, Sofia, Bulgaria

In the current paper the author addresses the problem of efficient spending of the resources in the healthcare sector. The problem is quite a hot issue because of several reasons. Every country invests a substantial share of its gross domestic product (GDP) in the healthcare. These resources are taken away from the private sector and in the countries with aging population and slow economic growth (such as the countries from the EU) they have very high cost. Third, under the current state of social and economic development the healthcare sector increasingly affects the economic development and the competitiveness of the

nations. The reasons stated above impose the wide application of methods for evaluation of efficiency and effectiveness of health services such as cost-efficiency analysis, cost-effectiveness analysis and the simple analyses of the cost function.

ON THE COMMUNICATIVE CULTURE IN HEALTHCARE ORGANIZATIONS

Rositsa Braykova, Drozdostoy Stoyanov¹ and Jeliazko Hristov²

1. Faculty of Public Health, University of Medicine, Plovdiv, Bulgaria, 2. Dean, Faculty of Public Health, University of Medicine, Plovdiv, Bulgaria

It is explored in the present study the controversial value dynamics, existing in the medical services during the period of political and economical transition. On one hand there is generated instability of the cultural and professional community values, on the other hand this may reveal a novel opportunity for introduction of modern complementary approaches in the management of the personnel communication in the raising diversity of values.

THE PROFESSIONAL REALIZATION OF THE GENERATION Y IN THE FIELD OF PUBLIC HEALTH

Dobriana Sidjimova and Zaharina Savova

Faculty of Public Health, Medical University, Sofia, Bulgaria

In the article are analyzed the specifics of the Generation Y (those, who are born after 1980) and their demands for professional realization. The representatives of this generation have sharp criteria and priorities choosing a future job, what shapes them as different from the previous generations. For the goals of this investigation, a questionnaire was distributed among students in first courses in specialty "Public health and health-care management" in the Faculty of Public health in Sofia Medical University. Analyzed are the results from the students' expectations for their future job when entering the University.

CONTEMPORARY TRENDS IN THE DEVELOPMENT AND THE FUNDING OF HOSPITALS

Anatoli Tachov

Director, Ministry of health, Regional health center, Blagoevgrad, Bulgaria

Many West European countries tend to diminish their hospitals' capacity. To use only market strategies such as separating the purchase of the health service from its delivery and the partial or full autonomy of hospitals makes only slower the process of restructuring and reforming of healthcares. These restructurings are much more difficult if the property right is decentralized and the character of motivation is heterogeneous. When we evaluate the use of horizontal and vertical integration, and mergence of hospitals in the European countries, we can notice that these cases of mergence are useful only if there is some decrease of useless powers or if there are clinical reasons to expend the scale or the admissions capacity. All well developed countries realize the importance of national health and the system of funding to be used to make this health care generally accessible. The system of funding used influence very directly the services offered. Nevertheless the effectiveness of the allocation of the funds, if the country spares less than 4% of its NGP for

Healthcare, its health services system will inevitably be underdeveloped. The experience of adopting and putting into operation the system of DRG is positive. The world experience proves that the functioning of a system is much more sensitive to the ways of allocation of funds towards the executives than to the total of the funds available to the healthcare system. The experimentation with different methods of doing this is a very important step in the process of developing the optimal ways of payments depending on the local conditions.

CULTURE AND QUALITY OF HEALTH SERVICE IN ONCOLOGY PATIENTS

Jeliazko Hristov, Nikola Atanasov and Stoyko Paunov

Department of Health Management, health economics and general medicine, Faculty of Public Health, Medical University, Plovdiv, Bulgaria

A considerable amount of research in the sphere of quantology shows that patients' satisfaction with health service is not optimal. This negative tendency is clearly manifested in the case of oncology patients. Their satisfaction with health care as a component of quality has its specific characteristics and subtlety. In connection to this the patient's opinion of the treatment is of great significance for improving the health management system. The main purpose of the present research is the analysis of the treatment conditions of oncology patients in the Plovdiv oncology dispensary.

ETHICAL DIMENSIONS OF THE HEALTHCARE REFORM IN BULGARIA

Jeliazko Hristov¹, Georgi Ivanov² and Donka Dimitrova³

1. Assoc. Professor, Department Health management, health economics and general practice, Faculty of Public health, Medical University, Plovdiv, Bulgaria, 2. Professor, Department Health management, health economics and general practice, Faculty of Public health, Medical University, Plovdiv, Bulgaria, 3. Ass. Professor, Department Health management, health economics and general practice, Faculty of Public health, Medical University, Plovdiv, Bulgaria (correspondence to Ass. Prof. D. Dimitrova, Plovdiv, Bulgaria)

The reforms in the health sector may be evaluated from various points of view: economic, political, social, ethical etc. The ethical assessment of the effects is of extreme importance mainly in the aspects of social justice and ensuring quality and equity in access and health services utilization. The reforms in the healthcare in Bulgaria basically introduced market relations between health services providers and patients mediated by the financial participation of health insurance institutions. These reforms resulted in: organizational changes in the public health system, transformation of property of health organizations, increased role of the professional organizations of the physicians, establishment of contract system between financing organizations and providers and financing of interventions by the Health insurance fund. All this changes seriously affected the provision of medical care and the relations between medical professions. Some of the changes had a significant impact on the equity and equality of medical care especially for the wage labor sector, because apart from the economic reasons certain ethical norms were not taken into consideration. Thus some social groups in the society whose health needs had previously been met by specialized services (workers, students etc.) considered the reforms dissatisfying and contradicting the ethical norms. The experience from the health reform in Bulgaria revealed that in planning and accomplishing reforms in the health sector it is mandatory to assess the

extent of violation of ethical norms and the deprivation of some social groups of their "privileges" given to on the basis of professional, work or age indications.

HEALTH INEQUALITIES: FACTS AND RESEARCH DIRECTIONS

Nevena Feschieva, Klara Dokova and Alben Kerekovska

Faculty of Public Health, Medical University of Varna, Bulgaria

Health inequalities is a central topic for public health policy in any country. The last almost two decades of socio-economic and political transition in Bulgaria have inevitably influenced the health status of the population and substantially impacted on the character of health inequalities among different groups. At the same time this period is characterized by insufficient research on inequalities of health, and in particular by a deficit of studies investigating their determinants. The existing surveys are fragmented and non-systematic. They do not comprehensively and profoundly explore the issue and its roots. Data is available on crude and specific mortality and morbidity rates by age, gender and place of residence. Data is also routinely collected on income distribution and population expenditures, including expenditures on health. However there is not a crosscut between these databases. Barriers are also available for obtaining mortality and morbidity data by marital, educational and socio-economic status; urban/rural place of residence; ethnic group. Our studies indicate substantial disparities in relation to urban - rural mortality, cardio - vascular morbidity rates, blood pressure and diabetes control. The question "Which group of factors – behavioral or socio-economic – influence mostly the existing health inequalities?" also remains open. The present lack of research on health inequalities is a serious barrier for adequate policy action and predetermines its inefficiency. At the same time, it poses a pressing challenge for the development of a comprehensive research strategy on a national level and its adequate resource support.

PALLIATIVE CARE ORGANIZATION IN THE HEALTH CARE SYSTEMS

Gergana Foreva¹, Maria Semerdgieva², Radost Asenova¹ and Lubima Despotova - Toleva¹

1. Department Management, Health Economics and General Practice, 2. Department Health Care Management, Faculty Public Health, Medical University Plovdiv, Bulgaria

Epidemiological data prove the trend of increasing portion of ageing people and the life - limiting diseases. Clinical, financial and ethical factors determine the importance of the palliative care organization in the health care systems. *Aim:* To investigate medical specialists' opinion about organization and funding of the palliative care in Bulgaria and compare it with the existing models in other health care systems. *Material and method:* Data are collected with original questionnaire and processed with statistical program software package SPSS.17. *Results and discussion:* Thirty three GPs participate in the pilot survey. 42,3%±8,6% of the doctors in the investigated group are certificated GP and the rest are postgraduate students in Family Medicine. The number of patients in 30,3% of the GPs' lists are over 1500 people. 45,5% of the physicians indicate over 10 patients, from their lists, with needs of the palliative care annually. The main difficulties in palliative care services delivering, according to our survey, are the organization (84,8%±6,2%) and lack of financial

sources (72,7%±7,8%). The most eligible organization, according to 81,8%±6,7% of the respondents, is palliative care offices well provided for hospital and home care. 1/5 of the GPs declare their possible role as coordinators of palliative care at patients' homes. *Conclusion:* The results of the GPs' opinion survey lead as main problems organization and funding of the palliative care services in Bulgaria. The most eligible organization, according to the respondents is palliative care offices well provided for hospital and home care. GPs possible role as coordinators of palliative care at patients' home would be the base of the so called integration model of palliative care. The results correspond with the Bulgarian arrangement in the second group in the International Observatory on End-of-life classification – state with local initiatives and without public funding for varied palliative care services.

ETHICAL APPROACH TO THE HEALTH SYSTEM

Lyudmila Chakarova

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The health system represents a hierarchical structure, whose elements fulfill very different functions. These elements have also different tasks, which have to be relevant to the common aims of the system. In the article is made an attempt to build up a wholesome approach to the health system from the point of view of the principles of medical ethics, with the intention of its deeper understanding. A survey is also carried out concerning the moral problems of the system, which mostly worry its consumers.

MEDICAL PROFESSIONALS' PERSPECTIVE OF EVIDENCE - BASED MEDICINE

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Described is a pilot study of 100 medical professionals' carried out in 2008 in the city of Sofia. *The aim* was to study the views and opinions of medical professionals about the essence and characteristics of evidence based medicine (EBM) and its implementation in clinical practice and health policy. *Methods:* An anonymous sociological questionnaire pilot study of 100 physicians was carried out in the city of Sofia. The group of participants included general practitioners, consultants in outpatient practices, clinical specialists in surgery, gastroenterology, cardiology, endocrinology, anesthesiology, image diagnostics etc. A specifically developed semi - structured questionnaire was used with 25 items. For most of the questions the participants had to choose between the formulated answers. The study took place in August and October 2008. *Material:* The majority of the participants (94%) were practicing medical professionals and only 6% (4 women and 2 men) were on administrative or managerial positions. *Discussion:* We established that the assessment

models depended on the structure and distribution of the studied group in relation to the length of clinical practice and self-evaluation of the standard of life. The study revealed the interest of the professional community towards the evidence-based approach not only in clinical practice, but also in strategic health management. The clinicians considered it necessary that the major issues of strategic management and health policy were studied extensively in the aspects of successful practices. *Conclusions* Bulgarian clinical specialists need to adopt the European ways of professional behavior, based on research evidence assuring correct decision making.

ON THE STRATEGY MANAGEMENT OF THE GLOBAL EDUCATION POLITICS IN MEDICINE

Bianka Tornjova¹, Drozdstoj Stoyanov¹ and Jeliazko Hristov²

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The current Global Education Politics (GEP) in Medicine is strongly influenced by the conceptual framework of the Person Centered care, as formulated by the president of WPA Juan E Mezzich. Furthermore it is driven from the so called comprehensive assessment and values-based medical practice, introduced by KWM Fulford. Most of the outstanding training programs in medicine, dentistry, healthcare management are already designed according to this novel approach. There is a challenging but nevertheless advantageous opportunity for reassessment of this model. Having been involved into the European community, Bulgarian Health Management institutions are facing the demand for attunement of the medical curriculum with the GEP strategy requirements.

SOME ECONOMIC ASPECTS CONCERNING INTEGRATED SYSTEMS FOR ELDERLY CARE IN BULGARIA

Jasmine Pavlova

Department of Health Economics, Faculty of Public Health, Medical University, Sofia, Bulgaria

Population ageing was one of the most distinctive demographic events of the twentieth century. It will surely remain important throughout the twenty first century. This problem is especially current for Europe. Aging is the most important population change in Europe nowadays, affecting every individual and every society, its economy, social structure and health care system. The same processes are particularly expressed in Bulgaria where we observed a permanent tendency to depopulation in the last decades. The percentage of the people above 65 years old is 22% (2007) and those of the individuals over 80 - 2,5 % (2025 - 65+ - 20,7%; 80+ - 3,9%; 2050 - 65+ - 30,1%; 80+ - 7,4%). The poor health status is typical for the old aged. So it reflects negatively on the economic and social position of the old persons. Meanwhile, a large increase of the proportion of people aged 85 or over can be expected to create a growing demand for personal care and help with the tasks of daily life. The problem has to be talked from several viewpoints. Integrating care can be particularly beneficial for the vulnerable segments of society who have difficulty accessing care due to social isolation or other barriers. This includes all socially disadvantaged groups, ethnic minorities, persons with chronic disability (of any age) and persons with mental health

problems. When integrated care packages require different organisations to work together, it will be important to minimise the practice of cost-shifting among different providers. It will also be important to ensure that organisations do not cherry-pick the lowest cost or most profitable patients, effectively excluding the more needy users from the system. Integrated systems for elderly appear to be feasible and have the potential to reduce hospital and nursing home utilization without increasing costs.

VALUES BASED MEDICAL PRACTICE: CHALLENGES BEFORE THE SYSTEM OF EDUCATION AND HEALTHCARE IN BULGARIA

Drozdstoy Stoyanov¹ and Kenneth William Fulford²

1. Faculty of Public Health, University of Medicine in Plovdiv; Deputy Director, Centre for Philosophy and Mental Health, Paisii Hilendarski University of Plovdiv; Lecturer in the New Bulgarian University; Psychiatrist in the State Hospital for Mental Disorders "St. Ivan Rilski", Ministry of Health, Sofia, Bulgaria, 2. Philosophy and Mental Health, University of Warwick; Fellow of St. Cross College; member of the Faculty of Philosophy and Honorary Consultant Psychiatrist, University of Oxford; Co-Director, Institute for Philosophy, Diversity and Mental Health; University of Central Lancashire; Visiting professor in the King's College and Special Adviser for Values Based Practice, Department of Health, London, United Kingdom

Values based assessment in medicine is derived from a new philosophy of mental health, based on the Oxford tradition in philosophy of language (JL Austin) and the moral 'theory into practice' (RM Hare, KWM Fulford). There is emphasized the crucial role of the "narrative" of the patient - his personal experience /history/ of disease, which is supposed to be the value counterpart to the facts /evidence and proof/ assessment of the health issues.

STUDY OF PATIENTS OPINION ON MEDICAL CARE QUALITY TAKEN BY THEIR GENERAL PRACTITIONERS

Kosta Kostov, Hristina Milcheva, Bogdana Dimitrova and Maria Kolarova

Trakia University, Medical College, Regional Centre of Health, Stara Zagora, Bulgaria

Purpose of this study is: to study the patients opinion on medical care quality taken by their general practitioners in outpatients structures of health service on the area of Stara Zagora. *The Results* of this study show that the quality of medical care taken by their general practitioners is good, but yet not a little part of the patients are unsatisfied or partially satisfied by medical service in outhospital section.

THE EUROPEAN'S STRATEGY LEADING PRINCIPALS FOR "HEALTH AND DEVELOPMENT WITH CHILDREN AND TEENAGERS"

Balichev U., Emil Vodenicharov and Jeliazko Hristov

NZOO and cathedra of Hygiene MU Sofia, and MU Plovdiv, Bulgaria

Summarized are The European's Strategy leading principals "Health and development with children and teenagers". The European burro and European professional pediatric communities apply seven approaches in the mention above strategy. The top pediatrician's point of view generalizes in develop of measurements which must be supported thought whole life cycle. In addition to it, there is detailed description for every task which must be

performing thought. There are recommendations for full integration between Pediatrics and all others working with children. Some new questions about professional training from the position of European's Pediatric Academy and European Pediatrician collegiums are posted. Another recommendation is complex education as: social medicine, sportive medicine, epidemiology, medical ecology, psychology, scientific approved medicine, teaming, and management.

DIRECT COSTS OF BRONCHIAL ASTHMA IN BULGARIA IN YEAR 2004

George Christoff

Medical University, Sofia, Centre of Allergy, Sofia, Bulgaria

Asthma is one of the most common chronic diseases in the world. Its rate, prevalence and incidence are associated with constant increase. The social and economic burden of asthma in many countries is of sufficient magnitude to warrant its recognition as a priority disorder in government health strategies. The expenses that health and health insurance systems, asthma patients, their families and society incur providing medical services for asthmatics are of considerable interest. Pharmacoeconomic analyses describe bronchial asthma nowadays as an illness with great social and economic impact on patients' and their families' quality of life through the impairment it causes. The reasons for that are: the chronic course of the disease and the expenses for treatment. Two main kinds of expenses are known - direct for medication, office and emergency visits, hospital treatment, and indirect because of lost work days and impaired quality of life. These two constantly increase worldwide. The author analyses the structure and amount of direct expenses for bronchial asthma in Bulgaria in the year 2004.

IMMIGRANTS' HEALTH: SITUATION ANALYSIS AND POLICY RESPONSES IN BULGARIA

Albena Kerekovska, Stojanka Popova and I. Mircheva

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As a new EU member state, Bulgaria is increasingly affected by immigration flows - becoming more attractive as both a transit and a final destination for immigrants. Immigrants' health is acknowledged as an issue of major public health importance and a challenge for policy responses. The aim is to explore the current situation and policies with regard to immigration phenomenon in Bulgaria and to identify the main problems of immigrants' health. The methods involve comprehensive review of literature and analysis of available data, regulatory norms and specific policies. The results reveal a great number of initiatives undertaken in Bulgaria to assess the major health problems of migrants and refugees and to assure high level of protection of their health. Nevertheless, there are problems emerging in practice that require further policy responses. They are related to: lack of consistent migration – management policy and adequate institutional structure for meeting immigrants' needs; lack of migrant – sensitive health services and insufficient sensitivity and training of health professionals and relevant stakeholders; lack of publicity and information about health insurance rights and obligations of immigrants and existing services; insufficient interagency and international cooperation; insufficient multi-sectoral

action and policies for solving migrants' health problems; lack of systematic reliable data, health information and rigorous research on migration.

AN ORTHODONTIC MANPOWER FOR 10-YEARS PERIOD IN PLOVDIV REGION

Julia Peeva

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There has been a considerable debate in Europe during the last few years on the manpower requirements in orthodontics. In some countries today, the need of orthodontic care cannot be accommodated due to the lack of professional manpower, whereas in others, a surplus of orthodontic facilities exists. The identification of full - time (equivalent) orthodontists is not straightforward and the respective figures have not necessarily been derived in an unambiguous way. Essentially, the figures represent those who hold a specialist license, or who have completed the recommended training for an orthodontic specialist but have not yet completed full registration requirements, or non-licensed practitioners who confine their practice to orthodontics, having entered full-time orthodontic practice prior to the establishment of specialist training schemes. It has been suggested an increased rate of training of orthodontists, as well as widening of the network of services rendered to the most susceptible age group (10-14years).

BIOETHICS TEACHING FOR GENERAL PRACTITIONERS IN MEDICAL UNIVERSITY, PLOVDIV

Mariana Liotchkova, Vanina Michaylova - Alakidi and Marieta Todorova

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The level of work ethics among General Practitioners (GP) in Bulgaria is about the average. Bioethics teaching is incorporated into the specialization program. Even the highly developed programs in medical ethics in the Faculty of Public Health in Plovdiv, there is room for improvement and strengthening. The bioethics teaching is realized in following dimensions: mastering psychosocial and ethics competence by GP; decision making; GP's activities in cases of death of family member; mourning as a reaction to the death and the process of overcoming the loss; giving back the joy of life; the role of ethical principles in General Practice; confidentiality; law and medical ethics; mistakes; management of uncertainty; coping strategies, etc. The necessity of complex cooperation in this process is commented - of the family, religion, specialized services with the key function of the family doctor and the specialists of healthcare management.

PROBLEMS IN MEETING POSTHOSPITAL HEALTH NEEDS OF PEOPLE AGED 65 YEARS AND OVER

Lora Georgieva

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Presented are problems in meeting posthospital health needs of patients aged 65 years and over, discharged from therapeutic (internal and neurological) and surgical (surgical and

orthopaedic) profile wards of two hospitals. Data is gathered by semi-structured interviews at patients' homes on the 7th (n=362) and 30th (n=339) day after discharge. Main problems during the process of meeting posthospital health needs are: difficult access of patients living in villages to primary medical care, out-patient specialized medical care, rehabilitation services and pharmacies; complicated administrative procedure for technical aids supplying; insufficient financial means for medicines and diet nutrition.

HEALTH PROMOTION AND PROMOTIVE STRATEGIES - THE RIGHT WAY TO DECREASE SOCIALLY IMPORTANT DISEASES IN BULGARIA

Lubomir Kirov

General practitioner, Peshtera, Bulgaria, Chairman of the National Association of General Practitioners in Bulgaria

A health promotion strategy traces out the way to achieving good social health by conducting good health promotion practices. A well constructed health promotion strategy is financially advantageous for the population, has perfect structure of management, good financial background and the necessary support and partnership of different institutions (government, ministry of health, health insurance funds, etc). Being of great importance for social health by reducing socially important diseases, promotive strategies should be an integral part of each and every national health strategy. And, if we desire to be effective, not just efficient in what we do, we should have good skill and knowledge how to create a national health promotion strategy. What follows is a brief description of how a national health promotion strategy for influencing socially important diseases was created and its implementation started in 2009.

OPPORTUNITIES FOR REGULATED ENTREPRENEURSHIP IN HEALTHCARE

Mariana Dyakova

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The regulated entrepreneurship is a basic prerequisite for controlled and planned market relations in the healthcare system. It allows for the successful interrelation of two seemingly opposite elements - the economic effectiveness and responsiveness towards the patient's requirements with the social responsibility and respect for its interests. The basic financial principles and the regulated entrepreneurship in the health systems in Europe are analyzed. Some of the up - to - date challenges and opportunities for regulated entrepreneurship in healthcare are overviewed.

THE FRENCH MILITARY HOSPITAL IN PLOVDIV - 1912. (First disclosure of archives)

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During the Balkan War (1912-1913) to establish military hospitals in the rear, Bulgaria asked the European countries for help. The French military medical missions were the first to set

off to Bulgaria. The surgeon physicians *Rebreyend* and *Gourioux* arrived on October 17, 1912 (just twelve days after the onset of the war) in Plovdiv. Some time later they were also joined by Dr. *George Heuyer*, a resident in a Paris hospital. The established hospital in Plovdiv was a rear one. A central place was taken by the military infirmary situated in the French College for Men "St. Augustine". Archival documents on hospital activities were preserved in the book-stock of the French College for Men, and following a translation from the French language were published for the first time. Amongst them there is a register of operations made in the period 01.11.1912 - 11.12.1912. For this period surgical aid was applied to 50 people. This hospital operated in the course of 3 months, and yet the memory of the experienced events preserved in the soul of these young French volunteer physicians was strong, durable and everlasting.

POSTGRADUATE TRAINING OF FAMILY PHYSICIANS IN COUNSELING YOUNG PEOPLE FROM DISTANT COMMUNITY REGIONS OF BULGARIA

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Background: The establishment of new democratic processes in East Europe after the 90th years of the last century, lead to radical changes in these countries: more liberal sexual behaviour, a high rate of abortions and an epidemic raise of HIV positive and drug users among young people. On the other side, family physicians in remote community practices have insufficient promotional activities and lack of experience in counseling young individuals. Because their CME stays behind these new processes, the GPs need to be educated more actively in communication skills and adequate attitude towards young people. Special topics are: reproductive and sexual health and prevention and control of HIV/AIDS. Aim of the study: assessment of the knowledge and attitudes of GPs to counseling young people and introducing a new educational program in distant general practices. *Methods:* A two stage study: An assessment of basic knowledge and attitudes of GPs from distant community centres to family planning, prevention and control of HIV/AIDS and counseling young people. An anonymous inquiry, including answers of 18 MCQ, fulfilled by rural GPs. The total number of the doctors in the study was 328, 178 from North and 150 from South Bulgaria. The mean age of doctors was 42.35 ± 6.5 years and the mean years of clinical practice was 14.6 ± 7.9 years. The second stage was an introducing a new educational program according to GPs' necessities. The project was accepted by the Ministry of Health and UNFPA - Bulgaria and first started in East North Bulgaria in the Department of FM of Varna Medical University. Then the educational process involved Plovdiv Medical University. *Results:* The data from the inquiry showed that 62.19% of rural GPs haven't enough information about actual HIV/AIDS data and 74.39% haven't good communication skills for counseling young people in family planning and prevention of HIV/AIDS. *Conclusions:* The study is still not finished, but the feed back of GPs educated in Varna showed 92.13% of them were highly satisfied with the new training program focused on communication skills orientated to young people, reproductive and sexual health problems and especially prevention and control of HIV/AIDS.

NURSING PROCESS AS AN APPROACH OF ORGANIZATION AND MANAGEMENT OF NURSING CARE

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Introduction: In 1961 Ida Orlando publishes her theory in "The Dynamic Nurse - Patient Relationship: Function, Process, and Principles of Professional Nursing". Her theory is the essence of the nursing process. The five-step nursing process-assessment, diagnosis, planning, implementation, and evaluation-serves as the foundation for all client care, that's why its significance to nursing theory is of great importance. It is generally accepted that nursing practice must be theoretically based, especially professional nursing. *Aim:* This report aims to study opportunities and attitudes among nurses (nurse - trainers, students and practicing nurses) for clinical application of nursing process. *Materials and methods:* Self-administered questionnaire has been applied among 535 nurses to reveal their views about the essence of nursing process and opportunities of its implementation in nursing practice. The study group includes 337 practicing nurses from four University Hospitals in Pleven, Sofia, Varna and Stara Zagora, 34 trainers from four nursing schools in the same places, and 164 students in their last year of training. *Results and discussion:* Most of the participants (79%) express their unquestionable interest in nursing process and consciousness of the necessity of its implementation in clinical practice. At the same time only 37 per cent of the respondents consider that nowadays in Bulgaria there are realistic possibilities for clinical application of the nursing process. *Conclusions:* The results of this study confirm our previous findings from the study at the University Hospital in Pleven that nowadays there are no possibilities for clinical application of nursing process in Bulgaria. Both studies prove that the most important factor for the development of nursing in Bulgaria is the profound knowledge of nursing process.

THE VOLUNTARY HEALTH INSURANCE MARKET IN BULGARIA 2004-2008

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This article pertains to growth and development of the Voluntary Health Insurance (VHI) market in Bulgaria in the last 5 years. The analysis includes the four main players on the market - VHI funds with the largest market share (between 64% and 93% of the VHI market share between them). We analyze the following financial indexes-premium income, health insurance reserves, and health insurance payments to the insured clients.

ASSESSING HEALTH AS A QUALITY OF LIFE

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In 1996 and 2001 in Bulgaria was carried out two National health interview surveys carried out in 1996 and 2001. In accordance with the answers to a series of questions

(recommended by WHO), subject were categorized as disabled, or having different states of perceived health. The indicators "Disability-free life expectancy" and "Healthy life expectancy" (based of self perceived health) were calculated according to Sullivan method. The results show that the indicators in 1996 are similar with those in 2001, but with tendencies of worsening in 2001. At all ages, the proportion of life in a condition free of disability, or in perceived good health is substantially lower for women than for men.

PERSPECTIVES ON BULGARIAN MARKET FOR NURSES

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The world has entered a critical period for human resources for health. The shortage of qualified health personnel, including nurses, is being highlighted as one of the biggest obstacles for improving the health and well being of the global population. In Bulgaria, as in many countries, one of the most problematic current human resource issues is a shortage of nurses. In our country the challenges facing the nursing workforce are interlinked with the challenges of the healthcare reform. We experience severe drop in the number of nurses, low wages, emigration, misbalanced demographic structure of nursing workforce, educational and qualification problems, disparagement of nursing profession and exodus from the profession. A nursing shortage has a major negative impact on health care. Failure to deal with it on national level is likely to lead to failure to maintain or improve health care.

A COST OF THE HOSPITAL TREATMENT OF PATIENTS WITH PNEUMONIAS, COPD AND BRONCHIECTASIS WITH AND WITHOUT RESISTANT STRAINS

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Introduction: Pneumonias, COPD and bronchiectasis are the most common community acquired lower respiratory tract infections. The antimicrobial resistance in these diseases has influence on the cost of the hospital treatment due to its economic effect that is connected with high costs. *Aim:* The aim of this study is to compare the value of the hospital treatment with the value of the clinical pathways in patients with resistant and sensitive strains with three diagnoses: pneumonia, COPD and bronchiectasis. *Material and methods:* 353 patients, treated in Pulmonary Clinic of University Multiprofile Hospital for active treatment, Pleven, Bulgaria, have been examined. 110 of them had pneumonia, 114 bronchiectasis and 129 COPD. 198 were with resistant to antibiotics strains and 155 - with sensitive isolates. The general cost of the treatment including medical and antibiotic treatment have been calculated for each patient by age, sex, concomitant diseases and hospitalizations, during previous year and clinical outcome. *Results:* Significant differences have been established between the cost of the hospital treatment of the patients in forming groups and subgroups. They are connected with studied variability of resistant and non resistant strains. The ratio in the patients with antibiotic treatment for pneumonia is 265/433 lv., for bronchiectasis - 214/429 lv. and for COPD - 141/224 lv. The cost of the hospital

treatment of investigated patients is twice to four times higher than the cost of the clinical pathways, determined by the National Health Insurance Fund. They don't cover the cost of the medical treatment and in patients with resistant isolates they don't cover even the cost of the antibiotic treatment. *Conclusion:* There is necessity to conduct multicentre trial to determine the real cost of the clinical pathways, because the discrepancy leads to big losses and runs into debts of the Pulmonary Clinic.

OUTSOURCING IN HEALTH CARE IN BULGARIA – CHALLENGES AND PERSPECTIVES

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The *aim* of outsourcing is reducing expenditure, better management of the health institution and performing higher quality medical. Outsourcing enables health managers to concentrate on what they can do best, with the available human resources, modern technologies and management. *Our aim* was to discuss and analyze the experience of hospital managers regarding the outsourcing approach, their assessment, conclusions and future expectations. *Materials and methods:* In-depth interviews were carried out with top managers from four hospitals in Plovdiv district. *Results:* The results obtained from the interviews showed that most widely used for outsourcing were hospital activities not associated with the basic medical activities. In general, hospital managers showed readiness and positive attitude to the application of the approach, particularly if quality of the offered service can be guaranteed, and if potential benefits prevail over risks. The results from the present study offered us preliminary information and directions to aid us in developing a successful set of instruments that to be used later in carrying out an official national study.

ECONOMIC ASPECTS OF HOSPITALIZED CASES OF INFECTIOUS DISEASES IN PLOVDIV REGION

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The spread of infectious diseases and their treatment are among the priorities of public health system worldwide. The main objective of every State is to establish an effective system for prevention, surveillance and control of infectious and parasitic diseases. A well built and properly functioning system for identification of cases allows an early diagnosis to be made. This makes it possible to significantly reduce the number of people suffering from infectious diseases, and also to decrease the cases with complications that require hospitalization of patients. Synchronizing the activities of all institutions responsible for strengthening and protecting the health of the population will lead to a decrease in the incidence of infectious diseases and will lower the costs that RHIF makes for hospitalization of these patients.

PATIENT SATISFACTION DATA: IMPORTANT INFORMATION FOR PROVIDING CONSUMER-ORIENTED HOSPITAL SERVICES

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In this study is examined the conception of consumer-oriented hospital services. The results of a patient satisfaction survey are presented, showing that consumers need more information on hospital care, medical procedures, pharmaceuticals, and they expect better services during their hospital stay. Patients have experienced comparatively low level of satisfaction for some aspects of hospital care. Some of the results show 31.6 % of the patients who state that doctors have not discussed their troubles and fears concerning the treatment. And according to 58.7 % of all respondents in the cases that they have had some troubles or fears concerning the health services, provided by nurses, they have not discussed them. Providers who want to build consumer-directed hospital services need to focus on some key issues: information (including consumer education), communication and the service itself.

ORGANIZATION OF THE WORK OF THE GENERAL PRACTITIONER

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An important aspect of the work of every general practitioner /GP/ is his duty and ability to provide 24 hour medical services to his patients every day of the year. This corresponds with one of the main characteristics of the GP practice-providing timely and continues care to the sick, the high risk individuals, and the healthy. In order to analyze whether the GP's where conducting these duties, we gave a questionnaire to 124 GP's. The results show that only about 40% of the questioned GP's provide 24 hour care to the patients that chose them, by finding a doctor for holydays, weekends, and night call. We also have data about the number of visits to the GP and consultations by phone.

BRUCELLOSIS IN BULGARIA - UNCOMMON AND FREQUENTLY DELAYED DIAGNOSIS

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Bulgaria had been free from brucellosis since 1958, but during 2005-2007 there has been a reemergence of human and animal disease. Diagnosis is difficult and frequently delayed. We present clinical, epidemiological and treatment characteristics of six patients with confirmed brucellosis. Clues to the diagnosis come from a thorough medical history. Full cooperation between public health and veterinary authorities is required for controlling the infection.

MAJOR INCIDENT MEDICAL MANAGEMENT AND SUPPORT - BULGARIAN POLICY

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Scientific and technological development have changed contemporary incidents' characteristics. Besides the magnitude of casualties, contemporary incidents could be characterized with the level of injuries' severity, environment impact with long-lasting consequences on flora, fauna, and human beings, infrastructure damage, as well. More frequently major incident consequences could be compared with those observed in disasters' situation. The aim of the article is to present the Bulgarian policy in major incident rescue operations management. Descriptive, deductive and cluster analyses were applied in order to depict Major Incident Medical Management and Support, and its place in United Rescue System established in Republic of Bulgaria.

MEDICAL TEAMS' PROTECTION - CRUCIAL STEP IN DISASTER MEDICAL MANAGEMENT AND SUPPORT

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Every disaster despite of its nature and type is an austere environment, where medical teams have to operate in order to provide medical support to affected population. The medical procedures effectiveness during disasters' medical support is highly influenced by the proper medical planning and management, as well as single medical specialist's physical capability to fulfill and execute his/her duties in order to save and preserve human lives and reduce long-lasting incapability. The aim of the article is to describe the minimum safety procedures, which have to be implemented in order to guarantee at the higher possible level medical teams' safety, enhancing disaster management effectiveness. Required minimum protective measures list is analyzed during each phase of disasters' medical support.

THE INSUFFICIENT FINANCING OF HOSPITAL CARE FROM NHIF AND THE REGULATED PAYMENTS OF THE PATIENTS

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In this article the question of insufficient financing of the clinical paths from the National Health Insurance Fund is traced. The author directs her attention to these paths, which regulate total or partial payment from patients of the high-costing materials. It is drawn attention to the other ways of regulated payments of the patients - the consumer's fee to the rate of 2% of the minimal working salary, as well as a fee for choosing a treating team from the patient.

EVALUATION OF THE MEDICO-SOCIAL NEEDS OF ADULTS AND CONTROLLING THE SERVICES PROVIDED TO MEET THEM

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We have conducted a study aimed at clarifying the medico - social needs of adults, and the influence of various factors on these needs being met. On average 69.65% of the interviewed had their medical needs met, while 47.58 had their social needs met. Every group of needs has been broken down by type and way of being met. On the basis of the study we have proposed a model, which clarifies the structure of needs and an algorithm for meeting them.

MONITORING OF THE CONDITION AND PROBLEMS OF COMPOUND CARE FOR PEOPLE WITH DISABILITIES, IN THE MEDICO-SOCIAL INSTITUTIONS OF THE REPUBLIC OF BULGARIA

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On the basis of compounds visits to the medico-social institutions for people with disabilities we have made an in-depth analysis on the quality of the services offered, the condition of the healthcare administration, the treatment that both personnel and the community has towards the disabled, qualifications of the personnel and the need for improvement of the quality of life of disabled people. We have made conclusions about the condition and problems of these institutions and the need for them to follow EU standards.

MODEL FOR EVALUATION THE MEDICO-SOCIAL NECCESITIES OF THE ELDERLY AND THE SERVICES NEEDED TO MEET THEM

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The demographic aging of the population is not only a fact, but a current process which is steadily speeding up. There are several distinct biochemical and biophysical changes in the organisms of the elderly, which reduce their adaptive capabilities and make them more vulnerable to many illnesses. Aging is an independently working factor, which has a specific meaning and adds additional requirements so that the elderly may receive adequate care to match their changed lifestyle, medical care and social needs. Recognising and specifying the necessities of the elderly involves determining their type, volume and structure, as they generate the need to perform certain actions. In actuality, every necessity presents some type of negative condition of the individual, which leads to them seeking different goods and services. The increasing number of the elderly obligates society to improve the services aimed at researching and meeting the necessities of these people. A solution for this

problem can only be reached with wide-spread support from both the country and society, with the problems of the elderly being treated according to the socio-cultural environment, as well as changing society's value system towards them. By doing this the individual and overall behaviour in society can be regulated, so as to give the elderly a feeling of worth and perspective. This will serve to help them find a meaning for their lives, the things that surround them and a purpose for the future, regardless of their age. Determining the necessities of the elderly has a significant role in creating and controlling the systems which provide and evaluate the services that meet their needs.

MANAGEMENT OF MEDICO-SOCIAL PROBLEMS IN ELDERLY PEOPLE, WHICH LEAD TO CHANGES IN THEIR PSYCHOLOGICAL FOCUS AND THE TREATMENT THEY RECEIVE FROM THEIR RELATIVES

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An observation and study conducted on 1043 subjects aged 60 - 90 from both sexes concludes that over the last several years the influences on the psyches of elderly people have grown vastly. There have been changes in the basis of their psyches, long term and life goals. The treatment elderly people receive from their relatives has a profound influence on their confidence and the quality of their lives.

MANAGEMENT ACTIVITIES OF GENERAL PRACTITIONERS IN BULGARIA

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In recent years the state of primary health care become constantly worsens. The article presented results of a study of two practices for primary health care for a period of three months - March, April and May 2008., regarding the doctor's ambulatory activity. The results show that in both practices, observed visits of patients to issue prescriptions covered by health insurance system are almost 50 percent of all outpatient activity of general practitioners. The data of daily workload of GPs are presented in the paper

MANAGEMENT OF QUALITY IN MEDICAL ACTIVITIES IN THE NEUROLOGICAL WARD OF MULTI-PROFILE HOSPITAL OF ACTIVE TREATMENT - AD HASKOVO

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The article considers major settings, related to the quality of hospital services. The authors present information about the status and existing system in the neurological ward for assessment of the quality of medical activities. The objective assessment of quality can be

achieved through the application of criteria and standards for quality. As it known, any management process has cyclic nature, starting with the planning of the action and wrapping up with monitoring and evaluation by the management of quality in neurological ward Hospital AD Haskovo apply "cycle of Deming". He is combined with the approach FOCUS, which prepares implementation of the cycle PDCA.

PATIENT'S OPINION OF OUTPATIENT CARE IN VOLUNTARY HEALTH INSURANCE

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Outpatient care in Bulgaria is provided not only by the mandatory health insurance scheme but also by medical centers owned by Voluntary health insurance funds (VHI). Despite that VHI is not well developed in our country we conducted a study encompassing 507 patients of such funds. The results show that over 55% of the patients we questioned are happy with the quality of the medical care provided by VHI. The data also provides a comparison between happiness/unhappiness with the mandatory health insurance scheme and VHI. An analysis is made of the factors that influence their opinion of the two types of health care.

PROBLEMS IN THE QUALIFICATION OF THE HEALTHCARE MANAGERS IN BULGARIA

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The reforms in health sector are the main forces and factors for education, forming and development of the new generation of healthcare managers. We conducted the research about the opinion and attitudes towards the system of education for health management. The survey was made among professionals working in different level in the health system in 11 regions in Bulgaria. In research questions was included: opinion and estimation of the undergoing education and used literature, lack and need of knowledge of healthcare management, priorities in the knowledge and preparation in healthcare management, needs for forming skills for communicability, skills for taking the decisions, dealing with conflicts, skills for team building. The received data can be used for improving the education, preparation and forming of the healthcare managers.

MEMBERSHIP IN THE EUROPEAN UNION: IMPLEMENTATION OF WORKPLACE HEALTH PROMOTION IN BULGARIA - REVIEW AND SHORT - TERM PROGNOSIS

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Introduction: In the period 1990-2009 were created serious prerequisites for health promotion (HP) implementation in the country. The specialists engaged in this activity and those who expect support and cooperation face two questions: Is this enough to manage

the current public health issues? What is the perspective and rational way to enforce HP implementation? Partial answers to those questions are sought in the 18 year practice of the authors in the sphere of workplace health promotion (WHP). *Purpose:* Through meta-analysis of the information about health issues in the country and WHP state to formulate evaluations and prognosis in relation to the current possibility to implement more comprehensively and develop WHP with a view to protection and improvement of the health state of the population in active age (15-64y). *Methods and material:* Graphic and comparative meta-analysis in historical and factological aspect is made on the basis of information from the external sources and own results from work on joint projects of the European Network for WHP (ENWHP) (partners are all EC member states), discussed in network, presented at periodical European conferences on WHP. *Conclusions:* The available scientific evidence for crisis in the health state (demographic, mental, morbidity and mortality rates) of the Bulgarian nation is so categorical that it imposes special measures. The approach incorporated in all national strategies "Better health for better future for Bulgaria" and its implementation should be reviewed because of lack of improvements in the national health indicators. In relation to the responsibilities and activities as well as to the financing, the health problems should be a priority issue for management in all national sector policies. The experience of the EU in the implementation of WHP involving all interested parties in the joint management of issues, similar to ours, should be a good argument supporting its implementation. *Prognosis:* The alarming public health parameters outline the necessity of revision of the achievements and re-evaluation of the current approaches to manage the critical demographic, health and human resources state of the nation. The time has come when special attention is to be paid in everyday life and labour area to the involvement of all interested parties in activities, leading to improvement. In the labour sphere a significant progress can be achieved by the state (together with health protection and state control) through a National programme for establishment of a system for identification and promotion of models of good practice by ENWHP technology with confirmed effectiveness, adapted for the country through two pilot projects of NCPHP.

NECESSITY AND APPROACHES FOR UNIVERSITY EDUCATION IN OCCUPATIONAL HEALTH

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The necessity of university education in the specialty "Occupational Health" enhances because of two major factors: a) the EU Directives for education of staff, responsible for health and safety at work and b) the national priorities for protection of public and occupational health. After 1997 our country undertook regulatory changes in protection of employees' health. In the Act, adopted in the country for the first time (Act for Healthy and Safe Working Conditions - AHSWC) the national dimensions of protection of the working force health are harmonized to the European ones. The requirements of the ordinances such as those for workplace risk assessment, functions and tasks of Occupational Health Services, health analyses and prognoses are directly related to education, training and

qualification of medical and non-medical staff to support the national traditions of workers' healthcare to a level, adequate to the European standards for protection of occupational health (OH). Up to now this process was insufficient without revised curricula for training in occupational health and is to a certain extent monopolized by a non-university structure. The results from this style of organization and management in education and training in the field of occupational health are: Insufficient number of specialists in occupational health according to the last changes in AHSWC of May 2008; Formal, to a great extent, involvement of the available specialists in OH in the minimal staff of Occupational Health Services (OHS); Impossibility to provide real help to the employees on workplace health and safety issues by medical and non-medical staff, without academic excellence in this field; Insufficient and incompetent occupational health advice to the employers resulting in a number of accidents and occupational injuries at the workplace. In order to overcome the underestimation of this modern, integral and dynamically developing specialty in the field of public health, it is necessary to enhance the training in all education degrees - bachelors, masters and PhD students. In this direction the Faculty of Public Health - Sofia, compiled and adopted, for the first time, a masters curriculum on occupational health that will be implemented in the activity of the Faculty in 2009.

THE NEW PUBLIC MANAGEMENT AND THE BULGARIAN HEALTHCARE SYSTEM

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The theory of New public management rises on the theory of public choice and on the new - Taylor's theory and marks out the concept that the "public entrepreneurship" is possible, adequate to public needs and effective. The New public management preaches the necessity of creative transfer of management approaches, methods and means from private to public sector. That provokes interest to observation and comparative analysis of the both sectors in healthcare system. One of the basic principles of bulgarian health care reform is the creating and guarantee for the equality of different kinds of property. There is a meaning to create public-private partnership (PPP). The health care reform guarantees the autonomy of health care organizations (HCO) like a economical units. The autonomy is a term for development of the competition and of the contract relations. The equality of financing activities of public and private HCO is guaranteed and it is the fundamental for PPP. This article presents data of some projects with accent over SWOT, patient's opinion, medical staff's opinion from both sectors - opinions of managers and medical staff at 17 public and 15 private healthcare organizations, expert's assessments at regional and national institutions and patient's opinion. The main possibilities for PPP are the law prerequisite, the unsatisfied needs, the investment deficit, the unsatisfied expectations and the need of horizontal and vertical co-ordination. At the same time, the obstacles for PPP and for New public management are the lack of stable strategies at the health care system, the lack of mechanism for prioritization, the lack of need's assessment and also the professional conflicts and the business-culture, based on short-term interests and informal logic.

COMPARATIVE ANALYSIS ON THE HEALTH SYSTEMS' EFFICIENCY IN BULGARIA AND GREECE

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The goal of the research is comparative study on the indicators for resources, health effectiveness (health results) and efficiency of the health care in Bulgaria and Greece, which are not only territorial neighbors, but have common traditions, religion and historical origins. The study is based on available information from the Data Base of WHO "Health For All". The studying period is 2000-2006 years (last year with available information). Through using the formula of the Global competitiveness index, is calculated the rate of the resources and health effectiveness, as their proportion - the efficiency coefficient. The conclusions show, that the healthcare system in Greece works better with higher efficiency - 1,73 (2000) and 2,49 (2005). Bulgaria is with lower and diminishing efficiency - 1,60 (2000) and 1,19 (2005). The study holds out opportunities for future economic and scientific cooperation between two countries in the health area.

TEN YEARS MANDATORY HEALTH INSURANCE IN BULGARIA - SOCIAL AND ECONOMIC ASSESSMENT

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The mandatory health, insurance introduced in Bulgaria in 1999, represents the basic financial alternative to the budget financing (applied as leading form of financing before the reform), by which is secured fairness, understood as equal opportunities of the insured citizens of approach to basic and universal package of health care, which is submitted by private and public providers of health services. *The objective* of the study is through analysis of certain basic achievements and problems to produce social and economic assessment of the mandatory health insurance in Bulgaria for the 10 years of its existence. Institutional information for the activity of NHIF is used. The study is covering the period 2000-2008. The methods used are: positive and normative economic analysis, partial SWOT analysis etc.

HUMAN RESOURCE AS THE MOST SIGNIFICANT CAPITAL OF THE MODERN HOSPITAL

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Human capital is a result of influence on the initial human resource, by that means new labour quality is achieved as a service factor. All the things referring to biological and social profile of the professionals would be stimulated in order to develop their potential turning into dominant production factor. We present empirical research of the relationships, coordination and collaboration of medical specialists in the multiprofile hospital with private property. The research target is to identify typical characteristics of medical specialist's daily activity, critical points in the relations at working place and psychological problems could

exercise an influence on the quality of work. Method and materials: 100 inquiry forms for anonymous filling, as respondents returned 88 filled forms, which presents 46% cross section of physicians and nurses into the hospital. Analyze of the obtained results presents three basic challenges toward human resources management as follows: overcome of conflicts caused by the organizational regulations; motivating of professional improvement and competencies improvement; cessation of crucial social relations caused by personal individualities. Conclusions demonstrate that the most effective way to overcome the conflicts is their preliminary foreseeing and prevention, by the leading role of the management team. Management team with specialized organization functions and collective activity control has the best chance to provoke and to receive motivating cooperation of each particular professional in the effective and efficient human resources management into the medical establishment.

EVIDENCE-BASED HEALTH POLICY AND HEALTH MANAGEMENT DECISIONS - EVALUATIONS AND ATTITUDES OF STUDENTS IN THE MASTER PROGRAM IN HEALTH MANAGEMENT

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The health policy makers and managers currently face multiple challenges in making justified decisions "within the constraint of resources available". The paper discusses health managers' perspective of evidence-based decision making in health policy and organizational management health. An anonymous questionnaire study of postgraduate students in health management was carried out in the Faculty of public health in Plovdiv, Bulgaria. The study provided information about the gaps in the educational programs, the attitudes of health managers and their assessment of the application of evidence-based approach in health policy and organizational management.

MANAGEMENT, FINANCING AND DIRECTIONS FOR DEVELOPMENT OF THE GENERAL MEDICAL PRACTICE

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The healthcare reform tried to solve the problems of the health system such as the blocking and destruction of the structure of healthcare establishments by creating market mechanisms aimed at increasing the quality of medical care and creating the necessary prerequisites for raising the prestige of medical doctors. The main concept underlying this reform is that „market medicine” should be the key to achieve better healthcare. Its main components are the State to retreat from the administrative-controlling functions and the public healthcare system to be privatized. The fact that our society as a whole has a hard time giving up the idea of having "free and accessible healthcare", the belief that market medicine could allow full access for all people to the highest levels of quality medical

services. The applied model of financing medical activities may be given as an example of incompatibility between spending and accumulation of resources. Commodity and financial relations are inherent to modern economy, healthcare including. The market mechanism gave patients the opportunity to choose on their own a personal physician and dentist, a healthcare establishment, as well certain medicaments. On the other hand, it promoted the medical specialists' increased consideration to patients and higher effectiveness of their labor, therefore providing a major contribution for establishing medical care criteria in the society. By generating innovations and technical advancement it provided better comfort for patient. The market healthcare system is marked though by the following defects: merger of demands and supplies – it is actually the basic cause of diversion from the free market; in the majority of cases, when a physician receives income which has been market-determined it turns to be a prerequisite for induced demand; in the case of vertical integration, the general practitioner refers the patient for consultation with a medical specialist and the patient is to choose that specialist on his/her own; the imperfect competition – not enough providers of the respective medical service and large extent of individualization of the labor of medical personnel. The first to experience the effects of changes in healthcare system as a result of this reform were the general practitioners. The main problems were related to the need to apply individuality of action, the need to provide financing and change of the methods of financing using other types of funding and payment systems, setting up their general medical practices in accordance with the requirements of the Commerce Act in combination with their registration under the Healthcare Establishments Act and compliance with the Medical Insurance Law.

THE HOSPITALIZATION COST OF PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN THE UNIVERSITY HOSPITAL OF ALEXANDROUPOLIS, GREECE

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Introduction: COPD is a leading cause of morbidity and mortality worldwide, and results in an economic and social burden that is both substantial and increasing. *Purpose:* To estimate the hospitalisation cost of patients suffering from COPD in the department of pneumology of the university hospital of Alexandroupolis, Greece. *Methods:* The study sample consisted of a total of 142 patients, suffering from COPD, of all stages, who were hospitalized in our department, in 2006 and 2007. The analysis was performed in 69 patients, due to data availability. Information on mean treatment cost per patient is presented separately for the I - IV COPD stages, according to GOLD criteria. Direct cost analysis was based on cost of personnel of the clinic, medication, laboratory and imaging tests. The economic analysis did not include the depreciation of capital assets as well as the overhead cost. The prices used for the analysis were based on Greek NHS prices

(FEK157/91, A' issue), 2006 Euros. *Results:* The mean (SD) length of stay in the department of pneumonology for a COPD patient was 6 (4) days and the mean (SD) actual cost per patient with stage I COPD was 1,068 (85) euros, the mean cost for a patient with stage II COPD was estimated at 1,081 (106,5) euros for the the whole length of stay and the mean cost for stage III and IV COPD patients are 1146 (120,3) and 1222 (197) euros, respectively. *Conclusion:* COPD posses a considerable economic burden to health care systems and societies. These findings are in accordance to international literature.

EVIDENCE-BASED HEALTH POLICY: MAJOR CHALLENGES

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Health policies are specific activities of political parties in making decisions and proposing actions for the government. Health policy is also associated with the accumulation of ideas, axioms, values, principles and rules applied in decision making and in proposing solutions for the problems of public healthcare. The practice in many countries around the world has proven that effective and efficient health policy should be based on sufficient and reliable evidence, i.e. facts, assessments and scientific conclusions. It is only then that health policy makers may take the best and most economically expedient management decisions for the issues of the population health and for the public healthcare systems. In order to achieve it health politicians should be familiar with the evidence-based approach and the sources of information and apply them in their activities (formulation and proposing solutions).

INNOVATIVE INTERVENTIONS OF INFORMATION TECHNOLOGY IN THE FRAMEWORK OF CROSS-BORDER PUBLIC HEALTH CENTERS (CBPHCS): GIS, ELECTRONIC PATIENT RECORD, HEALTHMETER

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Introduction: The Cross-Border Public Health Centers (CBPHCs) have been established within the framework of the INTERREG IIIA Programme with major aim the achievement of sustainable development and European integration. The projects have been developed and co-financed by 75% by the European Regional Development Fund of the European Social Fund of the European Union 75% (ERDF) and by 25% by the Greek State. *Purpose:* to present innovative interventions of IT implemented in the CBPHCs. *Material:* The prefectures involved in the programme were Drama, Xanthi for Greece and Smolyan, Blagoevgard for Bulgaria. The interventions presented are the Geographical System Information (G.I.S.), the Healthmeter and the Electronic Patient Record. *Results:* A G.I.S is computer hardware and software system that stores, links, analyzes, and displays geographically referenced information. G.I.S. technology makes it possible to link, or integrate, information that is difficult to associate any other way. The Healthmeter

implemented in the CBPHC of the Prefecture of Drama includes an electronic questionnaire, in which the personal health status of the user is portrayed by answering to simple and daily questions. The instrument, which can be distributed on paper or electronic medium, supports participation and insight in the initial stages of a directed individual health program for the continuation of which the utilization of professional counsel is stimulated. The Electronic Patient Record was implemented in the CBPHC of the Prefecture of Xanthi and is used by authorized health professionals of the Echinus Health Center. Electronic patient record systems have the potential to bring huge benefits to patients and health systems by storing and sharing health information electronically. *Conclusions:* IT interventions have the potential to improve quality of health care by integrating and analyzing disparate data sets, raising patient awareness, speeding up clinical communication, reducing the number of errors, and assisting doctors in diagnosis and treatment.

THE DIFFERENT APPROACH TO THE PERSONNEL MOTIVATION IN BULGARIAN HOSPITALS

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Reducing the hospital expenses by cutting the earnings of the personnel gives a negative result for the amount of revenues, the treatment of the patients and most of all - for the expert medical labour. The lower the salaries, the fewer patients are treated and the worse the financial results are. A regulative mechanism is needed to put into effect the contracted on national level salaries.

HEALTH PROMOTION ACTIVITIES IN THE FRAMEWORK OF THE GROSS-BORDER PUBLIC HEALTH CENTRES IN THE PREFECTURES OF KILKIS, DRAMA AND XANTHI

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Introduction: The Cross-Border Public Health Centers (CBPHCs) have been established within the framework of the INTERREG IIIA Programme with major aim the achievement of sustainable development and European integration. The projects have been developed and co-financed by 75% by the European Regional Development Fund of the European Social Fund of the European Union 75% (ERDF) and by 25% by the Greek State. *Purpose:* to present actions implemented for health promotion in the cross-border region, in specific the portal and infokiosk developed. *Material:* The prefectures involved in the programme were Kilkis, Pella, Drama, Xanthi for Greece and Smolyan, Blagoevgrad for Bulgaria. The main target of CBPHCs project is to improve the quality of life of the population by developing the collaboration and promotion of common strategies among the border health authorities of neighboring countries. The actions implemented include: 1) Infokiosk, 2) Portal, 3) Geographical System Information (G.I.S.), 4) Healthmeter, 5) Electronic Patient Record. Leaflets in the Greek and Bulgarian language on selected public health issues were also

distributed. *Results:* The portal www.dikedy.gr performs as an important information, communication and scientific cooperation data base on health issues and health services. Several infokiosks have been set up at busy but protected points in the Prefectures of Kilkis, Drama and Xanthi, as well as in Athens and are accessible by all citizens with information about health and services, in Greek and English. The Infokiosks are user friendly and the information is given in simple and comprehensible form with the form of questions and answers. *Conclusions:* Health promotion is important in addressing public health challenges. The use of information technology enables scientific cooperation and provides an extensive and easily accessible database of health issues and health services.

INFORMATION LEAFLETS AS A MEAN OF PROMOTION OF HEALTH POLICY: THE CASE OF ORAL HEALTH

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Introduction: Good health for the citizens of modern societies features the basic aim of World Health Organization (Region of Europe Bureau, HEALTH 21, http://www.euro.int/eprise/main/WHO/InformationSources/Publications/Catalogue/20010911_38). A mean to promote health policy can be information leaflets, which are being undertaken by social administrations (Ministries, Highest Educational Institutions), scientific associations, societies and private individuals. The *aim* of our study was to investigate the leaflets content, as well as their characteristics, that refer to oral health and pursue health policy promotion. *The material and method:* Our material was 36 leaflets, which are being delivered for free, so as to promote choices and attitudes relating to oral health. Those leaflets were gathered during one year's time from places, where health services are being held (dental practices for children and adults, pharmacies, libraries). In order to collect our data we used a record protocol, which was made for our project's needs. *Results:* In most leaflets, the publication date was indicated 69,5% (25) from which 54% (6) were published during the last three years. Their edition was administered by public 20% (7) and social institutions 80% (29). The leaflets were addressed, to adults only 22% (8), both adults and children 33,5 % (12), to children only 25% (9), to educators 3% (11). Our material's complexion was a form 53% (19), a diptych/triptych 25% (9), a fairytale 8,5 % (3). In order to understand the content better there was an illumination including sketches 50% (18), photos 44,5% (16), comic stories 8,5% (3). Their subject was about the advisable dental health practices 69% (25), maladies 44,5% (11), ways to face relevant matters 25% (9), phases of normal dental growth 14% (5), improper nutritional choices 14% (5), as well as pleasant feelings 5,5% (2), educational programs 5,5% (2), phobias 3% (1). In *conclusion*, we can refer that public and social associations use information leaflets, not only to promote oral health strategies addressing to all ages, but also to take particular care to inform citizens about health choices, behavior and prevention.

IMPACT OF AGE AND HEALTH STATUS ON PERCEIVED HEALTH NEED: THE CASE OF THE XANTHI AND DRAMA PREFECTURES

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Introduction: Need can be defined as “normative”, “perceived” or “expressed”. Need for health care may or may not become “expressed” need, leading to demand for health services. Perception of health need increases when symptoms of disease occur and/or when health status deteriorates. *Purpose:* To assess perceived health need in the Xanthi and Drama prefectures and the impact of age and health status on perceived health need. *Material:* A survey on health and health care services utilisation among the adult population in the prefectures of Xanthi and Drama was carried out in the framework of the INTERREG III programme “Creation of the Crossborder Public Health Centres (DIKEDY) of Drama and Xanthi”. The sample of 500 citizens aged over 18-years-old was stratified by place of residence, age and sex. Data were collected through personal interviews in May and June 2008. Health need was assessed by asking “Was there ever a time during the past month when you felt that you needed to visit a primary health care service (doctor)?” *Method:* Data were transcribed, coded and analysed using STATA software programme. Bivariate analysis using the χ^2 -test was performed in order to test the impact of age and self-rated health status on health need. *Results:* 33.8% and 40.2% of respondents reported having needed health care in the previous month in the Xanthi and Drama prefectures respectively. Perceived health need differed depending on age ($p<0.05$, $p<0.001$) and self-rated health status ($p<0.001$) in both regions. *Conclusions:* Older age and worse self-rated health has an impact on perceived need for health care. The factors are related to the onset of symptoms of illness, which have been found to be predictors of perceived need. The impact of these factors applies to both prefectures, in contrast to socioeconomic factors.

IMPACT OF SOCIOECONOMIC FACTORS ON PERCEIVED HEALTH NEED: THE CASE OF THE XANTHI AND DRAMA PREFECTURES

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Introduction: Need can be defined as “normative”, “perceived” or “expressed”. Need for health care may or may not become “expressed” need, leading to demand for health services. Socioeconomic factors have been found to affect perception of health need. *Purpose:* To assess perceived health need in the Xanthi and Drama prefectures and the impact of socioeconomic factors on perceived health need. *Material:* A survey on health and health care services utilisation among the adult population in the prefectures of Xanthi and

Drama was carried out in the framework of the INTERREG III programme “Creation of the Crossborder Public Health Centres (DIKEDY) of Drama and Xanthi”. The sample of 500 citizens aged over 18-years-old was stratified by place of residence, age and sex. Data were collected through personal interviews in May and June 2008. Perceived health need was defined as a positive answer to the question: “*Was there ever a time during the past month when you felt that you needed to visit a primary health care service (doctor)?*” *Method:* Data were transcribed, coded and analysed using STATA software programme. Bivariate analysis using the χ^2 -test was performed in order to test for association between health need and socioeconomic characteristics, namely income and education. *Results:* 33.8% of respondents in the Xanthi prefecture reported having felt the need to use health care services. The corresponding percentage was 40.2% in the Drama prefecture. No association was found with socioeconomic factors in Xanthi, however, in the Drama prefecture perceived health need was associated with family income level ($p < 0.05$) and education ($p < 0.05$). *Conclusions:* the impact of socioeconomic factors in perceived health need differs between the two regions. Differences according to socioeconomic status exist in the Drama prefecture.

USERS' ASSESSMENT OF THE RESPONSIVENESS OF THE GREEK SECONDARY HEALTH CARE SERVICES

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Introduction: The World Health Organisation (WHO) has developed the concept of responsiveness, which is a measure of how the health system performs in relation to non-health aspects. There are two domains included in the notion of responsiveness; the first one is related to respect for human beings as persons and the second refers to whether the system is people-oriented. *Objective:* To study how the Greek population rates the Greek hospital care services in terms of responsiveness and to explore which factors influence both the level and the distribution of responsiveness. *Data:* The sample consisted of 4003 individuals from the adult Greek non-institutionalised population and was stratified by county, age and gender in order to obtain a representative sample. *Methods:* Data was obtained through the national household “Survey Study of Health and Health Services Evaluation”, with the aid of a structured questionnaire, which was administered during household interviews. *Results:* Responsiveness of hospital services was rated as moderate, bad and very bad by 49% of recently hospitalized patients. Responsiveness of outpatient care was rated as moderate, bad and very bad by 38% of users. Almost 14% did not seek care due to unaffordability, while 11,5% reported having been treated improperly. Prompt attention is the most important element of responsiveness. People feel that the private health sector is more responsive than the public. *Conclusions:* The Greek health care system has a low level of responsiveness to people and this applies in the public hospital care in particular. Those in greater need of health services (old and poor people, those least educated) are experiencing inability to use them, mainly due to socioeconomic factors. It is suggested that money as a barrier to use of services has not been overcome in Greece.

DOCTOR - PATIENT COMMUNICATION: STRANGERS IN THE NIGHT?

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Introduction: Communication is considered as one of the cornerstones of patient care. A vast body of articles has been recently accumulated dealing with many problems arising in the course of physician-patient interaction. *Purpose:* To summarize current knowledge on various initiatives undertaken to enhance doctor-patient communication. *Material and Methods:* Literature search using PubMed database. The terms searched for in the field "Title" during the last decade were: doctor, patient, communication. *Results:* Eighteen review articles were retrieved. Doctor should not only pursue to find and fix the problem (2 Fs), but also communicate with the patient (4Es – engage, empathize, educate, enlist). The latter becomes the centre of all efforts and his/her empowerment is the key concept. To this direction, researchers suggest some interventions; examination at the scheduled time for adequate length of time, provision of detailed information, behaviour that inspires trust, appropriate non-verbal messages (especially in cancer patients), postgraduate courses in patient-centered communication. On the other hand, patients are advised to: reveal all necessary data with precision, provide reasonable time to the doctor to reach a diagnosis, be aware that they are not doctors, avoid misinterpreting the symptoms and not compare their problems with similar cases. Ensuring patients' confidentiality and privacy (informative, psychological, social, physical) promotes a more effective communication process and plays a crucial role in selecting the type of physician-patient relationship (paternalistic, informative, interpretive or deliberative). One should keep in mind that age, sex, ethnicity and personality constitute significant parameters in the doctor-patient interaction. Finally, the barrier of language is very important. The use of translation could lead to errors deliberately or not, since different words have different meaning in different cultures. *Conclusions:* These strategies offer promising results. Yet, further research is urgently needed to evaluate their appropriateness in different cultural contexts and various domains of clinical practice.

PRIMARY HEALTH CARE NURSING IN THE REGION OF CRETE: SETTING PRIORITIES FOR A NATIONAL HEALTH POLICY

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Introduction: As part of strategic planning for human resource development within the 7th Health Region of Crete, an action research study was conducted using the methods of "job analysis" and "needs assessment". *Aim:* To describe primary health care (PHC) nursing practice in regards to roles, clinical tasks, responsibilities and to explore continuing education (CE) needs, on-the-job training and professional development of nursing staff, as well as to formulate recommendations. *Materials - Methods:* Target population included all

nursing staff (registered nurses, midwives, health visitors and licensed practical nurses) employed at the 14 PHCCs of Crete. The original, validated questionnaire “*Assessment of Nursing Practices and Needs in Primary Health Care*” and the translated, culturally adapted and validated tool “*Training Needs Assessment*” were used. Data were analyzed statistically, according to educational preparation and professional category, as well as qualitatively, according to the content analysis method. *Results:* There were serious understaffing (49.5% vacancy rates) and skill mix issues, with licensed practical nurses being the most numerous (41.3%). In regards to everyday practice, there were no statistically significant differences according to educational level or category. Only exceptions were the counseling role ($p=0.01$), the teaching role ($p=0.03$), and obtaining a patient’s health history ($p=0.04$). Recruitment incentives were the unit’s reputation (73.9%) and residence (71.7%) or origin (65.2%) from the unit’s catchment area, whereas disincentives included the lack of opportunities for professional development (65.2%) and everyday support (62%). Deficits in human resources (53.6%) and equipment-supplies (36.2%) were viewed as major obstacles in job performance. Professional development opportunities were very limited and offered mostly off-site, whereas family obligations, distance and lack of free time were considered primary barriers to CE. Self-assessed competence was high, regardless of educational level or position held. Individual ability to use a computer, roles and responsibilities and the scope of nursing practice were significantly related to priority level assigned to specific training needs. *Conclusions:* Everyday PHC nursing practice focused on technological care and the clinical role, whereas health promotion and prevention activities were carried out opportunistically. Professional characteristics and level of performance among the four professional nursing categories were similar, whereas statistically significant training needs were identified for all staff. Priorities for a national health policy should focus on understaffing and skill mix unbalances, difficulties in recruiting personnel at rural settings, limited professional development opportunities, absence of support and consultation at the work-site, role conflict and failure to implement a health team approach.

PHD STUDIES IN GENERAL PRACTICE AND PRIMARY HEALTH CARE

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Background: This poster presents seven defended PhD theses under the supervision of the Clinic of Social and Family Medicine of the University of Crete, Greece during the period of 2008-2009 as part of a multidisciplinary post-graduate studies program, unique for Greek Medical Schools. *Content, aims and objectives:* Our theses aimed to explore different aspects of primary health care (PHC) and general practice in Greece and Cyprus, focussing mainly on specific clinical entities common to primary care. Views and perspectives of patients and health practitioners, validation of targeted interventions and use of specific instruments were included among the objectives of these studies. Primary investigators included general practitioners, community health nurses and social workers, integrating their distinct training and perspectives into the research protocols. Two studies referred to nursing and medical personnel employed in PHC settings either in Greece or in Cyprus. A

further study involved a multifaceted intervention in primary care in Cyprus. In addition, three studies addressed clinical subjects diagnosed with chronic venous insufficiency (CVI), chronic musculoskeletal disorders (MSDs) or functional gastrointestinal disorders (FGIDs). Finally, the seventh study investigated the views, attitudes and knowledge of rural and urban women and their physicians regarding mammography procedures. *Structure:* A new model in writing and reporting PhD findings was tested within the scope of the seven studies outlined above. The structure followed a number of ordered research steps beginning with the identification of the problem and the selection of the appropriate instrument to assess its burden at the practice, and continuing with the translation and validation of instruments. The implementation of the validated instrument led the research process and a conclusive article summarised the achievements of each PhD study. *Some key results:* A majority of the PhD studies resulted in the development and validation of instruments and databases appropriate for general practitioners. The studies revealed various issues with regard to understaffing and differential levels of skill. The three most common chronic conditions identified in Cyprus were hypertension, type II Diabetes Mellitus and hyper-lipidaemia for which a multifaceted intervention programme was identified as feasible and effective. Less than 40% of patients were reaching therapeutic goals. Information system intervention proved to be well adopted by patients, but main impediments were physicians' concerns and lack of incentives. FGIDs were reported less than expected, with low agreement between doctors' diagnosis and diagnostic instruments. CVI, dyspepsia and MSDs seemed to be frequent health problems reported in general practice but were often underdiagnosed. Women from rural areas undertook mammography less often than those from urban areas while physicians' advice played an important role in the decision-making process. *Conclusions:* Completed PhD theses by an array of health professionals with various backgrounds revealed a unique picture on the current situation of primary health care in Greece and Cyprus – both of which are Mediterranean countries. The findings provide evidence of the need for further advances in research, in everyday clinical practice and in national health policy development.

CREATION OF A RURAL PRACTICE-BASED RESEARCH NETWORK IN GENERAL PRACTICE IN CRETE, GREECE

Lionis C., Anastasiou F., Antonopoulou M., Antonakis N., Chliveros K., Dimitrakopoulos S., Kominos G., Kounalakis D., Koutis A., Ladoukaki E., Makri K., Petraki C., Prokopiadou D., Stefanaki I., Symvoulakis E., Tsakountakis N., Tsiligianni I. and Vasilopoulos T.

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Introduction: Practice-based research networks have been increasingly recognized as important vehicles for the improvement of quality of health care and for investigating research questions related to community-based practice and primary care. Such networks have received attention from several research and quality of care organizations in Europe and U.S.A. Among these, WONCA World and the International Federation of Primary Care Research Networks (IFPCRN) have substantially contributed to the promotion of such initiatives, recommending links between academic institutions and ambulatory practices. As part of an initiative of the Clinic of Social and Family Medicine at the School of Medicine,

University of Crete, a rural Practice-based Research Network has been created. The mission of the Cretan Rural Practice-based Research Network (CRPRN) is to improve the health of rural populations on the island of Crete and to promote research in primary care and general practice. *Aim:* The paper reports on the organizational structure of the Cretan network together with the themes and research activities that have been undertaken during the first two years of operation. *Material and Methods:* The network was initiated in 2006 and initial agreement between the Regional Health Authorities of Crete, the Clinic of Social and Family Medicine of the Medical School, University of Crete, Greece and a number of selected Health Centers and rural practices in Crete was approved. This facilitated a link between researchers and primary care practitioners and provided them with opportunities to develop joint research projects and to become involved in piloted research programmes. *Results:* At the current time, 18 general practitioners serving the public sector of primary care with a specific interest in research have joined this network. CRPRN member practices range in community size, and include general practitioners serving a population of a single peripheral practice or others offering their services within large primary health care centres. The practices represent rural areas in the county of Heraklion and Rethymnon on the island of Crete. This has recently been expanded with the inclusion of two practitioners from the private sector. Current studies of CRPRN focus on diabetes mellitus, COPD, iron deficiency anemia, and herpes zoster. Collaborative research with various disciplines and universities focussing on elderly people residing on Greek islands and in Cyprus with a view to investigating cardiovascular risk factors, nutrition, health habits and chronic morbidity (MEDIS study) has also been implemented. The network is currently developing an electronic minimum database to monitor selected illness entities and to report morbidity. Studies under development include: collaboration between CRPRN and a wide range of researchers, both within and outside of Crete for the development of funding proposals - mainly from EU/FP7 call - in the areas of over-the-counter drugs, patient safety, and vaccination coverage for vulnerable populations. *Conclusion:* Development of research links between academic institutions and rural practices appears to be an achievable target within Greek and southern European settings, but this requires further commitment and funding from policy makers and governmental bodies.

SESSION II

Public Health, Social Medicine, Epidemiology

ASSESSMENT OF DIETARY INTAKE OF LYCOPENE AND β -CAROTENE OF TECHNICAL COLLEGE STUDENTS

Victoria Atanasova¹, Pavel Pevicharov, Atanaska Alexandrova, Penka Gatseva, Raina Vasileva and Jeliuzko Hristov²

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Assessment of self - reported usual dietary intake of lycopene and β -carotene of students - first year, from Technical College "John Atanasov" - Plovdiv was performed. 59 students (46 regular and 13 extra-mural studies) have completed specially made food-frequency questionnaire (FFQ). The intake of these biological active compounds in the usual diet of the students was evaluated. Potential health risk from low frequency intake of foods rich in these antioxidant micronutrients was discussed.

EARLY DETECTION ON COGNITIVE DISORDERS AND DEMENTIA IN ELDERLY

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The early detection, diagnostics and treatment of cognitive disturbances at advanced years and old age are crucial to personal and public health. They contribute to the identification and treatment of reversible conditions and retention of mental decline in patients with dementia

DYNAMICS OF THE INCIDENCE OF LARYNGEAL CANCER IN THREE DISTRICTS OF SOUTH BULGARIA FOR 16YEAR PERIOD (1986-2001)

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Purpose: The aim of this survey is: To explore the risk factors that are mostly important for the development of laryngeal cancer. To propose adequate health program based on these studies. *Patients and methods:* Among the population of three districts of South Bulgaria with common population of 1.225.901 people was carried out a cohort study of laryngeal cancer for 16 year period. Different statistic methods are used for the analysis. *Results:* The incidence in men is characterized by long lasting factors and increases in Plovdiv region from 11.16 cases in 1986 to 11.31 - in 2001, in Pazardzhic region - from 7.53 to 13.53 cases and Smolian region - from 5.04 cases to 8.04 cases per 100 000 men. We found out cumulative incidence or risk of laryngeal cancer among men in the region of Plovdiv - 1.7 cases per 1000 men, in the region of Pazardzhic - 1.6 cases and in the region of Smolian

- 0.9 cases. *Conclusion:* We find tendency of developing the disease in the younger age. Primary multifocality is found in 2.35% in the cases with laryngeal cancer. The approach for rendering the multifocality in laryngeal dissection that we propose co-operates the prolonged survival of these patients.

THE CHOICE OF “THE BEST” AND “MOST EFFECTIVE” DIETETIC REGIME FOR OVERWEIGHT REDUCTION

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The *aim* of this work is to present a review and assessment of leading dietetic regimes for body weight reduction supporting the particular choice of “the best” and “the most effective” one. The *topic* of the discussion refers to the nutritional principles underlying the best and most effective dietetic regimes implemented in current dietetics. The literature and own evidence show that there are numerous dietetic regimes for body weight reduction and every new one aims to overcome the shortcomings of the preceding ones. A matter of consensus between the physician and the patient is only the starting dietetic therapeutic design. After its effect has been exhausted it is modified to another one. This modification is the task and responsibility only of the programme leading specialist. Coordinating the result from the preceding period and used factors to affect the burning the tissue fats, the dietologist compiles the next nutritional regime to continue the process of body weight reduction. Low-energy dietetic regimes are leading but the practice often implements elements of food separated diet, high-protein programmes, etc. A *conclusion* is drawn that the role of the specialist in Nutrition and Dietetics is, to overcome the patients’ metabolism up to permanent management of their problem – achieving and maintaining optimal body weight – through individual-oriented dietetic regimes.

TECHNIQUES FOR CONSULTATIONS OF PATIENTS ON HEALTHY AND DIETETIC NUTRITION

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The *aim* of this work is to present a review and assessment of existing techniques for consultation of patients on healthy and dietetic nutrition. The four steps at conducting a conversation between a specialist in Nutrition and Dietetics and a patient during a consultation is a *topic* for scientific discussions. The paper presents own data and literature evidence. Step 1: Getting information from the patient. Step 2: Analysis and assessment of the mistakes in the patient’s nutritional model. Step 3: Formulation of a common goal of the patient and the specialist. Step 4: Elaboration of an individual nutritional (healthy/dietetic) regime by the specialist in Nutrition and Dietetics. Particular conversation techniques are implemented also when proposing the elaborated individual dietetic regime. A *conclusion* is drawn that the dietological consultation does not aim to design a weekly/monthly menu but strives to improve the knowledge of an individual/group of individuals on health optimization and support the overcoming of one or more health problems through building up a motivation to implement a complex dietetic-therapeutic program. The successful start of

each dietetic regime requires competence from the consulting doctor and trust from the patient.

PARTICIPATION OF PATIENTS IN THE HEALING PROCESS

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The recent years have seen more and more discussions on the active participation of patients in the process of preserving and improving their own health. Patients are very often passive participants in the healing process which lowers its effectiveness. The inclusion of the patient in the process of healing and recovery is very much decisive for the quality of the therapies assigned since the final result is most important to the patient. This participation allows for the recovery to continue outside of the hospital. The health promotion programs are most important here - IRENA, MRFIT, SINDI, MERENA, INTERHEALTH, MONICA etc. They have their place in the formation of a new attitude towards people's health as shown by the results of observations carried out by healthcare specialists.

EPIDEMIOLOGICAL STUDY ON HEPATITIS B INFECTION IN PLOVDIV (BULGARIA)

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Nearly four decades after the discovery of the hepatitis B virus (HBV), it still remains one of the most important human pathogens. The aim of the present study is to analyze the intensive and extensive parameters of hepatitis B viral infection and to outline the risk population groups and risk factors for infection as well as to provide the epidemiological characteristics of hepatitis B infection in the region of Plovdiv. For the time period 1998-2007, we analyzed official data on morbidity rate of viral hepatitis for Bulgaria and data from the Center for Disease Control, Plovdiv, for the time period 2004-2008, including 475 patients with HBV. Our data included: a retrospective epidemiological analysis of 194 patients with positive hepatitis B viral markers, admitted to the Clinics of Infectious Diseases of the St. George University Hospital, Plovdiv (2007-2008). Complex epidemiological, statistical and routine serological methods were employed. Epidemiological analysis of HBV infection in Bulgaria and in the region of Plovdiv shows that the incidence of the disease has dropped but it still remains high compared to other European countries. The age groups 15-19 and 20-29 are most severely affected - 107 (48.24%) and 178 (33.01%) of the cases respectively. Infection is predominant among males. Statistical analysis demonstrated no seasonal variations in the morbidity rate of HBV. No difference was found in the morbidity rates between rural and urban populations - 13.9‰ for the urban and 3.24‰ for the rural residents. Fifty (26%) of our patients belonged to the high risk groups – the percentage is highest among intravenous drug abusers. The changing trends in the social and

economic conditions (high migration and risk practices) require an active surveillance and control system as well as harmonization with other European countries. Expansion of vaccination programs regarding the target high risk groups is also recommended.

RESEARCH OF THE MENTAL STATE OF PERSONS WITH CARDIOVASCULAR DISEASES

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Introduction: The cardiovascular diseases are the leading cause of death and disability in Bulgaria. They cause lots of psychosocial problems, which affect the quality of life of the involved persons. Depression (anxiety) is viewed as one of the most important psychosocial problems affecting the persons with hearth diseases. *Aim:* The aim of this article is to study the mental state of persons with heart diseases. *Methods:* An inquiry of 564 persons with cardiovascular diseases, accomplished for a year in a ward of cardiology rehabilitation. The mental state is assessed through General Health Questionnaire (GHQ-12). *Results:* Over half of the studied persons have shown some degree of mental disturbances. *Conclusion:* Identification and treatment of the mental disturbances should be an important part of the rehabilitation of persons with cardiovascular diseases.

ASSOCIATION BETWEEN BREAKFAST SKIPPING AND OVERWEIGHT AND OBESITY FREQUENCY IN BULGARIAN SCHOOLCHILDREN

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The frequency of overweight and obesity among Bulgarian schoolchildren increased in the last years. Several studies have reported positive association between adiposity in schildren and skipping breakfast. *The aim* of this study was to evaluate the frequency of overweight and obesity in urban Bulgarian schoolchildren and to look for its relationship to breakfast skipping. *Subjects and methods:* Object of study were 216 schoolchildren (88 boys and 128 girls) aged 11-15 years, living in the town of Plovdiv, Bulgaria. Overweight and obesity were defined according to the international cut off points for body mass index for overweight and obesity proposed by Cole et al, 2000. The schoolchildren were requested to answer a questionnaire on their breakfast habits. *Results:* 46 boys and gilrs (21,3%) of the total children' s number were with overweight and obesity. 35 (76%) of the children with overweight and obesity reported about breakfast skipping. The relative risk (RR) for overweight and obesity was 3,247 (95%CI: 1,927-5,472) $\chi^2=46,72$ with significantly positive correlation ($r=0,47$, $p<0,001$). *Conclusion:* The high prevalence of schoolchildren skipping breakfast as well as the association between skipping breakfast and overweight/obesity required an elaboration of educational program for healthy nutrition in the schools.

REPRODUCTIVE BEHAVIOUR OF THE BULGARIAN WOMEN DURING THE 1980 - 2004 PERIOD

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Since hoary antiquity the dream of the more families was to manage the birth rate and the number of the children in the family. How much and how it realize itself in Bulgaria can be seen from the conducted investigation of the birth rate and abortion during the 1980-2004 period. What factors influence over the family planning? Over the decision about number of the children in more families influence the stimulus from the state. Depending from the personal criteria for quality of life, the women from the different ethnic groups in Bulgaria, find this stimulus as sufficient to give birth to more children, or not. Basic instrument for control of the birth rate in this period are abortions. The absence of the demographics politics and the wrong social politics during the period 2000 - 2004, bring to increasing of the birth rate in the group of the mothers under age. As a result the number of the children born out of wedlock from mothers between 13 and 18 years old, increase. They use their children as an instrument to provide money from the state. When the two years paid leave finish they give birth to the next child and still receive money from the state or give their children in the state social homes. This is show the necessity of the competent social politics of the state and high health culture of the population.

CURRENT ISSUES ON PARKINSON'S DISEASE MANAGEMENT

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Parkinson's disease (PD) is a chronic neurodegenerative disorder of the later middle age usually affecting those over the age of 50 with progressive movement disorder, psychic and autonomous impairment. Based on programmes analysis and consensus world and European papers a necessity of complex approach for the control and management of PD has been outlined. It has been underlined that for the providing of good quality, accessibility, continuity and economic effectiveness of health care it is most important to define and apply the best medical practice built upon qualified professionals, elaborate standards and instructions based on scientific proof as well as the participation of patients and their families in the process of diminishing the negative effect of the disease. Successful disease management is influenced greatly by the organization and structure of the health system as well as voluntary (non-governmental) organizations that represent patient's interests.

SPREAD OF TUBERCULOSIS IN BULGARIA AND GREECE

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Introduction: Tuberculosis is a contagious bacterial infection that mainly involves the lungs. Rates vary by socioeconomic status and area of residence. About 2 billion people in the

world are infected with tuberculosis. Tuberculosis causes more deaths in the world than any other infectious diseases. *Objectives:* This report aims to describe and compare tuberculosis morbidity and mortality in Bulgaria and Greece from 1990 to 2006. *Material and methods:* TB mortality and morbidity data were extracted from European HFA database and the National Statistics of Bulgaria and Greece. *Results and discussion:* The levels of tuberculosis morbidity and mortality and the trends of these health indicators in Bulgaria and Greece are different. Prevalence of tuberculosis in Bulgaria increased after the beginning of socio-economic transition. At the end of period it is about 41 per 100000 inhabitants, but in 1998 the level of the indicator is 68 per 100000 population. In Greece prevalence gradually decreased about 2 times for the period. Tuberculosis standardized death rate in Greece (0,47 per 100000) is about seven times lower than that of Bulgaria (2,83 per 100000). *Conclusion:* Tuberculosis is preventable. Vaccination, early identification of infected people and medications treatment are some of the most effective ways to prevent tuberculosis from spreading. Now in Bulgaria is operating a National Tuberculosis program. The aim of the program is to limited morbidity and to reduce mortality of tuberculosis in Bulgaria.

RISK FACTORS FOR BREAST CANCER WITH REFERENCE TO THE CHERNOBYL DISASTER

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Bulgaria is in the first third in the world and in the middle in Europe for incidence of breast cancer. An increase in prevalence was confirmed and fluctuations in the values of the new cases registered in the Plovdiv region. The values studied by us give us grounds to suppose that as a result of the accident in the Chernobyl Nuclear Power Plant the active glandular parenchyma of the mammary gland reacted to the increased radioactive dose with malignant degeneration in the first years following the irradiation. This can be established after more prolonged investigations of greater parts of the population from the regions most involved.

BIO-STIMULATORS CAN ENHANCE THE RADIO-RESISTANCE OF THE ORGANISM (EXPERIMENTAL STUDY)

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The biological effects of ionizing radiation are mediated in part by free radicals. Total-body irradiation may result in a hematopoietic, gastrointestinal or cerebrovascular syndrome as well as in multiple organ dysfunctions depending on the total of the absorbed dose. We investigate groups of experimental animals C3H mice, which are exposed to radiation. Respistim plus is administered to some of those experimental animals per os 15 days before irradiation. By a total-body irradiation we simulate the hematopoietic form of the

acute radiation syndrome. The effect of *Respistim plus* is evaluated with Kaplan - Meier analysis of survival rate; bone marrow cells vitality test with trypan blue stain, changes of blood indexes. Statistical data treatment is done by methods of variational analysis and we consider as statistically reliable the results with $p < 0,05$. *Conclusions:* Administration of *Respistim plus* saves bone marrow cellularity according to the bone marrow vitality test. Survival rate of the experimental group (LD50/30) with administration of *Respistim plus* increases to 8,4Gy, in comparison with control group – 7,5 Gy. Twenty four hours after 7,5Gy radiation we evaluate statistically reliable increasing of leucocytes in peripheral blood.

RECENT TRENDS IN THE MANAGEMENT OF STROKE: EVIDENCE OF EFFECTIVENESS

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Introduction: Recent trends of the stroke prevalence and the overall population burden of stroke show that in the near future they are likely to increase since older people are the most stroke-prone age group and constitute the fastest growing segment of the population. Moreover, the proportion of strokes associated with disability or impairment is increasing too. Prognostic studies and meta-analysis suggest that stroke management is an effective strategy for changing these trends. *Objectives:* Our goal is to provide an overview of the current evidence of effective approaches for the management of stroke using content analysis on articles published in the scientific and clinical journals and electronic sites on neurological issues. *Results:* What has changed over the past 20 years is a gradual improvement in understanding of many of the separate processes that constitute the stroke disease. There is relevant evidence that patients do better if they receive effective treatment within an integrated system, with multidisciplinary teams, support for self-management and regular follow-up. Enabling this requires a paradigm shift from a medical, curative model of healthcare towards a coordinated, comprehensive system for prevention, diagnosis, and treatment of stroke as a long-term condition. Intravenous administration of rt-PA remains the most beneficial proven intervention for emergency treatment of stroke. A new analysis from the Early Use of Existing Preventive Strategies for Stroke trial confirms that urgent aggressive interventions after a transient ischemic attack or minor stroke cut the 90 day risk for recurrent stroke by 80%, as well as disability, hospital admission days, and costs by the same magnitude. In addition, there is sufficient evidence that aggressive interventions such as carotid endarterectomy and endovascular treatment after stroke show promise. Recommendations for prevention of recurrent stroke are reviewed and the use of an integrated treatment approach involving risk factor management, antiplatelete therapy and surgical procedures presents the opportunity to lower the risk of recurrent stroke and other events in patients with recent stroke. *Conclusions:* The evidences of effectiveness and cost-effectiveness of public health interventions still require further studies and developments. The time has come to translate effective approaches for management of stroke from research into practice. In this respect new guidelines on the management of stroke by international stroke associations based on available evidence are of great importance.

TENDENCIES OF THE INFECTIOUS DISEASES MORBIDITY IN THE REGION OF SMOLYAN - POSSIBLE THREATS FOR PUBLIC HEALTH

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The *aim* of present research is to analyze the tendencies of the infection diseases in Smolyan region and to identify present and potential threats to the health of the population in the border areas of Bulgaria and Greece. The primary information has been taken from the annual reports of Regional inspection on Public health protection and control - Smolyan and Ministry of Health for the period 1998-2008. *Results:* The levels of (2000-2001) Common Infection Diseases are extremely high, which is due to the high spread of Rubeola and Parotitis and in 2002 lowest level when drop infections situation was an average of 33,25% for the period. There are no registered cases of Morbilly in the Smolian region. *Conclusions:* 1. Diseases such Diphteria, Tetanus, Pertusis, Morbily, Poliomyelitis are not registered for the period of 1998-2008, a high immunity level coverage against diseases has been reached. 2. It is necessary to find possibilities for reimbursement of the anti-virus vaccine especially for the risky contingents. 3. A cyclic occurrence has been noticed in the respiratory infections without a mass immunoprophilaxy. 4. It is necessary to exercise an active control and pay attention to prevention of the spread out of Parotitis, Influenza, Enterocolitis. *Deduction:* Contacts informational exchange, knowledge and good practices contribute to increase of the quality of prophylactic actions in the sphere of the epidemiology of infectious diseases. Creating a system of effective transborder monitoring and control over the infectious diseases in accordance with European requirements will restrict the epidemic threts for the health of the population of Bulgaria and neighbouring countries.

DIMENSIONS OF WORK ETHICS IN THE PROFESSIONAL ACTIVITY OF PHYSICIANS

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The penetration of economic stimuli in the professional field of medical specialists puts on trial human values and adjustments to work activity. This study is aimed at investigating work adjustments among physicians as a specific professional group and measuring the level of their work ethics. General practitioners from several municipalities in Bulgaria are subject of the study. A direct individual anonymous inquiry, including a psychological test, was used for reporting work values and measuring the level of work ethics. For most of the respondents, professional duties gain the upper hand over personal and family commitments. They associate their success in work mostly with tenacious work and laid personal efforts and time. Physicians believe that their profession should ensure high living standard and they attach great importance to evaluation of work. The level of work ethics among physicians is about the average. There are only separate professionals with a high level of work ethics.

SCREENING FOR SOME SOCIALLY IMPORTANT DISEASES IN GENERAL PRACTICE

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The healthcare system change which took place in the country has led to a number of structural changes and general practitioners have been given the main task in screening practice. The existing screening practice was studied at 35 doctor's surgeries which were randomly chosen from among those which had a contract with the Regional Healthcare Department in Plovdiv: an 8.1% sample. The survey has shown that 14 (40%) of the subject surgeries have screened for diabetes 75-90% of the risk group members they had planned to screen. Another 40% have managed to screen over 90% of the targeted risk group members.

DYNAMICS OF INFECTIOUS DISEASES MORBIDITY - MODELING OF TENDENCIES

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Mathematical analysis and modelling are basic in the epidemiology of infectious diseases (ID), because adequate mathematical model of data due to scientific studies help healthcare policy and scientific investigation itself. The trend is a main element of development of phenomenon. It is reflex basic dynamic equation - increase, decrease, or stabilization around certain level. *Aim:* Modelling morbidity trends of certain infectious diseases in Bulgaria in regard of transborder mobility and analyze data concerning factors, influential to morbidity dynamics. *Materials and methods:* Object of this study are 7 ID with longtime registration, associated with actual factors (social, economic, behavioral etc.) of transborder mobility. Official statistic information presenting chronologic data about registered annual morbidity was employed. Analysis of changing epidemiologic processes of infectious diseases covers the period of start of registration to 2007 yr. To study appearing changes in dynamics of observed diseases, descriptive and analytic characteristics of temporary rows were determined: absolute volume, absolute and median increase, mode of development and median mode of development. Free graphic moderation of facts was performed. Because this method is simple and expressive, subjective and deductive, we employed the better in precision MLSq to describe the tendency. And so we determined the range of mathematical equations, which comprehensive reflect the basic order of infections distribution in time. *Results and conclusion:* In result, criteria for change of dynamic of an infectious disease are the

efficiency of basic control measure, characteristic of infectious process and specific pathogen. *In conclusion*, discussed infectious diseases present interest in regard of contemporary global processes, especially immigrational currents. That is a reason to be named diseases with changing epidemiology. Informativity of mathematical models of morbidity of infectious diseases is usefull when perform measures to prevent their import in regard of active today transboarder mobility.

ASSESSMENT OF THE REHABILITATION POTENTIAL OF DRUG ADDICTED PATIENTS - RESULTS FROM AN EMPIRICAL STUDY

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The purpose of the current study is to examine some of the characteristics of the drug addicts, seeking treatment in the hospital, for being able to support planning of the services for drug users. The study covers the pattern of drug use and social characteristic of 173 male patients, hospitalized for a first time in the Psychiatric Hospital "Dr Georgi Kisiov" - Radnevo in the period 2005-2008. The study has been developed by using a structured interview and unified questionnaire of the European Monitoring Centre for Drugs and Drug Addictions (EMCDDA). The results describe a group of patients with lower rehabilitation potential, related to the drug use pattern. The social characteristic of the patients predetermine lower level of rehabilitation as well, but at the same time defines a valuable resource of the family support. The main phases of the therapeutic - rehabilitation process in the conditions of hospital treatment are pointed out as well.

HEALTH KNOWLEDGE AND HABITS OF ROMA CHILDREN

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Population's health depends to a great extent on the health behavior and the attitude to one's own health. The choice of the surveyed group is made not only because of the peculiarities of the age of the respondents and the hiding risks, but also because of the compulsory requirements of the European Union for protection of the national minorities. This represents an item still in the Frame convention from 01.02.1998. *Aim of the survey* is to investigate the health knowledge, behavior and habits of pupils-roma children in the whole country. *Applied methods* - an anonymous inquiry was carried out among pupils of roma origin from the elementary and high schools (from the 4th to 12th school grade). The choice of the respondents is made on accidental principle. Included are 545 children of roma origin from 18 centers all over the country. *Results* show us, that health knowledge of

pupils-roma children is limited and that they have harmful health habits and an unhealthy lifestyle.

SPREAD AND TENDENCIES OF ACTIVE TUBERCULOSIS DISEASE REGISTERED IN PLOVDIV DISTRICT

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The aim of this work is to present a retrospective review of the spread and tendencies of active tuberculosis disease registered in Plovdiv District. *This essay* examines the tuberculosis as among the diseases in Bulgaria that are a social burden, turning into a social, medical and economic problem of the community. The epidemiological situation in Bulgaria shows that in 1990 the incidence level of tuberculosis was 25.9 per 100 000 people of the population. In 2001 there was an almost two - fold increase in the number of newly registered cases of tuberculosis in the country, reaching up to 49.9 per 100 000 in 1998 and 48.8 per 100 000. Since 2002 a tendency towards preservation of the incidence level has been observed, as well as a slow decrease of incidence - up to 42.4 per 100 000 in 2004 and 40.1 per 100 000 in 2005, whereas in 2007 the respective figure was 37.1 per 100 000. In 2003 Bulgaria ensured the full coverage of all cases in compliance with the strategy recommended by WHO (DOTS - Directly Observed Treatment - Short course). The indices for the Plovdiv District are within the average values for the country. Negative trend for district of Plovdiv in respect of the registered cases of prevalence of Tbc in comparison with that of the country is stronger expressed after 2004.

RESEARCH CARRIED OUT AT THE SMOLYAN MEDICAL CENTRE LTD BASED ON TREATED DISPENSARY PATIENTS

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Bronchial asthma is a chronic inflammatory disease of the respiratory tract of a recurring character. The burden of asthma, both social and economic, on the patients and their families is great enough to turn the care for the sick into a priority in the government's healthcare strategy. Attention has to be paid to expenses made by the healthcare system to ensure the care asthma patients need. The present research is aimed at a comparison of different groups of patients by age and acuteness of the asthma for: "Expenses-results" and "expenses-usefulness" with patients who do not undergo a regular and adequate inhalation treatment with corticosteroids and patients who do. "Expenses-results" and "expenses-usefulness" with patients up to 6 years of age before the start of the therapy and after treatment with leukotriene antagonists.

MORTALITY BY SOCIALLY SIGNIFICANT DISEASES IN BULGARIA AND GREECE

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The main causes of death in Bulgaria, Greece and European region as a whole are: diseases of the circulatory system, malignant neoplasms, injuries and poisonings, and diseases of the respiratory system. The level of mortality by circulatory diseases in Bulgaria is higher than the average of Europe, especially for males in active age (45-49) while in Greece is among the lowest. The low levels of mortality by circulatory diseases and by malignant neoplasms of the digestive system in Greece could be explained primarily with the specific nutrition model.

PREVENTION OF AIDS IN UKRAINIAN YOUTH

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Open the main trends of the preventive maintenance of the AIDS DISEASE in student ambience, is analyses contents of the special programs, are shown efficient ways, the forms and facility of the functioning, are given methodical recommendations. The Accent is made on functioning directed on shaping sound lifestyle.

FOODBORNE OUTBREAKS OF VIRAL HEPATITIS A DURING THE LAST TWO DECADES. REVIEW.

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The aim is to be shown the importance of the foodborne outbreaks for the epidemiology of viral hepatitis A. It is done a short review of some of the largest foodborne outbreaks of hepatitis A in different countries of the world. The first is from November, 2003, in Pennsylvania, associated with green onion. The second is from 2003 in New Zealand, arising after consumption of raw blueberries. The third is from 2000, in Spain, associated with consumption of clams. The next one is from 1998, in Ohio, caused from green onion and the last is a multistate outbreak from 1997 in Michigan. In one of the papers, included in the review, is shown the importance of the molecular epidemiology methods for detection of the union between the different cases from one outbreak. *Conclusions:* 1. Although the most common mechanism for transmission of the viral hepatitis A (VHA) is the person to person contact, sometimes foodborne outbreaks of the disease arise, causing illness of a great number of people. 2. Most frequently foodborne outbreaks of VHA are given rise to by frozen foods. 3. The methods of molecular epidemiology have to be utilized for detection of the outbreaks. In future these should be used much more often in practice to improve prevention of the VHA.

EPIDEMIC DATA FOR DIABETES MELLITUS TYPE 2 AND ITS COMPLICATIONS

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It is done a short review in the paper for the prevalence of diabetes mellitus in the world and for the estimated number of people with diabetes in 2030. There is a worldwide increase of the patients with diabetes every year, including Bulgaria. In 2030 every third patient with diabetes will be from Asia (usually from India or China). We discuss the results from the studied by us patients with diabetes mellitus during 2008. 284 from them were with insulin depended diabetes mellitus (IDDM) and 1225 with non insulin depended diabetes mellitus (NIDDM). Among the patients with IDDM 80,63% were with diabetic neuropathy; 27,46% - diabetic retinopathy; 8,45% - diabetic nephropathy and 67,96% - chronic coronary disease. From the patients with NIDDM among 75 (6,12%) the disease were diagnosed for the first time. Average 35% of them were with complications. Conclusions: 1. Cases of diabetes mellitus increase pandemically. 2. A considerable part (35%) of the new diagnosed patients are with complications. 3. The Public Health needs new strategies for control of the disease.

WHAT IS THE DEGREE OF INJURY OF GYPSIES IN RESPECT OF HEALTH AND ACCESS TO HEALTH CARE?

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While data and literature on Gypsy health present that Gypsi population is disadvantaged in almost all areas of health: on aggregate, Roma live about 15 years less than the majority populations; they suffer more from communicable diseases; Gypsy women suffer from poor reproductive health; Gypsy children are less well nourished than children from the majority population. There are many factors negatively affecting access to health care by Gypsies.

EPIDEMIOLOGY OF PSYCHOGENIC EATING DISORDERS IN BULGARIA

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Nowadays, the social significance of the issue of mental health is associated with the increase in mental illnesses and their spreading in every group of the world's population, as well as with the fact that these diseases remain a major cause of suffering and of a decrease in the quality of living of many people, of their families, and of the society as a whole. The National Mental Health Program brings to the foreground the necessity of creating new methods and mechanisms that would result in attaining a sustainable and continuous decrease in the spreading of mental illnesses and improving the quality of living of all the people with mental disorders and with social disfunction.

ADHERENCE WITH ANTIHYPERTENSIVE TREATMENT AMONG RURAL HYPERTENSIVE POPULATION

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The primary objective was to assess the importance of adherence with antihypertensive therapy for achieving lower blood pressure (BP) levels among rural hypertensive population. *Methods:* A survey among rural population (aged 45-74) in Varna region was carried out in 2007. BP was measured with standard mercury sphygmomanometer. Respondents were interviewed by trained personnel and a short questionnaire focused on BP awareness and treatment precision was completed. *Results* A total of 1183 persons were screened: 891(72%) were hypertensive, and out of these 617 (65.4%) were treated. After adjustment for age mean systolic blood pressure were significantly lower in the compliant group than the non-compliant group. Poor precision with therapy was associated with ethnicity different from Bulgarian, advanced age, lower level of education, diabetes, higher salt consumption. *Introduction:* Studies on awareness, treatment and blood pressure control reveal a specific situation for Bulgaria - high level of awareness and treatment but strikingly low levels of blood pressure control. (1) Poor adherence with anti-hypertensive treatment is traditionally related to low levels of blood pressure control. (2-4) Non-compliant patients apart from displaying worse health outcomes are also wasting precious and limited health care resources. (5) Acknowledging the importance of this factor one of the latest Cochrane reviews points out that: "...increasing the effectiveness of adherence interventions might have a far greater impact on health of the population than any improvement in specific medical treatment...". (6) Urquhart et al describe two main components of adherence-precision and persistence with treatment. (7) The primary aim of the present report is to analyse the level of precision with AH therapy among rural treated hypertensive population in north Eastern Bulgaria and factors influencing it. We tested the hypothesis whether good precision with treatment is related to lower levels of blood pressure.

UNDERREPORTING OF COMMUNICABLE DISEASES IN THE GREEK NATIONAL NOTIFICATION SYSTEM - MISSED OPPORTUNITIES FOR EARLY INTERVENTION

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Objective: Despite the mandatory reporting by laws, the incompleteness of notifiable infectious disease reporting is well-documented in many countries for various diseases. The purpose of this study was to investigate the completeness of infectious diseases reporting, the estimation of the incidence of various infectious diseases and to assess the degree of underreporting in the Region of Western Greece. *Methods:* Hospital records relating to infectious diseases were retrospective collected from three major hospitals in the prefecture of Achaia, region of Western Greece, in the period 1999-2004 and compared to the records of the corresponding public health department (PHDs) in the studied region. Statistical analyses were made using software SPSS v.16.0. *Results:* After record-linkage and cross-validation a total of 1143 hospital documented cases were identified, of whom 707 were

reported to the PHD of Achaia, resulting in an observed under-notification of 38% during the six-year study period. In addition to the 707 cases reported to the PHD from the three examined hospitals further 259 cases were notified by other sources, probably by office-based physicians or other hospitals not included in the study, resulting thus in a total of 966 reported cases to the PHD. Taking into account both, the hospital documented cases (1143) and the additional 259 registered cases to the PHD, the total number of notifiable cases was at least 1402 cases. Hence the average annual incidence was found to be at least 31,5 per 100000 population in Achaia. Among the reported diseases to the PHD the most common was meningitis (56,6%), followed by tuberculosis (9,5%), brucellosis (6,6%) and salmonellosis (6,2%). During the study period clustering of specific diseases was observed, indicating possible epidemics. *Conclusions:* The study demonstrates a substantial underreporting and from there an underestimation of the disease burden in Western Greece and as a consequence of these the miss of opportunities for early interventions. The notification system needs to be strengthened, in order to achieve appropriate prevention and control strategies, especially in the face of massive influx of immigrants and refugees from regions with high disease burden.

BREAST CANCER INCIDENCE, MORTALITY AND SURVIVAL IN THE EUROPEAN REGION

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Introduction: Breast cancer is by far the most frequent type of cancer in women with an estimated 430,000 new cases and 132,000 deaths in 2006 for the entire Europe. The aim of this study is to describe the incidence rates and long-term trends of breast cancer in the European countries, the factors that modify the risk of breast cancer, to highlight and explain the differences in incidence, mortality and survival and finally to find ways how to stop the development of breast cancer or to reduce the incidence and mortality. Methods: All data used for the presentation of the different outcome indicators for breast cancer (incidence, mortality and survival) derived from the World Health Organisation (WHO), the Organisation for Economic Cooperation and Development (OECD), EURO CARE project and other sources, on which further calculations and graphical illustrations are based. Furthermore a detailed literature review was performed in order to provide a critical look at the existing research related to the development, the risk factors and prevention of breast cancer. Results: The highest incidence rate in 2006 was estimated in Belgium (138 new cases per 100,000), whereas the lowest was observed in Romania (61 respectively). Mortality rates varied in 2007 by 17 deaths (in Iceland) to 34 deaths per 100,000 (in Denmark). Mortality trends are decreasing in Northern Europe, Western Europe and Southern Europe, whilst they are constant in Eastern Europe. The prognosis for breast cancer is relatively good, with 5year relative survival exceeding 75% in most countries of Western Europe. Particularly low breast cancer survival was seen in Eastern Europe with 5year relative survival rate between 60 and 67%. Breast cancer is hormone related, and the factors that modify the risk of this cancer include the events of reproductive life and lifestyle factors (e.g. unbalanced diet and alcohol). The evidence that alcoholic drinks are a cause of

breast cancer at all ages is convincing. Physical activity probably protects against breast cancer. Conclusions: The incidence rates for breast cancer continue to increase in the last decade and ranged currently from 60 to 140 new cases per 100,000 women in the European Region. The high incidence rates in recent years could also depend by the different introduction of screening programmes in various countries that anticipate incidence detecting early invasive cancers. However, an effective cancer control policy for Europe should: a. focus on early diagnosis, i.e. implementing organized mammography screening programmes and investing in modern diagnostic and treatment technologies to eliminate inequalities in the access to breast cancer diagnosis and treatment facilities in Europe (especially in Eastern European countries) and b. address primary prevention as a main priority, including avoidance of harmful alcohol use, diet improvement and physical activity to avoid obesity in order to achieve a reduction in breast cancer.

ALCOHOLISM: A DISEASE OF CIVILIZATION

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Introduction: Alcohol dependence is a major psychosocial problem which is lately exacerbated by the changes in everyday life: economical problems, unemployment, overcrowding, depression, etc. *Purpose:* The purpose of the study is to investigate the extent of the problem of alcoholism in the European countries and especially in Greece and Bulgaria. *Method:* Based on current data referring to alcohol abuse and the differences among the European countries. *Results:* Recorded consumption per capita is approximately 6.4 litres in Bulgaria and 10.6 litres in Mediterranean countries such as Greece. Comparing the two countries prevalence of alcohol consumption is higher in Greek boys. *Conclusion:* Alcohol consumption might be accompanied by smoking or other substance abuse and its prevalence is increasing. Alcoholism affects the higher economic classes as well.

IMPORTANCE OF REGIONAL CANCER REGISTRY IN GREECE

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Nowdays, more than ever there is a need to create a network of cancer registration (regional cancer registry in Greece). Knowledge of epidemiology and data are the first and most important step to create a comprehensive picture of the reality and the course of the disease in Greece. The Greek community in the last 30 years is in constant evolution and many of the social issues have changed dramatically. Even the level of health services has

improved greatly and it has its own importance in the fight to tackle cancer. This basis is the foundation necessary to be profitable and valuable for planning the prevention, treatment, research, and of course the early diagnosis of cancer. Without a clear and reliable data based on each effort clay feet and certainly can not meet today's increased demands for health care should be a modern European state. *Bibliography:* 1. Freddie Bray, Bjørn Møller; Predicting the future burden of cancer; *Nature Reviews Cancer* 6, 63-74, 2. Draper GJ, Kroll ME, Stiller CA; Childhood cancer. *Cancer Surv.* 1994;(19-20):493-517, 3. Bleyer WA; Cancer in older adolescents and young adults: epidemiology, diagnosis, treatment, survival, and importance of clinical trials; *Med Pediatr Oncol.* 2002;38(1):1-10, 4. Thomas J; Cancer control in Africa: a call for action; *Afr J Med Med Sci.* 2004;33(1):1-4, 5. Adams SA, Hebert JR, Bolick - Aldrich S, Daguise VG, Mosley CM, Modayil MV, Berger SH, Teas J, Mitas M, Cunningham JE, Steck SE, Burch J, Butler WM, Horner MJ, Brandt HM ; Breast cancer disparities in South Carolina: early detection, special programs, and descriptive epidemiology; *J S C Med Assoc.* 2006;102(7):231- 9.

HEALTH PROFILE OF THE FEMALE GREEK POPULATION

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Introduction: Women and men have different needs and access to health services. These differences when distinguished and dealt with would help to diminish inequalities between the two sexes. *Purpose.* To study the health profile of the female population and to highlight the determinants which affect their morbidity and mortality. *Material:* Standardized mortality rates for selected causes of death, such as cardiovascular, respiratory and digestive diseases, malignant neoplasms and external causes by age group (1-14, 15-24, 25-64 and 65+) with regard to the female population were used. These statistics proceeded from the World Health Organization/Office for Europe, Health for all Database. *Method:* Percentage changes from 1995 to latest available year were calculated and comparisons between Greece and European Union (EU 27 countries) were made. *Results:* According to age groups across these diseases females in Greece have excess mortality from cardiovascular diseases while mortality from breast cancer is somewhat lower than the EU. In comparison with 1995, in almost all age groups there was a decline in the change of SDR mortality from these selected causes of death in Greece. However the average decline was higher in the European Union. More specifically, in the age groups 1-14 and 15-24 motor vehicles traffic injuries are the leading cause of death in Greece (SDR 2.2 and 11.8 per 100000 inhabitants respectively compared with 1.8 and 8.1 per 100000 population in the EU). In the age group 25-64 SDR malignant neoplasms are the leading causes of death (82.3 vs 102.4 per 100000 inhabitants respectively). Within this category, breast cancer is the number one cause of death for this age group in Greece (SDR 21.7 per 100000 inhabitants compared with 27.5 in the EU). All causes all deaths in the next age group 65+ were higher in Greece than in the EU (3755.6 and 3460.2 per 100000 inhabitants respectively). Cerebrovascular diseases are the major cause of death in Greece than the EU (SDR 897.5 compared with 457.0 per 100000 inhabitants respectively). *Conclusions:* Chronic diseases are the major

causes of death in Greece, as in the other EU countries. Cerebrovascular disease is the single biggest killer for the female population, followed by malignant neoplasms. These diseases are preventable to a great extent, with a comprehensive prevention system in place, as showed relevant success policies in other developed countries. Furthermore, female population should be encouraged to encompass healthy lifestyles bearing in mind that their choices affect the whole family. Moreover, supportive measures and infrastructure for the care of their primary dependents such as children and elderly would help women to better perform their multiple roles, prevent stress and disease burden and thus contributing in the improvement of their health.

BOVINE SPONGIFORM ENCEPHALOPATHY (BSE) IN GREECE AND BULGARIA

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Introduction: Bovine Spongiform Encephalopathy (BSE) is a progressive, degenerative disease of the central nervous system of the cattle. Transmission of the BSE agent to humans, leads to a variant form of Creutzfeldt - Jakob disease (vCJD) and occurs after ingestion of contaminated food products. *Purpose:* Both Greece and Bulgaria are listed by the FDA among the countries which have substantial risk associated with BSE. Our purpose was to investigate the number of cases of BSE in the two countries and the safety measures that have been taken in order to prevent BSE contamination of food. *Method:* We checked out the current bibliography, looking for the reported cases of the disease and the current state as far as BSE is concerned. *Results:* Greece has reported the first case of BSE in July 2001, whereas according to the European Union's committees on BSE risk assessment in Bulgaria the presence of BSE infected cattle is also likely. Both countries are listed by the Scientific Steering Committee in the same category considering the likelihood of the presence of one or more cattle infected with BSE. *Conclusions:* Surveillance programs revealed BSE cases in many countries. Although all EU member countries have the same legal requirements for surveillance there is a lot of variability. Active cooperation between Greece and Bulgaria would probably restrict the BSE cases in both countries.

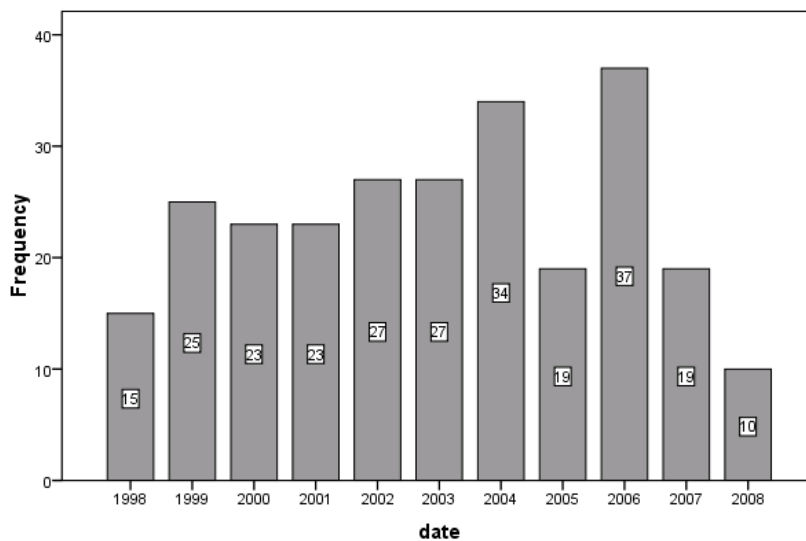
IMPORTED MALARIA CASES IN GREECE DURING 1998-2008

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Introduction: Malaria is an imported disease for the European Union, concerning especially travel medicine. Travelers to malaria endemic countries are an increasing group of

susceptible individuals, who use the ease of modern transportation to travel to/ or from the tropics either for migration, tourism or business. *Purpose:* In Greece malaria's notification is compulsory and most cases are thought to be imported, although there have been reported autochthonous malaria cases especially in the Evros province. The aim of this study is to evaluate last decade's reported cases. *Materials and Methods:* The new released epidemiological data of 259 confirmed malaria cases, reported to the Greek Centre of Disease Control and Prevention (KEELPNO) during 1998-2008 were studied and information about age and sex were gathered if available. Patients were classified into 6 age groups by the Greek Centre of Disease Control and Prevention. *Results:* Among 259 confirmed cases, age was available to 230 patients. The following table shows the age distribution of the disease, and the chart below represents the amount of cases reported annually. Cases (and percentages) by age group: 0-4 years: 7 (3%), 5-14 years: 7 (3%), 15-24 years: 40 (17.4%), 25-44 years: 117 (50.9%), 45-64 years: 48 (20.9%), >65 years: 11 (4.8%). Gender information was available to 247 out of 259 patients. Among those 247, the vast majority of 202 cases (82%) were male and 45 were female patients. *Conclusions:* More than half of the cases belonged to the age group of 25-44 years, and most of the patients were males. This epidemiological pattern may reflect travelling and migration habits and comes in total compliance with that reported by the European Centre of Disease Prevention and Control. Further epidemiological data such as reported travel history (country visited and cause of travel) and date of symptom onset, are required in order to estimate whether there is still autochthonous malaria transmission in Greece, specify the high risk groups and introduce a preventive policy. Further epidemiological data such as reported travel history (country visited and cause of travel) and date of symptom onset, are required in order to specify the high risk groups and introduce a preventive policy.



Confirmed malaria cases, reported to the Greek Centre of Disease Control and Prevention during 1998-2008.

EVALUATION OF SCREENING PROGRAMS FOR CERVICAL CANCER

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Introduction: Cervical cancer is one of the few highly preventable cancers. Screening for cervical cancer reduces invasive cervical cancer incidence and mortality. *Purpose:* The evaluation of cervical cancer screening at the Cytology Laboratory of General Hospital of Kavala. *Material and methods:* In 2007 the Cytology Laboratory examined 5000 cervicovaginal smears. Of these, 162 were new-diagnosed cases, which were used for this study. *Results:* In the age group of women between 20-25 years, 81 new cases of women diagnosed with HPV and CIN1-2 (50% of the 162) were found. In the age group 25-30 years, 40 cases (24.6%) were diagnosed with HPV and CIN2-3. In the age group 30-40 years, 28 cases (17.3%) were diagnosed with HPV and CIN2-3. In the age group 40-50 years, 10 cases (6.2%) with CIN2-3 were diagnosed and, finally, in the age group 50-60 years, 3 cases (1.9%) with diagnosis of CIN2-3 were found. *Conclusions:* The number of new cases of intraepithelial cervical malformations was clearly high. The percentage is higher, namely 50%, in terms of new diagnosed cases in the age group 20-25 years. The screening to detect cancer of the uterine cervix should begin at this particular age group. This is in agreement with the American College of Obstetricians and Gynecologists (ACOG) and the US Preventive Services Task Force, who recommend initial testing with either the traditional Papanicolaou (Pap) smear or liquid-based cytology starting by the age of 21 years or approximately 3 years after the first sexual intercourse.

BREAST CANCER IN WOMEN - PSYCHOLOGICAL IMPACT AND PROPOSED INTERVENTIONS

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Introduction: Breast cancer (BC) represents 32% of all female cancers, and is responsible for 19% of deaths related to neoplastic causes. *Purpose:* To highlight the reaction phases in which women diagnosed with BC are involved, to stress their perceived quality of life and to bring forward some useful interventions that could be employed. *Material and Methods:* Literature search using PubMed database to identify articles. The terms searched for in the field "Title" for the last decade were: cancer, breast, psychological, intervention. *Results:* Ten articles were retrieved, three of which were reviews. One article was not considered since it studied men with BC. Several reaction phases were identified; shock, anxiety, denial, depression, internalized anger, externalized hostility, acknowledgment, adjustment. Women are involved in both emotion and problem-focused coping, and research states that those with high self-efficacy report better quality of life in contrast to women with lower income and mood disorders. The newly diagnosed women complain for increased pain, bigger physical difficulties and significant role limitations. These patients receive considerable help from family members, relatives, friends, patient groups, colleagues,

medical and nursing staff. Humor is recognized as a strong means to potentiate a cognitive shift and reduce depression (7-46%) and anxiety (32-45%) frequency. As time goes by, help provided by social network seems to fade away mainly due to the burnout phenomenon. Interventions include: provision of in-depth information, use of another patient with BC as a role model, short-term goals with specific time limits, problems' breaking down in smaller ones, facilitation of feelings' expression, Gestalt techniques, exercising, new hobbies, open discussion of fears and doubts. *Conclusions:* BC exerts deleterious effects on all aspects of life (physical, psychological, social), since breast is linked to sexuality, maternity, and female identity. In this context, health systems should promptly recognize and fully cover the needs of BC patients.

CORRELATION OF RADIOLOGICAL AND CLINICAL FINDINGS WITH LABORATORY PARAMETERS IN ACTIVE PULMONARY TUBERCULOSIS

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Introduction: Tuberculosis remains the most frequent and important infectious disease causing morbidity and death. One-third of the world's population is infected with *Mycobacterium tuberculosis* and eight to ten million new tuberculosis cases occur annually worldwide. In particular, pulmonary tuberculosis, the most common form of tuberculosis, is a highly contagious and life-threatening infection. It is thus crucial for the clinicians to be fully aware of the possible clinical and radiological manifestations of this disease so that an early diagnosis can be made. *Purpose:* Demonstration of possible correlation of clinical and radiological findings during the diagnosis of pulmonary tuberculosis with the main laboratory findings. *Material and Methods:* A retrospective study involving 112 patients with active pulmonary tuberculosis who were hospitalized in the 1st Pulmonary Department of the General Hospital of Kavala during the period 2002-2006. *Results:* The most important positive (+) and negative (-) correlations are demonstrated in the table below:

| | <i>Hb/Hct</i> | <i>WBC</i> | <i>PLT</i> | <i>VES</i> | <i>CPR</i> |
|----------------------|---------------|------------|------------|------------|------------|
| Cough | | (+)* | | | |
| Expectoration | | (+)* | | | |
| Fever | (-)* | | | (+)* | (+)* |
| Fatigue | (-)* | | | | |
| Anorexia | | | | (+)* | |
| Duration of symptoms | (-)** | (-)** | | (+)** | (+)** |
| Infiltrations | | (+)** | (+)* | (+)* | (+)** |
| Cavity | | (+)** | | | |
| Pleuritis | | (-)* | | | |

Conclusions: The main laboratory findings are correlated with the clinical and radiological expressions of the disease. The column of the WBC presents the most frequent and strong correlations.

APPLICATION OF HEALTH BELIEF MODEL IN CERVICAL CANCER SCREENING

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Introduction: The Health Belief Model (HBM) is one of the value-expectancy models. It was first introduced by Hochbaum, Kegels and Rosenstock in tuberculosis prevention programs in late 1950s, but is currently employed in the evaluation of compliance/adherence, prevention strategies, and health services' utilization. It consists of six components; namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and health motivation/self-efficacy. Prevention of cervical cancer is based on avoiding smoking, regular clinical examination and mainly cervical smear test (Pap test). *Purpose:* The assessment of HBM application's utility in cervical cancer screening. This disease was selected for a variety of reasons; it represents the second cause of death among cancer female patients in Europe, treatment costs less in the first stages, and there is an early stage that can be adequately treated. *Material and Methods:* Literature search using PubMed database to identify articles. The terms searched for in the field "Title" for the last decade were: cancer, cervical, health belief model. *Results:* Four articles were retrieved, three of which were reviews. All of them proposed the same strategies; definition of population in hazard (susceptibility), description of disease's consequences (severity), provision of proofs of efficacy (benefits), reassuring, provision of help (barriers), seminars, calls, posters (cues to action), and positive reinforcement especially in poor and uneducated women (health motivation). However, some drawbacks of the HBM were underlined; it ignores normative influences and has been accused of vagueness. *Conclusions:* HBM is considered a prognostic model for the analysis of a screening program. All proposed interventions (television/radio campaigns, meeting women at their place of work, educational brochures) should address the following issues: the type of cancer that the Pap smear detects, the preventive nature of the test, the way the specimen is collected, and the age of women that should be examined.

PREDICTION OF BRAIN CANCER PATIENTS' SATISFACTION

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Introduction: Evaluation of patients' satisfaction is an essential prerequisite for assessment of the quality of health care services. *Purpose:* To develop a mathematical equation to predict satisfaction levels of inpatients diagnosed with brain cancer. *Material and Methods:* A sample of 194 brain cancer patients hospitalized in the University General Hospital of Alexandroupolis (Greece) between January 2005 and February 2009 was contacted at the day of discharge. The selected patients were administered a satisfaction questionnaire and were asked to complete it on the spot without any interference from the researchers. Linear

regression analysis was performed by Statistical Package for Social Sciences (SPSS v. 16.0). The threshold p value for statistical significance (2-sided) was set to 0.05. *Results:* The average completion time was 9 minutes and the obtained response rate was 84.02% (163 patients). The mean age of participants was 58.9 years old; 53.4% were men, 73.0% married, 51.5% came from the city of Alexandroupolis, 33.7% had a university degree, and 44.2% had never been hospitalized in this hospital before. The mean global satisfaction which was estimated to be 73.313 ± 1.494 was used as the dependent variable and age, sex, marital status, citizenship, educational level, location, length of stay, prior admissions and type of admission (urgent/scheduled) as independent ones. The derived equation was: $71,510 - (0.621 * \text{AGE}) + (3.482 * \text{SEX}) - (0.792 * \text{MARITAL STATUS}) + (2.798 * \text{CITIZENSHIP}) + (0.145 * \text{EDUCATION}) + (0.263 * \text{LOCATION}) + (4.297 * \text{LENGTH}) - (1.109 * \text{PRIOR ADMISSIONS}) - (5.737 * \text{TYPE OF ADMISSIONS})$. The R, R² and R'² values were 0.254, 0.064 and 0.009 respectively. Durbin-Watson value was 1.487 and F equalled 1.169 (p=0.319). *Conclusions:* Prediction of global satisfaction in brain cancer patients with the proposed equation was not satisfactory. Further validation of the equation in a bigger sample and exploration of additional prognostic variables is needed.

THE PULMONARY TUBERCULOSIS IN AGED AND ADULT PATIENTS IN THE PREFECTURE OF KAVALA AND THE REST REGION OF EAST MACEDONIA DURING THE PERIOD 2002-2006

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Introduction: Tuberculosis (TB) in the third millennium still remains a major global health emergency. It is associated with approximately 3 million deaths per year. In addition, 8 million people develop active disease and 2 billion have latent TB infection. It is estimated that nowadays the incidence of TB in Greece is approximately 10-12 cases per 100,000 population. The geographical distribution of TB displays Thrace in the first place and Macedonia, the authors' region, in the second. *Purpose:* The study aims to compare the clinical, radiological and laboratory findings of pulmonary and pleural tuberculosis. *Material and Methods:* The patients were derived mainly from the region of east Macedonia during the period 2002-2006 and were hospitalized in the 1st Pulmonary Department of the General Hospital of Kavala. 112 patients were examined, from which 65 were aged (≥ 65 years old) and 47 adults (24-64 years old). *Results:* The study demonstrated that: 1. In the adults predominate symptoms like fever, sweating, thoracic pain, fatigue, anorexia while in the elderly leading symptoms are cough, hemoptysis and dyspnea. 2. The Mantoux reaction was found positive in 64% and negative in 36% in the adults. The corresponding percentages in the elderly were 55% and 45% respectively. 3. The sputum or bronchial secretions culture for b-Koch turned to be positive in 48% (aged) versus 37% (adults), while in the last ones the percentage of negative sputum or bronchial secretions was 63%. *Conclusions:* The symptoms didn't present significant differences between the two groups. The disease in the elderly often does not present the typical symptomatology but nevertheless is less disturbing. The radiological findings were similar. The diagnosis of the disease in both age groups was confirmed with the isolation of the mycobacterium tuberculosis.

HABITUAL SMOKING AND THE COMPARISON OF HISTOLOGICAL FINDINGS WITH THE PHYSICAL SYMPTOMS

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Introduction: Smoking is the cause of death of millions of people all over world each year and is associated with cardiopulmonary morbidity and mortality. *Purpose:* The intention of our survey was to emphasize that clinical symptoms frequently lag behind histological changes caused by smoking. It's important to keep in mind that it may take 20 multiplying generations before one single cancer cell becomes a radiologically detectable mass. *Material and Methods:* Our survey refers to histological specimens taken from hospitalized patients seen at our Pulmonary Department at the General Hospital of Kavala, Greece. The specimens were either obtained from sputum or bronchoscopy. The medical history included information about age, smoking habits and their clinical symptoms. Although 8,000 specimens were initially collected, due to insufficient data, half of them had to be discarded. Therefore only 4,000 specimens were histologically examined. *Results:* 78.5% of the patients- whose specimens were histologically examined - were smokers. 79.26% were 50 to 80 years old. 472 (11.66%) of the specimens showed dysplastic changes, 3481 (86.05%) were negative for dysplasia but showed inflammatory or atypical changes and 93 (2.29%) were inconclusive. The inflammatory changes were especially found in patients with COPD and some form of pulmonary infection. Most specimens that showed dysplasia derived from patients in their 60's and 70's. Among the dysplastic specimens: 44.5% correlated with squamous cell carcinoma, 19.7% with small cell carcinoma, 16.9% with adenocarcinoma and the undifferentiated megalocytic cancer. *Conclusion:* Although the patients were hospitalized for reasons unrelated to cancer, the histological abnormalities and dysplastic changes found especially in smokers strongly suggest that smoking is the prime cause of pulmonary cancer in the older generations.

TOBACCO USE AMONG ADOLESCENTS IN GREECE AND ITALY

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Purpose: To investigate the differences of tobacco use in adolescents aged 14 to 16 y/o between Greece and Italy. *Study Population and Methods:* 208 randomly selected students from Secondary and High Schools in Italy and 363 respectively in Greece filled-in a questionnaire anonymously, which included demographics and queries about lifestyle and smoking, structured in multiple choice questions, Likert scales or VAS. *Results:* 54.7% of the adolescents from Italy versus 45.3% from Greece reported having tried to smoke even once in the past (Fisher, $p < 0.001$). No significant differences were noticed regarding the

weekly consumption of cigarettes between the two countries ($p > 0.05$, Italy: Mdn=20, Greece: Mdn=17). Non-smoking parents were more likely to come from Italy (father: OR=1.83, 95%CI=1.29-2.60; mother: OR=1.54, 95%CI=1.06-2.22). In Greece, having tried smoking was correlated with the hours of absence from lessons ($r=0.30$, $p=0.022$). According to the logistic regression, it was more likely for adolescents who had tried smoking, to come from Italy (OR=1.95, 95%CI=1.24-3.07) and have either brothers and sisters (OR=3.06, 95%CI=1.75-5.32) or friends smokers (OR= 6.69, 95%CI=4.32-10.36). In Greece, having a smoker mother increased the probability of trying to smoke by a factor of 1.85 (95%CI=1.01-3.41). *Conclusions:* Tobacco use among adolescents continues to be a wide-spread problem in both countries, despite various anti-smoking actions and campaigns. In Italy, additional measures, such as banning smoking in public places, could be correlated with the smaller number of smoker parents. It would be worthy to further study adolescents after the introduction of such measures in Greece.

ASSESSING MENTAL HEALTH DISTRESS IN PATIENTS WITH ARRHYTHMIAS

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Background: Arrhythmias are a common symptom resulting frequently in serious implications on patients health and their quality of life. Studies report that patients with recurrent arrhythmias or palpitations present frequently psychological distress (depressive symptoms, and/or anxiety), which result, in serious implications on their health and quality of life. *Purpose:* To assess mental distress in patients with arrhythmias. *Study Population and Methods:* 212 people with arrhythmic symptoms (90 males, 122 females; mean age=67.13 years, $sd=9.97$) were selected among the patients of the Health Centre of Chrisoupolis, who reported for the first time or repeatedly, arrhythmic episodes. Information was collected regarding demographics, habits, arrhythmias history, background regarding related chronic diseases, medicine treatment. ECG, physical examination, and auscultation were performed and laboratory analysis or referrals were carried-out when appropriate. Finally the General Health Questionnaire - 12 (GHQ-12) was conducted to evaluate mental distress. *Results:* 20.8% reported more than five arrhythmic episodes in the past 6 months. The most common type was the atrial fibrillation/flutter (65.1%). The GHQ-12 score was significantly affected by the type of arrhythmia ($H=17.88$, $p=0.022$). Patients with premature ventricular contractions had a significantly better GHQ-12 score than the ones with sinus tachycardia ($U=19.00$, $p=0.004$) and with supraventricular tachycardia ($U=16.50$, $p=0.001$). Those having experienced few episodes of arrhythmia per day had a significantly worse GHQ (Mdn=13.00) than the ones having sustained few episodes per month (Mdn=10.50, $U=882.00$, $p=0.014$). 72,5% of the patients received benzodiazepines regularly and their use seemed to be associated with first-detected AF ($\chi^2=6.61$, $p=0.038$). *Conclusions:* Monitoring chronic arrhythmias becomes a tiresome procedure for the patients, which may affect their mental health. Further studies could focus on evaluating the clinical decisions made by GPs, which may influence the natural history of the arrhythmias.

THE CHALLENGE OF DEMENTIA FOR PRIMARY CARE IN GREECE

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It is estimated that till 2020 we shall have a rise from 20% that it is today to a 26% for the population of individuals over 60 years old in all country members of the EU, while the increase rise, more tense for the fourth age, namely individuals that are over 80 years old. Greece has similar problems with the rest of EU countries regarding its aging population. Since Dementia is far more prevalent above the age of 65 the increase of Dementia prevalence is expected and it poses a great challenge for the health system in each country. Prevalence of Dementia in Greece: Alzheimer Europe estimates the number of people represents 1.12% to 1.22% of the total population of 11,082,751. The number people with dementia in Greece as a percentage of the total population are slightly below the EU average of 1.14% to 1.27. The early detection and referral of people suffering from dementia in the memory clinics were they can be diagnosed and treated is the first and most important step in dealing with dementia. Most of the elderly due to their multiple health problems are often contacting general practitioners and primary care physicians in general. Due to the lack of time in general practitioners practice it is difficult for them to access and refer many of the dementia cases they come across so their memory complains are often neglected. Already have started a research project in order to adapt screening instruments for diagnosis of dementia in primary care as well as creating an algorithm for referrals from Primary care to memory clinics.

CHRONOLOGICAL FOLLOW-UP OF THE PREVALENCE OF TUBERCULOSIS IN CHILDREN IN KAVALA, GREECE

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Introduction: The prevalence of TB is defined as the most reliable measurement of the occurrence of tuberculosis. This definition helped with the medical observation of children tested and followed up with the "Mantoux" test in Kavala, Greece. In detail, it is expressed as the percentage of people with a positive "Mantoux" test in a specific time-period in reference to the spreading of the tuberculous infection through the mycobacteria of TBC. *Purpose:* The intention of our research was the documentation and evaluation of the effectiveness of the efforts of two decades aimed at restricting the further spread of tuberculosis in the city of Kavala. It analyzes epidemiological data of the time-period of 1991 to 2008 with great accuracy. *Material and Methods:* Overall 15,208 Mantoux tests were applied to school-children aged 6 and 12 years old in Kavala. In particular, we used for the skin-test PPD-RT 23 and the evaluation of the skin-reaction was performed by experienced personnel within 48 to 72 hours. A reaction of greater or equal to 10mm was regarded as a positive PPD-test. *Results:* In summary, 53 positive PPD-tests were recorded. *Conclusion:* According to our analysis of the presented data, we observed a steady decline of the prevalence of TB in Grammar school children in Kavala during the last two decades. These

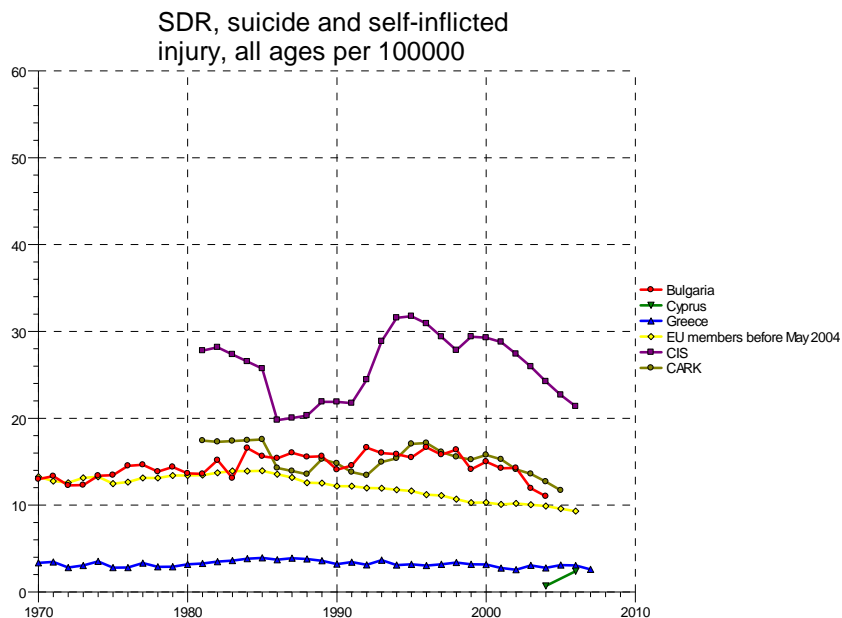
results are certainly encouraging in our continuous efforts in controlling the further spread of tuberculosis in our community.

MORTALITY TRENDS IN GREECE, BULGARIA: SUICIDE AND SELF-INFLICTED INJURY

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The longitudinal mortality trends have been studied in suicide and self-inflicted injury for the population of Greece, Bulgaria and Cyprus in compared with the respective epidemiological rates which concerns the majority of the population of the European Union (members before 2004), as well as the independent democracies of the former USSR (CIS: the 12 countries of commonwealth of independent States, CARK: the central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).



Age-standardized death rates (SDR) of suicide and self-inflicted injuries by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).

The data of the mortality entries have been used, as they have been registered from the National Statistics Department of Greece and they are catalogued from the European Statistics Department (Eurostat) and the European Region of the World Health Organization. In comparison with the E.U, Greece presents stable, five times less values, whereas a gentle decline is distinguished from the middle of 80s. The time series concerned about Bulgaria are almost the same with the independent democracies of the former USSR which are developed by the industrial standard, but higher values than the majority of E.U countries. We can also observe that Bulgaria presents a decrease from the mid of 90s.

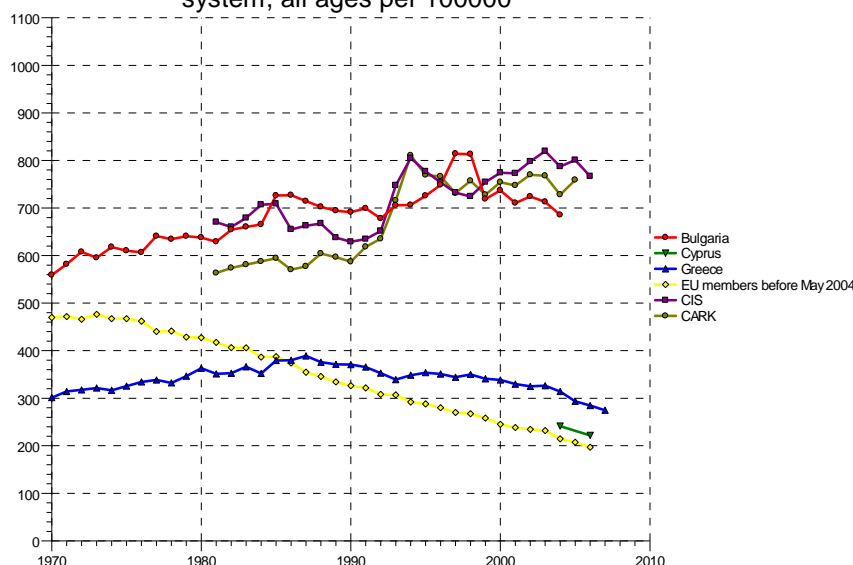
MORTALITY TRENDS IN GREECE, BULGARIA: DISEASES OF CIRCULATORY SYSTEM

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The longitudinal mortality trends have been studied in diseases of circulatory system for the population of Greece, Bulgaria and Cyprus in compared with the respective epidemiological rates which concerns the majority of the population of the European Union (members before 2004), as well as the independent democracies of the former USSR (CIS: the 12 countries of commonwealth of independent States, CARK: the central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan). The data of the mortality entries have been used, as they have been registered from the National Statistics Department of Greece and they are catalogued from the European Statistics Department (Eurostat) and the European Region of the World Health Organization. For the Greek population an increasing trend can be distinguished in the majority of the circulatory diseases till the end of the 80s which is followed by a gently decline course. On the contrary, for the Bulgarian population a respective increasing trend (with more than double values-rates) is preserved till the end of the 90s and a decline course is followed. An identical pattern is discerned after the division by gender. The indicative rates for the population of Cyprus are lower than the respective rates of the Greek population. The respective time series that concerns the majority of the population of the European Union reflects clear decline trend during the studied time period. Possible explanations for the evolvement of the rates of the Greek population, is the limitation of tobacco consumption, the secondary hypertension and hypercholesterinaemia prevention, through medical action, as well as the Mediterranean diet, which although it is limited, its goes still exist. Besides, the reversal longitudinal trend (from increasing, to decreasing course), has been observed for the majority of the population of the European Union, as well as for the population of countries developed by the industry standard, since the mid of the 60s (as it can be seen from the stabilizing tends till the mid of the 70s for the population of the European Union).

SDR, diseases of circulatory system, all ages per 100000



Age-standardized death rates (SDR) of diseases of circulatory system by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).

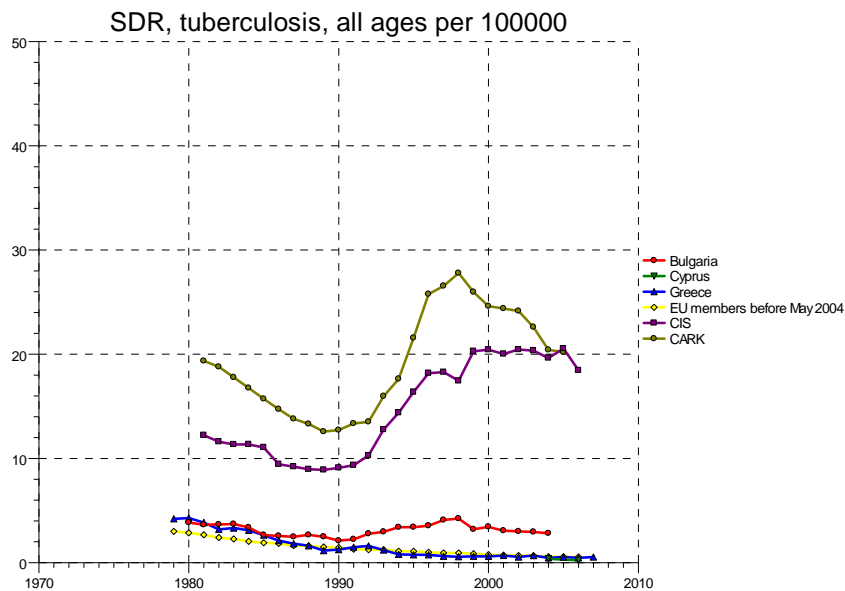
MORTALITY TRENDS IN GREECE, BULGARIA: TUBERCULOSIS

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The longitudinal mortality trends have been studied due to tuberculosis for the population of Greece, Bulgaria and Cyprus, compared with the respective epidemiological rates which concern the majority of the population of the European Union (members before 2004), as well as the independent democracies of the former USSR (CIS: the 12 countries of commonwealth of independent States, CARK: the central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan). The data of the mortality entries have been used, as they have been registered from the National Statistics Department of Greece and catalogued from the European Statistics Department (Eurostat) and the European Region of the World Health Organization. For the Greek population a delay to declining rates is observed at the mid of the 80s (as it's been recorded across the world started from the comments of CDC at the USA), which is followed by an increasing trend at

the first half of the 90s and after the return to previous values, stability which is preserved till the end of the studied time period. For the majority of the Bulgarian population, while the values start from the same levels at the beginning of the 80s, the declining course is greater in pace compared to Greece's and it appears an increasing course from the beginning of the 90s, which reverses at the end of the same decade with a gently declining trend. The longitudinal trends, which concern the independent democracies of the former USSR, are following the same standard with remarkable higher values and relevant delay at the reversal of trends for the most developed in the industry standard countries. The longitudinal standard, which concerns the majority of the countries members of the EU, is the same with the one described for the Greek population.



Age-standardized death rates (SDR) of tuberculosis by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).

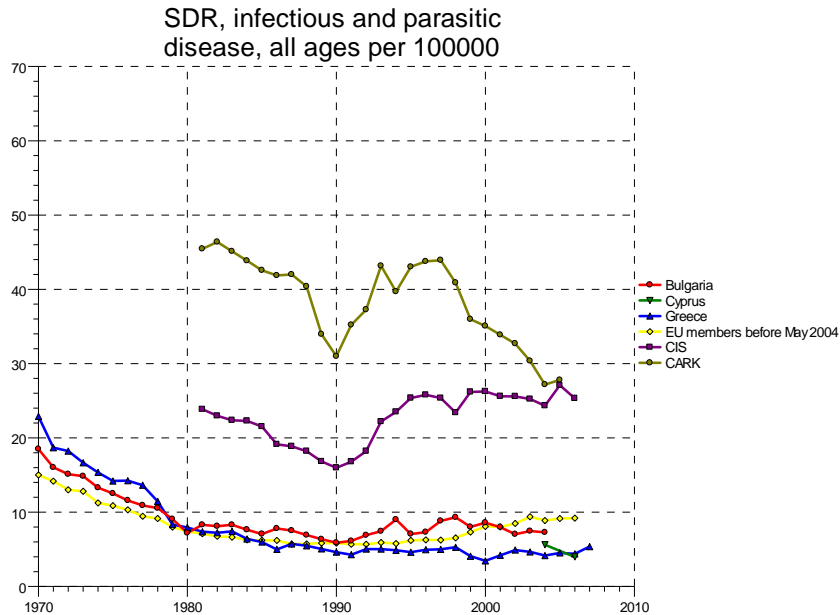
MORTALITY TRENDS IN GREECE, BULGARIA: COMMUNICABLE DISEASES

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The longitudinal mortality trends have been studied in communicable diseases for the population of Greece, Bulgaria and Cyprus in compared with the respective epidemiological

rates which concerns the majority of the population of the European Union (members before 2004), as well as the independent democracies of the former USSR (CIS: the 12 countries of commonwealth of independent States, CARK: the central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan). The data of the mortality entries have been used, as they have been registered from the National Statistics Department of Greece and they are catalogued from the European Statistics Department (Eurostat) and the European Region of the World Health Organization.



Age-standardized death rates (SDR) of diseases of infectious and parasitic diseases by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).

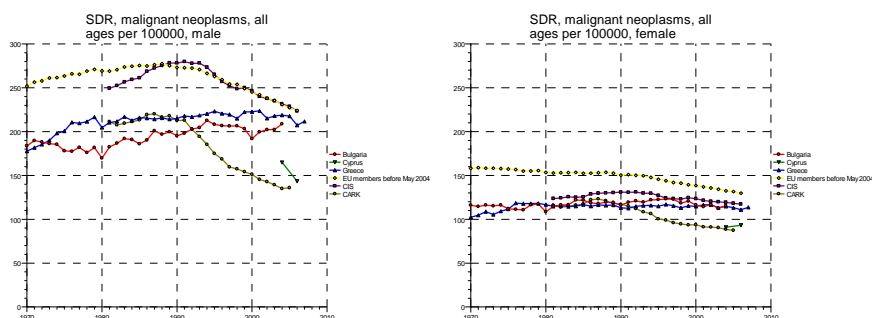
The time series of the communicable diseases as a cause of death, present a decrease for the population of Greece as well as the population of Bulgaria, corresponding to the respective standard of the population of the European union. Also, these time series have the same form till the end of 80s, except the decade of 70s where an intensive decreasing rate, has been observed. It's remarkable that at the end of 70s there is an exchange of values between Bulgaria and Greece, followed by stability till the end of the studied period. The values about Greece are always lower than Bulgaria. From the beginning of the 90s a gentle increase is presented for the majority of E.U.

MORTALITY TRENDS IN GREECE, BULGARIA: MALIGNANT NEOPLASMS

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We studied the time trends in mortality of malignant neoplasm for the population of Greece, Bulgaria and Cyprus and compared them with the corresponding epidemiological indicators of the total population of the European Union (member states before 2004), as well as with the new independent states of the former USSR (CIS: the 12 countries of Commonwealth of Independent States, CARK: the Central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan). We used data from the mortality registers, as they are recorded by the National Statistical Service of Greece and as provided by the Eurostat and the European Office of World Health Organization. The time trends show that for the total population of EU from the beginning of the decade 1970 the increasing trends become stable and after two decades the mortality rates begin a decreasing course. For the Greek population we observe an increasing trend during the whole studied time period, but now decreasing rates are observed. It is worth mentioning that mortality rates in Greece, Bulgaria and Cyprus are lower than the corresponding rates in the more developed countries (as in EU and CIS). Over the past four decades we observe slightly higher rates in Greece comparatively with the corresponding rates in Bulgaria. The gender specific mortality rates demonstrate highly increased rates for the Greek males in comparison with the male population in Bulgaria, whereas in respect of the female population we observe contrary higher rates in Bulgaria than in Greece nearly during the whole studied time period. The decreasing trends concerning the total population of the European Union is obvious, but we do not see the same trends with respect to the population of Greece, Bulgaria and Cyprus.



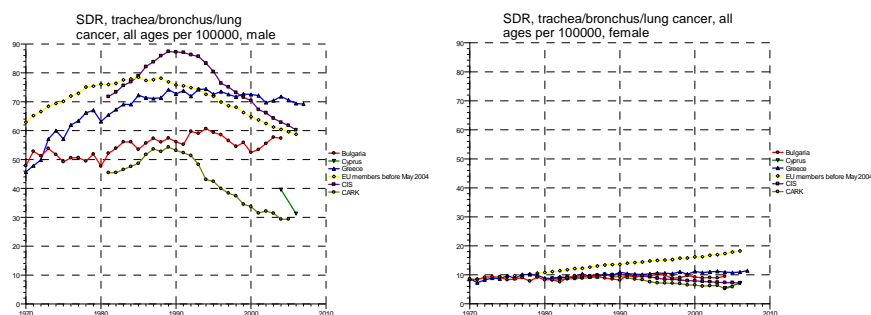
Age-standardized death rates (SDR) of malignant neoplasms by sex and by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan).

MORTALITY TRENDS IN GREECE, BULGARIA AND CYPRUS: CANCER OF TRACHEA, BRONCHUS AND LUNG

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The longitudinal mortality trends have been studied due to cancer of trachea, bronchus and lung for the population of Greece, Bulgaria and Cyprus, compared with the respective epidemiological rates which concern the majority of the population of the European Union (members before 2004), as well as the independent democracies of the former USSR (CIS: the 12 countries of commonwealth of independent States, CARK: the central Asian Republics Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Kazakhstan). The data of the mortality entries have been used, as they have been registered from the National Statistics Department of Greece and catalogued from the European Statistics Department (Eurostat) and the European Region of the World Health Organization.



Age-standardized death rates (SDR) of trachea, bronchus and lung cancer by sex and by year. Data from Greece, Bulgaria, Cyprus, European Union (members before May 2004), CIS (the 12 countries of Commonwealth of Independent States of the former USSR) and CARK (the Central Asian Republics: Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan) and Kazakhstan).

The diversification of frequency for the lung cancer is remarkable between the two genders, during the studied time period, with intense dominance of the male. Especially, for the male of the Greek population an increasing trend is distinguished till the end of the 80s, followed by a decade of stability, and then a gentle declining course from the end of the 90s. For the males of the Bulgarian population, although lower values are observed, there is a obvious gentle increase with possible stability of values (though epidemiological noise) during the last twenty years. The phenomenon of reversing trends is obvious for the majority of the European population (till the mid of the 90s), as well as the developed, according to the industrial standard, independent democracies of the former USSR (with relevant lag from the beginning of the 90s). It is a matter of great interest that for the Greek population higher values remained in relation to the predescribed groups of countries, as far it concerns the

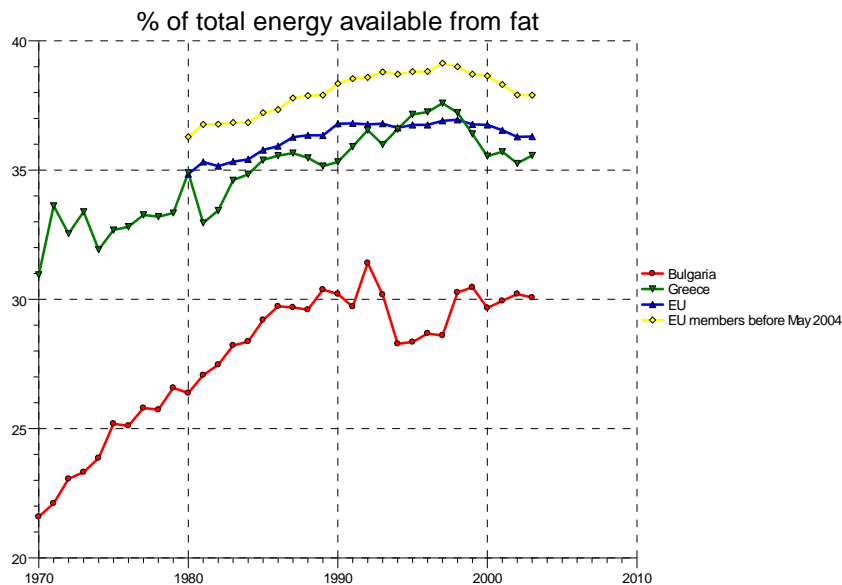
male, matter which is obviously related to the tobacco consumption. On the contrary, the standard of the trends, which concerns the female, shows a increasing trend for the majority of the of the European countries (and Greece), while for Bulgaria a stability is been observed, and for the independent democracies of the former USSR a gentle decrease, from the beginning of the 90s, obvious at the least developed.

NATIONAL VACCINATION COVERAGE SURVEY IN GREECE 2006: THE CASE OF THRAKI

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Background: Childhood vaccination coverage in Greece is estimated using ad-hoc population-based surveys. We conducted a National Vaccination Coverage Survey using stratified cluster sampling to estimate vaccination uptake in children attending the first year of Grammar School (about 6 years of age). *Methods:* The country was stratified into 6 regions and each region was subdivided into urban and rural areas. Each cluster contained a school classroom randomly selected from each region with probability proportional to size; Thraki was over-represented in the sample. All pupils of the selected clusters were asked to provide their vaccination booklet, recording their vaccination status.



Weighted proportions were calculated to allow for sampling weights and clustering. *Results:* Of the 3,878 participants (response rate 88.4%), 575 (14.8%) resided in Thraki, including 290 (7.5%) Greek Muslims. The weighted proportion of children vaccinated with 4 doses of

DTP was 98.3% (95%CI: 97.7-98.8%) in the total population, 94.0% (95%CI: 90.2-96.3%) in the inhabitants of Thraki and 91.9% (95%CI: 86.2-95.4%) in Greek Muslims. Primary vaccination for Hib was completed in 71.4% (95%CI: 69.1-73.7%), 44.5% (95%CI: 38.0-51.2%) and 35.3% (95%CI: 28.6-42.6%) of the total population, the inhabitants of Thraki and Greek Muslims, respectively. The vaccine uptakes for two doses of MMR in the above groups were 76.0% (95%CI: 73.6-78.2%), 80.4% (95%CI: 73.8-85.6%) and 79.7% (95%CI: 70.5-86.6%), respectively, and for three doses of HBV vaccine by the age of 12 months were 20.2% (95%CI: 18.3-22.2%), 68.5% (95%CI: 63.7-73.0%) and 71.9% (95%CI: 65.0-77.9%) respectively. *Conclusions:* Vaccination uptake in Thraki and in Greek Muslims was somewhat lower than that of the general population for most vaccines (DTP, Polio, MMR, Hib, MenC). Notably, timely vaccination uptake for HBV and coverage with two doses of MMR vaccine were higher in these groups. Further efforts are warranted to improve vaccination coverage in the region of Thraki.

INCIDENCE OF CIRCULATORY SYSTEM DISEASE IN BULGARIA AND GREECE IN RELATION TO DIET, ALCOHOL CONSUMPTION AND CIGARETTE SMOKING

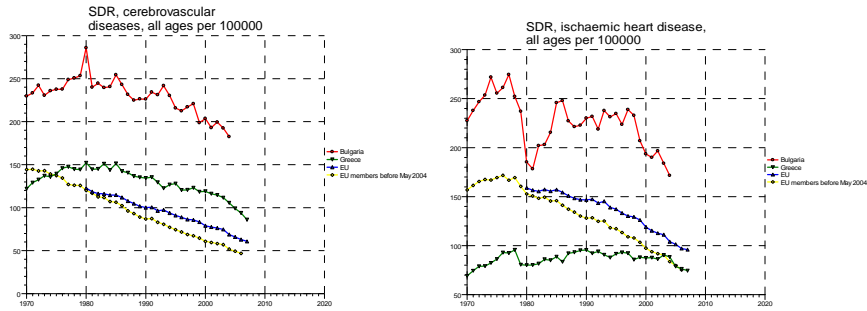
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1. Laboratory of Hygiene and Environmental Protection, Medical School, Democritus University of Thrace, Alexandroupolis, Greece, 2. Regional Laboratory of Public Health, Alexandroupolis, Greece

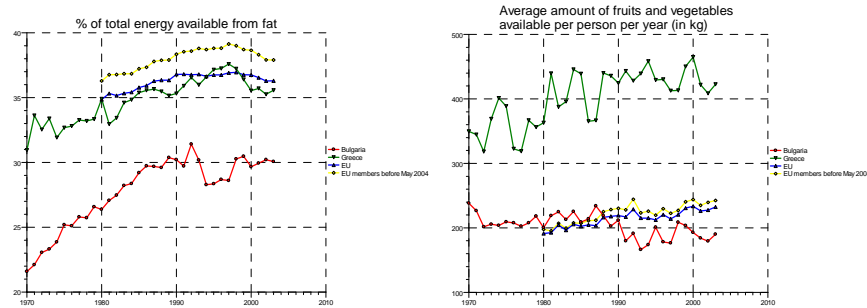
Diet, cigarette smoking and alcohol consumption have been proclaimed as pre-disposing factors in the development of circulatory and cerebrovascular disease. Here we have used health data from the HFA database (WHO/Europe) to investigate the association of circulatory disease incidence with respect to dietary and personal life-style factors, such as smoking and alcohol consumption. In Bulgaria mortality from diseases of the circulatory system is almost double that observed in Greece and other EU member states. Although, the major factors influencing mortality are socio-economic in nature and probably reflect upon the status of the health-care system and the medical services provided, it is interesting to speculate whether diet and life-style have a distinct impact of their own to impose, one that can be excluded by means of preventive policy formulation. Dietary fat intake is thought to be a major determinant of ischaemic heart disease. On the other hand fruits and vegetables are thought to be cardio-protective due to their high content of anti-oxidants. Cigarette smoking and alcohol consumption are determinants of personal life-style that may influence the pathogenesis of circulatory disease. Trends of cigarette smoking in Bulgaria and Greece are similar. Both countries exhibit high levels of per capita tobacco utilization, as opposed to the standardized mean of other European Union member states. However, alcohol consumption per capita is very low in Bulgaria, especially in the years following the political reform. In relation to diet, fat consumption in Bulgaria is much lower compared to Greece and other EU member states. On the contrary, the total amount of fruits and vegetables available is similar to EU countries, but significantly lower to Greece. In Greece consumption of fruits and vegetables ranks among the highest in EU member states and constitutes a major component of the pronounced "Mediterranean diet". Although the putative benefits of the Mediterranean diet for cardiovascular health are primarily correlative

in nature, they may indeed reflect a disparity in the incidence of heart disease, that is worth further epidemiological investigation.

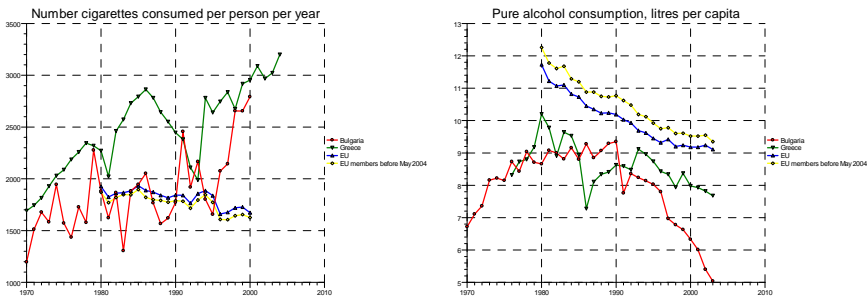
A. Incidence of circulatory system disease in Greece, Bulgaria and EU member states.



B. Dietary indices in Bulgaria, Greece and EU member states.



C. Trends of alcohol and cigarette consumption in Bulgaria, Greece and EU member states.



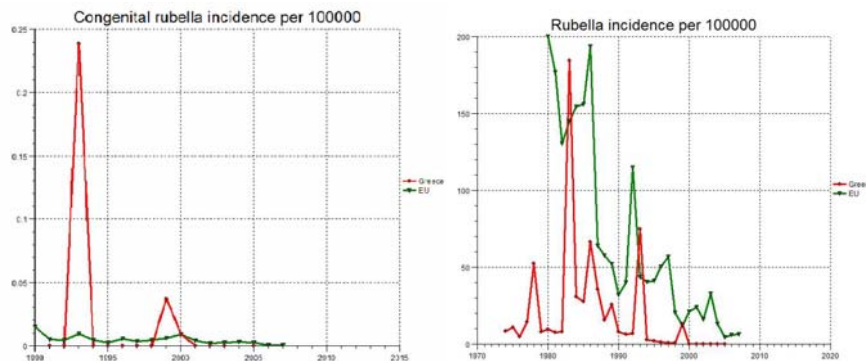
CONGENITAL RUBELLA DURING 1993 AND 1999 RUBELLA OUTBREAKS AND CURRENT SEROLOGICAL STATUS AMONG WOMEN OF REPRODUCTIVE AGE

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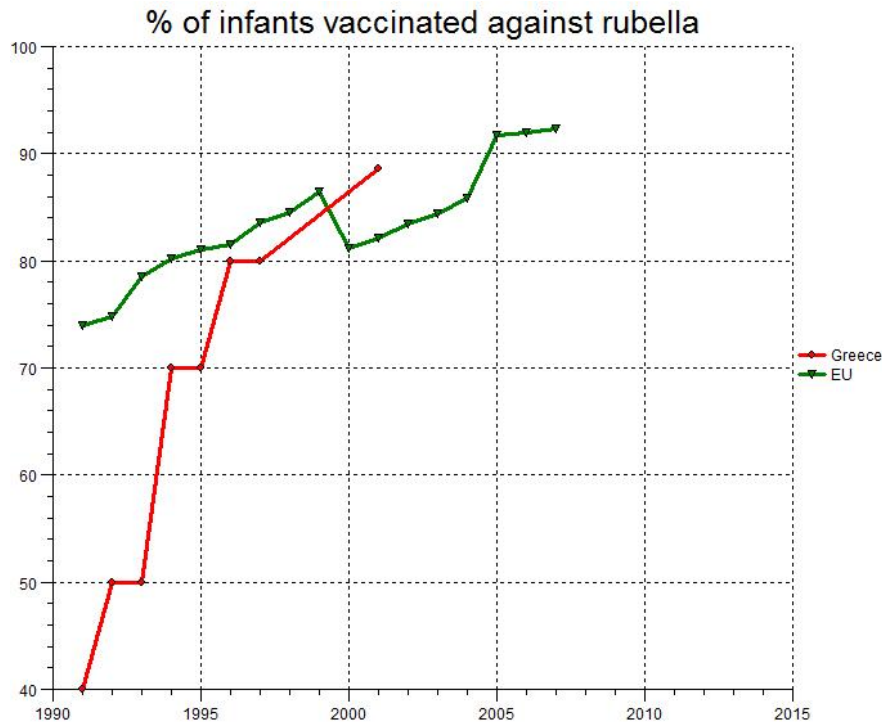
Introduction: Ever since MMR vaccination became compulsory (1989), Greek immunization schedule underwent a lot of changes, especially under the pressure of two rubella outbreaks, which occurred in 1993 and 1999. Current immunization policy (1999) includes a two dose MMR scheme at the age of 12- 15 months and 4-6 years. **Purpose:** The aim of this study is to evaluate those two epidemics' effect on congenital rubella's incidence and specify the present seroprevalence of women of childbearing age in a small province of Northern Greece. **Materials and Methods:** A systemic review of Greek medical literature was carried out, and 72 healthy women of childbearing age, who live in Drama province, Northern Greece, and attended a private microbiological- virological laboratory during 1/2007- 3/2009 were enrolled. Blood samples were tested with a rubella automatic ELISA method for both IgG and IgM antibodies.

| Serological Status against Rubella | Number of women (percentage) |
|--|------------------------------|
| IgG (+) and protective immunity (≥ 20 IU/ml) | 55 (76.4%) |
| IgG (+) but non- protective title (>10 and <20 IU/ml) | 6 (8.3%) |
| IgG (-) and no immunity at all (≤ 10 IU/ml) | 11 (15.3%) |



Results: The table beside shows last rubella's outbreaks in Greece. In 1993, disease's incidence rose to 74.93/100000 and high rates were observed among young adults (including women of reproductive age). This led to the widest increase of congenital rubella cases ever reported in Greece (incidence 0.2389/100000). In 1999 another rubella outbreak (1438 new cases reported, disease incidence 13.22/100000) led to a peak of congenital rubella to 0.0368/100000, indicating that women of reproductive age are still susceptible to

the virus. Table below shows the incidence of congenital rubella during those two outbreaks. Vaccination rates among infants are shown in the table below. Among 72 women of childbearing age tested, none had positive IgM antibodies, indicating that none had a recent rubella infection. The table below shows their serological status. *Conclusion:* Current indirect pattern of prevention of congenital rubella (immunizing infants and children) should be reinforced by a direct pattern (serological testing of women of reproductive age and another dose of MMR, if necessary), which should be established as compulsory.



CYTOMEGALOVIRUS (CMV) INFECTION IN FETUSES FROM SPONTANEOUS MISCARRIAGES IN THRACE

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Introduction: Cytomegalovirus (Human Herpesvirus 5 - CMV) infection *in utero* is a main cause of miscarriage. The 5-10% of infants with intrauterine or perinatal infection presents various relative abnormalities. A characteristic of viral infection is the formation of big cells

(cytomegalia) and inclusion bodies in the nucleus and in the protoplasm of cells *in vitro* and *in vivo*. The virus can be grown in cultures of human fibroblasts with an appearance of cytopathological corruption after 1-6 weeks. *Aim*: The aim of the current study was the detection of CMV infection in fetal membranes from miscarriages and the further investigation of relative abnormalities in the region of Thrace. *Materials and Methods*: The abortive material of 61 fetuses was examined, from 1st and 2nd trimester miscarriages (10 to 28 weeks of gestation), delivered to the Laboratory of Histology-Embryology of the University Hospital of Alexandroupolis between 2003 and 2007 and deriving from various regions of Thrace. Total genomic DNA was extracted from paraffin embedded tissues from fetal-maternal membranes using a special kit. The molecular detection of viral DNA was performed by Polymerase Chain Reaction (PCR). PCR products were visualized by agarose electrophoresis. Routine histopathological examination was performed in parallel in all the fetuses. *Results*: 70% of the fetuses presented severe chorioamnionitis. CMV infection was detected in one out of the 61 fetuses examined. It was miscarried in the 17th week of gestation. Histopathological examination revealed severe chorioamnionitis and no other relative abnormality. *Discussion*: CMV infection was observed in 1.6% of fetuses from spontaneous abortions in the region of Thrace, percentage than assembles with those reported in Europe. PCR constitutes a reliable, specific, sensitive and rapid method for the molecular diagnosis of the viral infection.

FREQUENCY OF CHROMOSOME ABNORMALITIES, HYDROPS FETALIS AND NEURAL TUBE DEFECTS IN EMBRYONIC MORTALITY IN EVROS

Lambropoulou M.¹, Chatzaki E.², Deftereou T.- E.¹, Lambropoulou V.¹, Boudoukas P.¹, Grammatikopoulou I.¹, Simopoulou M.³, Limberis V.⁴, Alexiadis G.⁵ and Papadopoulos N.¹

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Introduction: Chromosome abnormalities, hydrops fetalis and neural tube defects (NTDs) are frequent reasons of fetal death. Hydrops fetalis is a serious fetal condition defined as abnormal accumulation of fluid in two or more fetal compartments, including ascites, pleural effusion, pericardial effusion, and skin edema. NTDs include defects such as myelomeningocele, encephalomeningocele and encephalocele. *Aim*: In this report we estimate the frequency of chromosome abnormalities, hydrops fetalis and neural tube defects in embryonic mortality of Thrace. *Materials and Methods*: The material consists of 160 fetuses which were aborted spontaneously or after prenatal diagnosis of fetal pathology or were still-born, in the area of Evros during the period 2003-to present. Fetuses were sent by the Department of Obstetrics and Gynecology of University General Hospital of Alexandroupolis and came from different regions of Evros. Karyotypic analysis as well as routine histological and radiological examination was performed in all cases. *Results*: Ten cases of chromosome abnormalities were found, of which 8 were diagnosed as Down syndrome, 1 as Turner syndrome and 1 as Klinefelter syndrome. Eight cases of hydrops fetalis were also observed. Finally, 8 cases of neural tube defects were identified, 3 of which

were characterized as holoprosencephaly (1 of them was cyclopia), 1 as myelomeningocele, 1 as encephalomeningocele, 1 as meningocele, and finally 1 as encephalocele. *Discussion:* We conclude that the frequency of the chromosome abnormalities in fetal death of Thrace is about 6.25%, and there is also 5% of hydrops fetalis and 5% of neural tube defects. These frequencies comply with those reported in the rest of Europe.

MYCOPLASMA HOMINIS INFECTION IN SPONTANEOUS ABORTIONS IN THRACE POPULATION: DETECTION BY PCR

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Introduction: Mycoplasma hominis is a prokaryotic microorganism without a cell wall and stable morphology. In humans, mycoplasma can be transmitted through direct contact between hosts, downward from mother to child (either during labor or through the placental membranes). It can infect the amniotic sac early in gestation leading in severe chorioamnionitis. M.hominis has been isolated from maternal blood, blood of the umbilical cord and from neonatal blood. *Aim:* The main purpose of this study was to detect infection by the bacterial strain *Mycoplasma hominis* in placental membranes from spontaneous abortions in the area of Thrace. *Materials and Methods:* The experiments were conducted from June 07 to March 08 in the Laboratory of Histology-Embryology of the University Hospital of Alexandroupolis. Placental tissues from 59 miscarriages of the first and second trimester were studied. DNA was extracted using a specific kit and the presence of the *Mycoplasma hominis* strain was detected by PCR. *Results:* Among the samples that were examined, 2 were shown to be infected by *Mycoplasma hominis*. *Discussion:* The results of our research show that 3.4% of spontaneous abortions in Thrace have *Mycoplasma hominis* infection, which may hold a causative role. PCR is a sensitive, specific, reliable and rapid method for this type of infection that could be applied in the clinical routine.

PATHOHISTOLOGICAL STUDY OF SPONTANEOUS ABORTIONS IN THE AREA OF EVROS

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Introduction: Increased incidence of spontaneous abortions may be related to exposure to different mutagenic agents or increased maternal age or other causes. *Aim:* The aim of the current work was to record the histopathological diagnosis of fetal-maternal material from

spontaneous miscarriages in the area of Evros and to estimate the frequency of some common syndromes in relation to maternal age. *Materials and Methods:* Abortive material of fetuses was examined in the Laboratory of Histology-Embryology of the University Hospital of Alexandroupolis, deriving from the region of Evros. The gestational week was estimated using developmental anatomical criteria. The cause of each abortion was diagnosed by routine histopathological examination and was related to radiological examination data and other factors such as maternal age and fetal sex. *Results:* We examined 96 abortions during the period 2005-2008. The above samples refer into 64 boys and 32 girls. The frequency of Down syndrome was 6.3%, while hydrocephaly and anencephaly were 3.1% and 5.2% respectively. Most frequently abortions occur at 15-20 gestational weeks. Furthermore, the frequency of abortions was related to maternal age, with women over 35 years of age demonstrating the highest percentage. *Discussion:* Our results describe the frequencies of fetal disorders leading to spontaneous abortions in the population of Evros. The recorded percentages are in compliance with those found in the rest of Europe.

STUDY OF THE FUNCTIONAL GASTROINTESTINAL DISORDERS IN PRIMARY HEALTH CARE IN RURAL CRETE

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Background: Functional gastrointestinal disorders (FGIDs) are presented with high frequency in the general population and in general practice. *Aim:* This thesis investigated FGIDs in primary health care centers (PHCCs) of rural regions of Crete. It explored the possibility of applying international diagnostic criteria and revealed whether the diseases are influencing the patients' quality of life. *Subjects and methods:* All electronic and printed files from 1996 to 2000 within 5 PHCCs were retrospectively checked. All patients over 15, with a diagnosis of IBS, dyspepsia, inflammatory bowel disease, acute gastroenteritis and celiac disease were recorded. Patients with IBS and dyspepsia were invited to an interview. The diagnostic criteria of Manning's and Rome II, III, a tool of diagnosis for dyspepsia that was translated and validated into Greek, and another for the diagnosis of IBS, were used. The SF-36 was also applied. All new cases of dyspepsia within 4 PHCCs during the first semester of 2001 were also recorded and invited to an interview. *Results:* IBS and dyspepsia were found in lower frequencies than expected (1/1000 and 2.7/1000 patients-years respectively); 146 patients were identified with the diagnosis of IBS and 67 (45.9%) of those participated in the interview. The criteria of Manning were fulfilled by 69%, the Rome II by 32% and the Rome III by 16% of the patients. The agreement between the Rome II and Rome III with Manning was moderate ($k=0.51$) and poor ($k=0.25$) respectively. Symptoms from upper gastrointestinal tract were found in 394 patients, 48 (12.2%) of them had been recorded as dyspepsia by their doctor, also 23 patients with the diagnosis of FD were recorded in 2001. From these patients, 60.4% and 78.3% participated in the interview. The agreement between the diagnoses of the doctors and the questionnaire for the identification of dyspepsia (IDGP) in both phases of the study was low: 20.7%, with a $[k]=0.018$ (CI95% 0.017 - 0.019, $p=0.6$), and $[k]=0.02$, respectively. *Conclusion:* FGIDs are

presented in lower percentages than reported in bibliography. PHC physicians do not appear to use diagnostic criteria. The agreement between the various criteria and questionnaires of diagnosis is low. The diagnosis of functional dyspepsia seems to be problematic. This study resulted in a reliable instrument validated in Greek for the diagnosis of dyspepsia.

THE USE OF MAMMOGRAPHY IN CRETE

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Background: Breast cancer is the most commonly diagnosed cancer among women and a leading cause of death in both developed and developing countries, representing a serious problem in public health. Although the use of mammography seems to be effective in mortality reduction, with extensive evidence on the importance of pre-symptomatic screening programmes, Greece lacks a national breast cancer screening programme for women. *Aim:* This study reports the results from a PhD study on the use of mammography among middle-aged women in Crete in regards to attitudes, views, practices to mammography screening encountered by women and their physicians as well as the factors impacting on women's health decision making process. *Methods:* A. Women's and physicians' attitudes and practices: Semi-structured interviews. a. At 14 Primary Health Care Centers of Crete (PHCCs) from March to April, 2004. Thirty women from rural areas, 45-65 years of age, and 28 qualified primary care physicians. b. At University Hospital of Heraklion (UHH) from April to June, 2005. Thirty women residing in the city of Heraklion, 45-65 years of age, and sixteen randomly selected physicians. B. Physician's knowledge: Cross-sectional, self-administered survey. a. At 14 PHCCs during October 2004, all 106 general practitioners (GPs) and internists practicing were eligible and a random sample of 45 trainee GPs. b. At University Hospital of Heraklion, all 19 trainee GPs and 8 physicians. *Results:* A. The majority of rural women didn't use mammography very often. Most of the women knew about mammography and were interested in being screened, but few women, especially rural, were able to take an adequately informed decision. This study identified the subtle interplay of complex factors from both women's and physicians' perspective affecting the use of mammography in Crete. Physicians mentioned the effect of socio-economic factors on women's knowledge, attitudes, and practices. B. Physician respondents demonstrated limited awareness of recommendations for breast cancer screening. Agreement with "correct" responses ranged from 31% to 58%, whereas reported barriers to implementing cancer control services in clinical practices were lack of time (41%) and lack of office organization (36%). The majority of physicians did not discuss benefits or risks of mammography screening with women. *Conclusion:* This study provides valuable insights into women's and physician's knowledge, attitudes and use of mammography screening in Crete. There are several barriers impacting on the decision making process in mammography screening, including clinicians' awareness of guidelines, as well as factors influencing the participation rate. The study's findings provide health care providers and

policy makers in Crete with evidence specific to their locality for future development of a preventive programme of mammography screening.

FREQUENCY AND TYPE DISTRIBUTION OF HIGH-RISK HUMAN PAPILLOMAVIRUS INFECTION IN GREEK WOMEN, AND ACCEPTABILITY OF FUTURE VACCINATION – PRELIMINARY RESULTS OF THE “LYSISTRATA PROJECT”

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Objective: The aim of this study is to present the preliminary results of the so-called “Lysistrata” program for the prevention of cervical uterine cancer in Greece. This particular study includes results about the frequency of high risk human papilloma virus (hrHPV) in Greece, as well as HPV vaccination acceptance among Greek women. *Materials and Methods:* This is a prospective, questionnaire-based, cross-sectional study. From October 2005 to March 2008, 4070 women had cervical uteri HPV DNA test. Sampling was accomplished by medical/nursing staff in rural medical services, Health Centres or Hospitals across Greece, after an open invitation for cervical cancer screening announced via the local media. High risk HPV DNA detection and typing were performed by PCR in the laboratory of Molecular Biology, Papageorgiou General Hospital, Thessaloniki. Another sample of 3786 was asked to complete anonymously the so-called “Lysistrata” questionnaire about cervical cancer prevention. *Results:* 5.79% (236/4070) of the participants were found positive to hrHPV infection. The most frequently encountered hrHPV was HPV-16 (25.42% rate among the infected women and 1.47% of the total sample), followed by HPV-53, -31 & -35, -18, -51, -52, -58, -56, -39 & -66, -45, -59 & -33 and -68. Only a small (32.8%) percentage of women answered that they have regularly (yearly for more than 5 years) Papanicolaou (Pap) test, whereas only 15% of the women younger than 30 years-old answered that they have regularly Pap test. Negligence was the commonest reason for not having Pap test yearly. Regarding personal HPV vaccination acceptance, 83.2% (3150/3786) of the women would accept HPV vaccination in order to prevent cervical cancer. Regarding, parental HPV vaccination acceptance, 74.8% (2833/3786) of the women would accept their teenage daughter to have HPV vaccination in order to prevent an HPV infection and a subsequent cervical cancer, and 72.4% (2371/3786) of the women would accept HPV vaccination of their

teenage son. 62.6% (2371/3786) of the women would purchase HPV vaccine by their own means in case that the vaccine was not covered by the state. HPV vaccination acceptance seems to be independent of the profession, the place of living, the level of education and the family income. In the contrary, older age and marital status influence the level of acceptance. *Conclusion:* High-risk HPV infection rates in Greece are in levels comparable to other European countries; the commonest HPV type is HPV-16. HPV vaccine appears to be a well accepted intervention among the Greek population.

A CASE PRESENTATION OF MALIGNANT MESOTHELIOMA

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Introduction: Mesothelioma is a fairly rare form of cancer with malignant cells found in the pleural lining of the thorax or the peritoneum. A great majority of people with mesothelioma have an occupational history of exposure to asbestos. The risk of developing mesothelioma is closely related to the frequency and duration of exposure to asbestos and to the type of asbestos material used for insulation. *Purpose:* Our research concentrated on the importance of a detailed occupational history, i.e. duration, extensity and type of exposure to asbestos in the work-environment. Furthermore, we wanted to emphasize the persisting need for developing and applying new guidelines for early detection and for preventing exposure to asbestos in the future. *Material and Methods:* A 46year old man, non-smoker, presents with an occupational history of extensive exposure to asbestos through tile coating and plumbing since age 15. His routine work consisted of renovating old buildings and replacing floor tiles. He denied the use of any protective measures. His initial symptoms included pleuritic chest pain of one month duration, dry cough and weakness. His X-Rays showed a left pleural effusion. Intensive laboratory work-up and a pleural biopsy were performed. *Results:* The pleural biopsy showed epithelial type mesothelioma, which was consistent with his prolonged and intensive occupational exposure to asbestos. *Conclusion:* We want to emphasize the need for early detection of mesothelioma and for close observation of exposed workers, according to the general guidelines of occupational medicine, because of a prolonged lag time (30+ years) between development of symptoms and exposure to asbestos. In addition, it is important to educate the workers that the best protection from mesothelioma is the avoidance and limitation of the exposure to asbestos, i.e. preventive measures must be used as appropriate and needed.

SESSION III

Environmental Health, Health and Safety at Workplaces

SUBJECTIVE AND OBJECTIVE RESEARCH INTO THE WORKING CONDITIONS AND THEIR EFFECT ON THE HEALTH AND SAFETY OF PEOPLE WORKING IN THE HOSPITAL AREA (SICK BUILDING SYNDROME)

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Introduction: The "Sick Building Syndrome" term is used to describe the condition in which the users of a building experience acute health and/or comfort effects which seem to be connected with the time spent in the particular building and are not related to a specific illness or any other obvious causes. *Purpose:* The aim of the project is the subjective and objective investigation of the conditions of work and repercussions on the health and safety of people working in the hospital area, focusing mainly on the natural factors. *Material and Methods:* The methodology followed for the review part of the project, was the search of data on Cdc.gov, Niosh-cdc.gov, Medline.com, Epa.gov, Ashrae.org, Cen.eu, Sciencedirect.com, Osha.europa.eu, Elinyae.gr with words keys, Sick Building Syndrome, SBS, Indoor Air Quality, Indoor Air Pollution, Biological Pollutants, Organic Gases. *Results:* The "Sick Building Syndrome" is an existing problem in modern buildings, and is immediately related to the building ventilation and the presence of biological, chemical and natural factors which cause health problems. *Conclusion:* Most hospitals seem to be build with the same structural materials and are ventilated mechanically, exactly as the buildings that have already had the Sick Building Syndrome (SBS). In the hospital environment we can find many of the factors (natural, chemical, biological and mental) that can cause SBS.

CIVIL PROTECTION MECHANISM IN THE EVENT OF DISASTERS WITHIN EUROPEAN UNION AND REPUBLIC OF BULGARIA

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The review presents system for civil protection in European Union and Republic of Bulgaria in case of disaster. The main goal of this article is to assess the status of international cooperation and coordination. The tools of the mechanism for civil protection of European Union have been presented. An institutional civil protection system in Republic of Bulgaria is

a result of compliance with the legislations in the country and international treaties to which the state is a part. The system of Bulgarian disaster management is under jurisdiction of The Ministry of emergency situations. The role and structure of Ministry of emergency situations is described. A briefly review about current disaster risk within Bulgaria is made. Some examples of application of this international mechanism are pointed out.

THE ESSENCE OF THE WORKPLACE HEALTH PROMOTION METHODOLOGY, POSSIBILITIES FOR APPLICATION

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Health promotion at the workplace is a new holistic approach and technology for achieving health and social welfare of workers. Health promotion is a process, which provides people with the opportunity to increase the control of the factors determining health and to improve their own health. (WHO, Ottawa Charter, 1986). This is a developing conception, which includes lifestyle promotion as well as some other social, economic, ecological and personal factors beneficial to health. It is a strategy-relating people to their environment by combining their personal choice with the social responsibility for man's health. Its final aim is to build a healthier future. Health promotion at the workplace is not an abstract theory. It is developing as a scientific discipline and methodology and is successfully applied in all countries members of the European Union. In 1996 in Luxembourg was set up the European net for workplace health promotion (ENWHP). The member of ENWHP work together united by the motto "Healthy employees in health organization" being engaged in the working out, description and promotion of good practice for ensuring health at workplace.

PHYSICOTHERAPISTS'S EXPOSURE TO HIGH FREQUENCY RADIATION

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Introduction: Electromagnetic fields are all over in our environment and may come from natural or artificial sources. In physiotherapy centers there are many artificial sources that are used for the treatment of patients such as Electro-stimulators, Laser therapy, Ultrasound therapy, Pressotherapy etc. *Purpose:* The purpose of the research program is to present the levels of high frequency radiation to which physiotherapists are exposed, in order to assess the compliance with the law, for their safety. *Method:* Physiotherapists during their work-time, are wearing an instrument that measures electromagnetic radiation. The instrument – "Radman XT"

Radiation Monitor – writes down the percentage of the High frequency radiation that they receive while handling physiotherapy equipment and generally while treating their patients. The frequency range values of the instrument are between 27MHz and 40GHz. After measurements the “Radman XT” Radiation Monitor is connected to a computer where data and measurements are transferred and then processed in order to come to conclusions. *Results:* The study is in progress. The result will check the typical exposure conditions regarding to electromagnetic fields and the compliance or not with the reference levels of occupational exposure as established by guidelines of the International Commission on Non-Ionizing Radiation Protection, ICNIRP, (limiting exposure to time-varying electric, magnetic and electromagnetic fields (0-300 GHz), as well as with the 2004/40/EU Directive. *Conclusions:* This investigation is important for the safety of the workers, the patients subjected to treatment, the accompanying person’s exposures, and the compliance with the law.

SECOND-HAND TOBACCO SMOKE AMONG PRESCHOOL CHILDREN IN BULGARIA

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Introduction: Bulgaria takes one of the first places in Europe by the prevalence of smoking and especially by the number of cigarettes per capita. Second-hand tobacco smoke and its negative health effects are a significant public health problem. *Aim:* The aim of this paper is to show data about the second-hand tobacco smoking among preschool children and the relationship with their health status. *Methods:* The information was collected by self-administered questionnaire among 347 parents of 3-6 years old children, attending kindergartens in Pleven. The questionnaire consists of questions about parent's smoking habits, exposure children to tobacco smoke and related morbidity. *Results:* Despite high level of knowledge about the negative health effects of the second-hand tobacco smoke, 60% of parents are smokers and one of fifth women had been smoked during the pregnancy. Three quarter of the children live together with at least one smoker, 36% with two or more smokers. More than half of the parents smoke in presence of their children. *Conclusion:* There are evidences for widespreading of tobacco smoke exposure among preschool children in Bulgaria.

HEALTH PROMOTION AT THE WORKPLACE-TECHNOLOGY FOR ACHIEVING HEALTH IN THE CONDITIONS OF THE MARKETING ECONOMY

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Health promotion is the priority policy of the XXI century as a complex of activities aimed at the investment into health. Health promotion at the workplace is a combination of the employers, employees and society for the improvement of health and welfare of working

people. In the context of the health promotion at the workplace it means healthy workers who are strongly motivated satisfied, well trained highly qualified and satisfied and hence, higher productivity, better quality, contented employers and prosperity of the enterprise and the economy of the country. The aim is to create safe and comfortable workplaces along side with the possibility of preventing the appearance of ailments and accidents. The workplace is also the place where people can get new knowledge, to be motivated to change their attitude towards the healthy lifestyle.

HEALTH KNOWLEDGE AND RISK BEHAVIOR OF BULGARIAN PUPILS

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Statistical analysis in Bulgaria in the last decades show a decrease of the population, deterioration of the health status and the health indexes of the status of Bulgarian nation. It is also alarming that more and more surveys indicate risk health behavior among pupils. *Aim of the survey* is to investigate the health behavior of pupils and the ways and chances for influence in direction change of behavior to not risky. *Applied methods* - an anonymous inquiry was carried out among 806 pupils from the 5th to 8th school grade from 16 schools spread on the territory of the whole country. *Results* show us, that most of Bulgarian pupils and their families have a risky health behavior.

EPIDEMIOLOGICAL STUDY OF SPREAD OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AMONG WORKERS IN PLEVEN'S REGION

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Introduction: COPD is an epidemiological problem with increasing medical and social meaning and burden in the world. It occurs in 5-10% of old population of industrial countries, the incidence increases and fatal cases per year reach up to 3 million people. *Aim:* The aim of this study is to detect and specify in good time the incidence of the disease among workers in industry in Plevan's region. *Material and methods:* a screening study have been conducted among 912 workers, 353 (38,7%) men and 559 women (61,3%), average age 51,6 years in three manufactures: textile, glasswork and machinery construction. The workers filled respiratory questionnaires and have been tested by spirometry. The diagnosed people with COPD have been staged concerning GOLD. *Results:* Among tested population 16% morbidity of COPD has been established; men - 53%, women - 47%. The structure concerning age is: up to 40 years - 6%; 40-49 years - 23,2%; 50-59 years - 48,3%; 60-69 years - 18,5%; above 70 years - 4%. Concerning severity the distribution is: GOLD I - 79 (52,3%); GOLD II - 43 (28,5%); GOLD III - 21(13,9%) and GOLD IV - 8 (5,3%). Respiratory symptoms have been detected in 77,5% and in 22,5% of cases they were not

found ($p=0,001$). There is correlation between respiratory symptoms and the severity of the disease. *Conclusion:* A high incidence of disease's spread have been established, correlation between respiratory symptoms, severity of symptoms and development of the disease. Detection of COPD in good time, before development of complications leads to less lost of ability to work, social and financial expenses for ambulatory and hospital treatment.

SCHOOL MANAGEMENT, TEACHER ANXIETY AND HEALTH

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In the globalizing post-modern world the psychic resources for coping with the limited prediction and uncertainty about perspectives in life are challenged. Our own empirical studies presented in this paper have been conducted among 793 teachers from various regions in the country. *Objective* of the study is to establish the relationships among satisfaction from school management, anxiety, physical and psychic health of teachers. Empirical results show statistically significant increase in the levels of personal and reactive anxiety as a result of social anomy and the increasing aggression in society, manifested in interpersonal systems in which teachers are involved. The relations among the studied variables show a tendency for the low satisfaction of teachers with the management of the pedagogical process at school to have statistically significant effect on the more expressed levels of personal and situational anxiety, which in turn reflect on the physical and psychic health status of teachers.

HEALTH RISK MANAGEMENT AT OCCUPATIONAL EXPOSURE TO CARBON DISULFIDE

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Introduction: The adverse health effects at different exposure levels to carbon disulfide (CS_2) are contradictory. That was the reason for a follow up study to investigate the health status of workers in the Bulgarian biggest rayon viscose plant exposed to different concentrations of CS_2 before and after technical improvement of the technologies. *Aim:* The aim of the study was to evaluate the health risk among workers exposed to CS_2 before and after the management measures performed. *Methods:* The exposure was assessed by determination of external exposure by long-term personal sampling of the air. The health status of the workers was checked by measuring of the peripheral blood count, hemoglobin concentration; lipid metabolism indices: total cholesterol, HDL, LDL, triglycerides; target oriented search for early clinical signs of chronic CS_2 intoxication. *Results and discussion:* In 1999 the concentration of CS_2 in the rayon viscose plant exceeded 30 mg/m³. After technical improvements the exposure was decreased to the range 2÷20 mg/m³. Excretion

of TTCA in urine corresponds to CS₂ in the air. It proves the usefulness of this biomarker of exposure. The outline of the "Dose-effect" and "Dose-response" relationships gives reasons to affirm that the chronic exposure to CS₂ in concentrations exceeding 30 mg/m³ uses adverse effects (dyslipidemia, endocrine disorders, cardio - vascular diseases). In 2004, after the decrease of the CS₂ concentration these findings were registered rarely among the exposed workers. **CONCLUSION:** The follow up study shows that the decrease of the concentration of CS₂ from 48 mg/m³ to 10 mg/m³ reduces the prevalence of the adverse health effects among workers in a rayon viscose plant . Based on these facts a new proposal for revision of TLV - TWA of CS₂ in Bulgaria to 30 mg/m³ was suggested.

CONDUCTING RISK FACTORS FOR THE HEALTH AMONG A POPULATION AGED 25-64 IN KARDZHALI

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The study about the main risk factors' level for the Health risk of the population in Kardzhali (2007) is consecutive within the framework of CINDI programme and grips 1600 people aged 25-64y. To receive the necessary information is carried an individual interview in CINDI/Europe standard questionnaire. The results shown that the nutrition of the investigated people is unhealthy; 2/3 of them are with low physical activity in their leisure time; almost each fifth of them is a regular smoker; every fifth man and every sixth woman drinks alcohol over the admissible levels.

APPLICATION OF THE PRINCIPLES OF HEALTH PROMOTION AND OCCUPATIONAL RISK PREVENTION AT WORK IN THE KASPELA GENERAL HOSPITAL

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The Kaspela General Hospital developed and implemented in its medical care practice a management system of healthy and safe labour conditions, directly and closely interrelated with the system of quality management of medical activities. The Kaspela General Hospital works in the following basic directions: Implementation of a system for management of safety and health at work, Structure - management interaction in ensuring the safety and health of the medical staff in the Kaspela General Hospital, Application of a unified approach to the evaluation of potential risks for the health and life of the working persons, Monitoring the workplace risk factors, Application of long-term prophylactic target programmes in the Kaspela General Hospital. I. "Protection from the action of an infective causative agent - transmission of infections through air-borne drops and personal contact". II. Ventilations - Risk - Health Programme. III. Physiological regimen of work and rest. IV. Anti-stress Programme-directed to management of the stress factor at work and the body response to stress. V. Programme "Prophylaxis of musculoskeletal damage /MSD/". **Conclusions:** On the basis of the target practices implemented to make both workplace and working persons healthy, we can expect to record. Maximum number of work areas with optimum healthy labour conditions. Restricting to a maximum occupational diseases and

accidents at work. Lasting reduction in total work-associated morbidity and sick leaves due to temporary incapacitation. The workers and employees are actively trained and kept informed regarding the risks at work. To sum up, the introduction of a system of safety and health management in medical care providers is closely integrated in the health management process-quality, safety and health at work, and is a guarantee for better medical service of quality, in conformity with medical standards and leading to an ever increasing satisfaction of the patient.

HYGIENE PROBLEMS OF DRINKING WATER - SUPPLY LAID ON SURFACE WATER SOURCES IN THE SMOLYAN REGION

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Having in mind the transborder location of Smolyan area with the Republic of Greece, we have *aimed* to investigate the quality of surface waters (row and cultivated), used for everyday drinking water necessities in the area. Retrospective period of 3 years (2006-2008) has been included in the analysis. Primary information is collected from the records of surveys of raw water taken from the Waterpool Directories for EastAegean and WestAegean region, current health control realized by Regional Inspectorate of Protection and Control of Public Health - Smolyan and data of system production control of exploit factory water supply and system of drainage - Smolyan. *Results:* The share of surface watersupplies in the whole number of the watersupplies intended for drinking and everyday use of water is approximately 10%. All surface water sources used for drinking water with their grade, methods of fumigation and disinfection, general condition. They provide water supply of 15.44% of the population. all graded water sources meet the requirements of drink - water supply and only two of them are grade A3 (polluted) but to the extend suitable for everyday needs after filtration. Raw waters corresponded exactly to the demands and purpose of drinking water sources. *Conclusions:* Sanitary protected zones of the most surface water sources are missing. There are no tests for Boron, Beryllium, Vanadium, some toxic compounds such as: Cyanides, Pesticides, Mercuri, Selenium, Fluoride. It is found data for not regular disinfection of portable water.

MANAGEMENT OF DEPRESSION AND ANXIETY - NEW ACTIVITIES IN FAMILY MEDICINE IN BULGARIA

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Background: The economical and political changes in the last 10 years lead to some important changes in the health status of Bulgarian population. The reforming primary healthcare and the continuous medical education of family physicians were focused mainly on the social significant diseases. Stress, stress related diseases and psychiatric disorders were not in the domain of general practitioners (GPs). Aim of the study: assessment of the training of GPs from different areas in Bulgaria in management of depression and anxiety.

Methods: The education of management of depression and anxiety in general practice was introduced for the first time in Bulgaria among 39 family physicians, mean age 39.5±4.5 years, 29 women and 10 men. The trainers of four centres for CME - Plovdiv, Varna, Blagoevgrad and Sofia were supervised by Bulgarian - Flemish team of psychiatrists. The participating GPs prepared 5 own cases in advance (patients with depression or anxiety that caused them problems in diagnosis or treatment). The interactive method of education in small groups was assessed at the end of each day by supervision of the psychiatrist, self-assessment of the trainers and feed back of the trainees. *Results and discussion:* The preliminary data from the first training showed that more than ½ of the participants had not enough information and skills in diagnosing depression and anxiety. After the end of the course almost 74.56% of GPs answered that they could easier diagnose and would try to treat mild depression and anxiety. *Conclusions:* Our results demonstrate that we have to introduce the new educational training program for GPs management of depression and anxiety as a regular form of CME activities. This will help GP to recognise and treat easier depression and anxiety in their own practices.

MANAGEMENT OF RISKS AND SAFETY OF LECTURERS PLACE OF WORK IN THE SPHERE OF PUBLIC HEALTH AND HEALTH CARE

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The *Object* of this study is to establish what's the risk at the place of work of lecturers in the sphere of public health and health care, to propose a modern approach for its evaluation and necessary measures for safety conditions of work. *Purposes:* 1) Management of risks and safety at lecturers place of work in the sphere of public health and health care; 2) Proposal of modern approach for evaluation of risk factors at place of work, submitted and adequate to the global approach priority of our national policy. *The Target of the study:* lecturers in Medical College and Medical Faculty in the structure of Trakia University, Stara Zagora in the sphere of public health and health care who are target in our previous study too, devoted to evaluation of risk at place of work, stress and professional morbidity. *Material and methods:* anonymous inquiry study by direct group questionnaire forms. *Results and discussion:* In view of specific conditions in which this category of lecturers do their work, namely school-rooms and clinical bases, they are every day run at risks characteristic of pedagogues as well as of medical specialists. To this end it is advisable to apply adequate preventive activities for safety at place of work as well as for safeguarding lecturers health in the sphere of public health and health care.

DIMENSIONS OF REFLECTION IN THE HEALTH MANAGERS' ACTIVITY

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The aim of this work is to outline the tendencies for purposeful and active formation of reflexive culture in health managers on the basis of the relations between the different types

of reflection (intellectual, personal, dialogue and praxicological) and the main functions of the health management. Within the structure of the personal and professional specifications of the health managers the ability for self-assessment and evaluation of the personal intellectual capacities and their turning into efficient practical actions is a considerable part of professionalism.

STATUS OF TOBACCO CONTROL IN BULGARIA

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According to the WHO the epidemic use of tobacco products is one of the greatest existing threats to global health today. Because of tobacco product specificities their control has become a real challenge to public health and legislative practice. To be effective such control it is necessary to define the components of its effective performance: investing relevant resources and elaborating strategies for development of adequate infrastructure.

PARENTS' ATTITUDE TOWARDS THE FORMATION OF HEALTHY BEHAVIORS IN CHILDREN OF GIPSY BACKGROUNDS UP TO THREE YEARS OF AGE

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The present study is focused on investigating parents' attitudes towards the formation of healthy life habits in their children up to three years of age. Both parents and children are from gipsy backgrounds. Seventy - eight parents were questioned. The study was conducted in two day-care centers in Plovdiv. Results documented that parents' health education was insufficient, regardless of this fact they were reluctant to attend health education courses.

FAMINE AND SOCIETY SECURITY

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Famine is social and economic crisis usually accompanied by regional malnutrition, starvation, epidemics, and increased mortality recorded in the affected region. Nevertheless its prolonged and unmarked beginning famine poses features coinciding with disasters' characteristics. The aim of the article is to present the main types famine consequences and their effects and influence on society security. By means of descriptive, deductive, heuristic and cluster analyses potential famine influence on society security and possible security related consequences are analyzed and listed. Performed analyses are basis for conclusion that famine irrespective of its origin is factor with great influence on social stability and its development and is always accompanied with social security failure in different extent.

OCCUPATIONAL HEALTH SERVICES, AS A MAIN RESPONSIBLE FOR HEALTH AND SAFETY OF WORK. QUALITY MANAGEMENT SYSTEM IN OCCUPATIONAL HEALTH SERVICES

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By 1999 acts Bulgarian law for Health and safety Working Conditions. According of this law, every employer was obliged to enlist the assistance of a certified external or internal occupational health and safety service. By now, 375 OHS have been registered in Ministry of the health. The main tasks and difficulty of quality management system in OHS have been discussed.

DISEASE IMPACT ON EMPLOYMENT OF SCHIZOPHRENIC PATIENTS IN BULGARIA

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Schizophrenia is a mental disease of severe disturbances affecting the social functioning of patients. Employment is a serious problem for people with schizophrenia. Cross - sectional study was carried out at the Psychiatric Clinic of University Hospital in Pleven and at the Medical Centre "Apex" - Pleven in the period August - September 2005. Clinical examination and questionnaire survey were performed among 102 patients. Psychosocial skills of 61 patients were assessed by a psychiatrist. The remaining 41 patients with schizophrenia filled in a questionnaire. The results show that 2/3 of the diseased population were in the age group 18 - 49 years. Most people were unemployed or retired due to illness. Deficits in functioning were reported for almost all tested areas - 92% of the assessed patients did not know how to cope with various stressors. Cognitive deficits were identified in 66% of the patients, 55.7% could not find suitable employment, and 44.3% did not know how to obtain information about job opportunities. Lack of established social and employment skills were found in 52.2% of the unemployed and in 71.1% of the retired due to illness. Solving the employment problems of patients with schizophrenia requires a serious political and social commitment with full and consistent participation of patients, their families, medical professionals and communities.

DROUGHT AND COMMUNITY SAFETY

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Droughts are natural phenomena, but for great majority of the world they are the more frequent and significant disasters. Areas with arid climate, or those where the rainfalls are variable (e.g. Balkan Peninsula) are more drought vulnerable. The aim of the article is to present main factors leading to drought development and to describe the most important drought consequences with potential to affect community safety. Descriptive, deductive,

cluster and comparative analyses were applied in order to describe main drought effects on society security. Results of performed analyses of draught impact on economic, social and political life have led to conclusion that drought as a natural-social phenomenon has significant influence on countries' and regional security.

REEMERGENCE OF HUMAN BRUCELLOSIS, BULGARIA

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It is alarming that in many regions where Brucellosis is in a state of elimination, this infectious disease is re - emerging. *Aim:* Based on analysis of intensive and extensive epidemiologic indicators of human Brucellosis in Bulgaria, to evaluate the changing epidemiology of this infection and to offer some effective control measures. *Materials and methods:* The information is collected from data based on official report for the whole country (1950-2007 period), data from RIOKOS - Haskovo (2007 period), data from Infectious Disease Clinic of UMPHAT "St. George" Plovdiv (2005-2006 period). Screening serologic tests were performed by routine agglutination tests for brucella antibodies in NCIPD laboratories for especially dangerous infections. *Results:* For 1974-1990 period there were not registered cases, except 1 case in 1985. We could agree that this infection is eliminated, because for 1970-2004 only 11 cases were registered. Since 2005 morbidity starts to increase in result of 105 imported and locally registered cases during 2007. *Conclusions:* Based on analysis we could shape theoretical and practical epidemiologically significant conclusions regarding changing epidemiology of Brucellosis.

STUDENTS' OPINION OF SOCIAL MEDICINE TEACHING EFFECTIVENESS

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A direct group survey with 110 fifth course dental students has been made twice – at the beginning and at the end of the semester. The aim is to study the students' opinion and their recommendations for improving the teaching process of the discipline Social medicine. Ergonomics and bioethics are most attractive for the students, probably because of the possibility for playing roles, using video films and discussing cases. In the second study the relative part of the students who wish to participate in a simulative play during the practical classes has been increased from 46.54±4.96% to 64.95±4.84%. The students' preferences are to lectures with video materials. The relative part of the answer to the question "Do you think that studying Social medicine will help you for an easier adaptation in your future profession?" has been increased from 55.44±4.01% to 85.71±3.95%, which according to the authors can be interpreted as a complex positive evaluation of the lecturers' work at the department.

BIOLOGICAL TERRORIST'S THREAT-RECENT EVIDENCE

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The anthrax attacks in USA (2001) are an outstanding example of the terrorists' willingness and resolve to apply biological agents if available. What concerns international community more than bioterrorism history evidence is the recent evidence of bio-attack terrorists' preparedness. The aim of the article is to prove the bioterrorist's threat reality and imminence. Recent publications in the open sources were analyzed by means of descriptive, comparative and deductive analyses.

THE BIOLOGICAL FACTOR OF WORKING ENVIRONMENT IN HEALTH CARE INSTITUTIONS AND ITS INFLUENCE ON THE HEALTH STATE OF MEDICAL STAFF

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Every day, the medical personnel get into contact with different infection and other character factors, that define their working environment as extraordinarily aggressive microenvironment area. As before, the necessary attention to professional safety and health for medical staff is not devoted yet. The actuality of health prevention does determinate of the working environment influence over the medical specialists and their high level morbidity.

HEALTH STATUS OF BULGARIAN NURSES - A STUDY AMONG HOSPITAL NURSES

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The medical professionals around the world exhibit a significant feminization, therefore their health problems could be referenced as a particular case of female health, and as workers exposed to the impact of their work conditions. The scope of the present study has included the health status and health behavior of medical specialists from big hospitals, as well as the cumulative influence of several professional and communal factors. *Methods.* An anonymous questionnaire survey was conducted among medical nurses and midwives (n=1100) from 6 big hospitals in 4 cities located in North - Eastern and South Bulgaria 2007. The study *results* indicate high rates of risk behavior among the medical specialists such as smoking (55,9%), unbalanced diet with excessive salt and refined sugars consumption accompanied by a relatively low prevalence of the protective health behaviors - physical activity (73,7% are physically inactive), 12,1% sleep less than 5 hours, fresh fruit and vegetable consumption (23,3% everyday in winter); and an adequate dietary regimen. About 40% of the respondents (n=367) have increased body weight - BMI above 25. while 13,2% (n=122) indicate obesity (BMI above 30), About 15% has neurosis and 15,4% - cardiovascular diseases. The self assessment of the medical professionals about exposition to stress is 81,8% (n=743) The health problems of the respondents themselves (about 32%)

together with the problems and the uncertainty at work (27%) are considered as the main causes for stress. There shall be implemented measures establishing better health culture and awareness of healthy behavior based on proactive induction.

THE COURSE OF ADOLESCENT'S ADOPT IN WORKING PROCESS

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European countries came to an agreement about necessity of European strategy, based on quantitative and qualitative aims, oriented to children and young people preparation for their future working activities. This decision has a main task to preparation, beginning from early age, for adequate professional realization of young people. The youth unemployment came to the fore and it is constantly reached by never adequate educated young people. Educational systems engagement with problems of the professional education is coming to the fore in Bulgarian Republic. The efforts of education institutions engaged with healthy and prepared young people providing to EC, are turned to the professional education. Healthy and safety working environment like element of the professional education is necessary. It needs to be built in the European educational net and to be adequate to requirements of different brunches.

A CONTEMPORARY MEASUREMENTS OF THE QUALITY OF LIFE, IN RELATION TO THE PROCESS OF AGING

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The process of ageing is considered to be a major problem due to the sweeping changes in life duration. The fastest growing sector in the pyramidal structure of population, especially when referred to the industrially developed countries, is the age over 80s. QL is differentiated also as a management paradigm. It is a concept of general scope, with resources provided by international institutions, foundations and permanent programs, among which in the first place is the European Foundation for improvement of the quality of life and labour at the European Commission, which carried out a large-scale comparative survey (European Quality of Life Survey - EQLS, 2002) in 28 European countries.

A CONCEPT FOR DEVELOPMENT OF THE SCHOOL HEALTHCARE SERVICES IN THE REPUBLIC OF BULGARIA

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The key tool in provide the quality of medical services of the pupils in the healthcare consultations. The challenges before the school healthcare reveal an emphasis on the hypo - kinesis; irrational nutrition, stress, the harmful habits; informational and regimen load; traumatism; child aggression and violence; pollution of the environment, etc. This requires the development of a conceptual framework to outline the healthcare services necessary and appropriate for the children in the school age. It includes establishment of a legal

framework regarding the legislation in the system of school healthcare; optimal conditions for sustainable development of the system and accordingly construction and development of coordination and partnership based on effective and stable informational and organizational relationships between the medical professionals in general practice and their school collaborators. The accurate rationalization of all the abovementioned in the concept and in due course decision making will support the successful providing of a quality medical aid for the students at school.

MEDICAL STUDENTS' S ANTHROPOMETRIC NUTRITIONAL STATUS AND PHYSICAL ACTIVITY

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The aim of this study is to analyze the individual anthropometric status by measuring height, weight, waist, hip of medical students, 63 male and 72 female, third grade, average men's age $22,3 \pm 3,54y$ and women's age $21,6 \pm 1,36y$. Anthropometric status of the students is assessed by definite BMI / kg/m²/ recommended from WHO and the individual physical activity was estimated using questionnaire, including questions about daily activity. Statistical analysis is performed by absolute frequency, percentage, average, standard deviation, alternative analysis. The study delaminates the relationship between BMI and physical activity. After that we establish, that the most of female have normal BMI, but 41% from male have overweight and 5% of them - 1 gr. obesity. More of the men sports, but more of the women, than men had regularly physical activity like daily gymnastics. Results from this study indicate that many students have diversion from the normal BMI and students have to change his behavior.

TRENDS OF AMENABLE MORTALITY IN BULGARIA AND GREECE IN THE PERIOD 1980-2004

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Background: Bulgaria and Greece are neighboring countries but they have different models of mortality amenable to medical intervention. *Objective:* To examine the trends and the differences by cause and sex in mortality amenable to medical intervention between Bulgaria and Greece for a period of 25 years. *Methods:* Population numbers and mortality data were extracted from the WHO Mortality database for a period of 25 years (1980-2004). A list of 15 causes of death considered to be amenable by medical care was used. Average age-standardized mortality rates (ASMR) and relative risks (RR) were calculated by sex and cause of death for 5 consecutive periods of 5 years. *Results:* Bulgaria experienced higher ASMRs for almost all causes of death at the beginning of the period. Equal or lower ASMRs than these of Greece were found for some malignancies, for diabetes mellitus and perinatal causes. The greatest majority of amenable causes showed worsening mortality rates in

Bulgaria during the period of socio-economic transition after 1990. *Conclusion:* Different trends of amenable mortality in Bulgaria and Greece suggest potential differences in the standards of medical care and in the quality of health services management.

MANAGEMENT OF HEALTH AND SAFETY IN THE AMBIENT AND WORKING ENVIRONMENT IN THE REPUBLIC OF BULGARIA - MEMBER OF THE EUROPEAN UNION

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As a EU member state the Republic of Bulgaria follows the European policy for health protection based on closer cooperation between the sectors of health care, environmental protection and scientific research. The Bulgarian National Health Strategy (2008-2013) and the National Environment and Health Action Programme (2008 - 2013) are an explicit confirmation for the current Bulgarian policy acting on these issues, responding to the European initiatives. The policy for health protection against environmental hazards in the country is implemented mainly by the Ministry of Health and the Ministry of Environment and Waters. The policy concerning working conditions is conducted by the Ministry of Labor and Social Policy. In relation to the introduction in the practice of the European approaches and requirements in the field of waters in the period 2001-2008 and currently the National Center of Public Health Protection is developing joint projects with Greece (Aegean University), the USA (University of Pennsylvania), Germany, Belgium and the Netherlands. The goals and the obtained results are directly related to the responsibilities of the Ministry of Health on drinking waters safety. As a result from the implemented project in cooperation with the Aegean University in Mitilini, an inventory was made of the management of various water categories (industrial, household, surface, drinking), assessment of the pollution, processing and monitoring in the Bulgarian region of the transborder river valleys of Struma, Mesta and Maritsa. The national system for monitoring of ambient air protection currently covers 39 settlements with 56 monitoring facilities of which 18 automatic measuring stations for current assessment of ambient air quality, 9 differential optic absorption systems, 24 sites for manual sampling and 5 monitoring facilities built up and maintained by operators of establishments polluting the ambient air. Additionally, in other settlements the ambient air quality is controlled by 6 mobile automatic immission stations following a preset annual schedule. The concentrations of the main indicators are controlled on a daily basis: total dust, fine particulate matter, sulfur dioxide, nitrogen dioxide/nitrogen oxides, carbon oxide, ozone, benzene, lead, cadmium, nickel, arsenic and polyaromatic hydrocarbons. Additionally, relevant to the character and sources of emissions in certain regions of the country, are controlled the specific indicators: phenol, ammonia, airborne sulfuric acid, chlorine, hydrogen chloride, toluene, xylene, styrene, carbon sulfide, hydrogen sulfide, methane and non-methane hydrocarbons. Numerous new sources of electromagnetic radiation (EMR) emit in the environment of the Balkan countries. Simultaneously the "old" sources, such as radio and TV stations, radars, high voltage facilities, systems for traffic control and other stationary radiation sources have not suspended the emissions in the

environment. Our experience shows that the issue of providing protection for the population against non-ionizing radiation in the countries of the Balkan region is not at an adequate level. Our proposal is to establish an international working group as a basis for a new international regional community. It can be organized with the efforts of all specialists in the field of human electromagnetic fields (EMF) irradiation, risk assessment and protection that are interested in joint work. The Bulgarian National Programme Committee for EMF, as part of the international EMF project can be the main organizer of this community. Through the Act and National Guidelines for Healthy and Safe Working Conditions were introduced the relevant European principles and procedures. Currently the system is based at regulatory and institutional level and implements the acting national strategy for provision of healthy and safe working conditions by the competent governmental institutions (implementation of general and specialized control), through the activities of enterprises and organizations complying with the responsibilities of employers and employees and with the public support of NGOs. The legislation sets minimal requirements for provision of healthy and safe working conditions. At local level, through intracompany regulations stricter company criteria can be introduced. This tendency complies with the spirit of the European Directives of the "new approach". The various aspects of the outlined problems in the field of waters, ambient air, electromagnetic radiation and working environment are very significant for public health and enhance the possibilities for scientific exchange and joint work of Greek and Bulgarian specialists.

EPIDEMIOLOGY OF OCCUPATIONAL DISEASES IN BULGARIA

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The EU Health Strategy 2002-2006 identifies the reliable sources of statistical data for workforce health and safety. Those are data from multinational surveys of working conditions, health - demographic and professional characteristics of the workforce, statistics of work accidents, occupational diseases and health - related problems in the employees. This module covers the work of the National Register of Occupational Morbidity in Bulgaria which stores and, until 2006, provided to Eurostat, EC the official national data. The register works by an approved (in 2001) algorithm with harmonized with European statistics classifications and inventories of occupational diseases. The data for the epidemiology of occupational diseases in Bulgaria are alarming: by 2007 the number of occupationally ill individuals - active and retired was 32100 or almost 14‰, the great settlements such as Sofia, Plovdiv, Stara Zagora, had the greatest rate; the growth rate in 2007 vs. 2006 was 39.8 and in 2001 vs. 2000 was 53.9. Those data for disturbed occupational health are confirmed by the statistics of morbidity with temporary disability because of diseases and accidents, with the temporary disability with occupational causal relationship and the number of severe and lethal work accidents. The epidemiology of occupational diseases needs consolidation with data concerning other health issues of the workers, with the particular working conditions and character of the workforce with a view to adopting proper, science - based preventive actions for protection and reproduction of the workforce.

ERGONOMIC HAZARDS AND MUSCULOSKELETAL DISORDERS IN HEALTH-CARE WORKERS

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Aims: This descriptive study is aimed at evaluating levels of physical activity and body burden amongst different job categories at health-care facilities. *Methods:* 835 workers from 4 different Greek public hospitals took part in our study and completed a full questionnaire for homogenous worker groups including information on heavy physical activities and musculoskeletal disorders. The study population was divided in six different job-related groups: nurses (n=515), physicians (n=104), healthcare auxiliaries (n=90), technicians (n=32) and laboratory technicians (n=19). *Results:* Nursing personnel who repeatedly (62.8% out of 820) transfer patients (79.6%) and heavy equipment (80.8%) appeared to be most affected and referred to excessive fatigue after work (90.5%), lower back pain (87.0%), pain in lower extremities (81.8%), back pain (73.5%) and neck pain (67.2%). Furthermore, healthcare auxiliaries transfer heavy equipment (78.8%) or patients (57.8%); 76.7% of these workers complain of excessive fatigue, 77.8% of lower back pain and 74.5% of pain in their lower extremities. Although administrative workers do not usually transfer patients (10.0%) or heavy equipment (31.7%), they frequently refer to back pain (65.0%), low back pain (61.7%), neck pain (66.6%) and other musculoskeletal disorders. *Conclusion:* We need to consider multiple ergonomic operations to design easier job tasks, modify duties and minimise levels of physical activity in healthcare workers, a group accounting for a high prevalence of musculoskeletal disorders.

ACCIDENTS AND SYMPTOMS IN LABORATORIES OF PATHOLOGY AND CYTOLOGIC PERSONNEL AND IN THOSE PREPARING CHEMOTHERAPEUTIC DRUGS

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Introduction: Within the scope of ELIN.Y.A.E workplace activities, a hospital Health and Safety study is updated, especially in relation to Greek hospital laboratories of pathology and cytology and personnel preparing chemotherapeutic drugs. *Aim:* To investigate prevalence of work-related symptoms in employees in pathology and cytology laboratories of Greek hospital based on subjective estimation and prevalence of accidents caused by

working in such laboratories and preparing chemotherapeutic drugs. *Equipment - Methods:* We collected 285 medical histories from employees in 10 Greek hospitals. These personnel work in laboratories of pathology and cytologic and in chemotherapeutic drug preparation (86.3% female, 13.7% male employees). Mean employee age (standard deviation) is 40.8 (8.1) years and mean length of service is 11.7 (7.8) years. Questionnaires were received from medical staff (14.4%), laboratory staff (13.2%), nursing staff (51.1%), technical staff (8.6%), and staff in other workplaces (12.7%). Employees are divided into three groups: those who work in laboratories of pathology and cytology, those who work in chemotherapeutic drug preparation and a third group of employees working in various workplaces (control group). *Results:* Most common work-related symptoms in laboratories of pathology and cytology personnel were tearing (46.9%), rhino muciferous inflammation (45.8%) and throat ache (37.5%) lumbago (29.6%) headaches (19.4%) and rhinal congestion (31.4%). Most frequent complaints were lumbago (57.0%), latex dermatitis (28.0%) and catamenia problems in women. 86.2% of employees declared using personal protection equipment (PPE) (gloves, respirators and blouses). However, 60.0% of employees had suffered an accident in their workplace, most often puncturing (33.3%) and cutting (18.4%). It is important to stress that occupational accidents are more common in employees, who work in chemotherapeutic drug preparation (77.9%), than in laboratories of pathology and cytology (64.5%) (statistically significant $p < 0.05$). Environmental measurements showed high concentrations of formaldehyde (exceeding 0.3 ppm in many laboratories) and measurable concentrations of organic solvents (n-hexane, ethylbenzene, xylene, etc.). *Conclusion:* Symptoms reported by laboratories of pathology and cytology personnel and those preparing chemotherapeutic drugs are due to exposure to chemical agents used in these workplaces as well as myoskeletal exhaustion. The occupational deical specialist's consultative role appears essential to implementing prevention in hospital workplaces.

HEALTHCARE WORKERS SUBJECTIVE ASSESSMENT OF SYMPTOMS RELATED TO WORKING CONDITIONS IN GREEK HOSPITALS

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Introduction: This study represents part of an extensive research programme undertaken by the Hellenic Institute of Occupational Health and Safety to assess health and safety hazards to which hospital workers are exposed. *Aim:* The study aim was to investigate healthcare workers' subjective assessment of symptoms related to working conditions in Greek hospitals. *Methods:* 835 hospital workers from different job categories took part in this study. This population was divided into five different job - based groups: nursing personnel (n=515), physicians (n=104), technicians (n=32), auxiliary nursing personnel (n=90), administrative workers (n=61) laboratory technicians (n=19). *Results:* The five most frequent

symptoms amongst nursing personnel were excessive fatigue after work (90.5%), lower back pain (87.0%), stress symptoms at work (86.4%), pain in lower extremities (81.8%), eye fatigue (83.3%) and headache (80.0%). Moreover, physicians usually referred to symptoms including excessive fatigue after work (75.9%), eye fatigue (75%), stress at work (70.2%), headache (65.4%) and sleepiness after work (63.5%). Most frequent symptoms described by technicians were eye fatigue (71.9%), stress at work (71.9%), excessive fatigue after work (65.6%) and eye irritation (62.6%). Amongst auxiliary nursing personnel, most commonly described symptoms were lower back pain (77.8%), excessive fatigue after work (76.7%), eye fatigue (74.5%), stress at work (73.3%), and eye irritation (72.2%) and headaches (71.2%). Administrative workers often referred to eye fatigue (76.7%), headache (70.0%), stress at work (66.9%), neck pain (66.6%), eye irritation (65.0%), and back pain (61.7%). Finally, laboratory technicians referred to eye fatigue (94.7%), excessive fatigue after work (89.5%), stress at work (84.2%), pain in lower extremities (78.9%) and headache (73.7%). *Conclusion:* Most symptoms reported by healthcare workers from various job groups are related to intense physical activity (muscle strain) and occupational stress. The dangerous phenomenon of physician sleepiness after work is necessarily of great concern to the Greek Health Ministry and better arrangements to reduce physician working time and workload must be made. Occupational preventive medicine applications are essential to protecting employees in the dangerous working conditions encountered at Greek Hospitals.

COMPARISON OF SMOKING HABITS AND ATTITUDES BETWEEN MEDICAL STUDENTS OF TWO MEDITERRANEAN COUNTRIES, WITH DIFFERENT SMOKING BAN POLICIES, GREECE AND ITALY

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Introduction and Purpose: Aim of the study was to examine the differences in smoking habits of medical students between Greece and Italy, two Mediterranean countries that differ significantly in their smoking ban policy. *Methods:* A self-administered questionnaire on smoking habits and attitudes was distributed among students attending a medical school in northern Greece (Alexandroupolis) and in northern Italy (Varese). *Results:* The study enrolled 332 medical students from Greece and 115 from Italy. The prevalence of reported smoking among medical students in the 2 countries was similar ($p=0.935$). In Italy, daily cigarette consumption was lower, current smokers were significantly older ($p<0.001$), but Greeks reported having started smoking at an earlier age ($p<0.001$). Alcohol and coffee consumption was significantly greater among smoking Italian students. On the other hand, Italian students preferred low nicotine cigarettes (44.2%), while this percentage in Greece was significantly lower (11.6%). At least one attempt to quit smoking was reported by 66.7 % of all medical students (63.1 % in Greece, 77.3 % in Italy, $p=0.123$). *Conclusions:* Although prevalence of smoking among medical students of Greece and Italy is similar, differences in attitudes are detected, indicating a possible change of smoking trend in the

future. This may be a result of a strict policy against tobacco in Italy, implemented 3 years prior to the study, and the lack of intensified measures against smoking in Greece.

INVESTIGATION OF SUBJECTIVE OCCUPATIONAL RISK ASSESSMENT FOR HEALTHCARE WORKERS IN HERAKLION

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Introduction: The continuously increasing demands in daily medical care very often constitute multiple occupational risks, which the healthcare workers ignore. *Aim:* The aim of the study is to investigate the healthcare workers' subjective assessment of the occupational risks that exist in their working environment. *Material - Method:* A questionnaire for subjective occupational risk assessment of homogeneous workers' teams was used to carry out the study. The sample of the study was made up of 144 workers. A hundred and eighteen (118) were working in Venizeleio Hospital and twenty six (26) were working in private clinics of Heraklion. *Results:* A lot of workers from all the categories had not been informed about the risks which came from the work environment. A big percentage of nurses, especially in the private clinics (61,5%), had not been provided with sufficient protective personal equipment while the percentage of nursing personnel with an allergy to Latex gloves ranged from 23,3% to 58,8%. The number of fully vaccinated healthcare workers for tetanus, hepatitis A, hepatitis B, tuberculosis was at a low level while most of them recognized the possibility of being infected. An occupational accident had happened in the past in 19,6% of the nursing personnel in General hospital and in 7,7% in private clinics. The more frequent symptoms which were mentioned were excessive fatigue, stress and musculoskeletal problems. One to three women had abnormal menstrual cycle while an important percentage of nurses had at least a spontaneous abortion during their working period. *Conclusions:* Since personnel working in health care are often exposed to highly noxious factors, it is necessary to have regular evaluation of the occupational risks present, and to create the suitable conditions for the application of rules and practices regarding safety and hygiene.

PREVALENCE OF RESPIRATORY SYMPTOMS AMONG COTTON MILL WORKERS

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Introduction: A number of epidemiological studies have shown that byssinosis is associated with exposure to high levels of cotton dust. The new and interesting in this first survey is that

we investigated the prevalence of respiratory symptoms in cotton workers under low concentration of cotton dust. *Methods:* A respiratory questionnaire consisting of 47 questions was given to 443 cotton workers. Their lung function was measured by spirometry. Breathing zone cotton dust concentration was measured by personal samplers and static sampling was used to define the level of the work area concentration. *Results:* Workers with abnormalities in the pulmonary function parameters, including FEV₁, FVC, and PEF_R were 5.9%. In this group of operatives 7.7% ($p < 0.001$) had symptoms compatible with byssinosis, 65.4% of them were smokers ($p < 0.001$). Symptoms of allergic rhinitis had 69.2% ($p < 0.001$) 72.2% of them were smokers ($p < 0.001$). Asthma, which appeared after the age of 30, was reported by 57.7% ($p < 0.001$), 60% of them were smokers ($p < 0.001$). Mean breathing zone cotton dust concentration was 0.16 mg/m³ and the mean work area cotton dust concentration 0.13 mg/m³. *Conclusions:* Despite the reduction in cotton dust concentration, byssinosis symptoms, allergic rhinitis, asthma and impaired pulmonary function, are the most common findings in our cotton workers depending on the duration of exposure, the smoking habit and the nature of the cotton dust.

WORK SHIFTS IN GREEK HOSPITALS

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Aim: The aim of this study is to describe organization of Greek public hospital work shifts and evaluate the frequency at which a healthcare worker rotates through all 3 shifts (morning 07.00 - 15.00; afternoon 15.00 - 23.00, night 23.00 - 07.00). *Methods:* 835 workers from 4 different public hospitals participated in the study and completed a full questionnaire for homogeneous worker groups. The study population was divided into five different job-based groups: nurses (n=515), doctors (n=104), technicians (n=32), auxiliary nursing personnel (n=90), administrative workers (n=60) and laboratory technicians (n=19). *Results:* 64.1% of all healthcare workers answered that they rotate through all shifts and 45.7% of these change shift on a daily basis. Only 12.5% of hospital employees answered that they work only morning shifts. 63.1% of nursing personnel work all 3 shifts and just 8.3% work only morning shifts. Additionally, 63.1% of nurses' change shift every day. 48.9% of auxiliary personnel work all 3 shifts (38.9% of them change daily), but just 14.4% work only the morning shift. Greek hospital physicians spend many days of full 24h duty every month, despite their official 40-50 hour week. In percentage terms, 72.7% of doctors answered that they remain on 24h duty every 3-5 days, spending 6-10 nights inside the hospital (70-80 hours per week on average). A statistically significant difference was revealed, when comparing percentages of personnel working only the morning shift amongst administrative (40.3%), nursing (7.7%) or auxiliary personnel (17.3%) ($p < 0.05$). Additionally, the same significant difference ($p < 0.05$) was observed, when comparing employees, who work all 3

shifts (administrative (16.1%), nursing (63.9%) or auxiliary personnel (48%)) or employees, who change shift on a daily basis (administrative: 16.1%, nursing: 65.5% or auxiliary personnel: 38.7%). *Conclusion:* As a control measure, circular rotation of Greek hospital work shifts does not actually protect personnel within the population at high risk of burn-out syndrome.

STRESS RELATED HEALTH PROBLEMS AND MANAGEMENT OF OCCUPATIONAL STRESS

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Introduction: Stress can be described as a condition that tends to hamper the normal physical and mental state of a human being. Science is constantly learning about the impact that stress has on overall health. Common health problems and chronic diseases as well, that are said to accrue directly or indirectly from stress are: Headache, Sleep Problems and insomnia, emotional disorders, hair loss, sexual dysfunction, hyperthyroidism, Tiredness, Stiff Neck, Overeating or Loss of Appetite, ulcers, Backaches, Sour Stomach, Cardiovascular Disease, Musculoskeletal Disorders, and Impaired Immune Function. *Purpose:* of this systematic review is to define stress related health problems and what are the measures that must be taken from managers in order to ensure that employees are not subjected to unnecessary stress. *Material and methods:* a systematic review was made in "European Agency for Safety and Health at Work", "International Labour Office (ILO)" web sites for various publications and abstracts around the exact theme using as key words "stress, stress management, occupational stress, stress-related health problems". *Results:* Stress is the second most reported work-related health problem, affecting 22% of workers from EU 27 (in 2005). Work related stress in the life of organized workers, consequently, affects the health of organizations. Reducing work-related stress and psychosocial risks is not only a moral, but also legal imperative. Employers have an obligation to manage work-related stress, through the Framework *Directive 89/391/EEC*, which deals with health and safety in the EU. *Conclusions:* Stress affects the health and safety of individuals, but also the health of organizations and national economies. Research has identified a number of factors as important in successful stress prevention interventions in the workplace. These include: adequate risk analysis; thorough planning and a step-wise approach; a combination of measures aimed at the organization of work, and at workers themselves; solutions that are specific to individual workplaces; practitioners being experienced, and interventions being evidence-based; dialogue, partnership and workers' involvement, and sustained prevention and the support of senior management.

HEALTH AND SAFETY IN DENTAL LABORATORIES

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A dental technician is member of the dental team. Carries out all aspects of technical dentistry to complement the clinical work carried out by the dentist and so participates in the complete dental service received by the patient. Various materials are used in dental laboratories for manufacturing crowns and bridges, chromium-cobalt frameworks, acrylic dentures, and other dental products. Among these, precious and non-precious alloys, porcelain, methyl methacrylate, asbestos, Al₂O₃ mineral dust. The use of these materials and the working conditions has caused respiratory diseases, dermatological problems and neurotoxicity among dental technicians. Several cases of respiratory disorders have been reported among the members of this profession and epidemiological studies have shown a high prevalence of pneumoconiosis related to duration of exposure. Also there are contaminated items that have been in contact with the patient's mouth, saliva, and possibly blood. *Purpose:* The purpose of this study is to drawing out conclusions about the effects of the professional affected factors on dental technicians health and processing proposals for the occupational conditions and the promotion of occupational health. *Method:* A 12-page questionnaire on work-related health complaints was posted to 2000 members of the Hellenic Association of Dental Laboratory Technicians together with a prepaid return envelope. The questionnaire contains questions about working conditions, dental materials, professional affected factors about the health and security, medical symptoms according to the international bibliography.

HEALTH AND SAFETY CONDITIONS OF EMPLOYEES DURING MIXING CHEMOTHERAPEUTIC DRUGS IN GREEK HOSPITALS

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Introduction: Mixing chemotherapeutic (cytostatic) drugs in the hospital area constitutes a real occupational risk. Cytostatic drugs are classified as dangerous and should be used, during their mixing, with special handling procedures in specially designated areas and by

specially trained personnel. *Aim:* The purpose of this study is to investigate the attitude and behavior of employees towards the risks during mixing cytostatic drugs and the compliance with the Occupational Safety and Health Administration guidelines, to record the working conditions in the mixing areas along with the precautionary measures and accidents of the employees who handle these drugs. *Material - method:* The sample included employees from 24 public and private hospitals of Athens and regional territory. The survey was conducted from November 2006 to April 2007. The data collection was performed through a questionnaire of 47 closed type items, which was developed for this survey's purpose. 253 individuals took part in this survey stating that they handle mixing of cytostatic drugs. A statistical analysis (using SPSS ver. 15.0) was conducted to evaluate the findings. *Results:* 64.4% of the employees have at their disposal laminar air flow hoods during mixing cytostatic drugs, 69.1% uses specially isolated areas used for mixing cytostatic drugs while 57.9% complies with the regulations for restricted access in these areas. 34.4% reports employees' accidents and only 10% reports recording them while only 5.9% has been visited by an occupational physician and/or a safety officer (9.9%). *Conclusions:* The working conditions in the areas of mixing cytostatic drugs do not fully meet safety standards. The services of Occupational Safety and Health Administration are very poor, while accident recording is practically absent and guideline compliance generally low.

HEALTH BEHAVIOURS IN THE XANTHI PREFECTURE: HOW FAR FROM COMPLYING WITH DIETARY GUIDELINES?

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Introduction: dietary patterns in Greece have been changing over time away from the Mediterranean diet. *Purpose:* to evaluate dietary patterns and level of physical activity in the population of the Drama and Xanthi prefectures and to evaluate the impact of socioeconomic characteristics. *Material:* A survey on health and health care services utilisation among the adult population in the prefectures of Xanthi and Drama was carried out in the framework of the INTERREG III programme "Creation of the Crossborder Public Health Centres (DIKEDY) of Drama and Xanthi". The sample of 500 citizens aged over 18-years-old was stratified by place of residence, age and sex. Data were collected through personal interviews in May and June 2008. *Method:* Data were transcribed, coded and analysed using STATA software programme. Bivariate analysis using the χ^2 -test was performed in order to test for association between health behaviours and demographic and socioeconomic characteristics. In particular, alcohol consumption frequency, consumption of meat, fish and fruits/vegetables as well as frequency of physical exercise were analyzed. *Results:* 43.7% of respondents reported not to drink alcohol. Only 19% reported consuming 5 or more portions of fruit and/or vegetables per day, 12% eat fish 2 or more times/week. 31% reported eating red meat once or less than one time per week. 3.2% exercised or had any kind of intense physical activity 5-7 times/week. Women reported eating red meat less

often than men and men reported exercising more regularly than women. *Conclusions:* health behaviours of the majority of the sample population significantly deviate from international dietary guidelines. Unhealthy dietary habits and lack of physical exercise are risk factors for many chronic and cardiovascular diseases. In this framework, health promotion policies and prevention and early screening strategies are necessary.

MONITORING OF THE HYGIENIC CONDITION OF THE POTABLE WATER IN THE PREFECTURES OF EVROS AND RODOPI

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The population of the Prefectures Evros and Rodopi is 220.000 people. These Prefectures are located in the north eastern part of Greece, at the border with Turkey and Bulgaria. There are three large rivers, large agricultural areas that form a vast valley (the valley of Evros) – the third larger valley in Greece. Water is one of the major elements for human survival. The 70% of the human body is water. Water transfers many chemical and microbiological elements. It is evident then that the constant observation (chemical and microbiological) of the potable water is obligatory and essential. It is also essential to examine how the water is disinfected and how it is disposed. The aim of this survey is to reassure the necessity of organized companies, usually municipal, responsible for the management of potable water and their recording. The disinfection of water and the systematic classification of disinfectant means is the purpose of this survey. The recordings of water resources and the kind of processing/treatment is a basic factor that influences public health.

HEALTH BEHAVIOURS IN THE DRAMA PREFECTURE: HOW FAR FROM COMPLYING WITH DIETARY GUIDELINES?

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Introduction: dietary patterns in Greece have been changing over time away from the Mediterranean diet. *Purpose:* to evaluate dietary patterns and level of physical activity in the population of the Drama and Xanthi prefectures and to evaluate the impact of socioeconomic characteristics. *Material:* A survey on health and health care services utilisation among the adult population in the prefectures of Xanthi and Drama was carried out in the framework of the INTERREG III programme "Creation of the Crossborder Public Health Centres (DIKEDY) of Drama and Xanthi". The sample of 500 citizens aged over 18-years-old was stratified by place of residence, age and sex. Data were collected through personal interviews in May and June 2008. *Method:* Data were transcribed, coded and analysed using STATA software programme. Bivariate analysis using the χ^2 -test was

performed in order to test for association between health behaviours and demographic and socioeconomic characteristics. In particular, alcohol consumption frequency, consumption of meat, fish and fruits/vegetables as well as frequency of physical exercise were analyzed. *Results:* 30.6% of respondents reported not to drink alcohol. Only 20% reported consuming 5 or more portions of fruit and/or vegetables per day, 14% consumed fish 2 or more times/week. 39% reported eating red meat once or less than one time per week. 4.9% exercised or had any kind of intense physical activity 5-7 times/week. Women reported eating red meat more often than men. *Conclusions:* the majority of respondents in the Drama as in the Xanthi prefecture follow unhealthy dietary patterns. Physical exercise levels even in rural areas are extremely low. Public health policies aiming at changing health behaviours are necessary especially since family dietary habits have a significant impact on childhood obesity.

SMOKING HABITS IN THE DRAMA AND XANTHI PREFECTURES

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Introduction: smoking is a very important public health issue in Greece. *Purpose:* to present smoking prevalence and smoking habits in the Drama and Xanthi prefectures (both tobacco-producing areas) and to evaluate the relationship between gender and socioeconomic characteristics and smoking. *Material:* A survey on health and health care services utilisation among the adult population in the prefectures of Xanthi and Drama was carried out in the framework of the INTERREG III programme "Creation of the Crossborder Public Health Centres (DIKEDY) of Drama and Xanthi". The sample of 500 citizens aged over 18-years-old was stratified by place of residence, age and sex. Data were collected through personal interviews in May and June 2008. *Method:* Data were transcribed, coded and analysed using STATA software programme. χ^2 -tests were performed to test for association between smoking habits and demographic and socioeconomic characteristics. T-tests were performed to test for differences between genders in the number of cigarettes/day. *Results:* 71.2% and 65.4% of the respondents in the Drama and Xanthi prefectures respectively are smokers. Mean number of cigarettes per day was 24.09 (S.D. 15.90) in Drama and 22.88 (S.D. 13.25) in Xanthi. The number of cigarettes/day was higher in men in both prefectures ($p < 0.05$). The mean number of years since quitting smoking for ex-smokers was 11.14 (S.D. 7.19) in Xanthi and 13.61 (S.D. 10.44) in Drama. Ex-smokers reported to have been heavy smokers before quitting. Smoking (current smokers vs. no smokers) correlated with age in the Xanthi prefecture ($p < 0.05$) and gender ($p < 0.05$) in Drama but with no other socioeconomic or/and demographic factor in both prefectures. *Conclusions:* smoking prevalence in the Drama and Xanthi prefectures is high. Socioeconomic factors do not affect smoking. The survey findings bring forward the need for public health policy measures to reduce tobacco consumption in the general population.

MEDICAL WASTE MANAGEMENT IN THREE HOSPITALS OF EAST MACEDONIA AND THRACE REGION IN THE LIGHT OF THE HEALTH AND SAFETY ISSUES OF THE PERSONNEL INVOLVED

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Introduction: Medical Waste (MW) Management (MWM) is of great importance when Health and Safety issues of the personnel involved are considered, due to the infectious and hazardous nature of the specific waste stream that can cause undesirable effects on human and also on the environment. *Aim:* In the framework of this study, it is recognized that the MWM System is directly related to the occupational Health and Safety System of the health-care personnel and waste workers in Hospitals. The objective of this study is to analyze the parameters establishing the MWM System and examine the existing relations with the Health and Safety System. The study is being conducted in three Hospitals of the East Macedonia and Thrace Region. MW generation is determined and also the qualitative composition of the waste stream is approached. A review of the current status of the MWM is presented and the critical points for H&S issues are examined. *Materials:* The materials that are being used include a Questionnaire for the subjective assessment of Health and Safety System issues in MWM, relative instructions and forms for recording the weights. *Methods:* Field visits, observation, photographing, weighting and a questionnaire survey method are being used to collect the necessary information. *Results:* The results indicate that the MW generation range from 0.82 to 1.37 kg/bed/day, while the composition is relative the same among the three Hospitals. Segregation of the MW by colour coding is being conducted in all the Hospitals examined. The established knowledge level of the workers involved is moderate, while there are practices that can be improved. *Conclusions:* The problematic areas of MWM are addressed by proposing guidelines for minimizing the potential health risk for the personnel involved.

CONDITIONS OF HYGIENE AND SAFETY OF WORK IN THE TANNERIES AND DYEWORKS OF FUR SKINS

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Introduction: Fur leather production is one of the world's oldest occupations. Tanning is a chemical treatment that turns the crude-raw fur skin of mammals-animal hides into the much

less perishable material, fur leather. The workers in the Tanneries and Dyeworks of fur skins are exposed to a wide spectrum of professional hazards and notorious factors. Hazards related to tannery workers are included in the following categories: Physical Hazards, Chemical Hazards, Biological Hazards, Ergonomic, psychological and organizational factors and Accident Hazards. *Aim:* In Greece a relative research in this concrete economic sector was never conducted in the past. The aim of the study was to do research into the working conditions in the Tanneries and Dyeworks of fur skin, in order to indicate the repercussions on the health of workers-tanners as well as the submission of proposals for the improvement and promotion of the conditions of hygiene and safety at work, and also to control workplace risks. *Sampling:* This study took place in the Prefecture of Kastoria. It involved 121 tannery workers from 5 factories. All the Tanneries that were in operation during the field period of this research were included in the study. This amounted to 100% of the tanneries in Kastoria. The purpose of the study was explained to the people involved in this study and was carried out between December 13, 2008 and April 3, 2009. *Methodology:* The methodology that followed included an estimate of working subjectivity (input of questionnaire, interviews with the workers concerning labour situations, notorious labour factors about health and safety, as well as symptoms that are presented after a long working period in tanneries according to the international bibliography and experience in the Occupational Medicine), recording of productive processes and sources of danger and finally research into safety issues.

THE ROLE OF THE OCCUPATIONAL HEALTH INSPECTOR IN PREVENTION AND INVESTIGATION OF OCCUPATIONAL DISEASES

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Poor working conditions of any type have the potential to affect a worker's health and safety. Annually, an estimated 160 million new cases of work-related diseases occur worldwide, including respiratory and cardiovascular diseases, cancer, hearing loss, musculoskeletal and reproductive disorders, mental and neurological illnesses. Occupational health and safety encompasses the social, mental and physical well-being of workers in all occupations. The Occupational Health Inspector in general: inspects workplaces to ensure equipment, materials, and production processes do not present a health hazard, investigates health related complaints, enforces health laws and regulations, reviews and makes decisions regarding situations where a worker has refused to work on the grounds that danger exists, or the work will cause danger to the worker, provides advice regarding the development of healthy practices, encourages managers and employees to participate in occupational health and safety programs, investigates occupational diseases. The Occupational Health Inspector has two areas of intervention, both the worker and the workplace. A key role is protecting and safeguarding the health of workers from potential hazards arising from their work, which are responsible for occupational disease. Exploring the nature and causes of occupational disease and the application of appropriate methods

for prevention are the main priorities of the Occupational Health Inspector. Specifically, his interventions in the work place deal with: The primary prevention of occupational diseases, i.e. to prevent their occurrence, the level of secondary prevention, i.e. in relation to early diagnosis in preclinical stage of disease, the level of tertiary prevention, i.e., vocational rehabilitation, where feasible, of people with occupational disease, so as not to further adversely affect their health. The occupational disease can be prevented and to this end the contribution of the Occupational Health Inspector is of paramount importance.

THE MOBBING SYNDROME AT WORKPLACE

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Introduction: The mobbing syndrome at work is presented as a problem that affects the working relationships, decreases productivity and encourages the employees' absences from work, because of the psychological impact on individuals. *Aim:* With the present study, an effort was made to record the problem among employees at the health services, its frequency, its characteristics and finally the way with which the problem was dealt with the responsible institutions. *Material and methods:* 304 employees (30,6% of the sample were men and 69,4% women) from different hospitals in Greece participated, which in the presence of an interviewer filled out an anonymous questionnaire including open-type as well as close-type questions. The SPSS program was used for the statistical analysis and Pearson correlation and t-test as well. *Results:* The results showed that the 45,7% have suffered mobbing, and the 32,4% of the incidents happened within the last month and always in the working place, while the 58,3% (of employees) declare that more than four times harassment had taken place in working environment. 56.1% victims answered that they did not receive any support by their supervisors whereas no investigation took place in 71, 9% of the cases reported. *Conclusion:* All the above, demonstrate the extend of the problem of mobbing, the inadequate assessment, the negative consequences to the victims and the need for further studies and proposals for its resolution.

EXAMINATION OF THE SANITARY AND SAFETY CONDITIONS IN RESEARCH AND EDUCATIONAL LABORATORIES

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Introduction: Employees in research or educational laboratories are exposed to working hazards which can be divided into three categories: security or accident dangers, health dangers (physicists, chemists and biologists) and lateral dangers on health and security

(related to the organization of the work). Ensuring sanitary arrangements and accident prevention should constitute the basic concern of anybody in charge in laboratory workplaces. *Purpose:* The purpose of the present study is to examine the sanitary and safety conditions in research and educational laboratories. *Material and methods:* 100 employees from different laboratories, both educational and research participated in the study, which in the presence of an interviewer filled out an anonymous questionnaire including open-type as well as close-type questions. The SPSS program was used for the statistical analysis and Pearson correlation and t-test as well. *Results:* The analysis of the results concluded that the age factor and the participation in training procedures relevant to hygiene, safety and accident prevention relate to the emergence of accidents and the preservation of a "safety environment" inside the laboratory workplaces. In addition, it has been inferred that the intense working rates of employees in such tasks is related to the appearance of headaches. *Conclusion:* As in all aspects of significance "healthy" thus and in that of hygiene and safety at the work place, important role it should play the Prevention which is divided in three levels: primary, secondary and tertiary. The need for existence of person in charge, if is an individual or a committee, with competences the prevention of accidents and maintenance of hygiene and safety at work is judged imperative. The accidents as in each labour space, thus and in the laboratories inquiring and educational character can be anticipated.

ENDOCRINE DISRUPTORS IN POTABLE WATER: IMPLICATIONS IN PUBLIC HEALTH

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Introduction: Water is polluted, or contaminated, whenever any harmful or undesirable change in its physical, chemical or biological quality results from the release into it of synthetic or naturally occurring chemicals, radioactivity or organic matter. Contamination can occur at many points in the global water cycle. Most familiarly, pollutants can be released into rivers or into the sea, but they can also be released into groundwater by industrial by-products and pollutants. Endocrine disrupting compounds encompass a variety of chemical classes, including hormones, plant constituents, pesticides, compounds used in the plastics industry and in consumer products. Endocrine disruption has been the focus of an increasing number of scientific investigations in recent years. *Aim:* Evaluation of endocrine disruptors recorded in drinking water: affects and future implications in public health. *Material and methods:* Bibliographical research was performed from previous studies and the extracted information was analyzed, correlated and recorded. *Results:* Certain hormonally active chemicals, collectively called endocrine disrupting chemicals (EDCs), are known to mimic or block natural hormones in animals. The impacts of trace concentrations of EDCs on wildlife naturally lead to concerns about their potential effects on humans. Some scientists suggest that certain drinking water disinfection by-products (DBPs) may act as EDCs. Several reports associate increases in spontaneous abortions and cancers in humans to elevated concentrations of halogenated DBPs. Other endocrine disruptor chemicals that can be found in the water are pesticides. They can be present in

groundwater and raw water used for drinking water production at varying frequencies and concentrations. In particular, atrazine, simazine, and heptachlor and other organophosphates and organochlorines have been found to be toxic to the nervous system and to show damaging reproductive and development effects. Bisphenol A is a synthetic substance widely used to make polycarbonated plastics, and can contaminated bottled water through their containers. *Conclusions:* On 20 December 1999, the European Commission adopted a Communication on a Community Strategy for Endocrine Disrupters. The strategy points to the need for further research, international cooperation, communication to the public and appropriate policy action and identifies actions in the short, medium and long-term to meet these requirements. Prevention and monitoring must be followed when there is no specified legislation for manmade chemical compounds.

COMPOSITION AND PRODUCTION RATE OF SOLID WASTE FROM THE MEDICAL MICROBIOLOGY LABORATORY OF SOCIAL SECURITY FOUNDATION IN XANTHI, GREECE

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The objective of this work was to determine the composition and production rate of solid waste produced by the Medical Microbiology Laboratory of Social Security Foundation (I.K.A.) of the Prefecture of Xanthi, an area in Northeast Greece with a population of 102.000 people. The study lasted 6 working weeks, one week of every month from January to June 2005. During the study period, the Microbiology Laboratory provided service to 101 ± 21 patients per day. A total of 190 kg microbiological solid waste was collected during the study period, manually separated and weighed. Specifically, each working day the total amount of solid waste produced was manually separated in 11 sub-fractions and each sub-fraction was weighed and recorded. Laboratory personnel involved in waste handling took all necessary health and safety measures. Microbiological solid waste was classified in 4 main categories, according to Greek regulations: (1) Infectious waste, accounting for 69.3% (w/w). (2) Toxic waste accounting for 8.6%. (3) Infectious and toxic waste accounting for 13.7% and (4) Domestic-type waste accounting for 8.4% (w/w). Since infectious and/or toxic waste is classified as hazardous, it is concluded that the Medical Microbiology Laboratory produces mainly hazardous waste, accounting for 91.6% (w/w). A more detailed classification is presented in Table 1. Production rates of Table 1 were calculated using the total amount of waste produced and the total number of patients served on that particular day. The results are as follows: (1) Infectious waste 48 g/pat/d, (2) Toxic waste 5.9 g/pat/d, (3) Infectious and toxic waste 10 g/pat/d and (4) Domestic-type waste 6.1 g/pat/d. Excluding the domestic type (which is produced by personnel only and not the patients), the overall production rate for the 3 hazardous sub-groups was 64.9 g/pat/d. Since the microbiological solid waste is currently disposed of in landfills together with the municipal solid waste, the results of the study were used to suggest an appropriate management scheme. It appears that, due to the small quantities produced, the best approach would be to transport the waste to Xanthi General Hospital and treat it with the medical waste produced by the

hospital. In fact, the hospital has hired a private company, which collects the waste and treats it off site by sterilization.

| <i>Waste category</i> | <i>% Weight</i> | <i>Production rate g/patient/d *</i> |
|---|-----------------|--------------------------------------|
| INFECTIOUS WASTE | | |
| Syringes (Sharps) | 8.6 | 6.0 (0.8) |
| Blood collection tubes (Potentially sharps) | 37.4 | 26.0 (3.7) |
| Excrement collectors | 3.4 | 2.3 (1.8) |
| Urine collectors | 14.0 | 9.7 (2.5) |
| Gloves | 1.5 | 1.1 (0.3) |
| Cotton | 0.6 | 0.4 (0.3) |
| Culture disks | 3.7 | 2.8 (2.2) |
| <i>Subtotal</i> | 69.3 | 48.0 (6.4) |
| TOXIC WASTE | | |
| Reagent containers | 8.6 | 5.9 (4.6) |
| <i>Subtotal</i> | 8.6 | 5.9 (4.6) |
| INFECTIOUS AND TOXIC WASTE | | |
| External reagent package | 11.3 | 8.6 (9.7) |
| Cuvettes | 2.5 | 1.7 (0.3) |
| <i>Subtotal</i> | 13.7 | 10.0 (9.8) |
| DOMESTIC TYPE WASTE | 8.4 | 6.1 (3.2) |
| <i>Subtotal</i> | 8.4 | 6.1 (3.2) |
| TOTAL | 100.0 | 71.0 (18.0) |

Table 1. Percentages and average solid waste production rates from the medical microbiology laboratory of IKA, Xanthi. [* Numbers in parentheses represent standard deviations].

OCCUPATIONAL STRESS IN MIDDLE SCHOOL TEACHERS

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Introduction: Occupational stress in teachers can lead to a variety of negative outcomes including emotional exhaustion, feelings of depersonalization, and a sense of failure with one's personal accomplishment, the "burnout." Burnout is one of the major reasons that teachers leave the teaching profession, a loss that results in added costs in training and hiring for the field of education. Because of the negative outcomes associated with occupational stress, many studies have attempted to better understand the phenomenon of occupational stress as it relates to education. These studies have found that degree of stress can differ as a function of several variables. *Aim:* Aim of the study is to replicate

existing findings indicating that teachers' levels of occupational stress and burnout are associated with the demographics of age, gender, and grade level. This research will expand the existing knowledge base through the investigation of more factors that can create occupational stress in middle school teachers. *Materials and methods:* This study was carried out for three months in the beginning of 2009. The sample is middle school teachers in the region of Western Attica. The sample is constituted by 113 teachers. The questionnaire constituted from 71 questions. For the statistical analysis of results was used the statistical program SPSS 12.0. *Results:* Data analysis reported that women have greater stress than men (male mean=2.27, female mean=2.71), young teachers (age: 25-35) have more stress (mean=2.66) than teachers between 55 to 65 years old (mean=2.42). There is also a significant difference between teachers that are working in the first three classes of middle school (mean=2,53) than these in the last three classes (mean=2,66). The main factors of burnout are the disinterest of students and/or their negative attitude toward the learning, the total behavior of students as well as the social relegation of role and the work of teacher. *Conclusions:* The teachers are sensitized in subjects that concern in the quality of their educational work and in the behavior of students. Teachers are in high school have more stress the fact that can be also owed in the responsibility they feel for the import of students in university .They also feel stress because of the increased aggressiveness of children. However, the experience (age and years of instructive experience) limits the stress and allows them to carry out better their work and without repercussions in their health.

ENVIRONMENTAL MONITORING OF LEGIONELLA PNEUMOPHILA COLONIZATION IN FIVE PUBLIC BUILDINGS: A TWO-YEAR SURVEY STUDY

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Aim: An environmental monitoring of *Legionella pneumophila* colonization was conducted in five public buildings in the region of East Macedonia and Thrace, with no previous documented cases of legionellosis. The purpose of this survey was to (i) determine the presence of *Legionella pneumophila* in water distribution systems, (ii) provide baseline information for management, and (iii) evaluate the efficacy of decontamination measures. *Material and methods:* Hot and cold water samples were collected from cooling towers, taps, showers, tanks, boilers and from all possible water sources in surveyed buildings. The samples were analysed by both the "gold" standard culture method and molecular methods (PCR). *Results:* A total of 291 water samples were collected with seasonal distribution, between February 2007 and February 2009, from five public buildings. *Legionella pneumophila* bacteria were isolated from all (100%) of the five building water systems. Of the 291 samples, 41 (14%) were positive for *Legionella pneumophila*. High-level colonization (1000-32000 cfu/lit) of the water system, (27 to 33% of the samples were positive for *Legionella pneumophila* bacteria) was demonstrated for 3 (60%) of the five buildings. In all three buildings the temperature of the hot water was below 55°C and free chlorine was 0.02-0.04 ppm, during the investigation where the high-level colonization was found. Remedial action was taken to eliminate these bacteria (hyperchloration, thermal shocking and raise the temperature of hot water to over 55°C). The other two buildings had

hot water temperature over 50°C during the two year investigation. *Conclusions:* Decontamination procedures, including shock hyperchloration and thermal shock method performed, lead to only temporary reductions in contamination. In fact, previous concentrations of *Legionella pneumophila* were found within 3 to 10 months of decontamination in all of the three buildings with the high-level colonization. In order to prevent and monitor *Legionella pneumophila* infections, emphasis should be placed on the prevention of contamination. This awareness includes the ensure that the water system is well designed and maintained in accordance with national standards, e.g. the circulating hot water is maintained above 55°C and the concentration of free chlorine is 0.2 ppm.

ENVIRONMENTAL MONITORING AND EPIDEMIOLOGICAL STUDY OF ENTERIC VIRUSES IN WASTEWATER SAMPLES IN NORTH-EASTERN GREECE

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Introduction: Enteroviruses have been associated with outbreaks of waterborne nonbacterial gastroenteritis and are of significant concern for public health. Respectable numbers of viruses can be isolated from faeces of humans as well as from raw wastewater and polluted waters. Hepatitis A (HAV) is the first causative agent for acute hepatitis with a worldwide distribution. It is primarily transmitted by person-to-person contact through faecal contamination. Common source epidemics from contaminated food and water may also happen. It is estimated that each year there are 2 million cases of symptomatic hepatitis A. In developed countries, the incidence of illness is low, while in developing countries it is very high. Adenoviruses are also pathogenic to humans and their presence in environmental samples (polluted waters) may cause infections. Adenoviruses are causative agents of gastroenteritis, are the only human enteric viruses to contain DNA. Their attendance in polluted water and their role as originators of gastroenteritis have probably been underestimated. Norovirus is the most common etiological agent for gastroenteritis outbreaks as well as a common cause of acute gastroenteritis in children and has a significant public health impact worldwide. Morphology and genome organization classified NV as a member of the family Caliciviridae, which now comprises the two human related genera Norovirus (previously "Norwalk-likevirus", NV) and Sapovirus (previously "Sapporo-like virus," SV). *Aim:* In the present study, enteroviruses, adenoviruses, noroviruses and HAVs were detected in raw sewage. Samples were obtained from inlets of six biological treatment plants in the region of North-Eastern Greece. Raw sewage samples (72) were analyzed for the presence of these viruses during the period December 2004 to January 2006. *Material and methods:* Our procedure comprised of a simple concentration of viruses from raw sewage followed by RT-nested PCR in order to increase the sensitivity of virus detection. The PCR's products were sequenced and then were typed by nucleotide sequencing analysis. *Results:* Adenoviruses were found in 44 samples (61.1%). Sequencing analysis of the positive sewage samples showed the presence of type 41. Enteroviruses were detected in 36 samples (50%) and sequencing analysis of the positive sewage samples reported the presence of several types such as (a) coxsackievirus types

(b) echovirus (c) poliovirus. Finally, Noroviruses were found in only 12 samples (16.6%) while the presence of HAVs was inexistent. *Conclusion:* Water quality may be inspired by the presence of pathogenic enteric viruses came from sewage discharged to the aquatic environment. Waterborne disease may be transmitted by consumption of polluted drinking water. Raw wastewater was found to be contaminated by many and several types of enteric viruses that mainly cause gastroenteritis. Therefore, it is necessary to use the most efficient water treatment measures in sewage treatment plants.

THE RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND HEALTH PROBLEMS IN NURSING PROFESSIONALS

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Introduction: Work stress, as a risk factor in the work field, has gained particular attention since studies have proved its role on employees' health, thus documenting the importance of the mental and social structures in maintaining or losing health. The studies that have investigated nursing stress in other countries have identified a large variety of stressors and have highlighted the role of social and cultural factors. The *objective* of this research is to investigate if there is a significant relationship between the health level of the nursing professionals and the level of stress they experience due to their work and to identify the stressors related to the working environment of Greek nurses. *Method:* The study population consisted of nursing staff from all the educational levels from General Public Hospitals of the capital (both military and civil) as well as from General Public Hospitals of the provinces. To collect the data an anonymous self-reported questionnaire is used, while the data collection is in process. Data collected on: i. socio-demographic and job characteristics, ii. stress by using the Expanded Nursing Stress Scale – *Susan E. French, Rhonda Lenton, Vivienne Walters and John Eyles*, iii. health level using parts of the following questionnaires: a. A Greek adaptation of the General Health Questionnaire – GHQ, from Goldberg – *Moudjoukis, Adamopoulou, Garifalos and Karastergiou*, 1990, b. RAND 36-item Health Survey (version 1.0), c. The Physical Health questionnaire from *Masuda and Holmes* (1968), adopted by *Karadima* 1999, and d. behavioral health. The evaluation of the mental and social stress factors in the work field is particularly difficult and challenging. Identifying the stress factors related to the health and safety of the nursing staff in our country could be both the beginning and the guide for the design of a strategy to confront stress at work. As proved daily, the activities for health promotion in the work field is a move of strategic importance since the employees are the most precious resource of every organization and the only path for the achievements of its goals.

OCCUPATIONAL EXPOSURE OF NURSING PERSONNEL IN PEDIATRICS CLINICS AT PUBLIC HOSPITALS IN NORTHERN GREECE TO ENVIRONMENTAL HAZARDS

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Introduction: In order to ensure healthy conditions at workplace, international organizations, have instituted upper limits of several environmental factors that could provoke serious problems or disturbances on human health. Among these factors noise levels as well as thermal conditions and the level of concentration of dust in the breathing air are recognized as to be important for insuring health and safety conditions at workplace. Especially noise is considered as an invisible enemy that poses several effects on human health. As WHO suggests, noise can affect human health and well-being in a number of ways, including annoyance reaction, interference with communication, performance effects, effects on social behavior and physical effects including changes in blood pressure, other cardiovascular changes, hearing loss and problems with the digestive system and general fatigue. *Aim:* This paper aims at presenting and discussing nursing personnel subjectively estimation of noise level, as well as thermal conditions and the quality of breathing air (dust) during summer and winter period at workplace. *Method:* The sample of the study consisted of a hundred nurses working in Pediatrics Clinics at public hospitals in Northern Greece. Empirical data were collected by the use of a questionnaire that consisted of both open and closed questions. *Results:* The results of the survey showed that the great majority of the respondents (63%) estimated noise level as high. The thermal conditions are estimated by the majority of the respondents (57%) as unsatisfactory during the summer period while are estimated as unsatisfactory (32%) during the winter period. The dust concentration in breathing air is estimated as high by the majority (56%) during the summer period and as moderate as moderate during the winter period (61%). *Conclusions:* The result of the study yielded important issues that should be taken into account for the promotion of hygiene and safety conditions aiming to the prevention of occupational exposure at workplace due to environmental hazards.

OCCUPATIONAL ACCIDENTS IN THE MILITARY ENVIRONMENT

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Introduction: Each occupational environment exposes workers to factors that could drive them in an occupational accident if appropriate preventive measures are not in place.

Determination of factors that are related to occupational accidents and their evaluation has as a target their elimination. *Purpose:* To study the factors that are directly or indirectly responsible for the occurrence of occupational accidents in the military sector. *Material and Methods:* The study used a survey design. Data collection was made using a purpose designed self-report questionnaire from June 2008 to February 2009. It was distributed to every hospitalized worker with an occupational accident and the response rate was 94,8%. Descriptive statistics were used for data analysis and here preliminary results are presented. *Results:* A number of 37 occupational accidents were recorded. 62,2% of them affected soldiers and the rest military personnel. 75% had secondary education and 25% higher. Soldiers were serving at the same military unit that the accident happened for 1-18 months, while the military personnel from 6 to 35 months. 56,8% answered that they were informed about the risks of their occupational environment and 35% were trained to confront them. 24,3% had falls from height, 10,8% had slipped falls and 18,9% had an accident because of fallen objects. 27% had a strain, 16,2% had a fracture and 8,1% had a brain injury. 32,4% thought that the task process was responsible for their accident while 21,6% pointed out that the inexistence of supportive measures was the main reason for the cause of their accident. *Conclusions:* Over the years a growing political and media attention had been given to occupational accidents and their consequences. The preliminary results of this study do not allow us to have definitive conclusions on the factors that are relate to recorded accidents, although it seems that the type of and reasons for accidents in the military sector do not differ from other occupational sectors.

CHANGES IN LABOUR SOCIETY AND THEIR INFLUENCE IN HEALTH AND SAFETY AT WORK

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Introduction: The job market at the down of 21st century is being transformed by a significant change of occupational forms. A large part of this transformation concerns the temporary work relations, the partial employment, the informal schedules with untidy shifts, the continuous nightly work and in best case the employment with vague exhaustive schedule. On the other hand the ageing of workforce has already had an impact on Europe while an increasing reduction of young employers is observed. *Aim:* The aim of this review was to study how the changes in the labour society can influence the hygiene and the safety at work. *Method:* The method of this study included bibliography researc from both the review and the researc international literature and was referred to the changes of labour society and their influence in the hygiene and the safety at work. *Results:* The results of the literature review indicate that workers with arrangement of temporary work, as well as work with shifts, relate itself to an increase risk of occupational accidents. Also, about the age of workforce, studies report that older workers have more serious, but less frequent, workplace

injuries, than younger ones. Most of them take place when they work with continuing nightly shifts. Illnesses as the stress, the depression or the stress as well as the violence in the work, the harassment and the intimidation correspond from alone them in the 18% of problems of health in the work. The results of review emerges the need of existence of Delegates of Hygiene and Safety of Work as well as occupational health physicians, for the prevention and the safeguarding of health and safety in the labour spaces. *Conclusions:* The challenge that must be delt job market consists of the discovery of the write balance between flexibility and safety. Discovering this balance is a common responsibility between employers and employees as well as social partners and state.

OCCUPATIONAL STRESS AND THE MECHANISMS THROUGH WHICH IT AFFECTS THE HUMAN HEALTH

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Introduction: In tens of studies it has been shown that various aspects of a person's work can be a significant stress source, which in turn has implications on the person's mental and physical health as well as their safety at work. *Purpose:* The aim of this systematic review of the literature is to examine the mechanisms of stress on humans so as to better understand the influences of stress on human health. *Material - method:* A systematic review was made in "European Agency for Safety and Health at Work", "National Institute for Occupational Safety and Health (NIOSH)", "Job Stress Network" web sites for various publications and abstracts around the exact theme and the "Occupational and Environmental Medicine Journal" using as key words "stress, 'occupational stress', 'stress related health problems' and 'stress disorders', 'mental health', 'salivary IgA', 'stress and biochemical responses'. *Results:* When a person experiences work stress there is the possibility of adopting behaviors that lead to health risks. Some people react to stressful conditions adopting the patient's role since in this way they avoid the stressor maintaining a positive self-image. In some people stress affects their conception concerning their physical state making them focus on their physical symptoms at a greater degree than normal. The person adopts unhealthy behaviors, since the studies have shown that these people consume more alcohol, tobacco, coffee and fast food. Finally stress can affect the appearance or deterioration of a disease causing biochemical changes in the body. Some of these changes are the increase of corticosteroids and adrenaline and decrease in the immune system's function. *Conclusions:* It is now considered that work stress is one of the greatest problems of modern life. Chronic stress is undoubtedly a significant risk factor for the appearance of multiple problems in a person's mental, social and physical health.

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AVOIDABLE MORTALITY IN GREECE AS PERCENTAGE OF MORTALITY FROM ALL CAUSES (1980-2007)

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Background: Over the past three decades the concept of avoidable mortality originally introduced by Rutstein et al (1), has been widely used as an indicator of the overall effectiveness of the totality of health care therapeutic and preventive interventions. **Objective:** To calculate avoidable mortality as percentage of total mortality from all causes in Greece during the period 1980-2007. **Method:** Mortality data derived from the National Statistical Service of Greece. Causes of death were registered through the ICD-9 classification system. Avoidable mortality tables were calculated following European Atlas of Avoidable Mortality table of causes of avoidable death as modified from Newey et al (2). SMRs were standardized in respect to the Standard European Population (old version). Additionally, a similar process was carried out for calculating respectful all causes mortality rates in Greece. Subsequently, a time series of the percentage of avoidable mortality rates in respect to general mortality rates was calculated. **Results:** Significant decrease of the ratio of avoidable mortality as percentage of total all causes mortality was found throughout the entire time series.

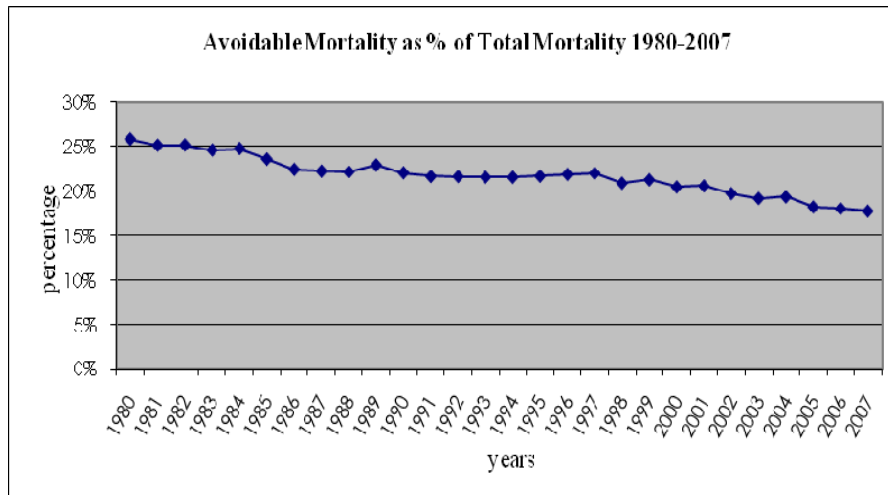


Diagram: Avoidable mortality as percentage of total mortality (Greece 1980-2007)

Conclusions: Findings are suggesting a substantial decline of the proportion of mortality that could in principle be avoided. Nevertheless, this proportion is not by any means eliminated. However, decline in avoidable mortality time-trend alone has generally been much sharper than decline in the avoidable/overall mortality ratio. This enhance the hypothesis that at least a part of avoidable mortality's time-trend decline is in virtue of the overall mortality's time decline (thus, to overall health determinants' effect), not necessarily attributed to an

intrinsic avoidable mortality's declining time trend (thus, to improvements in health care interventions). [1. *Rutstein D.D., Berenberg W., Chalmers T.C., Child C.G. Fishman A.P., Perrin E.B.*, "Measuring the quality of medical care", *New England Journal of Medicine*, 294, 582-8, 1976, 2. *Newey C., Nolte E., McKee M., Mosialos E.*, "Avoidable mortality in the enlarged European Union", *I.S.S. Statistics* 2, Nov. 2004].

AN EPIDEMIOLOGICAL PROFILE OF XANTHI PREFECTURE

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Introduction: Data included in the prefecture's epidemiological profile offer significant help and contribute to the decisions made on health policy planning. **Purpose:** Recording the demographic data, health profile and health system of the Xanthi Prefecture during the 1998-2005 period. **Material - Method:** The National Statistical Service of Greece, the Prefecture, the General Hospital, the Regional Health and Welfare Systems of Eastern Macedonia and Thrace and the Municipality of Xanthi. **Results:** The population, according to the 2001 census, amounts to 101.856 inhabitants (41% rural, 59% urban). The crude birth rate was reduced in 2004 compared to 1998 (12.58‰ / 13.64‰). The crude death rate shows falling trends from 1998 to 2004 (9.27‰ / 8.35‰) and is lower than the country's crude death rate (8.35‰ / 9.48‰). A significant fall is observed in the infant mortality rate in 2005 (5.17‰) compared to 1999 (9.80‰). The proportional mortality rates are presented in the table below. The operational indicators of the Xanthi Prefecture health system for 2006 are presented in the table below.

| Cause of death | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Malignant Neoplasms | 196.81 | 210.59 | 198.29 | 197.00 | 221.66 | 268.32 | 237.99 | 235.04 |
| Cerebral Vessel Disease | 175.53 | 174.55 | 178.04 | 150.92 | 180.89 | 173.62 | 156.75 | 200.85 |
| Ischemic Heart Disease | 123.40 | 139.64 | 126.87 | 157.83 | 145.22 | 138.67 | 156.75 | 120.73 |
| Lung Cancer | 76.60 | 59.68 | 72.49 | 59.91 | 85.35 | 76.66 | 59.50 | 70.51 |

Table 1. Proportional mortality rates (‰) of Xanthi Prefecture (1998-2005)

| Operational indicators of Xanthi Prefecture | No |
|---|---------|
| Examined | 163.077 |
| Hospitalized | 19.847 |
| Surgical operations | 6.313 |
| Laboratory exams | 760.431 |
| Mean length of stay (days) | 2.95 |
| Bed occupancy (%) | 69.78 |

Table 2. Operational indicators of Xanthi Prefecture (2006)

Conclusions: The evaluation of the epidemiological profile data of the Xanthi Prefecture can be a safe guide for the elaboration and development of health policies for the benefit of the prefecture and the broader region population.

THE DRAMA PREFECTURE HEALTH INDICATORS AS A TOOL FOR DESIGNING HEALTH POLICIES IN THE REGION

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Introduction: The information taken from the epidemiological profile is of primary importance for designing health policies in a region. *Purpose:* Recording the health indicators of the Drama Prefecture population for the 2000-2006 period. *Material and Method:* The National Statistical Service of Greece, the Drama Prefecture and the General Hospital of Drama. *Results:* The Drama prefecture population, according to the 2001 census, amounts to 103.975 inhabitants (49.2% men, 50.8% women). The composition of the population of Drama by broad age groups seems (Table 1) to show a significantly high proportion of older people. The crude death rate has shown a small increase during the last five years, since it was 10.61 ‰ in 2000 and 10.92‰ in 2006 and was higher than the respective country rate. The trends of the cause-specific mortality rates are presented in the table below. The infant mortality rate shows a reduction during this period, while no maternal mortality rate is recorded. The crude birth rate shows a falling trend from 2000 to 2005 (8.74‰ / 8.54‰) and only in 2006 it reached 9.35‰. The general fertility rate showed a similar trend and reached 37.9‰ in 2005 and 41.5‰ in 2006 from 38.8‰ in 2000.

| <i>Age groups</i> | <i>Drama Prefecture (%)</i> | <i>Total country population (%)</i> |
|-------------------|-----------------------------|-------------------------------------|
| 0 - 14 | 15.9 | 15.2 |
| 15 - 64 | 63.8 | 68.1 |
| 65+ | 20.3 | 16.7 |
| Total | 100 | 100 |

Table 1. Percent (%) of population by broad age groups (2001)

| <i>Cause of death</i> | <i>2000</i> | <i>2001</i> | <i>2002</i> | <i>2003</i> | <i>2004</i> | <i>2005</i> | <i>2006</i> |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Malignant neoplasms | 169.96 | 219 | 201 | 229 | 214 | 368.2 | 398 |
| Cerebral vessel disease | 238.7 | 230 | 201 | 199.5 | 196.3 | 228.7 | 197.5 |
| Ischemic heart disease | 112 | 126.2 | 137.4 | 141.5 | 142 | 157.4 | 122 |
| Lung cancer | 78.6 | 77.3 | 88.3 | 80.6 | 74 | 104.9 | 92.3 |

Table 2. Cause-specific mortality rates (‰) Prefecture of Drama (2000-2006)

Conclusions: The identification of demographic particularities and special health problems, combined with health system operational indicators, can be used to help design health policies based on the population's actual needs.

AGE SPECIFIC AVOIDABLE MORTALITY IN GREECE 1980-2007

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Background: Avoidable mortality concept originally introduced by *Rutstein* et al (1) is used as a reliable assessment measure of the overall effectiveness of the totality of interventions in health care. **Objective:** Analysis of age specific avoidable mortality in Greece for the period 1980-2007. **Method:** Mortality data from the National Statistical Service of Greece. Causes of death were registered through the ICD-9 classification system. Avoidable mortality tables were calculated following European Atlas of Avoidable Mortality table of causes of avoidable death as modified by Newey et al (2). SMRs were standardized in respect to the Standard European Population (old version). Analysis per five-year age-related categories was subsequently performed. **Results:** An overall decreasing tendency in most age-specific time trends was found. However, stagnation was observed at the 45-49 years category, while avoidable mortality marks an upturn at the 50-54 years category especially at decade 1990-2000.

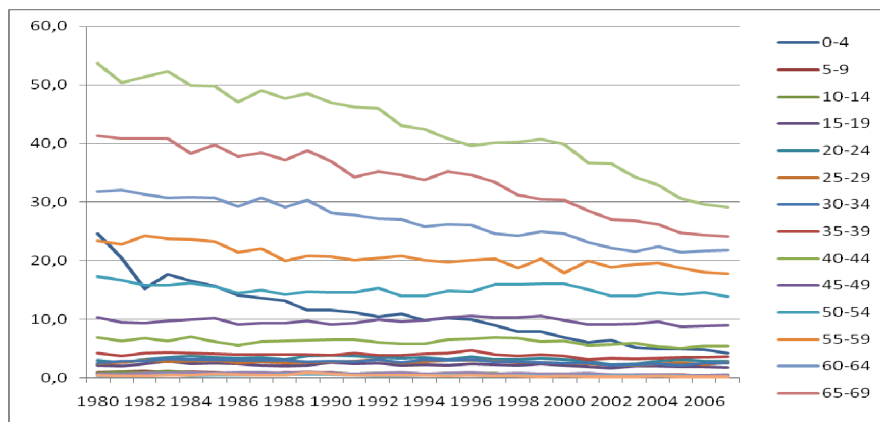


Diagram: Age specific avoidable mortality in Greece (SMR, 1980-2007).

Conclusions: Findings imply an overall decrease of avoidable mortality rates for almost all age groups. Nevertheless, conclusions should be further scrutinized as possibly biased by the simultaneous decline of all causes mortality rates time-trend during the same period of time in Greece. Additionally, stagnancy of time-trends of age-specific avoidable mortality rates in middle age categories indicate a potential serious shortcoming of health care interventions in Greece, given that it is exactly at these age categories that optimal efficiency of health interventions is to be expected (1). [1. *Rutstein D.D., Berenberg W., Chalmers T.C., Child C.G. Fishman A.P., Perrin E.B.*, "Measuring the quality of medical care", *New England Journal of Medicine*, 294, 582-8, 1976, 2. *Newey C., Nolte E., McKee M., Mosialos E.*, "Avoidable mortality in the enlarged European Union", *I.S.S. Statistics* 2, Nov. 2004, 3. *Maynard A., Chalmers I.* (eds.), "Non-Random reflections on Health Services Research", B. M. J. publishings, London 1997].

AVOIDABLE MORTALITY IN GREECE 1980-2007

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Background: Over the past three decades the concept of avoidable mortality originally introduced by *Rutstein* et al (1), has been widely used as an indicator of the overall effectiveness of the totality of health care therapeutic and preventive interventions. This concept is based on deaths from certain causes that should not occur in the presence of timely and effective health care or preventive interventions. **Objective:** To calculate avoidable mortality in Greece during the period 1980-2007. **Method:** Mortality data derived from the National Statistical Service of Greece. Causes of death were registered through the ICD-9 classification system. Avoidable mortality tables were calculated following European Atlas of Avoidable Mortality table of causes of avoidable death as modified from Newey et al (1). SMRs were standardized in respect to the Standard European Population (old version). **Results:** A general decreasing tendency of general avoidable and treatable mortality indicators was found ($SMR_{\text{avoidable}}$ 1980: 232.2, 2007:170.7; $SMR_{\text{treatable}}$ 1980:127.1, 2007:65). Preventable mortality follows a rather more stagnant pattern ($SMR_{\text{preventable}}$ 1980:51.8, 2007: 54.9).

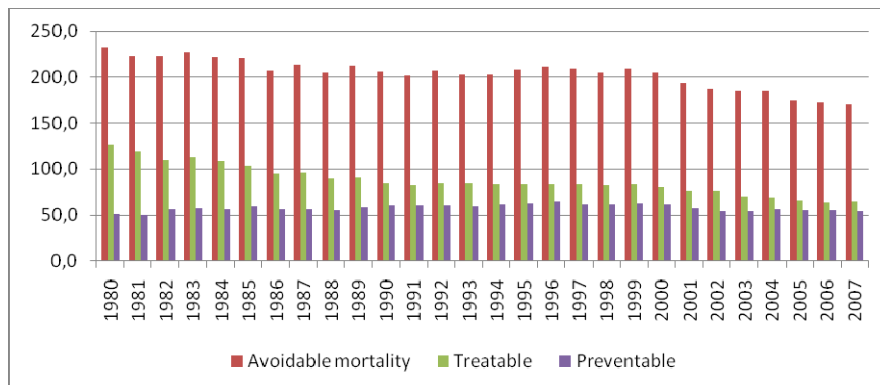


Diagram 1: Avoidable, Preventable, Treatable mortality SMR (Greece 1980-2007).

Conclusions: Findings imply the important growth and extension of use of technological innovations in the field of therapeutics as well as important delays in applying preventive policies of primary health care. Determinants such as inadequacies in prevention policies or weaknesses at behavioral and nutritional factors' control seem mostly plausible candidates for the explanation of observed tendencies of avoidable mortality time trends. These findings advocate for the necessity for further research in the particular field through mechanisms of permanent epidemiologic surveillance and monitoring. [1. *Rutstein D.D., Berenberg W., Chalmers T.C., Child C.G. Fishman A.P., Perrin E.B.*, "Measuring the quality of medical care", *New England Journal of Medicine*, 294, 582-8, 1976, 2. *Newey C., Nolte E., McKee M., Mosialos E.*, "Avoidable mortality in the enlarged European Union", *I.S.S. Statistics* 2, Nov. 2004].

THE CHANGE IN THE MANAGEMENT OF THE PESTICIDES AFTER INTERVENTION

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Aim: In recent years, increasing attention has been given to the consequences of pesticides in Public Health has been given. The aim of this study is to estimate the possibility of change in the management and occupational risks of the pesticides by interviewing 103 Greek farm workers in eleven-month period of time. **Study design:** The instruments used for this randomized study were two self-administered questionnaires. The population of the study was categorized in 60 professional and 43 part-time farm workers. **Results:** The measures of the variables in the intervention assessment questionnaire were significantly improved compared to the first results before intervention. The improvement observed was significant for the prevention of the occupational risk in both groups. The reported policy on pesticides use was to limit down the overuse according to public health and environment safety guidelines ($p < .005$). **Conclusion:** The management of the pesticides 'use is a huge problem for occupational safety and public health. Educational seminars from health care providers could be beneficial for farm workers.

CHILDREN'S ACCIDENTS IN A MULTICULTURAL GREEK REGION

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Introduction: Increasing injuries are a frequent phenomenon in most developing countries. A great part of these happen on the roads, or are caused by falls, burns, animal bites, stings, poisonings and suicides. 1/3 of the total number of deaths from birth until the age of 14 is caused by accidents. During puberty and the beginning of adulthood, the number of deaths caused by accidents is dramatically increased.

Aim: The aim of the present research was to study children's unintentional injuries in Thrace (a Greek region) and to make comparison of them among the various social groups (Native Christians, Native Muslims and the Repatriating) that live in the area. **Material and Methods:** The sample consisted of 1.516 High School children from Thrace. An anonymous questionnaire was used. It contained demographic questions and questions for the causes-reasons, the type-kind, the place and the result of the accidents that children had. The collection of data took place at schools in the mornings, after the children had received the necessary clarifications for the completion of the questionnaire. **Results:** Chi square method was used for the analysis and a strong correlation appeared between the existence

of an accident and many variables: sex (girls had about half probability of injury, $p < 0,001$), grade (juniors had more injuries than seniors, $p < 0,05$), mother's studies ($p < 0,001$), father's studies ($p < 0,001$) - parents with high or upper-high education had accident-prone children, and the social group each child belonged (the Repatriating had more while Muslims had less, $p < 0,001$). The odds ratio (OR) for the Repatriating was 3,3 (95%CI: 1,760-6,296) compared to Muslim and Christian Natives. Surprisingly, Muslim Natives had roughly half probabilities of injury compared to Christian Natives (OR: 0,4, 95% CI: 0,328-0,545). **Conclusions:** Younger boys, the Repatriating as well as children whose parents had high or upper-high education appeared to have greater probabilities of injury.

OCCUPATIONAL ACCIDENTS IN THE MILITARY ENVIRONMENT

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Introduction: Each occupational environment exposes workers to factors that could drive them in an occupational accident if appropriate preventive measures are not in place. Determination of factors that are related to occupational accidents and their evaluation has as a target their elimination. **Purpose:** To study the factors who are directly or indirectly responsible for the occurrence of occupational accidents in the military sector. **Material and Methods:** The study used a survey design. Data collection was made using a purpose designed self-report questionnaire from June 2008 to February 2009. It was distributed to every hospitalized worker with an occupational accident and the response rate was 94,8%. Descriptive statistics were used for data analysis and here preliminary results are presented. **Results:** A number of 37 occupational accidents were recorded. 62,2% of them affected soldiers and the rest military personnel. 75% had secondary education and 25% higher. Soldiers were serving at the same military unit that the accident happened for 1-18 months, while the military personnel from 6 to 35 months. 56,8% answered that they were informed about the risks of their occupational environment and 35% were trained to confront them. 24,3% had falls from height, 10,8% had slipped falls and 18,9% had an accident because of fallen objects. 27% had a strain, 16,2% had a fracture and 8,1% had a brain injury. 32,4% thought that the task process was responsible for their accident while 21,6% pointed out that the inexistence of supportive measures was the main reason for the cause of their accident. **Conclusions:** Over the years a growing political and media attention had been given to occupational accidents and their consequences. The preliminary results of this study do not allow us to have definitive conclusions on the factors that are relate to

recorded accidents, although it seems that the type of and reasons for accidents in the military sector do not differ from other occupational sectors.

THE MOBBING SYNDROME AT WORKPLACE

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Introduction: The mobbing syndrome at work is presented as a problem that affects the working relationships, decreases productivity and encourages the employees’ absences from work, because of the psychological impact on individuals. **Aim:** With the present study, an effort was made to record the problem among employees at the health services, its frequency, its characteristics and finally the way with which the problem was dealt with the responsible institutions. **Material-method:** 304 employees (30,6% of the sample were men and 69,4% women) from different hospitals in Greece participated, which in the presence of an interviewer filled out an anonymous questionnaire including open-type as well as close-type questions. The SPSS program was used for the statistical analysis and Pearson correlation and t-test as well. **Results:** The results showed that the 45,7% have suffered mobbing, and the 32,4% of the incidents happened within the last month and always in the working place, while the 58,3% (of employees) declare that more than four times harassment had taken place in working environment. 56.1% victims answered that they did not receive any support by their supervisors whereas no investigation took place in 71, 9% of the cases reported. **Conclusion:** All the above, demonstrate the extend of the problem of mobbing, the inadequate assessment, the negative consequences to the victims and the need for further studies and proposals for its resolution.

SELF-MEDICATION: A SERIOUS PROBLEM IN PUBLIC HEALTH. THE ROLE OF GREEK PHARMACISTS IN THE PREVENTION OF SELF-MEDICATION

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The crucial role of pharmacists in public health is widely accepted and is of high importance, since the patients recognize them as reliable scientists who are familiar

with their health problems. It is true that pharmacists are counselors of the public on everyday health care and key figures in the supply of medicines. Their education and training equips them to provide sound advice on medicines to the patients, while many of them are getting used to the self-medication either by getting the drugs on their own or after being advised from a relative or from another person of trust. In many cases patients are hesitant to visit physicians for matters that they believe that they can "handle" by themselves. Due to these facts, self medication is under development in the recent years in Greece and pharmacists should be ready to have a key role in providing them with assistance, advice and information about medicines available for self-medication. In this research the advisory role of pharmacists towards the phenomenon of "self-medication" is investigated. The research took place in the community pharmacies in Thessaloniki in accordance with the Pharmaceutical Association of Thessaloniki. There was a questionnaire that was full filled by the pharmacists. From the collected answers it was found that the pharmacists admit that they have to play a crucial role in public health matters. It was also found that in many cases patients ask for a medicine which it is not prescribed by the physician, according to their demands. Thus, patients ask from the pharmacists to play a more active role (90 %) in the part of information for drugs' safety and in terms of their counseling role regarding public health. In many cases it was also showed that pharmacists should be ready to face serious problems in drug - drug interactions and food - drug interactions, since the patients forget or avoid discussing such matters with the appropriate physician. As a result, pharmacists can play a pivotal role towards self-medication and they should take always under consideration that people trust them and count on them. It is true that community pharmacists are very close to every single patient, and in many cases patients feel more comfortable to discuss their problems with a pharmacist than with any other health scientist. According to the results of this research pharmacists should be aware for the public health matters and ensure that self-medication is responsible, is only undertaken when it is appropriate to do so and their advice is always given to seek a consultation with a physician when that is necessary.

EPIDEMIOLOGY OF CARIES IN SCHOOLCHILDREN OF EVROS PREFECTURE, GREECE

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Introduction: As in the rest of Thrace, the population of Evros, of which a large number derives from the forced population exchange that followed the treaty of Lausanne in 1923, consists of individuals of Greek origin and Muslim minority. The 'Muslim minority' of Evros defined by the Lausanne Treaty and officially recognized by the Greek authorities is represented by Gypsies (Roma), and Pomaks. In the

1990 s the demography of Evros has rapidly changed, due to immigration of Greeks from the former U.S.S.R., Albanians and Bulgarians. **Methods:** The present study analyzes the association between caries experience, quantified as the sum of the dfs and DMFS indices, and traditional risk factors that can affect the oral health in a population of children between the ages of 6 and 11 in four large cultural subgroups of Evros region: Roma, Pomaks, local Greeks and immigrants of Greek origin from the former U.S.S.R. Such factors are: dietary patterns (including consumption of cariogenic foods), tooth brushing, fluorides in drinking water, socioeconomic and demographic factors. A questionnaire filled in by the parents (or in the case of the minority group with the researcher's assistance) was used to evaluate how often the foods on the list were consumed by the children, which was then related to their caries experience. The data were collected from the visual examination of 300 children (68 Roma and 232 of Greek origin). **Results:** In spite of the high internal cultural diversity of Evros population the minority subgroups suffer frequent unjustified exclusion from studies due to cultural gap and lack of linguistically appropriate research. Muslims in disadvantaged neighborhoods lacking health insurance and financial barriers to health care access were more likely to have poorer oral health than their counterparts in advantaged neighborhoods. Comparing Muslims in Alexandropolis with their counterparts in Northern Evros (Didimoteicho) we came to the conclusion that children of both subgroups habitually eat sugary foods and drinks and snacks that contain sugar, but caries prevalence is lower in the 1st subgroup. Comparing Muslim pupils attending minority schools and Muslim pupils from regular schools, the children of the 1st subgroup which are mostly from families with low household income and low parent education level have increased prevalence of caries. Approximately 33% of pupils have an orthodontic problem. In the case of Muslim children it can be easily explained by prolonged (to the age of 6) pacifier use. **Conclusions:** The first conclusions affirm the impact of cultural and social factors on oral health. The prevalence of dental caries is disproportionately higher in Muslim children, and was associated to social and economic factors. Culture and language can profoundly affect Muslim children's health, as well as cultural competency training of health care professionals and provision of linguistically appropriate care. Roma and Pomaks as health care professionals are underrepresented, or not represented at all. Oral health of Evros population can be improved by reducing social inequalities and promoting social and economic integration of minorities and immigrants.