Methods Multi-methods comprising two stages: 1) group and individual interviews with S.Asians aged 50–74 years purposively sampled from faith-based venues in Oxfordshire (Mosques, Hindu temples and Sikh Gurdwaras), religious festivals and local community groups for maximum variation. Semi-structured interviews based on the Theoretical Domains Framework (TDF) investigated determinants of bowel screening completion. Interviews were recorded, transcribed, and analysed using framework analysis and findings mapped onto the COM-B Behaviour Change Wheel; 2) Co-production of intervention during two workshops with key stakeholders and target population. Findings from stage one were presented, feedback sought and amendments to the intervention prototype were made.

Results To-date 25 adults recruited of Indian, Pakistani and Bangladeshi ethnicity with variation in age, gender, first language, faith, compliance with bowel screening. Key barriers and TDF domains that they mapped to were: - lack of knowledge about bowel cancer and screening; lack of language, literacy and physical ability (skills) to carry out the home test; confidence to carry it out correctly (belief about capabilities); appropriate space and time to carry out the test (environmental context and resources); putting off undertaking the test (memory attention and decision processes); risk perception and fear of cancer (emotions). Enablers were: social influences from peers; goals and motivations. Data collection and workshops will be completed by May 2020.

Conclusion Early results suggest an intervention comprising education, persuasion, modelling and enablement functions could increase completion of the home test. An intervention prototype will be produced and further funding sought for intervention refinement and evaluation of early feasibility and acceptability.

P10 CIRCULATING INSULIN-LIKE GROWTH FACTOR-I (IGF-I) CONCENTRATIONS AND INCIDENCE OF CANCER AT 26 SITES: PROSPECTIVE ANALYSES IN UK BIOBANK

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Background Insulin-like growth factor-I (IGF-I) is suggested to support cancer cell growth and proliferation. Pre-diagnostic circulating IGF-I concentrations have been shown to be positively associated with breast cancer, prostate cancer and colorectal cancer but evidence for less common cancer sites is limited. The aim of this study was to investigate the associations between serum IGF-I concentrations and the incidence of rarer cancers using an outcome-wide approach to study cancers at 26 sites in UK Biobank, in which serum concentrations of IGF-I were measured for ~ 467,000 participants (93%).

Methods We analysed data from 394,406 cancer-free participants (52% women). IGF-I was measured in serum collected at baseline and in a subsample of 14,149 participants again in repeat samples collected during follow-up. Cancer diagnosis and death due to cancer during follow-up were determined using data-linkage with cancer and death registries. Multivariable-adjusted Cox proportional hazards models were used to determine associations between baseline serum IGF-I concentrations and cancer incidence, using the repeated measurements to correct estimates for regression dilution.

Results After a mean follow-up of 6.9 years, 23,496 participants were diagnosed with a malignant cancer. Higher IGF-I concentration was associated with an increased risk of colorectal cancer (hazard ratio per 5 nmol/l 1.10, 95%-CI 1.05–1.15), colon cancer (1.11, 1.05–1.17), malignant melanoma (1.08, 1.01–1.15), breast cancer in women (1.11, 1.07–1.15), prostate cancer (1.08, 1.04–1.11), thyroid cancer (1.23, 1.05–1.43) and multiple myeloma (1.13, 1.01–1.27), and a reduced risk of oral (0.86, 0.77–0.97), liver (0.37, 0.30–0.45), endometrial (0.90, 0.82–1.00) and ovarian cancer (0.88, 0.78–0.99).

Conclusion Higher IGF-I concentrations were associated with higher risks of cancer at the established sites (breast, colorectal and prostate cancer) and malignant melanoma, thyroid cancer and multiple myeloma. Higher IGF-I concentrations were associated with lower risks of oral, liver, endometrial and ovarian cancer; longer follow-up is needed to investigate the possible role of reverse causality.

P11 IMPROVING PROSTATE CANCER CARE THROUGH THE 'OUTLIER PROCESS': A NATIONAL QUALITY IMPROVEMENT WORKSHOP

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Background The National Prostate Cancer Audit (NPCA) reports publicly performance indicators for all hospitals in England and Wales providing radical prostate cancer treatment, identifying those with results that fall outside the 'accepted range' as 'potential negative outliers'. Hospitals with outlying results are requested to provide a formal response.

This 'outlier process', targeting a limited number of hospitals, mirrors a 'high-risk approach' of preventing poor quality care in contrast to a 'population approach' that would target all hospitals. We invited clinicians to a national workshop to learn how the outlier process contributes to quality improvement.

Methods The workshop started with presentations on reducing the 'toxicity' of radical prostate cancer treatment. Then, clinicians from three hospitals identified as outliers shared their experience of the process and the changes in practice they had made as a result. We collected data in three ways. First, an online platform was used to gather comments from participants during the workshop. Second, a number of participants were interviewed about the outlier process as a means to improve quality of care. Third, feedback was sought after the workshop from all participants. Responses were collated and analysed for themes.

Results Sixty-nine clinicians attended including urologists, oncologists, radiographers and nurses, representing a spread of hospitals across England and Wales. There were 6 interviews, 21 online comments and 31 responses after the workshop. The clinicians representing outlying hospitals highlighted the

negative (stigma, work load, negative impact on reputation) and the positive impact (detailed review of procedures, implementation of targeted approaches) of the outlier process. Participants felt that sharing experiences of outlying hospitals helps others to improve. They also suggested a 'buddy system' between better and worse performing hospitals. Many highlighted the importance of 'networks' to share experiences, either good or bad, as a vehicle for improving practice.

Discussion The outlier process was generally accepted as a possible mechanism to improve practice. However, participants indicated that effective dissemination is key to ensuring that identifying poor outcomes in some hospitals (e.g. high-risk approach) can stimulate country-wide quality improvement (population approach).

P12 ALCOHOL CONSUMPTION DURING MID-LIFE AND POSTMENOPAUSAL BREAST DENSITY

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Background Alcohol consumption and breast density are both established risk factors for breast cancer. Although it has been suggested that the effect of alcohol on breast cancer is via altered breast density, few studies examine whether alcohol consumption at particular life-stages is associated with subsequent mammographic breast density. Average breast density decreases with age and at menopause however women with high alcohol consumption have been shown to have higher breast density. The aim of the study was to examine the association between alcoholic consumption during mid-life and breast density in a population based sample of postmenopausal women.

Methods Data on alcohol consumption and breast density were examined among 833 postmenopausal women from the National Survey of Health and Development, a cohort followed up since their birth in 1946. Mammograms were obtained from routine screening programmes (at approximately age 50 years), from which breast density was calculated. Alcohol intake was self -reporting during mid-life (36, 43 & 53 years). Linear regression was used to evaluate the association between weekly grams of alcohol intake at each age and breast density. Regression was used to evaluate the association between alcohol consumption and breast density. This was then adjusted for body mass index (BMI), a known confounder. Then adjusted for BMI and additional confounders; parity, age at first child, age at menstruation, smoking status, physical activity, social status. Age at mammogram and menopause status were constant for all women, therefore no adjustment necessary.

Results In unadjusted analysis a unit increase in weekly alcohol consumption at age 36, 43 and 53 was associated with 4.1% & 3.4% increase and 0.3% decrease in breast density respectively. After adjustment for BMI, association remained age 36 with a 2.7% increase, and lost age 43 & 53. All association was lost when adjusted for potential confounders.

Conclusion A 2017 systematic review by Zimbicki and colleagues found a positive association between high alcohol intake and breast density, with a stronger effect seen in premenopausal women. This study suggests that there is no association between alcohol consumption in mid-life and postmenopausal breast density.

P13 ASSOCIATIONS BETWEEN THE LIFE TRANSITIONS OF EARLY ADULTHOOD AND CHANGES IN FAST FOOD INTAKE

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Background Early adulthood is typically a period of poor diet and rapid weight gain. It is also an age of transition, including changes in social and physical environments which may be associated with changes in health-related behaviours. We examine the association of five life transitions (leaving the family home, leaving full-time education, beginning full-time employment, beginning cohabitation, and becoming a parent) with change in fast food intake.

Methods We used four waves of data from adolescence (mean age 15) through early adulthood (to mean age 31) from the longitudinal, population-based Project EAT study (Minnesota, US). The underlying trajectory of fast food intake was modelled as a latent growth curve. Additional latent intercepts at waves 2, 3 and 4 were included, regressed on the 5 life transitions, to allow for additional effects of experiencing life transitions between waves. All life transitions were included in a single model allowing adjustment for other transitions and the underlying growth curve.

Results Fast food was consumed 1.69 times/week (SE 0.03) at age 15, and followed a negative quadratic trajectory through early adulthood. Beginning full-time employment and becoming a parent were associated with increases in fast food intake of 0.16 times/week (SE 0.007) and 0.16 times/week (SE 0.004) respectively. Leaving the family home and beginning cohabitation were associated with decreases in fast food intake of -0.18 times/week (SE 0.003) and -0.16 times/week (SE 0.008) respectively. Leaving full-time education was not associated with any change in fast food intake (-0.01 times/week (SE 0.89)).

Conclusion Social transitions in early adulthood contribute to changes in fast food consumption, which may affect dietary intake and long-term health. These findings suggest a further focus on the life transitions of beginning employment and becoming a parent for public health policies and intervention.

P14 POOR ORAL HEALTH AND THE ASSOCIATION WITH DIETARY QUALITY AND INTAKE IN OLDER PEOPLE IN TWO STUDIES IN THE UK AND USA

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Background We investigated the associations of poor oral health with dietary quality and intake in older people. We also examined whether changes in dietary quality can influence the risk of oral health problems.