PUTTING TECHNOLOGY INTO PRACTICE IN THE NHS

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On behalf of ABCD DTN-UK CSII best practice working group

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Disclosures

• Previous educational advisory roles and educational talks for:
  – Medtronic
  – Dexcom
  – Astra Zeneca, MSD and NAPP pharmaceuticals
Outline

• Putting Technology into Practice in the NHS
  – Current UK data on T1D outcomes
  – Diabetes technologies
  – Variations in access, uptake and socio-economic disparities
  – Key principles for improving outcomes and overcoming barriers
  – Current priorities and next steps
Type 1 diabetes – investing in improving outcomes vs spending on complications

~10% of people with diabetes have type 1 diabetes
Intensive management and complex needs at a younger age of onset than type 2 DM

End stage kidney disease

19 x more likely
4.5 x more likely

NHS Digital National Diabetes Audit, 2015-16 Report 2a: Complications and Mortality

Sight-threatening DR

11.2% prevalence
2.9% prevalence

Type 1 diabetes – current data

HbA1c 58MMOL (7.5%) OR LESS

Type 1: 30%
Type 2: 67%

Figure 9: Percentage of all people with diabetes achieving all three treatment targets by age and diabetes type, 2016-17.
Type 1 diabetes – variation

Range of CCG/LHB HbA1c treatment target achievement for people with type 1 diabetes 2016-17

- 64 specialist services with more than 400 Type 1 diabetes patients
- Almost 100% variation between services
Diabetes technologies

Meters

Smarter pens and meters

Apps and advisors

Resources and support

Consultation tools

Pumps (CSII)

CGM and flash GM

“Artificial pancreas”
Diabetes technologies

- Data downloads
- Diabetes management Apps
- Integration with smartphone and wearable technologies
- Patient accessible integrated care records
- Education, learning, support and behaviour change tools
- “DiY” technologies
- Telemedicine and remote consultations
What's the purpose of a diabetes management device?

1. Lower HbA1c?
2. Prevent severe hypoglycaemia?
3. Both 1 and 2?
4. Spend more time in range and reduce variability?
5. Make living with diabetes safer and easier?

(adapted from Gary Scheiner, Think like a pancreas blog)
Can access to insulin pumps improve type 1 diabetes outcomes?

NICE Technology Appraisal 151 (TA151)
• Attempts to reach target HbA1c with multiple daily injections → ‘Disabling hypoglycaemia’
• HbA1c levels ≥ 69mmol, 8.5% with multiple daily injections despite high level of care

Figure 8: Number of people with Type 1 diabetes by year started on pump, by country, England and Wales, 2016-17.
Can access to insulin pumps improve type 1 diabetes outcomes?

Figure 15: Mean HbA1c (mmol/mol) for those with Type 1 diabetes on an insulin pump compared to those not on a pump, by country, England and Wales, 2016-2017

Pickup JC, Sutton AJ. Diabetic Medicine 2008;25:765-774

National Diabetes Insulin Pump Audit Report, 2016-17
Variation in uptake in CSII

Figure 6: Percentage of people with Type 1 diabetes on pump therapy by participating specialist service¹, England and Wales, 2016-2017

¹ The two trusts reporting 100% of patients using insulin pumps have been excluded from this graph.
Deprivation and CSII

The number of people using pumps decreases with increasing levels of deprivation.

Figure 5: The percentage in each IMD quintile for people on pump, compared to those not on pump, Type 1 diabetes, England and Wales, 2016-17
NHS Digital NDA Insulin Pump Audit 2016-17 Recommendations:

• More people should be considered for pump treatment
• Ten-fold variation in pump use between specialist services should be investigated
Access to CGM

• Only 21% (43/205) commission CGM in-line with NICE guidance

• Main route to reimbursing CGM: Individual Funding Requests (IFRs) 60% (122/205)

Perera R, Oliver N, Wilmot EG, Marriott C. Diabetic Medicine 2018

Figure 1: Current routes to funding for continuous glucose monitoring (CGM)
Priorities 2018

• Address unacceptable variation in access and uptake in pumps and CGM

• Continue to provide educational opportunities for HCP
Diabetes technologies: Current issues

- Unaccepted variation in access and uptake
  - Perceived high costs
  - Variation in
    - commissioning
    - clinical culture
    - HCP skillset and competencies
    - service capacity and support for people with diabetes
  - High administrative burden for reimbursement in certain regions
Socio-economic divide

• Reasons?
  – Variation in services
  – Funding criteria and patient selection ...widens divide?

• A high degree of motivation, commitment and competence
• Estimating CHO consumption throughout every day
• Delivering multiple daily injections of insulin
• Regular glucose self-monitoring (≥4 times /per day)
Key principles for improving outcomes in type 1 services?
Key themes in services that are in the top 15% for achieving HbA1c<58 mmol/mol

**All**
- Commitment to Type 1 care
- Desire to do better
- Dedicated Pump clinics
- Importance of structured education

**Most**
- DSN training and rotation
- Dedicated medical staff
- Psychology service availability
- Integration with community services
- MDT working style
- Staff availability via phone/email/Skype
- CGMS
- Diasend

Personal communication between Dr A. Brackenridge and Dr Bob Young
Acknowledgement: Diabetes team at Guy’s and St Thomas, NHS Digital NDA
NHS RightCare Pathway: Diabetes

Minimum requirements for a Type 1 service:
- Consultant delivered, specialist multidisciplinary support for the person with Type 1 diabetes. All staff working with people with Type 1 diabetes should be trained in DAFNE or NICE compliant alternative.
- Each person with Type 1 diabetes should have a named Type 1 diabetes consultant and diabetes specialist nurse. They should be offered a review with the team at least annually.
- The service should have:
  - Sufficient capacity to enable same day review and frequent follow up of the person newly diagnosed with Type 1 diabetes.
  - A diabetes structured education programme in line with NICE Guidance, **NG17** for Type 1 and **NG28** for Type 2 NICE and ensure adequate capacity for places on the programme are commissioned.
  - Staff members trained in and able to deliver insulin pump therapy and CGM as per NICE guidelines.
  - Dedicated transition service for young people with Type 1 diabetes (age 16-25 years) who are transferring from paediatrics care into adult services.
  - Access to a diabetes trained clinical psychologist.
  - Have an annual care plan (which includes the 9 care processes) that is shared with the person with diabetes.
Overcoming the barriers for technology

- Culture
- Training – HCP and people with diabetes
- Multi-disciplinary team including psychology
- Negotiating service capacity (Trust management)
- Negotiating funding (Commissioning)
Key priorities—improving outcomes, technology uptake, reducing variation and socio-economic disparities

- Type 1 diabetes care needs are different from Type 2 diabetes
- Everyone with Type 1 diabetes should have access to specialised type 1 services
- What do we value?

Key themes in services that are in the top 15% for achieving HbA1c<58 mmol/mol

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NHS Diabetes Right Care Pathway - minimum service requirements for a type 1 service
Commissioning technologies

Real world data fundamental to assessing technology

Developing a consistent clinical and health economics procurement approach to new technologies

Maximising value

DTN UK
Summary:

- Outcomes for T1D and uptake of technology needs to improve
  - Variation and socio-economic disparity
- Reviewing T1D commissioning and access to specialised services and technologies is a key priority

Invest in preventing complications with improved care rather than treating complications with expensive treatments
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- **NHS Digital / National Diabetes Audit**

- **People with diabetes**
Best Practice Guides
www.DTN-UK.care

BEST PRACTICE GUIDE:
Continuous subcutaneous insulin infusion (CSII)
A clinical guide for adult diabetes services

CLINICAL GUIDELINE:
Guidelines for managing continuous subcutaneous insulin infusion (CSII, or 'insulin pump') therapy in hospitalised patients

BEST PRACTICE GUIDE:
Continuous subcutaneous insulin infusion (CSII) - A guide to service requirements