cardiovascular disease (30/1000/yr), 1044 from cancer (17/1000/yr]); 709 from respiratory (12/1000/yr); and 782 (13/1000/yr) from other causes. Overall mortality rates were higher among current-smokers compared with never-smokers (HR 1.49, 95% CI 1.34 to 1.65), due to increased mortality from cardiovascular disease (1.35, 1.15 to 1.58), cancer (1.71, 1.39 to 2.09), and respiratory disease (2.27, 1.75 to 2.95). Among smokers, mortality rates were linearly related to the number of cigarettes smoked. Former-smokers had only moderately higher overall mortality rates compared with never-smokers (HR 1.16, 1.07 to 1.25), chiefly due to continued increased risks of death from cancer (1.21, 1.03 to 1.42) and respiratory disease (1.60, 1.29 to 1.98).

Conclusions Among men who survived into their 70s, continuing to smoke is associated with persistent excess vascular and non-vascular mortality.

P2-27 DOES SOCIAL DISADVANTAGE IN EARLIER CHILDHOOD PREDISPOSE TO ONSET OF LIMITING LONGTERM ILLNESS (LLTI)/DISABILITY IN LATER CHILDHOOD? A POPULATION BASED STUDY USING THE UK ONS LONGITUDINAL STUDY (ONSLS)

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Introduction There is a lack of empirical evidence on the predictors and temporal ordering of factors associated with child disability.

Objective To examine the relationship between social disadvantage in earlier childhood and the onset of LLTI/D in later childhood in the UK ONSLS.

Methods Children born between the 1981 and 1991 UK censuses who became ONSLS members and were present at the 2001 census were identified. Data were extracted on those children who didn't have LLTI/D in 1991 but did in 2001 (index) and those with no LLTI/D on either occasion (comparison). A social disadvantage index (SDI) was constructed for 1991. Logistic regression models were fitted on LLTI/D with the SDI as the independent variable of interest adjusted for age, gender, lone parenthood, and ethnicity.

Results 60 000+ children became ONSLS members between 1981 and 1991 and were present at the 1991 and 2001 censuses. 52 438 in the index and comparison groups had complete data. In bivariate analysis, social disadvantage, age, gender and lone parenthood but not ethnicity were significantly associated with the onset of LLTI/D in the index group. After adjustment for confounding, the SDI showed a finely graded association with onset of LLTI/D in the index group (most disadvantaged OR=2.12 (1.77, 2.54); disadvantaged in two domains OR=1.45 (1.20, 1.75); disadvantaged in one domain OR=1.14 (0.94, 1.40)).

Conclusions Social disadvantage in earlier childhood as a predisposing factor for the development of LLTI/D in later childhood and adolescence. Social disadvantage may be both cause and consequence of childhood LLTI/D.

P2-28 FROM PROTOCOL TO PROGRESS: ESTABLISHING A REGISTRY OF CHILDREN AND YOUNG PEOPLE WITH DIABETES IN NORTH EAST ENGLAND AND NORTH CUMBRIA

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Introduction The changing nature of diabetes in the young has underlined the importance of reliable data on where and how patients with diabetes present and live. In the former northern health region of England, an area encompassing North East England and North Cumbria, intriguing patterns in incidence and relationships with socio-economic status have been identified. The study aimed to establish a diabetes registry for children and young people in the former northern health region of England.

Methods NHS Diabetes provided regional paediatric networks with financial support to enable delivery of national outcomes and improve diabetes care in the young. During regional meetings, the North East Clinical Paediatric Network discussed a proposal to fund establishment of a regional registry for patients with diabetes aged <18 years. The plan was universally supported. Funding was used to employ a registry co-ordinator. All regulatory approval applications were completed within a rigorous and transparent ethical framework. User group involvement formed a cornerstone of the process; their feedback underpinned the production of all patient, parents and care givers documentation. A robust data security and protection policy was developed.

Results There has been significant learning regarding resources required to establish a diabetes registry including identification of sustainability issues. Methodologies have been documented and an algorithm has been generated. Data collection commenced in January 2011.

Conclusions Establishing a registry is a complex process requiring many legal and ethical considerations. The algorithm can be used as a generic template to initiate similar registries in other geographical areas or for other diseases types.

P2-29 ASSOCIATION BETWEEN SELF-REPORTED DEPRESSION AND CHRONIC DISEASES: FINDINGS FROM A POPULATION BASED STUDY

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Introduction Cross-sectional studies have reported associations between depression and chronic diseases, however it is necessary adjust the analysis for potential confounders. The aim of this study was to examine the association between depression and chronic diseases among adults after controlling for potential confounders.

Methods This is a population-based cross-sectional study with a sample of 1720 adults aged 20—59 years from Florianópolis, Brazil. Interviews and anthropometric measures were performed at adults' households in 2009 and included data about socio demographic characteristics, 11 self-reported chronic diseases, use of health services and physical activity at leisure time. Poisson regression models were carried out to estimate Prevalence Ratios (PR) for the association between depression and chronic diseases (none; one; two or more chronic diseases) after controlling for sex, age, marital status, income, physical activity at leisure time and hospitalisation in the last 12 months.

Results The prevalence of depression was 17.1% (95% CI 14.9% to 19.2%). Even after adjusting for potential confounders the association between depression and chronic diseases remained statistically significant. Those with one chronic disease presented a prevalence of depression 40% (PR 1.4; 95% CI 1.05 to 1.87) higher than people without disease; the prevalence of depression was 120% (PR 2.2; 95% CI 1.70 to 2.87) higher among those with two or more chronic diseases.

Conclusion There is an association between depression and chronic diseases regardless potential confounders.

P2-30 CHRONIC ILLNESS AND SUBJECTIVE WELL-BEING OF FAMILY MEMBERS

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Background The hedonic definition of subjective well-being includes subjective perceptions of moods such as happiness and cognitive

judgements of life satisfaction coupled with an absence of negative feelings. Little is known about levels of well-being in the context of adaptation to chronic illness. This paper will explore the impact of chronic illness on the well-being of family members.

Methods Data come from wave 1 of *Understanding Society*, a new longitudinal UK-representative household panel survey. Subjective well-being of adults (16 years) was measured using the GHQ-12, the Warwick-Edinburgh Mental Well-being Scale and a question on life satisfaction. The Strengths and Difficulties Questionnaire measured well-being in youth (aged 10–15 years). Self-reported long-term limiting illness (LLTI) was used to indicate chronic illness. Latent variable models were used to explore associations between partners (N=4167) and among family members (n=3056).

Results LLTI in one member of a cohabiting partnership was negatively associated not only with their own well-being but also that of their partner. There were no differences by gender. The association between a parent's LLTI and their adult child's well-being was not significant, regardless of the gender of the parent. There was a significant association between mother's LLTI and SDQ total difficulties score for younger children; however no association was observed for father's Illness.

Conclusions There are associations between one's own illness on both themselves and their partners. A parent's LLTI was not associated with worse well-being in adult children but was associated with increased difficulties in their younger children.

P2-31 ASSOCIATION BETWEEN PLASMA VITAMIN D AND METABOLIC SYNDROME IN THE CANADIAN POPULATION

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Background Vitamin D deficiency has been implicated in the susceptibility to the metabolic syndrome and a spectrum of conditions, such as obesity and type 2 diabetes mellitus. The present study aimed to quantify the association between vitamin D serum levels and the occurrence of metabolic syndrome components and insulin resistance among Canadian adults.

Methods Vitamin D serum levels and the related clinical data were extracted from 1920 subjects from the Canadian Health Measures Survey, a national survey representing the general Canadian population. The definition of the metabolic syndrome components was based on the National Cholesterol Education Program, Adult Treatment Panel III criteria. Adjusted unconditional logistic regression models were used to estimate the association between vitamin D level quartiles and risk of having metabolic syndrome, as well as the association between plasma vitamin D and insulin resistance (HOMA-IR).

Results Within the survey, 11.4% of the subjects had the metabolic syndrome. Increasing levels of plasma vitamin D were positively correlated with reduced numbers of metabolic syndrome components. Subjects in the highest quartile had significantly lower risk of having metabolic syndrome compared to those in the lowest vitamin D quartile (OR=0.36, 95% CI 0.19 to 0.66). Furthermore, increasing plasma vitamin D levels were associated with lower HOMA-IR scores ($\beta=-0.88$, $p=0.004$) in a fully adjusted linear model.

Conclusion Vitamin D serum levels can predict the occurrence of metabolic syndrome and insulin resistance among Canadian adults.

P2-32 VITAMIN D IN THE PREDICTION OF METABOLIC SYNDROME: A TARGET FOR PUBLIC HEALTH INTERVENTION

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Background The association between vitamin D (VitD) and cardiometabolic health has been described however the ability of VitD to predict metabolic syndrome (MetSyn) beyond individual demographics and common lifestyle factors is unclear.

Methods 1799 adults from the Canadian Health Measures Survey, a nationally representative survey were examined. MetSyn was defined based on the National Cholesterol Education Program's Adult Treatment Panel III criteria. The comparative value of smoking status, energy expenditure from physical activity and plasma 25 (OH)D VitD to predict the presence of metabolic syndrome was evaluated using receiver operating characteristic curves (ROC) from fully adjusted logistic regression models (age, sex, ethnicity, education, annual fruit intake and month of interview). Somer's D and *c* statistics were used to compare across models. Sampling weights were applied to all models.

Results Inclusion of plasma VitD, energy expenditure and smoking status all lead to increases in the *c* statistic and Somer's D suggesting increased predictive ability compared to the baseline model. ROC contrasts, however, showed that only inclusion of VitD significantly increased the predictive ability of the model ($p=0.001$).

Discussion VitD may be a useful predictive tool for cardiometabolic risk prediction in addition to conventional factors. Prospective analyses may provide more insight into VitD as a potential population-based intervention target for reduction of chronic disease burden related to MetSyn.

P2-33 THE IMPACT OF THE METABOLIC SYNDROME ON CARDIOMETABOLIC AND INFLAMMATORY PROFILES AMONG CANADIAN ADULTS

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Background The metabolic syndrome (MetSyn) is known as a precursor condition for a spectrum of cardiometabolic complications including type 2 diabetes and cardiovascular disease. The present analysis aimed to quantify the differences in serum levels of cardiometabolic and inflammatory markers across the number of MetSyn components among Canadian adults.

Methods Serum levels of apolipoprotein A1 and B (ApoA1, B), creatine, total cholesterol/HDL cholesterol ratio (TC:HDL), C reactive protein (CRP), fibrinogen, glycosylated haemoglobin (HbA1c) and homocysteine were extracted from 1920 adults from the Canadian Health Measures Survey (CHMS). The definition of MetSyn components was based on the National Cholesterol Education Program, Adult Treatment Panel III criteria. Generalised linear models adjusted for age, sex, physical activity, smoking and ethnicity were used to quantify the relationship between select markers and number of MetSyn components.

Results Among survey subjects, 11.4% had MetSyn with 59.6% having at least one component. We observed several significant relationships between markers with increasing numbers of MetSyn components. Mean levels of ApoB, creatine, (TC:HDL), CRP,