

## Editorial

### Three and counting

Paulo Jorge Nogueira

### On the publication of the IV Portuguese National Congress of Public Health presented works' abstracts

Isabel Falcão

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### A study of the validity of a photographic manual of quantification of food portions

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### Norovirus outbreak in a Social Centre in Castelo de Paiva, November 2013

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Ministério da Saúde



*A cuidar dos portugueses*

Paulo Jorge Nogueira

*e d i t o r i a l*

### **Three and counting**

Despite the challenges that we face along the way, building this Journal number by number, it is kind of a dream that becomes real. We are obviously far from the desired goals, but each new step renews our hope and shows that it is possible to reach the destination.

This issue focus on the publication of communications' abstracts that took place at the IV Portuguese National Conference of Public Health held in Lisbon last October.

The history of the publication of these National Congresses of Public Health presented works' abstracts is irregular. Abstracts of the 2nd Congress were timely published. But all the remaining ones were waiting for publication. We are making efforts to recover all such materials.

For the IV Congress, for this publication, an effort was made to be more agile in the publication of the abstracts. But as this publication policy requires English translations this took a little longer than desirable. But it is done. The direct collaboration of the overwhelming majority of the authors themselves has been of major importance and deserves the due highlight here.

Regarding the remaining material for publishing, the one of the first Congress – which took place in 2009 – is particularly extensive; we look forward to making them available here the near future.

What encourages me most is the fact that this Journal is in position to be the means of dissemination of this type of work.

In the next editions of the National Congresses of Public Health, if there is interest in this publishing in the journal – Health by numbers Portugal –, if we align all, trim the procedures, and agree to submit the abstracts in both Portuguese and English and all other elements, we can publish the abstracts in time for the event itself. It will be spectacular!

Paulo Jorge Nogueira, **Director**

Isabel Falcão

*e d i t o r i a l*

## ***On the publication of the IV Portuguese National Congress of Public Health presented works' abstracts***

Most researchers, scientists and clinicians only read the abstracts of research studies, even when they can access the full article. In fact, reading only the abstracts may be an efficient way to stay up-to-date about some issues, particularly when people are pressed for time (1). On the other hand to access the abstracts of presented works during scientific meetings is a very important way for disseminating current data to broader audiences (2).

Undoubtedly, it is a good initiative to publish the abstracts of scientific meetings in an indexed journal or review where they will be stored for the long-term and visible to the scientific world community (3).

Thus, it seems rather relevant to publish the abstracts submitted to the IV National Congress of Public Health, held in Lisbon on October 2 and 3 2014, as it has already been done in previous congresses.

The Portuguese National Congresses of Public Health are an undeniable opportunity to discuss Portuguese citizens' health and familiar health. The IV Congress was not an exception and its warmth proved it well.

Two main questions were addressed during the event:

- ..... The burden of chronicle diseases and the challenges we are facing, particularly about prevention, control and management;
- ..... The risks of vectorial transmission diseases, emerging or re-emerging, its relationship with climatic changes, environmental risks, entomologic and epidemiologic aspects, contingency plans and good practices.

Other abstracts on other areas of Public Health were accepted, adding up 268. The Scientific Commission of the Congress selected 182 abstracts, for oral presentation or poster, which will be published in this special number of the DGS review.

We appreciate the authorization given by the authors to publish for a broader dissemination.

We hope that the reading and interpretation of these abstracts is easy and clear and may contribute to ameliorate the knowledge about Public Health issues.

Isabel Falcão, Directorate-General of Health

\* Composed by experts from several institutions, namely: Conselho Nacional de Autoridades de Saúde; Departamento Universitário de Saúde Pública da Faculdade de Ciências Médicas de Lisboa; Direção-Geral da Saúde; Direção Regional da Saúde da RA Açores; Escola Nacional de Saúde Pública; Instituto de Administração da Saúde da RA Madeira; Instituto de Higiene e Medicina Tropical; Instituto Nacional de Saúde Dr. Ricardo Jorge; Instituto de Saúde Pública da Universidade do Porto

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English Version

## A Abstracts IV CNSP Oral Communications

### 1 Detection of cryptic species of *Aspergillus* with reduced susceptibility to antifungal agents in hospitals

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**Introduction** Invasive aspergillosis is a fungal infection caused by *Aspergillus spp.* affecting mainly the immunocompromised. The mortality rate may reach 85%. *Aspergillus* identification should be based on molecular methods as there are species morphologically similar but distinct at the molecular level (cryptic species), with variable antifungal susceptibility profiles.

**Material and Methods** During one year, 101 air and 99 surface samples were collected from Hematology, Oncology and Intensive Care units of a Portuguese Central of Lisbon. *Aspergillus* isolates were identified morphologically and by molecular methods. Determination of the susceptibility of selected isolates was performed by microdilution.

**Results** 548 fungal isolates were obtained. Of these, *Aspergillus* was the most frequently isolated genus (19.7%). Ten *Aspergillus* species complexes were identified (being the Versicolores the most frequent) and several cryptic species were detected. An association was found between season of sampling and the species complexes isolated ( $p=0.001$ ). Complexes Circundati, Versicolores and Nigri had isolates with reduced susceptibility to antifungals: in Circundati complex, 3/6 isolates showed MIC to amphotericinB  $>8\mu\text{g/ml}$  (*A. westerdijkiae*) and 1/6 MIC  $>8\mu\text{g/ml}$  to itraconazole (*A. sclerotium/bridgeri*), 1/5 isolates from Versicolores complex presented MIC to itraconazole  $>8\mu\text{g/ml}$  (*A. sidowii*), all 4 isolates from Nigri complex showed MIC to itraconazole =  $4\mu\text{g/ml}$ .

**Discussion and Conclusions** *Aspergillus* is commonly isolated from the hospital environment. The study of prevalence, molecular epidemiology and susceptibility of *Aspergillus* cryptic species found in hospital environment is essential for the prevention of nosocomial infections and for antimicrobial resistance control, since a recent emergence of resistant strains has been observed.

**Keywords:** *Aspergillus*, cryptic species, hospital environment, nosocomial infections, antifungal resistance

## 2 A study of the validity of a photographic manual of quantification of food portions

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**Introduction:** There are evaluation methods of the food intake that shows some limitations. It's necessary to develop new tools, to decrease errors and increase precision such as visual aids with photographs through a manual with quantification of alimentary portions. The only manual existing in Portugal it is from 1996, so it's a good opportunity to update.

**Object:** The aim was to study the validity, feasibility and applicability of a alimentary quantification manual developed in this study.

**Participants and Methods:** Research took place during the period between December 2012 and January 2013, on a food unit. For preparation of the photographic album it was weighed food into three different portions and it was effected 482 photographs of 209 foods and 21 photographs of 30 kitchen utensils. For this validity study recruited a convenience sample consisting of 132 users of this unit, which took place in the period of gathering information. 76 males and 56 females, aged 20 and 69, have been selected. It was selected 54 foods/completed dishes and has been made 501 estimates of portions resourcing photographs portions of various foods that have been pre weighed. Participants have been asked about quantities of foods that they will intake. The portion was chosen, by watching images through the computer. After finishing the meals the exceed food was individual weight. This way it was possible to evaluate food quantity of each individual.

**Results:** Correlations between quantity of food stated and consumed was strong for 39 of the 54 items with a value of  $r > 0,8$ . For 10 foods, association between quantities of food stated and consumed showed values of  $r$  between 0,6 and 0,8. On the other way, it wasn't possible calculate the association for four items. Food portions like hamburger, boiled daffodil, grilled bass, codfish cakes and mince, are recommended the additional study of his validity. It wasn't observed significant differences between quantity stated and consumed between individuals regarding sex, age and BMI.

**Future implications:** Considering our results, photos of foods portions seem to show be a useful method of food consumption and a reliable quantification in the most foods. Despite of negative results for foods like hamburger, boiled daffodil, grilled bass, codfish cakes and mince this manual of food quantification is valid for estimate Portuguese food intake. For these foods will be necessary more validation studies. Concluding the development of quantification food manual and the process of validation for major part of foods analyzed, it is expected that this tool became to be very useful and important in quantification of portion food sizes.

**Keywords:** Food consumption, food portion, validation, manual of food quantification, visual aids

## 3 Norovirus outbreak in a Social Centre in Castelo de Paiva, November 2013

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**Background:** In November 2013 the Public Health Unit (PHU) triggered an outbreak investigation after receiving reports of several children with sudden onset of gastrointestinal symptoms (vomiting, diarrhoea), all of them attending to schools in the same geographic area. At the same time, some patients and workers from a nearby Social Centre (SC) were also falling ill with similar symptoms. Given that all notified cases had onset of symptoms in a 24-hour period and had eaten meals prepared in the same place (SC), it was hypothesized that this was a foodborne disease outbreak.

**Methods:** We conducted a case-control study on the SC workers, comparing food consumption history on cases (individuals with sudden onset of vomiting and/or diarrhoea) and controls (healthy individuals). Adjusted odds ratio (OR) we calculated for suspected food items using logistic regression. Food samples from meals prepared in the SC in the previous 72 hours and biological specimens from four cases (faeces) were collected and sent for microbiology/virology testing.

**Results:** We identified 157 individuals with gastrointestinal symptoms from 7 to 19 november. Eighteen worked at the Social Centre and fulfilled the case definition. Consumption of

one specific meal ("salada russa", prepared and served on 11 November) was found to be significantly associated to the odds of being a case (18/18 cases versus 16/22 controls; OR 8.4 [IC95%: 1.59-+Inf]). Laboratory testing of those food samples revealed heavy bacterial contamination, especially from the Enterobacteriaceae family. All four biological specimens were positive for Norovirus.

**Discussion:** The outbreak was due to the consumption of "salada russa", prepared and distributed by the Social Centre. Norovirus was the most likely responsible infectious agent. Bad structural and hygienic conditions in the kitchen and unsafe food handling probably led to the rapid amplification of the outbreak. Food testing for norovirus was not available. As a consequence of this investigation, SC initiated kitchen requalification work.

**Keywords:** Norovirus; outbreak; gastroenteritis

#### 4 Avoidable hospital admissions for ambulatory care sensitive conditions, ULS Matosinhos, 2008-2013

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**Background:** Ambulatory care sensitive conditions (ACSCs) are those conditions for which hospital admission could be prevented by good access and interventions at the ambulatory and primary health care levels.

**Objectives:** Estimate the burden of avoidable hospitalizations for ACSCs in Hospital Pedro Hispano (HPH), between 2008 and 2013, and associated costs.

**Methods:** Application of the methodology developed by the Canadian Institute for Health Information (CIHI), which considers preventable admissions those of individuals up to 75 years with the following diagnoses: angina, asthma, chronic obstructive pulmonary disease (COPD), diabetes, epilepsy, heart failure and hypertension. To estimate the costs of ACSCs two methodologies were considered: the price charged by the NHS for each diagnosis-related group and average daily cost of hospitalization by specialty, developed by the Management Control Service of ULSM, which is more appropriate to our reality.

**Results:** Between 2008 and 2013, hospitalizations for causes sensitive to ambulatory care in HPH account 2.6% of total admissions, with an attributable cost of about 5.5M€. The numbers of admissions for ACSC's, as well as their associated costs, have declined over the period. The three leading causes of hospitalization for ACSCs in the period 2008-2013 were: heart failure (with 27.8% of ACSCs admissions), COPD (26.5%) and epilepsy (15,6%). These are also the ones with higher costs.

**Conclusions:** According to the methodology adopted, it is possible to identify preventable hospitalizations and measure its impact economically and qualitatively. Although further investigation is required, the adopted methodology provides evidence to support a potential change in the way the healthcare system deals with preventable hospitalizations.

**Keywords:** Preventable hospitalization; ambulatory care-sensitive conditions; quality of health care; cost of disease

#### 5 Use of insecticide-treated bed nets in a rural area in Angola

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**Introduction** Children under 5 years are one of the groups most vulnerable to malaria. Use of insecticide treated bed nets (ITNs) is considered an effective preventive measure and has been the target of international investment as a way to reduce the morbidity and mortality of this disease. The aim of this study is to evaluate ITNs use in this age group.

**Methods** As part of Schistosomose, malaria and intestinal parasites study, 209 Kabungo children from 2 to 15 years were studied. Selected for this study were children between 2 and 4 years (n = 67) taken by parents (83,6%). A questionnaire was applied and blood collected to determine child's infection by Plasmodium falciparum and P.Vivax.

**Results** 19,6% (11/56) of parents reported having mosquito net at home and 45,5% reported that the children slept under net the night before the survey. Only one parent reported owning

ITN. The prevalence of children with *P. falciparum* infection was 3.64% and no cases of *P. Vivax* infection was been found.

**Discussion and Conclusion** The results of our study demonstrate that this location has a low coverage and distribution campaigns and promoting the use of ITNs remains necessary to achieve universal coverage of this way prevention, as recommended by the development of millennium goals.

Keywords: Malaria - Treated bed nets - Prevention - Angola

## 6 Information Systems in Primary Health Care and Epidemiologic Research – opportunities, limitations and possible ways

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**Introduction** In this work we have used Diabetes mellitus type 2 (DM2) and Chronic Obstructive Pulmonary Disease (COPD) cases to analyze the primary care data repository (SIARS) potentials and limitations as an epidemiologic research instrument.

**Material/Methods:** DM2 and COPC prevalences obtained from SIARS (in ACES Amadora) were compared with the prevalences reported by reference epidemiologic studies [1,2]. Information was extracted from SIARS considering December, 2013. Users with DM2 (ICPC-2 T90) and COPC (ICPC-2 R95) were included. ...

**Results:** From 187,902 registered users, 5.9% had a DM2 register, with variation between functional units (3.0% to 8.0%). The reference study, from National Diabetes Observatory indicated 7.3% as the diagnosed DM prevalence. The reference study for COPC, BOLD, mentions a prevalence of 14.2% among adults older than 40 years. From 98,585 registered users older than 40 years in our ACES, 1.3% (1326) had a COPC register.

**Discussion and Conclusions:** Data from SIARS underestimate DM2 and COPD prevalence, when compared with epidemiologic studies. The observed difference is lower for DM2, suggesting differential diagnostic/registration criteria between the two diseases. To estimate population based prevalences, SIARS is

still limited, due to under-registration and variations according to disease and functional unit. In the future, with better registration practices, SIARS can be a useful information system to obtain secondary data and its associated epidemiologic evidence.

Keywords: Health Information Systems, Diabetes, COPD, Epidemiology

## 7 Social media e educação para a saúde – análise do indicadores do Facebook para avaliação de projeto de prevenção do tabagismo

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**Introduction:** In Portugal, it is estimated that 32.8% of all adolescents have already experienced smoking. Nowadays, social networks have the potential for health promotion and 95% of individuals aged 10-15 years old use internet. In Amadora's ACES (group of primary care health centers) a project for smoking prevention in schools was developed, involving students through the submission of posters (to win prizes) and the use of Facebook (with posts motivating students and attributing points to posters - with bonus for 5 more likes). The objectives included analyzing key performance indicators (KPI) of Facebook page and the potentialities and limitations of its use.

**Material/Methods:** We analyzed: number of views/day (KPI exposure) and likes/day (KPI involvement) of the page and posts, the age of the users (KPI range) and the time course (January-July).

**Results:** 61 posters were submitted, by 122 students (from 1723 eligible) representing 10 schools from 14 possible. There were 236 likes, with maximum/day of 22. Views/day median of 12 users [Quartile1-Quartile3 (Q1-Q3): 2-46], maximum 1123. There were maximums in February and May. Share up 109 posts: images (80.7%), links (11.9%), videos (6.4%) and messages (0.9%). The median views/post was 82 users (Q1-Q3: 50-85) and the likes/post (Q1-Q3: 1-5). 67.0% of the posts had one like =1. In women,

8.0% of page fans and 11.0% of those who saw it was 13-17 years. In males, corresponding percentages were 4.0%.

**Discussion/Conclusions:** It was found high KPI exposure, likes less than the target (250) and limited reach of the target audience. Facebook is a potential with tool for the evaluation of exposure indicators to the message but limited to evaluation of behavior change.

**Keywords:** Social media, Health promotion, Smoking prevention

## 8 The contribution of avoidable mortality in life expectancy in Portugal in the last 20 years

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**Introduction:** Life expectancy at birth (LEB) offers a concise population measure which allows assessing not only the population health status of a country or region but also its development. However, gains in terms of years of life do not, in themselves, indicate the specific actions needed to improve the population health. Avoidable mortality (AM) amenable to primary prevention and health promotion (PPHP) and to medical care (MC), is a more suitable indicator to point priority interventions. The aims of this study are: i) to assess the contribution of amenable causes of death due to PPHP, to MC and ischemic heart disease (IHD) (partly PPHP, partly MC indicator) upon LEB in Portugal in the last 20 years and ii) estimate and compare the potential gains in years of life through the elimination (total and partial) of these amenable deaths, by sex and age.

**Data and Methods:** The data correspond to resident population and deaths occurred on Portugal mainland (1989-93, 1999-2003, 2006-10) by cause of death, sex and age group. The cluster of causes of death considered avoidable was set up according to Nolte, et al (2004). To assess the impact of AM on LEB, multiple decrement life tables were constructed.

**Results:** Over the last 20 years the AM decreased considerably in Portugal, standing out the reduction in deaths due to IHD (-50% in men and -57% in women). Still, in the last period, the

AM continues to represent 14% of all deaths, this being highest weight in men. Between 1989-1993 and 2008-2012, LEB increased 5.7 and 5 years respectively for men and women (77.1 and 83.4 years in 2008-2012), of which 3.9 and 2.4 years respectively, are due to the reduction of AM. Estimating the total elimination of AM it is found that, in the last period, LEB would be 80.3 in men and 85.5 in women, with the potential gain being higher in men (3.2 years).

**Discussion and Conclusions:** Men are the group most impacted by AM, mainly associated with PPHP, being considered a group for priority intervention. Actions and policy measures should therefore act over PPHP through interventions in spatial determinants that affect (positively or negatively) the lifestyle and behavior, by promoting environments that encourage healthy practices.

**Keywords:** Avoidable mortality, Life expectancy, Primary prevention and health promotion, Medical Care.

## 9 Phlebotomine sand flies as vectors of *Leishmania* spp., climate and environmental changes, and the globalization: consequences on the vectorial transmission in Portugal

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**Introduction:** Portugal is an endemic region of animal and human leishmaniasis, being the dog the reservoir of *Leishmania infantum*. This zoonosis has sand flies as vectors, and *Phlebotomus perniciosus* and *P. ariasi* are species proven as vectors. Studies on bioecological and vectorial characteristics have been conducted since this biological system is not static and can lead to changes in vectorial transmission. This work aims to present the importance of such studies.

**Material and Methods:** In the North, Centre and South, captures of sand flies were carried out for determining the distribution of the species, abundances, densities, hematic preferences, rates of infection with *Leishmania* sp., favourable times to the transmission and application of climate models.

**Results:** Distribution from North to South: *P. ariasi*, *P. perniciosus*, *Sergentomyia minuta*, *P. sergenti* and *P. papatasi*. Species infected with *L. infantum*: *P. ariasi* and *P. perniciosus*. Species infected with *L. major*: *S. minuta*. Species of greater trophic plasticity: *P. perniciosus*. Climate scenarios for *P. perniciosus*: wider distribution, density and period of vectorial transmission.

**Discussion and Conclusions:** With higher average annual temperatures as well as higher aridization, the risk of vectorial transmission is increased. On verifying *S. minuta* infected with *L. major*, and existing in Portugal the natural vector, the risk also increases. The presence of *P. sergenti*, vector of *L. tropica*, can lead to the transmission of this species, and with the "globalization" (migrations, tourists, soldiers from endemic regions), the risk is considerable. Since the 60s, sand fly surveillance and monitoring has never been more required.

**Keywords:** Sand flies, Leishmaniasis, climate and environmental changes, Portugal

## 10 Trends in the rate of in-hospital mortality from acute myocardial infarction in Portugal in the period 2000-2011

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Acute myocardial infarction (AMI) is the clinical form of ischemic heart disease that has most benefited from the simultaneous application of effective therapeutic measures, the entry in force of the prevention and control of tobacco use low, limiting the salt content in bread low and the "Via Verde Coronary Heart" program. In-hospital mortality due to MI occurred in Portugal in the period 2000-2011 is analyzed and also the possible impact of the measures mentioned in the context of sustained decline

in mortality rates from this cause. Ecological time-series study based on hospital episodes recorded in the period 2000-2011 on the database GDH. Acute myocardial infarction (AMI) as the primary discharge diagnosis and also all cases of hospital death due to MI were considered. Gross intra-hospital mortality rates with standardization rates of 25 years and over were calculated. Linear trends and projections for the period under study were calculated. Between 2000 and 2011 there were 141,615 admissions for AMI, corresponding to 120 605 patients, predominantly men (65%). There were 16 013 deaths from AMI but the gross rate of in-hospital mortality showed a marked decrease more evident in women, which had higher initial values than men. The standardization revealed that the decrease in mortality was similar in both sexes, maintaining consistently higher values in women. The calculation of the trend and forecast for the period 2008-2011, allows observing a reversal of the trend during this period, found especially in females, being more pronounced in the groups of younger and middle-aged women. The in-hospital mortality for AMI decreased and may indicate an improvement in the quality of care provided at hospital but may be associated with better control of risk factors upstream, improvement of the pre-hospital care or the joint action of these mechanisms. The higher rate of in-hospital mortality in women has been detected in other studies, assuming that the symptoms are less evident in these cases, hindering or delaying the diagnosis. Smoking habits, other addictive behaviors or taking contraceptive medication may be associated with reversal of the trend observed in young women.

**Keywords:** Acute myocardial infarction; In-hospital mortality rate; Trend.

## 11 Ecoepidemiology of *Dirofilaria* spp. – the human perspective

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Dirofilariasis is a vector-borne emerging zoonosis caused by *Dirofilaria* spp, filarial parasites that affect mainly dogs and other domestic and wild mammals and humans. Despite the high prevalence of canine heartworm in Portugal and the existence of several vector species, data on the occurrence of human

dirofilariasis are almost inexistent. Given the paucity of data on human disease, this work aims to updated information on the occurrence, attitudes and practices that clinicians have about this parasitosis. For this purpose, an anonymous online questionnaire was applied to clinicians registered in the Medical Association "Ordem dos Médicos". A total of 84 responses were obtained from clinicians of all districts and various specialties, being the most frequent the General and family medicine (19%), 41 men and 43 women, aged between 24 and 72 years (average:  $40 \pm 12$  years) and with medical activity between 1 and 35 years (median of 11 years). Of these 84 cases, 52 (62.7%) reported having heard of human dirofilariasis, however, 32% evaluate their knowledge about the parasitosis as none or insufficient, 27.4% indicate College and the Internet as the main sources of information and 45.2% refer as a vector-borne transmitted disease. Nine doctors reported to have diagnosed 10 cases of human dirofilariasis of which seven cutaneous, two pulmonary and one ophthalmic case. The results of this survey indicate a general unknowledge about the disease by the participants. However the evidence of human cases over the past 5 years highlights the occurrence of human infections caused by *Dirofilaria spp.*

**Keywords:** Human dirofilariasis, Vector-borne disease, Knowledge, Attitudes, Practices.

## 12 Suicide and sociomaterial deprivation. The effect of economic crisis in Portugal.

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**Introduction:** Economic crises are associated with an increase in mental illness. Portugal is one of the European countries with higher mental illness prevalence. The aim of this study is to identify the evolution in the geographic pattern of death by suicide

and intentional self-harm and its association with sociomaterial deprivation in Portugal (mainland).

**Material and Methods:** A cross-sectional ecologic study was developed, by using mortality by suicide and intentional self-harm data (ICD9: E950-E959; CID10: X60-X84) for the time intervals 1999-2003, 2006-2010 and 2008-2012, of resident population, in 2001, 2008 and 2011 and a Sociomaterial Deprivation Index (SDI) (illiteracy rate, unemployment rate, population living in houses without toilet, in 2001 and 2011), at a municipal level. A Hierarchical Bayesian model was used, to obtain a smoothed Standardized Mortality Ratio (sSMR) and a Relative Risk (RR) of mortality by sociomaterial deprivation was calculated (confidence interval of 95%).

**Results:** Mortality by suicide and intentional self-harm rose between 1999-2003 and 2008-2012, mainly in rural areas, showing a north-south geographic pattern. In these periods, socioeconomic deprivation has been shown to increase the risk by suicide and intentional self-harm, with an association that was significantly greater than 1.

In 2011, more than half of the Portuguese population lives in municipalities where the sSMR worsened between 1999-2003 and 2008-2012.

**Discussion and Conclusions:** Sociomaterial deprivation shows association with mortality by suicide and intentional self-harm, with an intensification of this association in the period 2008-2012.

**Keywords:** Mental health, Suicide, Socioeconomic Deprivation, Portugal

## 13 Dietary patterns of the Portuguese population with self-reported diabetes: data from the fourth National Health Interview Survey

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**Introduction:** Knowledge of dietary patterns (DPs) of diabetics is important for improving their control measures. Nevertheless, studies on diabetics' dietary habits are scarce in Portugal and there are no methods for evaluating the dietary patterns of the Portuguese population. Thus, the general purposes of this work were to identify indicators of an unhealthy DP based on self reported information about eating habits from the fourth National Health Interview Survey (NHIS) and to identify subgroups of the population with different DPs.

**Material and Methods:** The study population comprised 2973 diabetic individuals (1246 men, 1709 women) and 32244 non diabetic individuals (15536 men, 16708 women) aged 15 years and older living in private households derived from NHIS. To define DP indicators, some NHIS variables were defined and then we created a score to dichotomize the variables. Latent class analysis was used to classify individuals in different DPs groups.

**Results:** Three unhealthy DP indicators were established: i) dietary non diversity, ii) non consumption of fruit and vegetables and iii) number of main meals per day below three. Two classes were identified: unhealthy DP (class 1) and healthy DP (class 2) for diabetics and non diabetics. The highest proportion of participants was classified into the class of unhealthy DPs both in diabetics and non diabetics.

**Discussion and Conclusions:** The larger size of the class identified as unhealthy DPs suggests that health promotion activities should be tailored to improve DPs of both diabetic and non diabetic populations.

Keywords: Diabetes; Dietary patterns; Latent class analysis

## 14 Effect of a program of stretching on cervical and lumbar disability, in dressmakers

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**Introduction:** Low back pain and neck pain have become the main reasons of disability and absenteeism, with interference in quality of life, thus causing changes in the spine and muscular system. The realization of stretching exercises provides more flexibility, reduce the risk of muscular injury and to articulate by improving the static and dynamic posture.

**Objective:** To investigate the effect of a program of stretching on cervical and lumbar disability, in dressmakers.

**Methodology:** Quasi-experimental study, with 22 dressmakers in a shoe factory, who performed a program of specific stretches for the spine, for 5 weeks, with a duration of 15 minutes, two days a week study. The cervical and lumbar disability was assessed at two time points before (M0) and after program (M1), with the instruments Disability Oswestry Index (ODI), the Neck Disability Index (NDI). The median (P25, P75) was presented and compared the moments through Wilcoxon test. SPSS was used, considering  $\alpha = 0.05$ .

**Results:** In M0, the dressmakers had a lumbar disability to 20.0% (16.0, 28.0) and a cervical disability to 26.0% (12.5, 37.5). In M1, the lumbar disability passed 16.0% (10.0, 18.0) and cervical disability to 19.0% (10.0, 31.0%). There was a statistically significant improvement on the ODI ( $p = 0.001$ ), and NDI ( $p = 0.048$ ) at the end of 5 weeks of intervention.

**Discussion and Conclusion:** The stretching program was effective in decreasing cervical and lumbar disability, promoting significant improvements in both segments evaluated, it becomes essential to health promotion and training in this specific population.

Keywords: cervical disability, low back disability, stretching

## 15 Costs estimation of in-patient admissions associated with Arterial Hypertension in Continental Portuguese population between 2006 and 2012 and associated factors.

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**Introduction:** Hypertension has a high prevalence, which contributes for the leading cause of death in Portugal: brain-cardiovascular diseases. However the costs of in-admissions associated with this disease are not yet estimated or are poorly studied. On the other hand, a high expense associated with the antihypertensive drugs leads to the question of whether these drugs have introduced health gains.

**Material and Methods:** It was developed a quantitative study considering the population of continental Portugal between 2006 and 2012: for costs estimation of hospitalizations episodes associated with hypertension were used the Diagnosis Related Groups (DRG) and for the study and characterization of antihypertensive drugs, it was estimated the Vintage, using Marketing Authorizations dates and consumptions profile of this drugs, according to Lichtenberg1-2. It was applied a multiple regression to estimate the effect of vintage costs by adjusting for the variables gender, education, age, and patients receiving antihypertensive treatment.

**Results:** It was estimated an increasing cost over time associated with Hypertension; the results show regional differences. Adjusting for all other variables, it was estimated that an increase of one year in the logarithm of the vintage associated with a reduction of € 481.594 in the logarithm of the costs associated with hypertension; regions with the highest percentage of male patients have higher estimated costs, and regions with the highest percentage of patients with low education have lower estimated costs.

**Discussion and Conclusions:** The estimated cost associated with hypertension in Portugal has been growing; however there are regional differences; the explanatory factors are, in addition to Vintage, the sociodemographic characteristics and the number of patients receiving antihypertensive treatment. Similar results were obtained for Diabetes in Portugal.<sup>3</sup>

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**Keywords:** Costs, Hypertension; Mean Vintage; Hospital admissions

## 16 Diabetes em movimento® (Diabetes in movement) - A public health instrument for the diabetes type 2 and the associated cardiovascular risk

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**Introduction:** The purpose of this study was to analyze the effects of a community program of physical activity on blood glucose control and a cardiovascular risk in people with type 2 diabetes.

**Material and Methods:** 39 people (19 men and 20 women) with type 2 diabetes participated on a community program of physical activity (Diabetes em Movimento®) during 9 months. The blood glucose control (HbA1c) and cardiovascular risk were evaluated before and after. The data were compared with control group of people with type 2 diabetes with who maintained their usual physical activity during the study.

**Results:** Repeated measures ANOVA identified a significant effect ( $p < 0,001$ ) interaction time group in HbA1c and cardiovascular risk community interventions in the framework of physical activity as a Diabetes em Movimento® are an effective public health strategies in the control of type 2 Diabetes and associated cardiovascular risk.

**Finance and Registration:** Diabetes in Movimento® was funded by the Foundation for Science and Technology, and is registered in the Current Controlled Trials (ISRCTN09240628).

**Keywords:** Physical activity, exercise, type 2 diabetes, cardiovascular risk community intervention

## 17 Mismatch between school furniture and anthropometric characteristics of students in the 1st cycle of basic education: the case of a public school in Porto

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**Introduction:** The main aim of this study was to assess the potential mismatch between school furniture and anthropometric characteristics of students in the 1st cycle of basic education (public school in Porto). The second aim was to compare this mismatch between school years.

**Methods:** A cross-sectional study with a sample of 231 students was performed. After measured the school furniture and the anthropometric characteristics the mismatch was verified. The adequacy parameters were: seat height between 88% and 95% of popliteal height, seat depth between 80% and 95% of buttock-popliteal length, seat width between 110% and 130% of hip breadth, backrest height between 60% and 80% of shoulder height and desktop height between elbow-seat high and elbow-seat high + 5cm. The frequency of mismatch was computed for each parameter and Qui-square test was used to compare the mismatch between school years. All statistical analyses were conducted considering an  $\alpha=0.05$  and performed in SPSS 22.

**Results:** The mismatch of seat height, depth and width was 83.2%, 39.4% and 34.6%, respectively. The mismatch of backrest height was 4.7% and desktop height was 42.5%. There were significant differences between school years ( $p<0,001$ ) in all anthropometric characteristics except desktop height ( $p=0,850$ ).

**Conclusion:** The results showed a considerable mismatch between body dimensions of the students and the existing classroom furniture mainly in lower school years (1st and 2nd year).

**Keywords:** School Furniture, Anthropometry, Ergonomics, Mismatch

## 18 Detection of *F. tularensis* subsp.holarctica in ticks and in lagomorphs

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*Francisella tularensis* is the causative agent of tularemia. One of the modes of transmission of this organism is through the tick bites. Since 2007, it is known that *F. tularensis* subsp. holarctica is circulating in Portugal. The aim of this study was to evaluate the prevalence of infection of *F. tularensis* in ticks and the importance of lagomorphs in the maintenance of this bacterium in nature. For DNA extraction from ticks and animal tissues a columns protocol was used. Real-time PCR assays detecting the tul4 gene and ISFtu2 genes were performed followed by PCR subtyping assays specific for *F. tularensis* subspecies *tularensis* type A and type B. All positive samples were further analyzed by VNTR analysis of the genomic loci, Ft-M19, and sdhA gene sequencing. In this study, 237 ticks were collected in two regions of Portugal. Of these, 15 were infected with *F. tularensis* subsp. holarctica and 4 with Francisella-like endosymbionts. Concerning the lagomorphs, 93 samples were studied, and 6 were found to be infected with *F. tularensis* subsp. holarctica. These results show the first report of *F. tularensis* in lagomorphs collected in Portugal, indicating that these animals play an important role in the maintenance of *F. tularensis* in nature. This study also suggests that, besides *D. reticulatus*, other tick species may be involved in the transmission of these bacteria. This work was supported by FCT project: PTDC/SAU-ESA/104947/2008.

**Keywords:** *Francisella* subsp. holarctica, ticks, lagomorphs, tularemia

## 19 Vaccination Of Patients Undergoing Allogenic Stem Cells Transplant

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**Introduction:** The draft vaccination of patients submitted to Allogeneic stem cell of hematopoiesis arose from the need for vaccination of these patients, since the process of transplantation causes the lost of immunization provided through vaccines administered before and are highly susceptible to infection (Ljungman , et al, 2009;. PNV, 2012). The draft vaccination of patients undergoing allogenic hematopoietic stem cells transplant (HSCT) involves the following activities: inform the patient about the vaccination for patients undergoing HSCT; organize the implementation of vaccination after HSCT; liaise with the Health Center in order to provide continuity of care at the level of vaccination; validate compliance with the vaccination schedule.

**Objective:** Evaluate the effectiveness of the draft vaccination of patients undergoing SCT.

**Methods:** After one year of implementation of the project the effectiveness of the same was assessed by analyzing the rate of patients vaccinated through the National Immunization Program (NIP) with vaccination to prevent infection by Pneumococcus.

**Results:** After one year of one year of project implementation it was achieved a vaccination coverage rate of 81% of patients. Analyzing the performance of the PNV, 74% of patients are following it and this process is influenced by the clinical status of the same.

**Conclusion:** This project innovates in the approaching of the vaccination of these patients in connection with the health center nurses of the residence area, ensuring continuity of care.

**Keywords:** Vaccination, patients, HSCT

## 20 Smoking cessation after hospitalization in acute coronary syndrome patients: EPIHeart cohort

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**Introduction:** Hospitalization after an acute coronary syndrome (ACS) could be a privileged opportunity for smoking cessation due to smoking abstinence during hospitalization and the psychological impact of an acute cardiovascular event. The aim of this study was to quantify the incidence of smoking cessation after an ACS in Portugal.

**Methods:** Data were collected in the framework of an ongoing prospective cohort study of ACS survivors. Patients were recruited consecutively from August 2013, at the cardiology departments of two Portuguese hospitals [Hospital of São João (Porto) and Hospital of São Pedro (Vila Real)]. After a face-to-face interview in the in-hospital phase, follow-up data were obtained through a structured questionnaire applied by phone 6 months later.

**Results:** After a median of 6.9 months (interquartile range: 6.5 - 7.4) of follow-up, 212 patients [65 years (53-75), 74% male, 25% smoking at baseline] were reassessed. Sixty percent of the

patients who smoked at baseline stopped tobacco consumption during follow-up. Patients who stopped smoking were younger than those who kept smoking [53 (50-61) versus 57 (48-64) years]. The incidence of smoking cessation was higher in women (71.4% versus 57.8% in men), in married/civil union (62.5% versus 50.0% in single/separated/divorced/widowed), in patients with higher education (62.5% >9 years versus 50.0% ≤9 years) and in those without depressive disorders (50.0% versus 62.5%).

**Discussion and Conclusions:** More than half of smokers at the baseline were former smokers seven months after the acute event. Future analyses should focus on identifying the independent determinants of smoking cessation, with an adequate sample size for this purpose.

**Keywords:** Prospective cohort; smoking cessation; cumulative incidence; acute coronary syndrome

## 21 Incidence of Major Adverse Cardiac Events (MACE) in acute coronary syndrome patients: EPIHeart cohort

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**Introduction:** The growing population of acute coronary syndrome (ACS) survivors places a huge burden over healthcare services and countries' economical welfare. In Portugal, prospective data on clinical outcomes after an ACS are limited. Therefore, the aim of the present study was to describe the incidence of major adverse cardiovascular events in ACS patients.

**Methods:** The data were obtained in the framework of an ongoing prospective cohort of ACS survivors consecutively recruited since August 2013, at the cardiology departments of Hospital de São João (Porto) and Hospital de São Pedro (Vila Real). After a face-to-face interview in the in-hospital phase, follow-up data were obtained through a structured questionnaire applied by phone. Major adverse cardiac event (MACE) was defined as the cumulative incidence of all-cause mortality, acute myocardial infarction, percutaneous coronary intervention, coronary artery bypass graft surgery and/or stroke. Continuous variables are presented as median (interquartile range), while categorical variables are presented as proportion.

**Results:** After a median of 6.9 months (6.5-7.4) of follow-up, 212 patients [65 years (53-75), 74% males] were re-evaluated. The overall mortality was 4.7% [1.3% among ST segment elevation myocardial infarction (STEMI) and 5.1 among non-ST segment elevation ACS (NSTEMI-ACS) patients] and the incidence of MACE was 12.7% (3.8% among STEMI and 16.1% among NSTEMI-ACS patients).

**Discussion and Conclusions:** We observed a low rate of mortality and MACE occurrence rate in this longitudinal study. In the future, we intend to identify independent determinants of MACE, with an adequate sample size for this purpose.

**Keywords:** Acute coronary syndrome; cumulative incidence; major adverse cardiac events (MACE); prospective cohort

## 22 Monitoring influenza vaccine effectiveness using the screening method

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**Introduction** Due to the annual reformulation of the seasonal flu vaccine composition, vaccine effectiveness (VE) is evaluated for each seasonal vaccine. In this study we evaluate the feasibility of using the screening method for monitoring the influenza VE.

**Material and Methods** The study comprises data from the 2004/05 to 2011/12 season. VE was estimated by comparing the proportion of vaccinated influenza cases to the vaccine coverage (VC) in the source population. Influenza cases were derived from the national surveillance system (1). VC in the general population was obtained using a sample of households (ECOS sample) (2). VE was estimated using the Orenstein formula and the Farrington method to adjust for age group (3).

**Results** The VC in the general population varied between 14,3% (IC95%: 13,0; 15,8) in the 2006/07 season and 19,5% (IC95%: 17,6; 21,6) in the 2009/10 season. For the majority of the seasons the crude VE point estimates were between 40% and 65%. In the 2004/05 and 2011/12 seasons they were below 20% and in one season, 2007/08, VE was very high reaching almost 95%. In all but 2004/05 e 2011/12 seasons, VE were statistically significant. After adjustment for age, VE decreased and were not significant.

**Discussion and Conclusions** The screening method allowed obtaining VE estimates in every season in study. The VE estimates were lower than the ones obtained in other studies but we observed a comparable pattern. This method has limitations, namely, did not allowed adjustment for other confounding variables beyond age. However, considering that the other potential bias remain constant through the seasons, we conclude that can be applied in a monitoring perspective, allowing identifying changes and/or evolutionary trends of the VE.

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**Keywords:** Effectiveness, human influenza, influenza vaccine, screening method

## 23 Occupational exposure to aflatoxin B1 - New (old) occupational risk!

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Aflatoxin B1 (AFB1) is the most prevalent aflatoxin and is associated with carcinogenicity, teratogenicity, genotoxicity and immunotoxicity and only a small number of studies examined exposure in occupational settings. Workers can be exposed to high airborne levels during certain operations in specific occupational settings. A study was developed aiming to know exposure to AFB1 in three occupational settings: poultry, swine production and waste management. A biomarker of internal dose that measures AFB1 in serum was used. For AFB1 quantification, the RIDASCREEN Aflatoxin B1 30/15 enzyme-linked immunosorbent assay (ELISA; R Biopharm) was used, and was calibrated with aflatoxin standards from 1 to 50 ng/ml. 84 workers were enrolled: 34 from poultry farms, 11 from swine production farms and 40 from waste management industry. A control group (n=30) was also included. In the control group, the AFB1 values were all below 1 ng/ml. Eighteen workers (58.6%) from poultry showed detectable levels of AFB1 with values ranging from <1 ng/ml to 4.23 ng/ml and with a median value of 1.36 ng/ml. In swine, six workers (54.5%) had detectable levels with values ranging from <1 ng/ml to 8.94 ng/ml and with a median value of 1.05 ng/ml. In waste management, all the workers had detectable levels of AFB1, ranging from 2.52 ng/ml to 25.99 ng/ml with a median value of 9.75 ng/ml. Data showed that occupational exposure to AFB1 occurs in these settings with the waste management being the most problematic. Safety measures need to be developed to avoid exposure to this carcinogenic agent.

**Keywords:** Aflatoxin B1; occupational exposure; poultry farms; swine farms; waste management

## 24 Health workers prioritize health problems differently from non-health workers during a Local Health Plan development

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**Introduction** It is consensual that society should participate in health problems prioritization (HPP) but that is seldom the case. There is also limited information about the impact of including society in the prioritization process. The objective of this study was to compare HPP by health workers (HW) and non-health workers (NHW), during the Amadora Local Health Plan development.

**Material/Methods:** Eleven Amadora health problems were prioritized [Diabetes mellitus; Cardiovascular disease; Breast, Cervix and Colon Cancer; Violence; Tuberculosis; HIV/AIDS; Women and child's health; Mental health and Access to Health Care (AHC)] by 10 NHW and 9 HW. Problems were prioritized from 1 to 11 (more to less priority), by rounds according to magnitude, theoretical vulnerability and available resources to possible interventions. Priority means were compared, by problem, between HW and NHW, using Student's T-test ( $\alpha=0.05$ ). A sensitivity analysis with a non-parametric test (Kruskal-Wallis) was also undertaken.

**Results:** Statistically significant differences were only identified for tuberculosis (HW  $\bar{x}=4,6$  SD=2,4; NHW  $\bar{x}=7,3$  SD=2,2,  $p<0,01$ ), Violence (HW  $\bar{x}=8,6$  SD=1,9; NHW  $\bar{x}=6,4$  SD=4,1,  $p<0,05$ ) e AHC (HW  $\bar{x}=9,0$  SD= 2,4; NHW  $\bar{x}=6,9$  SD=3,8,  $p<0,05$ ). HW gave higher priority to tuberculosis while NHW gave higher priority to violence and AHC.

**Discussion/Conclusions:** Generally there is agreement in HPP between WH and NWH. Although NHW seem to value problems not directly related with the clinical activity. Including NHW in the HPP process should be considered to ensure a perspective less centered in the disease.

**Keywords:** Local Health Plans, Prioritization, Health problems, Health workers

## 25 Susceptibility of influenza virus to neuraminidase inhibitors antivirals in Portugal, 2009 – 2014

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**Introduction:** Antivirals are one of the measures of prevention / treatment in a pandemic situation, being fundamental the study of the resistance mechanisms to neuraminidase inhibitors antivirals (NAI). It is the most recent retrospective study on the resistance of influenza viruses to antivirals, describing the susceptibility profile of influenza virus NAI, between 2009-2014.

**Materials and Methods:** The biological samples were sent to INSA between 2009 and 2014, the Medical Sentinel Network, Network Services-Emergency / Obstetrics, EuroEva / I-MOVE and Portuguese Laboratories Network for Influenza Diagnosis, collaborate in the National Influenza Surveillance Program. Evaluation of susceptibility to NAI was performed by phenotypic and genotypic assays.

**Results:** 357 strains (206 influenza A, influenza B 151) were evaluated by phenotypic assay (oseltamivir and zanamivir). In 170 viruses were surveyed substitutions associated with resistance to NAI. H275Y substitution was investigated in the 643 (H1) pdm09positive samples. The type A virus showed greater susceptibility to NAI, compared to type B virus. The results showed a variation between seasons, without a clear trend for decreased susceptibility throughout the study. Were identified 3 A viruses (H1) pdm09 resistant to oseltamivir.

**Discussion and Conclusions:** Considering our results, there haven't been gradual changes in NAI susceptibility profile during the study period, 2009-2014. Were identified 3 A (H1)pdm09 viruses resistant to oseltamivir, in patients immunosuppressed and under antiviral therapy. It was not observed the transmission of NAI resistant strains in the community. The results showed that the virus of type A [A (H1) pdm09, A (H3)] exhibit greater sensitivity to NAI compared with virus type B.

**Keywords:** Influenza, Antivirals, Resistance

## 26 Differential diagnosis of respiratory viruses in ILI cases between 2010 and 2014

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**Introduction:** The scarce information regarding the viral aetiology of influenza-like illness (ILI) in Portugal, has motivated the differential diagnosis of respiratory viruses in ILI cases under the National Influenza Surveillance Program. The study aims to characterize the aetiology of the influenza-like illness and study the temporal distribution of respiratory viruses.

**Material and Methods:** Between 2010 and 2014, respiratory samples from ILI cases were analysed for the presence of the following respiratory viruses: influenza, respiratory syncytial virus, rhinovirus, adenovirus, parainfluenza virus, human metapneumovirus and human coronavirus. The diagnosis was performed by multiplex real-time RT-PCR, allowing for the detection of multiple infections.

**Results:** In each winter, the etiological agent was identified in 49-77% of ILI cases. Flu viruses were the most detected agent corresponding to 53,4%, 37,5%, 42,5% e 53,8% of ILI cases in

each winter between 2010 and 2014. Other respiratory viruses were detected in co-circulation with influenza viruses. Rhinovirus, RSV, human metapneumovirus and human coronaviruses were detected in higher percentage. Parainfluenza virus and adenovirus were detected in low numbers and sporadically. Mixed infections were detected in 1-2% of ILI cases. The highest percentage of positive ILI cases was observed in children under 4 years.

**Discussion and Conclusion:** The current study showed that 19-29% of the etiological agents detected in ILI cases correspond to other respiratory viruses which circulate simultaneously with influenza virus. Laboratory diagnosis of respiratory infection and knowledge of its etiologic agent allows for the adequate treatment and implementation of prevention measures for the transmission of infection, with particular importance and impact on groups at increased risk.

**Keywords:** Surveillance, Respiratory viruses, influenza-like illness

## 27 Impacts of cost-free influenza vaccine delivery on the vaccination rate of Portuguese mainland population aged 65 years or more: A study of the ECOS sample

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**Introduction:** During the 2012-2013 influenza season the Portuguese Ministry of Health started the cost-free delivery of influenza vaccines to the Portuguese population aged 65 years or more. The objective of the present study was to estimate the impact of this measure on the influenza vaccination rates in the elderly population during the influenza seasons from 2011-12 to 2013-14.

**Methods:** Three cross-sectional studies were developed for influenza seasons 2011-12, 2012-13 and 2013-14, applying a

computer assisted telephone survey to the ECOS (At home we watch health) panel, in March 2012, October 2013 and December 2013. The ECOS panel is a random sample of households in Portugal mainland, reachable by landline or mobile phone. Sample size varied from 2719 to 3182 during the study period. The telephone interview was applied to one inhabitant in each household who gave information regarding himself the also on other inhabitants of the same household. The impact of the cost-free vaccine delivery was measured by comparing the vaccination rate of the post free vaccination seasons with the vaccination rate in 2011-12.

**Results:** Influenza vaccination rates in the mainland Portuguese population were: 43.4%, 44.9% and 49.9%, in 2011-12, 2012-13 and 2013-14 influenza seasons. These represent a change in the decreasing trend observed since the post pandemic season. During season 2013-14, the absolute increase in the vaccination rate, comparing with season 2011-12, was 6.5% (CI95% -5,0 to 18,0%), which represents a relative increase of 15%.

**Discussion and Conclusion:**, after the Introduction of the free delivery of the influenza vaccine, an increase in the vaccination rate of the elderly population was observed. Although this increase did not reach statistical significance the results reinforce the importance of this monitoring system and suggest that cost-free influenza vaccination results in higher coverage of the elderly population.

**Keywords:** Influenza vaccine, vaccination rate, impacts, free vaccine deliver

## 28 Asymptomatic individuals and dengue transmission – insights from deterministic and temperature-dependent mathematical mod

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**Introduction:** Dengue is one of the most important vector-borne diseases. A geographic expansion has been observed and the first outbreak in Europe's modern history occurred in Madeira,

2012. Majority of dengue infections are asymptomatic but its role in dengue transmission is not well understood. This work aims at understanding the role of asymptomatic in dengue transmission through mathematical modelling.

**Methods:** A compartmental model including humans and *Aedes aegypti* was built. Humans were divided into Sh (susceptible), Eh (exposed), Ih (infectious), Rh (recovered). Ih was further divided into symptomatic and asymptomatic. Vector was divided into Sv, Ev, Iv. Parameters were collected from literature, considering Madeira setting. Temperature-dependent parameters were analyzed considered 23°C (model 1) and temperature registries (model 2). Model 2 also included dynamic Introduction of dengue-infected travelers, based on travelers modeling. Models were run considering different combinations of asymptomatic proportion (AP: 0.50 to 0.95) and asymptomatics recovery time (ART: 0.5 to 6.0 days).

**Results:** Model 1 resulted in single-peaked transmission, progressively smaller and later with the ART decrease and AP increase. Model 2 resulted in multi-peaked transmission, without a clear pattern as in model 1 (particularly in models with ART =3.4-4.5 days). Models with ART <6 days had a varying proportion of asymptomatics during the simulation.

**Conclusions:** Results suggest that asymptomatics are able to transmit the disease and have an important role on dengue transmission. Inclusion of temperature registries emphasizes the importance of environmental conditions. Future research should include more study on asymptomatics and vector survey.

**Keywords:** Asymptomatic, Mathematical modulation

## 29 Effect of backpack weight on lung function in school children

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**Introduction:** The aim of this study was to assess the effect of carrying school backpacks with 10%, 15% and 20% of children body weight on lung function in school children.

**Methods:** The study was performed in 32 school children (4th year of basic education). It was used a MicroGP spirometer to assess forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1), FEV1/FVC ratio and peak expiratory flow (PEF).

Each one of the children was evaluated in four conditions, in rest and carrying a backpack with 10%, 15% and 20% of their own body weight. The sequence of the evaluation was random. The results were presented in median (P25, P75) and the conditions were compared through Friedman and Wilcoxon tests. All statistical analyses were conducted considering an  $\alpha=0.05$  and performed in SPSS 22.

**Results:** The rest results were as follows: FVC 1,78 L/min (1,67; 2,07), FEV1 1,63 L/min (1,51;1,77), FEV1/FVC ratio 97,0% (90,5;100,0) and PEF 196,5 L/min (152,2;218,0). There was a statistically significant decrease in all parameters whenever the backpack weight was increased ( $p<0,001$  in all parameters between rest vs 10%, 10% vs 15%, 15% vs 20%), and the parameters decrease was statistically similar whenever there was an increase in the supported load ( $p>0,05$ ).

**Conclusion:** There is a relationship between the backpack weight and lung function and the higher the proportion of backpack weight higher the restriction in FVC, FEV1, FEV1/FVC ratio and PEF.

**Keywords:** School Backpack; Load Carriage, Lung Function, Expiratory Volumes

### 30 A starting point for a new understanding of infant mortality: A comparative study of numbers and causes of death of Portuguese Infant mortality and its components (2009-2012)

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Infant mortality helps understanding the level of health of a community. It is an important outcome, linking infant birth and death records with pregnancy outcome. The main of this study was to review the infant mortality in 2012; identifying the Whys and How of the situations in which the infants died. Were studied

for the period 2009-2012, the infant mortality, by the different components: neonatal, post-neonatal, under 1 year old and under 5 years of age; adding also, Foetal and perinatal mortality. Firstly basic cause of death data codifications and absolute numbers of infant's deaths were used; and a comparative analysis was performed. A revision of the death certificates allowed obtaining further information. For comparison between three or more years the multivariate version of the Fisher's exact test was used. For the evolution of number of deaths between two years, Fisher's exact test for 2x2 tables was used, testing unilateral hypotheses of relative increase and decrease of the number of deaths. Infant mortality associated with cancer and malformations decreased and infant mortality associated with non-communicable diseases decreased. The review of death certificates revealed an increase of deaths in weight categories: below 500g, between 1500-1999g and 2500g or more. There was resurgence of mortality in mothers aged between 30 and 34 years old, and an increasing trend in mothers with 40 years of age or older. It remains premature to say if there is any reversal of the downward trend in the Portuguese infant mortality.

**Keywords:** Infant mortality, neonatal mortality, causes of death, death certificates

### 31 Pharmacogenetic profile of the Algarve population: results from the pilot study of the European Health Examination Survey

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**Introduction:** Therapeutic failure and adverse drug reactions (ADRs) represent a public health problem which is partially determined by the individual genetic variability. It is therefore essential to assess the pharmacogenetic profile of the population in order to adapt drug therapies to each patient and minimize ADRs. The aim of this study was to determine the pharmacogenetic profile of the Algarve population and to compare it with other populations.

**Methods:** A cross-sectional study was developed in the context of the Portuguese Component of the European Health Examination Survey (EHES). The pharmacogenetic profile was defined for a total of 208 participants regarding 7 drugs (thiopurines, clopidogrel, warfarin, fluoropyrimidines, irinotecan, codeine and tricyclics), using information from 47 genetic variants from genes involved in drug metabolism. Pairwise  $F_{st}$  calculations were performed to assess the genetic distance between populations.

**Results:** We found that 85.6% of the participants have at least one risk allele to develop therapeutic failure or ADRs and 18.9% of the participants are intermediate or poor metabolizers for at least 3 drugs simultaneously. There were 4 variants with a significant differentiation between populations.

**Conclusions:** There is a high frequency of the genetic variants that confer risk to develop ADRs or therapeutic failure in the Algarve Population. Taking into account that the considered drugs are the most frequently prescribed in Portugal, the assessment of the individual pharmacogenetic profile will be important to avoid therapeutic failure and ADRs, with benefits both at the public health and economic levels.

**Keywords:** Adverse drug reactions, Therapeutic failure, Pharmacogenetics, Public Health Genetics, European Health Examination Survey.

## 32 Update of the knowledge on national tick species: geographical distribution, seasonality, vertebrate hosts associations and public health importance

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**Introduction:** Ticks are considered important vectors of infectious agents to man and animals all over the world. The transmission of tick-borne agents by some tick species highlight that systematic and bioecological studies are crucial to the knowledge of epidemiology of tick-borne diseases. The REVIVE program (Network of Vector Surveillance), is considered of major importance in public health in order to produce update information about the interface on vector/infectious agent. This program allows informed decisions on control strategies performed by health authorities. Here is presented the results of REVIVE-TICKS program regarding the geographical distribution, seasonality, vertebrate hosts associations and public health importance of national tick species.

**Material and Methods:** During 2013 ticks were collected from vegetation and vertebrate hosts. In the laboratory specimens were identified by morphological characteristics.

**Results:** In collaboration with ARS Norte, Lisbon e Vale do Tejo, Alentejo and Algarve, 1103 captures of ticks were done and 8015 tick specimens were identified as *Dermacentor marginatus* (130; 1.6%), *D. reticulatus* (443; 5.5%), *Haemaphysalis punctata* (7; <1%), *Hyalomma lusitanicum* (222; 2.8%), *H. marginatum* (360; 4.5%), *Ixodes canisuga* (1; <1%), *I. hexagonus* (95; 1.2%), *I. ricinus* (105; 1.3%), *I. ventraloi* (6; <1%) *R. bursa* (1063; 13.3%), *R. pusillus* (46; <1%) and *R. sanguineus* (5537; 59.1%). Surveillance of *Borrelia* and *Rickettsia* pathogens were performed in 609 tick pools. In positive pools (70; 11.5%), were identified 10 tick-borne bacteria, *Borrelia afzelii*, *B. garinii*, *B. lusitaniae*, *Rickettsia aeschlimannii*, *R. conorii*, *R. helvetica*, *R. massiliae*, *R. monacensis*, *R. raoulti*, *R. slovacica*.

**Discussion and Conclusions:** The execution of REVIVE Network reinforces the importance of this as vectors of etiological agents to man. Faster detection of tick-borne agents on ticks removed from humans and animals allowed regional health authorities to timely decide strategies regarding prevention, control and mitigation that contribute to improve Public Health in Portugal.

**Keywords:** Ticks, epidemiological surveillance, public health

### 33 Surveillance of flaviviruses in mosquitoes

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Arboviruses (Arthropod-borne viruses) are a group of viruses transmitted by arthropods in which are included viruses transmitted by mosquitoes. Flaviviridae viruses (genus *Flavivirus*) are emerging in Europe and viruses West Nile, transmitted by *Culex* mosquitoes, and Dengue, transmitted by mosquitoes *Aedes aegypti* and *Ae. Albopictus* stand out as important pathogens. Under a vector surveillance program (REVIVE), mosquitoes collected nationwide are identified and screened for the presence of viral activity. According to the public health importance, mosquitoes are processed for flaviviruses research (West Nile, Dengue, Yellow Fever, Zika, Japanese Encephalitis and other), by the extraction of total RNA from mosquito pools and subsequent detection of viral RNA by RT-PCR (Reverse Transcriptase Polymerase Chain Reaction) using specific primers for the genus. For the molecular identification of the detected flaviviruses, the PCR amplification products are sequenced and similarity searches are performed within GenBank database. In the REVIVE program, so far, pathogenic flaviviruses for humans were not detected, however, three different types of Insect Specific Flavivirus (ISFs) associated to different mosquito species have been identified in particular in *A. aegypti* in Madeira (2010 and 2013), in *Culex theileri* in Lisbon region (2008), in Alentejo (2009 and 2010) and Madeira (2010) and in *Ochlerotatus caspius* in Algarve (2008). The importance and maintenance of these viruses in nature has not yet been elucidated, however, it has been suggested that, in case of co-infection, mosquitoes simultaneously infected by a pathogenic flavivirus and an ISF, the ISF may prevent the transmission of pathogenic virus.

Keywords: Viruses transmitted by mosquitoes, flaviviruses, epidemiological surveillance

### 34 The role of health literacy to prevent/control the global burden of non-communicable diseases: results of the validation in the Portuguese context of the European Health Literacy Survey (HLS-EU-PT)

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**Introduction:** People with lower health literacy (HL) are less able to care of themselves and use more healthcare services. Health economists estimate that low HL alone costs the American healthcare system US\$73 billion/year. This research presents the first results of the European Health Literacy Survey in the Portuguese context.

**Methods:** A quantitative and qualitative explanatory cross-correlated study with a sample of 983 individuals from Portugal (mainland) was collected.

**Results** indicate internal consistence reliability of the HLS-EU-PT (Cronbach's alpha coefficient is 0.93 (Health Care), 0.932 (Disease Prevention) and 0.934 (Health Promotion) and 0.97 to the global scale. Principal components analysis with a Varimax rotation sequence produced a solution of factors, suggesting that the HLS-EU-PT is a dimensional instrument that follows the original pattern. Inadequate HL (23.7%) and problematic HL (36.3%) show that about 60% of respondents have limited HL. When performing bivariate examination of HL with health behaviors, like physical activity ( $r = -.23$ ), there is an association between HL and healthy life styles.

**Conclusions:** reliability, validity, internal validity, statistical validity longitudinal and linguistic validity, as land marks of the translation and validation process to Portuguese of the HLS-EU survey points to valid use of the HLS-EU-PT scale. The validated HLS-EU-PT Portuguese version of the HLS-EU survey can be accessed at [www.literacia-saude.info](http://www.literacia-saude.info). Association between socioeconomic/demographic determinants and the level of HL enhance the need to deepen a HL research agenda in PT. HLS-EU-PT can be used while planning public health policy strategies from the HL standpoint while considering social inequalities.

Keywords: Non-communicable Diseases; Health Literacy; European Health Literacy Survey in Portugal; HLS-EU-PT

## 35 Implementation of good practice procedures in the removal of ticks in human beings in the functional health units of the Group of Health Centers ACES Arrábida

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**Introduction:** Ticks are important vectors in the transmission of infectious agents to human, although the diseases that are associated with them still present an underreporting status, namely in the area of intervention of the Group of health Centers (ACES Arrábida). Under the frame of the vector vigilance national network, a procedure of good practices in functional health units has been implemented. In this paper the adopted strategies and the obtained results are presented.

**Material and Methods:** In the first semester of 2014, a multidisciplinary team of professionals from ACES Arrábida and Instituto Nacional de Saúde Dr. Ricardo Jorge, has prepared training sections, circuits, sample collection/delivery kit and an informative brochure.

**Results:** Eight training section were provided in ACES Arrábida, which were attended by 128 physicians and nurses (52%) from 18 functional health units, two sanitarian engineers and two veterinarian physicians from the municipalities of Palmela and Setúbal. Two additional training sessions were provided by request in the Hospital São Bernardo and in the City Hall of Palmela. On the first Semester of 2014, 11 tick collections were performed, six being done in the last 2 month, in the sequence of the training sessions. No pathogenic agents were found. However, an exotic species was identified - *Amblyomma* spp. in a patient that came from the EUA.

**Discussion and Conclusions:** The epidemiological surveillance of vectors in the area that concern the ACES results from the articulation between Public Health Unit, the other functional health units and the community's structures. The implementation of good practice procedures in the removal of ticks in human is one more step towards a healthy community.

Keywords: Tick, Removal, Public health

## 36 Avoidable mortality in the Northern Region of Portugal from 1989 to 2010

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**Introduction:** Avoidable mortality (AM) has been used to study health services performance and impact on population health. Since 2008 AM monitoring has been used in Portugal's Northern Region (PNR) for regional and local health planning, influencing PHC commissioning and public health policies at these levels. Our study addresses the main results of AM monitoring in PNR in the period 1989-2010.

**Methods:** Selection of avoidable death causes was based on Levêque's list. National Statistics (NSI) estimate tables, disaggregated by cause of death, residence, sex and age group were used. Data regarded Portugal, Northern Region and its NUTS III. Analysis was based on 5-year periods. Mortality rates indirect standardization was used for comparison purposes (95% CI), using Portugal as reference. A significance index using traffic lights' colors was built to produce easy interpretable maps.

**Results:** The number of premature deaths declined 27.5% and AM decreased 47.1%. A reduction in AM from cerebrovascular diseases (-56.9%), ischemic heart disease (-63%) and infant mortality (-81.6%) was observed. There was a 40.1% increase in AM from trachea, bronchus and lung tumors (83.6% in males) matched by a 113.1 SMR (95% CI =107.5-118.8). Liver cirrhosis AM decreased 11.1%, but the last 5 year period showed a 126.0 SMR (95% CI = 121.6-130.6). Significant differences in AM were found by gender and PNR sub-regions.

**Conclusions:** This study has shown the positive impact of health care services in PNR population health. It has also shown the need to reinforce some health programs, particularly smoking prevention and cessation, alcohol abuse prevention and treatment, and to address gender and geographical health inequalities.

Keywords: Avoidable mortality, Health gains, Inequalities

### 37 Prevalence of hypertension in the Portuguese center health region: data quality evaluation in the health information system “Sistema de Apoio ao Médico”

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Hypertension contributes to the burden of premature deaths due to cardiovascular disease. This study aimed to determine the prevalence of hypertension and to assess data quality of hypertension diagnosis, among patients  $\geq 20$  years registered in health centers of the Portuguese center health region, using the health information system (HIS) “Sistema de Apoio ao Médico”, in December 2013/January 2014. Data quality was assessed using HIS quantitative attributes for surveillance systems defined by the Centers for Disease Control and Prevention and checking compliance of International Classification of Primary Care (ICPC-2) diagnostic code with clinical criteria defined in national guidance issued by the Directorate General of Health. The prevalence of hypertension was calculated as the proportion of registered patients with ICPC-2 code for hypertension. The proportion of patients with unknown disease status due to out of date or missing data was computed. The prevalence of hypertension ranged from 20 to 30% and the proportion of patients with unknown disease status ranged from 44 to 53% ( $n=1.087.629$ ). Representativeness of registered patients with medical appointments was  $\geq 89\%$  for all included health centers. HIS completeness for blood pressure/antihypertensive drugs records ranged from 36% to 63% ( $n=1.001.847$ ). Sensitivity for ICPC-2 coding among patients with clinical criteria for hypertension varied between 56 and 80% ( $n=480.422$ ). Health centers with higher HIS completeness and sensitivity showed higher prevalence of hypertension, pointing out differences in prevalence according to differences in data quality. Further studies to identify other factors influencing disease registry are recommended.

**Keywords:** Prevalence; hypertension; data quality

### 38 Impact of a dengue outbreak: forward and backward steps for community engagement

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*Aedes aegypti* was first reported in the Madeira Island in 2005 [1][2][3]. Despite local vector-control initiatives, in 2012 the first dengue epidemic in Madeira was declared. [4][5]. The community engagement in dengue-preventive behaviours activities is the one of the priorities for dengue response according to World Health Organization [6]. In 2011 community perceptions regarding domestic source reduction were assessed in Madeira Island [7]. In 2013, after Madeira' first dengue outbreak a unique opportunity to compare perceptions before and after the outbreak-experience occurred. This was the aim of this study, which constitute the first report on the effect of an outbreak experience on community perceptions regarding a specific vector-borne disease. A cross-sectional survey was performed within female residents at the most *aegypti*-infested areas. A matching process paired individuals from studies performed before and after the outbreak, ensuring homogeneity between them. Perceptions regarding domestic source reduction were assessed according to the Essential Perception (EP)-analysis tool. After the outbreak there were more female residents who assimilated the concepts considered to be essential to understand the proposed behaviour. Nevertheless, no significant difference was observed in the percentage of female residents who achieved the defined 'minimal understanding'. Moreover, most of the population (95.5%) still believed at least in one of the identified myths. After the outbreak some myths disappeared and others had appeared. Monitoring public perceptions is therefore crucial to make preventing dengue campaigns updated and worthy. The present study quantified

and explored how the experience of an outbreak influenced the perception regarding a dengue-preventive behaviour. Funding: PTDC/SAU-EPI/115853/2009 and SFRH/BD/51012/2010

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**Keywords:** *Aedes aegypti*, Dengue fever, outbreak, public perceptions, community engagement

### 39 The perception of citizenship in health by users of the National Health Service

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**Introduction:** Health Citizenship is a process of individuals / community for obtaining / maintaining health, in ensuring the rights and duties of citizens in a relationship and shared responsibility between the state and the population 1,2,3. This study aimed to analyze the factors that interfere with the perception of citizens

about the frequency of use of their rights and duties in Health.

**Methods:** Developed a descriptive-correlational quantitative study with sample of 550 participants (50 participants for each county of the Lower Vouga Region (NUTS III) - accidental sampling). Questionnaire with built scale and validated in this study.

**Results:** Citizens older and with less qualifications have a higher use of health services (SS). Women use less the right / duty of health co-production and agent of change. Having more qualifications is associated with increased use of duty to cooperate with the SS and comply with rules and less use of the right / duty to co-production in health and SS agent of change. Citizens that more frequent SS have a higher perception of use of their right to information; lower perception of use of their right / duty to co-production in health and SS agent of change.

**Discussion and Conclusions:** We are located between the level 3 and 4 of Engagement Continuum Model (Citizenship). It is suggested greater involvement of the citizen: in your health potential; in clinical decision in disease management and governance of the SS; more adequate demand on the health system; and enhanced healthy contexts, to promote healthy choices and support in the disease.

**Keywords:** Citizens, health care, rights and duties

### 40 What adds eco-epidemiological research to the attention of Q fever \*

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**Introduction:** Q fever was first described in Portugal in 40's. This zoonosis is caused by *C. burnetii*, an ubiquitous bacteria accepted to be endemic in the country although not well studied. The latest outbreak that occurred in the Netherlands (2007-2009) has called attention to the problem and placed Q fever in research agenda. The results obtained in three years of eco-epidemiological investigation is presented.

**Material and Methods:** From 2001 to 2013, biological and environmental samples from different geographic regions of the country were analyzed by PCR. The study included samples from humans, domestic and wild ruminants, dogs, cats, rodents, wild carnivores and birds, milk and freshwater. In all positive samples the isolation of the agent were attempted by shell-vial. Isolates or DNA obtained from original samples, if presenting an adequate concentration, were genotyped by MLVA testing.

**Results:** PCR were performed in 2681 samples and agent's isolation were attempted in 400. *C. burnetii* were mainly found in fetal bovine, ovine and caprine samples as well as in human biological samples. Other positive samples include commercial cow milk, ticks, rodent and wild carnivores spleen/liver, and bird cloacae swabs. Over 20 isolates were obtained from humans and ruminants.

**Discussion and Conclusions:** The study identified a genetic diversity in Portuguese variants that is expected in a non-outbreak situation. The results show the involvement of different genotypes in Q fever clinical course which has been described before in other Mediterranean countries. Although several animal species may be involved in *C. burnetii* cycle, this study reinforces the role of small ruminants in agent's transmission to humans. \*  
Founded by FCT (project PTDC/SAU-SAP/115266/2009)

Keywords: Q fever; *C. burnetii*; Eco-epidemiology

## 41 Monitoring population health status: construction of a hospital-based data tool.

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**Introduction:** In Portugal, the main source of data from hospital morbidity comes from Diagnosis Related Groups (DRG) database, which is a record of hospitalization episodes. The aim of this work was to build a tool for monitoring population health status, using database of DRG as source of data.

**Methods:** We explored the database of DRG to list the variables available. Simultaneously, a search was carried out in national and international information systems to develop a list of indicators used to characterize hospital morbidity and mortality.

**Results:** The selected indicators were divided into four major groups: general (hospitalization rate and age-standardized hospitalization rate, in-hospital mortality rate, percentage of day cases, hospital standardized mortality ratio), quality and health outcomes (re-admissions, incidence of major lower limb amputations in diabetics, incidence of End-Stage Kidney Disease), health determinants (hospital stays for alcohol related harm indicator, low birth weight of term newborns, caesarean section rate, multiparity) and procedures (transplants and surgeries - hip replacement, cataracts and percutaneous transluminal coronary angioplasty).

**Discussion and Conclusions:** The tool contains a set of indicators selected for their importance as instruments for measuring population health status. Most of the indicators assess aspects of health care providing (access and quality), and are used because they are an important determinant in the population health status.

Keywords: Morbidity, mortality, hospital monitoring

## 42 Validation of a health literacy measure and prevalence of adequate health literacy in the Portuguese population

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**Introduction:** Individual health literacy (HL) is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Inadequate HL is associated with poorer self-management skills, less successful navigation of the healthcare system, higher morbidity and mortality. There are no published studies on the national prevalence of adequate HL.

**Material and methods** We validated the Newest Vital Sign in a sample of 249 participants. Construct validity was assessed through association with educational attainment and health-related occupation. We applied it in a national survey of 1544

Portuguese-speaking mainland residents aged between 16 and 79. The participants underwent face-to-face interviews using a structured questionnaire. A weighted prevalence was calculated. RESULTS The one-dimensional instrument showed high internal consistency (Cronbach's alpha=.854). Physicians scored higher than any other group, followed by non-health researchers, health researchers and by the general population ( $p$  for trend<.001). The weighted prevalence of adequate HL in the Portuguese population was 27.1% (95%CI:20.9%-33.3%). We found no differences between men and women, but people with adequate health literacy were significantly younger ( $p$ =.049) and more educated ( $p$ <.001).

**Discussion and conclusion** We adapted a brief and simple instrument and estimated a prevalence of adequate HL in a representative sample of the Portuguese population of 1 in 4.

**Acknowledgments** FCT (HMSP-IISE/SAU-ICT/0004/2009). The English version of the NVS was developed by Pfizer Inc.. Pfizer Inc. granted authorization for the translation and assessment of the psychometric properties of NVS for the Portuguese language in the adult population.

**Keywords:** Validation studies, Newest Vital Sign, health literacy, prevalence, Portugal

## B Abstracts IV CNSP Poster Communications

### 1 Climatic Changes and Insect-borne Diseases Associated with Freshwater: Perspectives for Portugal.

Authors: Prof. António José dos Santos Grácio<sup>1</sup>  
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**Introduction** The impact of climatic changes on the geographical distribution of vector-borne diseases is the result of their effect on habitats used by vectors. We present a summary of the actual situation concerning diseases transmitted by mosquitoes and blackflies in Portugal, and the future perspective based on climatic changes.

**Material and Methods** The work was based largely on our publications. Results *Aedes aegypti*, one of the principal vectors of viruses causing Yellow Fever, Dengue and Chikungunya, was recorded in 2005 for the first time in Madeira (1). In October 2012 the first Dengue outbreak occurred in that island. *Culex pipiens* and *Cx. univittatus* collected in 2004 in Ria Formosa were found infected with the virus that causes West Nile Fever, when had occurred two positive human cases for this virus in this zone, situated in Algarve (2). In 1992 a case of human *Onchocerca lupi* was published (3). *Onchocerca lupi* previously recorded in animals in the Algarve can thus also infect humans. The vectors are unknown, but blackflies are suspected (4).

**Discussion and Conclusions** Evaluation of the transmission scenarios of malaria in Portugal indicates that *An. plumbeus*, should be taken into consideration, since it is already responsible for malaria cases transmitted in Europe (5). Surveillance should be maintained on the eventual introduction of *Aedes albopictus*, specie already present in Spain, and responsible for Chikungunya Fever in Italy and France. *A. aegypti* control

should be carried out in Madeira to avoid its expansion and new Dengue outbreaks. Studies on *O. lupi* and vectors should be encouraged.

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**Keywords:** Climatic Changes; Arboviruses; Filariasis; Mosquitoes; Blackflies

## 2 Preventing the use of tobacco in Brazil

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**Introduction:** There are currently about 5 million smokers in the world, and only 16% of the world population is protected by tobacco control legislation. About 600,000 people die each year by involuntary exposure to tobacco smoke (WHO, 2014). The aim of this communication is to develop a systematic review on the prevention of tobacco use.

**Methods:** A systematic review in Scielo, Lilacs, BIREME, the Virtual Health Library and Google Scholar publications on smoking prevention (inclusion criteria: articles in English published between 2009 and 2013 (descriptors smoking, smoking epidemiology, tobacco control and smoking prevention and primary prevention)).

**Results:** 38 items with different approaches were identified: 21 (55.3%) address the smoking cessation process, and of these 8 focus experiences of smoking cessation in the hospital setting, 5 in the context of primary health care, 4 in the context of secondary care, 3 in the context of work and 1 in long term institutions; 11 articles (28.9%) presented studies on the prevalence of tobacco use and risk behavior in school and university contexts; 3 (7.9%) tell about the epidemiology of smoking and only 3 (7.9%) deal with the prevention of tobacco use.

**Discussion and Conclusions:** Most items researched look at tobacco dependence issues and / or the evaluation of the impact of smoking cessation programs. This reveals little scientific production concerning education and health communication focusing prevention of tobacco use, quality of life and healthy lifestyles.

**Keywords:** Tobacco, Tobacco Prevention, Health Promotion.

## 3 The planning applicability of the Unified Health System – PlanejaSUS (PlanSUS) in thirteen municipal health secretariats in Northern Goiás, Brazil

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**Introduction:** The aim of the research was to analyse the management planning process developed by the municipal secretariats of 13 (thirteen) municipalities in Northern Goiás, in Brazil. Method: A qualitative study. The triangulation method for the analysis of data was used, based on bibliographic researches, articles and Ministerial Rulings, Municipal Health Plans dating from 2010 to 2013 as well as the Annual Management Reports from 2010. Questionnaires were used with the municipal managers and data analysis was surveyed.

**Results:** It was observed that documentation regarding PlanejaSUS and answers by the health secretaries were not in compliance.

**Discussion:** The Health Plans and the municipal Annual Management Reports analysed, were not prepared in accordance with the minimum normative requirements established by the Ministry of Health.

**Conclusion:** It was concluded that this procedure might interfere in the proper formulation and execution of health public policies, as to organizational and assistential actions, as these must be directed to the real needs of user and to be more than just a formal administrative management document.

**Keywords:** Planning, SUS Planning, Health, Municipality

#### 4 Reasons for Nonadherence to dentist check by the beneficiaries of school age in two municipalities of the Baixo Vouga

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**Introduction:** Dental caries is an important health problem, affecting the population in Portugal and worldwide. The Portuguese Programme for Oral Health Promotion (PNPSO) includes a voucher for dental care as a strategy for secondary prevention of dental caries in vulnerable groups. However, not all the beneficiaries use the vouchers after receiving them. The objective of this study is to identify factors that influence non-compliance by school-aged beneficiaries, in two Portuguese municipalities served by "Aces Baixo Vouga" primary health care centre.

**Methods** We identified children born in 1999, 2002 and 2005, who attended public or not-for-profit schools in Estarreja and Murtosa (Portugal) in 2012/2013, who did not use the first voucher received, using SISO – Information System for Oral Health. We then interviewed their parents or legal tutors, using a questionnaire with closed questions about reasons for non-compliance.

**Results** Compliance ratio in the studied municipalities was 81,5% for children aged 7, 76,0% for children aged 10, and 69,8% for children aged 13. Preliminary results indicate that the major factors for non-compliance are: no information about how the voucher system works, the dentist who the child visits regularly does not accept PNPSO vouchers, and no regular previous dental care.

**Conclusion** Identifying the reasons for non-compliance with the PNPSO vouchers in school-aged children may facilitate the design of targeted strategies for increasing compliance in such individuals.

**Keywords:** Oral health, Dental, School population, Dental caries

#### 5 Pulmonary tuberculosis: resistance pattern to 1st line anti-tuberculosis drugs in the coimbra district, 2000-2011.

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**Introduction:** The rise of drug resistant strains puts a serious threat to tuberculosis (TB) control. The growing concern about resistance patterns in the community has led to the development of this epidemiological study, in order to assess in Portugal, in the Coimbra District, the Pulmonary TB cases notified between 2000 and 2011, and understand its resistance patterns to first line anti-tuberculosis drugs.

**Methods:** There were 556 cases of Pulmonary TB retrospectively enrolled from two TB diagnostic centres. The clinical records, results of antimicrobial susceptibility testing of the included patients were reviewed. Various parameters of the patients were analyzed such as previous treatment history, demographic and socioeconomic data. Categorical data were compared by the chi-square test or the fisher exact test. In order to determine independent risk factors for multidrug-resistant (MDR) pulmonary TB, odds ratio and 95% confidence intervals were calculated by using logistic regression analysis for epidemiologic variables.

**Results:** A total of 339 cases of Pulmonary TB were identified in which first-line antimicrobial susceptibility tests were performed, corresponding to 68,3% (adjusted) of the cases enrolled. Among those with a history of previous treatment, 29% (9/31) were resistant to isoniazid, and among the new cases, 11,4% (35/308) were resistant to streptomycin. The annual proportion of Pulmonary TB cases susceptible to all five first-line anti-tuberculosis drugs declined, from 88,2% (23/26) by 2009, to 70% (14/20) by 2011. Overall, MDR pulmonary TB was observed in 1,8% (6/339) of the isolates. There was significantly higher association of MDR-TB cases among those with previous treatment history (OR: 22,7 [IC 95%, 3,9-129,4]; p-value, 0,001).

**Conclusion:** The present study demonstrated in the Coimbra District epidemiologic data close to those of low incidence regions: rising proportion of cases with resistance to at least one drug. The main factor suggestive of MDR-TB is the history of previous treatment. In 2011 there has been a slight increase of Pulmonary TB incidence (6,7/100 thousand). It is safe to state that the disease due to its social and economic characteristics

emphasizes the importance of continuing its systematic surveillance.

**Keywords:** Pulmonary Tuberculosis, Resistance Pattern; First Line Anti-Tuberculosis Drugs; Coimbra's District

## 6 Accession to the flu vaccine in health professionals ARSC, IP

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**Introduction** The World Health Organization (WHO) states that the flu virus infects between 10 and 20 per cent of the world population annually. In Portugal, the additional annual mortality due to this virus is approximately 1200 to 1800 deaths, and this problem remains a serious public health issue.

Vaccination is one of the most effective methods to prevent infection and the most efficient procedure for specific prevention of infectious diseases, in particular among health professionals. At the ARSC, IP (Administração Regional de Saúde do Centro, Instituto Público, which is the regional health administration authority for the centre of Portugal), the vaccination coverage rates for preventing seasonal flu among health professionals have been declining and this situation must be reversed.

**Material and Methods:** In an attempt to help solve this problem a descriptive study that is correlational, cross-cutting and exploratory was developed. The purpose was to evaluate the take-up of vaccination against seasonal flu in 2012 and 2013, to characterize vaccination status by professional group and to identify the main factors of (non) take-up of vaccination against seasonal flu among the health professionals of the SSO (Coimbra branch of the Serviço de Saúde Ocupacional, the Portuguese Occupational Health Service), which belongs to the ARSC, IP. The sample consisted of 325 health professionals (223 nurses and 102 doctors). After obtaining the necessary authorizations and informed consent, a self-completion questionnaire was used, which was divided into three sections: the first is the demographic and professional sample characterization; the second gathers information related to the state of health, using the Locus scale for health control (Pais Ribeiro) and the MAT scale (A. B. Delgado and M. L. Lima), and the third relates to information about the seasonal flu vaccination.

**Results:** The reasons most often mentioned for getting the flu vaccination were 'because the vaccination protects them' (98.8 per cent); 'because the vaccination protects the patients' (82.9 per cent); 'because it is recommended by the DGS (General-Directorate of Health)' (77.4 per cent); and 'because it is recommended by national and international bodies' (67.8 per cent). The reasons given for not getting it were 'having a low risk of getting flu', 'having doubts about the effectiveness of the vaccine', 'being afraid of its side effects' and 'not agreeing that the patients are at risk'.

**Discussion and Conclusions:** The evaluation of the differential in the take-up of the seasonal flu vaccination, taking into account the perception of the risk of catching flu, has shown that those who most take up vaccination have a higher average value ( $X=3.27+1.15$ ) than those that do not ( $X=2.94+1.10$ ), which may indicate that those who perceive the risk as being higher have a higher take-up of the vaccination ( $t=2.679$ ,  $p=0.008$ ). Conducting awareness-raising campaigns which include information, education and free, easy access to vaccination may contribute to developing positive attitudes towards taking up the vaccination, and it is in this area that the occupational health services may have a key role to play.

**Keywords:** Vaccination, seasonal flu, health professionals, Accession

## 7 Lifestyles and chronic diseases in Brazilian immigrants living in Lisbon

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Nowadays, international migration and the health of immigrants is an important issue for individuals and for the countries involved. Brazilians are the largest immigrant community living in Portugal and it is important to know the effects that migration and "being an immigrant" may have on lifestyles and health in this population. This communication is based on a PhD research in the area of health psychology and used a sample of 120 Brazilian immigrants (67 women and 53 men), aged between 19 and 64 who lived in the region of Lisbon for at least one year, who agreed to participate after being informed. This research is exploratory, regarding the determinants of health, and used quantitative and qualitative methods for analysis of interview surveys conducted during the period July/2009 to June/2011. The results indicated that 11.7%

felt their health was very good and 62.5% good. Four men and nine women reported a chronic disease and 15.8% did not know if they had any chronic disease. However changes in lifestyles had occurred, an increase in the consumption of alcoholic beverages (beer and wine) and decreased physical activity, contributing factors to the development of chronic diseases. We conclude that migration and change in contexts of social and cultural inclusion influenced the habits and lifestyles of these Brazilian immigrants in Portugal. The adaptation and integration of immigrants is a slow and complex process that requires an eclectic, systematic and multidimensional approach.

**Keywords:** Brazilian immigrants; lifestyles; chronic diseases; migration; health

## 8 *Tinea capitis* - retrospective analysis of cases diagnosed between 2004 and 2013

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**Introduction** *tinea capitis* is an infection of the hair and scalp caused by dermatophytes of the genera *Trichophyton* and *Microsporum*. Transmission may occur by person to person contact, or indirectly by contact with infected animals. The prevalence varies by country and region, being more prevalent in developing countries (2, 4); children of are usually the most affected group (4, 5, 6). Objective This study aims to describe the epidemiology of *tinea capitis* in the region of Lisbon and Tagus Valley, from January 2004 to December 2013.

**Material and Methods** A retrospective analysis of laboratory results was conducted, of the period 1st January 2004 to 31st December 2013, from patients of the area of Lisbon and Tagus Valley, suspected of suffering of *tinea capitis*. Mycological analysis of hair and scaly scalp were performed and demographic data of the patients were analyzed.

**Results** Of 224 cases of *tinea capitis*, 129 (57.6%) were males and 95 (42.1%) were females. Dermatophytes most commonly isolated were *Microsporum audouinii* (120 cases, 53.6%), and *Trichophyton soudanense* (43 cases, 19.2%), with children in

groups 1-4 years and 5-9 years being the most affected groups.

**Discussion** The Lisbon area exhibits a different epidemiological profile than that described in similar studies for the northern regions of Portugal as the highest prevalence of species found were anthropophilic species and imported species.

**Keywords:** *Tinea capitis*, fungal infection, *Microsporum*, *Trichophyton*, surveillance.

## 9 Outbreak of viral meningitis in a preschool center

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**Introduction:** Viral meningitis is a meningeal inflammation resulting from a viral infection of the central nervous system. It can occur in the form of outbreaks or isolated cases. Over 85% of cases are attributed to enteroviruses. On December 8, 2013, a first case of viral meningitis in a five year old child was notified to the Local Authority via Health Alert and Appropriate Response System (SARA). The child attended a preschool center in the geographic area of ACeS Porto Ocidental.

**Materials and Methods:** Epidemiological surveillance and risk management by the application of control measures were implemented in this outbreak. All cases of meningitis (suspected, probable or confirmed) must be notified to the Local Health Authority through SARA and investigated to identify close contacts which should remain under clinical monitoring. Measures of individual and general hygiene should be strengthened. After identification of the etiologic agent additional control measures may be implemented, depending on the agent.

**Results:** The first case was reported on December 8. On December 10, 2 more cases were reported. Information of individual and general hygiene measures and monitoring of close contacts were provided to the school and parents. On December 12, 2 more suspected cases arose. By December 16 there were a total of 6 cases. In 2 cases, stool sampling was collected.

*Echovirus 6* was isolated in these samples. No more cases were reported.

**Discussion and Conclusions:** Timely investigation of reported cases, and the implementation of appropriate control measures, prevented a larger outbreak in the pre-school center in concern.

**Keywords:** Viral Meningitis, Preschool, Epidemiological Surveillance

## 10 *Salmonella enterica* in Portugal 2002-2013: serotypes associated with human disease

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**Introduction** *Salmonella enterica* is one of the most common causes of acute gastroenteritis all over the world, with high morbidity and mortality. The transmission route is mainly food borne, but can also occur through contact with live animals and human to human (*S. Typhi*) (1). Our goal was to evaluate the main *Salmonella enterica* serotypes responsible for human gastroenteritis in Portugal, between 2002 and 2013.

**Material and Methods** The serotypes of 5546 strains that caused gastroenteritis episodes were determined by the Kauffmann-White-de Minor scheme (2, 3). Results The most frequently identified serotypes were *S. Enteritidis* (N=3672; 66,2%), *S. Typhimurium* (N=1141; 20,6%) and *S. 4,5:i:-* (N=304; 5,5%). In addition, we identified 114 less common serotypes (N=429; 7,7%), equally responsible for gastroenteritis. Some of those serotypes were described for the first time in Portugal, associated with human disease (*S. Brikama*, *S. Bardo* e *S. Elomrane*, among others).

**Discussion and Conclusion** In the last 11 years, we identified 117 *Salmonella enterica* serotypes associated with gastroenteritis episodes in Portugal. The establishment of surveillance systems is highly important as it allows serotype monitoring in each country and the detection of outbreaks. Thus correlations between human and food born isolates are likely to be made and preventive measures that will hopefully lead to the decrease in salmonellosis cases can be taken. Bibliography (1) Majowicz SE, Musto J, Scallan E, Angulo FJ, Kirk M, O'Brien SJ, Jones TF, Fazil A, Hoekstra RM. The Global Burden of Nontyphoidal *Salmonella*

Gastroenteritis. *Clinical Infectious Diseases* 2010; 50:882–889. (2) Herikstad H, Motarjemi Y, Tauxe RV. *Salmonella* surveillance: a global survey of public health serotyping. *Epidemiology & Infection* 2002; 129: 1-8. (3) Grimont PAD, Weill FX. Antigenic formulae of the *Salmonella* serovars. WHO Collaborating Centre for Reference and Research on *Salmonella* 2007; 9ª edição. (4) Silveira L, Marques A e Machado J. 2013. Infecções por *Salmonella enterica* no período entre 2000-2012. *Boletim epidemiológico Observações Volume 2 - Número Especial 1*. (5) Silveira L, Marques A, Santos J, Furtado C e Machado J. 2014. *Salmonella enterica* - Serotipos menos frequentes com importância em patologia humana, caracterizados no INSA entre 2002-2013. *Boletim epidemiológico Observações Número Especial 3 - 2ª série*.

**Keywords:** *Salmonella*, serotypes, Public Health, outbreak, surveillance

## 11 Falls differences depending on age and sex

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**Introduction** The issue related to “safety in the home, schools and leisure facilities” imposed the development of the EVITA system - Epidemiology and Surveillance of Injuries and Accidents in 2000 (National Institute of Health Dr. Ricardo Jorge), contributing to an assessment of the consequences of accidents and promote safety.

**Material and Methods** The EVITA collects and analyzes data on Home and Leisure Accident with recourse to the emergency of selected health units, whose cause is not disease, car accident, work accident or violence. For this study falls between 2009 and 2012 were analyzed.

**Results** Between 0 and 44 years old there was a higher percentage of falls among males in the age groups, 45 years and over showed a higher percentage in females. The percentage of “drop at the same level,” “Fall on and from stairs” and “fall, unspecified” was higher in females in most age groups. The “house” was the place with the largest percentage of falls in all age groups and both sexes. The study revealed a higher percentage of lesions in the “Head” in males between 35 and 64 years and from 65 years in females.

**Discussion and Conclusions** The results indicate that it would be important to conduct further studies about the causes of the differences between the sexes and age groups found in this study, to promote more effective and specific preventive measures regarding the characteristics of individuals, in this case the sex or age group.

Keywords: Falls, Surveillance, Injuries, Leisure

## 12 Risk behavior surveillance in young people in the Azores

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**Problem:** The risks behaviors related to health contribute to morbidity and mortality among young people and adults. These are often established during childhood and adolescence and may remain into adulthood. Risk behaviors are interrelated and are avoidable. The regional directorate of health in partnership with the regional education directorate implemented a risk behavior surveillance system in youth in the autonomous region of the Azores (RAA). System description: The centers for disease control prevention created in 1991, the youth risk behavior surveillance system (YRBS). The YRSB was applied between May and June 2014, in the Azores. The survey was conducted to students, a total of 38 schools. The target population was all students from 6 to 12 years, including alternative pathways, totaling 21391 students. 6325 valid questionnaires (29,6% of total students) were obtained.

**Results:** The prevalence of risk behaviors for a total of 58 indicators in the 9th to 12th grade. Public health actions: The results obtained by applying the YRBS served to developing strategies and adapted future health policies the needs found and evaluate trends in risk behavior in order to improve health among young people.

Keywords: Surveillance, Empowerment, Health, School

## 13 Pulmonary tuberculosis: resistance pattern to 1st line anti-tuberculosis drugs in the coimbra district, 2000-2011.

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**Introduction:** The rise of drug resistant strains puts a serious threat to tuberculosis (TB) control. The growing concern about resistance patterns in the community has led to the development of this epidemiological study, in order to assess in Portugal, in the Coimbra District, the Pulmonary TB cases notified between 2000 and 2011, and understand its resistance patterns to first line anti-tuberculosis drugs.

**Methods:** There were 556 cases of Pulmonary TB retrospectively enrolled from two TB diagnostic centres. The clinical records, results of antimicrobial susceptibility testing of the included patients were reviewed. Various parameters of the patients were analyzed such as previous treatment history, demographic and socioeconomic data. Categorical data were compared by the chi-square test or the fisher exact test. In order to determine independent risk factors for multidrug-resistant (MDR) pulmonary TB, odds ratio and 95% confidence intervals were calculated by using logistic regression analysis for epidemiologic variables.

**Results:** A total of 339 cases of Pulmonary TB were identified in which first-line antimicrobial susceptibility tests were performed, corresponding to 68,3% (adjusted) of the cases enrolled. Among those with a history of previous treatment, 29% (9/31) were resistant to isoniazid, and among the new cases, 11,4% (35/308) were resistant to streptomycin. The annual proportion of Pulmonary TB cases susceptible to all five first-line anti-tuberculosis drugs declined, from 88,2% (23/26) by 2009, to 70% (14/20) by 2011. Overall, MDR pulmonary TB was observed in 1,8% (6/339) of the isolates. There was significantly higher association of MDR-TB cases among those with previous treatment history (OR: 22,7 [IC 95%, 3,9-129,4]; p-value, 0,001).

**Conclusion:** The present study demonstrated in the Coimbra District epidemiologic data close to those of low incidence regions: rising proportion of cases with resistance to at least one drug. The main factor suggestive of MDR-TB is the history of previous treatment. In 2011 there has been a slight increase of

Pulmonary TB incidence (6,7/100 thousand). It is safe to state that the disease due to its social and economic characteristics emphasizes the importance of continuing its systematic surveillance.

**Keywords:** Pulmonary Tuberculosis, Resistance Pattern; First Line Anti-Tuberculosis Drugs; Coimbra's District

## 14 Socioeconomic inequalities in diabetes and hypertension, in the Northern region of Portugal

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**Background:** Diabetes and hypertension (HBP) are high prevalent conditions, causing severe consequences, with different magnitude in-between regions frequently explained by socioeconomic disparities. In Portugal, these diseases' prevalence is high (41% and 12,7%, respectively), and varies between regions. Little is known about their association with socioeconomic status, and little is being done to tackle these differences. Therefore, this study aimed to measure the association between socioeconomic (SE) inequalities and type 2 diabetes (DM<sub>2</sub>) and HBP prevalence, in the population resident in the Northern region (NR) of Portugal, in the year of 2013.

**Methods:** An ecological correlation study analyzed the 2028 parishes of the NR of Portugal on DM<sub>2</sub> and HBP prevalence, and SE status. Prevalence data was obtained from the health administrative information system. SE data was obtained both from the information system and from the 2011 national census database. For each parish, the association between each SE indicator and age-standardized prevalence of DM<sub>2</sub> and HBP was measured using linear regression and, subsequently, inequality indexes.

**Results:** In the NR of Portugal, the prevalence of diagnosed DM<sub>2</sub> and HBP was 6,16% and 19,35%, with an increasing trend with age. Both diseases had a heterogeneous geographical distribution. DM<sub>2</sub> prevalence was associated with the educational level ( $\beta$  -1.18), tertiary sector weight ( $\beta$  -0.87), unemployment ( $\beta$

-0.6) and poverty rates ( $\beta$  -2,05),  $p < 0.05$ . HBP was associated with the educational level ( $\beta$  -4,35), illiteracy ( $\beta$  -3.16), tertiary sector weight ( $\beta$  -3.82), unemployment ( $\beta$  -1.05) and poverty rates ( $\beta$  -5.54),  $p < 0.05$ .

**Conclusions:** These results allow public health teams to act directly on the most deprived parishes, and reinforce the power of socioeconomic policies to improve our population health status. This study also confirms that an administrative information system may be a liable source of data for epidemiologic, organizational and health monitoring studies.

**Keywords:** Diabetes, Hypertension, Health Inequalities, SIARS

## 15 Communicable diseases, what fails?

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**Introduction:** The communicable and infectious diseases' surveillance system is an essential tool for Public Health monitoring, prioritizing problems and defining programs for its control. If an important part of these diseases have no clinical manifestations and patients don't recur to health services, the vast majority of diseases are diagnosed and treated and its notification, even if obligatory, is forgotten. Frequently, its usefulness is undervalued and this process falls into the panoply of administrative procedures that clinicians have to complete.

**Methodology:** It was drawn a questionnaire and it was sent by email for all physicians with institutional electronic address of Matosinhos (n=764). This questionnaire had no obligatory answers, and it had closed responses (multiple choose and checkboxes) and one with free text to improvement suggestions. We obtained 173 responses from different specialties, from physicians graduated from 1975 until present.

**Results / Conclusion:** Underreporting may have been justified by the unawareness of which diseases shall be notified, when and where, as well as all the paperwork that crowds physicians' schedule, added to a notification system on paper that often is not available in service. Also, the lack of feedback can lead doctors to not understand the need for a surveillance system, although most find useful to have it.

**Keywords:** Communicable diseases, underreporting, Matosinhos

## 16 Public Health and Cemeteries: Baião Gravediggers Working Conditions Characterization

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**Introduction:** Facing death in a pragmatic way, it results in a body to which is necessary giving a final destination. The most common is the burial in cemeteries. These are seen as places of worship, and not usually overlooked as a potential source of environmental and occupational risk. Professions associated with death, such as gravediggers, are socially less desirable and frequently neglected. It is urgent to characterize these professionals working conditions in order to identify the real needs of intervention in Public Health.

**Material and Methods:** Descriptive cross-sectional study with a quantitative approach. It was developed and applied a questionnaire to the entire population of Baião gravediggers.

**Results:** All gravediggers joined the study (19). None had specific training, and 47.37% have been developing this activity in between 5-15 years. These professionals identified physical and ergonomic risks as the main risks activities. The most valued were: exposure to environmental conditions (73.68 %), burial (68.42 %) and cuts (52.63 %); intense physical effort (68.42 %), repetitive movements (68.42 %) and sudden movements (57.89 %). Biological risks were neglected. Work accidents occurred in 26.32% of the population, with burial and cuts as major events (15.79 %). Only 47.37% of these professionals use personal protection equipment and 63.16% doesn't use anchors at the opening of graves, this fact revealed vulnerability in protective measures. Individual hygiene/clothing is deficient with lack in facilities, resources and equipment.

**Discussion and Conclusions:** These workers begin and perform the gravediggers activity without any specific training, learning with practice, often neglecting the protection measures, with risk to public and individual health. It is fundamental to develop a structured program on the profession inherent risks,

including not only gravediggers training, but also in cemeteries management.

Keywords: Gravedigger, work, cemetery, occupational health

## 17 Medication use patterns among elderly institutionalized people

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**Introduction:** In Portugal, the growing aging population is associated with multiple pathologies and consequently polypharmacy. Given the pharmacokinetic and pharmacodynamics changes in the elderly, it is necessary a thorough review of the use of medicine in geriatrics.

**Objective:** To evaluate the degree of dependence, cognitive status and therapeutic profile prescribed the institutionalized elderly in nursing homes and day centers. Methods and Material: Observational, descriptive and cross-sectional cohort study, the sample consists of 148 individuals of 4 nursing homes/day centers in Coimbra. We applied a questionnaire that included sociodemographic and pharmacotherapeutic parameters that evaluated the cognitive status and the degree of dependence.

**Results:** It was found that most of the seniors use polypharmacy denoting a higher prevalence in the female. Regarding the degree of elderly dependency in the study revealed, mostly independently and with regard to cognitive status showed higher education to 11 years.

**Discussion and Conclusions:** It was also observed that increasing age leads to increase of administered drugs and these consequently lead to an increased number of drug interactions and inappropriate medication. Most independent elderly showed better cognitive level. The 4 nursing homes/day centers have several differences in particular the patterns and number of medications administered.

Keywords: Pharmacotherapy, Geriatric, Drug Interactions, Drug inappropriate.

## 18 Cystic Hydatid Human Disease – Retrospective analysis of suspicious and monitorized clinical cases between 2008 and 2013

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**Introduction:** Cystic hydatid (CH) is a zoonotic parasitic disease with worldwide geographic distribution, caused by the larval stage of *Echinococcus cestoda*. The diagnosis of infection is based on symptomatology, imaging and laboratory serological diagnosis.

**Materials and Methods:** A retrospective analysis of laboratory results of all suspected cases of CH was performed in a total of 992 serum samples, to confirm or exclude the diagnosis between 2008 and 2013 - 591 patients with clinical suspicion of hydatid disease and 401 confirmed clinical cases to monitor. The methodologies used in laboratory diagnosis were commercial ELISA and immunoblot, and "in house" ELIEDA.

**Results:** In laboratory, 130 (22%) new positive cases were confirmed and 71% of cases after surgical treatment in monitoring remained positive. From 130 new positive cases, five were children under 11 years old and 72% occurred in adults aged less than 31 years. The age group of 51-70 years showed the highest number of patients with positive serology for *E. granulosus* after surgical treatment.

**Conclusions:** Data analysis showed that the majority of new cases of CH occurred in the adult female population; 4% in children under 11 years old and 5% in adolescents and young adults from 11 to 20 years. The gradual decrease in the number of patients with clinical suspicion of hydatid disease that arrived to INSA, could be related with the increased activity in primary prevention. In conclusion, despite the sample of involved patients limitations, associated with referral bias is reinforced the importance of establishing an active surveillance of this disease, allowing timely intervention in public health and to target populations.

Keywords: Cystic Hydatid, human, diagnostic

## 19 Human trichinellosis: observational study in two populations exposed to infection by *Trichinella sp.*

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**Introduction:** Trichinellosis is a parasitic zoonosis caused by nematodes of the genus *Trichinella*. This parasite infects humans by means of ingestion of either raw or undercooked meat that contains parasites and larvae which later become viable nematodes. It is estimated that at least 11 million people around the world are infected with *Trichinella sp.* Trichinellosis is a mandatory reportable disease in Portugal and there is no report since 1966.

**Material and Methods:** The study population was composed by two distinct groups: individuals who lived in Évora and Elvas district (group I) and hunters and their families (group II), both groups exposed to consumption of pig and wild-boar meat, and/or derivative products. The 200 biological samples (serum) were analyzed through the qualitative method for the detection of *Trichinella* IgG antibodies ELISA and the confirmatory test Western Blot.

**Results:** In our study we obtained 29 positive results by ELISA with 8 confirmed results by Western Blot, from a total of 200 samples for group I, and 14 positive results by ELISA with 3 confirmed results by Western Blot for group II (in 73 samples). Generally we obtained 4.0% of cases with *Trichinella spiralis* antibodies for group I and 5.5% of cases with *Trichinella spiralis* antibodies for group II.

**Conclusions:** The identification in this study of individuals with anti-*Trichinella* antibodies in target populations proves the existence of under-diagnosis / underreporting and determines that the infection is a potential public health problem related to food safety. Although not identified or presenting atypical symptomatology, this infection increases morbidity of exposed populations. Thus, the results obtained are evidence that this infection should be considered, as in other countries, notably Spain, an emerging infection.

Keywords: *Trichinella*, Portugal, clinical diagnostic

## 20 Leishmaniasis - Retrospective analysis of confirmed cases in the National Reference Laboratory between 2008 and 2013.

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**Introduction:** Leishmaniasis is an infectious disease caused by a number of different species of the protozoan parasite belonging to the genus *Leishmania*. The dog is the main reservoir and host of this parasite. This infection originates 4 clinical presentations, visceral leishmaniasis or kala-azar syndrome (the most severe form of the disease), cutaneous leishmaniasis, diffuse cutaneous leishmaniasis and mucocutaneous leishmaniasis. It is estimated that occur worldwide 1.3 million new cases and 20,000 to 30,000 deaths per year caused by this parasite. In Portugal, leishmaniasis is endemic, caused by *L. infantum* and the predominantly clinical presentation is the visceral.

**Materials and Methods:** Were analyzed 209 samples ( bone marrow and peripheral bloods) 173 serologically and 37 by PCR, using commercial serological methods ELISA and IF and immunoblot and nested PCR for amplification of variable region encoding gene SSUrRNA.

**Results:** Of the 209 samples received 27 (12.92%) were confirmed by serological methods, and 11 (5.26%) by PCR.

**Discussion and Conclusion:** The climatic / environmental and socio-economic changes in Portugal as well as parasite resistance to drugs and vector to insecticides in use, may be providing emergency and / or re-emergence of leishmaniasis in Portugal. Due to the considerable ignorance of the majority of the Portuguese population, the underreporting of positive cases and the absence of a national plan of diagnosis and control of vector and human and canine disease, this parasitic disease may be being neglected by many clinicians.

Keywords: Human Leishmaniasis, Portugal, INSA

## 21 In the right measure - anthropometric study of a population

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**Introduction** Portugal is the 2nd European country with the highest prevalence of child obesity 2, 3, therefore is a priority to invest in prevention and treatment of this epidemic, focusing on community based interventions<sup>1, 2</sup>. Integrated in the project "Na medida certa" were implemented actions to promote healthy eating habits, and was carried out an anthropometric study to determine the prevalence of obesity and overweight in a schoolchildren population.

**Material and Methods:** Retrospective longitudinal study. The study included measurements of all children in the county in two distinct periods: Feb/2010 to Nov/2009 when attending the last year of pre-primary education and, Oct/2013 to Feb/2014, when attending the 4th year of basic education. We included all those with measurements in the 2 periods. Variables: age, gender, primary school, height, weight, Body Mass Index (BMI) and BMI percentile (pBMI). Data collected according to guidelines of the Direcção Geral de Saúde (DGS), and stored in the database of the CDC (Center for Disease Control). Statistical analysis performed in SPSS20.0.

**Results:** We obtained a sample of 124 children, 58.1% were male with a mean age of 9.60 ( $\pm$  0.5) years. Of these, 77.4% had normal weight, 12.9% overweight and 9.7% obesity in the first measurement, and 72.6% normal weight, 19.4% overweight and 8.1% obesity in the 2nd measurement. There was a statistically significant difference ( $p > 0.05$ ), in the pBMI of females only, between the 2 periods.

**Discussion and Conclusions:** There was no marked change in the values of pBMI of the children, between the 2 time points. However, it appears that the prevalence of overweight and obesity are below nacional average<sup>1</sup>, 27.5% are overweight, of which 8.1% are obese, compared with 33% and 14.6%, respectively, in Portugal. The results demonstrate that these efforts must be maintained constant, and need everyone help. Bibliography 1. Carvalho MA, Carmo I, Breda J, Rito AI. Análise comparativa de métodos de abordagem da obesidade infantil. Ver Port Saúde Pública. 2011 Ago 2, 29(2):148-156. 2. Ribeiro S. Obesidade

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3. <http://www.apcoi.pt/obesidade-infantil/>

Keywords: Children's obesity; Children's overweight

## 22 Imported case of human rabies in Amadora - The Importance of public health measures

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**Introduction:** Rabies is a fatal zoonotic disease in humans that can be prevented through vaccination or through appropriate measures after exposure. Portugal is a country free of rabies since 1960 and the likelihood of an autochthonous case is virtually nonexistent. However, the possibility of imported cases, especially of Portuguese Language Countries Africa is a reality, mainly due to the intense migratory flow.

**Material and Methods:** We report a case of imported human rabies in a woman who presented in the ED initially with complaints of low back pain on July 19, without initially reporting exposure to animal bites. Five days later with worsening symptoms returned to ED and reported a trip to Bissau, Guinea-Bissau, in April 2011, where she was bitten on the left heel region by a dog (*Canis lupus*) on 1st May. She was diagnosed with rabies on July 26 and died two weeks later, despite having been treated with the Milwaukee protocol...

**Results:** Six individuals were identified as exposed and underwent post-exposure, which consisted of four intramuscular doses of rabies vaccine, two doses on day 0, followed by one on day 7 and 21 prophylaxis. The case was reported to Early Warning System of the European Union and the focal point of the International Health Regulations in Guinea Bissau.

**Discussion and Conclusions:** The case described is an example of effective coordination between local public health authorities, the Hospital, the Directorate-General for Health and International Institutions such as the Pasteur Institute in Paris. The constant and rapid exchange of information between these entities allowed to confirm the case and identify exposed individuals to protect them.

Keywords: Human rabies, Guinea-Bissau, Zoonosis, Vector-borne diseases

## 23 Smoking profile of pregnant women residing in Braga

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**Introduction:** Smoking during pregnancy carries risks, both for the pregnant woman's health and the fetus. These risks will be in foreground not only during peripartum but also during the newborn's normal development. Consumption proportion of this substance within women that are in fertile age was, in 2005, 11,2%. Usually the percentage of smoking during pregnancy varies between 11,5% and 15%, depending on the study. Therefore, smoking cessation during pregnancy is the most cost-effective intervention and should be encouraged by the health professionals in all maternal health consultations. It is known that the greatest benefits, both for the woman's health and the fetus, is achieved until the 15th week of gestation, but stopping this consumption in any period of the pregnancy benefits the child's health.

**Objectives:** The aim of this investigation was to analyse the habits of smoking (if they smoke, how often and / or if they quit smoking with or without help from the health services) during the gestational period of pregnant women residing in Braga and registered a newborn in the Civil Registry during 2012.

**Methods:** For this a cross-sectional observational study was made with data collection through an indirect application questionnaire by telephone, through a sample study.

**Results:** The proportion of women who smoked during pregnancy was 11,11%. 85.33% of those were daily tobacco consumers and 16.67% had an occasional consumption. The average smoking history was 3,53 cigarettes per day. In the group of the women that reported smoking habits during pregnancy, 88.89% had an intervention of health services, but only 5.88% of those were able to cease consumption during pregnancy.

**Conclusions:** The proportion of women who smoked during pregnancy in Braga was slightly lower than the percentage found in the literature. An intervention by the health services was applied to the most of these women, but with a very low

proportion of positive results. Therefore, it becomes important to implement strategies that improve the effectiveness of the intervention in this area.

Keywords: Tobacco, pregnancy, Braga

## 24 Laboratory surveillance of *Neisseria gonorrhoeae* infections in Portugal

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In 2008, WHO estimated in 106 million the number of cases of gonorrhoea in adults, worldwide. ECDC determines *Neisseria gonorrhoeae* (NG) as the second cause of bacterial sexually transmitted infection (STI) in Europe. The ability of NG to develop multiple classes of antibiotic resistance justifies the need for continued vigilance and monitoring. In this context, the national reference laboratory for STI in the National Institute of Health Dr. Ricardo Jorge (INSA) invited laboratories distributed throughout mainland Portugal to send the NG strains isolated under their laboratory diagnosis to INSA, in order to constitute a national collection that would enable the quick detection of antibiotic resistance outbreaks and of transmission networks. Currently, the laboratory network is composed of 45 public and private laboratories and the national collection gathered over 700 strains between 2006 and late 2013. In the course of the Portuguese phenotypic and genotypic monitoring of circulating NG strains, no case of resistance to the antibiotic recommended for gonorrhoea treatment (ceftriaxone) was observed. More than 250 NG-MAST types were identified, among whom types ST2 and ST1407 stand-out, as these two types represent (together) about a third of the cases. Data gathered by the collection are regularly reported to the DGS who informs the ECDC. Better knowledge on the epidemiology of gonorrhoea at a global level is critical to achieve gains in terms of public health.

Keywords: *Neisseria gonorrhoeae*, NG-Mast, antibiotic resistance, laboratory surveillance

## 25 Alcohol consumption in mothers that breastfeed during the infant's 1<sup>st</sup> year, prevalence and associated factors, in Vila Franca de Xira, in 2014

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**Introduction:** Alcohol consumption during maternal breastfeeding is a topic that has gained relevance in the past years. Contrarily to alcohol consumption during pregnancy, of which the consequences over the fetus' health are well known, there is still little knowledge about the effects of alcohol consumption during breastfeeding. This study aims to characterize alcohol consumption and associated factors in mothers that breastfeed, or have breastfed, in the 1<sup>st</sup> year of the child's life in the municipality of Vila Franca de Xira in 2014.

**Methodology:** A transverse study was promoted, with application of a self-filling questionnaire, to a stratified sample with proportionate allocation per Functional Unit, of mothers that attended the infant health appointments of the municipality health units, between March and May of 2014.

**Results:** Median age for mothers was 31 years and for children was 3 months. Total breastfeeding time was a median of 2 months and only 16.3% breastfed for more than 5 months. Prevalence for alcohol consumption during breastfeeding was 7.9% and during gestation was 8.1%. Factors that associated, with statistical significance, to alcohol consumption during breastfeeding were mother's age, knowledge, and previous alcohol consumption during gestation. Prevalence of smoking habits during breastfeeding of 13.4% and of illicit substance consumption was 0.6%.

**Conclusions:** Prevalence of alcohol consumption during breastfeeding, at a local level, is similar to that of gestation, and below that found in similar studies in other countries. The total time in breastfeeding is slow considering national and international recommendations.

Keywords: Breastfeeding; alcohol consumption; prevalence; child.

## 26 The school in public health promotion - Presentation of the 1<sup>st</sup> part of a national survey of health practices in schools

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Health promotion in Portuguese schools – social practices and representations study is being developed by the Portuguese League for Social Prophylaxis and is co-funded by DGS. It aims to identify and in-depth study health promotion practices in educational institutions nationwide, from the 1<sup>st</sup> cycle of basic instruction to high schools. This study comprises two research phases carried out between 2012 and 2014 and focuses on a mixed methodology (Grenne, Kreider & Mayer, 2005). The 1<sup>st</sup> phase pursued quantitative

**Objectives:** a national survey on health promotion practices was developed and all national public schools' managers were invited to answer, 314 responses, from all districts of the country, were obtained. The 2<sup>nd</sup> phase of the research, aiming a qualitative approach, implies interviewing 18 school health projects' coordinators or school managers from the North region. Collected data indicate weaknesses in the relationship between identification of needs and priorities and the development of initiatives to promote health in school. There are also gaps related to the evaluation of the undertaken initiatives. Additionally a tendency for variations in strategies implemented by several institutions arising from factors such as student participation and teachers' actions, the existence of partners, etc. is shown. However, it is possible to recognize a significant investment in promoting healthy eating habits (53.2%) and addressing sexuality-related subjects (50.0%). Conclusively, school environment appears as very favorable to the implementation of a school health educational program' as well as to the emergence of new strategies and actors on health promotion.

**Keywords:** Healthy lifestyles, good practices, school, children and adolescents

## 27 Physical abuse of older adults in family context in the North region of Portugal: case-control study

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**Introduction** Physical violence is recognized as a serious public health problem<sup>1</sup> and associated with increased likelihood of morbidity and mortality<sup>2,3</sup>. The knowledge of violence risk factors is crucial to the develop intervention and prevention strategies. This study aimed to evaluate risk factors of physical violence against community-dwelling older adults.

**Methods** We conducted a case-control study with a sample of 157 cases, victims of alleged physical assault aged 60 + years living in the North region of Portugal who had lodged a criminal complaint to GNR or had been submitted to an forensic examination in INMLCF, IP. The 160 controls were selected from general population of the same geographical area by simple random sampling via random digit dialing. Data on demographic and health characteristics of cases and controls were collected. Odds ratios and 95% confidence intervals were estimated using unconditional logistic regression.

**Results** After adjusting for sex, age and marital status, living in cohabitation, OR=6.72, CI95%=[2.72, 16.62], and reporting at least one chronic disease, OR=4.38, CI95%=[2.21, 8.72] were significantly associated with increased risk of physical violence. The protective effect of social support, OR=0.23, CI95%=[0.09, 0.59] was verified.

**Conclusions** Evidence of association of cohabitation, health status and social support with victimization by physical aggression in community-dwelling older adults was observed. Knowledge of determinants and factors associated with violence is a first step for planning health policy aimed at ensuring a more secure and healthy aging.

**Keywords:** Physical abuse, family, ageing, case-control study

## 28 Eye Health: The convergence insufficiency and school performance

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**Introduction:** The literature reports that binocular syndromes, such as convergence insufficiency (CI), are the leading cause of visual problem complaints in children, teens and active adults and may subsequently be reflected in their academic or work performance. The aim of this work is to determine the frequency of convergence insufficiency in children and estimate the relative risk of poor school performance of these children compared to children with normal binocular vision (VBN). Method: We assessed 360 children attending middle school in Covilhã (age:  $10.89 \pm 0.88$ ), by characterizing the state of binocular vision and evaluating the visual symptoms associated with near tasks through the CISS (Convergence Insufficiency Symptom Survey). Symptoms were correlated with the presence of CI syndrome as well as with school results in the subjects of Mathematics and Portuguese.

**Results:** The prevalence of CI in children evaluated was 7.25%. A positive association between visual symptoms and the presence of CI was found, as well as between the presence of the syndrome and poor school performance. The possibility of poor school performance is 3.3 higher for students with CI than for students with VBN (OR: 3.2 [95% CI: 1.404, 7.366]).

**Discussion:** The increasing demand for near vision, a consequence of society's development, tends to induce ocular disorders that manifest in symptoms of eye strain, even when observing the absence of refractive errors. This study demonstrates that convergence insufficiency is a factor that can interfere with the academic performance of students. It is therefore necessary to reflect on the promotion of school eye health.

Keywords: Eye health; Binocular vision; Convergence insufficiency; eyestrain

## 29 Invasive pneumococcal disease in children: vaccination coverage and disease incidence in the Central Region 2008-2011

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*Streptococcus pneumoniae* is a pathogenic microorganism for humans, which is responsible for high rates of morbidity and mortality worldwide. This research aimed at making a retrospective analysis of invasive pneumococcal disease cases in children in the Centro Region of Portugal and the 2008-2011 period. In terms of vaccination, coverage highlighted were the 77% coverage for two doses to 11M for the 2011 cohort, 30% for 4 doses to 15M and 46% to 24M. In prevalence, by December 31, 2011, there were vaccination coverages of 34%, 4.8% and 26% for the same doses with increasing trend in the four years in analysis. The estimated incidence of the disease in 2011 was 5.7 / 100,000 children translating a sound reduction on the previous year (10.8 / 100,000). The most frequent clinical forms of presentation were pneumonia (50%) and occult bacteremia (22%). Most cases occur in the first 2 years of life (61%). There haven't been any deaths and no differences were found in the distribution between genders and age groups of the variables considered. In terms of analysis of the effect of the new vaccine in circulating serotypes, there was no evidence of any relationship and the most frequent serotype 19A was (32.3%). The agreement of the serotypes covered by the incidents with Pn13 was in the Centro Region in the 87% study period, justifying the maintenance of the recommendation of this vaccine against the disease. Further studies are needed to better understand the reality of this disease.

Keywords: *Streptococcus pneumoniae*, invasive pneumococcal disease, vaccination, serotypes, disease

## 30 Sleep problems among Portuguese adolescents

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**Introduction:** Sleep problems - insomnia, symptoms of insomnia, inadequate sleep patterns and daytime sleepiness, are common in adolescence. The aim of this study was to assess the prevalence of sleep problems and identify factors associated with insomnia in adolescents of the district of Viseu.

**Methods:** We designed a cross-sectional study with a sample of 6919 adolescents (53.2% female). Data collection was conducted through a self-administered questionnaire. Insomnia was defined by symptoms and consequences that occurred on a daily basis with a frequency of at least three times per week in the last month; daytime sleepiness by the Epworth Sleepiness Scale and sleep patterns using sleep duration and sleep habits. We considered "insufficient" <8 hours / night sleep.

**Results:** The prevalence of sleep problems in adolescents were: insomnia = 8.3%; symptoms of insomnia = 21.4%; daytime sleepiness = 33.1% and insufficient sleep = 29%. Both were higher among the female gender ( $p < 0.001$ ). Only 6.4% reported to lie down everynight at the same hour and needed an average of 21 minutes to fall asleep. After adjustment for sex and age, insomnia was associated with the female gender (OR = 1.82, 95%CI 1.56 - 2.13), age  $\geq 16$  years (OR = 1.17, 95%CI 1.01 - 1.35), urban residence (OR = 1.30, 95%CI 1.04 - 1.63), coffee consumption (OR = 1.40, 95%CI 1.20 - 1.63), alcohol consumption (OR = 1.21, 95%CI 1.03 - 1.41) and depressive symptoms (OR = 3.59, 95%CI 3.04 - 4.24).

**Conclusion:** Sleep problems are common among adolescents. Sleep disturbances should be a major concern to health and educational professionals with the goal of making good sleep habits an integral component of a healthy life.

Keywords: Sleep problems, Insomnia, Adolescents

## 31 Safety On Wheels: Helmet, Lights, Action - Epidemiological Study On 3<sup>rd</sup> Grade Students, In The Figueira Da Foz's District.

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**Introduction:** Physical activity is an essential part of a healthy lifestyle. However some of the expected health gains are lost due to accidental injuries. According to the World Health Organization, three quarters of deaths among injured cyclists are from head injuries. In order to support a population-based bicycle helmet campaign, a Bicycle youth risk behavior survey was conducted.

**Methods:** The survey was conducted through the administration of a questionnaire adapted of the Unicef's "Have Fun, Be Safe" (2008), to a school based sample of 319 students (out of 515) on the 3<sup>rd</sup> grade, in the Figueira da Foz District Schools. The outcome measures were related to safety behaviors when riding the bicycle. Out of the 8 outcomes studied, there were 3 considered problematic (answer "always" reported under 50%), which were characterized by sex and geographic area.

**Results:** 296 (92,6%) students reported to ride a bicycle. 48,6% of the students, 42% of the boys, and 56,3% of the girls wore helmet. Rates of reported helmet use on the urban and rural areas, were 54,9% and 38,6%, respectively. On the rural area 32,4% of the children, 40,1% of the girls and 26,7% of the boys, wore bright clothes that could be easily seen when cycling. Under 40% of the children wore bike lights and/or reflectors; 41,2% on the rural, and 31,3% on the urban area.

**Discussion and Conclusions:** The bicycle is the most popular equipment among children. Boys take on more often risk behaviors. Rates of reported helmet use were superior on the urban area, which may be related to economic resources. On the eventuality of an accident, more than half of the children who ride a bicycle (51,6%) are at risk of a traumatic brain injury. Falling is part of riding a bike. However we cannot be negligent. The helmet is an individual protection that should be promoted.

Keywords: Accidents, Bicycle, Helmet, Traumatic Brain Injury, Figueira da Foz District

## 32 Glucose control and postprandial glycaemia in type 2 diabetes

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**Introduction** The PhENA-DIA project, promoted by the Centre for Research and Development in Health (CES) at the School of Health of the University of Algarve, intends to study the evolution in health status in patients with type 2 diabetes (T2DM). One of the goals of this project is to analyse postprandial hyperglycaemia (PPHG). There is evidence that PPHG is highly prevalent throughout the day in T2DM patients, even in those with an HbA1c level well below 7.0%. This study aimed to compare the glycaemic response in T2DM patients with different glycaemic control classification.

**Methods** A group of 66 patients previously diagnosed with T2DM was recruited and categorized into patients with HbA1c below 7% (proper glycaemic control) and patients with HbA1c of 7% or above (poor glycaemic control). All subjects were interviewed and offered a nutritionally controlled breakfast. The glucose response to the experimental breakfast was monitored for 120 minutes after the meal.

**Results** There are no significant differences in postprandial glycaemia between patients with adequate glycaemic control and those with poor glycaemic control,

**Discussion and Conclusions** Our results imply that some subjects are unaware that they exceed the recommended rise in postprandial glucose, and thus may be at a higher than expected risk for macro and microvascular events. As self-monitoring is the only practical way to detect postprandial hyperglycaemia, efforts should be made to promote regular glucose self-monitoring.

**Keywords:** Postprandial glucose, type 2 diabetes, diabetes nutrition

## 33 Consulta do viajante ACES Baixo Mondego - Coimbra

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**Introduction** International travelling may present different risks to health. Given this reality, in Portugal there are traveler's consults availability, which are a branch of Preventive Medicine, with the primary objective of giving advice and supporting travelers, and, as well, of prescribing vaccines and drugs.

**Objective:** To characterize the data of travelers of the Baixo Mondego ACES USP (Public Health Unit – Groups of primary care health centers of Baixo Mondego) and compare the progresses between 2012 and 2013.

**Material and Methods:** A descriptive study, with data analysis related to travelers that attended to medical and nursing consults, at Baixo Mondego ACES for the biennium 2012/2013.

**Results:** Increase of 13% of travelers attended between 2012 and 2013, mostly male (61% in 2012 and 59% in 2013), preference for public offering (85% vs. 84%), primarily targets a few countries (83% vs. 83%). For the ten most visited countries. The predominance was countries of the African continent (80% vs. 81%) followed by countries of the American continent (11% vs. 10%). Traveler's provenance is mostly Coimbra (58% Vs 63%). Vaccines administered in 2012 were: VFA (29%), VFT (27%), VIP (18%), VMACW135Y (16%) and HAV (5%). In 2013 it should be noted: VFA (36%), VFT (23%), VIP (18%), HAV (8%) and VMACW135Y (6%), length of travel predominance was up to one month (51% and 51%), the work was the main reason for the trip (62% and 63%).

**Conclusions:** Traveler's consults presented a growth between 2012 and 2013, being consistent with the increase in the number of trips observed globally. The observed indicators were stable between 2012 and 2013.

**Keywords:** Traveler's consult, Coimbra

## 34 Mental health mandatory assessments in Santa Maria da Feira, 2003-2013

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**Introduction:** Under the Mental Health Portuguese law, public health authorities have the power to determine the mandatory assessment of an individual with severe mental illness in a hospital for clinical evaluation and possible treatment. By studying the mandatory assessment warrants, the researchers intended to characterize the patients' profile, identify determinants of mandatory assessment recurrence and signal coordination gaps between the entities involved.

**Methods:** descriptive study with an analytical component of mandatory assessment warrants issued in the municipality of Santa Maria da Feira between January 2003 and December 2013. Microsoft Excel and SPSS 19 software were used for statistical analysis.

**Results:** 201 warrants were issued, corresponding to 134 individuals (mean age 41.7 years, 73.9% male). Observed data shows an increasing trend in the number of issued warrants per year. Recurrence (more than one issued warrant) was observed in 24.6% of individuals. Positive history of alcohol abuse [OR = 2.988 (95% CI = 1.526 to 5.823)] and schizophrenia [OR = 6.300 (95% CI = 3.366 to 11.794)] are risk factors for recurrence. 49.8% of the issued warrants are associated with a diagnosis of schizophrenia, 38.3% resulted in hospitalization and in 48.3% no feedback from the destination hospital was available.

**Discussion and Conclusions:** This is one of the first studies regarding mandatory assessment warrants. An important limitation was the scarcity of information in the records. Alcohol abuse and schizophrenia were identified as risk factors for warrant recurrence. There are important communication gaps between hospitals and public health units regarding mandatory assessment warrants.

**Keywords:** Mental Health; Mental Health Act; Mandatory Assessment

## 35 Demographics of Public Health Professionals in the North of Portugal - where do we stand?

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**Introduction:** A health system needs sufficient human resources to function properly. For Public Health Units (PHU) there are indicative ratios of inhabitants per doctor, nurse and environmental health technicians (Decree No. 137/2013). Public health is one of the most aged medical specialties. The researchers intended to calculate the existing ratios of inhabitants per professional of Public Health, in the North Region, comparing them with the legally entitled, and perform a demographic analysis of public health physicians (PHP).

**Methods:** A descriptive cross-sectional study was conducted in November 2013. Demographic information was collected regarding all professionals of the North Region Public Health Services. Choropleth maps were produced based on the relationship between the observed ratio and the legal ratio. A value of inhabitants per professional up to 125% of the legally appointed was considered as the limit of compliance.

**Results:** Less than 25% of PHU comply with the appointed ratios. There is no clear geographic pattern regarding the shortage of public health professionals. 89.5% of PHP are at least 50 years old and 70% will retire until 2024.

**Discussion and Conclusions:** This study reveals for the first time the status of the implementation of legally prescribed ratios for public health professionals in a health region. The study also reveals the noncompliance with the indicative ratios established in Decree No. 137/2013 in the North Region and the heterogeneities existing between PHU. In addition, the findings of other demographic studies about PHP shortages are strengthened, including the aging of the PHP and the possible difficulty of replacement.

**Keywords:** Public Health Professionals; Demographics; Health System

## 36 1<sup>o</sup> Monitoring study of the tobacco consumption in the ACeS Douro Sul public teaching students

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**Introduction:** Smoking can be the cause or the factor of chronic noncommunicable diseases aggravation, namely some cancers, as well as cardio and cerebrovascular diseases. The decisions that young people make can influence their health future as theirs relatives. The school is the privileged place to health literacy promotion and individual and collective empowerment on the promotion and cessation of tobacco consumption.

**Objectives:** Know the prevalence of tobacco consumption by young people in scholar age in ACeS Douro Sul in 2012/2013 scholar year.

**Methodology:** This was a descriptive and cross-sectional study, the catchment area of intervention was the Public Health Unit of the Aces Douro Sul, and applied a questionnaire to 7th, 9th and 12th grade of scholarship, that attended public schools.

**Results:** The results obtained, witch refer to 361 students, revealed the prevalence of smoking students (10%) and non-smoking (89%), and 51,4% daily smokers and 48,6% occasional smokers. The most reported age to the beginning of the 1st cigar consumption was 11 – 14 years. The reasons reported for tobacco use were living with smoking friends and family and "nervousness".

**Conclusion:** Considering our results, and since the identification of health intervention priorities of ACeS Douro Sul identified in the Local Health Plan 2011/2016 lead to the urgent implementation of smoking prevention and control measures involving the participation of several partners of the community, it can be concluded that the implementation of the regional program PELT – Tobacco Free Schools in Douro Sul schools is fundamental and indispensable to achieve all More Health!

**Keywords:** Tobacco; Students; Douro Sul.

## 37 The Geography of Diabetes *Mellitus* in Portugal in the last 20 years

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**Introduction:** Diabetes *Mellitus* is a public health problem that is on the increase throughout the world, including in Portugal. This paper aims to identify the changing geographic pattern of this cause of death in Portugal and its association with sociomaterial deprivation.

**Material and Methods:** This is a transversal ecological study of the deaths by Diabetes *Mellitus* in Portuguese municipalities in three periods (1989-1993, 1999-2003 and 2006-2010). It uses a Bayesian hierarchical model in order to obtain a smooth standardized mortality ratio (sSMR) and the relative risk of death by Diabetes Mellitus associated to sociomaterial deprivation.

**Results:** In 1989-1993, the highest sSMR values were found in coastal urban municipalities (80% of municipalities with sSMR = 161, of which 60% are urban), in 2006-2010, the opposite was found, with the highest sSMR values occurring in rural areas in southern inland regions (76.9% of municipalities with sSMR = 161, of which 69.2% are rural), particularly the Alentejo. The relative risk of death by Diabetes Mellitus increases with vulnerability associated to social and economic conditions in the area of residence, and is significant in the last two periods (relative risk: 1.00, IC95%: 0.98-1.02).

**Discussion and Conclusion:** Diabetes *Mellitus* presents a geographic pattern marked by coastal-inland and urban-rural asymmetry. However, this has been altering over the last twenty years. 48% of the population reside in municipalities where the sSMR has increased in the last twenty years, particularly in the rural areas of inland Portugal.

**Keywords:** Demography; Diabetes *Mellitus*/epidemiology; Diabetes *Mellitus*/mortality; Portugal; Socioeconomic Factors

### 38 Incidence of patients undergoing dialysis in the reference population area of a Lisbon Hospital.

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**Introduction:** Incidence of dialysis in Portugal is one of the highest in Europe and worldwide. In 2009, Portugal had an incidence of 240 patients/pmh when the overall incidence in Europe was 125 patients/pmh. The goal of this work is the identification of priority areas of intervention in pre-dialysis phase.

**Methodology:** Retrospective epidemiological study.

**Results:** The incidence of patients requiring renal replacement therapy (RRT) was 166p/pmh in 2010, 154p/pmh in 2011, in the first half of 2012 was 80 p/pmh and in 2013 was 125p/pmh. Hemodialysis is the most common technique (93%). Younger patients are opting for PD. 68% of patients starting RRT are followed in nephrology consultation and of these about 80% have been followed up for more than a year. With regard to formal education about treatment options from 2010 to 2012, the vast majority of patients did not perform query for clarification (80%). In 2013 almost all of the patients held consultation for clarification (after implementation of the standard 017/2012 of DGS). 67% have no definitive vascular access for hemodialysis beginning. From Jan 2010 to June 2012 the majority of patients required hospitalization to start RRT (69%). The mean hemoglobin values (10.07 vs. 9.16 g / dl) and albumin (3.27 versus 2.93 g / dl) were higher for patients followed in consultation ( $p = 0.000$ ), although clinically, this values are below the target values set by the guidelines. The clinical picture which led to entry into dialysis did not appear to differ from the clinical condition of patients not followed in nephrology consultation. Were the patients followed in consultation, who started RRT with higher mean GFR (9.46 versus 8,31ml / min / 1.73m<sup>2</sup>). Patients who started dialysis in ICU had higher GFR compared to patients in wards (15.18 versus 8.91 ml / min / 1.73m<sup>2</sup>  $p = 0.006$ ). It was also found that the main reason of entry into dialysis to lower GFR was uremic syndrome and GFR higher was water imbalance.

**Conclusions:** The current model of care, in our view does not respond to the needs of these patients. The provision of care by multidisciplinary teams can improved survival of CKD, to decrease the number of hospitalizations, construction of permanent access timely and can improve analytical values as found in the scientific

literature. This means that patients enter the dialysis program in better conditions, facilitating the acceptance of its new health/disease condition.

**Keywords:** Incidence, Chronic Kidney Disease, Renal Replacement Therapy, Multidisciplinary Teams.

### 39 Mesotheliomas: brief description of the portuguese situation from hospitalization episodes occurred during 2000-2011

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Mesotheliomas are the most serious disease associated with asbestos exposure. Malignant variant is fatal, affects mainly serous as pleura, peritoneum and pericardium and arises about 30 years after exposure. The use of asbestos is banned, but the potential for exposure remains due to works carried out for maintenance or waste removal operations without prior identification of hazardous materials and use of appropriate protective equipment and measures. All cases of mesothelioma hospitalization episodes occurred in 2000-2011 period were extracted from the Diagnosis Related Groups (DRGs) database. Patients were identified from those records and characterized according to gender, age group and lesions location. Linear trend was calculated from the number of cases with first hospitalization in the year. 427 patients with mesothelioma were identified of whom 66% were male, and 34% female. Pleural locations, both parietal and visceral, constituted 77% ( $n = 217$ ) and peritoneal 20% ( $n = 56$ ). It resulted in 257 surgical interventions and 88 hospital deaths (36% of cases). 23 deaths (26%) occurred at ages below 70 years. The linear trend suggests an increase in cases of mesothelioma. Data are consistent with the scientific information, including the increasing trend as a result of exposures that occurred 30 or 40 years ago. Results suggest that exposure was higher than that usually accepted for Portugal, so it is mandatory to determine the etiologic fraction of risk in relation to occupational exposure and clarify more precisely the sources of exposure with emphasis on those that remain till today. There was an underreporting of mesotheliomas as occupational disease estimated at 97% in the considered period.

**Keywords:** Mesothelioma; Hospital admission

## 40 The seasonal burden of the diseases of the circulatory system in Portugal

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**Introduction:** In Portugal, chronic diseases are responsible for 86% of all mortality, among them the diseases of the circulatory system are the main cause of death. These have a significant seasonal pattern, characterized by important increases during winter months, which may represent an important environmental vulnerability. The main aims of this study are to quantify the seasonal increase in mortality through diseases of the circulatory system in Portugal and to identify the regions with higher vulnerability.

**Data and Methods:** Monthly deaths due to diseases of the circulatory system were assessed since 2000 until 2009 by NUT III. The chi-square goodness of fit test was used to identify seasonal significant increases in mortality. The number of Excess Winter Deaths was measured by comparing the number of deaths between December and March with the average number of death recorded in the rest of the year. The seasonal impact was assessed through the Excess Winter Death index and their confident intervals. Regions were categorized in four classes: high overall mortality/ low seasonality; high overall mortality/ high seasonality; low overall mortality/ low seasonality; low overall mortality/ low seasonality.

**Results:** Important winter seasonal increases were found throughout the country. The number of Excess Winter Deaths is strongly associated with the overall mortality and their determinants, but the seasonal increase in mortality might be related to other socioeconomic determinants or behavioral contexts.

**Conclusions:** These results highlight the cold weather vulnerability as an important determinant of chronic diseases.

**Keywords:** Diseases of the circulatory system; seasonality, cold weather vulnerability

## 41 Tuberculosis in Sousa Valley – case series or an outbreak?

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In July 2012 the local Public Health Unit (PHU) was notified of a case of tuberculosis (TB) in a 9-year old child (C) living in one of the local municipalities (M) of the PHU area. The epidemiological investigation led to the identification of the probable primary case, a priest (P) with sputum-smear positive pulmonary TB who performed religious services in three parishes of the municipality and 21 cases of latent tuberculosis epidemiologically linked to P. Despite enhanced screening of contacts in 2012, in 2013 new cases of TB, who might be related, arose among the local population.

**Methods:** A descriptive retrospective study was performed, including all TB cases notified from 2011 to 2013 in the municipality M. Epidemiological investigation reports were analyzed and a possible transmission network was established.

**Results:** Ten out of the 21 cases diagnosed in municipality M were found to be epidemiologically linked, having attended to the same church, coffee shop or restaurant. Three of those had had contact with P in the church setting, but had not been identified for screening in 2012 because at that time the level of exposure and risk of transmission were considered to be low. Two cases had contact with P in the restaurant setting – one of those was considered the presumable source case (symptoms onset in 2011).

**Discussion:** A retrospective investigation of tuberculosis cases in municipality M allowed identification of epidemiological links among them, raising the hypothesis of an ongoing TB outbreak in the local community for three years at the least, with transmission probably occurring in three different settings. The confirmation that all the cases were a part of the same outbreak would only be possible through genotyping of TB strains, something that was not possible given the existing financial constraints.

**Keywords:** Tuberculosis; outbreak; investigation

## 42 Healthy excessive weight in Portuguese women after motherhood

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**Background/Objective:** Healthy obesity is a subtype of obesity not accompanied by cardiometabolic disturbances. Our aim was to quantify the prevalence of healthy excessive weight and its determinants after motherhood.

**Methods:** This study comprised 1847 mothers of a birth cohort assembled after delivery of a liveborn, without subsequent pregnancies until a reevaluation 4 years later. A healthy profile was defined as the absence of hypertension, diabetes, dyslipidemia, a level of C-reactive protein <3mg/l and HOMA-IR <second tertile. Crude and adjusted odds ratios (OR) and the respective confidence intervals (95%CI) were computed using multinomial logistic regression models, taking women with normal BMI as the reference category.

**Results:** Four years after delivery, 47% of women had normal BMI, 33% were overweight and 20% obese. In each BMI class, 61%, 33% and 12% presented a healthy metabolic profile, respectively. After multivariate adjustment, having a family history of CVD or cardiometabolic risk factors was associated with a higher probability of obesity with a not healthy metabolic profile (OR=1.39 95%CI: 0.98-1.98). Women who breastfed the enrolled child for more than 26 weeks were less likely to be obese with a not healthy metabolic profile (OR=0.39 95%CI: 0.23-0.68). Physical exercise was associated with a lower likelihood of being obese and having a not healthy metabolic profile (OR=0.48 95%CI: 0.33-0.70). These associations were not observed for excessive weight with a healthy metabolic profile.

**Conclusions:** These results support the existence of a healthy excessive weight phenotype in women after motherhood, influenced by anthropometrics, genetic and lifestyles characteristics.

Keywords: Obesity, healthy metabolic profile, motherhood

## 43 Evolution of vaccination coverage rate of measles in Portugal: From 0 to 95%, on the way to elimination?

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**Background:** Vaccination coverage rates greater than 95% are guaranteed to control and possible elimination of targeted diseases of the National Immunization Program. The present study aims to assess the evolution of compliance with measles vaccination strategy in fulfilling the objectives of the DGS and the WHO for the elimination of the disease in Portugal.

**Methodology:** Cross-sectional study in 411 individuals born between 1970 and 2003, by consulting the Single Sheet of Immunization and Individual Health Bulletin.

**Results:** The rate of vaccination coverage of measles vaccine increased from values of just over 30% in the cohort born before 1977 to a single dose of vaccine, for values greater than 95% for two doses of vaccine, in the generations born after 1993 ( $p = 0.001$ ). Vaccination status was strongly correlated with birth cohort to which they belong subjects ( $r = 0.684$ ,  $p = 0.038$ ). As well as compliance with the recommended ages for the 1st and 2nd dose ( $r = 0.239$ ,  $p = 0.001$ ).

**Discussion/Conclusions:** The data presented here are consistent with data from the DGS, and the data of the region to which the sample belongs. In this sample the vaccination coverage rate of measles vaccine, increased in two decades to more than 95% for two doses of measles vaccine values. Not only the number of vaccine doses increased with the fulfill

Keywords: Measles, vaccination, immunization coverage.

#### 44 Toxoplasmosis – Retrospective analysis (2009-2013) of confirmed cases from National Reference Laboratory of Parasitic and Fungal Infections, National Institute of Health Dr Ricardo Jorge

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**Introduction:** *Toxoplasma gondii* is an obligate intracellular protozoan parasite, which is responsible for toxoplasmosis in different species of vertebrates, including humans. Infections in healthy adults are generally benign, although toxoplasmic retinitis is frequently a cause of serious eye disease in otherwise healthy adults. More profound disease occurs in immunocompromised hosts or as the result of congenital infections.

**Methods:** A 5 years retrospective study was conducted on 695 suspicious cases from congenital and acquired toxoplasmosis admitted and confirmed from January 2009 to December 2013.

**Results:** This study allowed the identification of 681 acquired and 14 congenital toxoplasmosis. In acquired toxoplasmosis, we verified that 90.5% (616/681) were women and 7.2% (49/681) were men (2.3% unknown gender). Most women were between 25 and 44 years of age and men were between 25 and 64 years. In congenital toxoplasmosis, we observed a very similar distribution of gender, however, concerning to age most had less than one year old.

**Discussion and Conclusions:** In our study, like other studies in European countries, the highest incidence rate occurs in persons between 25 and 44 years and a clear predominance in woman was observed, once the screening of toxoplasmosis is clinically warranted in pregnant women in Portugal. In conclusion, despite the limitations sample, probably associated a bias (just suspicious cases), the identification of 695 toxoplasmosis demonstrate itself, the importance of the continuous active surveillance of this infection either in the pregnant woman or in immunocompromised patients.

Keywords: *Toxoplasma gondii*, confirmatory diagnosis, immunocompromised, congenital.

#### 45 REVIVE: detection of *B. burgdorferi* s.l. and *Rickettsia* spp. in ticks collected from Humans

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**Introduction:** Ticks are the arthropod vectors that constitute a major risk to public health in both Portugal and in Europe. To assess the risk that ticks pose to public health it is essential to have data on existing populations, species, their distribution and abundance. Since 2011 the Ministry of Health has asked the National Institute of Health to implement and coordinate a national surveillance program (REVIVE) for ticks and diseases transmitted by them.

**Material & Methods:** Ticks removed from man were studied from January 2012 to July 2014,

**Results:** As a result of the involvement of the various health agencies, 439 ticks from 77 municipalities of mainland Portugal were sent to CEVDI, representing 10 species of ticks: *Dermacentor marginatus*, *D. reticulatus*, *Haemaphysalis punctata*, *Hyalomma marginatum*, *H. lusitanicum*, *I. ricinus*, *I. ventraloi*, *Rhipicephalus bursa*, *R. pusillus* and *R. sanguineus*. The majority of the ticks sent to the laboratory belonged to the species *I. ricinus* (41%), followed by *R. sanguineus* (34%). All ticks were analyzed for the presence of *Borrelia* spp. and *Rickettsia* spp.

**Discussion & Conclusions:** *B. afzelii*, *B. garinii* and *B. lusitaniae*, and eight species of *Rickettsia*, *R. aeschlimannii*, *R. conorii*, *R. helvetica*, *R. monacensis*, *R. massilae*, *R. mongolotimonae*, *R. raoulti* and *R. slovaca* were detected from the ticks. The REVIVE program has produced important results both in the surveillance of ticks and mosquitoes. The timely detection of infectious agents in ticks removed from man represents a valuable tool in the prevention of diseases transmitted to humans.

Keywords: Surveillance programme, ticks, tick-borne diseases

## 46 Dengue in the state of Paraná, epidemiological considerations, environmental and socio-economic profile

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**Introduction:** Dengue is an arbovirus of global concern, the major public health campaigns object. Tropical countries are the most affected due to their characteristics, environmental, climate and social. In Brazil, the expansion of the area of occurrence is associated with urbanization without basic sanitation structure and economic globalization. The objective of this work is to understand the profile of the state of Paraná socioeconomic factors with dengue association.

**Methodology:** an ecological study was developed which relates the incidence of dengue with various socioeconomic indicators, using as analysis tools SIG, ACP and Clusters. Socio-demographic data were used from the IBGE 2010 Census and dengue cases the years 2011, 2012 and 2013. The 2010 Census variables were used for calculation of socioeconomic indicators, conducted the analysis of principal components and georeferenced.

**Results:** There were 4 main components, based on these results was performed the analysis of clusters, calculated dengue incidence rates for all years of study and the proportions of age, gender, final classification, serotype, evolution of the case and cluster. Showing unique characteristics of spread of the disease, socioeconomic factors may be associated with high incidence rates, women aged 15 to 34 years is the most affected population profile and the year 2012 was an inter-epidemic period.

**Conclusions:** In the process of health and illness for each human group, is necessary to understand the biological environment, physical, economic, social and human interactions in this geographical area.

**Keywords:** Dengue, socioeconomic indicators, clusters

## 47 Parental needs in Neonatal Intensive Care Units

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**Introduction:** The aim was to identify the needs of parents with children very preterm hospitalized in Neonatal Intensive Care Units (NICU) and describe its association with socio demographic characteristics, obstetric and baby at birth.

**Methods:** Were surveyed 211 mothers and fathers of children very preterm hospitalized in NICU level III of the north of Portugal (July 2013-june 2014). It was administered Inventory Needs Family in NICU, each item classified as not important (1) to very important (4). Adjusted odds ratio (OR) for Age, Sex and the variables significantly associated with each subscale, and respective confidence intervals of 95% (95% CI) were estimated by logistic regression.

**Results:** the subscales most often considered very important were "trust and safety in healthcare" (median (Q25 -Q75): 3,9 (3,8-4,0)), the "physical and emotional closeness" (median (Q25 -Q75): 3,8 (3,6-3,9)) and the "information needs" (median (Q25 -Q75): 3,7 (3,6-3,9)). After adjustment, the needs of "comfort" were considered most important by the participants >35years (OR =2,60, 95% CI: 1,34 to 4,99), with >12 years of education (OR = 2,66, 95% CI: 1,35 to 5,24) and multiple pregnancies (OR =2,53, 95% CI: 1,25 to 5,15). The "information needs" were less valued by participants unemployed (OR=0,38, 95% CI: 0,16 to 0,92) and previous pregnancy (OR = 0,40, 95% CI: 0,17 to 0,93). Mothers more valued the needs of "social support" (OR = 1,95; 95% CI: 1,08 to 3,52).

**Conclusion:** Mothers and fathers of children very preterm hospitalized in NICU seem to prioritize needs associated with the baby. The importance on comfort and social support is associated with socio demographic characteristics. The provision of care focused on family should be sensitive to these differences.

**Keywords:** Neonatal Intensive Care Units, Premature Birth, Needs Assessment, Parents.

## 48 Quality of life of parents of children very preterm 4 months after delivery

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**Introduction:** The aim was to assess the quality of life of mothers and fathers of children very preterm, four months after delivery, and describe their association with psychosocial, demographic, obstetric and baby at birth.

**Methods:** were surveyed 99-mothers and fathers of children very preterm, four months after birth (November 2013-July 2014). Was administered Inventory quality of life WHOQOL-bref and inventories of depression and Beck anxiety. Mean differences ( $\beta$ ) in the evaluation of quality of life were estimated by linear regression models adjusted for age, sex and variables significantly associated with each WHOQOL-bref domain.

**Results:** Mothers and fathers rated the overall quality of life as good or very good [Mean (Standard Deviation) = 72.47 (12.77)]. After adjustment, participants with income  $<€$  1,500 ( $\beta$  = -5.53, 95% CI: - 10.73 to -0.32), previous pregnancy ( $\beta$  = -5.36, 95% CI: - 10:42 to -0.30) and anxiety symptoms ( $\beta$  = - 8:37, 95% CI: - 14.73 to -2.02) reported lower overall quality of life. Anxious and depressive symptoms was inversely associated to the areas 'physical' ( $\beta$  = -7.70, 95% CI: - 13.91 to -1.49,  $\beta$  = -19.53, 95% CI: - 28.68 to -10.37) and "social relations" ( $\beta$  = -9.11, 95% CI: - 17:55 to -0.66,  $\beta$  = -20.74, 95% CI: - 33.18 to -8.31). Depressive symptoms decreased the perception of quality of life in the fields "psychological" ( $\beta$  = -29.37, 95% CI: - 38.62 to -20.13) and "environment" ( $\beta$  = -16.61, 95% CI: - 26.05 to -7.18), while schooling  $<12$  years was significant in the "environment" ( $\beta$  = -7.50, 95% CI: - 12.82 to -2.17).

**Conclusion:** Four months after delivery, the quality of life of mothers and fathers of children very preterm is associated with anxiety symptoms, depression and social characteristics. Acknowledgements: FEDER e FCT (FCOMP-01-0124-FEDER-019902, PTDC/CS-ECS/120750/2010, IF/00956/2013).

**Keywords:** Premature birth, Quality of Life, Parents

## 49 Reduced the Family Needs Inventory version in Neonatal Intensive Care Units

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**Introduction:** Identify parental needs in Neonatal Intensive Care Units (NICU) is essential to promote family health. We propose a reduced version of the Family Needs Inventory in NICU, through cultural adaptation for the Portuguese population.

**Methods:** We carried out the linguistic adaptation of the Family Needs Inventory in NICU \*, a scale with 56 items classified not important to very important. This was administered to 70 mothers and fathers of children hospitalized in NICU 5 level III of northern Portugal, 8-22 days after admission (January-June 2013). The number of items required to obtain a confidence level of approximately 0.8 was calculated using the Spearman-Brown formula. We evaluated the construct validity, as well as the model fit the comparative fit index (CFI).

**Results:** Factor analysis revealed two dimensions, one focused on the needs of parents and one in the baby's needs. To construct the reduced version, we selected 14 items in each dimension. The confirmatory analysis supported the existence of two dimensions (CFI = 0899) with a high level of reliability (Cronbach's alpha = 0.78). Mothers gave more importance to focus on baby needs. Mothers and fathers less educated and lower income attributed greater importance to the needs focused on parents.

**Conclusion:** Reduced Inventory of Family Needs version NICU is a brief instrument, simple, valid and reliable. We should develop studies exploring associations with family-centered care practices. Acknowledgements: FEDER e FCT (FCOMP-01-0124-FEDER-019902, PTDC/CS-ECS/120750/2010, IF/00956/2013). \* Ward K. (2001). Perceived needs of parents of critically ill infants in a Neonatal Intensive Care Unit (NICU). *Pediatric Nursing*, 27(3): 281-288.

**Keywords:** Intensive Care Units, Needs Assessment, Parents, Validation Studies

## 50 Lyme borreliosis in Portugal

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*Borrelia burgdorferi* sensu lato (s.l.) is the causative agent of Lyme borreliosis (LB), one of the most common tick-transmitted diseases in Portugal. LB, a multisystemic disease, is considered an emerging disease in some regions of the world, particularly in Portugal. The most common agents of human LB are *B. burgdorferi sensu stricto* (s.s.), *B. afzelii*, *B. garinii*, *B. valaisiana*, *B. lusitaniae* and *B. spielmanii*. In our country, *B. lusitaniae* is the most prevalent species found in ticks. However, other species have also already been detected such as *B. afzelii*, *B. valaisiana*, *B. garinii*, *B. burgdorferi* s.s., *B. turdi* and *B. myamotoi*. Two human strains of *B. lusitaniae* were isolated from Portuguese patients confirming its pathogenicity. The analysis of laboratory data has confirmed LB as being underreported, with an estimated incidence rate of 0.04 per 100 000 inhabitants. As in other diseases, the collaboration between the laboratory and clinicians is essential for the diagnosis of Lyme borreliosis, since the morbidity and mortality associated with this disease depend heavily on the timely implementation of appropriate therapy.

**Keywords:** *B. burgdorferi* sl, Lyme borreliosis, *B. lusitaniae*

## 51 New Pharmaceutical care web-expert patient program to support chronic diseases management

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**Background** Internet is a widely accessible means to allow the management of chronic diseases. Academic and managerial interest in the patient engagement is rapidly getting the attention and becoming an essential tool for researchers, clinicians and

policy makers worldwide, allowing to achieve an increasing burden of chronic disorders. In this study it was used a web-based intervention to assist vulnerable patients (seniors with more than 65 years old) – the ePharmaCare platform. The utilization patterns of the platform as well as their engagement were assessed.

**Objective:** The objective of this study is to observe how Pharmaceutical Care may be done through an online platform, where exchange of information between patients and the pharmacist. **Method:** We targeted seven senior patients with more than 65 years with chronic diseases, like hypertension, diabetes mellitus type 1 and type 2 and dyslipidemias, to use the online platform for health self-management with health attention meetings, during six months. This test was performed with collaboration of a pharmacist with experience in Pharmaceutical Care. This study was particularly focused in the medication adherence and lifestyle modification. It also included an evaluation component about the usability of the platform, which were analyzed by observations of their data by the pharmacist.

**Results:** The use of the personal profile was the keystone tool to empower patients with chronic diseases for their health self-management showing high applicability and user-acceptance, medication adherence and healthy behaviors. It was observed an improvement in using ePharmaCare platform with the increasing use by patients.

**Conclusion:** Web-based strategies allow an easier mean to access valuable information. This will help taking a viable decision about easing chronic diseases, through the commitment between patients and pharmacists. There is a huge potential of the ePharmaCare platform since it allows a closer follow-up in the treatment of chronic diseases. Research using large multicenter trials is definitely required to access effectiveness, productivity and transferability of this type of intervention.

**Keywords:** Pharmaceutical Care , Innovation, Human Resources for Health , Chronic Illness, Pharmacist , Information Systems

## 52 Treatment cost of advanced ovarian cancer

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**Introduction** The incidence and prevalence of cancer among the Portuguese population has been rising. The disease cost and its forecast for the coming years is a key input for the health planning process, at all levels of the health system. The aim of the most recent study developed by Portuguese Oncology Institute of Porto FG, EPE (IPOP) was to evaluate the treatment cost of patients with advanced epithelial ovarian cancer (AEOC).

**Methodology** IPOP Medical Oncology Service identified the patients who were admitted in 2010, and its treatment pathways, using clinical records and the database of the institution cancer registry. The different health care activities provided and date of attendance (years 2010, 2011 and 2012) were obtained from the administrative records. The activity was valued at constant prices (2013) and it required the use of several information sources. Then, the collected information was classified referring to the patient admission date and/or death date. Finally, treatment cost was evaluated.

**Results** 29 patients with AEOC were included. The overall 3-years survival rate was 30%. The total treatment cost was 405 thousand Euros (14 thousand Euros/patient). The average cost per patient, in the first 24 months of disease, was 9,6 thousand Euros (for patients alive at the end of 2012) and, in the last 18 months of life, was 13,8 thousands Euros.

**Discussion/Conclusions** The results demonstrate treatment costs per patient very variable, which may be justified by the different individual responses to therapeutic. Costs are higher after admission and in the last months of life.

Keywords: Ovarian cancer; treatment cost

## 53 Policies and strategies of intersectoral action on health-enhancing physical activity promotion in Portugal

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**Introduction:** Health-enhancing physical activity promotion (HEPA) is constituted as a priority area for intersectoral coordination in public health domain for combating physical inactivity pandemic and its health, economic, environmental and social impact. A content analysis on national intersectoral policies on health-enhancing physical activity (PA) promotion is crucial, becoming the main objective of the present study. Additionally, the health sector role in this domain was analysed, as well key factors / success criteria for implementation of HEPA policies promotion.

**Material and Methods:** A qualitative, descriptive and cross-sectional study was designed, using interviews, documental and content analysis on health, education, sports, transportation / urban planning and social action sectors.

**Results:** Several categories of macroenvironment, microenvironment and individual dimensions of PA determinants were identified, namely: "coordination", "strategic management and planning", "vertical integration" and "work in partnership". The health sector was mostly not considered as responsible for intersectoral action stewardship in this domain. "Political commitment", "integration through other sectors and policies", "work in partnership" and "communication strategy" were criteria assigned with very relevant importance.

**Discussion and Conclusions:** The systematization of intersectoral action policies and strategies for HEPA promotion in Portugal should be performed more frequently, addressed for the first time in this study the intersectoral dimension.

Keywords: Public health; physical inactivity; physical activity promotion policies; health-enhancing physical activity; intersectoral action.

## 54 Gericão project - or how to improve life satisfaction through food

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**Introduction:** Gericão project is an health's promotion project, focused on food education for the elders of Community Center of Quinta do Conde (CCQC)'s day center. It aims to determine the prevalence of overweight and obesity between the users of CCQC's day center, as well as their satisfaction with life, before and after the implementation of Gericão project.

**Materials and Methods:** The Portuguese versions of MNA® (Nestlé Nutrition Institute, 2009) and Satisfaction With Life Scale (Diener E, Emmons RA, Larsen RJ, Griffin S., 1985) were applied before and after the intervention. Which occurred between March and May 2014, based on lectures followed by facilitated discussions of the topic among participants, drawing sessions and exposition, as well as pamphlets.

**Results:** Prevalence of overweight and obesity remained on 66,7% in men, and decreased from 69,5% to 60,9% in women. It also occurred an increase in satisfaction with life from 41,4% to 65,5%. However, this differences weren't statistically significant, therefore associations between adherence to the program and life satisfaction cannot be made.

**Discussion and Conclusions:** Although the nutritional state of the elders of CCQC's day center became nearer of the adequacy, and their wellbeing increased, both results weren't statistically significant, thus they can't be associated to Gericão project. Thereby is essential the replication of the project with larger samples and a control group.

**Keywords:** Active aging; food education; satisfaction with life; non governmental organizations.

## 55 Index of Multidimensional Deprivation of the Northern Region of Portugal - Application of 2011 Census

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**Introduction:** The aim of this work is to make an Index of Multidimensional Deprivation (IMD) and assess the distribution of relative deprivation in the Northern Region of Portugal in 2011.

**Methods:** Population in study encompasses the resident population in the Northern Region of Portugal, in the census moment of 2011; Ward (Freguesia) is the elementary study spatial area. The design of the IDM followed the methodological basis of Noble (2006). Six domains of deprivation were selected (Income, Employment, Health and Disability, Education and Skills, Housing, Accessibility to Goods and Services); twenty five indicators (from the Census 2011) were selected to represent each field; accounting for small number's effect, an empirical bayesian estimator was used for smoothing; each indicator estimate was ranked and standardized, and grouped by respective domain; each domain estimate was ranked, exponentially transformed and finally combined.

**Results:** Spatial distribution of deprivation at ward-level is heterogeneous, with the highest level being observed in the Territorial Units of Tâmega, southern part of Grande Porto, western wards of Alto Trás-os-Montes e Douro, and the southern part of Ave e Cávado. Among Boroughs, the highest deprivation level was observed at Cinfães, Baião, Marco de Canaveses and Mesão Frio.

**Discussion / Conclusion:** Deprivation is an increasingly important component of study in public health. It represents a new element to support decision making in health resources and priorities, both for community and health care professionals.

**Keywords:** Deprivation

## 56 Travelers to high risk areas: attitudes, practices and disease

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**Background:** According to the World Health Organization, each year there are more than 900 million international trips, many of these for developing countries. Thus, many travelers are exposed to poor sanitary conditions and higher health risks. Part of these risks can be minimized by travel medicine consultations, with health education, vaccination and/or malaria chemoprophylaxis.

**Methods:** A descriptive study was held aiming to characterize the practices of travelers, and the incidence of health complications in short duration travels. A post-travel survey was applied to individuals who had travel medicine consultation in the International Vaccination Center of Leixões, between January 2013 and March 2014.

**Results:** Were obtained 388 valid responses in travelers for high risk destinations. Their ages ranged between 18 and 73 years (60% were male). 8.2% reported consuming non-bottled water and 41.2% beverages with ice. 20.5% reported not having taken malaria chemoprophylaxis, as indicated by the physician. 17.8% of respondents reported disease during the voyage. The most common health complications reported was gastrointestinal pathology (diarrhea).

**Conclusion:** A significant proportion of travelers adopted high risk behaviors and contracted disease while travelling. Good practice advices and prevention measures, such as adherence to malaria chemoprophylaxis, should be improved in order to prevent travel related diseases.

**Keywords:** Travel medicine, tropical diseases, preventive measures and compliance

## 57 Protozoan-associated diarrheal infections in symptomatic patients: observational study, September–November 2012

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**Introduction** and aim Three of the most common causes of protozoan-associated diarrheal infections are *Giardia duodenalis*, *Cryptosporidium spp.*, and *Entamoeba histolytica*. In Portugal, information about these parasitic infections is rare, especially for *E. histolytica*. The present study was conducted to investigate the prevalence of these infections in stool samples of patients with diarrhoea, collected from Portuguese hospitals, in the period between September and November 2012.

**Material and Methods** Antigenic diagnosis was performed by ELISA. In the *Entamoeba* positive samples, a real-time PCR that differentiates between *E. histolytica* and *E. dispar* was performed. Results A total of 812 human faecal specimens were analysed. The patients' mean age was 34.3 years, 424 patients were male gender, and 397 samples were isolated from children under ≤18 years old. A total of 71 (8.7%) samples were positive, at least for one parasite. From the 71 infected individuals, 63 presented a single infection with the following distribution: 20.6% infected by *G. duodenalis*, 27.0% by *Cryptosporidium sp.*, 23.8% by *E. histolytica* and 28.6% by *E. dispar*. The frequency of *Cryptosporidium sp.* was significantly higher in children than in adults, especially in younger children and *E. histolytica/dispar* infection were more frequent in adults.

**Discussion and Conclusion** The results showed a number of cases by *E. histolytica* infection similar to the others parasites infections. *Cryptosporidium sp.* and *G. duodenalis* showed a higher frequency for children when compared to the adult's frequency.

**Keywords:** *Giardia duodenalis*, *Cryptosporidium sp.*, *Entamoeba histolytica*, *Entamoeba dispar*

## 58 Multivariate Analysis Of Health Status Predictors On The Adult Portuguese Population

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**Introduction:** We are registering, on current societies, changes on the mortality profile generally related to the increase of chronic degenerative diseases. People constantly look for new treatments, allowing an increase on the survival rate and respective Quality of Life. We propose to evaluate the impact of different Health Predictors on the Adult Portuguese Population.

**Material and Methods:** Observational study (analytical and cross-sectional). The sample was composed by 1214 inhabitants aged 35 years old or over 35 years old (Coimbra's County). The data collection method was a Health Survey with the following information: demographic, clinical record, health behaviors, Lifestyles, MOS SF-36, Health Locus of Control and Quality of Life Index. Statistical

**Methods:** Multiple Multivariate Linear Regression.

**Results:** HRQoL showed to be lower on the female group, older age groups, people with low education level, without religion, living in rural areas, unemployed, active workers with short term contracts. HRQoL was positively predicted by the physical activity practice, normal waistline perimeter, by sleeping =>7-8h/day, less years of smoking practices, good locus of control and physical condition (besides worse results on nutritional care, preventive behaviors, psychological well-being and social/economic dissatisfaction. The Chronic Diseases with negative impact on the HRQoL were: diabetes, hypertension, rheumatism, osteoporosis, chronic pain and wound, CVA (Cerebrovascular Accident) history, tumors, hearth and mental diseases.

**Discussion and Conclusions:** HRQoL results from a set of criteria that interact amongst themselves and define the health profile of each inhabitant. The best health profile is present on good practices and lifestyles, higher education, living in city areas, access to health equipment, work security, religious beliefs, satisfaction with life and absence of chronic diseases.

**Keywords:** Health-Related Quality of Life (HRQoL); Health Locus of Control (HLC); Chronic Disease; Health Predictors; Lifestyles.

## 59 Diabetes Mellitus (DM) Increases The Risk Of Community-Acquired Pneumonia (CAP) Admissions

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Respiratory infections are frequently associated with DM, which in Portugal has one of the highest prevalence rates in Europe. As such, Health Authorities and Medical Societies recommend several general measures, as well as flu and pneumococcal vaccination of people with DM. Aiming to evaluate the prevalence and impact of DM among CAP patients, we have carried out a retrospective, nationwide register analysis of hospitalized patients. Anonymized data referring to the period 2009-2012 were extracted from the National Hospital Discharge Database of DRGs. Patients included in the study had CAP as main diagnosis on admission within the age range 20-79 that matched the PREVADIAB - National Prevalence Study. DM prevalence, within the 74,175 CAP episodes that matched the inclusion criteria, tended to increase over time, from 23.7% in 2009 to 28.1% in 2012, being significantly higher when compared to the national DM prevalence ( $P < 0.0002$ , 28.1% versus 12.9% in 2012). The average length of stay was significantly higher in cases of CAP with DM ( $P < 0.0001$ , median of 9 (6-14 days) vs 8 (5-13 days)), as well as in-hospital mortality ( $P = 0.0064$ , 15.2% vs 13.5%). Taken together, this retrospective analysis provides evidence of a high prevalence of DM in subjects hospitalized with CAP, concomitant with a longer hospitalization stay and higher mortality rate in

these individuals as compared with people with CAP without DM. This study reinforces the relevance of DM as a risk factor for CAP and the need for more effective implementation of preventive guidelines in this population.

**Keywords:** Community-acquired pneumonia (CAP); Diabetes *mellitus* (DM); Epidemiological study; hospital admissions.

## 60 Guinea-Bissau Children's Dental caries and eating habits of both sexes

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**Introduction and Objectives:** Tooth decay is the most prevalent childhood diseases, and the eating habits are important for its prevention, because its etiology is related to the carbohydrates metabolism. The purpose of this study was to evaluate the relation of caries and eating habits of Guineans children.

**Participants and Methods:** Cross-sectional study, whose 655 children (8.0 ± 3.5 years; 25.4 ± 10.9 kg, 1.24 ± 0.2 m; 17.0 ± 24.1 kg / m<sup>2</sup>, 2.2 ± 2.7 teeth) were observed according to oral evaluation (primary teeth caries rates (cpod) and permanent (CPOd), eating habits (semi-quantitative feed frequency questionnaire) and anthropometric (weight, height and BMI). The methodology in this study followed the criteria recommended by WHO for oral health epidemiological studies. The descriptive and inferential statistical analysis was executed with SPSS software (version 22.0).

**Results:** The most consumed aliments were fruit, rice and fish; the least consumed were cereals, jelly, juice, egg, tea and chocolate. Although there was no statistically significant differences ( $p > 0.05$ ) between the caries index and BMI, there was found that the flour consumption ( $p = 0.001$ ), rice ( $p = 0.010$ ) and juices ( $p = 0.041$ ) reduced the incidence of dental caries in permanent teeth, and that the chocolate ingestion ( $p = 0.013$ ), cereals ( $p = 0.041$ ), flour ( $p = 0.007$ ), vegetables ( $p = 0.012$ ), dairy products ( $p = 0.005$ ); meat ( $p = 0.001$ ), water ( $p = 0.002$ ) and juices ( $p = 0.039$ ) decreased caries in deciduous teeth.

**Discussion and Conclusions:** It seems that, more important than the frequency of food consumption, is the quantity and quality of food eaten to justify the study results; that the evaluation of the

cpod/CPOd will be less important than assessing the number of effective caries and its extension; that the access to oral health care is scarce; and filled teeth were null.

**Keywords:** Guinea; children; teens; oral health; nutritional status.

## 61 Diabetes admissions in an Internal Medicine Service of a Portuguese hospital: characterization and relationship with length of stay and mortality

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**Introduction:** Diabetes *Mellitus* is a disease with high prevalence that seems to have significant hospital expression. The magnitude of it is not known, particularly in Internal Medicine Services.

**Material and Methods:** All hospitalization admissions of an Internal Medicine Service, for the years 2012 and 2013, were analysed taking into account the following variables: age, gender, diagnoses, age adjusted Charlson Comorbidity Index (ICCA), admissions number, length of stay and in-hospital mortality.

**Results:** A total of 7245 admissions were evaluated, 26.9% of which from diabetic patients. Diabetes was the main reason for hospitalization in 2.3% of cases. Diabetic patients were older (74.92 ± 12.03 vs 72.78 ± 17.17,  $p < 0.001$ ), have higher ICCA (3.76 ± 1.618 vs. 2.91 ± 1.55) ( $P < 0.001$ ), longer length of stay (9.79 ± 8.81 vs 9.34 ± 8.01) ( $p = 0.039$ ) and a higher number of hospitalizations (2.04 ± 1.47 vs 1.77 ± 1.24,  $p < 0.011$ ). Diabetes was not related to increase in-hospital mortality ( $p = 0.203$ ). Disease prevalence increased from 22.6 to 24.1% over the two years of study.

**Discussion and Conclusions:** The high prevalence of diabetes has more relevance as comorbidity. The finding that these patients have higher mean number of hospitalizations and longer mean length of stay suggests a significant cost increase to the National Health Service. Investments in integrated disease management, literacy and health education may be crucial to counteract this trend.

**Keywords:** Diabetes *Mellitus*, Burden of illness, Internal Medicina, Length of stay, Patient admissions

## 62 Prevalence of major cardiovascular risk factors in acute coronary syndrome patients: EPIHeart cohort

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**Introduction:** Trends in the prevalence of cardiovascular risk factors (RF) can influence the clinical presentation of patients with acute coronary syndrome (ACS). In this study, we sought to quantify the prevalence of the major cardiovascular RF in patients with ACS in Portugal.

**Methods:** Data were obtained in the framework of an ongoing prospective cohort of ACS survivors consecutively recruited since August 2013, at the cardiology departments of Hospital de São João (Porto) and Hospital de São Pedro (Vila Real). All RF were self-reported (except body mass index that was measured). Interviewers collected the information during hospitalization.

**Results:** The median age of the 416 patients was 66 years (interquartile range: 54-76 years), 72% were men and 37% had a diagnosis of ST segment elevation myocardial infarction (STEMI), while 55% had non-ST segment elevation ACS (NSTEMI-ACS). Sixty-seven percent of patients reported having dyslipidemia (67% among STEMI and 65% among NSTEMI-ACS), 64% hypertension (58% among STEMI and 66% among NSTEMI-

ACS), 31% diabetes (21% among STEMI and 35% among NSTEMI-ACS), 27% were current smokers (37% among STEMI and 22% among NSTEMI-ACS) and 25% were obese (19% among STEMI and 27% among NSTEMI-ACS). Considering the presence of FR simultaneously, 31% of patients reported having 0/1 FR, 59% 2/3 and 10% 4/5.

**Discussion and Conclusions:** The prevalence of risk factors varied according to the type of ACS. In the future, we aim to quantify the association between previous history of RF and different forms of presentation of ACS, as well as prognostic implications.

**Keywords:** Acute coronary syndrome; cardiovascular risk factors; cohort; prevalence

## 63 The form sent by the Assistant Physician to the School Health team is a useful tool in the management of chronic diseases in the community

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**Introduction:** Data recorded in the form sent by the Assistant Physician to the School Health team enable the estimation of the burden of certain chronic diseases in the population, allow for more targeted health education and aid a better management of the diseases identified in school children.

**Methods:** Since 2012, data from all those forms are entered into a base (Excel(R)), and a descriptive analysis of the following variables is performed: body mass index, blood pressure (11-13 years), presence of chronic diseases, decayed teeth, and changes in vision, hearing or language. Differences found in the bivariate descriptive analysis are tested for statistical significance. A session of health education is proposed to schools where children with asthma, epilepsy or diabetes study.

**Results:** In the cohort born in 1998 (n=417, 53.7% female), at 11-13 years, 34.1% had impaired vision, 24.2% overweight or obesity, 19.3% normal-high blood pressure or a value that if repeated would be confirmed as hypertension, 7.3% decayed teeth, 1.4% chronic diseases and 1.2% altered hearing. Three

sessions of health education were undertaken in schools were asthmatic children studied, addressed to teachers and non-teaching staff.

**Discussion and Conclusions:** The use of those forms as a diagnostic tool in Public Health allowed the identification of a high prevalence of children with vision disorders, overweight / obesity and changes in blood pressure, supporting the needs that based on other sources were prioritized in the Local Health Plan. Additionally, the information obtained was useful for school health intervention.

**Keywords:** Chronic; prevention; observatory; school; form

## 64 Respiratory tuberculosis in ACeS Porto Ocidental: spatial distribution of the notified cases in the 2011-2013 triennium

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**Introduction:** The municipality of Porto is one of the main clusters of tuberculosis in Portugal, maintaining a higher notification rate than the Northern Region and Portugal. Therefore, it becomes important to know the local spatial distribution of tuberculosis allowing to geographically guide intervention strategies, increasing their efficiency.

**Materials and Methods:** Data relating to residence (coordinates and civil parish) was collected from the epidemiological surveys of reported cases with respiratory tuberculosis in the 2011-2013 triennium, in the geographic area of ACeS Porto Ocidental. The distribution of the number of cases and the average annual notification rate was mapped by the 12 civil parishes of the ACeS Porto Ocidental. It was also studied the spatial distribution of the cases using the Kernel density estimation.

**Results:** In the period under study 147 cases (35,9/100.000 residents) were reported. Massarelos was the civil parish with the lowest number of cases (2) and the lowest notification rate (9,8/100.000). Ramalde recorded the highest number of cases

(29), while Vitória was the civil parish with higher notification rate (105,2/100.000). Areas of high density of cases were identified in the Union of parishes of Cedofeita, Santo Ildefonso, Sé, Miragaia, São Nicolau and Vitória, and also some outbreaks of tuberculosis in Aldoar, Ramalde and Lordelo do Ouro.

**Discussion and Conclusions:** The results provide guidance for local intervention strategies, by prioritizing areas of highest density of tuberculosis. The interpretation of results is limited by the small number of cases, particularly when distributed by year or civil parish.

**Keywords:** Tuberculosis, Porto, Spatial Distribution, GIS

## 65 Tobacco consumption in the Portuguese population – analysis of age-period-cohort effects

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**Introduction:** Portugal has been observing a decreasing smoking prevalence among men and an increasing prevalence among women and a cohort effect was suggested. This work aims at evaluating the existence of age-period-cohort effects on smoking prevalence.

**Methods:** Data from 1987, 1995/96, 1998/99 and 2005/06 National Health Surveys (NHS) were analyzed namely prevalence by: age (connected by period and cohort), period, and cohort. Analyses were stratified by sex.

**Results:** Among men, prevalence by age connected by period overlapped, except for the age group 25-34 years, where a decreasing was observed [prevalence 25-29 years: 53.7% (1987) to 39.6% (2005)]. The same was observed in the analysis by period. Analysis by age connected by cohort showed an overlap of prevalences for the majority of age groups. In the analysis by cohort parallel trends were observed but with decreasing prevalences in the age groups (maximum 54.3% - 25-29 years, cohort 1956-1960; minimum in the ≥ 65 years group - 12.6-15.0%). Among women, prevalences by age connected by period did not overlap and decreased along time (in 1987, 20-24 years - 18.9%; in 2005, 30-35 - 20.2%). The same was observed by period. Analysis by age connected by cohort does not overlap,

with 1961-65 and 1966-70 having the highest prevalences. Analysis by cohort shows a progressive increase (until the 1961 cohort, where it stabilizes).

**Discussion/Conclusions:** Our analyses suggest an age effect for men and a cohort-period effect for women. Though limited by irregular periods between surveys this work gives further insights in the dynamics of tobacco consumption.

**Keywords:** Age-period-cohort analysis, National Health Survey, Tobacco consumption

## 66 Dental Caries prevalence on 13 year old students at Guarda

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Dental health is an integrating part of the well being, and a determinant for a good quality of life. Considering that dental hygiene should be one of the references on health promotion, a prevalence study was carried out, based on a sample of 389 students from Guarda's County. The study aimed to determine the prevalence of dental caries, and to measure the knowledge and behaviors related to dental health on 13 year old students at Guarda. To determine dental caries prevalence, a dental exam was performed to 389 students. It was determined a high prevalence of dental caries (46,8%) and a caries index (DMFT indices) of 2,2. The behaviors and knowledge were measured through the administration of a questionnaire to the 389 students, only 187 answered. Of these 187 enrolled, 32,1% (n=60) brush their teeth clean once a day (40 male; 20 female). Most of the students enrolled do not brush their teeth clean after having sugary drinks and/or snacks. The use of dental floss is very low 19,8% (n=37). Girls use dental floss more often 12,8% (n=24). The mouthwash was performed by 54% (n=101) of the students enrolled. The sugary drinks were taken daily by 28,9% (n=54) of the students, without a difference of statistical significance between boys 13,9% (n=26) and girls 15% (n=28). Effective measures to promote dental health are needed.

**Keywords:** Dental carie; Prevalence; DMFT indices; Determinants

## 67 Development and validation of a fall prevention manual dedicated to the elderly living in the community

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Falls are a public health problem that mostly affects older people. The prevention of falls can be achieved through multiple factorial interventions, including the educational approach. The health literacy (HL) adequacy of the health materials is vital in order to enhance adherence of older people to adopt the behaviors taught. The HL INDEX is a tool used to evaluate the HL demands of the health information materials.

**Aim:** Development and validation of a fall prevention manual dedicated to the elderly, living in the community, according to HL demands.

**Methods:** Firstly, a sample of 11 published manuals dedicated to falls in the elderly was selected for evaluation with the HL INDEX tool. Secondly, a fall prevention manual dedicated to the elderly was prepared in the Portuguese language, on the basis of HL demands. Lastly, eight dynamic sessions took place with a focus group, in order to validate this manual in the Portuguese elderly population.

**Results:** In the HL INDEX evaluation, 4 manuals scored higher than 75%. During the focus group sessions for the validation of the manual, no difficulties were identified and the participants showed intention to change behaviors for the prevention of falls.

**Discussion and Conclusions:** The success in the prevention of falls in the elderly will partly depend on the characteristics of the health information materials, but also on the HL level of its target audience. The manual with information and instructions to community-dwelling older adults is available by request to organizations and professionals involved in fall prevention programs

**Keywords:** Health Literacy, fall prevention, educational manual, elderly, Health Literacy INDEX

## 68 A Doença Crónica nos Planos de Saúde da População da Região Norte

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**Introduction:** The implementation of health plans of the population of the North region (local health plans - LHP and regional levels Northern Health - RLNH) aims at putting the health needs (HN) of the population on the agenda of key stakeholders, within and outside the health sector, so that the social commitment will result in the development of coordinated health strategies, to achieve the goals of health for all. This analysis goal is to demonstrate how the population's health plan includes chronic diseases (CD) and their risk factors (RF) in the health agenda of the Northern Region of Portugal.

**Methods:** We performed a descriptive analysis of LHS from 24 ACES/ULS (Primary care health centers groups/Local Health Units) and the RLNH in terms of population health needs (HN) identified as priorities in each, with a focus on CD and their RF. Also analyzed was the geographical distribution of priority assigned by the different plans to these HN. The NH: lower mortality from CVD was considered a priority in RLNH which was also identified as a priority in 19/24 ACES/ULS, the lower mortality from diabetes in 15/24, the lower mortality from IHD in 10/24 ACES/ULS and 10/24 ACES/ULS identified also the CLDC as a priority HN. As for FR only the lowest consumption of tobacco and alcohol was prioritized in 2/24 ACES/ULS. Geographically there was uniform homogeneity in assigning high priority position in HN: lower CVD mortality throughout the northern region.

**Discussion and Conclusions:** The RLNH and LHP HN were effective in putting with a high priority in the agenda of Health chronic diseases, most notably for CVD, diabetes and IHD. Different ACES prioritized different HN and different levels of prioritization in public HN. Based on LHP, especially in available epidemiological evidence, and this being scarce for the local level, they were less effective in putting the RF of the CD respective Health agenda. More information about determinants of population health, and the use of information existing at regional or national level allowing the inference to the local level, would contribute to a better alignment of strategies more cost-effective and to achieve the desired health gains.

**Keywords:** Chronic Diseases - Population Health Needs - Health Agenda

## 69 Return to professional work after an acute coronary syndrome: EPIHeart cohort

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**Introduction:** With the improvement in the treatment of acute coronary syndrome (ACS), an increasing number of patients return to professional work after the acute event. We intended to identify socio-demographic and clinical determinants of return to work after ACS.

**Methods:** Data was collected in the framework of a prospective cohort of ACS patients consecutively admitted in the Cardiology department of Hospital de São João (Porto) and Hospital São Pedro (Vila Real). After a face-to-face interview in the in-hospital phase, follow-up data were obtained through a structured questionnaire applied by phone by trained researchers 6 months later.

**Results:** Of the 202 patients with follow-up information, 27.7% were full-time/parttime workers at the onset of the acute event. After a median follow-up of 6.9 months (interquartile range: 6.5-7.4), 71.4% of the workers returned to work and 21.4% did not return due to disability. The patients that returned were younger [51 (46-54) versus 56 (52-59) years, p=0.033] and they had more

years of education [9 (6-12) versus 6 (4-10),  $p=0.024$ ]. Patients working in the private sector (94.1% versus 58.3% in the public sector,  $p=0.081$ ) and with a lower number of risk factors [0-1 (100%) versus 4-5 (57.1%),  $p=0.118$ ] returned to work more frequently.

**Discussion and Conclusion:** Return to professional work was more common in younger patients, with higher educational level and with a lower number of risk factors. In future analyses, with larger sample size, we intend to study the independent determinants of returning to work, including ACS type and ventricular function.

**Keywords:** Prospective cohort; cumulative incidence; return to professional work; acute coronary syndrome

## 70 Arrábida virus: preliminary genomic analysis of a new phlebovirus isolated in Portugal

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In the Mediterranean region Toscana virus (genus *Phlebovirus*, family *Bunyaviridae*) is considered an emerging pathogen very important in Public Health since it is the etiological agent of meningitis and meningo-encephalitis. In Portugal its presence is demonstrated with the identification of laboratory confirmed clinical cases and also through seroprevalence studies in the human population. In entomological surveillance studies a new virus of the Phlebovirus genus was isolated in Arrábida region, Setúbal. The main objective of this work was to start the phylogenetic characterization of this virus, tentatively named Arrábida. Partial genomic sequences of the S, M and L segments of Arrábida virus were obtained by RT-PCR. The sequence alignments were performed using ClustalX program and the phylogenetic relationships among different virus strains were determined by neighbor-joining analysis using Mega version 5 software. The phylogenetic trees analysis leads to the conclusion that Arrábida virus belongs to Naples' virus serogroup, which comprise, among others, the Toscana virus. The isolated virus shows greater resemblance to phleboviruses identified in Spain and France, namely Massilia and Granada viruses. This is the first phlebovirus isolated in sandflies in Portugal. Studies to clarify its pathogenicity to humans are of the utmost importance. The

present work was funded by PTDC/SAU-SAP/119199/2010 FCT project.

**Keywords:** Phleboviruses, Toscana virus, Arrábida virus

## 71 Influenza Surveillance in Portugal, 2013/2014 winter season

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**Introduction** The National Influenza Surveillance Program aims to collect, analyse and disseminate of information on influenza activity in Portugal. The clinical and laboratory surveillance allows the determination of the weekly incidence rates of influenza-like illness (SG), identification / characterization of influenza virus, detection of outbreaks, identify emergent virus with pandemic potential risk to public health. Was analyzed and described the flu activity in Portugal, in season 2013/2014. **Materiais e Métodos:** In 2013/2014 collaborated: Medical Sentinel Network (MS), enabling the calculation of the incidence rate of influenza-like illness. In the laboratory component, collaborate MS Network, Emergency Units Network, doctors from the EuroEVA project and the Portuguese Laboratories Network for Influenza Diagnosis Influenza sending respiratory samples for testing / characterization of influenza viruses.

**Results:** In 2013/2014, the influenza activity was moderate. The epidemic period was between 1/2014 and week 8/2014, maximum SG 80.7 cases / 100,000 inhabitants in week 4/2014. Laboratory analysis of 869 nasopharyngeal swabs allowed the identification of influenza virus in 467 (54%) SG cases. Of these, 460 (98.5%) were influenza type A: 279 (32%) of subtype (H1) pdm09 and 181 (21%) of AH3 subtype. Were detected 7 influenza viruses type B.

**Discussion and Conclusions:** In 2013/2014 season, the influenza activity was moderate with rates similar to 2012/2013 incidence. The epidemic period occurred earlier in relation to 2012/2013 and was of shorter duration. The influenza virus type A was predominant with co-circulation of two subtypes: A (H1) pdm09 and A (H3). The detected viruses are genetically and antigenically similar to the vaccine stains and sensitive to oseltamivir and zanamivir antivirals.

**Keywords:** Surveillance, Influenza vírus

## 72 Regional variability in patients' trajectories within the healthcare system: EPIHeart cohort

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**Introduction:** In order to allow a timely access to percutaneous coronary intervention (PCI) capable hospitals, the healthcare services network should be effectively used by patients with acute coronary syndromes (ACS). We aimed to describe patients' trajectories in the healthcare system and to identify regional variability.

**Methods:** This study is based on a cohort of ACS patients. Patients were admitted to the cardiology department at Hospital de São João (HSJ), in Porto or Hospital de São Pedro, in Vila Real. Data was collected by trained interviewers.

**Results:** We recruited a total of 409 patients. The majority in our sample were males (72.4%) with a mean age of 64.8 years. We identified 15 trajectories which varied according to the region analyzed ( $p < 0.001$ ). The most often used trajectories were T1) direct admission to a PCI-capable hospital (HSJ: 70.2% vs. HSP: 28.3%), T2) admission to a primary healthcare center and transfer to a PCI-capable hospital (HSJ: 2.8% vs. HSP: 13.6%) and T3) admission to a non PCI-capable hospital and transfer to a PCI-capable hospital (HSJ: 18.4% vs. HSP: 43.5%). In Porto, the shorter trajectory, considering the time between symptoms onset and ECG, was T1 (100 (50-250) minutes), followed by T2 (120 (70-150) minutes) and T3 (150 (60-495) minutes). In Vila Real, the quicker trajectory was T3 (85 (35-375) minutes), followed by T2 (118 (55-303) minutes) and T1 (120 (60-260) minutes). The differences were not statistically significant.

**Conclusions:** The most used trajectories were different according to the region analyzed. Optimizing healthcare services networks and adapting them to regional specificities is essential to ensure the access to a proper diagnosis and treatment, in patients with ACS.

**Keywords:** Trajectories, health services, acute coronary syndrome

## 73 Impact of transportation mode on the time to first medical contact in acute coronary syndrome: EPIHeart cohort

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**Introduction:** A timely arrival to a proper hospital is critical to the diagnosis and treatment of acute coronary syndrome (ACS). The aim of this study was to evaluate the impact of transportation mode used by patients on the time to first medical contact.

**Methods:** This was a prospective cohort study of ACS patients, conducted at Hospital de São João (Porto) and Hospital de São Pedro (Vila Real). Data was collected through structured interviews.

**Results:** Among patients who sought healthcare services due to symptoms (n=403), 61.0% used their own transportation, 30.0% used ambulances from the national institute of medical emergency (INEM), and 8.9% used fire-department-based ambulances. Compared to men, women more often made

use of INEM ambulances (33.9% vs. 28.5%), followed by fire-department-based ambulances (13.4% vs. 7.2%) and patients' own transportations (52.7% vs. 64.3%) (p=0.049). Younger patients, employed, with more years of education and with higher income made less use of fire-department-based ambulances. Patients who reported a more intense chest pain and who recognized the symptoms as a cardiac problem made more use of INEM ambulances (36.7% vs. 24.1%; 36.2% vs. 21.5%) (p=0.015; p=0.007, respectively). The median time between symptoms onset and first medical contact was 63 (30-145) minutes when using INEM ambulance, 123 (60-430) minutes when using patients' own transportations, and 165 (58-498) minutes when using fire-department-based ambulances.

**Conclusion:** Transportation modes chosen by patients vary according to sociodemographic characteristics and clinical presentation, with impact on time between symptoms onset and first medical contact.

**Keywords:** Transportation mode, delays, first medical contact, acute coronary syndrome

## 74 Chest pain severity in the clinical presentation of acute coronary syndrome and its determinants: cohort EPIHeart

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**Background:** Chest pain is a key symptom in the clinical presentation of acute coronary syndromes (ACS). Patients' perception of chest pain may vary, with impact on the time to diagnosis. The aim of this study was to describe chest pain severity according to patients' characteristics, clinical history, type of ACS, and circumstances at pain onset.

**Methods:** A total of 402 ACS patients were consecutively recruited as part of a prospective cohort study at Hospital de São João (HSJ) and Hospital de São Pedro (HSP). A structured questionnaire was completed by trained interviewers. Patients' pain severity was measured on a scale of 1-10.

**Results:** Three-quarters of patients were men (72.9%) with a mean age of 64.5 years. The most frequent final diagnoses were ST-elevation AMI in 39.0% of patients, non-ST elevation AMI in 44.3%, and unstable angina in 9.7%. More than half of the patients were sleeping or resting when chest pain arose (58.4%). The median severity of chest pain was 8 (7-10). In multivariate analysis, men (OR=0.35; 95%CI : 0.21 to 0.59) and patients who were sleeping when chest pain arose (resting vs. asleep, OR=3.53; 95%CI: 1.86 to 6.70; mild-to-moderate exercise vs. asleep, OR=2.21; 95%CI: 1.15 to 4.23; intense exercise vs. asleep, OR = 2.01; CI 95%: 0.77 to 5.22) had a lower likelihood of having more intense pain (>8).

**Conclusions:** This study demonstrated that patients who had lower pain perception were male and were sleeping when the chest pain arises.

**Keywords:** Chest pain; chest pain severity; acute coronary syndrome

## 75 National Programs for Priority Health in Numbers

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In the perspective of knowledge in Health it is important to characterize the national scene regarding to disease and its determinants. The National Priority Health Programs are essential for monitoring and development of Health in Portugal, allowing, a posteriori, the implementation of actions adjusted to reality. The main of this study was to analyze the main indicators of each priority program as the prevalence of tobacco consumption, mortality from circulatory disease or cancer disease, the prevalence of overweight, the in-hospital mortality from diabetes, number of HIV infection, mortality due to suicide, the admissions for respiratory disease and the consumption of carbapenems. The analysis involved several national data sources. Are highlighted just a few results as the standardized mortality rate for malignant tumor - which decreased from 218.7 (per 100,000) in 2010 to 213.8 in 2011. In parallel, the standardized mortality rate from suicide also decreased 2010 to 2011: from 8.1 to 7.5. Studies also revealed HIV infection prevalence rates above 5% in most vulnerable populations. Finally, the in-hospital lethality in hospitalized patients with diabetes was reduced between 2010 (8.1%) and 2012 (7.6%). Should be noted the improvements observed in Health in Portugal in recent years in particular with regard to mortality from malignant tumor and suicide and in-hospital lethality in hospitalized patients with diabetes, which maintains the quality of actions taken in the past and the importance of continuity

**Keywords:** Priority Health Programs, Mortality, Lethality

## 76 Deaths by cause of death, according to the place of death in Portugal (1988-2012)

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The study of mortality provides some of the most important indicators of the health status in Portugal. Mortality statistics are used in medical research, public health monitoring and planning and evaluation of the health status. In this study we analyzed the data provided by the National Statistics Institute, IP, on the number of deaths, total and by all causes of death, by place of death as a percentage, recorded in Portugal between 1988 and 2012. There was a deaths' decrease at home between 1988 and 2012 and an increase in the percentage of deaths at the hospital/clinic. The lowest percentages were noted in deaths elsewhere. It should be highlighted that by the year 1990, the most common place of death was the home, becoming the hospital/clinic after this year. In the 25 years under review, from the analysis of the general deaths by some causes of death in Portugal, it was found that the deaths occurred in hospitals/clinics always had a higher percentage compared to the deaths occurred at home and other places. The exceptions were the circulatory system diseases, cerebrovascular diseases and suicide and other self-inflicted injuries intentionally, which showed a higher percentage of deaths occurred at home. Over the past 25 years there was a reversal of the deaths' location pattern, from home to medical locals. The results reinforce the need for continued monitoring the place of death, so that respective analysis allows adoption of adequate health policies.

Keywords: Death, Cause of death

## 77 Prevalence of symptomatology painful in dentistry students: an alert to misuse of ergonomics

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Musculoskeletal diseases are the most prevalent occupational disorders in dentists. This study investigated the presence of painful symptoms in 148 students enrolled in clinical disciplines of the Dentistry school, Federal University of Rio Grande do Norte, Natal, RN, Brazil. Data were collected by the Nordic musculoskeletal questionnaire. The diagnostic of musculoskeletal symptoms was based on markings in a diagram of the human body where we focused on the neck, shoulders, upper and lower back, elbows, hips, thighs, knees, ankles and feet. In addition, based on this questionnaire, it was calculated the index of severity of symptoms. Data were analyzed from measures of central tendency and variability for quantitative variables, absolute and relative frequencies for categorical variables, and evaluation of the significance between groups (confidence interval and Chi-square) and correlation analysis (Pearson). In relation to the symptoms, females were most affected, independent of the academic level, with values one in the index of severity. It was observed significant positive correlations among all levels of the course and in all anatomic regions (neck, lower back, wrists, hands and shoulders) with  $p < 0.001$ . There was a trend of worsening of symptoms, which produce consequences as absence of the work. It suggests fundamental and urgent needs that some ergonomic measures or legislative procedures used in the prevention of musculoskeletal disorders in the academic environment. It is unacceptable that students in full training process already suffer such conditions.

Keywords: Ergonomics, Occupational Diseases, Cumulative Trauma Disorders, Workplace Safety.

## 78 Work accidents with exposure to biological material in oral health staff of the public services from Brazil

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The aim of this research was to evaluate the prevalence of typical accidents involving exposure to biological materials and their notifications in the oral health staff of health public services in Natal-RN, Brazil. A cross-sectional study was developed in which data collection was based on semi-structured self-administered questionnaire. The prevalence of occupational accidents was 13% and 18% by dentists and assistants, respectively. The results reveal that 100% of accidents reported by dentists and 38.46% by assistants involved blood. Surgery and periodontics (40%) were the specialities most closely related to accidents. As auxiliary, 84.6% of the accidents occurred during the material wash out. Most dentists and auxiliary believes that accidents were caused by inattention. The objects which dentists were more crashed were needles (40%) and to the auxiliary, instrumental (84.6%). Hands were the most affected part of the body (90% and 100%, respectively). Of the injured, 40% of dentists and 42% of dental assistants have not stopped the procedure and did not seek emergency care after the accident. In addition, 100% have reported that there was no record of accidents. Washing with soap and water (90% and 60%) and the use of alcohol 700 (84.6% and 53.8%) were the subsequent procedures to more accidents reported by dentists and assistants, respectively. More than half of dentists (59.3%) and auxiliary (53.8%) reported that there is no more worries protocol to be followed in your workplace in case of accidents. The prevalence, lack of attitude and the lack of reporting of accidents are worrying. We suggest the creation of a faithfully performed post-accident protocol, besides the implementation of continuing education programs to promote health and raise awareness in oral health staff regarding the prevention and notification of occupational accidents, emphasizing its potential consequences, considering the risk factors that they are exposed in the dental practice.

Keywords: Work injuries, occupational health, occupational exposure.

## 79 Health Belief Model applied to the influenza vaccine acceptance

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**Introduction** The Health Belief Model (HBM) has been used to examine motivations for adapting health-related behaviors.<sup>1</sup> This study proposes to access participants' perceptions about HBM dimensions (susceptibility, severity, benefits, barriers,) regarding influenza vaccine-seeking behaviour. **Methods** Data was collected through a telephone survey of a household unit sample (Sample ECOS). Dimensions were obtained through principal component analysis and logistic regression was employed to model the "did not took the vaccine." Results were weighted by age group and region. **Results** The main reasons for not taking the vaccine were "considering oneself to be a healthy person" (33.0%, 95% CI:27.2-39.4), "never or rarely getting sick with the flu/cold" (25.8%, 95% CI:18.1-35.3) and "not being in the risk group or having a health problem" (13.4%, 95% CI:10.2-17.5). After adjustment for age and chronic disease, of the factors associated with not taking the vaccine were perceptions: of low susceptibility (OR=4.4, 95% CI:1.6-12.3), of barriers in accessing services (OR=5.6, 95% CI:2.5-12.5) and of associated side effects (OR=20.9, 95% CI:1.8-240.3).

**Discussion and Conclusion** Susceptibility and barriers emerged as the most consistently dimensions associated with vaccine-seeking behaviour, in accordance to other studies that have applied the model to health preventive behaviours.<sup>1</sup> Vaccination campaigns may enhance their effectiveness if they take into consideration the factors that are most relevant to individual's decision making. **References** 1. Champion VL, Skinner CS. The health belief model, In K Glanz, BK Rimer, K Viswanath, eds., Health behavior and health education: theory, research, and practice (pp. 42-65). San Francisco: John Wiley & Sons. 2008.

Keywords: Health Belief Model; influenza vaccine; susceptibility; seriousness and barriers

## 80 Isolation of Poliomyelitis in Portugal - 2013

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**Introduction** – The last case of poliomyelitis in Portugal occurred in 1986. In 2002 all 53 countries in the WHO European Region were certified polio free. The National Polio Eradication Programme coordinated by DGS includes vaccination, FPA surveillance, laboratory containment and response to virus importation. The National Reference Polio Laboratory at INSA performs laboratory investigation of suspected cases and Enterovirus surveillance. In September 2013 a Poliovirus was isolated from the faeces of an Angolan child who had been admitted to Hospital Dona Estefânia without polio symptoms.

**Material and Methods** – After viral isolation INSA notified the DGS and sent the isolated virus immediately to WHO European Reference Laboratory for intratypic differentiation. The DGS activated the Response Plan to the possible importation of wild polio virus and notified the relevant international institutions. Epidemiological investigation was conducted including the investigation on stools samples collected from contacts.

**Results** – Poliovirus type 1 and type 3 were identified in the stools of the patient. The intratypic differentiation test revealed that the viruses were Sabin like. The epidemiological investigation revealed that the child had been vaccinated in Angola with three doses of oral polio vaccine in 2013. The last dose was about a month prior to the collection of the stools. Any Enterovirus was detected in the stools samples of contacts.

**Discussion and ConclusionS** – This event was useful as it tested the current Response Plan to the possible importation of a wild poliovirus and endorsed its improvement.

Keywords: Isolation, Poliovirus, Portugal

## 81 Health literacy assessment at the primary health care: a strategy for prevention and Health promotion

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**Introduction.** The current paradigm of health predicts full integration of health promotion in the exercise of citizenship, implying that each individual is able to use health care, transmit accurate information to the health professional and also, daily manage its health/disease. Several studies show that to enhance positive outcomes in health, health literacy (HL) should be incremented, as well as the training of skills in e-health literacy (e-HL). It is therefore important to characterize the different individual profiles (health professionals, patients and informal caregivers) of HL and e-HL to reduce the asymmetry of knowledge. The assessment of HL and e-HL at the primary health care in the Centre region of Portugal will allow the development of empowerment strategies addressing the different profiles, under the framework of the governmental program “Programa Nacional de Prevenção de Acidentes”.

**Methods.** Application of the Portuguese versions of the questionnaires Newest Vital Sign, e-HEALS and Health Improvement Card, complemented by a demographic characterization, in a first phase to the health professionals.

**Results.** 126 health professionals (21% males, 25-63, M=46 years old) recruited from six ACES – ARSC revealed adequate HL (81.3%), the majority with perception of high e-HL, healthy diet (56.9%) and lack of physical activity (79.7%).

**Discussion and Conclusions.** The findings suggest the need to maximize strategies to promote HL/e-HL, as well as healthy habits. “Healthy policies” must promote strategies in communication and marketing that enhance literacy in general and HL/e-HL in particular, and thus, the citizens’ empowerment.

Keywords: Health literacy, e-health literacy, primary health care, accident prevention

## 82 Surveillance of environmental tobacco smoke exposure in catering and drinks establishments – The experience of ACeS Porto Oriental

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**Introduction** Each year, tobacco epidemics kills about 6 million people (5.4 million smokers and 600 000 non-smokers) due to ETS exposure. In the absence of a safe level of ETS exposure, the aim of this project is to protect population from this pollutant in indoor spaces, with interventions in CDE.

**General Objective** To reduce in 30% the number of CDE that doesn't comply with tobacco law.

**Materials and Methods** Selection of the sampling areas in the geographic intervention zone of the ACeS Porto Oriental, according to the following criteria: surroundings of schools and colleges; zones of high commercial/social/touristic concentration and large arteries. Identification and characterization of CDE according to the posted label ('smoking allowed' – blue label; or 'smoking ban' – red label). Selection of the CDE with blue label, blue and red labels or without no label at all. Intervention in the selected CDE.

**Results** 66 sampling areas were identified and 222 CDE; 45 of these were selected, and there was an intervention in 38; 7 were excluded. After the 1st intervention, 100% didn't meet the tobacco law. In 66% of the CDE the process was concluded (tobacco law enforcement), and 20% established a smoking ban in all the premises. 11% of the processes were conveyed to other entities (for not complying with the tobacco law) and 24% remain ongoing.

**Discussion and Conclusions** The general objective was achieved. The changes that occurred were considered relevant, namely the change from 'smoking allowed' to 'smoking ban'. The ignorance and/or misinterpretation of the law were the more evoked reasons for the failure of complying with it. The absence of label was considered intentional in some of the CDE. Globally, it was verified a good acceptance of the imposed measures under this project.

**Keywords:** Environmental tobacco smoke (ETS); catering and drinks establishments (CDE); tobacco law.

## 83 “Mexer com a Diabetes” Project

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**Introduction:** Project developed in the municipality of Aveiro, since October 2013, by a multidisciplinary team of professionals (Family Medicine residents, nurse, nutritionist, physicians, physiotherapist and psychologist) from the ACeS Baixo Vouga, in partnership with the local authority.

**Material and Methods:** Group education (average of 10 subjects/ group) of diabetic patients from the Health Centre of Aveiro: 7 theoretical and practical sessions lasting two hours each. In the 1st and 7th session: evaluation of biometric parameters (TANITA C-300 scale and stadiometer) and evaluation of knowledge and life habits (self-administered questionnaire). Before and after the intervention: collecting of HbA1c values.

**Results:** Of the 51 diabetics that participated, 24 (16 males) were present at both times of evaluation. In the 1st evaluation: these 24 had on average 68.6 years of age, a BMI of 30.3kg/m<sup>2</sup> and an HbA1c value of 6.8%. In the 2nd evaluation: there was on average per participant, 0.354kg weight loss and 1.108kg fat-free mass gain. Thirteen diabetics have reported an increase in physical

activity and in the number of daily meals. In the 19 diabetics, who had HbA1c records, there was an average reduction of 0.3%.

**Discussion:** The differences found between the HbA1c values and between the fat-free mass values, before and after the intervention, are statistically significant (paired t-tests,  $p_{\text{HbA1c}}=0.018$ ;  $p_{\text{gd}}=0.024$ ). The results suggest a change in behaviour with a positive impact on the health of participants, meeting the results of studies that have demonstrated cost-effectiveness of Diabetes Self-Management Training Programs.

**Keywords:** Type 2 Diabetes *Mellitus*, Disease Control, Disease Management, Health Literacy

## 84 Maternal chronic diseases and children with congenital malformations in Portugal

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**Background:** Several studies suggest that maternal chronic diseases such as diabetes, thyroid disorders or epilepsy, increase the risk of congenital anomalies in fetuses or newborns of these women (1-6).

**Objectives:** To study the association between chronic diseases of the mother and congenital malformations.

**Methods:** We analysed data from the National Registry of Congenital Anomalies (RENAC) between 2000 and 2010. A prevalence rates were calculated using at numerator the number of cases reported in newborns, fetal deads and terminations of pregnancy. The statistical significance of the association was studied using the chi-square test with a 5% significance level.

**Results:** Maternal chronic diseases more commonly reported were asthma (22.5%), thyroid pathologies (12.6%), epilepsy (8.2%) and diabetes mellitus (5.9%). In pregnant women with chronic illness, 29.5% of offspring had a congenital heart disease, 18.6% musculoskeletal anomalies, 13.3% congenital anomalies of the urinary system and 6.3% had congenital anomalies of the nervous system. Positive association was observed between maternal epilepsy and congenital anomaly of nervous system ( $p = 0.002$ ). No statistically significant associations were found between maternal diabetes mellitus and congenital heart disease ( $p = 0.09$ ).

**Conclusions:** Positive associations were observed between some maternal chronic diseases and the birth of a child with congenital anomalies. These findings highlight the need for continued research in this field.

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**Keywords:** Chronic Diseases; congenital anomalies

## 85 Cytomegalovirus infections of the central nervous system: a retrospective analysis (2010-2014)

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**Introduction:** CMV is a virus associated with severe neurological conditions. Quantitative real time PCR analysis of CSF has contributed substantially to improving the diagnosis and clinical management of CNS complications in CMV infected patients. We retrospectively studied the frequency of CMV infections in CNS pathologies, according to clinical/laboratory/epidemiological data, in cases received at NIH, between 01/2010 and 04/2014.

**Methodology:** 1790 CSF from patients with CNS infection, grouped according to age, immune status and clinical diagnosis were analyzed. Laboratory diagnosis was effectuated by quantitative analysis of CMV-DNA by real-time PCR technology.

**Results:** CMV-DNA was detected in CSF of 26(1.5%) cases. Fourteen of the 26 cases (14/26 - 53.8%) were immunocompromised patients aged  $\geq 30$  years and 12/26 cases (46.2%) immunocompetent adults aged  $\geq 27$  years, except one case with 1 year old. Clinical diagnosis of positive cases: behaviour modifications (15/26) associated with neuroimaging alterations(6), febrile syndrome(6) and vomiting(3), encephalitis (5/26), meningitis (2/26), severe immunosuppression with febrile syndrome (2/26), seizures (1/26), unknown clinical diagnosis (1/26). CMV-DNA viral load values vary between 57-4965 copies/ml in immunocompromised cases and 28-470 copies/ml in immunocompetent cases.

**Discussion/Conclusions:** The frequency of CMV infection in immunocompetent and immunocompromised individuals is similar, but higher values of CMV viral load were found in immunocompromised patients. Detection of CMV DNA by PCR in CSF samples suggests disease, however, positive results should always be interpreted according to the individual clinical context, especially in cases of low viral load.

**Keywords:** Cytomegalovirus (CMV). Central Nervous System (CNS). Cerebrospinal fluid (CSF). Quantitative real-time PCR technology

## 86 The use of Benzodiazepines in Individuals with Insomnia

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**Introduction:** Sleep is an essential need to human beings. With the current social and professional demands, insomnia is becoming more frequent each day. Because of that the consumption of sleeping medication, such as Benzodiazepines, has ramped up to the point of being a public health problem.

**Material and Methods:** This is an observational, descriptive cross-sectional nature and non-probabilistic study. The target was the population with insomnia living in Viseu, and their Benzodiazepinas consumption patterns. The data was gathered

from February to April in the year of 2014, and 182 people were surveyed.

**Results:** The female population represent the bigger share of the study and Terminal Insomnia is the most frequent (50,3%). The majority of the surveyed people (67,0%) is medicated for the problem and 78,7% does so from more than 6 months. The most used drugs are Alprazolam (23%) and Lorazepam (23%). It was shown that the consumption of Benzodiazepinas increases with age, it is taken by female subjects for more than 6 months and by people with more than 40 years old.

**Conclusion:** Knowing that Benzodiazepinas, in the treatment of insomnia, should only be used up to 4 weeks, the survey shows unadvised consumption levels.

**Keywords:** Consumption; Benzodiazepines; Insomnia

## 87 Tooth brushing at school and reduction on dental plaque: evaluation of the effectiveness of an Oral Health Project

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**Introduction:** Oral health programmes that promote supervision of tooth brushing at school and those that involve parents and children have proven to be effective in reducing tooth decay.

The Portuguese National Program for Promotion of Oral Health recommends tooth brushing during school attendance and so in Oliveira do Bairro County was developed by the local Health Centre the Mister Tooth Project (Mr. Tooth) which consisted in oral health education sessions on tooth brushing techniques and implementation of daily tooth brushing in preschool children. In this project participated 258 children (out of 660 of Oliveira do Bairro's preschool children). Our study aimed to evaluate the effectiveness of the project in reducing dental plaque and consequent reduction of dental caries risk.

**Methods:** A quasi experimental community trial took place using 258 preschool children all of them enrolled on Mr. Tooth Project. Index of decayed, missing and filled temporary teeth (dmft) was

evaluated before intervention; dental plaque index (PI) was evaluated before and after intervention. Prevalence of caries and IP variation were also estimated.

**Results:** The prevalence of caries found was 32.8 % (95% CI: 27.0 - 38.6) and the average dmft was 1.2 ( 95% CI: 0.9-1.4 ). The initial IP found was 2.83 (95% CI: 2.80 - 2.87 ) and final IP was 0.40 ( 95% CI: 0.34 - 0.46 ). A significant reduction of the PI was observed after the intervention.

**Discussion and Conclusions:** Lack of control group and the lost of follow up (n = 66) were important limitations of the study. Nevertheless, Mr. Tooth Project proved to reduce dental plaque after an average of 106 days of tooth brushing in school, which suggests its maintenance as a primary strategy for preventing tooth decay.

Keywords: Dental carie, dental plaque, school health

## 88 Spatial Cluster Analysis of Premature Mortality in the Northern Region of Portugal, 2008-2010

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**Introduction:** In this study multivariate analysis methods are used with the aim to identify sets of correlated death causes and sets of Primary Health Care Groups (PHCG) in Portugal's Northern Region (PNR) with similar premature mortality profiles (<75 years).

**Methods:** Age standardized mortality rate of a set of 13 specific causes of death for 24 PHCG was the indicator used. Principal Components Analysis (PCA) and Cluster Analysis (CA) were the two multivariate analysis methods used. Once PHCG clusters were formed, those differing in terms of the variables which contributed to their grouping were identified, using non-parametric Kruskal-Wallis and Tukey tests.

**Results:** Cluster Analysis classified variables (death causes) in four classes: I - HIV/aids, trachea, bronchus and lung cancer, stomach cancer and Tb; II - cerebrovascular diseases, COPD,

diabetes and ischemic heart disease; III - pneumonia, colorectal cancer and chronic liver disease and cirrhosis; IV - transport accidents and suicide. For each of these classes three to five sets of PHCG with similar premature mortality profiles were identified.

**Conclusions:** The multivariate procedures used in this study identified homogeneous patterns for premature death causes and PHCG in PNR. They also reduced the information dimension and grouped PHCG according to similar mortality profiles. Hopefully, the results of this study will support a more integrated health planning in PNR, framed by "epidemiological borders", rather than geographical/administrative ones.

Keywords: Cluster Analysis, Principal Component Analysis, Mortality mapping

## 89 Stroke: evolution and trends of the incidence rate in the population under observation of General Practitioner's Sentinel Network between 1990-2012

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**Introduction:** Stroke is a leading cause of death in Portugal (in 2012 128.6 / 105), and there is little information on its incidence.

**Methods:** An ecological time-series study was conducted using data from GP Sentinel Network between 1990 and 2012, with exception of the years 1999-2003, from which family doctors from GP Sentinel Network reported all new cases of stroke in their patients' lists. Incidence rates were calculated for three years and adjusted to the age distribution of the Portuguese population. The trend was estimated using Poisson regression models. There was an increase of 265.1/ 105 incidence rate for 343.7 / 105 patients during the time period under study. This annual increase of 1.30% (95% CI - 3.99 to 6.89) was not significant. There was an annual increase in the incidence rate, not significant, 0.47 (95%

CI -6.83 - 8.35) in women and 2.17% (95% CI -5.54 - 10.52) in men, noting however, a significant annual increase in men aged 35-44 years (7.6% [95% CI 2.60 to 8.80]).

**Discussion:** Although not have been a significant annual increase in the incidence rate of stroke in both sexes, there was a significant increase in men of 35-44 years, which may be related to the higher prevalence of hypertension and smoking in men or/ and an increase over the years of the frequency of the main risk factors at early ages.

**Keywords:** Incidence, stroke, General Practitioner Sentinel Network

## 90 School Health, Communication and documentation

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**Introduction:** The Public Health Unit (USP) has a key role in defining objectives, priorities and planning in school health (SE) strategies and respective monitoring. This intervention requires a constructive communication among professionals from different units, favoring the share of information.

**Material and Methods:** USP carried out an analysis of projects implemented by SE teams in the county between 2004 and 2010. This assessment identified the need to create a number of projects and the development of registration and evaluation tools, based on Local Health Diagnostic and Plan. Consequently articulation procedures were defined with the operational teams of SE (in Community Care Units), Hospital Pedro Hispano and community partners.

**Results:** Optimization of the articulation within SE allowed the development of: Project pouch; Parameterization proposal of the Nursing Practice Support System for documentation of activities; Tools in Excel for recording activities of schools, of the E-bug evaluation and indicators monitorization; Page in the ULSM site and intranet.

**Discussion and Conclusions:** It is important to focus on the relationship between the various sectors of health and community, sharing best practices, standardizing projects nationally and promoting benchmarking. It is a pressing need for development

of information systems and adequacy of human resources to the current demands. The challenge also involves the exploitation of research, so that the evidence reflects the impact of SE intervention in health determinants.

**Keywords:** School Health, articulation, documentation, monitoring.

## 91 PELT and tobacco consumption in educated youth of Póvoa de Varzim and Vila do Conde

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**Introduction:** According to WHO, smoking is the leading preventable cause of disease and death in worldwide. Traditional preventive measures in order to transmit information and to increase the knowledge proved to be ineffective. The PELT, Tobacco-Free School Program, is a different response, integrating the development of personal and social skills, contributing to effective behavior change.

**Objectives:** To characterize the pattern of tobacco consumption and smoking prevalence track in young educated of the 7th, 9th and 12th grade from schools of Póvoa de Varzim and Vila do Conde in 2013.

**Methods:** cross-sectional study, Survey questionnaire to a representative sample study of the target student. Statistical analysis was performed in SPSS v21.

**Results:** Of the respondents, 774 answered the questionnaire, 48.3% male and 51.7% female. 9.7% assume smoking, of which 60% were daily smokers, 55.5% of smokers consume daily 5 to 10 cigarettes, 25.3% smoked because they feel comfort. Smokers who started to consume before the age of 14 smoke more cigarettes per day ( $p = 0.00$ ). The higher consumption was observed in the Secondary Schools. In PELT Schools were identified 2.5% smokers against 11% in other schools. At PELT Schools the tobacco consumption starts late ( $p = 0.03$ ).

**Conclusions:** PELT presents itself as an important health promotion tool based on active pedagogical processes, allowing help young people improve self-esteem and assertiveness, enabling them to make informed and responsible decisions with regard to consumption tobacco.

Keywords: Smoking, Tobacco, Smokers

## 92 Effect of an action for health promotion in the posture of administrative technicians

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**Introduction:** The continuous and prolonged computer use can lead to musculoskeletal problems and can also lead to the adoption of incorrect postures and overburden structures of the musculoskeletal system, compromising the performance of the worker. It is important a therapeutic preventive and intervention to reduce occupational problems.

**Objective:** To investigate the effect of an action for health promotion, in the posture of administrative technicians and intensity of pain in different body segments.

**Methods:** A quasi-experimental study consisted of 45 administrative technicians, who were subjected to an initial posture evaluation scale with Upper Limb Rapid Assessment (RULA) and pain assessment was performed. Subsequently, there was an action for health promotion in which all administrative staff was invited to participate. The control group was formed by individuals who did not participate in the action and the experimental group, for those who participated. After a month of action a reevaluation was performed. In comparing the moments Wilcoxon test was used. The statistical program used was SPSS, considering an  $\alpha = 0.05$ .

**Results:** There were statistically significant changes in the experimental group between the initial and final evaluation by RULA ( $p = 0.001$ ). After the action for health promotion, there was a statistically significant decrease in pain intensity in the neck ( $p = 0.041$ ), cervical ( $p = 0.011$ ), right shoulder ( $p = 0.038$ ), thoracic region ( $p = 0.027$ ), right arm ( $p = 0.042$ ) and lumbar region ( $p = 0.017$ ) only in the experimental group.

**Discussion and Conclusion:** It is concluded so that the action of health promotion had positive effects on posture and pain of administrative staff.

Keywords: Occupational health, health promotion action, RULA

## 93 Diagnosis of Dengue cases, native and imported, at the National Health Institute Dr. Ricardo Jorge (2011-2013).

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Dengue virus is recognized as the most important arboviral pathogen, endangering one third of the human population. Dengue virus is transmitted exclusively by mosquitoes, primarily *Aedes aegypti* and *Ae. albopictus*, and comprises four serotypes (DEN 1-4) with the same epidemiological characteristics but genetically different. Human infection by this virus is in about 60% of cases asymptomatic, making surveillance involving donations of blood and tissues a priority in human health systems. Cases of disease are mainly of dengue fever and, less common, cases of dengue hemorrhagic fever or dengue shock syndrome. In Portugal, the reference laboratory diagnosis of dengue is carried in CEVDI/INSA. In this laboratory techniques of direct and indirect diagnosis are performed. Until 2010 the laboratory identified annually about 10-20 cases of dengue imported from endemic areas, mainly in Brazil. In 2011 the lab has confirmed six cases of Dengue, half of them from Brazil. In October 2012, CEVDI/INSA confirmed the first two autochthonous dengue cases in Madeira Island and identified the serotype as DEN1, originated in Latin America. In the last quarter of 2012, CEVDI confirmed 95 dengue cases (183 in diagnostic applications originating from Madeira) and 11 cases of importation into the continent from Madeira Island. CEVDI/INSA also collaborated in the molecular blood donor's analysis in Madeira Island and identified seven positive samples from asymptomatic donors, in 530 tested samples. In February 2013, the laboratory identified an unusual number of cases of imported dengue from Angola. These were the first cases of an outbreak, which occurred mainly in the region of Luanda, with over 800 cases. In total the CEVDI/INSA confirmed 89 cases imported from Angola. The virus was identified as DEN1 with African origin. The origin of imported cases of dengue fever diagnosed in CEVDI/INSA in these last few years reflects the global distribution of dengue fever (2011), the occurrence of dengue in new areas (2012) and traveller preferences for tourist or business purposes (2013).

Keywords: Dengue, laboratory diagnosis, autochthonous cases, imported cases

## 94 Characteristics associated with the diagnosis of HIV in individuals aged over 50 in Portugal between 1983 and 2013

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**Introduction** In recent years, the number of people aged 50 years and over who are diagnosed with HIV infection has increased globally. An ageing Portuguese population increases the need for understanding of the burden and characteristics of HIV in this age group to improve access to care.

**Methods** We selected persons over the age of 50 with a confirmed HIV diagnosis and notified to the national HIV surveillance system between 1983 and 31 December 2013. We conducted a descriptive analysis.

**Results** In the study period, 6782 persons were diagnosed with HIV, of these 2653 (39%) developed AIDS. The male female ratio was 2.5. The majority of cases were of Portuguese origin (4987, 77%) and heterosexuals (5509, 81%). In 2013, this group of individuals were responsible for 26% of all new HIV diagnoses made and a rate of 8.4 cases per 100,000 persons observed.

**Discussion and Conclusion** The epidemiological profile of HIV infection has evolved, now persons aged 50 and over account for a quarter of all new diagnoses made. Understanding the needs of this age group is important to optimize prevention and treatment programs.

Keywords: HIV, older adults, age, epidemiology

## 95 Geographic distribution analysis of the Congenital Anomalies prevalence per ACES, in Portugal in the period 2000-2010

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**Introduction:** Congenital anomalies do not represent obligatory declaration diseases, although their notification is recommended by the Health Directorate-General of Health. The National Registry of Congenital Anomalies (RENAC) receives anomalies notifications observed in newborns, stillbirths and medical terminations of pregnancy. One of its goals is to determine the Congenital Anomalies prevalence in Portugal and characterize their geographic distribution. The main objective of this study is to analyze the spatial distribution of Congenital Anomalies prevalence between 2000 and 2010, disaggregated by ACES.

**Material and Methods:** To estimate the Congenital Anomalies prevalence rate was used as numerator the number of newborns and stillbirths, with at least one anomaly diagnosed by the end of the neonatal period. It was used as denominator the number of births. These estimates were calculated per mother's residence in each ACES (source: INE). The strata in the map are based on the values internationally accepted as expected prevalence, which are of 200-300 cases per 10,000 births / year.

**Results:** The prevalence of Congenital Anomalies is less than 199.9 / 10,000 births for most of the ACES. There was clusters in the cases distribution ( $p$ -value = 0.01). The distribution of the clusters resulting from the application of Local Moran's Index was made in three areas of high values and three areas of low values.

**Discussion and Conclusions:** The Congenital Anomalies prevalence in Portugal, between 2000 and 2010, was not very high, not exceeding in any ACES 300 cases per 10,000 births / year, from which the occurrence is higher than expected.

Keywords: Congenital Anomalies, Prevalence, Geographic Distribution

## 96 Prevalence, Control and Determinants of Hypertension in University Workers

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**Introduction:** Hypertension is quantitatively the major risk factor for cardiovascular disease. Implementing population-based strategies to control and prevent hypertension, particularly among workers, is fundamental. Given the number of hours that an individual spends in the workplace and, being Occupational Health a mandatory activity for employers, professionals in this area are in a privileged position to outline and implement health promotion programs. Thus, this study aimed to estimate the prevalence of hypertension in a sample of university workers.

**Material and Methods:** A cross-sectional study was conducted involving 917 workers of the University of Porto, who participated in at least one Occupational Health assessment in 2013. A logistic regression model was used in order to calculate the adjusted odds ratios for the risk factors for hypertension and their confidence intervals at 95%. Statistical analysis was performed using the IBM SPSS Statistics 21.0 software.

**Results:** The estimated hypertension prevalence was 32.4%. Among hypertensive workers, 43.6% were under pharmacological treatment and among the latter, 58.0% had normal blood pressure levels. In addition, 86.4% had dyslipidemia, 79.8% were sedentary, 74.8% were overweight or obese and 17.3% smoked regularly. Workers with a higher risk for hypertension were from the Law School (OR=1.66, 95%CI 0.55-5.00) and employees of the Medical School showed a decreased risk (OR=0.26, 95%CI 0.09-0.73).

**Conclusion:** Although the prevalence of hypertension found was lower than the national average, more than half of the hypertensive individuals were not under any pharmacological treatment and accumulated other cardiovascular risk factors. Thus, it is necessary to implement strategies that promote the hypertension control among university workers.

Keywords: Hypertension; Prevalence; Risk factors.

## 97 Reading performance in children with visual function anomalies: a public health problem?

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**Introduction:** Preventable visual loss in children is an important public health problem. The aim of this study was to identify the impact of visual function anomalies in reading performance.

**Methods and materials:** descriptive and cross-sectional study. A convenience sample with 672 children of school age (7.69±1.19) was recruited in 11 Schools in Lisbon (1st to 4th grade). Children received a visual function evaluation and a reading performance evaluation (34 Portuguese words), and then were classified in two groups: normal visual function (NVF=562) and abnormal visual function (AVF=110).

**Results:** Children with AVF presented a lower number of correct words (AVF=31,00, NVF=33,00, p<0,001) and a lower precision (AVF=91,18%, NVF=97,06%, p<0,001). When comparing children between the 4 grades, fluency (AVF=24,71, NVF=27,39, p=0,007) was lower in children with AVF for all grades except for the 3rd grade. The risk of having a low reading performance is higher in children with AVF [OR=4,29, I.C.95% (2,49,7,38)]. The 2nd, 3rd and 4th grades presented a lower risk of having a low reading performance.

**Discussion and Conclusions:** Children with AVF presented a lower reading performance. The visual function role is more significant in the 1st and 2nd grades. A normal visual function is important to an effective reading performance. Ophthalmological observation is essential before 1st grade to assure a normal reading process in children.

Keywords: Reading performance, visual function anomalies, school grade.

## 98 School white milk available in Kindergartens and 1<sup>st</sup> Cycle Schools of municipalities Gouveia, Seia and Fornos de Algodres

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**Introduction:** In municipalities Gouveia, Seia and Fornos de Algodres was implemented the promotion project of school white milk consumption since academic year 2009/2010. This project is integrated into the PEACE (Food Education Program in School Community) which falls within the national plan for school health developed by the Public Health Unit of the ULS (local Health Unit) of Guarda.

**Methodology:** The implementation of this project allows promoting white milk consumption from the schools with kindergartens and 1st cycle schools involving parents, teachers and students.

**Results:** 2013/2014 Gouveia, Seia, Fornos de Algodres: % kindergartens using school white milk - 72.7% 62.5% 67%, respectively; % Schools 1st cycle using school white milk 100% 66.6% 0%, respectively; % School white milk relatively the chocolate milk (Kindergartens/1st cycle) 50%/ 50%, 17%/5% No Rating.

**Discussion and Conclusions:** The daily consumption of products high in sugar can result in childhood obesity, tooth decay, diabetes and cardiovascular disease. Therefore, and taking account that the school white milk is a food that is consumed daily, although it is allowed that schools make available school chocolate milk from complying with specific rules. The white milk should be a food to promote as preferential choice contributing to the reduction of the above. We can conclude that where there was a greater involvement of the school community there was an effective increase in the single school milk fraction provided by the schools.

Keywords: Milk, School, Children, Obesity

## 99 Questionnaire on water availability in schools, in Portugal, in the academic year 2011/2012

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**Introduction:** Good hydration is important to ensure the correct functioning of body functions, particularly in children. However, several studies have demonstrated an inadequate water consumption (WC) among children, and proposed interventions in schools to promote it. Thus, it is necessary to know the availability of water and the means to promote its consumption in schools. The present study aims to evaluate the availability of drinking water and existence of promotion strategies to its consumption, in Portuguese schools.

**Methods:** As part of the partnership between the Directorate-General for Education and the Directorate-General of Health, namely through the National Program for the Promotion of Healthy Eating, an online questionnaire was made available to all grouped and non-grouped schools, in Portugal mainland and its autonomous regions (10311 schools), in the 2011/2012 academic year.

**Results:** We considered responses from 1363 schools (13.2%). When all considered, 44.0% reported having ≥1 fountain (22.0 to 60.0% when stratified by region). In 64.0% of the schools WC is encouraged in buffet/bar and 38.0% reported WC promotion activities (mostly Health Education - 57.0% of activities).

**Discussion/Conclusions:** There was a low availability of water fountains in schools and a small number of activities aimed at promoting WC. These results are limited by a low complete response rate (13.2%) and by non-inclusion of the students' perspective. However this study points out the need for greater intervention in schools in terms of water availability and promotion of WC.

Keywords: Diet habits, obesity, school health promotion, water consumption

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## mort@lidades.Evita - a visualization tool of avoidable mortality

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**Introduction:** Avoidable Mortality (AM) is used to study health services performance and impact on population health. Monitoring of AM in the Northern region of Portugal has been essential to support regional and local decision-making and planning. As such, there was a clear need to construct a tool for the communication of information on the trend analysis of AM in the period from 1989 to 2010.

**Material and Methods:** The information relevant to include in a computer dynamic query tool was selected from the trend analysis of AM from 1989 to 2010. The data were processed in Microsoft Excel and the tool programmed in Visual Basic language, allowing the user to generate different tables, graphs and choropleth maps. Indirect standardization of mortality rates (95% CI) was used for comparison purposes, using Portugal NUTS I (mainland) as a reference.

**Results:** The tool was developed in three sections: "Evolution of preventable deaths" – Number of deaths, quinquennial variation disaggregated by sex and NUTS III (sub-regional levels); "Evolution of observed and expected deaths" – standardized mortality ratios disaggregated by cause of death and sex; "Evolution of standardized mortality ratio" – visual comparison of standardized mortality ratios between the different NUTS III (at the user's choice) over the 20 years period. The tool was made available in the portal of the Northern Region Health Administration.

**Discussion and Conclusions:** The mort@lidades.Evita tool allows health services, their professionals and decision makers to know, in a simple and dynamic way, the impact of their intervention and its better adjustment to the population health needs.

Keywords: Avoidable mortality, Health gains, Inequalities

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## Air quality in the districts of Aveiro, Lisbon, Faro and Porto

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Air quality, over the past decades, has been subject of study and legislative action alongside the growth of industrial activity and population, major contributors to its degradation. Once the consequences of this degradation cause effects on human health and ecosystems, it is necessary to implement measures to control air quality. The national network of monitoring of air quality, applied to the entire Portuguese territory, allows us to analyze the concentrations of air pollutants emitted by various emission sources in Portugal. This study, characterized as observational retrospective cohort, aimed to analyze the evolution of the air quality in the cities of Aveiro, Lisbon, Portimão and Oporto in the period of 2005-2011. Data collection was conducted via web "QualAR" database online on air quality of the Portuguese Environment Agency. The pollutants studied were PM10, NO2, CO, O3, and C6H6. The selection of the stations was based on the same type of environment and identical focus of pollution. All the evaluated stations were characterized by urban environment ambient and vehicle traffic areas. For a description of the parameters it were applied simple descriptive measures. Statistics strategies applied were: Student's t test for the population mean, General Linear Model: Repetead Measures ANOVA and I to factor. Based on the legislative framework in force in each of the years under review, the results show that concentrations of PM10 and NO2 exceeded their limits of protection of the human health defined by national legislation. In general, between stations and regarding the annual concentration of pollutants, it was found that the Lisbon station presented the highest annual concentrations of pollutants, as the station is located in one of the main routes of Lisbon with frequent traffic congestions and a large traffic flow. The stations that recorded lower annual concentrations were Aveiro and Portimão, since they stand characterized with a lower population density and less anthropogenic activity.

Keywords: Air quality, air pollution, pollutants, human health

## 102 Assessment of contamination by bacteria and fungi in the waste industry and its operators

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Work and health are closely human-related concepts that form a duality both in a traditional perspective, in which disease prevention in the workplace, occupational health and the preventive health model take on particular relevance, and in the social aspect, in which the preventive approach and individual attitudes on occupational health have been the focus of special attention. In this context, the previous knowledge of the risks to which workers are exposed is of crucial importance, and preventive actions for the accurate identification and quantification of those risks should be initiated. This work is aimed at knowing the risk of occupational exposure to biological agents (bacteria and fungi) in the waste sorting industry and landfills. The continued work undertaken was based on references focusing on the issues associated with biological agents in an occupational context, complemented by the collection, identification and quantification of the biological agents associated with the activity of reuse of waste. The experimental component in this study comprised collections at surface level, carried out with a view to evaluating the microbiological contamination and transmission of biological risks through contact surfaces (fomites). Strategic points were selected as to the route in each industrial unit (water tap and doorknob in the bathroom, lockers' knobs, administrative services knobs and the inside of protective breathing masks). The biological contamination of the operators' hands was equally assessed. The evaluation of biological risk in surfaces and manipulators shows the existence of considerable bacterial contaminations on the surfaces studied and in the hands of the collaborators of the productive sector. The compared analysis of the contamination of contact surfaces with the hands of the collaborators revealed the inexistence of a correlation pattern between the bacterial and the fungal microflora of manipulators and surfaces, the bacterial contamination being much higher in the former. However, and taking into account the overall average counts of each surface studied, it was possible to establish contamination routes of microbial charge (cfu/dm<sup>2</sup>) in terms of viable bacteria and fungi

on the surfaces under analysis. The results of this research confirm the need for specific training plans, related with the occupational exposure to biological agents, to be put in place alongside engineering and organisational measures, as well as collective protection measures supported by the implementation of individual ones.

**Keywords:** Biological Agents; sorting of waste; Landfill; Biological risk; Fomites

## 103 The International Traveler Profile: A Decade of Change

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**Introduction:** In recent decades, international travel has had a steady growth, reaching in 2013 a total of 1,087 million people. In the north region of Portugal, this growth was evidenced by the need to open new International Vaccination Centres (CVI), with a consequent increase in the number of Travel Medicine consultations – from 6357 (2004) to 14,111 (2013). Thus, it becomes important to study the profile of the international traveler, in order to tailor the response of services to its current traits.

**Materials and Methods:** A descriptive study and comparison of the travelers' profile who visited Porto's IVC in 2004 (n = 6,357) and 2013 (n = 5814). Analysis of existing variables in the records of the consultations: gender, age, place of residence, destination, and purpose of travel and length of stay. Data on occupation and accommodation at the destination for the year 2013 was also collected. The statistical analysis performed consisted in determining the ratio of travelers by each variable per year.

**Results:** Comparing the years 2004 and 2013, the proportion of female travelers decreased, keeping the male travelers as the most common. In both years of study, the travelers in the working-age range were the ones who sought most the consultations, with over 70% of these residing in the district of Porto. The continent

of Africa was the most sought in 2004 and 2013. In 2013, Angola (67.1%) was the main destination in Africa, Brazil (70.3%) was the main destination in America and India (41.3%) was the main destination in Asia. In 2004, 50.1% of travels had a reported length of time of "8 to 15 days", while in 2013, 31.6% had a duration of "16 to 30 days" and 31.5% of "over 3 months". From 2004 to 2013, the purpose of travel went from mainly tourism to business.

**Discussion:** In the last decade, the number of consultations in the Northern Region IVCs had a global growth of 121%. The African continent remained the main travel destination, and Angola the main country destination. However, with respect to length of stay and purpose of travel, there were relevant changes, including an increased length of stay accompanied with a reversal reason of travel from tourism to business travel.

**Keywords:** International Vaccination Centre (IVC), International Health

## 104 Prevalence and surveillance of arterial hypertension in health care workers of ACES Almada-Seixal

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**Introduction:** Arterial Hypertension (HTN) is the most frequent modifiable cardiovascular risk factor in Portugal and is associated with circulatory diseases. Knowledge about healthcare workers HTN prevalence and surveillance is necessary for an adequate prevention and treatment. The study objectives were: 1) to estimate HTN prevalence in health care workers at the primary care public health center of Almada (ACES Almada); 2) describe the health care system surveillance of healthcare workers.

**Methods:** Was conducted a random sample of all 407 healthcare workers at ACES Almada. After informed consent, healthcare workers blood pressure was measured, and they were asked to answer a questionnaire that aimed to describe healthcare workers blood pressure surveillance and socio-demographic status. Data collection was performed in August and September of 2012. For blood pressure evaluation and surveillance, Regulation number 20/2014 of Directorate-General of Health was considered.

**Results:** 201 healthcare workers were included in the study. Healthcare workers average age was 45,6 years and 80,6% were females. HTN prevalence was 23,9%. Among the healthcare workers with HTN 85,6% had their disease controlled and the

same proportion knew they had HTN. Three Healthcare workers were diagnosed during the study.

**Discussion and Conclusions:** HTN prevalence in ACES Almada healthcare workers was lower than in the Portuguese population, however ACES Almada healthcare workers are younger and with a greater proportion of females than the Portuguese population. The study demonstrated the need of further HTN surveillance in ACES Almada healthcare workers.

**Keywords:** Arterial Hypertension, Healthcare Workers, Surveillance

## 105 Legionnaires' disease surveillance in Portugal 2004-2013

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**Introduction:** Legionnaires' disease (LD) is a mandatory notifiable disease in Portugal since 1999. In 2004 the Integrated Epidemiological Surveillance Program of Legionnaires' Disease (PVEIDL) was created. The PVEIDL allows the notification of LD cases by clinicians and laboratories. This report aims to analyze the Portuguese epidemiological data from 2004 to 2013.

**Methods:** From 2004 to 2013 the LD notifications database was analyzed and also the hospital admissions recorded as LD cases in the database "Grupos de Diagnósticos Homogéneos da Administração Central do Sistema de Saúde".

**Results:** 962 cases of LD were notified from 2004 to 2013. An Epidemiological inquiry was performed in 73,5 % of notified LD cases. The districts with higher notification rates per million were Braga (21,46) and Porto (19,90). 1188 hospital admissions were recorded with LD diagnose between 2004 and 2013. The districts with higher hospital admission rates recorded as LD cases per million were Porto (24,42) and Braga (20,75).

**Discussion and Conclusions:** We noticed an increase in the number of LD notifications and hospital admissions. The analyzed data reinforces the need to strengthen LD surveillance as well as the implemented measures for disease prevention and control.

**Keywords:** Legionnaires' Disease; Legionella; Public Health Surveillance; Portugal

## 106 Diagnosed Prevalence of Obstructive Sleep Apnea Syndrome: Data from the Portuguese GP Sentinel Network

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**Introduction:** Obstructive sleep apnea syndrome (OSA) is characterized by recurrent episodes of apneas and hypopneas, secondary to the collapse of the upper airway during sleep, and is associated with cardiovascular events. In Portugal, its magnitude is unknown, particularly at primary health level of care.

**Material and Methods:** A cross-sectional study took place during 2014, in which sentinel physicians were invited to participate, by reporting all cases under the diagnosis of OSA registered on their lists of users. The scientific protocol and questionnaires were sent to physicians who agreed to participate (n=29). Prevalence of OSA by sex and age group was calculated. Cases were characterized by sex, age, method of diagnosis, clinical history and clinical management. The association between severe OSA and pertinent risk factors was evaluated using a logistic regression model and adjusted OR were calculated.

**Results:** Prevalence of OSA in the population aged 25 years or over was 0.89% (95% IC: 0.80-1.00%). It showed to be higher on males 1.47% (95% CI 1.30 to 1.67%) and those aged between 65 and 74 years (2.35%). Most of the cases had severe OSA (48.4%). Obesity (84.6%), hypertension (74.8%) and diabetes mellitus (38.7%) were the most frequent co-morbidities observed in those patients. Genre (OR: 2.6 for males) and obesity (OR: 4.0) were associated with a higher risk of severe OSA.

**Discussion:** A lower prevalence than estimated in other countries was found which may be explained by case definition used, but could also indicate, as referred by other Authors, an important under-diagnosis of this health condition.

**Keywords:** Obstructive Sleep Apnea; Portugal; Prevalence Study; GP Sentinel Network

## 107 Sleep pattern on young healthy college student

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**Introduction:** Sleep is essential, its deprivation in humans could lead to death. Sleep is a Behavioural state, with perceptual alterations, reversible and non-responsive to the environment. The need for sleep is individual and varies greatly with age.

**Objective:** To know the sleep pattern on young healthy college student, taking as its starting point the student's life and the fact that they live in a "online" world, being supposed: changes in The sleep-wake cycle and differences in sleep pattern.

**Material and Methods:** We studied 19 students, male, with an average age of 19.79 years, with the range between 18-23 years old non-smokers. We conducted a complete polysomnography. From the Parameters obtained we present a simple descriptive analysis and compared to known patterns on adults.

**Results:** Significant differences were observed in all parameters, with the exception of Total Sleep Time (TST) and latency to sleep. Comparing to a closer age range (20-29 years) the differences diminish, continuing to be significant, with exception of TST and latency.

**Discussion:** The sleep pattern of young college student (18-23 years), has its own specificities, in particular: a TST higher than those found for the age group 20-29 years; a sleep efficiency higher than those found for adults and for 20-29 years; a percentage of deep sleep far superior to those found in the groups reviewed; the differences in the percentages of N2 And REM sleep, are consistent for both comparison groups, having our sample smaller percentages of those types of sleep.

**Conclusion:** We conclude that sleep in a healthy young adult is different from sleep in a healthy adult. This age group has longer sleep time, increased sleep efficiency, and a larger amount of deep sleep.

**Keywords:** Sleep; sleepstages, polysomnography, youngadult, reference values

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## Use the internet as a means of access to oral health information - a pilot study

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**Introduction and Objectives** The use of internet has provided to the public an access to a wide range of specific information in the area of oral health. This study aimed to determine the frequency of access and classify the type of information collected by a group of volunteer adults.

**Materials and methods** A cross-sectional, descriptive and analytical study was conducted among 116 adults who voluntarily agreed to participate in a survey using self filling questionnaire available in a digital platform. The sampling method used was non probabilistic and by convenience. We performed a descriptive and univariate inferential statistical analysis using the computer program SPSS 22.0.

**Results** The majority of the sample was male (56.9%) and the most representative age group is 25-34 years (12.9%), with a mean  $\pm$  SD age of  $44.6 \pm 8.7$ . Reported residing in a sub-urban area 87.1% of respondents, 60.3% have an education between 9-12 years and only 13.8% completed college. Most reports earning monthly between one and two minimum wages. In 94.8% of respondents reporting having daily access to the internet and 76.7% of the sample said remember ever having used the internet to search for information related to oral health. It was also found that men surveyed more information than women (53.4%,  $\chi^2 = 0.390$ ,  $p = 0.532$ ) and also individuals with less than 44 years (OR = 11.3 age, 95% CI [5.2, 17.6]), or more than nine years of schooling (OR = 8.5, 95% CI [6.3, 12.4]) and equivalent household income up to two minimum wages or more (OR CI95% = 1.9 [1.1, 3.0]) are more likely to turn to the internet to search for information about oral health. The information found is classified as being of satisfactory quality by 41.4% of subjects and 17.2% of respondents reporting to have adopted behaviors related to oral health in light of his research by considering that information reliable.

**Conclusions** Respondents still report to a very limited way to appeal the internet to search for information of oral health and a reduced number indicates that altered behaviors based on this research. The older age groups had little use of this tool, even having a greater availability of time to research. The probability

of accessing the internet to search for information oral health essentially seems to depend on age, education level and income.

**Keywords:** Oral Epidemiology , Health Literacy , Medical Informatics

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## First autochthonous case of Canine visceral leishmaniasis in Guaíra – Parana - Brazil

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Brazil has been facing an expansion of canine and human visceral leishmaniasis. Paraná state was considered harmless a few years ago, when it was notified the first case of autochthonous disease in dogs. Visceral leishmaniasis (VL) is an anthroponosis very important in public health. In Brazil, it is transmitted by Sandflies and *L. longipalpis*. It is a systemic disease that affects the mononuclear phagocyte system, prejudicing the spleen, liver, lymph nodes, marrow bone and skin. According to the World Health Organization, this disease is one of the six most important parasitic diseases that affect the population. The present paper reports the first autochthonous case of canine VL in Guaíra, Paraná. A female dog was seen in the Veterinary Hospital, complaining about ocular hyperemia. After treatment for conjunctivitis without clinical improvement, the suspicion was VL, because the patient was from a town that borders an endemic region for the disease. Serological tests were positive, confirming the suspicion. In Brazil, the treatment of dogs is not recommended by the Ministry of Health, who advocates euthanasia as a control form associated with entomological and epidemiological surveillance of the disease in order to reduce the mortality rate, morbidity rate of human and canine cases. For owners who opt for the treatment of the animal, measures that reduce the risk for the animal are aimed, becoming an important reservoir for humans, such as the use of deltamethrin impregnated collars, it is recommended that a clean and sanitized environment be maintained.

**Keywords:** Public health, metazooses, kala-azar.

## 110 Air quality assessment in classrooms

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The modern and growing consumption pattern has consequences in the environment, which inevitably reflect on human health. Daily, air quality has implications on our wellbeing and influences and can affect our future, which is why the quality of indoor air has been identified as a major environmental risk to public health, becoming especially important in the case of vulnerable groups, such as children. This study was meant to evaluate the air quality in schools in the municipality of Coimbra, Portugal, in the four seasons of the year (fall/winter and spring/summer). The temperature was measured (T°), relative humidity (RH), carbon monoxide (CO) concentrations, carbon dioxide (CO<sub>2</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), volatile organic compounds (VOCs), formaldehyde (HCHO) and particulate matter (PM<sub>10</sub>), within 51 primary schools in the municipality of Coimbra, Portugal and the surrounding outdoor area in the autumn / winter season and spring / summer. Also, a grid was filled with characterization of structural and functional conditions of the schools. The sample collection took place from November 2010 to February 2011 (autumn / winter season) and March 2011 to June 2011 (spring / summer season). Statistical t-student tests were applied for paired samples and the Wilcoxon t test. It was found that in 47 schools, the average concentrations of CO<sub>2</sub> was well above the maximum reference concentration (> 984ppm), mentioned in the Portuguese legislation. The maximum concentration values found inside the rooms, were very critical, especially in the fall / winter, reaching 5320 ppm. In some schools, the average concentrations of VOCs and PM<sub>10</sub> indoor exceeded the legislated maximum concentration of reference. We have further found that significant values were not detected (risk) for CO, HCHO, NO<sub>2</sub>, SO<sub>2</sub> and O<sub>3</sub>. We have found a higher concentration of pollutants inside the room compared with the outside. The results suggest that inadequate ventilation is associated with some results found, in particular the high concentration of CO<sub>2</sub> found in classrooms.

Keywords: Air Pollution, Air Pollution, Indoor; signs and symptoms, Respiratory; Child Health

## 111 Effectiveness of the influenza vaccine in 2013-2014: results from the EuroEVA study (Effectiveness of the influenza vaccine in Europe)

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**Introduction:** The EuroEVA study aims to estimate the effectiveness of the seasonal and pandemic influenza vaccine (VE) during and after the epidemic season of 2013-14, in the general population and among the target group of the vaccine.

**Material and Methods:** A test-negative design was used to estimate VE - influenza-like illness cases (ILI) with laboratory confirmation of infection by the influenza virus (cases) were compared with the influenza-like illness cases negative for infection by the influenza virus (controls). The ILI cases were selected among patients on GP appointments. The epidemiological data was obtained through a questionnaire. The influenza VE was estimated as 1 minus the odds ratio of being vaccinated among the cases versus the controls and adjusted for confounding by logistic regression.

**Results:** Between the weeks 50/2013 and 14/2014 142 ILI cases were recruited, being the final analyzed sample of 125 ILI (77 influenza cases and 48 controls). After adjustment for age, number of cohabitants and month of symptoms onset, the results show that the effectiveness of the influenza vaccine in 2013-14 was 50,2% (IC95%:-59,5;84,5) and 63,9% (IC95%:-41,8;90,8), for the general population and target group, respectively.

**Discussion and Conclusions:** The GP recruitment was inferior than in the previous season and that caused a reduction on the sample (63%). Nevertheless, it was possible to estimate the seasonal adjusted VE, 50% (total) and 64% target public. The sample size does not allow additional analysis, namely, by circulating virus.

Keywords: Influenza, Effectiveness, Influenza Vaccines

## 112 Prevalence of hypertension in patients of two health care units: contribution of patients with medical appointment in the last year

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The prevalence of disease is based on aggregated data about the proportion of registered patients coded for disease, according to the International Classification of Primary Care (ICPC-2). This study aimed to determine the contribution of patients with medical appointment in the last year (MA1Y) for the prevalence of hypertension among patients  $\geq 20$  years registered in two health care units of the Portuguese center health region, in December 2013. The prevalence of hypertension and the proportion of patients with unknown disease status due to out of date or missing data were computed. Representativeness of registered patients with medical appointment, blood pressure/antihypertensive drugs records completeness and sensitivity for ICPC-2 coding according to clinical criteria defined in national guidance were assessed. The prevalence of hypertension was 37% in patients with MA1Y ( $n=9.692$ ), corresponding to 30% in registered patients ( $n=13.544$ ). The prevalence of hypertension was unknown in 35% of patients with MA1Y, corresponding to 42% in registered patients. Patients with MA1Y contribute with 89% of ICPC -2 codes for the prevalence in registered patients and 60% for the proportion of registered patients with unknown prevalence; constitute 72% of registered patients with the last medical appointment in 2000 to 2013, contributing to 76% of medical appointment representativeness, 86% of completeness and 91% of sensitivity. Patients with MA1Y account for most of the prevalence of hypertension. It should be clarified whether this subgroup is representative of all registered patients, regarding prevalence computing, or if it is a bias in the recent use of health care due to disease.

**Keywords:** Prevalence, medical appointment; hypertension

## 113 Socio environmental and hematologic profile of the citizens of Bairro Espírito Santo neighborhood – Santo André's landfill (São Paulo – Brazil)

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We live in an unprecedented urbanization in our history that alongside with physical, social and economic developments is having a significant impact on population's health. In our contemporary society due to higher apprehensions of pollution, violence and poverty, cities no longer ensure a good quality of life and due to this fact they become unhealthy environments to the local inhabitants. This study aim is to measure the socio-environmental profile of residents who live in the area surrounding Santo André's landfill – "Bairro Espírito Santo" by using the contextualization of the area in study. The research method is the type Observational Retrospective cohort and by convenience sampling in Santo André in the Greater ABC region. The study was characterized by evaluating the screening of hematologic diseases related to a near location of the landfill. The disease manifests itself within a broad spectrum of symptoms that lead to changes in blood count parameters. The full blood counts were performed and it was discovered that the blood counts of residents living near the landfill had positive results in hematological changes. Leukopenia, lymphopenia, monocytosis and thrombocytopenia were the most frequent encountered changes. However it is considered that the evidence of the relation cause- effect to environmental exposures that may trigger chronic manifestations in humans requires specific studies that are often costly and time-consuming.

**Keywords:** Landfill, Waste, Socio-environmental impact, Hematologic diseases

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## Food Safety - A Challenge In Public Health

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Food safety is one of the most important and most pressing issues in Public Health, since it is related to the presence of hazards associated with foodstuffs at the time of its consumption. This study was intended to assess the structural conditions of canteens, the measurement of polar compounds in frying oils, the evaluation of the temperature of the food before consumption in dining areas (without kitchen) and outside of the kitchen venues, before their distribution and evaluation of nutritional quality of meals. The sample consisted for canteens of public and private education institutions and IPSS, totaling 30 canteens and 85 food handlers. For the collection of data it was used a checklist for structural conditions and functioning of the installations, equipment for measuring food temperatures and polar compounds and it was used an evaluation grid nutritional for measuring the quality of meals. The results obtained with regard to the structural and operational conditions of the facilities it was concluded that the canteens revealed good condition, however it is recommended the need for correction of some non-conformities. It was found that some foods are served at temperatures that are in the danger zone. The nutritional evaluation it was concluded that existed food monotony, excess lipids and inadequacy of the menus to different age groups. Given the theme relevance, it was becomes central to the improvement of structural conditions and functioning of canteens and the nutritional quality of meals and the promotion of knowledge and development of skills of the professionals and handlers involved, because they are key players in the process of food safety.

Keywords: Safety food; quality of food; canteens; handlers.

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## Impact assessment of the Dynamic Model of Evaluation and Family Intervention in the contexto of Primary Healthy Cary in Vila Franca do Campo/Azores

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The implementation of the Dynamic Model of Evaluation and Family Intervention (MDAIF) aims to contribute to family health management, singularly and to the community's health by combining their resources. Having MDAIF (Figueiredo, 2012) as a theoretical framework, we sought to identify the evaluative data and areas of attention assessed by nurses while providing care to families; identify the needs of families in nursing care and family health gains produced by the implementation of this framework. MDAIF areas of attention variables were defined through quantitative, exploratory-descriptive methodologies. The study took place at the Vila Franca do Campo Health Center. Data collection, in which the period reported up on is January to July 2012, considered the Family Nurse Project's information technology platform as parameters were defined, which translated the operacional matrix of MDAIF. Microsoft Office Excel 2007 was utilized to perform data analysis. The most frequent areas of attention were "water supply", adaptation to pregnancy" and "role of the care provider". The greatest needs identified in the areas of attention were "domestic animal", "family planning" and "role of the care provider". The areas of attention that produced the most gains whit respect to nursing care were "residencial building", "family planning" and "role of the care provider". MDAIF contributed to the development of practices conducive to obtaining gains in family health, which allow evidence to the developed in this area of nursing aimed at managing the health of families and communities.

Keywords: Health Primary Care; MDAIF, Family Health; Nurse Family

## 116 Citizens Perception Scale on the rights and duties in the health system: psychometric characteristics

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**Introduction:** Citizenship in health is the ability to exercise informed and responsible manner, power / influence on the health and development of the health system, essential for maximum autonomy in health. Constituted objectives of the study: to validate the Perception Scale Citizenship Health (EPeCiS); know the perception of citizens about their rights and duties in the health system.

**Methods:** Developed a descriptive study with a sample of 550 participants (50 participants for each county of the Lower Vouga (NUTS III) - accidental sampling). Was created and validated a data collection instrument.

**Results:** The EPeCiS consists of 27 items. The factor structure identified eight dimensions: Right and duty to respect; Right to information and decision and duty to cooperate; Right to care and duty management in their use; Right and duty to dignity and respect for beliefs; Right and duty to actively participate in their health; Right to choice and decision; Right to fight for their rights; Right to health data and duty to comply with rules. The scale explains 56.5% of the total variance. The KMO value is 0.844 (good) and Cronbach's alpha of 0.708 (reasonable). The mean age of the sample is 45.6 years ( $\pm$  18 years) and 55.8% were males. Participants have a medium to high level of perception of rights and duties.

**Discussion and Conclusions:** The EPeCiS has good psychometric characteristics. It is necessary to promote the involvement / influence of citizens in health, developing literacy, training and empowerment in health.

**Keywords:** Citizens, health care, rights and duties

## 117 Prevalence of Multimorbidity in Portugal.

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**Background:** Chronic diseases (CD) represent one of the the main challenges in health systems worldwide. Their co-occurrence (multimorbidity) (MM) increases complexity and severity, with negative impacts on health outcomes and health care utilization. These impacts are reinforced by population ageing, and justify the growing interest of research evidence.

**Objectives:** To estimate the prevalence, analyse the distribution of MM considering socio-demographic variables, health status, quality of life and functional status, and identify patterns of most frequent CD.

**Methods:** cross-sectional study using data from 2005/2006 Portuguese National Health Survey. After a descriptive approach, bivariate and multivariate logistic regression analyses (odds ratios) were used.

**Results:** 36% of all the population with CD were multimorbid (had three or more CD), with a median of 4 diseases. Proportionally the prevalence of MM increased in women (42,5% vs 27,4%), with aging (14,8% between 20-44 years vs 55,2% in older than 65years), lower educational level (46,8% less than 6 years vs 16,4% plus than 13years), and marital status (16,9% single vs 56,3% widowed). MM is significantly associated with a lower self-perceived quality of life (56,6% very bad), health status (79,2% very bad) and functional status (70,7% very insatisfied). Multivariate logistic regression model for the presence of MM (ROC curve 0,708; specificity of 62,2% and sensitivity of 69,8%) showed significantly evidence for gender (OR=2,026 female), age (OR=5,227 older than 65 vs 20-44 years), educational level (OR=2,185 less than 6years vs. plus than 13years), and marital status (OR=6,344 divorced vs. single). 71,4% of multimorbid individuals reported a co-occurrence of 3 or 4 chronic diseases, with a higher prevalence for hypertension (64,2%), rheumatic diseases (57,8%) and chronic pain (50,9%).The presence of a mental health disorder increased with the number of morbidities.

**Conclusions:** Prevalence of multimorbidity in Portugal follows european patterns, strongly related to old-age population. The knowledge concerning the epidemiology of multimorbidity is critical to increase the efficacy of health promotion, prevention and disease management.

**Keywords:** Chronic disease, multimorbidity, prevalence, patterns of multimorbidity

## 118 Reasons of tooth extraction in the pedagogical dental clinic of Fernando Pessoa's university

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The loss of permanent teeth is a concern that is increasing in general population, including health professionals. Tooth loss causes numerous health, personal and economic problems to those individuals affected by it. The importance our society attaches to image itself can cause discrimination for those suffering from edentulism.

**Objectives:** In the present study, the main purpose is to evaluate the causes of tooth extraction and its distribution on the population that was analyzed, in a pedagogical clinic, between 2008 and 2012.

**Methods:** A cross-sectional study was performed using analysis of clinic processes at the dental Clinic of the University Fernando Pessoa. The population consisted of 1112 adult patients in which 613 were women. It was evaluated the frequency of different types of tooth extracted, the reasons for extraction and the distribution according to the gender and age. Data analysis was conducted using SPSS © v 21.0 by means of descriptive and adequate inferential techniques ( $\alpha = 0.05$ ).

**Results:** 2536 permanent teeth were extracted, being the 2nd molars of both jaws the most extracted teeth with 11.2% (maxilla) and 10.9% (mandible). Dental caries was the main reason for extraction except in the mandibular incisors. The reason of occurrence of tooth extractions was 1.23 in men in comparison with women.

**Conclusion:** The data submitted may not be representative of general population due to the clinical reasons of tooth extraction. However, it evidenced the fact that dental caries continue to be the main reason of tooth loss and it increases with age and with the male genre.

**Keywords:** Tooth Extraction, Edentulous Mouth, Epidemiologic Research Design, Public Health

## 119 "Already disinfected your stethoscope today? Knowledge and perceptions of students and doctors"

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**Background:** Healthcare associated infections are associated with significant financial and social costs. Healthcare equipment has been identified as a likely source of these infections. The stethoscope, which is used as a medical device by medical students and physicians, is likely to be contaminated by microorganisms. If not disinfected, it may transmit pathogens from one patient to another.

**Objectives:** To explore the knowledge and perception on stethoscope hygiene amongst medical students and physicians and to assess the level of contamination of physicians' stethoscopes.

**Materials and Methods:** A non-randomized sample of 522 medical students in the clinical years and 40 physicians were asked questions exploring their knowledge and perception concerning stethoscope hygiene. The surface of the stethoscopes' diaphragm belonging to the 40 physicians was analyzed using Count-Tact™ agar plates.

**Results:** Out of a total of 40 stethoscopes' diaphragms, 20 (50,0%) were contaminated with bacteria and/or fungi. Out of the 522 medical students, 433 (83,0%) regard stethoscope hygiene as highly important and 338 (64,8%) don't know how to properly disinfect their stethoscope. Out of the 40 physicians, 35 (87,5%) regard stethoscope hygiene as highly important and 18 (45,0%) don't know how to properly disinfect their stethoscope.

**Conclusion:** Data suggest a lack of knowledge concerning the guidelines for stethoscope disinfection amongst medical students and doctors in this sample. However, both think that stethoscope disinfection is relevant and believe the stethoscope is a potential

vehicle of infection. We observed a lower level of contamination of the stethoscopes' diaphragm than shown in the consulted studies. It is our belief that stethoscope disinfection is relevant, hence we suggest that undergraduates should have proper education on this matter according to international guidelines.

**Keywords:** TCross Infection, Infectious Disease Transmission, Professional-to-Patient, Disinfection, Handwashing, Stethoscopes, Microbiology, Fomites

## 120 Geographical distribution of morbidity diabetes *mellitus* and hypertension of morbidity registered in the Information System of the Regional Health Administration (SIARS) of the central region, in 2013.

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The clinic information diagnosis, according to the International Classification of Primary Care (ICPC-2) is used to create morbidity indicators used by the Regional Health Observatory of the Centre's Regional Health Administration, IP (ARSC, IP.) to monitor the health status of the population. The aim is to characterize and compare the prevalence of diagnosed morbidity of hypertension (HTA) and diabetes mellitus (DM) in adults over 20 years age in the Health Centre Groupings (ACeS) and Local Health Units (ULS) in the center health region in 2013. Diagnosed morbidity ratio (RMD) is the proportion of users registered with the disease ICPC-2 code assigned, accepting enrollees as an approximation to the resident population. We compared the morbidity between ACeS / ULS using the standardized rate of diagnosed morbidity (RPMD) concerning the European standard population for 2013, using the direct method. The age structure of the population was characterized through the aging index (IE). The source of information was SIARS, software for analysis Excel® and mapping ArcGis®v10.1. The RMD was higher in ACES / ULS with more aged population enrolled, except in ACeS Cova da Beira (RMD HTA = 21%; IE = 208) and Baixo Mondego (RMD DM = 10%; IE = 177). The RPMD was lower than the RMD in both pathologies. The range of variation of RMD and RPMD between ACeS / ULS was higher for HTA (RMD 21-34%; RPMD 17-28%) compared to DM (RMD 8-11%; RPMD 8-10%). Age does not explain the differences in diagnosed morbidity of

hypertension and diabetes mellitus, thus, requiring additional research to identify other factors.

**Keywords:** Standardization; Prevalence; Diabetes *Mellitus*; Hypertension

## 121 Promoting Health literacy with tailored smoking cessation support through the Internet (the portal [www.parar.net](http://www.parar.net))

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Tobacco consumption in Portugal (where the prevalence of smokers is 20.4%) is affecting 1.6 million smokers and is increasing in women as well as in the 35-44 age men group. There is an interest in smoking cessation in these groups. The National Health Plan emphasizes the use of information technologies in smoking cessation like the internet. In this case it is considered the portal [www.parar.net](http://www.parar.net) as a tool to increase health literacy about smoking cessation in order to empower citizens and health professionals.

**Results:** of a population of 3500 users of the portal [www.parar.net](http://www.parar.net), 3411 provided informed consent and 3170 answered initial eligibility questions. From these, 1463 met all eligibility requirements, deciding a cessation date providing information like the Sense of Coherence, Prochaska and DiClemente's Stages of Change, Fagerstrom tolerance scale score, with 24 other constructs measurements considered relevant for improving the path to a life without smoking. The age mean is 35 years (s.d 9,7 years) with a smoking rate of 21 cigarettes and two previous quit attempts. In proportion, more women than men use the platform. After 12 months of having decided a D day and using the portal, 32,5% were abstinent.

**Conclusions:** [www.parar.net](http://www.parar.net) assist health professionals in their task and help to reinforce users decision to stop smoking.

**Keywords:** Smoking cessation; internet support; health literacy; sense of Coherence; Prochaska and DiClemente's stages of change; Fagerstrom tolerance scale

## 122 Prevalence of Overweight/Obesity among Portuguese Children – Influence of Parental factors

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**Introduction:** In the last decades the prevalence of child overweight and obesity (overweight/obesity) became a serious public health problem. The aim of this study is to know the risk factors associated with the prevalence of overweight/obesity, with particular emphasis on parental factors.

**Material/Methods:** This study was designed as a national cross sectional survey, and was carried out from March/2009 to January/2010 in schools from all districts of mainland Portugal. The sample included 17,509 children with 3-10 years old, of both sexes. The cut-offs used to estimate the prevalence of overweight/obesity were the WHO (parents) and the IOTF (children). For comparison of means was used the T-Test, and the Chi-Square Test in the case of categorical variables. To estimate the impact of factors in the analysis, we used logistic regression. It was considered a significance level of 5%.

**Results:** The prevalence of overweight/obesity was 27.9% (obesity=8.2%), significantly different between sexes, being male a protective factor (OR = 0.807, p <0.001, CI: 1.102-1.149). We observed a statistically significant difference of overweight/obesity between the different ages, with a rise trend. Parent's overweight/obesity had a greater prevalence of children overweight/obesity when compared with parents with normal weight (1.8 times higher in children of parents with overweight/obesity). Smoking in pregnancy, low-birth weight and the non-breastfeeding are factors negatively associated with children overweight/obesity.

**Discussion/Conclusions:** The regional differences found, with a lower prevalence in Algarve, justify special consideration. The results show a strong influence of family environment in children overweight/obesity that deserves more discussion and further

exploration of existing data, and especially, a greater investment in education within the family.

**Keywords:** Children Overweight / Obesity, Frequencies, Portuguese Children, Parental Factors.

## 123 Urgent care characterization of two Family Health Units

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**Introduction:** The knowledge of the characteristics of users who arise to the urgent care of the Family Health Unit (FHU) as well as the most common diagnoses and their orientation, is to improve the quality of services and adapt the means to the identified needs.

**Objective:** Comparative analysis of the characteristics of two urgent care consultations (Family Health Unit Mar and Family Health Unit Oceanos) during October 2013.

**Methods:** Observational, transversal and descriptive study of 4 family physician urgent care consultations in each FHU. Variables: gender; age; attendance by the family physician or other; day of week; hours' time; diagnosis and patient orientation. SPSS statistical analysis, Chi-square test, 5% significance level.

**Results:** The sample included 1138 consultations; 62.7% were female. The predominant users' ages were between 51-60 and 61-70. Monday was the most demanded day. The most frequent diagnosis were A98 (preventive medicine / general monitoring), followed by K86 (hypertension without complication). In 46.1% of the consultations was established pharmacological treatment; 28.3% non-pharmacological treatment was established. 3.5% of users were referred to hospital care and 5.1% to nursing consultation.

**Discussion:** To ensure and improve the quality of care in urgent care consultations, it becomes necessary to inform the public about the procedures of this type of consultation and reprogram the consulting hours in accordance with the flow per hour and day of the week.

Keywords: Urgente care, Family Health Units

## 124 Q fever: the experience of ten years of laboratory diagnosis

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**Introduction:** Q fever is a zoonosis caused by *Coxiella burnetii*, a bacteria associated to domestic ruminants and mainly transmitted by aerosols. During the last decade, several outbreaks have been reported in Europe. The latest and most important outbreak has occurred in the Netherlands from 2007-2009, drastically changing the disease scenario and calling attention to Q fever problem and to the need of more accurate information.

**Material and Methods:** This work revises the results obtained from Q fever laboratory diagnosis performed by CEVDI/INSA from 2004 to 2013. Available tests for case confirmation include detection of IgG and IgM anti-*C. burnetii* phase I and II by IFA, PCR and agent isolation in cell culture.

**Results:** From a total of 5629 suspected patients, 250 fulfilled the case definition criteria (including 232 acute, 13 chronic and 5 potential chronic situation). No outbreak has been identified and the epidemiological context of Q fever cases are discussed. Febrile illness, alone or associated to hepatitis/pneumonitis were the main clinical manifestation of acute Q fever. Chronic disease were in most cases associated to endocarditis. Pediatric cases osteomyelitis and potential vascular infection in chronic kidney disease patients were also identified as chronic Q fever.

**Discussion and Conclusion:** The lack of outbreaks are in accordance with disease historical record in Portugal. The clinical and epidemiological context of the disease is also shared by other endemic countries from the Mediterranean basin (as Spain and France). Of note, is the fact that the number of confirmed cases identified here are higher than official reports, clearly showing that this disease is underreported. In this perspective, the inclusion of the laboratory data to the current notification system is important in order to better evaluate Q fever impact.

Keywords: *C. burnetii*; Q Fever; Acute/Chronic infection; Laboratory Diagnosis

## 125 Retrospective study of the spatial distribution of dengue cases in the state of Paraná, Brazil

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The most important arboviral which affects humans is named dengue, and it's caused by Flavivirus. Four currently serotypes are known (DENV-1, DENV-2, DENV-3, DENV-4). The main transmitter mosquito (*Aedes aegypti*) is originally from Egypt, Africa, and since the sixteenth century it has spread to the tropical regions of the world. In Brazil the first reports of dengue were in the nineteenth century, thenceforth occurs endemically in most states alternating with epidemic episodes. The present paper is a retrospective survey of the number of reported and confirmed cases of dengue and its spatial distribution, made from information provided by ISND (Information System for Notifiable Diseases) and other official means, during the period of August 2010 to July 2014 in the state of Paraná, Brazil. The number of reported and confirmed cases during the period of August to July in the years 2010/2011, 2011/2012, 2012/2013, 2013/2014, were respectively 65,649 and 29,207, 23,762 and 2,678, 110,774 and 54,716, 56,071 and 18,824. The western and northern regions of the state were those that had a greater number of cases and highlighting the city of Jacarézinho in 2010/2011, Paranavaí in 2011/2012/2013 and Jaguapitã in 2013/2014. The years of 2012/2013 were the largest epidemic, having a coefficient of incident morbidity of about 498.62 / 100,000 inhabitants. Despite awareness campaigns about preventive measures, the epidemic continues to plague our country. Stronger measures should be taken to try to prevent the proliferation of vectors, since there are no vaccines to combat this arbovirus.

Keywords: Dengue, public health, notification, Brasil, Paraná

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## Update of the Portuguese Programme for Poliomyelitis Eradication

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**Introduction** – Poliomyelitis can cause definitive paralysis of limbs or death. Eliminated from almost the entire world, including WHO's European Region (since 2002), the target for interruption of transmission of wild polio virus was set for the end of 2014. 2012 registered the lowest number of cases ever worldwide. However, this number rose again in 2013 with 416 cases reported by 8 countries. In 2014, by 29th July, there were 131 cases in 9 countries. In May WHO considered international transmission of poliomyelitis a public health emergency of international concern.

**Materials and Methods** – Europe is kept free of poliomyelitis through the Programme for Poliomyelitis Eradication run by WHO-Europe. In Portugal the Directorate-General of Health coordinates the National Programme for Poliomyelitis Eradication. The four strategies to sustain polio-free status are: vaccination, clinical, laboratory and epidemiological surveillance, laboratory containment and response to the eventual virus importations.

**Results** – The last case of wild polio virus in Portugal occurred in 1986, but the risk of importation still exists. The updated Programme guidelines reinforce vaccination of risk groups (travelers, migrants from affected countries and health professionals), favor surveillance of acute flaccid paralysis, reinforce laboratory surveillance of Enterovirus and detail some of the response actions to the eventual importation of the virus.

**Discussion and Conclusions** – It is the responsibility of health professionals at local and regional level to operationalize the Programme being watchful for poliomyelitis cases and for the procedures of the Programme.

Keywords: Poliomyelitis, eradication, elimination, vaccination, surveillance, acute flaccid paralysis, IPV, OPV

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## Overweight and obesity in Portuguese children, eating habits and regional prevalence

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In Portuguese children and youth are observed a very high prevalence of overweight and obesity compared with other European countries (Padez et al. 2005, Sardinha et al. 2010, Valente et al. 2010). The objectives of this study were to evaluate the prevalence of overweight and obesity in children aged 3-10 years old from the Portuguese mainland regions, to know some eating habits of children and to know differences by sex, age, and parental education. We studied a representative sample of 22,028 children who were observed in 2009-2010 by the Study of Prevalence of obesity in Portuguese children. Weight and height were assessed, calculated BMI and nutritional status categories classified in agreement with cut offs proposed by Cole et al. (2000). Eating habits and parents' education were known by questionnaire. Values of descriptive statistics and X2 analysis, principal component factor analysis and analysis of variance were calculated. Were observed a prevalence of 19.9% for overweight and 8.9% for obesity. Higher percentages of overweight /obesity were among girls (31.3%), ages 8-10 years old (32.3%) and in the North region (32.1%). The analysis of the regression scores of the frequency of food consumption showed: lower consumption of sweets and milk/soup by children with obesity, higher consumption of fast food in Lisbon-Setúbal and Algarve, increasing of sweets consumption and decreasing of milk /soup consumption from north to south. The results suggest regional variability in the occurrence of children's overweight/obesity and eating habits.

Keywords: Obesity in Portuguese children, overweight and obesity, children's eating habits

## 128 Birth weight and breastfeeding programming risk of childhood obesity in Portugal COSI-Portugal 2010

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**Introduction:** Obesity is the most prevalent childhood disease and represents a priority global challenge in the European Region. Its etiology is multifactorial. The aim of this study aims was to evaluate the relationship between birth weight and breastfeeding in childhood obesity.

**Materials and Methods:** The Nutritional status of 3638 children aged 6-9 years old was accessed at the 2nd round of the COSI Portugal (2010), using WHO criteria. Birth weight and breastfeeding data were provided by a family questionnaire.

**Results:** In 2010, 39% of Portuguese children were overweight in which 16,4% were obese. 8,3% children were born with low birth weight (<2500g) and 5,4% were macrosomic newborns (>4000g). 52% of the children were breastfed less time than the WHO recommendations (≥ 6 months). Low birth weight was not a risk factor for later childhood overweight (OR 0,74; IC95% 0,57-0,98), however, a positive correlation between macrosomia born children and overweight was found in this study (OR 1,41; IC95% 1,05 1,90). Moreover non-breastfed children were at greater risk of being obese (OR 1,39; IC95% 1,09-1,77).

**Discussion and Conclusion:** High birth weight and non-breastfeed children are risk factors to increase overweight and childhood obesity prevalence.

Keywords: Childhood obesity; Breastfeeding; Birth weight.

## 129 In-Dependencies project

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**Introduction:** International studies show that the information and the practice of social competencies in schools decreases tobacco and alcohol consumption. The study's aim was smoking and alcohol prevention in Condeixa-a-Nova and Penacova's schools since 2010/2011 to 2013/2014.

**Methods:** Cohort study that included 761 students from 7th, 8th and 9th year, intervened for 3, 2 and 1 year respectively. Intervention based on psycho-educational sessions, themed contests and smoking cessation clinic. Rated prevalence, efficacy and satisfaction through questionnaires. Data recorded and analyzed using SPSS and Microsoft Excell.

**Results:** Included 761 students and 543 intervened. In non-intervention group 33% of smokers smoked every day, with an average of 29 cigarettes / week. In intervention groups 15%, 18% and 13% of smokers smoked every day, with an average of 16,9 and 7 cigarettes per week. 87.5%, 93.8% and 97% felt they gained more decision-making power in relation to smoking avoidance and 86%, 91% and 95% in relation to alcohol eviction. 96.8%, 97.8% and 89% wanted interventional activities continuation. Tobacco and alcohol's perception and knowledge score was 8.5 in non-intervention group and 9.6, 9.9 and 10.4 in intervention groups.

**Discussion and Conclusions:** Smoking's frequency and cigarettes consumption decreased. There was an increased awareness and knowledge about tobacco and alcohol. Most intervened students defended intervention's continuation.

Keywords: School; tobacco; alcohol; Prevention.

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## Latent tuberculosis infection among health care workers in Portugal: a cross-sectional study.

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**Background And Aim:** Health care workers (HCW) are at high risk of exposure to tuberculosis patients. Due to this occupational hazard, HCW represent an important group with higher risk of tuberculosis disease and infection. The aim of this study was to perform a casuistic analysis and assessment of the predictive factors for latent tuberculosis infection (LTBI) over a 5-years period in Portugal among health care workers.

**Material and Methods:** Retrospective study. All LTBI HCW cases registered in the national database (mandatory registration) between January 2008 and December 2012 were selected. Data about demographic situation (gender, age), job category (doctor, nurse, auxiliary nurse, others) and workplaces (hospital, primary care) were analyzed. LTBI was assessed by tuberculin skin test (TST) and interferon gamma release assay (IGRA). For a statistical analysis, the differences between groups were assessed by Chi-square test.

**Results:** In a total of 573 HCW, most were female (n=445, 78%), Portuguese born (n=544, 95%) with an average age of 38 years (SD 11 years). Most work in hospitals (n=348, 84%) and the detection of LTBI was performed equally by routine and contact screening (50%). The highest proportion was found in nurses (40%) and auxiliary nurses (33%). To each doctor registered (n=50) there were 4 nurses (n=211) and 3 auxiliary nurses (n=171). The proportion of LTBI was higher in hospitals among auxiliary nurses compared to primary care (34% Vs 21%, p=0,03). The proportion among the others job categories was similar.

**Conclusion:** Our study showed higher proportion of LTBI in nurses. The higher proportion of LTBI in hospitals was associated to auxiliary nurses. This data highlight adequate infection control measures should be undertaken.

Keywords: latent tuberculosis infection; health care workers; risk

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## Characterization Clinics, Epidemiology and Risk Factors Relating to Mortality from Tuberculosis in Patients coinfectd with HIV/AIDS

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One of the most critical issues related to co-infection HIV / Tuberculosis (TB) is the associated mortality. HIV infection has contributed to the increase in the number of TB cases and has even been responsible for increased mortality among co-infected patients. Fortaleza, located in northeastern Brazil, is one of the urban centers with the highest incidence of TB in the country. This study assessed clinical, epidemiological and risk factors related to mortality from TB in patients coinfectd with HIV / AIDS, over 12 years living in the city of Fortaleza-CE. It was a retrospective, descriptive and case-control study. Data were reviewed in 262 medical records of patients with active TB treated at four reference hospitals for HIV / AIDS in Fortaleza between the years 2004-2008. The profile of these patients is characterized by young adults, low education, common being alcohol consumption habits (41.98%), smoking (33.59%) and use of illicit drugs (26.72%). The majority (65.65%) showed for the first time TB. In the clinical presentation, pulmonary TB was observed in 50% of cases. The majority (62.98%) underwent hospitalization for the treatment of TB. The use of antiretroviral was more frequent in cases that were cured or termination of treatment (88.0%). The mortality rate was 11.45% and 16.03% abandonment coefficient. In univariate analysis, the separate individual / widower has 3.7 times greater risk of death from TB, and 100% of new cases died. X-ray examination showed a changed ratio of 31% of deaths. The diagnosis of HIV due to TB was a protective factor for death (OR = 0.25). The mean viral load before the TB cases was higher in group (p = 0.04). The start of ART was another protective factor for death (OR = 0.11). In the final model of multiple logistic regression, we found that the individual who had no response to treatment was 9.9 (p = <0.01) times more likely to lead to death and the individual who did not start antiretroviral was 10.1 (p = <0.01) times more likely. These results are important for the planning and development of actions for the control of TB in patients with HIV / AIDS in Fortaleza.

Keywords: Tuberculosis. Acquired immunodeficiency syndrome. Coinfection. Mortality. Epidemiology.

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## Mosquito Bite Prevention: Practices of International Travelers in Malaria Endemic Areas

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**Introduction:** According to WHO, in 2012, 207 million cases of malaria occurred worldwide. The majority (80 %) occurred in sub-Saharan Africa. Individual prevention measures for mosquito bites (IPM) are key strategies for prevention.

**Materials and Methods:** Study conducted by interview in Oporto International Vaccination Centre to 453 travelers in the year 2013. Inclusion criteria: travelers with more than 18 years of age and previous stays in risk areas. The use of IPM was rated as regular, irregular, wrong or no IPM.

**Results:** The most used IPM was the air conditioner (60.5 %). Other IPM: ITN 14.5%; repellents 25.6%; insecticides 16.5%; protective clothing 9.8%, vitamin B (2,5 %); others (0.5%). Approximately 15 % did not use IPM, 18% used regularly, and 35 % irregularly. Adherence decreased with length of stay and number of trips.

**Discussion:** traveler's advice about all the possibilities of IPM for mosquito bite is essential. Travelers with multiple trips and extended stays in risk areas have greater risk and need strengthening of information about appropriate measures during travel consultations.

Keywords: International Travel Health; Mosquito Bite Prevention, Malaria

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## Motivation for physical exercise of students in the 7th grade of Albergaria-a-Velha's Schools

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**Introduction:** In the context of health promotion daily physical exercise implementation at an early age is very important. Although being known the effects of regular physical activity (exercise) on quality of life, motivation is essential to ensure adherence and continuation. Knowing the motivation of individuals to practice physical exercise, it is possible to design the strategies that encourage it. The aim of this study was to determine the distribution and relationship between the types of behavioral regulation of motivation for physical exercise, the students from the 7th grade, of Albergaria-a-Velha's schools, in 2012-2013.

**Methods:** Epidemiological study of descriptive, cross-sectional observational type, based on self-report questionnaire, with 257 participants.

**Results:** Among the study population, 82.1% practiced physical activity in addition to physical education classes and 67.3% had a behavioral regulation of motivation for physical activity, the intrinsic type. It was found that there was a relationship between the type of motivation and behavior control the practice of weekly exercise, and with some practice sport by students ( $p < 0.05$ ).

**Discussion and Conclusions:** In this study it was found that most students seem to be an active population with healthy lifestyle habits. Like other studies "intrinsic motivation" was the most prevalent, therefore the need to promote programs and projects to enhance increasingly physical exercise as a habit was highlighted.

Keywords: Motivation, exercise, students

### 134 Developing personal and social skills in the context of sexuality, in 8th grade students, from the municipality of Albergaria-a-Velha

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**Introduction:** Sexuality is an essential element to the overall process of identity development. Within the context of promotion of sexual and reproductive health, sexual education, while being a contribution to adolescents' personal and social development, has gained prominence in the activities of the areas of education and health. The purpose of this intervention was to identify and develop the level of knowledge of concepts of sexuality in 8th grade students, from an aggregate of Schools of Albergaria-a-Velha and Branca, in 2013-2014.

**Material and Methods:** Eleven classes were included in the intervention. An education session for health was performed to each class, addressing the syllabus, in accordance to the Guidance of the General Health Department 010/2010 of 14/10/2010. The assessment was made based on self-administered questionnaires before and after the intervention.

**Results:** In both phases of intervention, most of the students were female and an increase of correct answers of 71.1% to 90.2% from the pre to post-intervention questionnaires was observed. Most students felt "Totally Satisfied" with regard to attending the session.

**Discussion and Conclusions:** This intervention revealed that most students in the pre-intervention phase appeared to have some knowledge on the subject and that the level of knowledge increased after it (19.1%). In order to boost a healthy development among adolescents the Authors consider of the utmost importance to promote and to continue this kind of intervention.

**Keywords:** Health Promotion, Sexuality, Students.

### 135 Identification of the main risk factors for Colorectal cancer along Alentejo Litoral, Portugal – case-control epidemiological investigation study

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**Introduction:** Colorectal cancer (CRC) is currently considered a major public health problem. Due to population aging in Alentejo Litoral (AL) it is important to identify risk factors (RF) for the disease in order to address possible and effective prevention measures. The main goal of the study it was the identification and its ranking of the main RF for CRC.

**Material and Methods:** It was performed an analytical epidemiological case-control study, with the odds ratio (OR) identification. The unit of observation it was: resident in the AL, with=40 years. The study included 90 CRC cases (identified by ROR-Sul) and 201 controls (lists of ULSLA). The independent variables included in the study (sociodemographic, family/personal and behavioral history), were known by conducting a survey. Descriptive, bivariate and multivariate (logistic regression) statistical analysis (SPSS 20) was performed.

**Results:** Main results for bivariate analysis (Confidence Interval (CI) 95% and p value<0.10) were: personal history of inflammatory bowel disease (OR=9.302), Insulin therapy (OR=6.897), consumption of alcoholic beverages in the past (OR=4.853) and >4x/week (OR=3.632). Main results for multivariate analysis, were (CI 95% and p<0.05): consumption of red meat (adjusted OR=6.828), family history (adjusted OR=6.628) and number of alcoholic drinks=3/day (adjusted OR=5,808).

**Discussion / Conclusion:** The main RF for CRC in AL, it were: red meat consumption, family history for CRC and number of alcoholic drinks=3/day. The study also concludes that most RF identified are modifiable, and can be targeted for interventions of health promotion and disease prevention.

**Keywords:** Risk factors, Colorectal cancer, Odds Ratio

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## Colorectal cancer epidemiological characterization along Alentejo Litoral, Portugal

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**Introduction:** Colorectal cancer (CRC) has a high level morbidity in Portugal, corresponding to the 3th most common cancer for both sexes, and it is considered a growing public health problem, especially in Alentejo Litoral (AL) region.

**Material and Methods:** An observational study was conducted with the main goal being epidemiological and demographic characterization for CCR, about cases registered at ROR-Sul, between 2005-2011, in AL population. The main epidemiological indicators for AL and its municipalities were calculated.

**Results:** For the period and population studied, and according to ROR-Sul, were recorded 576 cases. The average annual incidence (Figure 1) corresponded to 84.0 new cases/100,000 inhabitants (107.2 for males and 62.5 for females), the prevalence rate to 519.8 cases/100,000 inhabitants, the average annual mortality (Figure 2) to 49.9 deaths/100,000 inhabitants (64.5 for males and 34.0 for females), with a mean value of 11.95% lethality. The average survival at 5 years was founded to be 30.1%. The average age at diagnosis corresponded to 69.7 years and most common stage at diagnostic was local/regional disease level (61.6%). Adenocarcinoma was the most common histologic type, and rectum was the most frequent local for disease.

**Discussion and Conclusion:** Considering the results found for incidence, prevalence and mortality, these were considerably higher than national level (31.4, 211.6 and 14.6/100,000 inhabitants, respectively) indicating the presence of a high burden of disease referring to the important identification of major risk factors in order to allow a more efficient performance in terms of disease prevention. 1) Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray, F. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11. Lyon, France: International Agency for Research on Cancer, 2013 Available from: <http://globocan.iarc.fr>, accessed on 17 / March / 2014.

Keywords: Colorectal cancer, Burden of disease, Incidence, Mortality

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## Public Health Line situation diagnosis

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**Introduction:** This study fits within the diagnostic status of nurses who develop their activity in the context of Public Health Line in Director-General of Health. The Public Health Line is characterized by an annual attendance of about 45 000 telephone contacts made by 75 nurses. This line allows the citizens to have a rapid contact with nurses that counsels and referral to health services when it's needed. The aim of this study was to identify the nurses needs face to this innovative intervention care.

**Methodology:** The work follows the methodology of health planning to the community by performing the step starting throe health population diagnosis, the study population of 75 nurses Line of Public Health. Data collection took place in January 2014 using a form built on systematic literature review and the theoretical model of Betty Neuman.

**Results:** The results obtained allowed to identify the main needs referred by the study group, of which we highlight the need for: training - 96.6%; monitor / meet citizen satisfaction - 80%; monitor / meet health outcomes resulting from its intervention - 66.7%; monitor / meet the costs of its intervention - 60%.

**Conclusion:** The results, intervention priorities were set according to the needs hierarchy referred by the nurses, the work will continue towards the planning of interventions in terms of training, knowledge of satisfaction and health outcomes in the population with the service provided.

Keywords: Nurses; Public Health Line; Health planning

## 138 Preliminary results of Neonatal Screening for Sickle Cell Disease in the Provincial Hospital of Bengo, Caxito, Angola

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**Introduction** The Hemoglobinopathies are hereditary diseases with a prevalence of 10 to 30% of carriers in the African population. The Sickle Cell Disease (SCD) is the most severe form of the disease. Given the importance of the subject and the scarcity of data we began a study on Neonatal screening of SCD in the Provincial Hospital of Bengo (HGB).

**Material and Methods** It was started in April 2014 a longitudinal prospective cohort study, which will involve approximately 2000 children, that includes the collection of blood from umbilical cord from all the new-borns of the HGB, the performance of the hemogram and agarose gel electrophoresis in alkaline pH. The present study had the approval of the Ethics Committee of the Ministry of health of Angola.

**Results** 511 samples were subjected to electrophoresis, of which approximately 63.2% have normal genotype (AF), 13.3% of Hb variant, 18.4% of FAS (asymptomatic carriers), 2.9% of Hb S/Variant, 1.8% of FS (homozygotes) and 0.4% for patients with Hb S and C. It was identified cases with hematologic indices, namely changes of haemoglobin among 46.7% and 55.6% in SCD against 39.36% of FAS.

**Discussion and Conclusions** The present study identified a prevalence of S allele on about 23.5% of new-borns what is according to the study conducted in Luanda in. These preliminary findings underline the need to rethink health policies with the aim of reducing the morbidity and mortality that occurs in these children to engage in prophylactic measures and therapies from 6 months of age.

**Keywords:** Hemoglobinopathies, electrophoresis, umbilical cord, hematologic indices

## 139 Early identification of health related problems in blood pressure, vision and hearing by School's Health Local Program

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**Introduction:** The identification of health related problems for normal blood pressure level, vision and hearing in pediatric, it is held in the child consultation program at familiar and general medicine. However, unequal health surveillance, verified in some areas of Alentejo, produced by the health professional resources shortage, imply a limited diagnostic accuracy, which in turn leads to therapeutic delay and impairment of learning ability. Thus, there is so important the intervention added by School's Health local programs, providing greater coverage to pediatric population. These intervention goals were to identify these health problems timely at school.

**Methods:** An intervention was performed by School's Health local program in Alvalade Sado basic school, which consisted of a mass screening to 2nd and 3rd cycle students, with a total of 164 students. It was conducted by collaboration of several health professionals with previous training on measurement identification for blood pressure (cutoff levels adapted percentile for age, sex and height), the evaluation of visual acuity by Snellen scale and hearing acuity applying Rinne and Weber tests. Cases identified were referenced for observation on Familiar general consultation, or if they were users without family doctor, then for Pediatric, Ophthalmology or Otorhinolaryngology observation.

**Results:** Of the total 164 screened students, we identified: 1 case with alteration of the normal blood pression; 34 cases with impaired visual acuity and 28 of audition acuity alterations.

**Discussion / Conclusion:** This mass screening event allowed early and timely identification and correction of these health problems, allowing to restore the learning potential.

**Keywords:** Early identification, surveillance, schoolar Health

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## Epidemiological Study of TMTBP in Alentejo Litoral

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**Introduction:** Lung cancer, at Portugal, is at 4th place, for incidence and mortality, after breast, prostate and colorectal cancer.

**Material and Methods:** It was conducted an epidemiological descriptive, cross-sectional study which aimed to characterize malignant tumors of the bronchus and lung (MTBL). The source of data used for the study was collected file cases with registration at ROR-Sul in the period between January 2003 and December 2013.

**Results:** For Alentejo Litoral population, and 2003-2013 period, according to ROR-Sul, there were found 421 cases registered, including 129 living and 292 deceased. The prevalence rate of the main bronchus cancer in AL it was equal to 0.12 cases/100,000 inhabitants. The prevalence rate of lung cancer was 4.19 cases/100,000 inhabitants for both sexes. Average death rate from bronchus cancer was equal to 1.12 deaths/100,000 and average mortality rate for malignant tumor of the lung was equal to 29.06 deaths per 100,000 population. The average survival at 5 years of bronchus cancer was 8.33% and lung cancer was 7.94%.

**Discussion / Conclusion:** The main finding of the study it was that between 2003 and 2013 there was a decrease of deaths from cancer of the lower airways. Database ROR SOUTH, [http://GLOBOCAN //](http://GLOBOCAN//), INE Portugal in 2013

Keywords: Cancer, prevalence, mortality.

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## Prevention of Depression in adolescents - Contributions of the project +Contigo

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**Introduction:** Depression in adolescents a major cause of morbidity and mortality associated with difficulties in interpersonal relationships, the deficits in academic performance and suicidal behavior (Garber et al., 2009). According to Bhatia and Bhatia (2007) about 70% of children and adolescents with depressive disorders are not diagnosed and do not receive appropriate treatment. Because of their high vulnerability, the early detection of depression and prevention of suicidal behavior in schools is essential.

**Materials and Methods:** The +Contigo is a longitudinal research project with multilevel intervention network in the promotion of mental health and well-being and also the prevention of suicidal behaviors sphere. Includes assessment of depression using the portuguese version of the BDI-II. It was conducted an experimental study with the control group, in three diferente moments.

**Results:** The Project +Contigo between the years 2011 and 2013 involved 2105 adolescents. The mean scores decreased over the three moments in the target intervention group, a statistically significant difference for the control group. The biggest difference is related to severe depression, which had higher incidence in the control group, and the number of cases without depression had its higher incidence on the target group intervention.

**Discussion and Conclusions:** The intervention produces results in the short and medium term (six months) for depressive symptoms, with statistically significant results for the control group. These data enhances the need for projects aimed at the early detection of depression and prevention of suicidal behavior in schools (DGS, 2013).

Keywords: Adolescents - depression - prevention of suicidal behavior in schools - project +Contigo

## 142 Childhood obesity determinants related to the first year of life in a sample of children from the northern region of Portugal

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**Introduction:** Overweight in school aged children is a public health problem that has risen in recent decades. Recently, factors related to pregnancy and first year of life had been proven to be decisive in occurrence of obesity during childhood, in developed countries.

**Material and Methods:** Weight and height were assessed by trained health professionals, according to WHO guidelines, in a sample of children in 56 schools of the Northern Region, in 2010. Food, health, social and demographic variables were collected by direct application of a questionnaire to parents. Statistical significance analysis performed by the test Spearman's Correlation.

**Results:** 1678 children aged between 6-10years (mean:  $7.2 \pm 0.6$ ) were evaluated. 50% were girls. 59.5% of children were normal weight, 39.9% were overweight (pre-obesity and obesity) and 0.6% were underweight. The variables that contributed most to the occurrence of overweight were: introduction of artificial milk before 6months - 57.4%( $p < 0.001$ ); not breastfeed or do it up to 5months - 52.8%( $p < 0.001$ ); introduction of solid foods after 6 months - 19.0%( $p < 0.001$ ); and weight at birth higher or lower than recommended - 11.9%( $p < 0.05$ ). The variables that contributed most to normal weight were: introduction of solid foods between 4-6months - 73.0%( $p < 0.001$ ); and breastfeeding  $\geq$  6months of life - 48.4%( $p < 0.001$ ).

**Discussion / Conclusion:** These results point out determinants of overweight (pre-obesity and obesity) in childhood, that can be targeted for preventive actions during the prenatal period and first year of life, as well as determinants of normal weight, important factors to promote in pregnant women and infants.

**Keywords:** Determinants, obesity, overweight, food habits, 1<sup>st</sup>-year-of-life.