

# P2-506 INFLUENCE OF CLIMATE ON THE INCIDENCE OF URBAN LEPTOSPIROSIS

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**Introduction** Leptospirosis has emerged as an important health problem in developing countries due to the growth of slum settlements worldwide, where poor sanitation favours rat-borne transmission. Large urban epidemics occur during seasonal periods of heavy rainfall. However, a detailed analysis has not been performed to determine how rainfall, as well as other climatic factors, specifically influences the risk of leptospirosis in these endemic settings.

**Methods** We analysed data from 2083 leptospirosis cases which were identified during active population-based surveillance performed in the city of Salvador, Brazil between 1996 and 2010. Information on daily rainfall, humidity and temperature were obtained for the same period. A generalised additive model was fitted, using a negative binomial distribution for weekly aggregated data (729 weeks). We incorporated a non-parametric term to estimate the time trend and a sin-cosine term to control for seasonal confounding.

**Results** Rainfall and humidity were positively associated with the number of cases two weeks later, linearly and without a threshold. Temperature protected, even though the range between maximum and minimum temperatures is small: from 22 to 33°C. A decreasing trend was highly significant, possibly due to intervention of sewerage and garbage collection systems.

**Conclusion** Leptospirosis is expected to become an increasingly important slum health problem as predicted global climate change and growth of the world's slum population evolves, and models adequate to estimate the impact of both environment and climate variables on incidence of all environmental related diseases should be incorporated in the epidemiologists toolbox.

# P2-507 PREVALENCE AND FACTORS ASSOCIATED TO GEOHELMINTH INFECTIONS IN CHILDREN LIVING IN MUNICIPALITIES WITH LOW HDI IN BRAZIL

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**Introduction** The high magnitude and wide geographic distribution of parasitic infections, coupled with the negative impact that may cause the human body given to these infections have an important position among the major health problems of the population especially in developing countries. The objective of this study is to describe the occurrence of geohelminth in children of the north-northeast Brazil and to identify environmental and socioeconomic risk factors. Methods Coprologic surveys were carried out to estimate the prevalence of geohelminth infections among in children in 10 Brazilians municipalities with low Human Development Indexes. Socioeconomic and environmental data were obtained from the children's parents or guardians, and fecal samples were examined. The proportion of geohelminth infections according variables of interest was calculated. Risk factors were evaluated using multilevel logistic regression. Of the 2523 children studied, 36.5% were affected by one or more geohelminths (*Ascaris lumbricoides*: 25.1%; hookworm: 15.3%; *Trichuris trichiura*: 12.2%). The overall frequency of geohelminth infections was 45.7% in rural areas and 32.2% in urban areas. Low family income (OR=1.75; 1.38–2.23), low maternal education level (OR=1.69; 1.39–2.06), presence of garbage near the home (OR=1.50; 1.22–1.84) and an increased

number of individuals in the household (OR=1.41; 1.17–1.71) were associated with infection.

**Conclusion** The geohelminth infections were strongly related with socioeconomic conditions, stressing the importance of public interventions targeted to improve life conditions as part of its sustainable prevention.

# P2-508 CHANGE IN THE EPIDEMIOLOGIC PATTERN OF OCCURRENCE OF DENGUE AND DENGUE HEMORRHAGIC FEVER IN BRAZIL

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**Introduction** In Brazil, three serotypes of dengue virus (DENV1 to 3) circulate. The incidence of dengue fever (DF) was greater in adults and was lower than the proportion of dengue haemorrhagic fever (DHF). However, since 2007 this has changed. This study describes and discusses some of the determinants of this change.

**Method** Data from 1990 to 2010, recorded in the Notification and Hospital Information Systems, were used. The incidence of DF and the number of hospitalisations for DHF were represented in time trends curves, by age-group.

**Results** Until 2000, the proportion of DHF was 0.06%; In 2002 and 2009 it was 0.34% and 0.46%, respectively. Between 1998 and 2006, DF and DHF were concentrated in individuals over 14 years old, particularly between 20 and 40 who represented more than 50% of the cases. In 2007, there was substantial increase in hospitalisations for DHF of individuals under 15. Between 1998 and 2006, the proportion in this age-group varied from 9.5% (1998) to 22.6% (2001, and in 2007 reached 53% (p<0.05). This trend increased in 2008, and has remained until 2010.

**Conclusions** There was a significant increase of DHF and in the ratio DF/DHF in Brazil, especially by age-group pattern. A more virulent DENV-2 serotype, responsible for outbreaks from 2007 to 2008, could have occurred, but there was no change in phylogenetic DENV2 that circulates in Brazil since 1990. It is possible the sequence of the three DENV is a important factor in determining the changes in epidemiology in this country.

# P2-509 POPULATION IMPACT OF DEPRESSION ON FUNCTIONAL DISABILITY IN THE ELDERLY: RESULTS FROM THE "SÃO PAULO AGEING & HEALTH STUDY" (SPAHE)

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**Introduction** With the fast population ageing, disability among the elderly is becoming a major public health issue. Depression is highly prevalent in this phase of life and may be associated with a significant proportion of the disability among elderly populations. We aimed to investigate the association between depressive symptoms and functional disability in older adults, independently of comorbidities and socioeconomic factors and to estimate the Population Attributable Fraction (PAF) of disability due to depressive symptoms and depression.

**Methods** A cross-sectional survey was carried with 2072 residents aged 65 years or over living in a low-income area of São Paulo, Brazil. ICD-10 depression and depressive symptoms were assessed with the Geriatric Mental State and the Neuropsychiatric Inventory. The assessment of disability was made using the WHO Disability Assessment Schedule Instrument (WHO-DASII). The 90<sup>th</sup> percentile of WHO-DAS scores was considered as high disability.