Edinburgh Mental Wellbeing Scale (SWEMWBS). Secondary outcome measures were BMI, fruit and vegetable intake, physical activity, alcohol consumption, smoking and self-efficacy.

Results Clients reported positive experiences of engaging with the service and described making lifestyle changes, such as reducing portion sizes or trying new activities. Many would have liked a longer intervention (usually 8–12 weeks) and staff agreed that the duration was often insufficient for those with more complex physical, mental and/or social needs. Pre/post analysis of the intervention data revealed significant improvements across all outcome measures, with the largest changes observed in clients with the least positive results at baseline. These changes were largely maintained at both follow-up periods. Furthermore, reductions in the differences in EQ-5D and SWEMWBS scores between clients from the 30% most deprived communities and all other clients at the six-month follow-up stage implied that inequalities had narrowed over time. The value for money assessment indicated an estimated cost per quality-adjusted life year (QALY) of £3900 and a social return on investment of around £3.59 for every £1 spent on WFL.

Discussion An integrated health and wellbeing approach can be acceptable to members of the target communities, encourage them to make and maintain lifestyle changes, and potentially reduce health inequalities. The WFL service appeared to represent good value for money, although the reliance on self-report data and lack of a control group were limitations of the study design. Further research is needed to establish the effectiveness of this approach over other intervention models.

Lifecourse later life

OP08

EXPLAINING TRENDS IN CORONARY HEART DISEASE MORTALITY AND SOCIOECONOMIC INEQUALITIES IN DENMARK 1991–2007: IMPACT_{SEC} MODEL ANALYSIS USING ROUTINE DATA

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Background Coronary heart disease (CHD) mortality has declined substantially during recent decades but is still one of the leading causes of death, morbidity and healthcare costs in Denmark. Furthermore, socioeconomic inequalities persist. Quantifying the contributions of prevention and treatment to these recent declines might help to identify the most successful health policies, particularly for reducing inequalities.

Methods We used IMPACT_{SEC}, a previously validated policy model, to apportion the recent decline in Danish CHD mortality to changes in major cardiovascular risk factors, and to increases in treatments in nine non-overlapping patient groups. Participants: All Danish adults aged 25–84 years, stratified by gender, age group and quintiles of financial income. Main

outcome measure: Deaths prevented or postponed (DPP), stratified by socio-economic circumstance (SEC).

Results There were 11 110 fewer CHD deaths in 2007 than would be expected if the 1991 mortality rates had persisted. This reflected a dramatic 74% fall in CHD mortality rates (from 433 to 113 deaths per 100,000). Improved treatments accounted for approximately 24% (95% confidence interval=21%–28%). This contribution was higher in more affluent quintiles (approximately 26%) and least in the most deprived group (19%). The biggest contributions came from the treatment of congestive heart failure in the community (630 DPPs=5.7% of all DPPs) and in hospital (410 DPPs=3.7%).

Risk factor improvements accounted for approximately 40% (37%–44%) of the mortality fall. This contribution was higher in the central quintiles –approximately 51% (47%–58%) and least in the most deprived quintile – approximately 36% (29%–39%). The largest contribution came from population falls in cholesterol levels approximately 24% (22.7%–25.4%) of all DPPs; and decreases in smoking, some 10% (8.4%–12.2%).

Overall, the IMPACTSEC model could explain two thirds of the mortality fall. The 36% gap most likely reflects deficiencies in data, notably in population blood pressure and income.

Conclusion Denmark has benefited from one of biggest falls in CHD mortality in high income countries. The treatment uptake rate in Denmark was comparable with that in other countries and treatments accounted for approximately one third of the total mortality fall, much as in other, comparable populations. The largest contributions came from population-wide, non-pharmacological reductions in major risk factors, notably cholesterol and smoking. Future strategies should therefore prioritise population-wide prevention policies.

OP09

CHILDHOOD COGNITIVE ABILITY AND STANDING BALANCE IN MID TO LATER LIFE: FINDINGS FROM THE MRC NATIONAL SURVEY OF HEALTH AND DEVELOPMENT

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Background Physical performance indicators, such as standing balance, grip strength and walking speed, are increasingly being used as markers of healthy ageing. This is based on growing evidence that poor performance on these tests is associated with adverse health outcomes including falls, disability, hospitalisation and mortality. Individual variation in the levels of performance on each of these tests may be due to diverse contributing factors across life. Previous research has suggested that neurodevelopmental pathways may be particularly important for balance performance; however the few published studies on this have only examined balance at one age. We aimed to examine the associations between childhood cognitive ability, a marker of neurodevelopment, and standing balance at three ages in mid and later life.

Methods Up to 2785 participants from the MRC National Survey of Health and Development, a British cohort study followed since birth in 1946, were included in analyses. Standing balance was assessed at ages 53, 60–64 and 69 using the one-legged stand test with eyes closed up to a maximum of 30 s.

Childhood cognitive ability was assessed using a set of standardised tests at age 15. Linear regression models estimated the association between childhood cognitive ability and log-transformed balance at each age. Adjustments were made for sex, childhood socioeconomic position, current physical activity, height and weight. Analyses were performed using STATA v14.1.

Results Men had better median balance times than women at age 53 [Men: 5 (interquartile range: 3–10); Women: 4 (3–7)], 60–64 [M: 3.7 (2.5–5.6); W: 3.3 (2.3–4.8)], and 69 [M: 3.0 (2.0–5.0); W: 2.9 (1.9–4.3)], but a decline in median balance times with age was observed in both sexes. In sex-adjusted and fully-adjusted models, higher childhood cognitive ability was associated with better balance times, although this association weakened with increasing age. A one standard deviation increase in childhood cognitive ability was associated with fully-adjusted mean differences in log-balance times (ln(s)) of 0.12 (95% CI: 0.08–0.15), 0.05 (95% CI: 0.02–0.09) and 0.04 (95% CI: 0.001–0.08) at ages 53, 60–64 and 69, respectively.

Conclusion Balance performance decreased with age, and was consistently lower in women than men. Higher childhood cognitive ability was associated with better balance performance at all ages but the strength of this association weakened over time. Further research should examine how the associations of other neurodevelopmental factors with balance change with age. Interventions earlier in life may help to maintain balance performance from midlife.

OP10

RESIDENTIAL MOBILITY DURING CHILDHOOD AND LATER RISKS OF PSYCHIATRIC MORBIDITY, VIOLENT CRIMINALITY AND PREMATURE DEATH: A NATIONAL REGISTER-BASED COHORT STUDY

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Background Links between childhood residential mobility and pernicious trajectories through to adult maturity are incompletely understood. We therefore carried out a comprehensive investigation of the relationships between residential relocation during upbringing across a broad range of later adverse outcomes.

Methods Using interlinked registers, a national cohort of n=1,475,030 persons born in Denmark during 1971–1997 was followed up from 15th birthday to a maximum age of early 40 s for risks of psychiatric morbidity, substance misuse, violent criminality, and natural and unnatural mortality. All cross-municipality residential moves during each age-year between birth and 15th birthday were measured. Survival analyses (© SAS Institute Inc.) was used to estimate incidence rate ratios (IRRs) associated with relocation during each age-year of upbringing. Parental socioeconomic status was delineated according to income, educational attainment and employment status.

Results Elevated risks were observed for virtually all outcomes examined, with excess risk seen among those who experienced multiple versus single relocations in a year. For attempted suicide, violent offending, substance misuse, personality disorders and unnatural deaths, we observed especially sharp spikes in

risk linked with multiple relocations in a year during early/mid-adolescence. For example, diagnosis for substance misuse from age 15 was over six times more likely among adolescents who moved two or more times at age 14 than for their peers (IRR 6.35; 95% CI 5.82, 6.92). With violent offending and attempted suicide, our two primary outcomes, we found a risk gradient with increasing age at exposure among higher as well as lower socioeconomic groups. A consistent pattern of markedly elevated risk was not seen among all psychiatric illnesses examined; thus, eating disorders and obsessive compulsive disorder were not strongly linked with residential mobility during upbringing.

Conclusion As with other register-based studies, potential for residential confounding is a limitation of this investigation. Nonetheless, whatever causal mechanisms are implicated, frequent residential change is a strong marker for serious familial adversities. Heightened vigilance is therefore indicated for relocated youths. Health, educational and social services should be mindful of the potential psychosocial needs of adolescents who have recently moved homes or who have relocated more than once over a short period, and effective risk management will require close cooperation between multiple public agencies. When addressing the vulnerabilities of troubled young people, the possible harmful impact of residential relocation during childhood should be considered for individuals from affluent or middle class backgrounds, as well as those who grew up in deprived families.

OP11

LIFE COURSE SOCIOECONOMIC POSITION AND THE PREVALENCE OF TYPE 2 DIABETES IN LATER LIFE. A CROSS-SECTIONAL ANALYSIS FROM THE IRISH LONGITUDINAL STUDY OF AGEING

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Background A substantial body of research has pointed to an association between socioeconomic position (SEP) and the prevalence of type 2 diabetes (T2D), whereby those in lower social classes are disproportionately affected by the disease. However few studies have examined the contribution of SEP trajectories across the life course to the development of T2D. We investigate the independent and synergistic effects of childhood and adult SEP, as well as the effect of social mobility, on T2D risk in later life.

Methods Cross-sectional data from The Irish Longitudinal Study of Ageing (TILDA) (n=4998), a nationally representative probability sample of adults aged 50 and older, were analysed. Prevalent diabetes was defined using subjective (self-reported doctors diagnosis) and objective data (medications usage and glycated haemoglobin testing). SEP was classified as a three level variable (low, intermediate, high) based on fathers occupation in childhood (origin SEP) and respondents primary occupation in adulthood (destination SEP). A 5-level social mobility variable was created from cross-classification of origin and destination SEP ('Stable High' 'Stable Intermediate', 'Stable Low' 'Upwardly Mobile' and 'Downwardly Mobile'). Logistic regression was employed to assess the relationship between SEP variables and T2D. All analyses were adjusted for age and age², and stratified by sex.