

were analysed in a sample of 242 elderly. The disability incidence was 91.5/1000 person-years in robust, 118.6/1000 person-years in pre-frail, and 223.2/1000 person-years in frail elderly. Frailty is associated to the risk of developing disability (OR=3.32;  $p=0.015$ ). In model 1, adjusted for age, sex and education, frailty remains significantly associated (OR=2.54;  $p=0.045$ ). In model 2, after adding depression, falls, BMI, and mobility limitation, frailty lost significance, but still shows risk (OR=2.61;  $p=0.066$ ).

**Conclusions** Incidence rate of ADL limitation was greater in frail elderly, but other factors, as depression and falls, are also important and should be considered.

#### P1-123 EDUCATION, MUNICIPAL DEVELOPMENT AND RATE OF HOMICIDES IN MINAS GERAIS, BRAZIL

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I C Gomes,\* E L Machado, M A Costa, G S Atuncar. *Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*

**Introduction** Homicide rates are increasingly and have become a public health problem in developing countries, affecting mainly young males aged 15–29 years. We aimed to investigate the relationship between the development level of the cities and schooling, with the rate of homicides.

**Methods** An ecological study was performed with data from the State of Minas Gerais, Brazil (population >50 000) in 2006. We used the following variables: homicide mortality rate per 100 000 in 15–29 year olds, school attendance of young people aged 15–17 years and the Index for Social Responsibility (ISR). The ISR is a compound indicator that aggregates information from health outcomes, income, education, demography, public safety, management, housing and environment, culture and sport and leisure. The relationship between the variables was investigated by linear regression.

**Results** Of the 2320 deaths in Minas Gerais in 2006 due to external causes, 283 (12%) were due to homicides. The victims were mostly male (89%) and 43% belonged to age group 15–29 years. Regression modelling showed the homicide rate decreased with increasing ISR and increasing school attendance.

**Conclusion** These results suggests that mortality in young people is related to lower educational level. Thus, strategies for dealing with violence should consider investing in the education of citizens.

#### P1-124 KNOWLEDGE AND ATTITUDES TOWARDS THE HUMAN PAPILLOMAVIRUS VACCINE AMONG COLLEGE STUDENTS

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<sup>1</sup>O Simwale, <sup>2</sup>N Daneshvar,\* <sup>2</sup>L Scott, <sup>2</sup>T Sylk, <sup>2</sup>M Penn. <sup>1</sup>*Pennsylvania Department of Public Health, Harrisburg, Pennsylvania, USA*; <sup>2</sup>*Franklin and Marshall College, Lancaster, Pennsylvania, USA*

**Introduction** Human papillomavirus (HPV) is the most common sexually transmitted infection (STI) and is a leading cause of cervical cancer in the USA; most cases occur in individuals between the ages of 15 and 24, yet few studies have examined factors associated with HPV vaccine acceptance among this age group.

**Methods** Responses to a 15-question web-based survey were used to determine predictors and deterrents of HPV vaccine acceptance among college students.

**Results** Multinomial logistic regression was used to analyse data at a CI of 95%. Students who believed they were at risk for contracting HPV were over four times more likely to be willing to receive the vaccine than students who did not believe they were at risk [OR: 4.2; CI 2.113 to 8.359;  $p=0.000$ ]. Students who had previously been diagnosed with an STI were almost seven times more likely perceive

they were at risk for contracting HPV [OR: 6.86; CI 1.85 to 25.52;  $p=0.009$ ]. Male students were less willing to receive the preventative HPV immunisation than their female counterparts [OR: 0.355; CI 0.155 to 0.812;  $p=0.007$ ]. Students who were aware of the relationship between HPV and cervical cancer were nearly two times more likely to report willingness to receive the vaccine [OR: 1.93; CI 0.987 to 3.754;  $p=0.044$ ].

**Conclusion** HPV vaccination uptake may be increased if future programs emphasise students' susceptibility to HPV infection. Vaccination campaigns should also include more information regarding the relationship between HPV and cervical cancer, as well as vaccine safety and effectiveness.

#### P1-125 SOCIAL INEQUALITIES IN BIOMARKERS: FINDINGS FROM THE ENGLISH LONGITUDINAL STUDY OF AGEING (ELSA)

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C de Oliveira.\* *University College London, London, UK*

**Introduction** Although social inequalities in health are widely recognised, the process by which the social environment becomes translated into physiological and psychological processes that influence health remains unclear. The aim of this longitudinal study was to compare changes over time and the relationship between socioeconomic position and different biomarkers in a nationally representative sample of older adults in England.

**Methods** The sample consisted of 6260 participants aged 50 and older who took part in the 2004 and 2008 waves of the English Longitudinal Study of Ageing (ELSA), a prospective national cohort study of people aged 50 years and over. The analyses included biomarkers associated with cardiovascular disease as well as those associated with improved health and well-being. The changes in these markers over time were modelled using two measures of socioeconomic status: total (non-pension) wealth and level of education. Analyses were adjusted for confounding variables.

**Results** The prevalence of overweight, general and abdominal obesity was inversely related to socioeconomic position as defined by wealth and education. Fewer participants who were better off and had more educational qualifications had levels of 'good' cholesterol (HDL), triglycerides, fibrinogen, CRP and glycated haemoglobin that would indicate increased risk. Total and LDL cholesterol showed an inverse socio-economic gradient.

**Conclusion** Overall, there was a very clear socio-economic gradient in biomarkers measured in ELSA and the pattern was similar for both men and women.

#### P1-126 NUTRITION NEEDS TO DEVELOP EFFECTIVE MEASUREMENT POLICIES

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E Alexander,\* D Yach, G A Mensah. *PepsiCo, Purchase, New York, USA*

Measurements of food and nutrition availability and intake inform national policy, standards and research. However, existing nutrition data are not complete and often subject to error. Accurate and comprehensive data are needed on the source of food and nutrients. Nutrient sources amenable to intervention and the cost of such interventions must be described to determine feasible approaches. Food sales data describes the formal sector, omitting the informal sector which accounts for a majority of energy intake in some countries. Food balance sheets used by the FAO to estimate dietary intake do not take into account household or retail waste, over-estimating dietary intake. NHANES, the US population intake survey is subject to underestimation of dietary intake due to reporting error, especially by overweight subjects. Standard portion

sizes from national data are often used by researchers while actual portions are often much larger, and therefore include more calories. Finally, data on the food sources of nutrients are not publicly available. Current data describes food item sales yet nutrient quantities are not available for each item, preventing determination of company and food item sources of nutrient intake. To successfully improve the food environment and promote health through diet, measurement of dietary intake quality and supply must be improved.

**P1-127 SPATIAL AND TEMPORAL DYNAMICS OF DENGUE FEVER CASES IN ARARAQUARA CITY, BRAZIL**

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M A De Oliveira,\* H Ribeiro, M Inenami, R G da Silva. *Public Health School, University of São Paulo, São Paulo, Brazil*

**Background** Dengue fever represents a serious public health issue in Brazil. Araraquara is a city, in state of São Paulo that has been having serious outbreaks of dengue fever in the last decade, in spite of its relatively good social and economical conditions. This study mapped and analysed spatial and time distribution of the cases of dengue fever in Araraquara.

**Methods** Registered and confirmed cases of years 2007 and 2008 from the National System of Diseases Notification (SINAN) were geo-referenced using a street based map and a Geographic Information System (GIS). To analyse spatial temporal distribution pattern of dengue fever cases, density Kernel were used on the events according to epidemiological week.

**Results** In 2007, 335 cases were confirmed, and in 2008, 1233 new cases. Spatial analysis presented occurrence of dengue fever cases almost all around the urban area of the municipality of Araraquara. Important spatial variations on the distribution pattern along the epidemiological weeks were identified. In the two analysed years, most areas that presented high concentration of cases in a specific week tended to have fewer cases on the following week. However, in some areas of the city were identified clusters of dengue fever that remained in the same place.

**Conclusion** The results showed that, at a local intra urban level, the analysis of cases per epidemiological week can be an way to identify spatial and time important differences on the incidence of the disease and possible factors associated.

**P1-128 A SYSTEMATIC REVIEW OF SEXUAL RISK FACTORS FOR HIV IN INDIA**

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<sup>1</sup>N Dhingra, <sup>1</sup>P Arora,\* <sup>1</sup>P Jha. <sup>1</sup>*National AIDS Control Organization, Ministry of Health and Family Welfare, Government of India, New Delhi, India;* <sup>2</sup>*Centre for Global Health Research, Li Ka Shing Knowledge Institute, St Michael's Hospital, Dalla Lana School of Public Health, University of Toronto, Toronto, Canada*

**Introduction** India's large HIV epidemic and the potential for epidemic HIV spread in some areas demands a full understanding of HIV transmission. Factors associated with HIV infection in India include: commercial sex work, sexually transmitted infections (STI), numbers of sex partners and male circumcision. We wished to quantify effects of the above risk factors, roughly estimating their size, for each gender and in high- and low-HIV risk populations.

**Methods** Meta-analysis of risk factors for HIV from 34 studies identified through literature search of multiple on-line databases. Risk factors were: male circumcision/religion, biologically confirmed infection with Herpes Simplex Virus 2, syphilis or gonorrhoea, self-reported genital ulcer, multiple sexual partners and paid sex work. Random-effects meta-analysis of effects was conducted.

**Results** Each of the seven risk factors were significantly associated with HIV status in both men and women. The strongest effect size

among men was HSV-2 infection (OR: 4.68; 95% CI 2.40 to 5.43) while the strongest effect among women was ever being paid for sex (OR: 5.06; 95% CI 3.69 to 6.95). The effect of multiple sexual partners was similar among men (2.80; 95% CI 2.09 to 3.77,) and women (3.00; 95% CI 1.88 to 4.79) and was similar when further stratified by HIV-risk group. Syphilis and multiple sexual partners as risk factors for HIV were significantly associated with lower HIV-risk study populations.

**Conclusions** The risk factors examined in our analysis should remain targets of HIV prevention programs. Our results confirm that sexual risk factors for HIV infection remain an important part of the HIV epidemic in India.

**P1-129 THE IMPORTANCE OF REPRODUCTIVE HEALTH AND HIV/AIDS EDUCATION PROGRAM FOR YOUNG PEOPLE IN PAPUA AND WEST PAPUA PROVINCES, INDONESIA**

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<sup>1,2</sup>W Diarsvitri,\* <sup>1</sup>I Dwisetyani. <sup>1</sup>*Department of Community Health, Faculty of Medicine, Hang Tuah University, Surabaya, East Java, Indonesia;* <sup>2</sup>*Australian Demographic and Social Research Institute, The Australian National University, Canberra, ACT, Australia*

**Introduction** Papua and West Papua Provinces have the highest HIV/AIDS prevalence in Indonesia. In 2009, 94.4% HIV/AIDS cases in Papua Province were transmitted through heterosexual intercourse and the cases among 15–19 years age group were in the fourth rank. A study in 2007 revealed 46.9% Junior High School students had misconception on HIV/AIDS transmission and prevention. These features motivated the author to carry out the 2009 Reducing the Risk of HIV/AIDS: Intervention Trial for Young Papuans Study. The aim of this study was to evaluate of the reproductive health and HIV/AIDS education program in changing young people's knowledge, attitudes and behaviour intention associated with HIV/AIDS and sexuality.

**Materials and Methods** Sixteen senior high schools were randomly selected to either receive the program or to act as a control group. Students of Year 11 from the selected schools (n=1082) took a pre-intervention test and 2 months later, a post-intervention test. Changes in knowledge, attitude and behavioural intentions between the two groups were compared using a mixed model.

**Results** Findings showed that the intervention was associated with 0.11 points higher knowledge (95% CI 0.08 to 0.12), 0.13 points higher attitude (95% CI 0.09 to 0.22) and 0.18 points higher behavioural intentions (95% CI 0.11 to 0.33) after adjusting for age, gender, previous sexual experience, ethnicity and pre test mean score.

**Conclusions** Our reproductive health and HIV/AIDS education program was effective in changing knowledge, attitude and behavioural intentions of students. It is important to promote its inclusion in the school curricula.

**P1-130 CREUTZFELDT-JAKOB DISEASE: REPORT OF CASES**

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J Dias.\* *Secretary of State of Health of Bahia, Salvador, Bahia, Brazil*

**Introduction** Creutzfeldt-Jakob disease (CJD) is an infectious disease attributed to a proteinaceous infectious particle (prion), which attacks the central nervous system. The form of acquisition is still unknown and may occur by four known mechanisms of transmission: sporadic, hereditary, iatrogenic and variant (vCJD), which occurs by eating contaminated beef carrier of mad cow disease.

**Methods** Reporting of cases of CJD has occurred in Bahia between August 2007 and December 2010.

**Results** There have been 14 suspected cases of sporadic CJD, eight confirmed, two probable (WHO criteria), one discarded and three