

**Conclusion** RWG from birth to 3 y was positively associated with BMI in early childhood and adiposity growth throughout childhood to adolescence. This positive effect was particularly detrimental for non-LBW than LBW children, which may have important public health implications for preventing early life RWG among term appropriate- and large-for-gestational-age children.

**OP7 BARRIERS AND FACILITATORS TO ADOPTION, IMPLEMENTATION AND SUSTAINMENT OF OBESITY PREVENTION INTERVENTIONS IN SCHOOLCHILDREN—A DEDIPAC CASE STUDY**

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**Background** The aim of the study was to explore the implementation of school based diet and physical activity interventions with respect to the barriers and facilitators to adoption, implementation and sustainability; supportive actions required for implementation and recommendations to overcome identified barriers. Two interventions rolled out nationally in Ireland were chosen; Food Dudes, a programme to encourage primary school children to consume more fruit and vegetables and an Active Travel to School Programme in primary and secondary schools. Trained school coordinators (teachers) cascade the programmes to other teaching staff.

**Methods** Multiple case study design using qualitative semi-structured interviews with key stakeholders: primary and secondary school teachers, school coordinators, project coordinators/managers, funders and intermediaries. Fifteen interviews were conducted. Data were coded using a common categorization matrix. Thematic analysis was undertaken using the Adoption, Implementation and Maintenance elements of the RE-AIM implementation framework.

**Results** Good working relationships within and across government departments, intermediaries and schools were critical for intervention adoption, successful implementation and sustainability. Organisational and leadership ability of coordinators was essential. Provision of participation incentives acted as motivators to engage children's interest. A deep understanding of the lives of the target children was an important contextual factor. The importance of adaptation without compromising core components in enhancing intervention sustainability emerged. Successful implementation was hindered by: funding insecurity, school timetable constraints, broad rather than specific intervention core components, and lack of agreement on conduct of programme evaluation. Supportive actions for maintenance included ongoing political support, secure funding and pre-existing healthy lifestyle policies.

**Conclusion** Successful implementation and scale up of public health anti-obesity interventions in schools is dependent on contextual factors, engagement and leadership at multiple levels and secure funding. Recommendations to overcome barriers include: capacity to deliver within an already overcrowded curriculum and clear specification of intervention components within a conceptual framework to facilitate evaluation. Our findings are generalisable across different contexts and are highly relevant to those involved in the

development or adaptation, organisation or execution of national public health interventions; policy makers, guidelines developers, and staff involved in local organisation and delivery.

**OP8 ARE CLINICALLY OBESE CHILDREN AT INCREASED RISK OF HOSPITAL ADMISSION? A LONGITUDINAL ANALYSIS USING LINKED ELECTRONIC HEALTH RECORDS IN WALES AND SCOTLAND**

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**Background** Few studies have examined the extent and nature of health service utilisation by obese and overweight children. We estimated the rate of hospital admission from five to 13.9 years of age in children who were clinically overweight or obese by age five years compared with their healthy weight peers, using linked electronic health records from a nationally representative prospective cohort of children in Wales and Scotland.

**Methods** Data were available for 3306 singleton children participating in the Millennium Cohort Study (MCS), who were living in Wales (n=1840) or Scotland (n=1466), and whose parents consented to linkage to their health records up until their 14th birthday. Height and weight were measured at home interview at age five years and weight status was categorised according to the UK1990 clinical reference standards. Overall, 3269 (1678 boys) of these 3306 (98.9%) children were linked to the Welsh Demographic Service (n=1838) or their Scottish Community Health Index number (n=1431) via probabilistic and deterministic record matching. In turn, they were matched to Welsh and Scottish hospital admission records from the Patient Episode Database for Wales, and Scottish Morbidity Records, respectively. Using information on admissions from five to 14 years, we fitted negative binomial models adjusted by potential confounders in order to compare rates of inpatient admissions from any cause, for diseases of the digestive or respiratory system, or for injuries by weight status at age five.

**Results** At age 5, 11.6% and 6.8% of children were overweight or obese respectively, and 37% had at least one subsequent hospital admission by their 14th birthday. Compared to children of a healthy weight, there was no increase in the rate of all-cause hospital admissions among overweight or obese children (confounder-adjusted rate ratio (RR), 95% confidence interval (CI): 0.9 (0.7, 1.1) and 1.2 (0.9, 1.5), respectively), or with diseases of the digestive or respiratory system or with injuries.

**Conclusion** This is to our knowledge the first study to link childhood weight status to hospital admissions in a nationally representative cohort. We found that clinical obesity at primary school entry is not associated with a higher rate of subsequent hospital admissions up to age 14 years in children born in 2000/2001. Future analyses will examine primary care consultations and accident and emergency attendances. Longer-term follow up is also needed to determine whether rates increase with age.