

Type 1 Consultation (T1C) Tool User Guide



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



Acknowledgments



References

Foreword

In light of the increasing demand upon NHS diabetes services, achieving good outcomes for people with type 1 diabetes can be a challenge. As the NHS struggles to keep pace with demand and advances in technological solutions for the management of diabetes, the fundamental elements of treatment such as care planning and communication can be lost. This is evidenced in national data sets demonstrating significant variation in the health outcomes of people with diabetes. This consultation tool is specifically designed for the management of type 1 diabetes and provides a holistic approach to care planning, bringing together a measure for psychological wellbeing (diabetes distress) as well as clinical results (HbA1c and Gold Score). Whilst this tool has been developed specifically with type 1 diabetes in mind, with some adaptations this approach could be of value in consultations for people with type 2 diabetes.

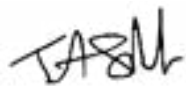
The objective underpinning this tool is to reduce the variation in care planning that currently exists across services. It aims to encourage diabetes teams to review how their current provision meets the needs of their local population e.g. in improving access to technology, structured education and access to psychological support. It facilitates the collection of a robust data set which will provide a detailed picture of demand to inform outcomes-based commissioning.

We hope you find the tool and this user guide helpful. We welcome your feedback and suggestions for improvement.

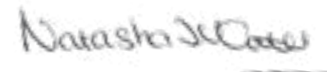
Please contact one of the HIN team or email hin.southlondon@nhs.net



Dr Pratik Choudhary
Senior Lecturer and Consultant in Diabetes,
King's College London



Jackie Sturt
Professor of Behavioural Medicine in Nursing
Florence Nightingale Faculty of Nursing and Midwifery
King's College London



Dr Natasha H Patel
Consultant Diabetologist,
Guy's and St Thomas' NHS Foundation Trust



Contents

[Introduction and purpose](#) >

[How to introduce the Type 1 consultation tool in your clinic \(including top tips\)](#) >

[Step by step guide to using the tool in consultations](#) >

[Hypoglycaemia](#) >

[Hyperglycaemia](#) >

[Diabetes Distress](#) >

[Resources](#) >

[Acknowledgments](#) >

[References](#) >

Introduction

This document is a guide for those using the **Type 1 consultation tool (TIC)** in clinical practice. The tool itself is available in the **resources section**.

The TIC has been devised by the Health Innovation Network (South London's Academic Health Science Network) diabetes team, with support from King's Health Partners. Its purpose is to give every individual with Type 1 Diabetes access to high quality Type 1 diabetes services, via the introduction of an annual care planning tool.

The TIC is designed to assist you with annual care planning and as such it incorporates questions on the physical and emotional aspects of living with diabetes, to provide a holistic approach. We recommend that this tool should be completed at least once a year with every person with type 1 diabetes; however you may find aspects of the tool useful to complete at every appointment.

This tool helps you to capture the required key data points for the London type 1 clinical network specification, the National Diabetes Audit and the 2016-17 CCG Improvement and Assessment Framework.

Purpose: The TIC is designed to assist your service in 3 ways



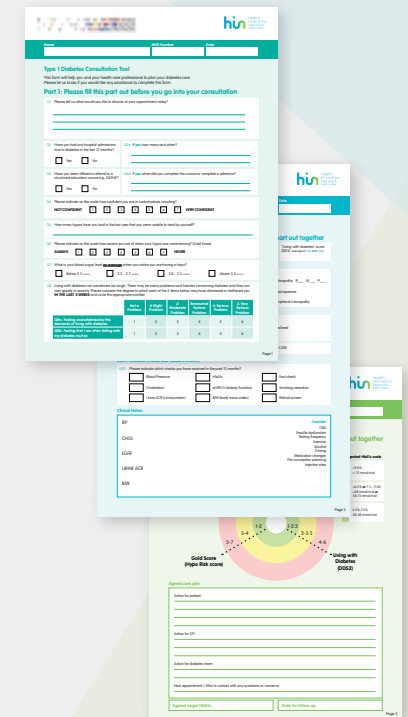
Care Planning Tool: An individual care plan which will consider HbA1c (an individualised target), diabetes distress and hypoglycaemia score. It will enable the clinician and patient to plot results for each of these together onto a circular chart, which will easily demonstrate changes in results and ensures appropriate discussion, care planning and referral if required. The tool also includes questions on structured education, care processes and diabetic complications. It allows the patient to set the agenda and have ownership of the consultation.



Service Delivery: The overall service results from the tool will help services to highlight the needs of their patients, risk stratify them and plan service provision accordingly. This will enable services to understand demand and share outcomes with commissioners, and ensure that services have the appropriate resources to deliver high quality care.



Type 1 Network: For services in London, anonymous data collected from the use of the tool will be shared at the London Type 1 Network meetings. This data will provide an overall picture of the quality of care for Type 1 patients across London and help to identify opportunities for improvement. By agreeing to use the TIC you are agreeing to share the outcome data measures on page two of the TIC in an anonymous format for the purpose of service benchmarking and to identify opportunities for collaboration.



This user guide is aimed at health care professionals and diabetes multidisciplinary teams. People with diabetes should consult with their healthcare professional as they would normally do, when discussing the management of their diabetes. The Health Innovation Network would like to emphasise that clinical decision making remains the sole responsibility of individual clinicians, and that any information provided is for information and educational purposes only and is not intended to constitute professional advice, diagnosis or treatment, or as a substitute for professional judgement. The Health Innovation Network cannot endorse resources developed by other organisations and therefore individuals and organisations take full responsibility for any use that they undertake of these resources.

T1C in your clinic

- > How to introduce the Type 1 consultation tool in your clinic
- > Top tips for introducing the T1C!
- > Step by step guide to using the tool in consultations



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



Acknowledgments



References

How to introduce the Type 1 consultation tool in your clinic

Before introducing any change to a clinical setting it is essential to have the involvement of the entire multidisciplinary team, including administration staff and managers. In order to make the change sustainable and part of everyday practice, people whose working practices will be directly affected by the introduction or change need to have their say.

Consider:

- Are staff encouraged to express their ideas and is their input taken on board?
- Are staff able to run small-scale tests (Plan-Do-Study-Act cycles - PDSA) based on their ideas, to see if additional improvements should be recommended?
- What is the mechanism for staff and patients to feed back on their experiences of using the tool?

Find out more about why the HIN developed the TIC



Top tips for introducing the TIC!

- 1** **Start small** e.g. 1 clinic, 1 day a week and **plan** the organisational processes required to implement for all staff in the clinic including reception staff. Who needs to know about the TIC? How will staff need to change the way they work? What resources will they need? How will you promote it to patients? What are the key messages? e.g. agenda setting.
- 2** **Map the process** for a patient completing the form, from receiving it in the waiting room (or in advance) to completing it and leaving with a completed care plan. What needs to happen at each stage? How and when will blood tests be completed in advance? Who needs to be informed and how? How will you document and review the care plan next time?
- 3** **Introduce all staff to the changes** and gain support for the team from a senior supporter and create engagement from all staff.
- 4** **Agree** the process and start & feedback dates
- 5** **What else from your consult needs to change?** Introducing any new change can initially take longer than existing practice, so consider how you can work as efficiently as possible. Are you already providing psychological screening e.g PAID? If so using DDS2 in the first instance instead could take less time (See [DDS pathway](#) for more details).
- 6** **Explain the change to patients!** Keeping patients informed of how their consultation may change and how they are expected to prepare for the consultation, (e.g. agenda setting, what they need to bring, what tests should have been completed prior, what to do afterwards) will all help when introducing the TIC in your clinic. In the resources section there is an example of an [explanation sheet](#), this can be used to introduce the change to patients.
- 7** **Collecting the data.** What is your process for collecting the data on part 2 of the form? What changes to you need to make to your data collection process? How/who will analyse your data?
- 8** **You may not get it right first time!** Feedback from our trial sites has told us that it may take a few attempts to discover how to integrate the TIC into a consultation. Don't be discouraged, talk to colleagues, consider the process and keep going!

It is important to ensure that the patient receives the form as early as possible in the process, at check in or if possible sent out with clinic appointments.

Make sure the process is agreed with administration staff and check periodically how this process is working. Ensure you are providing patients with enough time to complete the form – initially you may find that patients are not accustomed to being asked to set an agenda for the visit and they may not know or need help in deciding what to suggest, however on subsequent appointments patients will be more prepared. Care planning enables the individual person with diabetes to identify their own goals, action plans and any support they may need. This becomes a gateway to providing personalised support, which:

- Links traditional clinical care with support for self-management
- Signposts to community resources made available as part of wider local commissioning
- Coordinates health and social care where appropriate
- For you and your patient to get the most out of using the tool it is essential that the most up to date blood results including HbA1c and eGFR are available at the appointment. If point of care testing is not available then this may require the patient to attend for a blood test in advance of their appointment. Patients should also be encouraged to bring along their retinal screening results and this should be clearly requested in the appointment letter.



Dr Pratik Choudhary and Prof Jackie Sturt have made a short film about how to get the most out of the TIC consultations

Step by step guide to using the tool in consultations

The tool is made up of 3 parts.

Part 1 Preparation for the consultation

Q1

Agenda setting

This question should be completed by the patient in advance of seeing the diabetes team, ideally at home or if not then in the waiting room. Initially patients are likely to be unfamiliar with this approach and may not write anything, however experience shows that with repeated use of the tool patients become familiar and comfortable with completing this section. It is good practice to encourage patients to consider completing this before their next appointment.

Agenda setting allows the patient to consider the purpose of the appointment and provides the clinician with an insight into what is most important to the patient. In some cases the most important thing may concern other issues such as finances, relationships and housing. These issues are highly likely to be impacting on the patient's ability to self manage. Whilst the diabetes team may not be able to act to change these issues, simply acknowledging their presence will be useful for planning care with realistic expectations!

This question should also be considered as a recap of the last 12 months. The answers will provide the core information you need which, combined with the context of the patient's agenda, will provide you with key pieces of information to move forward in planning the next 12 months.

Name **NHS Number** **Date**

hin Health Innovation Network South London

Type 1 Diabetes Consultation Tool
This form will help you and your health care professional to plan your diabetes care. Please let us know if you would like any assistance to complete this form.

Part 1: Please fill this part out before you go into your consultation

Q1 Please tell us what would you like to discuss at your appointment today?

Q2 Have you had any hospital admissions due to diabetes in the last 12 months?
 Yes No

Q2a If **yes** how many and when?

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?
 Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q4 Please indicate on the scale how confident you are in carbohydrate counting?
NOT CONFIDENT 1 2 3 4 5 6 7 **VERY CONFIDENT**

Step by step guide to using the tool in consultations

Q2-2a

Hospital admissions

These answers provide an indication of any problems relating to hypo or hyperglycaemia. This information is not always available in clinic and the patient may forget to tell you, especially if this is 'normal' for them.

Q2 Have you had any hospital admissions due to diabetes in the last 12 months?

Yes No

Q2a If **yes** how many and when?

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?

Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q3-3a

Structured Education

Structured education is a fundamental part of Type 1 diabetes care. Improvements in patient outcomes as a result of attending are well documented; however we also acknowledge that structured education in its traditional format of 5 days of group education is not suitable for everyone. It is important to include the date a person attended or declined structured education, because they may now be willing to attend.

Q2 Have you had any hospital admissions due to diabetes in the last 12 months?

Yes No

Q2a If **yes** how many and when?

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?

Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q4 Please indicate on the scale how confident you are in carbohydrate counting?

NOT CONFIDENT [1] [2] [3] [4] [5] [6] [7] VERY CONFIDENT

Q5 How many hypos have you had in the last year that you were unable to treat by yourself?

Step by step guide to using the tool in consultations

Q4

Confidence in carbohydrate counting

Use the answer to this question to explore the reasons behind the score. It may help you to identify patients who already have the skills required for dose adjustment and may need refreshing, or those who have limited or no experience at all. When seeking additional support or training for dose adjustment, consider referral to an appropriately qualified dietitian. Remember that a measure of confidence is not always a measure of competence.

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?
 Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q4 Please indicate on the scale how confident you are in carbohydrate counting?
NOT CONFIDENT [1] [2] [3] [4] [5] [6] [7] **VERY CONFIDENT**

Q5 How many hypos have you had in the last year that you were unable to treat by yourself?

Q6 Please indicate on the scale how aware you are of when your hypos are commencing? (Gold Score)
 ALWAYS [] [] [] [] [] [] NEVER

Online support and additional training can be found at:

Bournemouth Diabetes and Endocrine Centre (BDEC) online
www.bertieonline.org.uk

Diabetes UK carb counting E-book www.diabetes.org.uk

Carbohydrate counting APP www.carbsandcals.com

www.inputdiabetes.org.uk

www.f1resources.uk

www.excarbs.com

www.diabetestravel.org

The Health Innovation Network does not endorse resources developed by other organisations, and therefore individuals and organisations take full responsibility for any use that they undertake of these resources.

Step by step guide to using the tool in consultations

Q5&6

Hypoglycaemia risk

These questions are designed to establish a patient's risk of hypoglycaemia which needs to be determined in order to create a comprehensive care plan. See the [hypoglycaemia section](#) later in this document for suggestions on how to develop your own local pathway.

The Gold score is a validated tool comprising of a simple 7-point visual analogue scale that can be used by patients to grade their awareness of hypoglycaemia with '1' being always aware and '7' being never aware.

- Scores of 1-2 are normal
- A score of 3 or 4 denotes intermediate awareness
- Those scoring 4 or above have impaired awareness of hypoglycaemia and in multiple studies have been shown to be at 3 – 6 fold higher risk for severe hypoglycaemia. Most population surveys show 20-30% of people with type 1 diabetes have impaired awareness, with the risk rising with age and longer duration of diabetes.

Q2 Have you had any hospital admissions due to diabetes in the last 12 months?

Yes No

Q2a If **yes** how many and when?

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?

Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q4 Please indicate on the scale how confident you are in carbohydrate counting?

NOT CONFIDENT [1] [2] [3] [4] [5] [6] [7] VERY CONFIDENT

Q5 How many hypos have you had in the last year that you were unable to treat by yourself?

Q6 Please indicate on the scale how aware you are of when your hypos are commencing? (Gold Score)

ALWAYS [1] [2] [3] [4] [5] [6] [7] NEVER

Q7 What is your blood sugar level **on average** when you notice you are having a hypo?

Below 2.2 mmol/L 2.2 - 2.7 mmol/L 2.8 - 3.3 mmol/L Above 3.3 mmol/L

Q8 Living with diabetes can sometimes be tough. There may be many problems and hassles concerning diabetes and they can vary greatly in severity. Please consider the degree to which each of the 2 items below may have distressed or bothered you **IN THE LAST 4 WEEKS** and circle the appropriate number.

	Not a Problem	A Slight Problem	A Moderate Problem	Somewhat Serious Problem	A Serious Problem	A Very Serious Problem
Q8a. Feeling overwhelmed by the demands of living with diabetes	1	2	3	4	5	6
Q8b. Feeling that I am often failing with my diabetes routine	1	2	3	4	5	6

Step by step guide to using the tool in consultations

Q7

Hypo awareness

It is important to establish a patient's awareness of hypoglycaemia in order to understand their risk of having a severe hypo. If an individual with Type 1 Diabetes has experienced severe hypoglycaemia in the preceding 12 months, it is important to discuss the treatment options and it is suggested that you consider using the hypoglycaemia pathway – see [hypoglycaemia section](#).

Q6 Please indicate on the scale how aware you are of when your hypos are commencing? (Gold Score)

ALWAYS 1 2 3 4 5 6 7 NEVER

Q7 What is your blood sugar level **on average** when you notice you are having a hypo?

Below 2.2 mmol/L 2.2 - 2.7 mmol/L 2.8 - 3.3 mmol/L Above 3.3 mmol/L

Q8 Living with diabetes can sometimes be tough. There may be many problems and hassles concerning diabetes and they can vary greatly in severity. Please consider the degree to which each of the 2 items below may have distressed or bothered you **IN THE LAST 4 WEEKS** and circle the appropriate number.

Not a Problem	A Slight Problem	A Moderate Problem	Somewhat Serious Problem	A Serious Problem	A Very Serious Problem
---------------	------------------	--------------------	--------------------------	-------------------	------------------------



This film provides more information about each question on the TIC and the importance of Diabetes Distress

Step by step guide to using the tool in consultations

Q8a
&8b

Living with Diabetes (Diabetes Distress Score 2)

These two questions relate specifically to the psychological demands of living with diabetes. We recognised during the work of the Diabetes Improvement Collaborative that across South London that there was a great unmet demand for the acknowledgement, assessment and support for people who are suffering psychologically with the demands of living with diabetes. During the development of the TIC, we worked closely with Professor Jackie Sturt, Professor of Behavioural Medicine in Nursing from King's College London.

The TIC uses the Diabetes Distress Score 2 (DDS2), a screening tool to identify those patients with high diabetes distress. It is a simple 2 question tool that scores with a high degree of sensitivity and specificity people who have diabetes related distress. Due to its concise 2 question score, it was well received in early pilots of the TIC. DDS2 identifies people who may score highly on more detailed psychological screening tools, such as DDS17 or PAID (Problem Areas in Diabetes). Use this opportunity to look into areas of your patients' diabetes which you or your patient may not have had the opportunity to explore before. This can be difficult but it may help to remove barriers that can be hindering your patients from moving forward.

In order to calculate the DDS2 score add the score from question 8a and question 8b together and divide by 2, (to get the average of the two).

More detailed information, including a suggested pathway, can be found in the [Diabetes Distress](#) section of this guide.

Q2 Have you had any hospital admissions due to diabetes in the last 12 months?
 Yes No

Q2a If **yes** how many and when?

Q3 Have you been offered a referral to a structured education course e.g. DAFNE?
 Yes No

Q3a If **yes** when did you complete the course or complete a refresher?

Q4 Please indicate on the scale how confident you are in carbohydrate counting?
NOT CONFIDENT [1] [2] [3] [4] [5] [6] [7] **VERY CONFIDENT**

Q5 How many hypos have you had in the last year that you were unable to treat by yourself?

Q6 Please indicate on the scale how aware you are of when your hypos are commencing? (Gold Score)
ALWAYS [1] [2] [3] [4] [5] [6] [7] **NEVER**

Q7 What is your blood sugar level **on average** when you notice you are having a hypo?
 Below 2.2 mmol/L 2.2 - 2.7 mmol/L 2.8 - 3.3 mmol/L Above 3.3 mmol/L

Q8 Living with diabetes can sometimes be tough. There may be many problems and hassles concerning diabetes and they can vary greatly in severity. Please consider the degree to which each of the 2 items below may have distressed or bothered you **IN THE LAST 4 WEEKS** and circle the appropriate number.

	Not a Problem	A Slight Problem	A Moderate Problem	Somewhat Serious Problem	A Serious Problem	A Very Serious Problem
Q8a. Feeling overwhelmed by the demands of living with diabetes	1	2	3	4	5	6
Q8b. Feeling that I am often failing with my diabetes routine	1	2	3	4	5	6

Page 1

Step by step guide to using the tool in consultations

Part 2 - Data collection

Part 2 of the TIC enables the collection of an agreed set of key metrics that will support you in understanding your local type 1 diabetic community, so that you can develop services appropriately. The majority of information here has already been completed in page 1 of the TIC. Use this section to add to your data and write clinical notes.

The first 4 boxes at the top of the page should be completed using the data from the previous page.

Type 1 Diabetes Consultation Tool
Part 2: You and your healthcare professional will fill this part out together

Number of severe hypos in past 12 months (Q5)	Gold score (Q6)	Today's HbA1c: (can be from within last 6 weeks)	"Living with diabetes" score (DDS) (average of Q8a and Q8b)
---	-----------------	--	---

Complications

Q9 Please tick existing complications:

<input type="checkbox"/> No complications	<input type="checkbox"/> Stroke/Transient Ischaemic Attack (TIA)	<input type="checkbox"/> Retinopathy R__ M__ P__
<input type="checkbox"/> Microalbuminuria	<input type="checkbox"/> Ischaemic heart disease	<input type="checkbox"/> Gastroparesis
<input type="checkbox"/> Proteinuria	<input type="checkbox"/> Peripheral vascular disease	<input type="checkbox"/> Peripheral neuropathy

Structured education and therapy:

Q10 Structured education status (Q3 and Q3a):

<input type="checkbox"/> Completed course or refresher course	<input type="checkbox"/> Referred	<input type="checkbox"/> Declined
Date: _____	Date: _____	Date: _____

Q11 CSII (Pump) MDI RT-CGM

Care Processes: (Please add values if known)

Q12 Please indicate which checks you have received in the past 12 months?

<input type="checkbox"/> Blood Pressure	<input type="checkbox"/> HbA1c	<input type="checkbox"/> Foot check
---	--------------------------------	-------------------------------------

Step by step guide to using the tool in consultations

Q9

Complications

In order to understand the severity and variation in demand upon a diabetes service it is important to know the amount and complexity of needs of the people using the service. This knowledge will enable a clearer understanding of the demand and what service provision is required to meet it.

You should complete the retinopathy part by grading it into the following categories:

R (Retinopathy): grade 0-3

M (Maculopathy): grade 0-1

P (Photocoagulation): grade 0-1

This information will be provided from the eye screening clinic letter (encourage patients to bring this with them).

More detailed information on the eye screening can be found here:



The screenshot shows the 'Type 1 Diabetes Consultation Tool' interface. At the top, there are input fields for 'Name', 'NHS Number', and 'Date'. Below this is the title 'Type 1 Diabetes Consultation Tool' and a sub-header 'Part 2: You and your healthcare professional will fill this part out together'. There are four summary boxes: 'Number of severe hypos in past 12 months (Q5)', 'Gold score (Q6)', 'Today's HbA1c: (can be from within last 6 weeks)', and '"Living with diabetes" score (DDS) (average of Q8a and Q8b)'. The 'Complications' section is highlighted, containing question Q9: 'Please tick existing complications:'. It lists nine options with checkboxes: 'No complications', 'Microalbuminuria', 'Proteinuria', 'Stroke/Transient Ischaemic Attack (TIA)', 'Ischaemic heart disease', 'Peripheral vascular disease', 'Retinopathy R___ M___ P___', 'Gastroparesis', and 'Peripheral neuropathy'. Below this is the 'Structured education and therapy' section with question Q10: 'Structured education status (Q3 and Q3a):'. It includes checkboxes for 'Completed course or refresher course', 'Referred', and 'Declined', each with a 'Date:' field. Question Q11 asks about insulin use: 'CSII (Pump)', 'MDI', and 'RT-CGM'. The 'Care Processes' section (Q12) asks for checks received in the past 12 months, listing 'Blood Pressure', 'Cholesterol', 'HbA1c', 'eGFR/Cr (kidney function)', 'Foot check', and 'Smoking cessation'.

Step by step guide to using the tool in consultations

Q11

Therapy

This data should be recorded in order to provide a clear audit of the uptake and outcomes of each therapy.

Q10 Structured education status (Q3 and Q3a):

Completed course or refresher course Referred Declined

Date: Date: Date:

Q11 CSII (Pump) MDI RT-CGM

Care Processes: (Please add values if known)

Q12 Please indicate which checks you have received in the past 12 months?

Q12

Care processes

Care processes are an integral part of diabetes care. They are a mandatory part of the Quality and Outcomes Framework (QOF) and the National Diabetes Audit (NDA), therefore they are everyone's responsibility. If these checks have not been completed in the last 12 months then you should action this.

Care Processes: (Please add values if known)

Care Processes: (Please add values if known)

Q12 Please indicate which checks you have received in the past 12 months?

Blood Pressure HbA1c Foot check

Cholesterol eGFR/Cr (kidney function) Smoking cessation

Urine ACR (Urine protein) BMI (body mass index) Refinal screen

BP Consider CBG Erectile Dysfunction

Care processes in type 1 diabetes

People with Type 1 diabetes are less likely than people with Type 2 diabetes to receive all of the eight care processes (this excludes eye screening). In 2014-15, 38.7% of people with type 1 diabetes in England and Wales received all the eight care processes compared with 58.7% of people with type 2 diabetes in England and Wales. People aged under 40 are much less likely

to receive their care processes compared with older people for both type 1 and type 2 diabetes. (Source: National Diabetes Audit 2013-2014 and 2014-2015 Report 1: Care Processes and Treatment Targets. Health and Social Care Information Centre, January 2016).



Step by step guide to using the tool in consultations

Clinical notes

Use this section to write your clinical notes. In the right hand corner of the box are some prompts which act as a reminder of questions to ask the patients. This ensures that all aspects of the individual's life are covered – these are not mandatory questions but should be considered, more like clothes pegs from which to hang the conversation on!

Exercise – This question will enable you to explore if a person with type 1 diabetes is exercising regularly and if not encourage them to do so. It will also help you consider if they require any support in adjusting their insulin to avoid hypos when they do exercise.

Alcohol – this is about ensuring that individuals are reminded of the effect of drinking alcohol on their glycaemic control and possible subsequent hypoglycaemia the following morning, and that they are aware of measures to prevent hypoglycaemia.

Pre-conception planning - Type 1 diabetes is often diagnosed in childhood or early adulthood. For women of childbearing age* with Type 1 diabetes, pregnancy planning is essential to reduce risks to the mother and baby. Pregnancy planning ensures that issues are identified and minimised to maximise the health of both mother and baby.

*Childbearing age is defined as the period in a woman's life between puberty and menopause.

Medication changes – any recent changes that could account for changes in glycaemic control – eg steroids

Erectile dysfunction (ED) – prevalence estimates of ED in Type 1 range between 27-75%. Patients often find it difficult to initiate discussion about this and rely on health professionals to initiate the topic.

Driving – See [Resources](#) section for DVLA regulations.

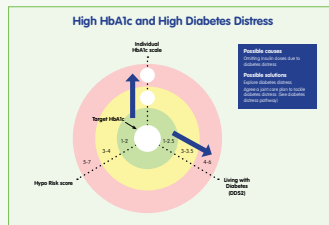
Smoking cessation – This will enable you to explore if a person with type 1 diabetes is smoking. You should ask open questions to understand how much, and if they are aware of the added risks associated with smoking and type 1 diabetes. Use this opportunity to provide education on risks and options for support with stopping smoking.

Step by step guide to using the tool in consultations

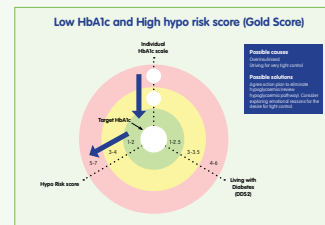
Part 3: Plotting the results

The circular chart in part 3 of the TIC is blank to enable the clinician, in discussion with the patient to plot the HbA1c, DDS2 and Gold Score results from part 1. Together they should agree the desired HbA1c target, which can then be plotted on the graph. This facilitates discussion and individualised goal setting for HbA1c.

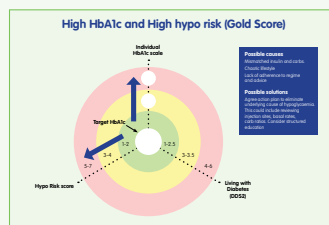
We suggest that you plot at least two points for each of the domains (ie at least the last point and today's), so that the trend can be seen. It is challenging to ascertain the story of how well a person is managing their diabetes from one plot of a single moment of time. On the right hand side of the graph there is a recommended HbA1c scale in accordance to NICE guidance, however we acknowledge these targets may not be achievable or desirable for everyone. See **Individualising HbA1c** for more information.



1) High HbA1c, high distress, low hypos - consider that the patient may not be taking (enough) insulin and is likely to be missing boluses



3) Low HbA1c, high hypos – this is often seen in overinsulinsed patients who may have perfectionist traits. If distress is high this may be related to fear of HYPERglycaemia, especially if the patient is hypo unaware. This needs to be taken into account when trying to reduce hypos

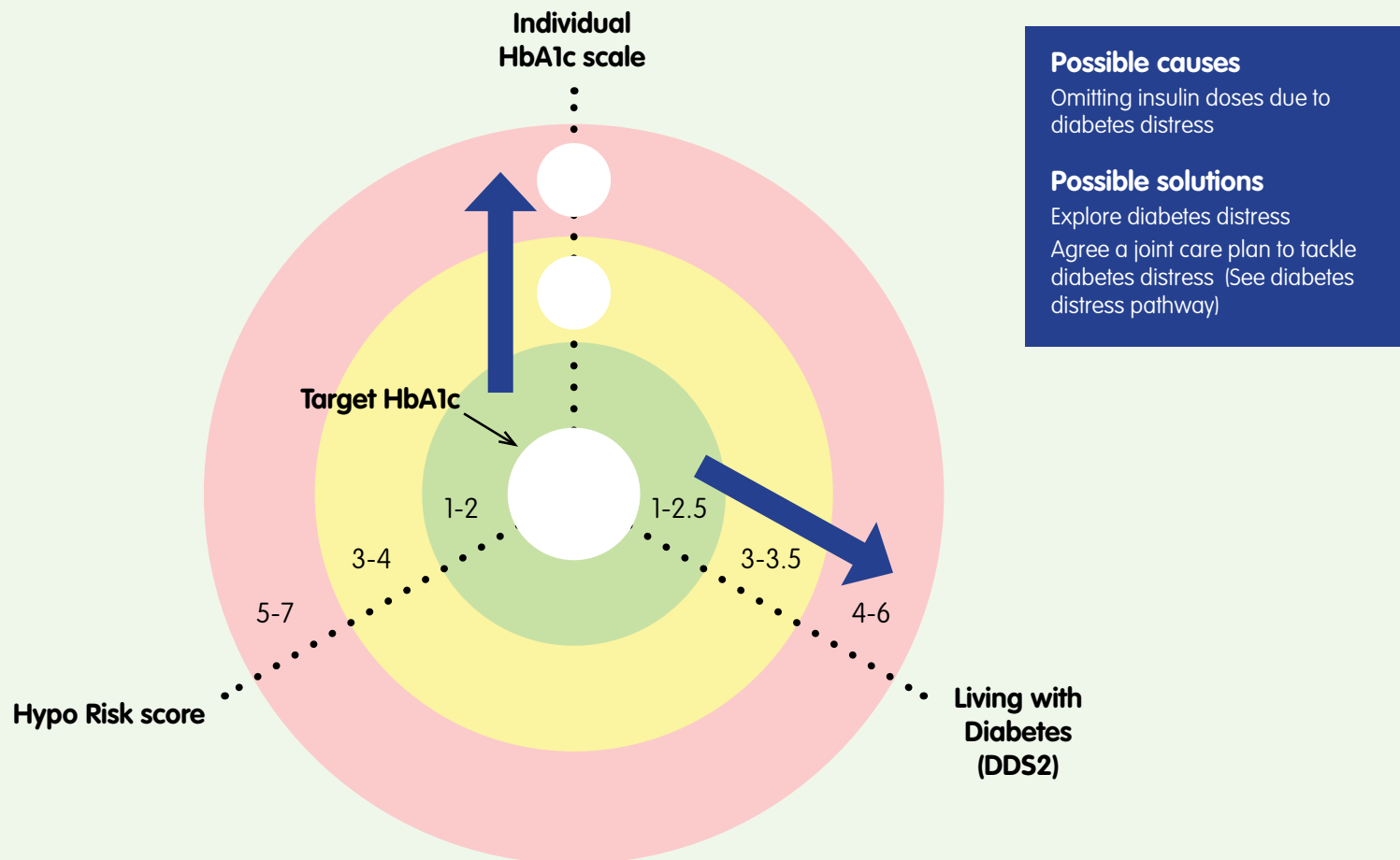


2) High HbA1c, high hypos (distress may be high or low) – this pattern can indicate chaotic use of insulin and that food and insulin are usually taken at different times

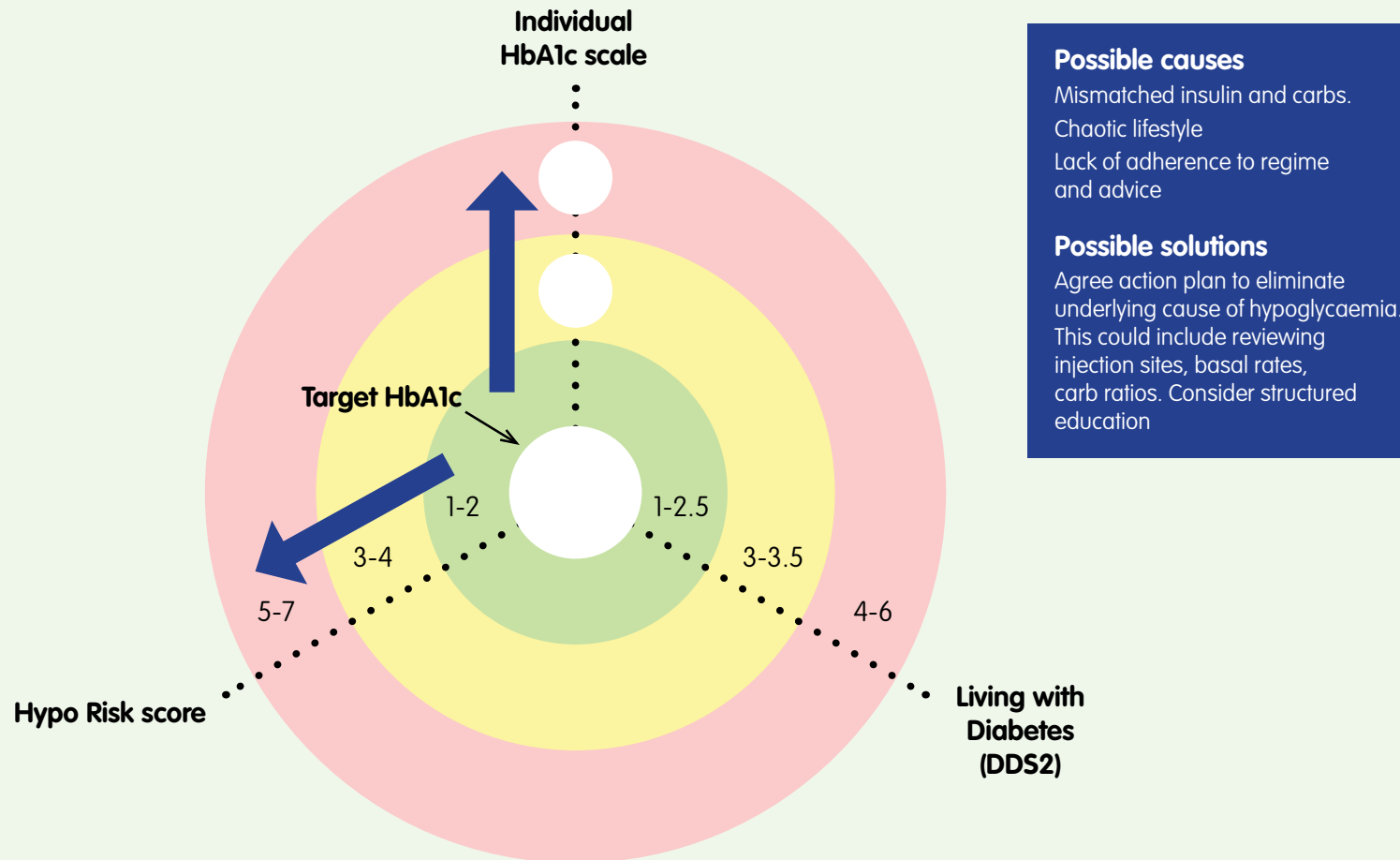
How to plot the scores and what they are telling you

Everyone is different. During early trials three common patterns emerged which we have explained in these charts, but don't forget to work with your patients as individuals.

High HbA1c and High Diabetes Distress



High HbA1c and High hypo risk (Gold Score)



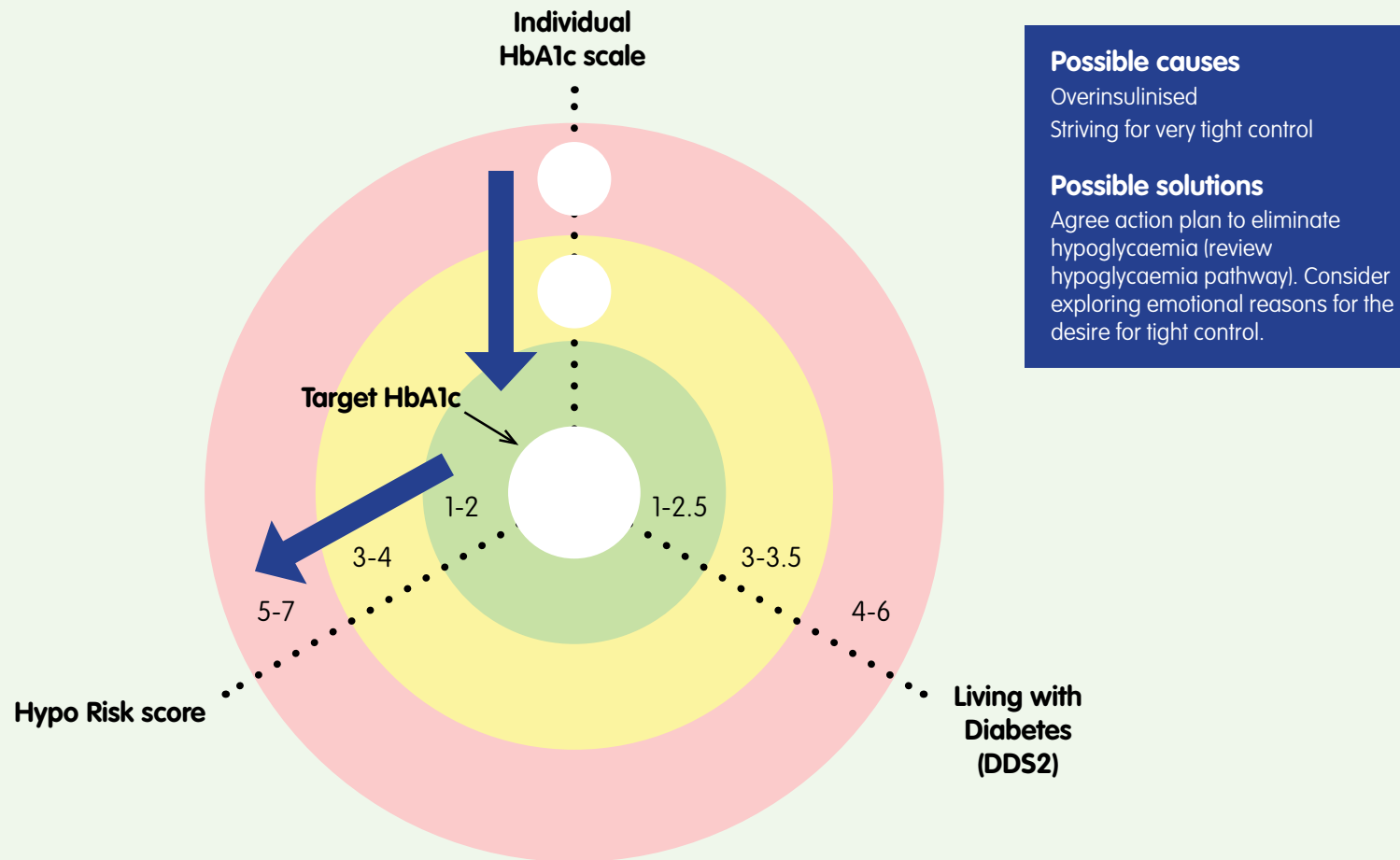
Possible causes

Mismatched insulin and carbs.
Chaotic lifestyle
Lack of adherence to regime and advice

Possible solutions

Agree action plan to eliminate underlying cause of hypoglycaemia. This could include reviewing injection sites, basal rates, carb ratios. Consider structured education

Low HbA1c and High hypo risk score (Gold Score)



Step by step guide to using the tool in consultations

Individualising HbA1c

As per NICE guidelines, it is important that a target HbA1c is unique to the individual, and the NICE recommended target of 6.5% may not be appropriate for everyone.

There are a number of factors that should be taken into consideration when individualising the HbA1c.

1. Disease duration
2. Hypoglycaemia risk
3. Presence or absence of complications
4. Planning pregnancy

It should also be noted that the rate and reliability of insulin absorption also varies on a daily basis, complicating things further. Target HbA1c should be discussed and agreed with the patient.

Are there pitfalls of lowering blood glucose too far?

The 'low as you could go' approach led to several studies to identify whether intensive glucose lowering could reduce macrovascular disease in those at high cardiovascular risk^{1,2,3}. Whilst a reduction in incidence and progression of microvascular disease was demonstrated, the approach had no bearing on macrovascular outcomes. Indeed, one study demonstrated an increased death rate in those treated intensively and an increased incidence of hypoglycaemia².



Step by step guide to using the tool in consultations

Individualising HbA1c

Should we be trying to achieve tight control for all?

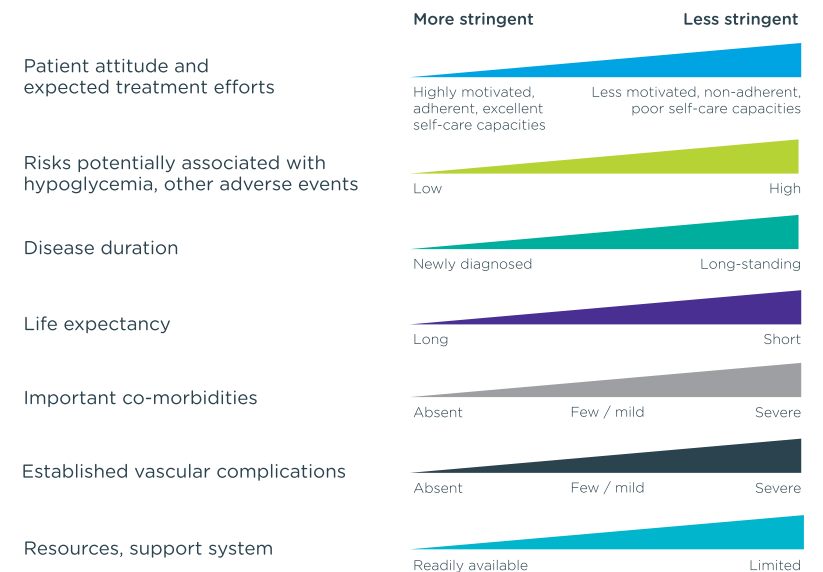
There are a number of factors that we need to take into consideration that are largely dependent on individual patient circumstances. Treatment should be individualised to take into account patient preference, length of diabetes and presence or absence of complications. Individual treatment goals should consider the following:

- reducing symptoms caused by high blood glucose such as thirst, polyuria, lethargy and increased number of infections.
- reducing the risk of life-threatening illness through severe hyperglycaemia.
- achieving tight glycaemic control for those with newly diagnosed Type 1 diabetes to reduce the development and progression of both microvascular and macrovascular complications – where it is safe to do so.
- achieving safe, but less tight, blood glucose levels in those with longer duration Type 1 diabetes or those who are at higher cardiovascular risk, frail or elderly.

Ensure that the patient's persistent hyperglycaemia is not caused by high variability due to a lot of hypos, over treating hypos, or deliberately running their HbA1c high to prevent hypos.

This diagram highlights the checks and balances that can be discussed with the individual with Type 1 diabetes when setting a personalised glycaemic target. Although this was originally developed based on research in the Type 2 population, there is no reason why the same points cannot be used as a basis of discussion with an individual with Type 1 diabetes to determine an appropriate individualised HbA1c. However, if appropriate, don't forget to take into account fertility and pre-conception glycaemic targets.

Approach to management of hyperglycemia



Inzucchi et al, 2012, Diabetes Care 35 (1364-1379).⁴

Hypoglycaemia pathway



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



Acknowledgments



References

Hypoglycaemia pathway

Severe hypo-glycaemic episodes can have a huge impact on everyday lives of people with Type 1 diabetes, and those around them. Unpleasant symptoms and fear of the consequences of severe “hypos” can reduce independence and spontaneity, significantly impacting on quality of life. Hypos also put pressure on family, colleagues and friends, to be involved in their prevention and management.

A degree of hypoglycaemia (low blood glucose) is inevitable with Type 1 diabetes. On a weekly basis, most adults with well-controlled Type 1 diabetes report that they experience 1-2 episodes of mild-moderate hypoglycaemia that they can self-treat. Symptoms can occur at various glucose levels depending on previous hypoglycaemic experience.

All individuals with Type 1 diabetes should receive education around avoidance of hypoglycaemia, (through structured education) with particular emphasis on:

- Injection sites – checking for and avoiding injecting into lipohypertrophy sites
- alcohol
- physical exercise, sport and recreational activities
- travelling, including long distance flights.

All clinical staff working in services for people with Type 1 diabetes should have the expertise to provide appropriate input to those at high risk of problematic hypoglycaemia. It is also suggested that each Type 1 service has a hypoglycaemia pathway – see the [hypoglycaemia pathway](#) on the next page as an example that contains the following components

- **Structured education such as DAFNE or other local equivalent if not already attended.** Such programmes have been shown to reduce hypoglycaemia whilst improving overall glycaemic control. A hypoglycaemia-specific education programme may be considered if available.
- **Use of insulin pump therapy.** This intervention, implemented by a multidisciplinary team competent in its use, has been shown to reduce frequency of severe hypoglycaemia frequency. Services should follow **NICE Technology Appraisal 151**.
- **Use of blind Continuous Glucose Monitoring (CGM).** This can be used with either multi-dose injections (MDI) regime or insulin pumps. This is especially useful where insulin pump therapy without CGM has not been successful in reducing episodes of severe hypoglycaemia. Recent NICE guidance supports the use of CGM in this context (**NG17 1.6.21**).

If the skills required for the above measures are not present within the team, or are lost, the team should have a pathway in place to refer these patients to an appropriate service.

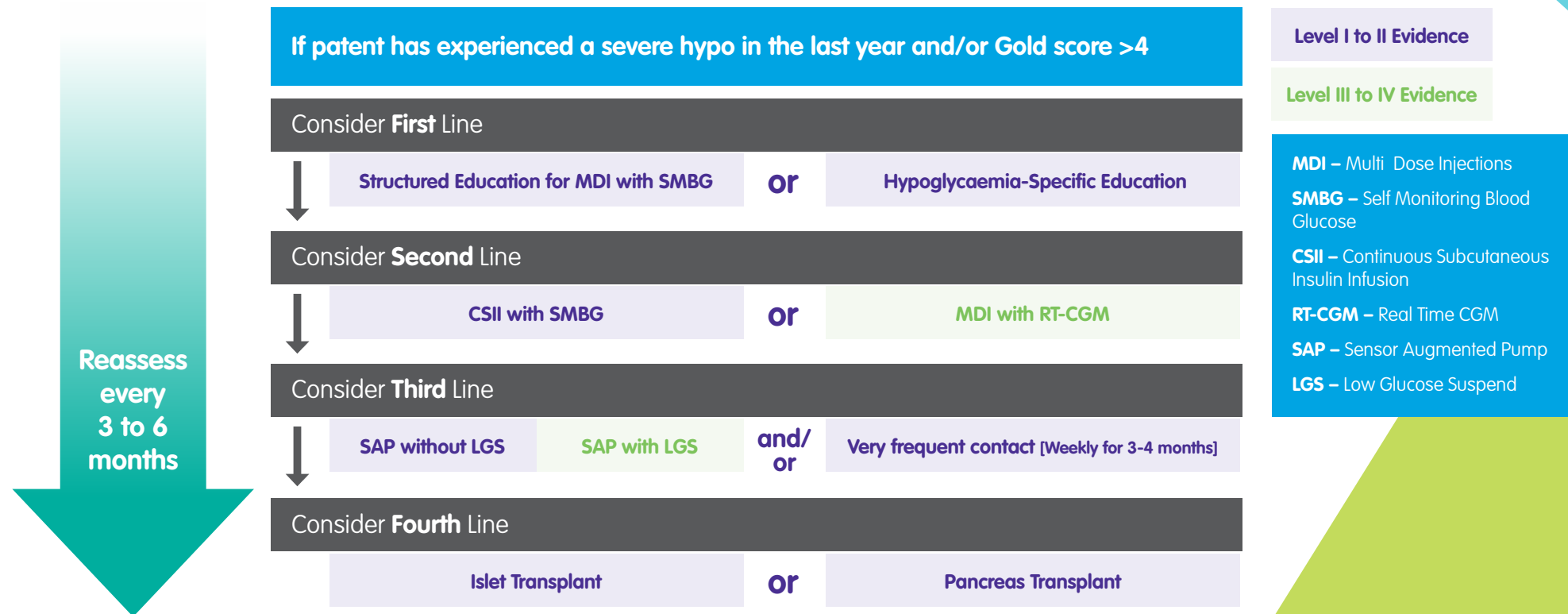
- **Islet or Pancreas Transplantation:** For patients where the above interventions are unsuccessful or unsuitable, consideration should be given to refer the person with Type 1 diabetes for assessment of suitability for islet or pancreas transplantation. Islet or Pancreas transplantation is centrally commissioned and provided for those patients who experience frequent severe hypoglycaemia despite best medical treatment. In current circumstances that should include assessment and management at an experienced centre including a trial of insulin pump therapy and continuous glucose monitoring.

There are two Islet/Pancreas transplant services in London, one at the Royal Free London NHS Foundation Trust and the other at King’s College Hospital NHS Foundation Trust. We would recommend initial referral for assessment to the Clinical Lead for Islet/ Pancreas Transplant services, if patients fit into this category. Data from the King’s College Hospital centre suggests that up to two-thirds of patients who meet the criteria for islet transplantation do not require transplantation if provided with access to a specialist hypoglycaemia unit with access to education, psychological support and technology.

Hypoglycaemia pathway

If an individual with Type 1 diabetes has experienced severe hypoglycaemia in the preceding 12 months, it is important to discuss the treatment options and it is suggested that you consider using the hypoglycaemia pathway.

A suggested Hypoglycaemia pathway



Adapted from: Evidence-informed clinical practice recommendations for treatment of type 1 diabetes complicated by problematic hypoglycemia. Choudhary P, et al. Diabetes Care. 2015.⁹

Hypoglycaemia pathway

Driving

Repeated severe hypos can reduce cognitive function, prevent an individual from driving and impact on employment. Certain occupations are barred completely to people on insulin due to the risk of hypoglycaemia.

Recent changes to licensing have been implemented within the European Union which include strict rules around glucose monitoring.

The DVLA provides specific guidance in relation to driving with diabetes, and healthcare professionals should make sure patients with a current driving licence are made aware of the guidelines and that the conversation is documented.



[A guide to filling
in your DIAB1
medical form](#)



[Assessing
fitness to drive](#)



Hyperglycaemia pathway



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



Acknowledgments



References

Hyperglycaemia pathway

Hyperglycaemia - Persistently elevated HbA1c of >69mmol/mol or >8.5%

Most adults with well-controlled Type 1 diabetes will experience episodes of **hyperglycaemia** each week. However clinical services should place an emphasis on those who have persistently elevated HbA1c greater than their individualised HbA1c target. NICE guidance for insulin pump therapy (CSII) states that a HbA1c of over 69mmol/mol (>8.5%) and persistent as at least 2 measurements of over 69 mmol/mol (>8.5%) over 6-12 months, can be deemed of concern and support should be in place to enable these individuals to achieve their individualised target HbA1c.

Type 1 diabetes is a complex long term condition, which requires the individual to own the condition for the rest of their life and take responsibility for their health and behaviours. It is a condition which affects the individuals' way of life every hour, every day as glucose profiles and insulin requirements vary on a daily basis depending on multiple factors.

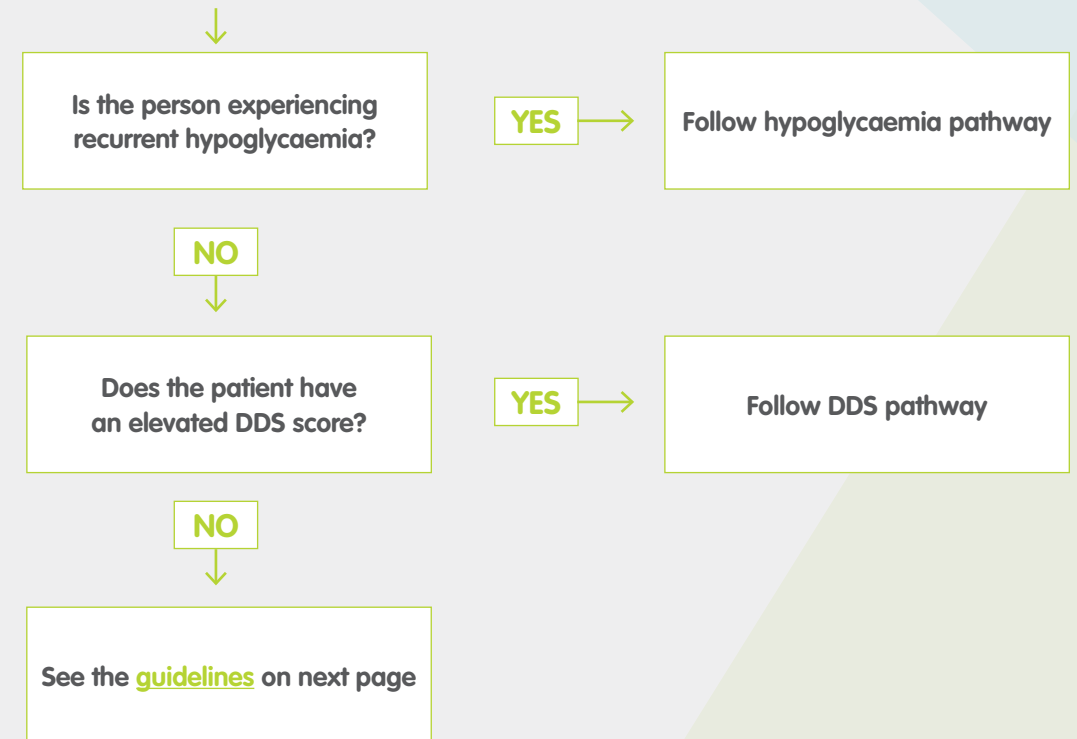
In order to support an improvement in HbA1c it is important to use the TIC tool within an MDT which enables holistic approach. Both hypoglycaemia and Diabetes Distress can impact and result in hyperglycaemia and until both of these areas are managed then it is unlikely that there will be an improvement in the HbA1c.

For example, in an individual with Type 1 persistent hyperglycaemia could be due to high variability due to a lot of hypos, over treating hypos, or deliberately running their HbA1c high to prevent hypos.

Additionally, assessing for disordered eating would be justified in those with very high or persistently raised HbA1c. This is where blinded CGM is useful, as patients may not recognise what is happening themselves.

The following flow chart is a suggested pathway for the management of Hyperglycaemia using the TIC

Is the HbA1c of >69mmol/mol or >8.5%



Hyperglycaemia pathway

Once Diabetes Distress and hypoglycaemia have been investigated and excluded as a cause of hyperglycaemia then there should be a discussion with the patient to identify and review self-management skills, and any new or on-going educational needs so that the appropriate support to achieve optimal glycaemic control can be offered. *This may include:*

- One-to-one sessions with either dietitian or diabetes nurse or both
- Group educational sessions for example repeat DAFNE course (or equivalent structured education course) or a DAFNE refresher
- Online Support
- Peer Support
- Use of Technology – for example Continuous Glucose Monitoring or Bolus Advisors
- Review Injection Sites (does the patient have lipohypertrophy resulting in erratic absorption of insulin?)
- Does the individual require a change in insulin regime?



Diabetes distress



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



Acknowledgments



References

Diabetes Distress

An introduction to Diabetes Distress (DD) and the Diabetes Distress Scale (DDS)

Diabetes Distress (DD) is an emotional response to living with and managing type 1 and type 2 diabetes. It has 4 domains of emotional burden of diabetes: treatment burden, health professional relationship burden and interpersonal burden. Systematic reviews have found Diabetes Distress to be associated with HbA1c⁶ and every 10 point reduction in DD when measured by the PAID scale is associated with a 0.2% reduction in HbA1c⁷. Elevated DD is also found to be associated with reduced self-care behaviours relating to physical activity, poorer diet, disordered eating and insulin restriction⁶. The evidence shows a close association between how a person manages their diabetes-related health and their emotional response to diabetes. This makes Diabetes Distress an important clinical area for assessment. 30% of people living with type 1 diabetes will be experiencing elevated DD at this moment and this is affecting their ability to cope with and manage their diabetes.

We are targeting Diabetes Distress, using the DDS Screening Tool, because recent research by Sturt et al.¹²

Diabetes Distress has been assessed for 20 years using the Problem Areas in Diabetes Questionnaire (PAID)⁸ and more recently some of the PAID authors have developed the Diabetes Distress Scale (DDS)⁹. The DDS⁹ has been found to provide useful sub scales around the four domains so that the areas in which Diabetes Distress is most elevated can be targeted for additional patient therapeutic support by the diabetes team. These authors have progressed their DDS work to develop a specific type 1 DDS and a DDS 2 screening tool making these scales an ideal suite of diabetes distress assessment scales^{10,11}. We are targeting Diabetes Distress, using the DDS screening tool, because recent research by Sturt et al¹², Diabetes Distress, as opposed to other psychological morbidities such as depression and anxiety, was found to be at the root of most peoples' self-care coping struggles with diabetes and was found to be resolvable within the diabetes clinic setting. For example, structured education such as DAFNE has been shown to be an effective tool to reduce diabetes distress^{6,13,14}. However, Sturt et al¹² found clinical depression was a significant contributor to distress in up to a third of patients with elevated diabetes distress and consequently care pathways beyond the diabetes team are required for these individuals. It is therefore strongly advised that referral pathways to these psychological services such as IAPT are identified before using any tool to assess the psychological demands of diabetes. The [flow chart](#) on the next page is an example of a pathway for using DDS2 as a screening tool.



To find out more about the relationship between diabetes and depression, what to look for and how to advise a patient who you suspect may have a major depressive disorder **look at the e-learning pages on the King's Health Partners website.**

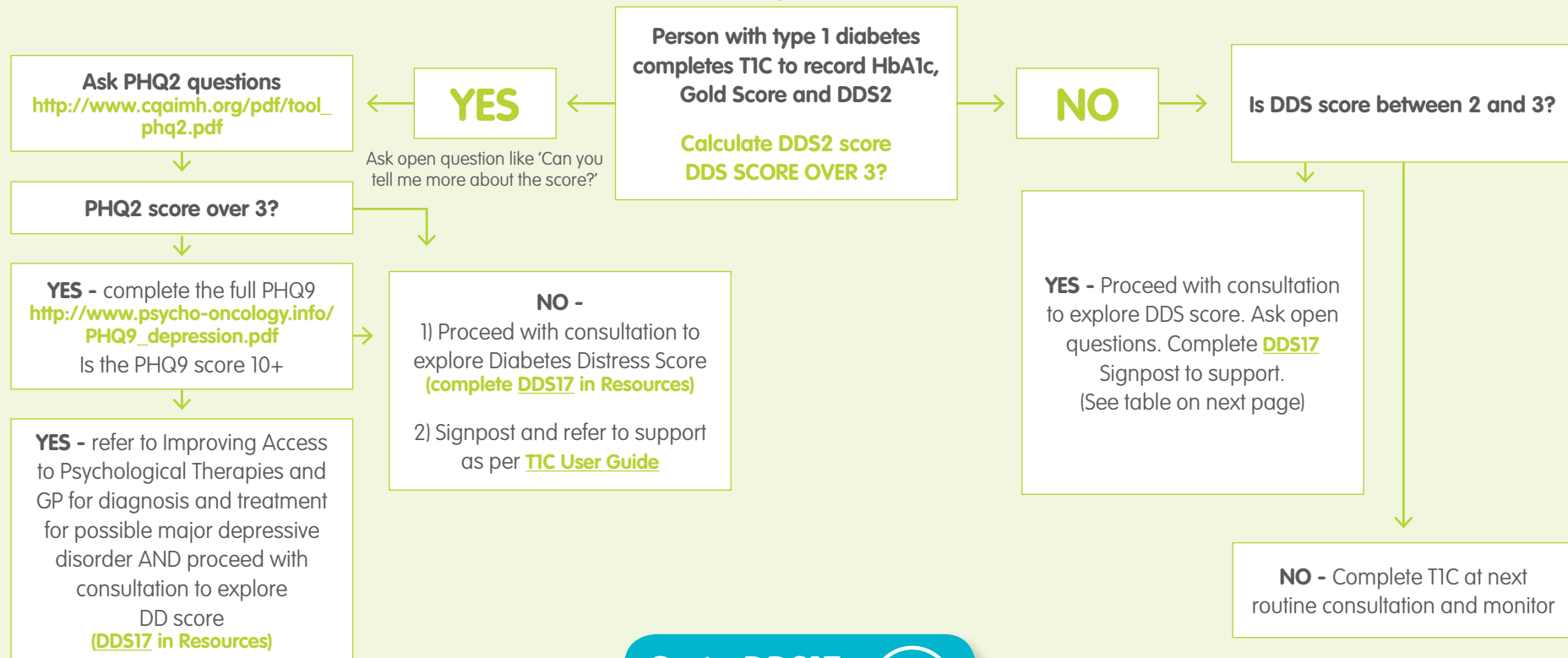


Diabetes Distress

Team to pool knowledge and compile and share a booklet/list of resources to support people living with type 1 and long term conditions generally.

To calculate DDS2 score

Add the score of Q8a and Q8b together and divide by 2 = DDS2 score



Go to DDS17

Diabetes Distress

What do I do now that I know the DDS2 score?

DDS score more than or equal to 3	DDS score 2-3	DDS score less than 2
<p>Complete full <u>DDS17</u> and review together</p> <ul style="list-style-type: none"> Identify particular areas of high DDS? Ask open questions to explore Encourage patient to tell you the detail in 1-2 areas (so they cognitively engage) 	<p>Complete full <u>DDS17</u> and review together</p> <ul style="list-style-type: none"> Identify particular areas of high DDS and problem solve together 	<p>Repeat DDS2 annually and monitor</p>
<p>Offer additional appointments/contacts</p>	<p>Consider using email/Skype/text consultations to add in support (reduce sense of isolation)</p>	<p>Consider emotional aspects of diabetes if a rise in HbA1c is observed</p>
<p>Consider using email/Skype/text consultations to enable more contact</p>	<p>Introduce to Diabetes Online Community via Twitter, Facebook, forums</p>	<p>Take a preventative approach to Diabetes Distress using the TIC at each appointment</p>
<p>Introduce DAFNE or equivalent as an option and if reluctant discuss timescales and building blocks for future referral</p>	<p>Introduce to local diabetes support groups/expert patient groups</p>	
<p>Signpost peer support for those where isolation may be a large factor, ask "Do you know anyone else with type 1 diabetes that you can share experiences with?"</p>	<p>Review structured education needs and perceptions</p>	
	<p>Complete DDS2 at each consultation and at least 6 monthly</p>	

The Health Innovation Network does not endorse opinions and/or views expressed on social media platforms. People with diabetes should consult their healthcare professional as they would normally do, when discussing the management of their diabetes.

Resources



Introduction



Your clinic



Usage guide



Hypoglycaemia



Hyperglycaemia



Diabetes Distress



Resources



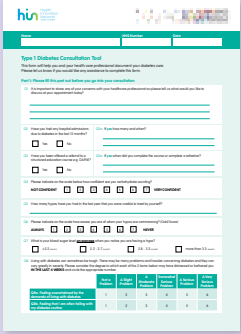
Acknowledgments



References


Resources

The Type 1 Consultation tool (TIC)




You can download the TIC here

The Large Text Type 1 Consultation tool (TIC)



You can download the large text TIC here

Diabetes Distress 17 (DDS-17)



You can download here

Explanation sheet



You can download an example cover sheet here

Resources - Psychological assessment tools

Improving Access to Psychological Services (IAPT)

Some patients are likely to benefit from IAPT services (please see suggested **flow diagram** in Diabetes Distress section). For details on local IAPT services and how to refer (many offer self-referral) please see the directory available here



Go to website

Diabetes and driving

People with Type 1 Diabetes can be reluctant to share that they've experienced a severe hypoglycaemic episode due to concern over losing their licence – hence it is important to re-iterate that there are things that we can do to support them to prevent hypoglycaemia either via education or the use of technology.

By law a person with any insulin dependent form of diabetes who holds any UK driving licence must inform the DVLA.

Further details of the DVLA regulations and guidance for professionals can be found at the following links:

[A guide to filling in your DIAB1 medical form](#) >

[Assessing fitness to drive](#) >



Acknowledgments

The Health Innovation Network and King's Health Partners would like to thank the following individuals and organisations for their input to the Type 1 Consultation tool and User Guide through sharing their resources, best practice, time and knowledge.

Autors

Dr Pratik Choudhary

Senior Lecturer and Consultant in Diabetes, King's College London

Faye Edwards

Senior Project Manager "Diabetes Programme" Health Innovation Network

Dr Natasha H Patel

Consultant Diabetologist, Guy's and St Thomas' NHS Foundation Trust

Laura Spratling

Programme Director, Diabetes & Atrial Fibrillation, Health Innovation Network

Professor Jackie Sturt

Professor of Behavioural Medicine in Nursing, King's College London

We would like to thank the following contributors

Professor Stephanie Amiel

RD Lawrence Professor of Diabetic Medicine, King's College London

Dr Neel Basudev

Clinical Director (Diabetes Programme) Health Innovation Network and GP, Lambeth

Conor Fisk

Project Manager Technology and Communications, Health Innovation Network

Geraldine Gallen

Senior Diabetes Specialist Nurse, King's College Hospital

Dr David Hopkins

Clinical Director, Division of Ambulatory Care & Local Networks, King's College Hospital NHS Foundation Trust

Beth Nelson

Data Assistant, Health Innovation Network

Siobhan Pender

Diabetes Specialist Nurse, Guy's and St Thomas' NHS Foundation Trust

Dr Stephen Thomas

Clinical Director, London Diabetes Clinical Network, Consultant in Diabetes and Endocrinology, Guy's and St Thomas' NHS Foundation Trust

The members of the Health Innovation Network Diabetes Patient Reference Group

The members of the London Type 1 Network

References

1. Duckworth, Abira C., Mortitz T., Reda D., Emanuele N., Reaven P.D., Zieve F.J., Marks J., Davis S.N., Hayward R., Warren J.D., Goldman S., McCarren M., Vitek M.E., Henderson W.G., Huang GD., for VADR investigators (2009).

Glucose control and vascular complications in veterans with Type 2 diabetes. *New England Journal of Medicine* 360(2): 129-139.

2. The Advance Collaborative Group (2008)

Intensive blood glucose control and vascular outcomes in patients with Type 2 diabetes. *New England Journal of Medicine* 358(24): 2560-2572.

3. Action to control cardiovascular risk in Type 2 diabetes Study Group (2008)

Effects of intensive glucose lowering in Type 2 diabetes. *New England Journal of Medicine* 358(24): 2545-2559.

4. Inzucchi S.E, Bergenstal R.M, Buse J.B, Diamant M., Ferrannini E., Nauck M., Peters A.L., Tsapas A., Wender R. & Matthews D.R. (2012)

Management of hyperglycaemia in type 2 diabetes: a patient centred approach. *Diabetes Care* 35, 1364-1379. 21. National Institute for Health and Care Excellence

5. Choudhary P, et al. Diabetes Care. 2015.

Evidence-informed clinical practice recommendations for treatment of type 1 diabetes complicated by problematic hypoglycemia.

6. Sturt, J., Dennick, K., Due-Christensen, M. and McCarthy, K., 2015.

The Detection and Management of Diabetes Distress in People with Type 1 Diabetes. *Current diabetes reports*, 15(11), pp.1-14.

7. Strandberg et al.

Relationships of diabetes-specific emotional distress, depression, anxiety, and overall well-being with HbA 1c in adult persons with type 1 diabetes. *J Psychosom Res* 2014; 77(3): 174-79 ;

8. Welch, G.W., Jacobson, A.M. and Polonsky, W.H., 1997.

The Problem Areas in Diabetes Scale: an evaluation of its clinical utility. *Diabetes care*, 20(5), pp.760-766.

9. Polonsky, W.H., Fisher, L., Earles, J., Dudl, R.J., Lees, J., Mullan, J. and Jackson, R.A., 2005.

Assessing psychosocial distress in diabetes development of the diabetes distress scale. *Diabetes care*, 28(3), pp.626-631.

10. Fisher L, Polonsky WH, Hessler DM, Masharani U, Blumer I, Peters AL, Strycker LA, Bowyer V.

Understanding the sources of diabetes distress in adults with type 1 diabetes. *Journal of Diabetes and its Complications*. 2015 Jun 30;29(4):572-7.

11. Fisher, L., Glasgow, R.E., Mullan, J.T., Skaff, M.M. and Polonsky, W.H., 2008.

Development of a brief diabetes distress screening instrument. *The Annals of Family Medicine*, 6(3), pp.246-252.

12. Sturt, J., McCarthy, K., Dennick, K., Narasimha, M., Sankar, S. and Kumar, S., 2015.

What characterises diabetes distress and its resolution? A documentary analysis. *International Diabetes Nursing*, 12(2), pp.56-62.

13. Sturt, J., Dennick, K., Hessler, D., Hunter, B.M., Oliver, J. and Fisher, L., 2015.

Effective interventions for reducing diabetes distress: systematic review and meta-analysis. *International Diabetes Nursing*, 12(2), pp.40-55

14. Hagger, V., Hendrieckx, C., Sturt, J., Skinner, T.C. and Speight, J., 2016.

Diabetes Distress Among Adolescents with Type 1 Diabetes: a Systematic Review. *Current diabetes reports*, 16(1), pp.1-14

