CHD incidence from the period 1980–1988 to 2000–2008 according to UK region. We also examine regional differences in changes in established coronary risk factors over these periods

Methods The British Regional Heart Study recruited 7735 men between 1978 and 1980 when aged 40–59 from 24 British towns. Established risk factors were measured at baseline examination and on 4252 participants twenty years later (1998–2000). CHD incidence over eight years from baseline was compared with incidence over eight years following re-examination. Age-adjusted Cox regression models including an interaction between an indicator for time period and region were used to assess relative hazards of CHD incidence between the two time periods according to UK region: South England (7 towns), Midlands/Wales (4 towns), North England (10 towns) and Scotland (3 towns).. Age-adjusted linear and logistic models with the same interaction term assessed changes in risk factors between the two periods according to region.

Results CHD incidence for 1980–1988 in the South, Midlands/Wales, North and Scotland was 0.6, 0.8, 0.9 and 1.1 per 100 person years, and 1.1, 1.5, 1.3, and 1.1 for 2000–2008 when participants were 20 years older. Age-adjusted hazard ratios for the second versus first period in the four regions were 0.40, 0.50, 0.32 and 0.22 (p for interaction = 0.05), indicating that age-adjusted CHD incidence declined considerably in all regions but most rapidly among Scottish towns. While risk factor profiles were more favourable in the South than other regions in the first period, evidence of period/regional interactions were found in the analysis of some risk factors. Compared with the South, statistically significantly faster declines occurred in mean systolic blood pressure for North England and Scotland (by 3.1 mmHg and 4.1 mmHg respectively), in mean total cholesterol for Midlands/Wales (0.24 mmol/l), in smoking for Scotland (ratio of odds ratios 0.74), and faster increases in moderate physical activity in North England and Scotland (ratio of odds ratios 1.20 and 1.41 respectively). However mean BMI increased similarly across all regions.

Conclusion Fall in CHD incidence was faster in the Scottish towns than the English towns. An impressive improvement in coronary risk profiles was likely to be responsible, especially with respect to blood pressure, smoking and physical activity.

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Background Physical activity, healthy body weight, smoking, and alcohol consumption are each related to mortality, physical and cognitive function, and mental health but their combined long-term effect is unknown. We examined the individual and combined influence of these risk factors on mortality and subjective and measured function in middle-aged adults followed for 18 years.

Methods Data were from the US Health and Retirement Study (HRS), a biennial, longitudinal, nationally representative survey of older adults. 11,597 participants aged 51 to 61 were followed from study enrolment for an 18-year period. A health behaviour score was calculated with one point for each behaviour: moderate physical activity three times per week; BMI 20 to 25; alcohol consumption less than 7 drinks/week; non-smoking. Outcomes were all-cause mortality, problems with activities of daily living (ADLs), lung function, grip strength, walk speed, measured cognitive function, and depressive symptoms. Adjusted logistic and linear regression models were used to examine the relationships between health behaviours and outcomes separately by gender.

Results For all outcomes except grip strength there was a dose-response relationship between healthy behaviour score and outcomes. For example, in men with four healthy behaviours and no baseline ADL problems, at 18-year follow-up 78.4% had no ADL problems, 6.6% had ADL problems, and 15.0% had died. In men with no healthy behaviours and no ADL problems at baseline, at follow-up 35.1% had no ADL problems, 8.8% had ADL problems, and 56.1% had died. Results in women were comparable but ADL differences were more marked. Number of healthy behaviours was related to follow-up cognitive function, mental health, walk speed, and lung function but not grip strength. Results were robust to adjustment for socioeconomic status (SES: measures of health, income, and level of education) and in analyses stratified by SES similar differences were found in relation to healthy behaviours within strata.

Conclusion Simple differences in lifestyle behaviours in middle age are associated with major differences in mortality, functioning and health risks as people progress into old age. Effective health promotion in these age groups could bring substantial health benefits for individuals across SES groups.

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Background The association between smoking and coronary heart disease (CHD) has been well-documented, though most studies use a composite measure of CHD. Few studies have investigated the association between smoking and specific coronary disease phenotypes, even fewer, its first manifestation. These have generally been restricted to comparison between two disease phenotypes, often with small number of events or single gender studies. Our objective is to investigate the association between smoking and initial manifestation of specific coronary phenotypes, i.e. stable angina (SA), unstable angina (UA), non ST-elevation myocardial infarction (nSTEMI), ST-elevation myocardial infarction (STEMI), and coronary death unheralded by prior symptomatic disease (UCD), within a framework of competing risks for these and other atherosclerotic diseases.

Methods This was a prospective cohort study of >915,000 patients aged 30+ with no evidence of atherosclerotic disease in coronary, cerebrovascular or peripheral circulation prior to study entry. Using linked electronic health records from a CALIBER dataset, we incorporated primary care data from General Practice Research Data, acute coronary syndrome data from the Myocardial Ischaemia National Audit Project registry, hospital admissions data from Hospital Episode Statistics, and mortality and deprivation data from Office for National Statistics. The hazard of smoking was modelled using Cox proportional hazard regression, with data augmentation to incorporate competing risks of multiple disease presentations, and adjusted for age, sex, deprivation, blood pressure, blood-pressure lowering medication, diabetes and statin use.

Results There were 22,815 initial coronary disease presentations and a further 48,659 initial presentations of other cardiac, atherosclerotic cerebrovascular disease and peripheral arterial disease. Within the competing risk model, all coronary presentations showed an increased hazard for smokers compared to non-smokers, but the cause-specific adjusted hazard ratio (95% CI) for ST elevation myocardial infarction (STEMI) (2.99; 2.46–3.64) was substantially greater than those for the other presentations, including: stable angina: (1.30; 1.25–1.35), unstable angina (1.48; 1.32–1.66),

non-STEMI (1.93; 1.64–2.28), and unheralded coronary death (1.58; 1.42–1.76).

Conclusion The substantial difference in the hazard of smoking between STEMI and other initial presentations suggests a specific role for smoking in the aetiology of STEMI. One limitation of this study is unrecorded risk factor data, with the potential for bias in the complete-case analysis reported here. The strengths of the study are the large cohort size with the associated large number of person years of observation and events, the clinical detail allowing typing of coronary phenotypes, the likely completeness of event capture through multiple sources of data, and the range of phenotypes compared within a single study.

Mental Health II

THE ASSOCIATION OF PARENTAL FATAL AND NON-FATAL SUICIDAL BEHAVIOUR WITH OFFSPRING SUICIDALBEHAVIOURAND DEPRESSION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background Children whose parents die by, or attempt, suicide are believed to be at greater risk of suicidal behaviours and affective disorders. We systematically reviewed the literature on the association of parental fatal and non-fatal suicidal behaviours with offspring suicidal behaviour and depression and, using meta-analysis, estimated the strength of these associations. We further investigated the role of parental and offspring gender, and offspring age at exposure as potential effect modifiers.

Methods We carried out a comprehensive literature search using Medline (1950-April 2011), PsycINFO (1876-April 2011), EMBASE (1980-April 2011) and Web of Science. Twenty eight articles met our inclusion criteria, 14 of which contributed to the meta-analysis. Crude odds ratio (OR) and adjusted odds ratio (AOR) were pooled using fixed-effects models.

Results Controlling for relevant confounders, offspring whose parents died by suicide were more likely than offspring of two living parents to die by suicide [AOR 1.94, 95% confidence interval (CI) 1.54–2.45] but there were heterogeneous findings in the two studies investigating the impact of parental suicide on offspring suicide attempt (AOR 1.31, 95% CI 0.73–2.35). Children whose parents attempted suicide were more likely than unexposed children to attempt suicide (AOR 1.95, 95% CI 1.48–2.57). However, compared with offspring of parents who died by other causes, the risk of suicidal behaviour was only slightly elevated for offspring of suicide decedents (suicide: OR 1. 81, 95% CI 1.56–2.10; suicide attempt: OR 1.73, 95% CI 1.63–1.83); no adjusted analyses were available. Limited published research indicated that offspring exposure to parental death by suicide is associated with subsequent increased risk of affective disorders compared to offspring of two living parents. Maternal suicidal behaviour was associated with larger effect estimates compared to paternal suicidal behaviours. There was some evidence that younger age at exposure to parental suicidal behaviours was associated with greater risk than exposure in later childhood/adolescence. There was no evidence that the association differed in sons versus daughters.

Conclusion Parental suicidal behaviour is associated with increased risk of offspring suicidal behaviour, above and beyond the risk associated with a loss of a parent to a cause other than suicide. Findings suggest that maternal suicidal behaviour is a more potent risk factor than paternal suicidal behaviour. Limited evidence suggests that children are more vulnerable than adolescents and adults. However,

there is no evidence of a stronger association in either male or female offspring.

EVALUATING MENTAL WELLBEING IN CHILDREN WITH HEALTH RELATED BARRIERS TO LEARNING: RESULTS OF A QUASI-EXPERIMENTAL BEFORE AND AFTER INTERVENTION

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Background Clear associations have been demonstrated between poor mental health, behavioural problems and low educational attainment in secondary school children while negative self-perceptions are associated with truancy and classroom disruption at secondary school level. The majority of research in this field focuses and measures outcomes in terms of mental illness. Fewer interventions have been evaluated using positive mental health/mental wellbeing measures, though the body of evidence is growing.

We aimed to evaluate the effect of targeted school counselling or 'Wellbeing Mentorship' on mental wellbeing in children with health related barriers to learning at risk of low educational attainment and attendance. Health related barriers to learning included medical issues, mental health, sexual health, bullying, family challenges and emotional and behavioural barriers.

Methods The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was used to evaluate mental wellbeing in pupils seen by Wellbeing Mentors. WEMWBS is validated for use in populations aged 13+. Gender, age, school deprivation, attainment and attendance were measured. Mentors at eight diverse schools collected data from April 2011 to February 2012. A power analysis was conducted. Given the risk of high attrition, pupils were sampled within a designated time frame wherein Mentors evaluated every eligible pupil. Pupils completed WEMWBS at the beginning, end, and 6–10 weeks after their last mentoring session. Interventions comprised 6 sessions of weekly one-to-one health and wellbeing support.

Results Ninety-six eligible pupils undertook and completed WEMWBS, out of 160 estimated mentoring referrals. Using paired t-tests and ANOVA, we assessed changes in WEMWBS scores between time points. Pupils' mental wellbeing significantly improved (95% Confidence) from baseline to completion. Girls' baseline mean WEMWBS score (43.3) increased by 7.4 points to 50.7 at completion; boys baseline mean (44.2) increased by 6.2 to 50.4. These changes were sustained at follow up. Boys and girls results demonstrate statistically and clinically meaningful change. We compared our results with WEMWBS data collected in 2008 from two of the same and one similar school (n=753). The comparator mean for girls (47.4) and boys (49.8) indicate that mentored pupils improved their mental wellbeing to a similar level (boys) or a significantly higher level (girls).

Cooperation, process measures, attainment and attendance reporting varied greatly between schools; these data are still being collected.

Conclusion Both before and after and population controls suggest that mentoring is a worthwhile intervention for improving mental wellbeing in secondary school pupils identified with health related barriers to learning.

DOES ANONYMITY INCREASE THE REPORTING OF MENTAL HEALTH SYMPTOMS?

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Background There is no doubt that the perceived stigma of having a mental disorder acts as a barrier to help seeking. It is possible that individuals may be reluctant to admit to symptoms suggestive of