Background to and Launch of National T2 FYOC pathway

Dee Aswani (presenting on behalf of National T2 Network FYOC T&F group, chaired by Heather Clark), July 25

QI project June 2022 Sheffield Children's Hospital (SCFT)

A National T2 T&F group formed early Sept 24

Agreed initial scoping steps……

1. Sept 24 – T2 working group survey at meeting

2. Dec 24 – Present SCFT Audit of FYOC at Dec 24 Study Day

3. Live poll regarding value of a National Tool and key components

T&F group – completion June 25

First Year of Care Pathway for CYP with Type 2 Diabetes

Produced by the Children and Young People's National Diabetes Network, National T2 Diabetes Working Group

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Based on: Sheffield Paediatric Diabetes Team's T2 Diabetes First Year of Care Pathway, piloted from August 2022

Rationale and information when using the Pathway

Introduction

The First Year of Care Pathway for CYP with T2 Diabetes has been produced by the *National CYP Diabetes Network, T2 Diabetes National Working group* to assist paediatric diabetes units in implementing holistic and robust support for CYP diagnosed with T2 diabetes. The Pathway sets out a framework for consistency of clinical management and holistic support to encourage positive outcomes. The emphasis is on the delivery of education in the right environment to be able to impress the seriousness of a diagnosis of T2 diabetes in CYP and the aim for remission, to screen for complications at an early stage, and to frequently review progress for rapid treatment escalation. This approach is more likely to support remission. T2 diabetes remission is more likely to be achieved soon after diagnosis.

This is pathway has been designed as a gold standard to comply with NICE NG18 and ACDC consensus guidelines of screening, treatment and ongoing care, and designed to achieve the best possible outcomes by encouraging engagement from the beginning. While it serves as a pathway we are striving for, it is recognised that achieving it fully may currently be constrained by resource limitations, especially in dietetics and psychology. Nonetheless it provides a framework for continuous improvement and a vision for future progress as T2 diabetes diagnoses in CYP continue to rise. There is variable access to medication and referral for specialist services for complications. Teams are encouraged to use the pathway to identify best use of current resource and where there may be gaps in providing optimal T2 diabetes care.

Admission at diagnosis

It is strongly recommended that CYP are admitted at diagnosis or planned admission takes place as soon as possible. There is a deliberate shift in mindset towards admitting newly diagnosed CYP with T2 diabetes to underscore the gravity of the condition and to emphasise the need for immediate and comprehensive care. Inpatient access to screening can take place at the earliest opportunity and time can be given to understand the family context to ensure that education and goal setting can be individualized, for example to understand eating patterns and food preferences. Most importantly, the current model of care does not convey seriousness or severity, or have any parity with Type 1, despite being a more progressively aggressive condition when diagnosed in CYP.

Frequency of contact and review options

Where the Pathway stipulates *'OPA or review'*, review may take different forms depending on the needs of the CYP and team resource. For some families a home visit may be appropriate, for others a remote or other form of contact; lead MDT members will be determined by local context. The emphasis is on **regular**, **intensive** contact to support and maintain change within a short timeframe. It must be remembered that although the Pathway is intensive, each PDU will receive a small number of CYP newly diagnosed each year.

Vulnerability factors and barriers to healthcare

Exploration of vulnerabilities and barriers is vital. This includes the family context and needs; financial and social pressures; factors affecting engagement, eating healthily and adopting the changes needed and the need for cultural adaptation of care and advice including language needs. Examples of available resources to support signposting are on the *Useful links* section.

Newly diagnosed T2 patients – timeline for first year of care

At diagnosis

MDT support: Ensure everyone working with CYP has:
- Completed Managing T2 diabetes in CYP and Complications of excess weight (CEW) in CYP *Landing Page:* NHSE elfh Hub / portal.e-lfh.org.uk
- Linked with their NCYPD Network T2 Diabetes group
- Read the ACDC T2 Diabetes in CYP Consensus Guidelines

At diagnosis: Acute admission ideally or planned ward attendance as soon as possible
- Diabetes autoantibody screen / MODY probability calculator
- Start metformin +/-insulin
- Provide new patient information pack or similar as locally agreed
- T2 educational resources e.g. DigiBete T2 app clinic code & YoungT2.org, NHS food scanner
- MDT education: BG and ketone testing; downloading; CGMS for two weeks; lifestyle, diet and physical activity goals, complete local education checklist
- Psychology screening – refer to ACDC Guidelines in addition to clinical assessment
- Allocation of keyworker
- Set target HbA1c <48mmol/mol at three months, weight loss according to age and stage of development, and SMART lifestyle goals
- Consider referral for child to Tier 3 and / or CEW / local Tier 2 services for weight management
- Consider writing to GP for referral to local services or NHS prevention or digital weight programmes (or self-referral if mother has had past GDM) for siblings and family members
- Signposting to tools such DUK T2 Know Your Risk and NHS BMI calculators (for CYP under 18 years) (for adults)
- Exploration of vulnerabilities and barriers to healthcare including LD, neurodiversity, ACEs
- BMI, BP, LFTs, Liver USS, Vit D, Vit B12, urine ACR. Consider measuring WC. Screen for complications and co-morbidities and refer as needed: OSA, PCOS, smoking, home oximetry, respiratory, gastro, 24hr BP
- Refer for retinopathy screening from 12 yrs

First weeks at home
- Home visit
- Regular telephone contact with key worker / MDT
- Completion of post discharge T2 education
- Psychology appointment if not seen at diagnosis
- T2 apps and resources
- GlucaGen hypokit training (if on insulin)
- School care plan and school training
- Frequent review of BG data with medication adjustment
- SMART Lifestyle goals review
- Schedule frequent MDT contacts
- Dietitian assessment and reviews coinciding with MDT appointments where possible
- Counsel from diagnosis on contraception and avoiding unplanned pregnancy. Considerations to be given for those on GLP-1s

GLP-1s (with baseline screening tests)
Liraglutide (daily) or Dulaglutide (weekly) 10-12 yrs
Semaglutide 12-16 yrs (weekly)

Diabetes targets
- HbA1c ≤ 48mmol/mol by 3 months and maintained
- Average 14-day glucose <8mmol/l, pre-prandial BG 4-7mmol/l
- Time in range 3.9-10.0mmol/l 70% (if using CGMS)
- Time in tight range 3.9-7.8mmol/l 50% (if using CGMS)
- 5% weight loss in first 3 months for pre or post pubertal CYP, and 10% in first year if post-pubertal. Aim for BMI <85th centile longer term
- Treatment of complications
- To discuss each clinic and consider options to facilitate target achievement
  - BG data review, consideration of CGMS
  - Downloading and reviewing data at home
  - Medication review, rapid treatment escalation, aiming for insulin avoidance and preferential use of other agents
  - Education and lifestyle review – diet, exercise and sleep
  - Emotional wellbeing and referral to psychology if indicated
  - More frequent contact
  - Review of vulnerabilities factors with appropriate signposting
  - Early help or social care referral if appropriate
  - Elective admission
  - Improving HbA1c pathway
  - Consideration of CEW service input

Celebrate successes e.g. attendance at appointments, maintaining contact with the team and discussion of challenges (not specifically achieving targets)

Outpatient care: ' How can the team help?', ' What is going well?', ' What are the challenges?

2-week OPA or review (e.g. home or remote visit)
- BMI & BP, WC
- BG/SG data review
- Medication review
- Check all screening has been done as above at diagnosis
- Oral health promotion - (NHS Find a dentist)
- Dietitian review

1-month OPA
- BMI & BP
- BG data review
- Medication review, consider GLP-1
- Review all BP measurements as inpatient and at two-week OPA, consider ambulatory BP monitoring
- Dietitian review

2-month OPA or review
- BMI & BP
- BG data review
- Medication review
- Average BG >8mmol/l – consider if further support or intervention required
- Dietitian review

3-month OPA
- BMI & BP
- BG data review
- Medication review
- HbA1c >48, consider if further support or intervention required
- Review weight goals
- Non-fasted blood lipid profile
- Dietitian review

4-month OPA or review
- BMI & BP
- BG data review
- Medication review
- HbA1c >48, consider GLP-1
- Dietitian review

6-month OPA
- BMI & BP & WC
- BG data review
- Medication review
- HbA1c >48 – consider if further support or intervention required
- Review weight goals, consider a different dietary approach/GLP-1
- BP still raised consider ACE inhibitors
- Consider C-peptide if diagnostic doubt

9-month OPA
- BMI & BP
- BG data review
- Medication review
- HbA1c >48, consider if further support or intervention required
- Repeat lipids if high at 3 months, consider statins
- Dietitian review

12-month OPA and Annual Review
- BMI & BP & WC
- BG data review
- Medication review
- HbA1c >48: consider further support or intervention required
- Annual review bloods (lipids, Vit D, TFTs, LFTs, U&Es and nutritional bloods if on GLP-1 or restricted diet), injection sites, urine ACR, vaccination reminder, smoking, dentist
- Psychology A/R as per ACDC guidelines
- Dietetic annual review
- Weight targets and trajectory
- Foot exam from 12 yrs; Retinopathy from 12 yrs
- Sexual health from 12 years
- Liver USS every three years
- Structured education

Meet with Psychology within 4 weeks
Psychology screening – refer to ACDC Guidelines in addition to clinical assessment
Ongoing reviews to monitor for development of disordered eating patterns alongside weight change

5-month and 7-month Dietitian Review

10/11-month Dietitian Review

A glossary of abbreviations used is on the final page

Useful links

- ACDC: A Practical evidence-based approach to T2 Diabetes in CYP
- NICE NG18: Diabetes (type 1 and type 2) in children and young people: diagnosis and management
- NICE NG246: Overweight and obesity management
- E-learning for healthcare: Managing T2 diabetes in children and Complications of excess weight in CYP
- National CYP Diabetes Network T2 Diabetes Online Study days
- DigiBete YoungType2 website. Contact hello@digibete.org for clinic code
- NPDA Spotlight on T2 Diabetes
- RCPCH DUK Children and Young People's Type 2 report.pdf
- DUK Reverse the Trend report
- NHSE Language matters: language and diabetes
- Talking to your child about weight - a guide for parents and caregivers of children aged 4-11 years, University of Bath
- BDA Childhood Obesity Toolkit, including Leading conversations
- Obesity UK and Obesity 4Thought Language Matters: Obesity
- World Obesity Healthy Voices *The do's and don't when talking about obesity*
- The UK's Eating Disorder Charity - Beat
- Children North East Poverty Proofing© Paediatric Diabetes Workforce Guide
- RCPCH Child Health and Inequalities Toolkit
- Diabetes UK Helpline | Diabetes UK

Abbreviations

ACDC – Association of Children's Diabetes Clinicians
ACEs – Adverse Childhood Experiences
A/R – Annual Review
BDA – British Dietetic Association
BG – Blood Glucose
BMI – Body Mass Index
BP – Blood Pressure
CEW – Complications of Excess Weight
CGMS – Continuous Glucose Monitoring
DUK – Diabetes UK
GLP-1s – Glucagon-like Peptide-1
GDM – Gestational Diabetes Mellitus
LD – Learning Difficulties
Liver USS – Liver Ultrasound Scan
LTF – Liver Function Tests
MDT – Multidisciplinary team
MODY – Maturity Onset Diabetes of the Young
NCYPDN – National Children and Young People's Diabetes Network
NICE – National Institute for Health and Care Excellence
NPDA – National Paediatric Diabetes Audit
OPA – Outpatient appointment
OSA – Obstructive Sleep Apnoea
PCOS – Polycystic Ovary Syndrome
PDU – Paediatric Diabetes Unit / team
RCPCH – Royal College of Paediatrics and Child Health
SG – Sensor Glucose
SMART – Specific, Measurable, Achievable, Relevant, Time-bound
TFT – Thyroid Function Test
U&Es – Urea and Electrolyte tests
Urine ACR – Urinary Albumin to Creatine Ratio
WC – Weight Circumference