population, along with information from the local care home inspectorate. Analyses were performed using Cox regression models with hazard of care home admission as the outcome.

Participants 55 440 people aged 65 years or older and not living in care homes at the time of the Census.

Main outcome measures Permanent admission to a care home for older people, identified by change of address (from health card registration information) to a registered nursing or residential home (from inspectorate information).

Results In unadjusted models, women were 80% more likely to be admitted to a care home than men (HR 1.80 95% CI 1.65 to 1.96), while in fully adjusted models, the risk averaging across all living arrangements was 10% higher (HR 1.10 95% CI 1.00 to 1.20). There was however variation in the risk by living arrangements. After controlling for age, there was no raised admission risk for females among people living alone (HR 1.05 95% CI 0.93 to 1.19), or with siblings (HR 1.04 95% CI 0.64 to 1.68), however there was a higher risk when looking at the 20 972 cohort members living with a partner (HR 1.34 CI 1.14 to 1.59). There was no evidence of variation with health status of coresidents.

Conclusions Apart from age, the single biggest contribution to the raised admission risk is living arrangements. There are no apparent gender differences among people living alone or with siblings, whereas the risk is higher for women living with a partner. This suggests that the support provided within the home is different, and that women receive less support from their husbands than men receive from their wives. Further research should investigate the effect of coresident gender on living arrangements among people living with children.

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065 **UTILITY OF ELECTRONIC PATIENT RECORDS FOR EVALUATING STROKE SECONDARY PREVENTION IN PRIMARY CARE**

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Background To utilise electronic patient records (EPRs) to evaluate the secondary prevention of stroke; to evaluate data recorded in EPRs as potential outcome measures for pragmatic trials in primary care.

Methods Data were analysed for 414 family practices comprising 22 730 patients with an index first stroke between 2003 and 2006. For each subject, the EPR was evaluated for the 12 months before and 12 months after stroke. Data were analysed for stroke secondary prevention measures.

Results Blood pressure (BP) readings were available for 77% before stroke, and 90% after stroke. Mean (SD) values for BP after stroke were systolic 139.1 (17.1) and diastolic BP 78.0 (9.2) mm Hg. Intraclass correlation coefficients by family practice were 0.03 for both systolic and diastolic BP. For 14 006 subjects (62%) with records available both before and after stroke, the mean systolic BP was 6.02 mm Hg (95% CI 6.01 to 6.03) lower and the mean diastolic BP was 2.78 (2.77 to 2.79) lower after stroke than before. Cholesterol records were available for 48% before and 70% after stroke. The mean total cholesterol was 5.1 (1.16) mmo/l before stroke and 4.60 (1.06) after stroke. The Intraclass correlation coefficients was 0.02 for total and 0.05 for the LDL cholesterol levels. Atrial fibrillation was recorded in 3% before and 5% after stroke.

Conclusions EPRs have potential for evaluation of outcomes in pragmatic trials of stroke secondary prevention. Important reductions in vascular risk factor values were observed following stroke.

Wednesday 8 September 2010
Parallel Session D

Food policy

066 **ESTIMATING THE UK CARDIOVASCULAR MORTALITY REDUCTION EXPECTED WITH DIFFERENT FOOD POLICY OPTIONS**

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Objective To estimate the reduction in UK cardiovascular mortality potentially achievable by decreasing saturated fat, *trans*-fat and salt consumption and fruit and vegetable consumption.

Methods Cardiovascular Disease (CVD) mortality reductions were calculated by synthesising data on population, diet, cholesterol levels, blood pressure, and CVD mortality rates. Contemporary mortality and dietary data among UK adults 25 to 84 years old were obtained from official statistics. We quantified the aetiological effects of specific dietary factors on cholesterol levels, blood pressure, and CVD mortality using systematic reviews and meta-analyses. The number of CVD deaths achievable by reducing saturated fat, trans fat, and salt consumption and fruits and vegetables was estimated for a variety of dietary policy scenarios. Results were stratified by 10-group age and sex.

A probabilistic sensitivity analysis was then conducted. Using Monte-Carlo simulation, best, maximum and minimum estimates were calculated.

Results Reducing salt consumption by 1 g/day, saturated fat by 1% of energy intake and trans fat by 0.5%, and of fruits and vegetable intake 1 portion per day would result in approximately 13 850 fewer CVD deaths per year. These would comprise 4790 (minimum estimate 4620, maximum estimate 4910) fewer coronary heart disease deaths among men and 1840 (minimum estimate 1790, maximum estimate 1900) among women, along with 4000 (minimum estimate 3910, maximum estimate 4100) fewer stroke deaths in men, 3230 in women (minimum estimate 3160, maximum estimate 3310). Approximately 26% of the 13 850 mortality decrease would be attributed to decreased transaturated fat consumption, 27% to increased fruits and vegetables consumption 24% to decreased saturated fat consumption, and 23% to decreased salt consumption. More substantial dietary improvements could result in approximately 38 100 fewer CVD deaths (min 37 900, max 39 100).

Conclusions The CVD burden attributable to saturated fat, transaturated fat, salt and, fruits and vegetable consumption is substantial. Food policies resulting in even small dietary changes could result in approximately 20 000 fewer CVD deaths each year. This would represent a 9% reduction in UK cardiovascular mortality. Similar benefits might be expected in other industrialised populations.

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067 **FOOD INSECURITY, WELL-BEING AND INEQUALITIES IN DIET IN UK WOMEN**

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Objective Prevalence of household food insecurity varies between populations, but is higher among those who have low incomes, poor

educational attainment and low sense of well-being. The impact of household food insecurity on an individual's quality of diet depends on their role within the household and mothers may be more adversely affected than other family members. Studies have linked food insecurity with mental health problems in women of childbearing age. This study examines the relationship between food insecurity, well-being and quality of diet in women of childbearing age.

Design Cross-sectional survey of educational attainment, food insecurity, well-being and quality of diet in women of childbearing age.

Setting Sure Start Children's Centres (SSCCs) in three south coast towns with high levels of disadvantage- Southampton, Gosport and Havant.

Participants 1022 women attending SSCCs between January and April 2009.

Main outcome measures Food insecurity, assessed using the short form of Blumberg household food security scale; dietary quality score from a 20-item food frequency questionnaire; well-being by the WHO-5 questionnaire.

Results 11% of women had insufficient money to buy food, and 9% reported going hungry. Women of lower educational attainment were twice as likely to be food insecure as women of higher educational attainment (prevalence rate ratio 2.02, 95% CIs 1.42 to 2.86). Women who reported lower well-being were three times as likely to go hungry as women of higher well-being (prevalence rate ratio 3.18, 95% CIs 2.04 to 4.93.) Women who experienced food insecurity had poorer quality diets: becoming food insecure was accompanied by a 0.79 standard deviation reduction in dietary quality score (95% CIs −1.10 to −0.48). In a multivariate regression analysis, having lower educational attainment, lower well-being, being food insecure and going hungry were significant independent predictors of dietary quality, after adjusting for age and number of children in the household. Being food insecure predicted a 0.32 standard deviation reduction in dietary quality score (95% CIs −0.61 to −0.28), and going hungry a 0.45 standard deviation reduction (95% CIs −0.77 to −0.12).

Conclusion Food insecurity was common: one in five women lived in food insecure households. Women of lower educational attainment were twice as likely to be food insecure as women of higher educational attainment. National survey data indicate that disadvantaged young women have diets of poor quality. Our study suggests that food insecurity and low sense of well-being are aspects of disadvantage that predict poor quality of diet.

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068   **SYSTEMATIC REVIEW AND META-ANALYSIS OF SCHOOL-BASED INTERVENTIONS TO IMPROVE FRUIT AND VEGETABLE INTAKE**

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Objective The aims of the review were to identify school-based randomised and non-randomised controlled trials to increase daily or lunchtime fruit and vegetable intake in children and to determine the impact of school-based interventions to change fruit and vegetable consumption at lunchtime and over the whole day.

Design A systematic literature review was carried out to identify appropriate trials. This was followed by meta-analysis techniques to determine the pooled estimate of the difference in daily fruit and vegetable intake in the intervention group compared with the control group.

Participants Trials carried out in schools where children were aged 5 to 11 years were included. All trials reported in English language journals were eligible.

Results 28 randomised and non-randomised controlled trials were identified that reported daily fruit and/or vegetable intake. A median intake of 0.4 portions more fruit and vegetables was consumed in the intervention group compared to the control group. The qualitative review of 7 studies reporting lunchtime intake, either in addition to daily intake or independently in studies concentrating solely on lunchtime intake, revealed a median difference of 0.2 portions more fruit and vegetables in the intervention group at lunchtime. The meta-analysis of daily intake included 13 studies classified into one of two groups: behavioural change studies with a school and/or home component that relied on families improving eating behaviour; and free school fruit and vegetable scheme where fruit and vegetables are distributed to children. The short term impact of both type of programme was determined using the follow up data collected within 3 months of the end of the intervention. This was the longest follow-up period in most cases. The pooled estimates (95% CI) for behavioural change studies and free fruit and vegetable schemes were 0.43 (0.21 to 0.65) and 0.44 (0.20 to 0.67) portions respectively. The pooled estimate (95% CI) for all studies was 0.42 (95% CI 0.27 to 0.58) portions more in the intervention group. The majority of the difference was due to fruit not vegetables. Heterogeneity was high for the meta-analysis with lunchtime intake but reasonable for daily intake.

Conclusion School-based interventions have the potential to moderately improve fruit and vegetable intake in children, with approximately half of the increase attributable to improvements in lunchtime intake.

Physical activity

069   **LONGITUDINAL ASSOCIATION BETWEEN EARLY LIFE ADVERSITY AND PHYSICAL ACTIVITY AT AGE 36 YEARS**

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Background Periods early in life, between birth and adolescence, could be especially important for the establishment of health behaviours. Early adversity may influence the level and types of physical activity in adulthood.

Objectives To investigate the associations between early adversity and adult physical activity, and the role of depression and education as potential mediators of these associations. Structural equation models were used to 1) identify five latent factors of early adversity: socio-economic conditions (father's unskilled job, lack of home amenities and overcrowding), parental health (parental poor heath, maternal neuroticism); family structure during childhood (death of parents, divorce), chronic illness (hospitalisation for >1 month); and social isolation; 2) model the effect of depression/anxiety (at ages 15 and 36 years) and education level (at age 26 year) on the relationships between early adversity and physical activity.

Design Prospective cohort study.

Setting England, Scotland and Wales.

Participants Approximately 3300 men and women from the MRC National Survey of Health and Development, followed up since birth in March 1946.

Main outcome measures Four physical activity types measured at age 36 years—cycling/walking, heavy gardening, sports/recreational activities, and activity during the working day—with three levels of intensity (most active, less active, inactive).

Results There was no evidence of direct paths between early adversity and adult physical activity (p>0.05). However, there was a strong indirect effect of socio-economic adversity on activity at work (0.24) and on sports/recreational activity (−0.10) via education. The significant indirect effects of adolescent emotional problem on activity at work day (−0.01) and on sports/recreational activity (−0.01) via adult depression/anxiety were of smaller