Methods 2456 adults were surveyed in Hyderabad, Bangalore and Chandigarh in India. Socio-demographic and lifestyle characteristics were obtained through a questionnaire, and a dried blood spot (DBS) was collected from all individuals aged 18 and over; sexual behaviour was collected from those aged 18e49 years. DBS samples were tested for HSV-2 and syphilis serology. The association between HSV-2 and syphilis infections with socio-demographic and behavioural variables was analysed using multivariable logistic regression.
Results The prevalence of HSV-2 and syphilis was 10.1% and 1.7%, respectively. Urban/rural differences in prevalence were only seen for syphilis. For both infections, the prevalence between males and females was not significantly different. In males and females, HSV-2 prevalence increased significantly with increasing age; for syphilis, a slight trend was seen only in females. In a multivariable analysis, HSV-2 infection in males and females was associated with site, religion and testing positive for syphilis, in addition to reporting $2 lifetime partners in the previous year among males and being ever married or having had sex with a non-regular partner in the last year among females.
Conclusions The burden and geographic heterogeneity of HSV-2 and syphilis infections in India are significant. A national household and DBS-based sexually transmitted infection (STI) surveillance system would enable monitoring, especially in relation to the HIV epidemic, and planning of evidence-based prevention and treatment programmes.

P1-83 PHYSICAL ACTIVITY AND THE POTENTIAL INDEPENDENT DETRIMENTAL MENTAL HEALTH OUTCOMES OF SEDENTARY BEHAVIOUR IN THE GENERAL POPULATION

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Introduction Sedentary behaviour (SB) is a distinctive form of human behaviour that should not be considered the endpoint of the physical activity (PA) continuum. Hence, SB and PA might work independently in relation with mental health (MH). Investigating these relationships may inform public health initiatives targeting MH promotion.
Methods 6720 adults aged 24–65 years from the Belgian National Health Survey provided data on SB and PA via the IPAQ, and on MH via the GHQ12 and the SCL-90-R. Multiple logistic regression analyses examined associations between SB and five MH problems, controlling for PA and other confounders. Further analyses explored variations across gender, age, SES, and participation in recommended moderate- and vigorous-intensity PA.
Results In the total sample, SB was positively associated with feelings of depression OR=1.406, 95% CI [1.157 to 1.709], anxiety OR=1.523, 95% CI [1.217 to 1.905], and symptoms of somatisation OR=1.401, 95% CI [1.134 to 1.732]. These MH problems were significantly more present among individuals who sat over 2100 min/week (controlled for PA), indicating potential independent detrimental MH outcomes of SB. Further, these positive associations existed independent from gender and age, in the lower SES category, and among all individuals who did not fulfil one PA recommendation. Fulfilment of either one PA recommendation, and high SES seemed protective, with the potential MH protective effects of recommended PA approaching the MH protective effects attributed to high SES.
Conclusion While it is important to encourage both increases in PA and reductions in SB, from the perspective of MH, increasing PA may represent the priority, since PA seems protective against the independent detrimental MH outcomes of SB.

P1-84 HIDDEN MARKOV RANDOM FIELD FOR SPATIAL AND SPATIAL-TEMPORAL RISK MAPPING

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Risk mapping in epidemiology enables the epidemiologist to identify regions with high or low risk of contamination and understand the underlying mechanisms of the spread of the disease. In this work we are presenting a method of risk mapping based on finite mixture models, in which the allocation to the mixture components is modelled through a correlated process, the Potts model. The inference is performed using an approximation of the Expectation Maximisation (EM) algorithm based on the mean-field theory. One advantage of this model is that the classification of the risk is done automatically and not performed in a second step as in current risk mapping.
Methods We are presenting also a way of initialisation able to overcome the sensitivity of this algorithm to its initial parameters. Combining the proposed model to this way of initialisation is leading to good results even in the case of animal non contagious diseases, in which the risk level is very small. This is illustrated in both simulated data and real data: The bovine spongiform Encephalopathy disease in France. We will also introduce an extension of this model to the spatial-temporal context since taking in account the temporal dependencies besides the spatial ones usually provides more useful cues. This methodology will be illustrated on simulated data.

P1-85 EPIDEMIOLOGICAL RISK ASSESSMENT OF *C DIFFICILE* OUTBREAKS LEADS TO RAPID IMPLEMENTATION OF A NATIONAL LABORATORY BASED SURVEILLANCE SYSTEM AND CHANGES IN HOSPITALS' HYGIENIC GUIDELINES

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Introduction In January 2009 the Capital region of Denmark experienced for the first time an outbreak of hypervirulent *Clostridium difficile* PCR ribotype 027.
Methods An epidemiological investigation was launched in a regional hospital in February 2009; the Statens Serum Institut supported the hospital in the outbreak investigation and risk assessment. Considerable media attention raised awareness among other hospitals of the Region and prompted informal collaboration. Risk management was conducted by the National Board of Health, which issued guidelines to enhance surveillance of *C difficile* and to implement control measures.
Results In April 2009, the National Board of Health requested all Clinical Microbiology Departments to submit isolates of *C difficile* to the Reference Laboratory of Statens Serum Institut, if those fulfilled a set of criteria. The criteria ensured surveillance of severe *C difficile* infections by strain characterisation. An epidemiological study on mortality confirmed that the criteria used in the surveillance programme ensured detection of emerging and hyper virulent strains. Following discussion with Hospital Hygienic Committees, in collaboration with the Statens Serum Institut, the National Board of Health, and the Danish Working Environment Authority the recommendations of the Danish Working Environment Authority were changed and disinfection with chlorine became legal and was included as an option in the hospital hygienic guidelines of the Capital Region.
Conclusion The outbreak response including field epidemiology investigation led to rapid changes in national surveillance and policies. Involvement of different stakeholders and communication