systematic reviews meeting all inclusion criteria. Of the 24 identified reviews, 16 reviews addressed question 1, whilst 19 reviews addressed question 2. The primary studies within these reviews included a number of interventional studies and several randomised control trials.

The majority of studies which examined the optimum age of transition stated that transition time should be determined by developmental maturity, not a rigid age threshold. However, delayed transition was associated with improved outcomes. These included health-service use, clinical outcomes, reduced care gaps and patient satisfaction. Evidence from individual programmes found potential benefits from commencing transition preparedness training in early adolescence.

Studies which evaluated age-appropriate services found that they were generally well-regarded by patients and often result in improved outcomes, better engagement with healthcare services or improved patient health behaviours.

Conclusions This review suggests that delayed transition and dedicated age-appropriate services result in improved outcomes and increased patient satisfaction. These findings appear to be consistent across a range of long-term conditions and in a variety of healthcare systems. Further work is required to identify specific barriers and facilitators to successful health-care transition.

G425(P) A SYSTEMATIC REVIEW AND META-ANALYSIS OF OUT OF HOSPITAL NURSING INTERVENTIONS TO REDUCE EMERGENCY DEPARTMENT ATTENDANCES IN CHILDREN AND YOUNG PEOPLE

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Aims Rising use of emergency departments has resulted in increased costs and poor quality of care for children and young people. Clear evidence on which interventions work in reducing the number of unplanned admissions is important for those who use and commission emergency department services and to improve the quality of healthcare services. There is a policy imperative to shift care out of hospitals but insufficient evidence on the effectiveness of out of hospital care. This review aims to identify, critique, and collate outcomes in published evidence for nurse-led out hospital care for children and young people with chronic conditions.

Methods Two databases were systematically searched from 1965–2017, to identify randomised controlled trials that used nurse-led out of hospital care to reduce emergency department attendances in children and young people (0–18 years) with at least one chronic condition. The pooled incidence rate ratio (IRR) was estimated using the R package metaphor.

Results Five randomised controlled trials (3 USA, 1 Canada, 1 Scotland) met the inclusion criteria. All five trials were included in the qualitative review but four were included in the meta-analysis due to heterogeneity in outcome measures. Four papers reported on CYP with asthma and the fifth on chronic illness. Only three papers reported significant effect for a reduction in emergency department attendances. Study quality was moderate, with a medium risk of bias. The meta-

analysis fitted a random-effects model, which estimated a pooled IRR of 0.65 (95% CI 0.40, 1.03) implying a non-significant positive effect of nurse-led out of hospital care on reducing emergency department attendance.

Conclusions Although this review found no association between emergency department usage and nurse-led out of hospital care, the effect sizes were large and three papers found positive associations. Only five randomised controlled trials were included in this review, most of which studied children and young people with asthma, highlighting the need for further research in this area.

G426(P) PAEDIATRIC DENTISTS' IDENTIFICATION AND MANAGEMENT OF UNDERWEIGHT AND OVERWEIGHT CHILDREN

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Aim Dental caries and obesity are increasing challenges for the NHS. Dentists see children frequently and are well placed to identify both conditions and potentially intervene, in line with government strategy of 'making every contact count'. We aimed to identify routine practice of Specialists in Paediatric Dentistry (SPD) regarding diagnosis and management of children with abnormal body mass index (BMI).

Methods An anonymous online survey was emailed to all SPD in the UK. Questions investigated whether and when height, weight or BMI were measured; actions taken; and dentists' feelings regarding their role.

Results 49/112 (42%) of SPDs responded (table 1). All felt they had a responsibility to identify underweight or overweight/obese children.

Abstract G426(P) Table 1 Dentists' habits regarding assessment of children's weight, height, and BMI

How frequently do you measure X?	Weight n	%	Height n	%	BMI n	%
Always	8	17	7	15	3	7
Often	12	26	11	24	9	20
Occasionally	18	39	14	30	13	28
Rarely	2	4	3	7	4	9
Never	6	13	11	24	17	37

Weight was the most commonly measured anthropometric value; height less so. BMI was most commonly calculated if a general anaesthetic/sedation was planned (n=21/29), or if the patient 'looked overweight' (n=16/29). Of those measuring BMI only 41% had taken action more than twice in a year: most commonly (90%) the child's GP was informed. Challenges to intervention included the sensitive nature of weight, and the lack of protocol. Of the 37% that did not measure BMI, two-thirds felt they did not know how to interpret the result.

Conclusions SPD were supportive of their role in the identification of underweight or overweight/obese children presenting to their clinics. However, many felt uncertain about BMI

interpretation or subsequent management. Dentists were concerned regarding a lack of clear protocol, and the sensitive nature of discussing weight. Thus, few routinely measured BMI or acted on abnormal results. Dentists would benefit from inclusion of BMI calculation and interpretation into the undergraduate curriculum, with additional training for practicing SPDs. The development of a local protocol to manage children with abnormal BMI would further support this.

G427(P) RETROSPECTIVE AUDIT OF NUTRITIONAL STATUS ASSESSMENT AND MANAGEMENT OF LOW BONE MINERAL DENSITY IN CHILDREN AND YOUNG PEOPLE WITH CEREBRAL PALSY: ARE WE ADHERING TO NICE GUIDELINES?

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Background Children and young people (CYP) with Cerebral Palsy (CP) are at risk of nutritional problems. Up to 90% experience difficulties in chewing or swallowing, and/or eating or drinking independently.

It has been recognised that these children at risk of nutritional problems have an increased risk of bone demineralization and low-impact fractures.

Feeding impairment also correlates with the severity of motor deficit (GMFCS level IV – V). Studies show that those within this category were 5.7 times more likely to have lower bone mineral density (LBMD) than GMFCS level I-III.

The recent NICE guidelines have made recommendations that CYP with CP have regular reviews of their nutritional status and LBMD should be assessed and adequately managed.

Aim To ascertain (as per the NICE guidelines)

- Whether CYP with CP (GMFCS level IV–V) seen in a tertiary neurodisability service are having regular reviews of their nutritional status.
- Whether LBMD is being assessed adequately.

Method Retrospective case note analysis of CYP with CP (level IV–V) attending between March 2015– February 2017

Results 24 children with GMFCS IV–V, CP, were identified. The male to female ratio was 11:13

- 96% had their weight measured
- 92% had their height measured
- 75% had a nutritional review performed
- 70% were referred to dieticians/for alternative methods of feeding.
- 62.5% of individuals had their dietary intake of vitamin D/ calcium assessed at clinic
- 17% had investigations performed

Discussion Our findings showed that we are not achieving optimum results in mandatory areas such as measuring weight and height. Barriers identified were lack of equipment and training in mobilising a wheel chair bound child.

Other areas for improvement include the need to perform regular nutritional reviews, with ongoing referrals if deemed necessary.

A proforma/checklist for the service is currently being developed in order to aid clinic reviews, and a further audit will be performed in a year.

G428(P) THE INFLUENCE OF TECHNOLOGY ON OBESITY IN CHILDREN AND ADOLESCENTS THREATS TO, AND OPPORTUNITIES FOR, HEALTH IN OUR DIGITAL WORLD

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Aims There has been a focus on increasingly 'sedentary life-styles' as a driver of rising child and adolescent obesity. The use of technology amongst young people has been often purported as a major contributor to this behaviour change. We examined technology through multiple lens, looking at the threats it brings, and how we can harness potential opportunities in the prevention and intervention of obesity.

Methods A literature review was performed using PubMed and the Cochrane Library databases, using various combinations of search terms including 'child', 'adolescent', 'overweight', 'obesity', 'BMI', 'BMI-z', 'technology', 'screen time', 'television', 'ehealth', 'mhealth', 'exergaming', 'gamification' and 'wearables.'

Results Cross-sectional and longitudinal studies have identified a correlation between 'screen time' and increased likelihood that a child will be overweight or obese, as well as reduced physical activity and increased consumption of high energy and/or low nutrition quality foods. Multimedia food marketing has been shown to have a negative influence on children's food choices and perceptions of nutrition. However, technologies can be manipulated for health promotion and to encourage behaviour change.

Technology can be integrated into existing programmes, making them more accessible, sustainable and individualised. Such integrated models have allowed both patients and professionals to track nutrition and lifestyle behaviours to identify opportunities for intervention and improve communication between these groups. Three systematic reviews identified 'mhealth' and 'ehealth' interventions in children, with none from low and middle-income countries. Diverse modalities exist, with mixed evidence behind their efficacy by physical activity, diet quality or body mass index (BMI) measures. A tailored approach is needed for different age groups or for family focused programmes, with variations in content required to ensure continued engagement. There has been a rapid expansion in the use of commercial 'apps', however little is known regarding the quality of these tools. One review assessing 383 apps identified a lack of evidenced-based methods, scientific evaluation, or healthcare professional involvement in design.

Conclusion There is limited robust evidence regarding the role of technology in childhood obesity. Guidelines and policy regarding 'screen time' and the use of technology is important to support healthcare professionals giving advice regarding healthy lifestyle measures.

G429(P) 'THROUGH THE WINDOW – A LITERATURE REVIEW OF FALLS'

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Aims Two children were admitted following accidental falls from windows. This prompted us to review the literature regarding this important paediatric public health issue.

Methods A literature review encompassing ‘falls from windows +children’ between 1990–2017 was performed.

Results Demographics

- Falls are the most common cause of accidental injury to children, and one of the commonest causes of death in children >1 year
- Every year 4,000 children in the UK <15 years are injured falling from windows
- Boys are 2–3x more likely to fall than girls
- 73.3% children hospitalised are <5 years
- Black children are 3x more likely to fall than non-black children
- Closely linked with social deprivation – poor quality housing, overcrowding and inadequate supervision are contributing factors
- Most frequently happen in the spring, summer, during holidays and weekends
- 68% falls occurred at home – in one study the bed had been placed close to an open window in 83% cases

Injuries

- Most common pathology following a fall of at least 1 m is head trauma (63%), 17.3% having multiple trauma
- Severe head injuries carry a high risk of mortality, particularly in younger children
- The mortality rate for falls from windows is 4.7%, compared to 0.07% for other falls
- 87% of victims fell from the third floor or lower

Prevention

- Education and publicity campaigns
- Window catches, guards and restrictors to stop windows opening >10 cm
- Move beds/furniture away from windows
- Building legislation to safeguard high windows
- Opportunistic advice on fall prevention prior to discharge from hospital

Conclusion Falls from windows are one of the top five injuries in the <5's. Many of the risks are predictable and amenable to simple interventions.

In the UK falls from windows are persistent with social inequalities placing poorer children at greater risk, demonstrating that preventive strategies are suboptimal.

Paediatricians have a duty to act as injury prevention advocates; to identify needs, raise awareness and influence action for enhanced child safety measures. The morbidity from falls from windows warrants acknowledgement with robust multifactorial prevention strategies to promote the safety and well-being of children.

G430(P)

RECOGNITION AND RESPONSE TO PAEDIATRIC OBESITY IN THE GENERAL OUTPATIENT POPULATION: ARE WE MISSING A KEY OPPORTUNITY?

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Aims Obesity negatively impacts physical health, mental well-being and shortens life expectancy.¹ Reducing childhood obesity rates will save lives.² Despite this, children are only routinely screened for obesity twice (4–5 years and 10–11 years) through the National Child Measurement Programme (NCMP).³ Additional opportunities to identify overweight/obese children cannot be missed.

This study aims to explore the prevalence of overweight/obese children in the outpatient population of a district general hospital (DGH) and assess the recognition of these children by paediatricians.

Methods This pilot study began with an audit of growth parameters for 87 children (2–16 years) attending paediatric outpatient/ambulatory clinics during one week in September 2017. Retrospective body mass index (BMI) centile plotting enabled identification of overweight (≥ 91 st but < 98 th centile), obese (≥ 98 th centile) and severely obese (> 99.6 th centile) children. Clinic letters were reviewed to check if children were recognised as overweight/obese during medical consultations.

Collaboration with the Public Health Agency (PHA) facilitated comparison with NCMP data.

Results 100% children were weighed but 14% (12/87) had no height documented. BMI centiles were plotted for the remaining 75 children (56%-male, 44%-female). 28% were overweight/obese which compared similarly to NCMP data showing 27% overweight/obese 10–11 year olds in the trust's geographical area.⁴ Our study had more obese children at 15% (including 4% severely obese) compared to NCMP data at 6.6%.

Only 3 patients had a BMI plotted and consequently diagnosed as obese (all severely obese). 86% of overweight/obese children (presenting with constipation, asthma, enuresis etc) were not actually recognised as overweight/obese during the consultation.

Conclusions Our paediatric outpatient population has an alarmingly high prevalence of obese/overweight children, yet this problem is poorly recognised. Subsequent questionnaires indicated strong staff support for height/weight/BMI centile plotting for every child to improve obesity detection. Therefore, universal BMI plotting (utilising the RCPCH growth app) is being implemented as a quality improvement drive. Telephone information-gathering exercises revealed fellow DGHs reporting similar challenges with paediatric obesity recognition. Our pilot has grown into a regional obesity awareness project. We are collaborating with dietitians, physiotherapists and the PHA to create a multicentre, multidisciplinary paediatric obesity awareness e-learning package for staff.

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