Educating
Representing
Supporting

Standards of care for management of adults with type 1 diabetes: SUMMARY OF RECOMMENDATIONS

Executive Summary

Gold Standard recommendations for care of people with type 1 diabetes

Standard 1: Minimum requirements for a specialist service caring for people with type 1 diabetes

The specialist service may be based in secondary care or the community but irrespective of location, the following criteria must be met:

A. Staffing

- The service must be delivered by a multidisciplinary team comprised of a consultant diabetologist, diabetes specialist nurses and diabetes specialist dietitian. The team must have access to a psychologist with an understanding of type 1 diabetes

B. Education and training

- All specialist staff should be trained in principles of flexible insulin adjustment, based on DAFNE (Dose Adjustment For Normal Eating) or a similar accredited education programme
- Staff should be trained to offer DAFNE or similar accredited education to all people with type 1 diabetes
- Staff must have training and expertise in the use of technology

C. Access to technology

- The service must have access to up to date technology including insulin pumps and continuous glucose monitoring

D. Data collection

- The service should collect and analyse data to allow benchmarking. This should be submitted to national audits as required
- Minimum datasets include:
  - number of people registered with the service
  - attendance/DNA rates
  - care processes
  - use of technology
  - outcomes
- The service should endeavour to identify the total population of people with type 1 diabetes in their area to address the barriers to accessing specialist care

Standard 2: Provision of care

A. At diagnosis

- Initial education from a Health Care Professional (HCP) with specialist knowledge of type 1 diabetes
- Multiple daily injection therapy offered as the first line insulin regimen
- Structured education (validated programme) offered after 6-12 months
- Individualised nutrition and exercise advice from a specialist dietitian
- Regular contact with HCPs until confident to self-manage
- Consistent team communication on blood glucose and HbA1c targets and the reasons for these

B. Follow up

- Regular follow up and support from an HCP specialising in type 1 diabetes who is trained in flexible insulin adjustment around carbohydrate counting and with knowledge of appropriate technology, including flash glucose monitoring, bolus advisors, continuous glucose monitoring and insulin pump therapy
- Identification of barriers to self-care (e.g. other life events or situations, psychological factors, weight issues)
- Referral to a specialist psychologist when required
- Discussion of blood glucose control (individualised HbA1c target)
- Review of blood glucose monitoring and insulin equipment
- Hypoglycaemia - incidence/awareness
- Complications - discussion of any current problems with opportunity for the person to discuss sensitive issues such as erectile dysfunction
- Diet (with referral to specialist dietitian if required)
- Effect of exercise - onward specialist referral if participating in complex/high level sport
- Identification of areas where further education would be beneficial (e.g. revision of sick day rules, insulin adjustment)
- Identification of potential benefit from increased use of technology (e.g flash glucose monitor, continuous glucose monitor, insulin pump) for those who stand to benefit

C. Annual review including 8 care processes and annual retinal screening (may take place in primary care)

- Treatment of risk factors when present
- Referral to specialist care when indicated:
  - Poor glycaemic control
  - Impaired awareness of hypoglycaemia
  - Insulin pump and continuous glucose monitoring
  - Ophthalmology
  - Nephrology
  - Autonomic neuropathy
  - Podiatry (Diabetic Foot Team)
  - Preconception advice
  - Psychological support as required

D. Inpatient care

- Ensure guidelines are in place to provide safe care to all inpatients with diabetes. To include:
  - Management of DKA
  - Management of hypoglycaemia
  - Management of hyperglycaemia
  - Safe use of insulin
  - Perioperative management
  - Specific circumstances e.g. steroids, artificial feeding, end of life
- Ensure diabetes team staffing levels (DISNs) are at a safe level and that staff are trained in management of inpatient situations
- Use the 'Making hospitals safe checklist' to compare the local service against national standards and improve where necessary

E. Transition care

- Process
  - An identified lead for transition in each paediatric and adult diabetes service
  - A joint paediatric-adult transition policy
  - Evidence of consultation and user involvement in policy development
  - Transition period lasting at least 12 months with input from paediatric and adult teams over that period with at least one combined appointment
  - Experience of care audit
  - Evidence of a shared care-planning template
  - Frequent follow up to support continuity of care
  - Psychological support when required
- Outcome
  - Monitor DNA rates and act upon them to maximise engagement
  - Monitor admissions for diabetic emergencies (DKA/hypoglycaemia) and take actions to reduce them
  - Monitor the percentage of the clinic population with HbA1c <58mmol/mol and take actions to maximise this
  - Reflect on outcomes of audits of care

F. Sub-specialty services

- Ensure that multidisciplinary specialist teams are established to provide care for people with diabetic foot disease and for pregnant women with type 1 diabetes
- Establish direct links to services providing care for people with diabetes related complications eg renal, cardiology, ophthalmology to ensure a collaborative approach and to increase understanding of type 1 diabetes

Recommendations

1. Diagnosis and immediate management

Recommendations

- People with newly diagnosed type 1 diabetes should be admitted to hospital as an emergency if they have symptoms and signs of ketoacidosis (DKA)
- People without signs of DKA may be commenced on insulin in the community but should be referred to a specialist diabetes team immediately
- Multiple daily injections (MDI) is the initial treatment of choice
- If there is doubt about the diagnosis islet autoantibodies should be measured and referral made to the specialist team
- C-peptide can be a useful discriminant of diabetes type when measured more than 3 years after diagnosis but is not helpful at the time of diagnosis

2. Initial management

Recommendations

All people with newly diagnosed type 1 diabetes should receive the following:

- Individual education from a health care professional trained to manage type 1 diabetes
- Individual nutritional advice from a specialist diabetes dietitian
- Invitation to a structured education course in flexible insulin therapy within 6-12 months of diagnosis
- Access to psychological support when necessary
- Access to specialist exercise advice for those wishing to exercise intensively or competitively
- Ongoing support for self-management from a team which specialises in type 1 diabetes
- A care plan outlining what care to expect in the coming year with individualised treatment targets and annual care processes
- Link to peer support and resources

3. Follow up consultations and on-going support

Recommendations

- Consultations should be person-centred, following the person's agenda and identifying any barriers to self-management
- Specialist teams should provide continuity of care
- Routine checks should be carried out annually (not necessarily by the specialist team) and used to inform care planning
- Complications should be identified and documented, with onward specialist referral as required
- Psychological issues should be identified (consider use of scores such as PAID or T1-DDS) (Appendix 1) and should prompt referral to a psychology service

4. Targets, monitoring and treatments

Recommendations

All people with type 1 diabetes should be offered the following:

- Multiple daily insulin injections (MDI) or an insulin pump (CSII) using analogue insulins
- Evidence based, structured education should be offered to all individuals to get the best possible outcomes on their chosen insulin regimen
- Access to a variety of blood glucose meters, including those with built-in bolus calculators if indicated, tailored to individual requirements
- Access to sufficient blood glucose strips (4-10 per day or more if needed) to support them to achieve a NICE recommended HbA1c
- Access to intermittent (flash) glucose monitoring for those who meet national criteria. This is cost effective for those testing 8 or more times per day. (For England this should meet NHS England funding criteria.)
- CSII for individuals meeting the NICE TA 151 criteria
- Real-time CGM for those meeting the NICE criteria, as per the principles of the Type 1 diabetes consensus pathway
- Unpredictable blood glucose results should be investigated by the specialist team
- SGLT2 inhibitors may be combined with insulin in certain circumstances but should be used with caution because of the increased risk of DKA

Specialist teams must ensure that:

- A procurement framework is in place for insulin pump applications
- A clear pathway and prescribing/commissioning policy for CGM (flash/intermittent and real-time) is agreed with the local CCG/LHB
- Ongoing education and training on clinical application of technology and use of newer therapies must be provided for all healthcare professionals working with people with type 1 diabetes

5. Long term complications: screening and management

Recommendations

- Optimise glycaemia, taking into account individual risks and benefits
- Ensure annual screening for complications is offered and explore strategies to encourage uptake
- Address microvascular and macrovascular risk factors
- Refer to specialist teams for treatment of complications

6. Acute complications

Recommendations

Hypoglycaemia

- All people with type 1 diabetes should be asked about hypoglycaemia symptoms and thresholds using validated tools such as the Gold score at each consultation
- People with problematic hypoglycaemia should be offered structured education and hypoglycaemia avoidance training
- People with frequent biochemical hypoglycaemia but good awareness should be offered a flash glucose monitor
- People with hypoglycaemia unawareness and/or recurrent severe hypoglycaemia [≥2 in a year] should be offered real time CGM with alarms or an insulin pump. If this is not adequate to minimise problematic hypoglycaemia, sensor augmented pumps with automated basal suspension [or closed - loop systems] should be considered
- If technology is declined, advise maintaining a fasting blood glucose above 5mmol/L to reduce risk of nocturnal hypoglycaemia
- Ensure that every person with type 1 diabetes is made aware of the DVLA driving regulations
- People with intractable hypoglycaemia despite use of all available technologies should be referred to a specialist centre for consideration of islet transplantation
- Hospitals should have a policy in place for treatment of hypoglycaemia in inpatients

DKA

- All people with type 1 diabetes should receive education and updates for sick day rules: http://trend-uk.org/wp-content/uploads/2018/03/A5_T1Illness_TREND_FINAL.pdf
- People taking an SGLT2 inhibitor should be warned about the risk of euglycaemic DKA
- Hospitals should have a guideline in place for management of DKA
- Hospital staff should be trained in management of DKA and designated wards should be used to ensure staff are experienced
- People admitted with DKA should be referred to the diabetes team for review of diabetes management and follow up
- People with recurrent DKA should have access to psychological support

7. Special circumstances

7.1 Young adults and transition clinics

Recommendations

- A formal process of transition, to include joint clinics with a paediatric and an adult diabetologist, should be established in every unit
- A specialist young adult clinic for the 18-25 age group should be held in a format (face to face, skype, email), and at a time, which meets the needs of this age group
- Staff working in transition and young adult clinics should be trained in communication skills relevant to young people
- Psychological support should be available
- Attendance rates and outcomes should be audited

7.2 Older people and Care Homes

Recommendations

- Treatment for older adults with Type 1 diabetes should be individualised according to their functional capacity
- Educational, glycaemic and cardiovascular treatments for independent older adults with Type 1 diabetes should be the same as that for younger patients with Type 1 diabetes
- For people with type 1 diabetes aged 65 or over, or those with evidence of cognitive or physical decline, the annual review should incorporate a frailty assessment which assesses ability to manage type 1 diabetes
- Frail older people should have a written individualised diabetes care plan focusing on:
  - frequency and method of glucose monitoring
  - nutrition
  - insulin regimen
  - HbA1c or blood glucose target that considers risk of hypoglycaemia versus development of vascular complications
  - relaxed targets for blood pressure and cholesterol control
  - community care arrangements
- If the person is no longer able to self-manage, the insulin regimen should be adapted so that diabetes can be safely managed by carers
- Carers, whether personal or professional, should receive education and training to provide the knowledge they require to support diabetes management
- A community multidisciplinary team which includes a diabetes consultant, GP and diabetes specialist nurse should exist to discuss and facilitate management of older people with type 1 diabetes
- Frail, older people with type 1 diabetes should have access to screening services
- Care homes should have policies and care plans in place for people with type 1 diabetes in line with Diabetes UK guidance: https://www.diabetes.org.uk/resources-s3/2019-05/Clinical%20Guideline%20for%20Type%201%20Diabetes%20for%20Older%20Adults%20-%20April%202019.pdf

7.3 Pregnancy

Recommendations

- Incorporate preconception planning advice into routine diabetes care for women of child-bearing potential
- Ensure glycaemic control is optimised preconception (HbA1c 48-53mmol/mol) and women take folic acid 5mg daily from pre-conception to the end of the first trimester
- If the HbA1c target cannot be met without hypoglycaemia on MDI, offer CSII
- Provide antenatal care from a combined diabetes/obstetric specialist team
- Offer CGM for the duration of the pregnancy
- Follow NICE guidance for standards of care

7.4 Inpatient diabetes

Recommendations

- Systems should be in place to ensure that every inpatient with diabetes receives safe care and is empowered to self-manage when well enough to do so
- Staff should be aware of the particular risks faced by people with type 1 diabetes when they are inpatients
- Diabetes inpatient teams should participate in the NaDIA snapshot audit and the NaDIA harms audit
- Inpatient teams should assess staffing levels against national standards and should analyse the NaDIA data to identify areas needing improvement
- Teams should assess performance against the ‘Making hospitals safe’ standards checklist and take steps to meet any standards not already in place
- Trust management should be made aware of gaps in the service and risks to safe inpatient care

7.5 Perioperative care

Recommendations

- Elective surgery for people with diabetes should be carefully planned to ensure that diabetes is optimally controlled throughout the patient journey
- Guidelines should be in place, ideally based on the JBDS guideline for perioperative management of adults with diabetes, but taking into account the NCEPOD recommendations
- Glycaemic control should be assessed before referral (primary care), at the time of the decision for surgery (surgical outpatients) and at the pre-operative assessment clinic, with the target HbA1c <69mmol/mol whenever possible
- A diabetes care plan, to include agreement about self-management where appropriate, should be agreed pre-operatively
- People with diabetes should be prioritised on the list to avoid prolonged starvation
- Staff at every stage of the patient journey should know that the person has diabetes and be aware of the agreed care plan
- The diabetes team should be asked for advice if, at any stage, the targets set by the guideline are not being achieved

7.6 Driving

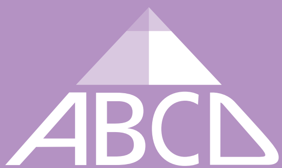
Recommendations

- People with type 1 diabetes must be made aware of the DVLA regulations
- Although flash glucose monitors and CGM may be used for monitoring in Group 1 licence holders, all drivers must carry a meter and strips for finger prick testing
- Drivers must adhere to the regulations related to informing the DVLA about episodes of severe hypoglycaemia or impaired awareness of hypoglycaemia

7.7 Exercise and physical activity

Recommendations

- Structured education for people with type 1 diabetes should include information around exercise and physical activity
- Individualised advice should be available for people with type 1 diabetes wishing to undertake a more intensive programme of exercise
- Dietetic advice should be available as part of this service



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