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 with the risk of developing disability (OR = 3.52; 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 GERAIAS, BRAZIL**

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Introduction Homicide rates are increasing 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 homicide.

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 suggest 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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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 = 0.009]. Male students were less willing to receive the preventative HPV vaccination than their female counterparts [OR: 0.555; 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.
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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**Background** Dengue fever represents a serious public health issue in Brazil. Araraquara is a city, in state of Sao 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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**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 ulcers, 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.