public outpatient clinics. The patient's cardiovascular risk profile and cardiovascular risk score (calculated using Framingham Cardiac Risk Score algorithm) and risk reduction advice were uploaded to the patient's handset. Providers and patients completed pre (baseline) and post (3-month) intervention questionnaires and participated in post-intervention focus groups. Descriptive-analytical statistical methods were used. Grounded theory guided the qualitative data analysis.

Results Pre-intervention patients were less likely to understand doctors hand writing (mean score (M)=3.58, SD=1.07); uncertain about heredity and stress as CVD risk factors (M=3.05, SD=1.58 and M=2.32, SD=1.20, respectively); and held a positive view e-plat-forms for personal decision support (average score for all items >4.5). However patients were worried about their cardiovascular health status (M=3.58, SD=1.35). Patients have reported sharing their personal health information with their healthcare provider.

Conclusions This pilot study has provided preliminary evidence of the feasibility, acceptability, and utility of an e-platform in primary interventions for CVD.

P1-543 USE OF RESEARCH QUESTIONNAIRES IN THE NHS BOWEL CANCER SCREENING PROGRAMME IN ENGLAND

[1,3]J Watson,* [1]J Green, [1,2]J Patnick. [1]Cancer Epidemiology Unit, University of Oxford, Oxford, UK; [2]NHS Cancer Screening Programmes, Sheffield, UK; [3]On behalf of the Bowel Screening Follow-Up Study investigators, UK

Background The NHS Bowel Cancer Screening Programme uses biennial guaiac faecal occult blood testing (FOBt) to screen men and women initially aged 60—69 for colorectal cancer. The programme provides a valuable opportunity for screening-related epidemiological studies.

Aim Assess the impact of a research questionnaire on uptake of FOBt screening.

Study 1 10 940 participants (5470 in each arm) invited for screening by the Midlands & North West Bowel Cancer Screening Hub were randomised to receive or not receive a study questionnaire pack (questionnaire, patient information sheet, consent forms and reply-paid envelope) with their screening test kit. Screening uptake was ascertained from screening programme records and a χ^2 test used to assess any association between receiving a questionnaire and screening uptake. Screening uptake was significantly lower in those sent a questionnaire than those who were not (50.8% vs 55.2%, p<0.001).

Study 2 36 225 participants were batch-randomised to receive or not receive a questionnaire pack 2—3 days after their FOBt screening kit mailing by the Midlands & North West Screening Hub (6168 receiving and 13 158 not receiving questionnaires) or Southern Screening Hub (5801 receiving and 11 098 not receiving questionnaires). Screening uptake did not differ between those receiving or not receiving questionnaire packs [Midlands & North West: 56.7% vs 56.6% (p=0.9); Southern: 53.4% vs 53.4% (p=1)].

Conclusion Including research questionnaires within FOBt mailings resulted in a significant screening uptake reduction. However, sending the same questionnaires 2—3 days after FOBt kits did not. These findings may have implications for future research within the screening programme.

P1-544 VIABILITY OF A SINGLE EMOTIONAL HEALTH QUESTION COMPARED TO THREE SELF-REPORT MEASURES OF MENTAL HEALTH

[1]C Weller,* [2]S McDonald, [3]H Kehler, [2]S Tough. [1]Department of Community Health Sciences, University of Calgary, Calgary, Alberta, Canada; [2]Department of Paediatrics,

University of Calgary, Calgary, Alberta, Canada; [3]Alberta Health Services, Calgary, Alberta, Canada

Introduction Instruments designed to assess various aspects of mental health are commonly administered to women during pregnancy and the early postpartum period. The sensitivity, specificity and positive and negative predictive values of these instruments vary across study methodologies. The primary objective was to test the hypothesis that a single self-report emotional health question is effective in identifying women at risk of developing depression, anxiety or stress. The secondary objective was to describe how mental health instruments categorise women who report their emotional health as positive or negative.

Methods Questionnaires were administered to participants in a community cohort study (N=1550) at three time points: prior to 24 weeks gestation, between 32 and 36 weeks gestation, and 4 months postpartum. At each time point women completed the Edinburgh Postnatal Depression Scale, Speilberger State Anxiety Scale and Perceived Stress Scale and rated their emotional health as either "Excellent," "Very good," "Good," "Fair," or "Poor." Responses to this question were compared to the results from each of the mental health instruments.

Results The single emotional health question is significantly correlated to the results of each of the longer instruments (p<0.001). The positive predictive value of the single question in comparison to the instrument conclusion is approximately 81% during pregnancy and 71% postpartum. The negative predictive value of the single question is approximately 86% during pregnancy and 91% postpartum.

Conclusion A single self-report emotional health question may be a valid method of screening women during pregnancy and early postpartum for depression, anxiety and stress.

P1-545 BIRTH SIZE DIFFERENCES BETWEEN WHITE AND PAKISTANI ORIGIN INFANTS BY GENERATION: RESULTS FROM THE BORN IN BRADFORD COHORT STUDY

[1,2]J West,* [3]D A Lawlor, [1]L Fairley, [1]J Wright. [1]Bradford Institute for Health Research, Bradford, UK; [2]Institute of Health Sciences, University of Leeds, Leeds, UK; [3]MRC Centre for Causal Analyses in Translational Epidemiology, Department of Social Medicine, University of Bristol, Bristol, UK

Background Previous studies have shown markedly lower birth-weight among infants of South Asian origin compared to those of White European origin. Whether such differences mask greater (central) adiposity in South Asian infants and whether they persist across generations in contemporary UK populations is unclear.

Objective To describe differences in term birth size between Pakistani origin and White British origin infants and investigate whether the magnitude of any differences changes depending on whether the parents and grandparents of Pakistani infants are born in the UK or South Asia.

Design Birth cohort study (Born in Bradford (BiB)).

Setting Bradford, UK.

Participants 1838 White British and 2222 Pakistani mothers and their babies who were born between 2007 and 2009.

Main outcome measures Birthweight; head, arm and abdominal circumference; subscapular and triceps skinfolds.

Results Pakistani infants were lighter (mean difference 280.5 g; 95% CI −318.4 to −242.5) than White British infants and were smaller in all other measurements following adjustment for socioeconomic position and smoking. Differences were least for subscapular skin-fold thickness (mean z-score difference −0.20; 95% CI −0.29 to −0.11) and greatest for abdominal circumference (mean z-score difference −0.56; 95% CI −0.64 to −0.47). The magnitudes of differences from White British infants did not differ substantively by generation.

Conclusions Pakistani infants were smaller in all measurements but had a tendency to greater central obesity (as indicated by subscapular skinfold thickness). Differences do not appear to differ markedly across generations. This suggests that differences may be genetically driven or are affected by epigenetic or persisting behaviour characteristics.

P1-546 | MALARIA INFECTION IN PREGNANCY AS A RISK FACTOR FOR LOW BIRTH WEIGHT IN THE DISTRICT OF BANGKA BELITUNG, INDONESIA, 2010

[1]I Winarta,* [1]Tafwid. [1]*Indonesia University, Depok, west Java, Indonesia; [2]Gajah Mada University, Centre of Java, Indonesia*

Background Malaria is a major health problem in Indonesia. The District of Bangka is one of 338 malaria endemic areas with a clinical malaria rate of 51.87% and positive malaria rate of 9.46% in 2008. In malaria endemic areas pregnant mothers are the major group at risk for malaria infection. Malaria infection during pregnancy contributes to maternal morbidity and low birth weight (LBW) infants (<2500 g) caused either by preterm birth or intrauterine growth restriction (IUGR), factors that become the greatest risk factors for infant morbidity and mortality.

Methods This was a case-control study where the population are infants, namely LBW infants (<2500 g) as a case and normal birth weight infants (2500−4000 g) as a control within the period of 2008−2009. There were 174 subjects in total, comprising 58 cases and 116 controls. Data analysis used univariable, bivariable (χ^2) and multivariable (logistic regression) techniques.

Results There was a significant association between malaria infection in pregnant mothers and the incidence of LBW infants (crude OR =2.90; 95% CI 1.38 to 6.10), and after adjustment or controlled simultaneously for external variables, the influence of malaria infection remained (adjusted OR =2.97; 95% CI 1.37 to 6.39). Pregnant mothers with malaria infection had a risk 2.9 times greater for delivering LBW infants than normal birth weight infants. All external variables had no influence on malaria infection in pregnant mothers and the incidence of LBW infants.

Conclusion Pregnant mothers who delivered infants with LBW were more likely to be infected with malaria than pregnant mothers who delivered infants with normal birth weight.

P1-547 | ASSOCIATION OF DNA METHYLATION WITH METAL EXPOSURE AMONG HEALTHY KOREAN POPULATION

H D Woo, D Paek, Y J Kim, Y Lee, J W Lee, H W Chung.* *School of Public Health, Seoul national University, Seoul, Republic of Korea*

Introduction DNA methylation is regarded as a well-defined epigenetic mechanism and involved in biological processes including ageing and cancer. The purpose of this study is to find whether DNA methylation is associated with lifestyle and environmental factors in healthy population residing in an industrialised zone in Korea.

Methods A total of 758 subjects (324 males and 434 females) were included in this study. Global DNA methylation level by lifestyle factors and environmental pollutants was measured in peripheral blood leukocyte.

Results Global DNA methylation levels (expressed as PMR values) of men were varied with age, while no change was seen in women. No association between lifestyle and biochemical factors (smoking, homocysteine, leptin, albumin and BMI) with global DNA methylation was observed. The relationship between metal such as

mercury, cadmium and arsenic and DNA methylation was analysed. Arsenic only had positive association with DNA methylation level in male group. Global DNA methylation pattern among family members was analysed to find familial aggregation. Significant associations of Mother with offspring, offspring with offspring were found. Correlation between sibling pairs was also increased in young age group, suggesting that DNA methylation patterns determined not only by genetic factors but environmental factors.

Conclusion DNA methylation levels of men were varied with age, while those of women were consistent throughout the age group. Positive association was shown in urinary arsenic only in adult male. DNA methylation level can be regulated by environmental stressor, but the association between each environmental factor and global DNA methylation was not strong.

P1-548 | RISK FACTORS FOR AN OUTBREAK OF CHIKUNGUNYA FEVER IN WEST BORNEO, INDONESIA, 2010

F Y Sitepu,* A Suprayogi, D Pramono. *Field Epidemiology Training Program (FETP) Gadjah Mada University, Yogyakarta, Indonesia*

Background Chikungunya fever is a vector-borne disease with high morbidity rates, prolonged polyarthritis in some cases and it cause substantial socioeconomic impact. On 4 January 2010, an outbreak of Chikungunya fever was reported in West Borneo in Indonesia. The total number of cases was 65 with no fatalities. An analytical study was undertaken to determine the risk factors for the outbreak.

Method This was an observational study with case control design. Cases were those with major clinical symptoms of Chikungunya fever, such as fever, arthalgia, myalgia, rash and headache. Controls were neighbours of cases who did not have clinical symptoms of the disease. The study used bivariate and multivariate analyses with χ^2 and logistic regression. OR was used to determine risk factors. Some patient's blood was tested to confirm the diagnosis.

Results From the bivariate analyses, risk factors were farming in the forest (p value <0.05, OR=10.14, 95% CI 3.84 to 26.76); not using mosquito repellent devices (p=0.001, OR=4.70, CI 1.75 to 12.60); not eradicating mosquito nests (p=0.007, OR=3.18, CI 1.33 to 7.61); and hanging clothes (p=0.015, OR=2.814, CI 1.206 to 6.566). The multivariate analyses showed that farming farming in the forest was an independent risk factor for infection (Exp.(B): 9.122, p<0.05). Laboratory examination of blood samples confirmed that two out of four cases were positive for Chikungunya fever.

Conclusions Farming in the forest was a risk factor for infection. This was the basis for health promotion and prevention of future cases of Chikungunya fever in West Borneo.

P1-549 | THE ROLE OF PSYCHOSOCIAL FACTORS IN SLEEP DURATION IN ELDERS AND ITS EFFECT ON ALL-CAUSE MORTALITY: THE KRAKOW STUDY

[1]K Zawisza,* [1]B Tobiasz-Adamczyk, [2]A Galas, [1]M Brzyska. [1]*Department of Medical Sociology, Chair of Epidemiology and Preventive Medicine, Jagiellonian University Medical College, Krakow, Poland; [2]2Department of Epidemiology, Chair of Epidemiology and Preventive Medicine, Jagiellonian University Medical College, Krakow, Poland*

Introduction Epidemiological studies performed in the last decades confirmed the significant role of sleep as an independent predictor of survival in older age.

Objective The aim of the study was to assess the role of the social position, self-reported functional status, self-rated health, and a