NPDA
National Paediatric Diabetes Audit

RCPCH Audits

National Paediatric Diabetes Audit (NPDA) Type 2 Diabetes Spotlight Audit 2023/24

Appendices – Glossary, Line of Sight Table, and Acknowledgements

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HQIP
Healthcare Quality Improvement Partnership

RCPCH
Royal College of Paediatrics and Child Health
Leading the way in Children's Health

1. Glossary

Acanthosis nigricans
Dry, darker patches of skin that usually appear on the neck, armpits or groin. This is a cutaneous marker of insulin resistance and is associated with a range of conditions including obesity and Type 2 diabetes.

Alanine transaminase (ALT)
An enzyme found mostly in the liver, which has a crucial role in converting food into energy. Higher levels in the blood stream can indicate an inflamed or damaged liver.

Albuminuria
Albumin is a protein usually found in the blood. If kidneys become damaged, they may become leaky and allow albumin to pass from the blood into the urine, which is referred to as albuminuria.

Ambulatory blood pressure monitoring (ABPM)
When your blood pressure is measured whilst you as you go about your normal daily activities, for up to 24 hours.

Body Mass Index (BMI)
A measure taking into account your height and weight that is used to classify healthy and unhealthy weight categories.

HbA1c
The term HbA1c refers to glycated haemoglobin. Measuring HbA1c gives an indication of a patient's average blood sugar levels over a period of a few months. Consistently higher HbA1c is associated with higher risks of developing diabetes-related complications.

Hyperlipidaemia
A high level of lipids (fats, cholesterol and triglycerides) circulating in the blood.

Hypertension
A condition in which blood pressure is high enough that it may eventually cause health problems, such as heart disease.

Insulin
A hormone made in the pancreas, which is an organ in your body that helps with digestion. Insulin helps your body use glucose (sugar) for energy.

Metformin
A medicine used to treat Type 2 diabetes. It reduces the amount of sugar your liver releases into your blood and also makes your body respond better to insulin.

Non-alcoholic fatty liver disease (NAFLD)
A range of conditions caused by a build-up of fat in the liver usually seen in people who are overweight or obese, which can lead to serious liver damage.

Paediatric diabetes unit (PDU)
A paediatrician-led multidisciplinary team of health professionals within an NHS trust, hospital or Health board delivering diabetes care to children and young people.

Triglycerides
Types of fat (lipids) combined with glycerol, a form of glucose. Higher levels of triglycerides in the blood contribute to the risk of developing heart and circulatory disease.

Type 1 diabetes
An autoimmune condition where the body can no longer produce insulin, so insulin injections or infusions are needed.

Type 2 diabetes
A condition with both genetic and lifestyle factors, where the body is unable to make enough insulin, or where the insulin that is produced doesn't work effectively.

2. Line of Sight Table

Provider line of sight table on report recommendations for submission to the funders							
Please can the provider complete the following details to allow for ease of access and rapid review							
Project and Title of report, including HQIP Ref. ***e.g., Ref. XXX, Project and report title***				Ref 532: National Paediatric Diabetes Audit Type 2 Diabetes Spotlight Audit 2023/24			
1. What is the report looking at/what is the project measuring?				• The incidence and prevalence of Type 2 diabetes • Whether recommended health checks are being received by children and young people with Type 2 diabetes • The prevalence and incidence of Type 2 diabetes-related complications amongst children and young people with diabetes • The treatments and support offered to children and young people with Type 2 diabetes, including treatment for complications and comorbidities			
2. What countries are covered?				**England and Wales**			
3. The number of previous projects (e.g., whether it is the 4th project or if it is a continuous project)				**1**			
4. The date the data is related to (please include the start and end points – e.g., from 1 January 2016 to 1 October 2016)				**1 April 2023 – 31 March 2024**			
5. Any links to NHS England objectives or professional work-plans (only if you are aware of any)							
Please can the provider complete the below for each recommendation in the report							
No.	**Recommendation**	**Intended audience for recommendation**	**Evidence in the report which underpins the recommendation** *(including page number)*	**Current national audit benchmarking standard if there is one**	**Associated NHS payment levers or incentives'**	**Guidance available (for example, NICE guideline)**	**% project result if the question previously asked by the project (date asked and result). If not asked before please denote N/A. This is so that there is an indication of whether the result has increased or decreased and over what period of time**

1	With the increased incidence and prevalence of Type 2 diabetes, and larger caseloads at the PDU-level, teams should be formally trained in the management of children and young people with Type 2 diabetes. This should include evidence-based training and resources to help care for ethnic minority families and those living in deprived areas. Healthcare professionals should engage with their networks to increase their skills and confidence in Type 2 diabetes management.	The National Children and Young People's Diabetes Network, the RCPCH, Integrated Care Boards in England and Local Health Boards in Wales.	• Page 6 - The number of CYP with Type 2 diabetes receiving care from a PDU in England and Wales has increased by 88% to 1,521 in 2023/24. • Page 7 - The prevalence of Type 2 diabetes (0-15 years) has increased to 7.7 per 100,000. • Page 7 - The incidence of Type 2 diabetes (0-15 years) has increased to 2.5 per 100,000. • Page 6 - 57% of PDUs managing more than 5 CYP with Type 2 diabetes. Only 5% of PDUs have no diagnosed cases of Type 2 diabetes.	N/A	N/A	• NHS England Children and Young People Diabetes toolkit - Review the capability and competencies of specialist paediatric MDTs to ensure that staff are being supported to develop key skills to care for children and young people with Type 2 diabetes. This could include training and or participation in peer support networks • Wales National Strategic Clinical Network for Diabetes Workplan 2024/25 – Priority 11 – Workforce • Welsh Quality statement for diabetes – 7. Health boards provide appropriately resourced specialist teams and professionally competent generalist care to support people with diabetes to manage their condition in accordance with the nationally agreed pathways, locally adopted. • National CYP Diabetes Network Delivery Plan 2020-25: Providing staff upskilling opportunities (including training in type 2 diabetes in	• The number of CYP with Type 2 diabetes receiving care from a PDU in England and Wales has increased by 88%, from 810 in 2019/20, to 1,521 in 2023/24. • The prevalence of Type 2 diabetes (0-15 years) has increased to 7.7 per 100,000, from 4.5 per 100,000 in 2019/20. • The incidence of Type 2 diabetes (0-15 years) has increased to 2.5 per 100,000, from 1.7 per 100,000 in 2019/20. • In 2023/24, more PDUs are managing CYP with Type 2 diabetes, with 57% of PDUs managing more than 5 CYP with Type 2 diabetes, compared to 27% in 2019/20. • In 2023/24, only 5% of PDUs have no diagnosed cases of Type 2 diabetes, compared in 14% in 2019/20.

						paediatrics and technology training)	
2	Children and young people with identified comorbidities should be offered treatment and specialist support in line with National Institute for Health and Care Excellence (NICE) guidance.	Integrated Care Boards in England and Local Health Boards in Wales.	• Page 11 – 86% of CYP with Type 2 diabetes had a BMI in the obese range, but only 23% were offered treatments for obesity • Page 12 - 44% blood pressure above the 98th percentile, but only 5% received treatment for hypertension • Page 12 – 20% of CYP had high LDL and 25% had high total cholesterol, but only 1% received treatment for hyperlipidaemia. • Page 12 – 20% of patients had albuminuria, but only 3% received treatment for albuminuria.	N/A	N/A	• NG18 1.3.74 – offer children and young people with type 2 diabetes annual monitoring for hypertension, dyslipidaemia, and moderately increased albuminuria • NG18 1.3.78 – Explain to children and young people with type 2 diabetes and their families or carers that monitoring is important because if they have hypertension, early treatment will reduce their risk of complications. • Welsh Quality statement for diabetes – 24. Health boards use risk stratification tools to deliver prompt investigation of people with signs of diabetes, identifying early patients demonstrating poor disease management and referring them to the appropriate healthcare professional for support. •	• In 2019/20, 92% of CYP had a BMI in the obese range. 15% received treatment for obesity. • In 2019/20, 42% had blood pressure above the 98th centile. Only 6% received treatment for hypertension • In 2019/20, 14% had high LDL and 26% had high total cholesterol. 0.6% received treatment for hyperlipidaemia. • In 2019/20, 26% had albuminuria, and 3% received treatment for albuminuria.

3	Children and young people with Type 2 diabetes and a BMI in the obese range should be offered holistic support, including psychological and dietetic input. This may include referral to specialist weight management services.	Integrated Care Boards in England and Local Health Boards in Wales.	• Page 11 - 86% of CYP with Type 2 diabetes had a BMI in the obese range, but only 23% received treatment for obesity. • Page 11 - 12% of those with a BMI in the obese range were offered a very low calorie diet. 4% were offered meal replacement, and 2% had or were referred to bariatric surgery. 23% had other treatment for obesity, such as low calorie diets, orlistat, GLP1 agonists, SGTL2 inhibitors, lifestyle modifications, or referral to Complications of Excess Weight or Eating	N/A	**BPT 2024-25**	• NG18 1.3.15 – At each contact with a child or young person with type 2 diabetes who is overweight or obese, advise them and their families or carers about the benefits of exercise and weight loss, and provide support towards achieving this. • NG18 1.3.16 – Offer children and young people with type 2 diabetes dietetic support to help optimise body weight and blood glucose levels • NG246 1.14.2 – Ensure interventions are multicomponent, tailored to meet individual needs, and take into account the wider determinants and context of overweight and obesity • NG246 1.14.9 – Refer to the local mental health pathway if there are oncerns at any stage of the intervention that the child or young peron's mental wellbeing is affected by their weight, that mental health is affecting their weight or the circumstances that influence their weight, or an eating disorder is suspected.	• In 2019/20, 92% of CYP had a BMI in the obese range. 15% received treatment for obesity.

			Disorder services.			• NG246 1.14.36 – Give children and young people, and their family and carers, information about any other local sources of long-term support as part of a multidisciplinary team approach. These could include support from a Registered dietitian or UK Voluntary Register of Nutritionists (UKVRN) registered nutritionist administered by the Association for Nutrition, youth worker, school nurse, family support worker, local support group, online groups or networks, friends and family, free healthcare-endorsed apps, national programmes, charities, helplines, and community groups (such as local leisure services or sports clubs). • NHS England Children and Young People Diabetes toolkit - Work with stakeholders in the ICS and ICP (including Local Authorities) to take a population health management approach to addressing overweight and obesity in children and young adults – with a	

						particular focus on high prevalence areas and groups, and the presence of Tier 1 and Tier 2 services. • NHS England Children and Young People Diabetes toolkit - Map relevant local supporting services available for CYA with type 2 diabetes (such as weight management services, peer support, mental health, or social support services) and ensure providers are signposting appropriately. • NHS England Children and Young People Diabetes toolkit - Work with CEW clinics, where present, to map pathways and ensure that interdependent services are joined up (such as diabetes services). Not all ICSs currently have a CEW clinic, therefore requiring some ICSs to work across larger boundaries. • Wales National Strategic Clinical Network for Diabetes Workplan 2024/25 – Priority 7 –	

						Remission of Type 2 diabetes • Healthy Weight, Healthy Wales – Targeted and specialised services: evidence driven dietetic led programmes reversing the trends in Type 2 diabetes through weight management, high quality multi professional specialist weight management services available for children and families, and adults across Wales delivered within local communities.	
4	A standard, specialised package of care should be available within all PDUs for children and young people with Type 2 diabetes. This should reflect the fact that CYP with Type 2 diabetes are more likely to come from ethnic minority backgrounds and live in more deprived areas. Care packages need to be accessible to all, individualised where appropriate and culturally tailored. Access to psychological and dietetic support should be universal and offered without bias.	Integrated Care Boards in England and Local Health Boards in Wales.	• Page 8 - The majority of CYP with Type 2 diabetes are from minority ethnic backgrounds with 63% of CYP with Type 2 diabetes identified as part of an ethnic minority (Figure 4), compared to 18% of the CYP with Type 1 diabetes (2023/24 core audit).	N/A	**BPT 2024-25**	• NG18 1.3.3 – Tailor the education programme to each child or young person with type 2 diabetes and their families or carers, taking into account issues such as … cultural considerations, … current and future social circumstances. • NG18 1.3.19 – Take into account social and cultural considerations when providing dietary advice to children and young people with type 2 diabetes • NG18 1.3.64 – Offer children and young people with Type 2 diabetes and their	• In 2019/20, 65% of CYP with Type 2 diabetes identified as part of an ethnic minority • In 2019/20, 71.4% of CYP with Type 2 diabetes lived in the two most deprived quintiles. • In 2019/20, black CYP had the highest mean HbA1c of any ethnic group (95.5 mmol/mol). • The remaining items were not calculated in 2019/20

	Provision of such a package of care would be in line with NICE guidance, the NHS England Core20PLUS5 approach to reducing health inequalities for children and young people, and the Welsh Government Quality statement for diabetes.		• Page 8 - Type 2 diabetes is more prevalent amongst those living in deprived areas. 70% of CYP with Type 2 diabetes lived in the two most deprived quintiles of England and Wales, compared to 43% of CYP with Type 1 diabetes (2023/24 core audit). • Page 9 – Black CYP had a higher health check completion rate than other ethnicities and the national average. • Page 11 – Black CYP had the highest mean HbA1c of any ethnic group. CYP from the most deprived areas had			families or carers emotional support after diagnosis, and tailor this to their emotional, social, cultural, and age-dependent needs. • NHS England Children and Young People Diabetes toolkit - Consider the diversity of the population and whether services can adapt the delivery of care or service models based on key factors such as language, religion, cultural norms, practices, and beliefs. • Wales National Strategic Clinical Network for Diabetes Workplan 2024/25 – Priority 9 – Tackling inequalities • Welsh Quality statement for diabetes – 4. *Health board clinical teams pay particular attention to adapting service models and tailoring approaches to improve engagement with groups who may have challenges accessing traditional healthcare models and subsequently have lower rates of key care process*	

			higher HbA1cs than those from the least deprived areas. • Page 14 – CYP from the most deprived areas were more likely to be offered psychological support and dietetic support.			*completion and poorer treatment outcomes.* •	
5	As children and young people with Type 2 diabetes carry a greater risk of developing comorbidities, careful consideration should be given to the potential for intervention and early escalation for treatment for comorbidities. This requires education and guidance to PDUs about the use of adjunctive therapies that can reduce the risk of future complications of the disease. Regular completion of key care processes is essential for the early detection of comorbidities and complications. Therefore, any unwarranted variation	The National Children and Young People's Diabetes Network, Integrated Care Boards in England, Local Health Boards in Wales and the NHS England Getting It Right First Time programme.	• Page 11, Figure 10 – On average, CYP with Type 2 diabetes had a higher BMI than those with Type 1 diabetes. • Page 12 – 44% of CYP with type 2 diabetes had blood pressure above the 98th centile • Page 12 – 34% of CYP had a total blood cholesterol of 5 mmol/l or more, compared to 19% of CYP	N/A	N/A	• NG18 1.3.78 – Explain to children and young people with type 2 diabetes and their families or carers that monitoring is important because if they have hypertension, early treatment will reduce their risk of complications. • NG18 1.3.81 - Explain to children and young people with type 2 diabetes and their families or carers that monitoring is important because if they have dyslipidaemia, early treatment will reduce their risk of complications. • NG18 1.3.86 - Explain to children and young	• In 2019/20, 92% of CYP with Type 2 diabetes had a BMI in the obese range, compared to 24% of CYP with Type 1 diabetes aged 12+ and 19% of CYP with Type 1 diabetes aged 0-11 yrs • In 2019/20, 42% of CYP with Type 2 diabetes had a blood pressure above the 98th centile, compared to 27% of CYP with Type 1 diabetes. • In 2023/24, 28% of CYP with Type 1 diabetes in 2023/24 (2023/24 core audit report). • In 2019/20. 29% of CYP with Type 2 diabetes had a total cholesterol of 5 mmol/l or more, compared to 19% of CYP with Type 1 diabetes

	in care process completion should be monitored and addressed.		with Type 1 diabetes in 2023/24 (2023/24 core audit report). • Page 12 – 20% of patients with Type 2 diabetes had albuminuria			people with type 2 diabetes and their families or carers that: if moderately increased albuminuria is detected, improving blood glucose management will reduce the risk of this progressing to significant diabetic kidney disease. Annual monitoring is important because, if they have diabetic kidney disease, early treatment will improve the outcome.	• In 2019/20, 26% of CYP with Type 2 diabetes had albuminuria, compared to 11% of CYP with Type 1 diabetes. • In 2023/24, 10% of CYP with Type 1 diabetes in 2023/24 (2023/24 core audit report).

3. Acknowledgements

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