selected micronutrient intakes in children across the WHO European Region (WER) using the latest available NDS intakes and WHO Recommended Nutrient Intakes (RNIs) to highlight vulnerable groups and areas of concern.

Methods NDS information was gathered primarily by internet searches and contacting survey authors and nutrition experts. WER countries were grouped into areas – Western, Northern and CEEC. Survey characteristics, reported energy, and nutrient intakes by gender and age group were taken from the latest NDS reports from post-2000 surveys. Population weighted means were calculated and presented by country, European area and WER-wide for both genders and age groups <10 y and ≥10 y. WHO RNIs were used to assess nutrient intake adequacy and highlight aspects of concern.

Results Child energy and nutrient intakes were only available from 21 NDS across a third (n=18) of WER countries. Energy and macronutrients, where boys and older children had higher intakes, were more widely reported than micronutrients. Trans fats, omega fats, added sugar and iodine were the least reported nutrients. Countries in all European areas had poor RNI attainment levels; most countries did not meet the carbohydrate, sugar, saturated fat or fibre RNIs in any age group. Older adolescents were more likely to meet RNIs based on absolute levels rather than %E. Micronutrient attainment was higher than macronutrients, but worst in girls and older children. Iron, vitamin D, folic acid and sodium intakes were of concern, particularly in girls and children aged ≥10 y. Only six surveys reported intakes by various socio-economic indicators.

Conclusion Only a third, mainly Western, WER countries provided published child nutrient intake data. Gaps in provision mean dietary inadequacies may go unidentified, preventing evidence-based policy formation. WHO RNI attainment was poor, particularly in girls and older children. Inconsistent age groups, dietary methodologies, nutrient composition databases and under-reporting hinder inter-country comparisons. Future efforts should encourage countries to conduct NDS in a standardised format by gender, age and socio-demographic variables. A European-wide policy focus to improve intakes, particularly in girls and children aged ≥10 y would be beneficial.

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P46 HOW DOES ETHNIC ADJUSTMENT OF CHILDHOOD BMI CHANGE OBESITY PREVALENCE IN INNER LONDON BOROUGHS WITH HIGH ETHNIC DIVERSITY: ANALYSIS USING NATIONAL CHILD MEASUREMENT PROGRAMME DATA FOR 2015–2017

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Background for ethnic adjustment of BMI are available but not currently used in the National Child Measurement Programme (NCMP). We evaluated the effect of ethnic-specific BMI adjustments on the prevalence of obesity and severe obesity, using cut-offs to identify children potentially needing clinical intervention, in three inner London Boroughs with high obesity prevalence and ethnic diversity.

Methods We analysed de-personalised NCMP data for 21 126 (10,348 girls) five year-olds (5,463, 9065 and 6598 respectively in City & Hackney, Newham and Tower Hamlets) and 19 024 (9,361 girls) 11 year-olds (4,865, 8274 and 5,885) for the school years 2015–16 and 2016–17. We estimated, for each borough, the prevalence of obesity (BMI centile ≥98th) and severe obesity (defined as ≥120% of the 95th centile) based on unadjusted and ethnic-adjusted BMI using ethnic-specific BMI adjustments for South Asian and Black ethnicity children, developed by Hudda *et al*. These add ~1.1 kg/m^2 to, and deduct between 0.12 and 5.52 kg/m^2 from, the BMI of South Asian and Black ethnicity children respectively. We report the net change in numbers identified for possible clinical intervention over both school years and for both ages combined.

Results Proportions of five and eleven year-olds of South Asian ethnicity were highest in Tower Hamlets (58.5%; 67.4% respectively) and Newham (39.1%; 30.3%), and lowest in City & Hackney (9.7%; 6.4%). Equivalent proportions of children of Black ethnicity were highest in City & Hackney (29.6%; 22.0%) and Newham (16.5%; 13.6%), and lowest in Tower Hamlets (8.3%; 9.4%). Ethnic-specific BMI adjustments increased the respective prevalences of obesity and severe obesity in Tower Hamlets from 6.7% and 1.7% to 8.1% and 2.5% at age five, and from 11.2% and 6.9% to 11.9% and 8.6% at age 11, a net increase of 133 obese and 154 severely obese children. Equivalent prevalences in City & Hackney fell after ethnic adjustment, from 6.7% and 1.8% to 5.2% and 1.4% at age five, and from 10.7% and 8.8% to 9.4% and 7.7% at age 11, a net decrease of 145 obese and 74 severely obese children. Prevalence estimates before and after ethnic adjustment in Newham were broadly similar, resulting in three fewer obese and 28 more severely obese children.

Conclusion Adoption of ethnic-adjusted BMI in ethnically diverse areas alters local estimates of childhood obesity, avoids misclassification of children of South Asian and Black ethnicity, and is essential to support clinical service planning and commissioning. Ethnic-specific BMI adjustments for children of mixed ethnicity are needed.

P47 HIGH PREVALENCE OF OBESITY IN THE GAMBIA: EVIDENCE FROM A NATIONWIDE POPULATION-BASED CROSS SECTIONAL HEALTH EXAMINATION SURVEY

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Background The prevalence of obesity has more than doubled in West Africa over the past 15 years. Obesity is increasing at a faster rate in developing countries compared with developed countries. Possible explanations include epidemiological and nutritional transition, increased consumption of processed foods, and urbanisation. A 1996 study revealed a double burden of over- and under-weight in The Gambia. We examined overweight and obesity prevalence and the associated risk factors in Gambian adults.

Methods This study uses a random nationally-representative sample of 4111 adults aged 25–64 years (78% response rate) collected in 2010 using the WHO STEPwise survey methods, restricted to non-pregnant participants with valid weight and height measurements (n=3533). We categorised body mass index from measured height and weight to determine underweight, overweight and obesity (WHO thresholds). Analyses were stratified by gender. All analyses were weighted for non-response and adjusted for complex survey design using STATA14. We conducted multivariate multinomial regression analysis to identify factors associated with underweight, overweight and obesity, using normal weight as reference. Fully adjusted relative risk ratios (ARRR) with their corresponding 95% confidence intervals (CI) are reported.

Results Two-fifths of adults in The Gambia were overweight or obese, with a higher prevalence of obesity in women (17.0%, [95% CI 14.7% to 19.7%] vs 8.1% in men, [6.0–11.0%]) and urban residents. Urban residence, abdominal obesity, higher education, and age were significantly associated with obesity among both men and women. Obesity was also significantly associated with low fruit and vegetable intake in men, and with hypertension and ethnicity in women. Most of these variables were also significantly associated with overweight. Compared with rural residents, the risk of overweight and obesity among urban residents were three- and six-fold higher respectively in men (overweight: ARRR 3.1, 95% CI 1.7 to 5.6; obesity: 6.6, 2.5–17.2) and in women (overweight: 3.2, 1.9–5.4; obesity: 5.9, 3.1–11.2). No significant associations were found for underweight, except for smoking and ethnicity in men and old age and ethnicity in women.

Conclusion This study reveals that the burden of obesity is increasing at an alarming rate in The Gambia. Preventive strategies should be directed at raising awareness of the risk factors, discouraging harmful beliefs on weight, and the promotion of healthy diet and physical activity particularly in urban areas and among women.

P48 WHAT BARRIERS AND FACILITATORS INFLUENCE THE IMPLEMENTATION OF NEW HIGH-RISK MEDICINE SERVICES IN SCOTTISH COMMUNITY PHARMACIES?

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Background In the UK, 6.5% of hospital admissions are attributed to adverse effects of high-risk medicines, including warfarin and non-steroidal anti-inflammatory drugs (NSAIDs). Warfarin and NSAIDs 'care bundles' were developed to address this. These services focus on improving care processes and patient outcomes. They focus on medication-specific interactions and patient education, and were piloted in 2017 in 24 pharmacies across four healthcare regions, with intent for national implementation. This study aims to identify barriers and facilitators influencing their successful implementation.

Methods Following a systematic review identifying barriers and facilitators to the national implementation of community pharmacy innovations, a questionnaire was developed and disseminated in June 2017 to pharmacy staff (n=217) in the pilot pharmacies. Multivariate regression analysis was conducted to identify barriers and facilitators influencing successful implementation (determined using a 6-item Likert-scale). Pearsons-Chi Square test was used to identify differences between the bundles.

Results Seventy-four participants (34.1%) responded from 17 pharmacies (70.8%). 73.1% and 72.1% considered the warfarin and NSAIDs bundles successfully implemented respectively. Multivariate regression analysis identified two factors influencing successful implementation of the warfarin bundle ($p<0.001$, $R^2=0.752$): compatibility of the bundle with pharmacies' processes; and positive perceptions of patients. For the NSAIDs bundle, four predictors of implementation success ($p<0.001$, $R^2=0.633$) were identified: pharmacy staff having sufficient knowledge of NSAIDs; perceived incentives involved in bundle delivery; workload of the NSAIDs bundle; and funding. Compared to the NSAIDs bundle, pharmacy staff involved with the warfarin bundle were less likely to agree there were sufficient pharmacy staff ($p=0.030$), and that they had enough time ($p=0.025$) and training ($p=0.004$) to deliver the bundle.

Conclusion The questionnaire successfully identified barriers and facilitators to the implementation of the bundles. Warfarin bundle success factors (compatibility and positive patient perceptions) were unsurprising as previous strategies in Scotland have engaged pharmacies with warfarin counselling, and patients are likely to have experienced some warfarin counselling already. This is not the case for NSAIDs, therefore it is understandable that additional strategic facilitators (incentives and funding) were success factors. Workload associated with the NSAIDs bundle was a risk to successful implementation, potentially explained by the greater number of patients from over-the-counter purchases and prescription supplies. Contextual factors not captured may explain differences (e.g. regional staffing issues may explain why warfarin bundle participants were less likely to think they had sufficient staff and time).

P49 SPATIAL DISTRIBUTION OF SOCIOECONOMICALLY DEPRIVED IMMIGRANTS AND THEIR ACCESS TO HEALTHCARE SERVICES IN A NORTHERN CITY IN CHILE

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Background Immigrant population have exponentialy grown in the past thirty years in Chile, concentrating in the northern and central areas of the country. Iquique is one of the densest cities in the country in terms of international migrants, reaching around 10% of total population. In this city, healthcare network is divided into 4 primary care centres and one hospital. No study; however, has analysed where socioeconomically deprived immigrants are located in the city and how they access healthcare services compared to the local population. This study aimed at analysing the spatial location of international migrants in socioeconomic deprivation in the city of Iquique and how they access public healthcare, as well as compare it to the locals.

Methods Secondary data analysis of 2012 census data in Chile. We built a multiple index of deprivation for immigrants and locals separately, with the following dimensions at the census track level (n=1,879): (i) educational level (none/primary/secondary/higher), (ii) any disability (yes/no), (iii) housing (overcrowded, collective, rented), (v) crime (theft/burglary) (iv) environment (traffic accidents). Dimensions of the index were