JBDS-IP Joint British Diabetes Societies for inpatient care

RC PSYCH ROYAL COLLEGE OF PSYCHIATRISTS

The management of diabetes in adults and children with psychiatric disorders in inpatient settings

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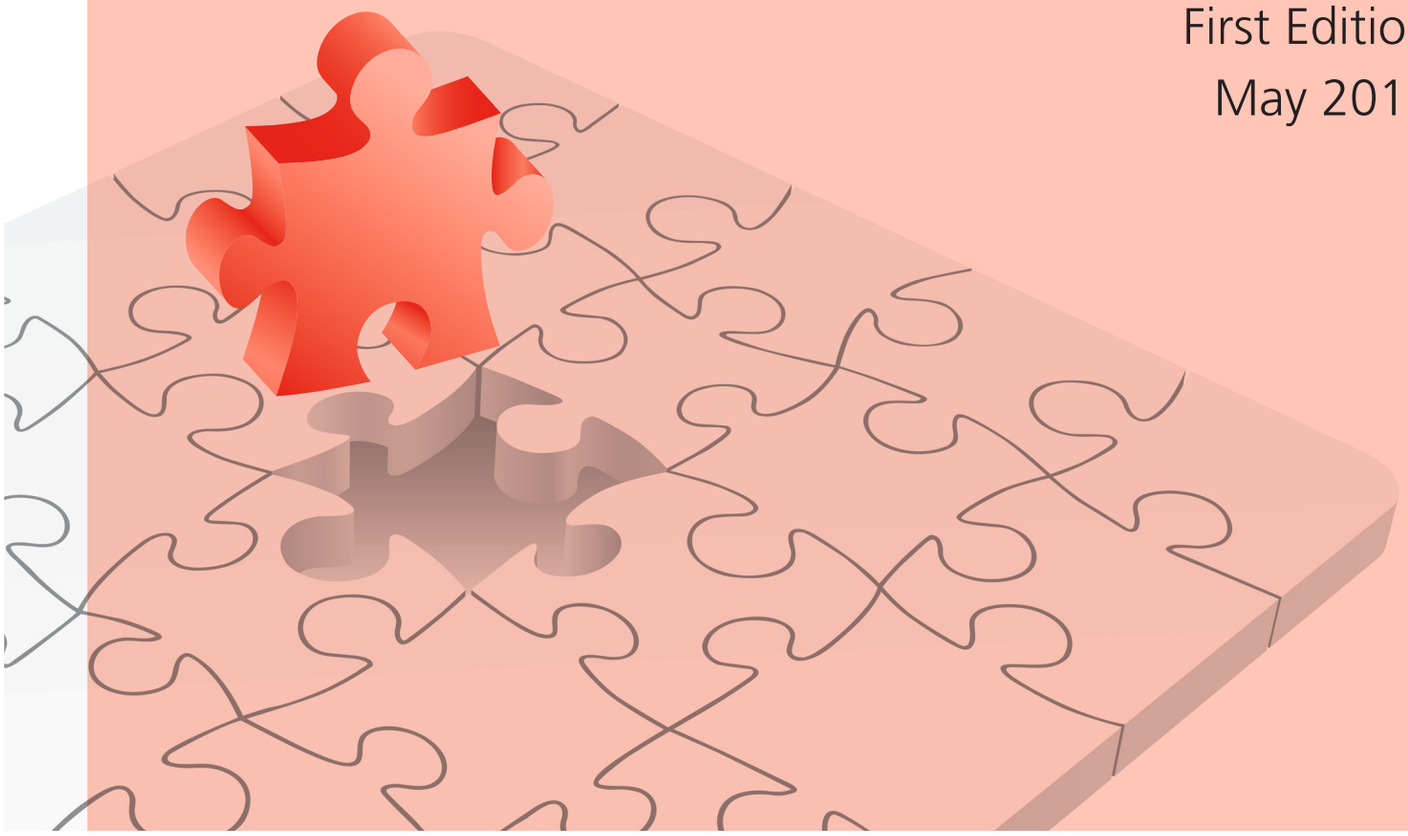

DIABETES UK CARE. CONNECT. CAMPAIGN.

ABCD Association of British Clinical Diabetologists

DISN UK GROUP

UKCPA CLINICAL PHARMACY ASSOCIATION

WEDS welsh endocrine and diabetes society

This document is coded JBDS 13 in the series of JBDS documents:

Other JBDS documents:

Management of glycaemic control in pregnant women with diabetes on obstetric wards and delivery units May 2017 JBDS 12

Management of adults with diabetes on the haemodialysis unit April 2016 JBDS 11

Discharge planning for adult inpatients with diabetes October 2015 JBDS 10

The use of variable rate intravenous insulin infusion (VRIII) in medical inpatients October 2014 JBDS 09

Management of Hyperglycaemia and Steroid (Glucocorticoid) Therapy October 2014 JBDS 08

Admissions avoidance and diabetes: guidance for clinical commissioning groups and clinical teams December 2013 JBDS 07

The management of the hyperosmolar hyperglycaemic state (HHS) in adults with diabetes August 2012 JBDS 06

Glycaemic management during the inpatient enteral feeding of stroke patients with diabetes June 2012 JBDS 05

Self-Management of Diabetes in Hospital March 2012 JBDS 04

Management of adults with diabetes undergoing surgery and elective procedures: improving standards Revised March 2016 JBDS 03

The Management of Diabetic Ketoacidosis in Adults Revised September 2013 JBDS 02

The Hospital Management of Hypoglycaemia in Adults with Diabetes Mellitus Revised September 2013 JBDS 01

These documents are available to download from the ABCD website at www.diabetologists-abcd.org.uk/JBDS/JBDS.htm and the Diabetes UK website at www.diabetes.org.uk/joint-british-diabetes-society

1 Executive summary

Nearly every category of ICD-10 Chapter F (mental disorders) is associated with diabetes and with worse outcomes and premature mortality.[1] In addition, many people with diabetes suffer from diabetes related distress.

The quality of the diabetes care provided for people with mental illness is suboptimal regardless of whether the clinical presentation is in acute or mental health settings or primary care. However, when patients are admitted, there is often an urgent clinical need to optimise both conditions. We have chosen the inpatient setting because it is also a window of opportunity to effect better shared care planning and decision making.

This working group gives guidance for reconfiguring of services to reduce the alarmingly high rates of morbidity and premature mortality related to diabetes in people with mental illnesses. We expect equivalent levels of care for diabetes in people with and without mental illness in order to improve mental health and reduce the risk of diabetes complications. We encourage good practice through collaborative working, raising awareness, improved communication, introducing mandatory training and skills competencies all embedded in a patient-centred approach. Local variation in diabetes outcomes in those with and without mental illnesses should be audited, and commissioners held to account if services are not meeting the needs of this high risk and vulnerable group. There is a need for more commissioning and research investment to develop and evaluate novel clinical innovations to better support our patients with both diabetes and mental illness. There is a need for a system and culture change in the NHS to genuinely integrate the mind and body and incentivise best practice.

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4 Foreword

The association between diabetes and mental illness is well recognised, and this co-morbidity leads to worse outcomes for both conditions. Despite this, integrated care for these patients remains poor and commissioned services to improve the care for these patients are almost non-existent.

This joint work between psychiatry and diabetes professionals (with JBDS – IP and RCPsychiatrists) is the first time a national collaboration has had the primary aim of providing guidance to improved care and outcomes for people with both diabetes and mental illness in an in-patient setting.

We have arranged these guidelines by type of inpatient setting and have produced recommendations that are generic and setting specific.

Many of the recommendations are obvious, but are rarely addressed at organisational, commissioning or clinical levels. Care for people with mental illness and diabetes should be the same as for those without diabetes and adjustments should be made to take account of the complexity of delivering genuine integrated care to this co-morbid high risk group.

We urge healthcare professionals working in both mental health and diabetes care to use these guidelines to start conversations with their own Trusts and commissioners to ensure that local services meet the needs of this group of patients.

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5 Abbreviations

SMI	Severe mental illness
CBT	Cognitive behavioural therapy
MDT	Multidisciplinary team
DKA	Diabetic ketoacidosis
rDKA	Recurrent diabetic ketoacidosis
ECT	Electroconvulsive therapy
LD	Learning Disability
CQUIN	Commissioning for Quality and Innovation payment
CYP	Children and Young People
ED	Eating Disorder

6 Introduction

Comorbid mental illness and diabetes present a unique set of challenges both for the patient and for healthcare providers. The evidence for effective interventions is limited and there are no consensus treatment guidelines. Added to this are the inherent difficulties of delivering care across parallel organisational and operational boundaries and a recognition that individuals with psychiatric disorders often struggle to access routine physical healthcare and have other inequalities in health.[2]

Nearly every category of ICD-10 Chapter F (mental disorders) is associated with diabetes (type 1, type 2 or both).[1] In addition, many people with diabetes suffer from diabetes related worries, fears and distress such as fear of hypoglycaemia, complications, failing and the burden of the permanence of the condition.

Individuals with schizophrenia and other mental illnesses are at an increased risk of developing type 2 diabetes.[3] In addition, their life expectancy is reduced by approximately 20 years compared to the general population, with much of the excess mortality attributed to higher rates of cardiovascular disease (CVD).[4] The risk of diabetes is observed regardless of whether individuals are receiving antipsychotic medication, although receiving such medications further increases the risk of diabetes and of premature CVD-related mortality.[5–7] The reasons behind this increased risk of type 2 diabetes and premature CVD mortality are multifactorial and include increased rates of smoking, poor diet, obesity, lower levels of physical activity and antipsychotic medication in the context of institutionalisation even in the community.[8–11]

In spite of this well-recognised increased risk, the quality of the diabetes care provided for people with SMI is poor and people are less likely to receive the full complement of recommended services and support.[12,13] In addition, deaths from acute complications of diabetes in individuals with SMI but unrecognised diabetes have been reported.[14]

These issues are not restricted to individuals with schizophrenia but have been recognised in every area of psychiatry including child and adolescent, learning disabilities, liaison psychiatry, eating disorders and older adults.[2,15,16] Therefore this guidance is categorised by in-patient setting.

This document aims to provide guidance to support inpatient mental health teams and medical teams in acute trusts to optimise glycaemic control in their patients with mental illness and diabetes and to inform commissioners about models of care that provide high quality and cost effective diabetes and psychiatric care with an excellent patient experience.

7 Purpose of these guidelines

This working group calls for configuration of services to reduce the alarmingly high rates of morbidity and premature mortality related to diabetes in people with mental illnesses. We expect equivalent levels of care for diabetes in people with and without mental illness in order to improve health and reduce the risk of diabetes related complications. We encourage good practice through collaborative working and a patient-centred approach. Local variation in diabetes outcomes in those with and without mental illnesses should be challenged and commissioners held to account if services are not meeting the needs of this high risk and vulnerable group. A change in culture is needed that adopts the mind-body model of integrated care and incentivises best practice.

8 Summary of key recommendations

8.1 Commissioners

- Ensure the needs of people with diabetes and SMI are specifically addressed in contracts with providers of in-patient care
- Avoid financial or other barriers to cross-organisational working, make specific targeted efforts to bring all relevant health care professionals together to scope and address obstacles to good care
- Ensure patient structured education is commissioned that meets the complex needs of people with diabetes and serious mental illness
- Consider incentivising good joint care for example through CQUINs

8.2 Acute trusts

- Develop joint pathways with mental health providers
- Facilitate MDT working with mental health professionals
- Screen for mental ill health in those admitted with acute complications of diabetes whose aetiology is unclear or not medically explained and ensure staff are appropriately trained to do this

8.3 Mental health trusts

- Create a diabetes register particularly in units where individuals may have prolonged inpatient admissions (for example secure hospitals)
- Screen for diabetes particularly in those prescribed second generation antipsychotics
- Implement diabetes-related competencies as part of mandatory training with particular focus on managing and avoiding hypoglycaemia and safe use of insulin
- Audit current practices in diabetes care

8.4 Clinical teams

- Ensure staff receive the basic skills in diabetes and in mental health that are in keeping with their job role to care for patients with comorbidity
- Develop and increase awareness of local pathways and policies for contacting diabetes or mental health services
- Ensure best practice tariff criteria are met for DKA and hypoglycaemia and for children and young people with diabetes

9 Older People: Dementia and Later Life Functional Disorders

9.1 Epidemiology

Type 2 diabetes is associated with a 60% greater risk of developing any dementia and diabetes may present for the first time in a person with cognitive impairment or dementia.[17] Around 20% of older adults have type 2 diabetes and in residential or care homes, the prevalence of type 2 diabetes is even higher (27%).[17–19] The prevalence of diabetes amongst patients in an older adults mental health ward has been found to be 20% with an estimated 13% of patients having undiagnosed diabetes.[20]

Cognitive impairment is associated with suboptimal diabetes self-management including medication adherence, missed clinic appointments, poor insulin administration technique and inability to recognise and self-manage episodes of hypoglycaemia which may be result in an acute admission.[21,22] Those with cognitive impairment and diabetes who are treated with insulin are significantly more likely not to know what to do in the event of low blood sugar or how to manage medication in the event of sickness.[21]

A heightened problem in older adults with diabetes is the increased risk of hypoglycaemia. Around 15,000 hospital admissions/year in England and Wales are secondary to hypoglycaemia in people aged over 60 years, most of whom have type 2 diabetes, and this is attributed to anti-diabetes polypharmacy, altered eating habits and poor nutrition.[22–26] Nutritional compromise is a significant difficulty in severe mental illness, with audit data showing that 15% of female inpatients in mental health settings have a BMI of <18 kg/m^2 and 5% have a BMI<14 kg/m^2.[27]

Adverse outcomes of hypoglycaemia include worsening cognitive impairment, further malnutrition, falls, fractures, cardiovascular and cerebrovascular events, increased hospital admissions and death.[23,28–30] Screening for diabetes and a clinical review is always indicated in any older adult admitted to any inpatient setting.

9.2 Overview of models of care

9.2.1 Diabetes and Dementia

1. While there are no NICE guidelines for comorbid diabetes and dementia, in each condition, there is guidance that reinforces the need for early diagnosis, improved access to diagnostic and specialist clinics, access to the right information systems, and to increase the participation of individuals with either condition in routine and regular health checks.[31,32]

2. Early diagnosis of either diabetes in individuals with dementia, or of dementia in individuals with diabetes, is important as it should be a prompt for ensuring regular review processes are in place for risk factor management and screening for diabetes or dementia prevention. Early diagnosis also allows family members or carers to support self-management, manage hypoglycaemia risk and avoid hospital admissions.

3. A key component is to address social problems in older people with comorbid diabetes and mental illness. They are more likely to be in need of social support to help self-manage and the role of formal and informal careers needs to be explicitly stated.[30]

9.2.2 Examples of best practice

9.2.2.1 Best Clinical Practice Statement for Diabetes and dementia

In 2014, a National Expert Group produced a **Best Clinical Practice Statement** to inform commissioners, health and social care professionals and other stakeholders of approaches that can be employed to enhance the quality of care for older people with diabetes and dementia.[22] This Statement outlined a common set of 'principles of care', practical guidance to primary care professionals and an emphasis on cooperation between clinical teams in developing a clinical pathway that integrates effective management of both conditions. It advocated an emphasis on early detection of either condition to promote independence, improve health-related quality of life, reduce carer burden and reduce healthcare costs.

9.2.2.2 Care Quality Commission for Care Homes

In 2015, the Care Quality Commission outlined diabetes guidance to Inspectors of Care Homes that focused on ensuring that four main elements of care should be present: screening for diabetes at admission, having a fully-stocked hypoglycaemia kit available, a risk-calculation assessment tool for diabetes foot disease, and better training and education of care home staff on diabetes and its complications were emphasised.[33]

9.2.2.3 Producing individualised diabetes care, dementia care settings, nationwide

Multiple examples of good practice emerged across old age psychiatry in the UK of pragmatic, risk versus benefit analyses of secondary prevention diabetic medication in later life patients with dementia. Many clinicians adopted a pragmatic approach to diabetes care prioritising hypoglycaemia avoidance and immediate control of diabetes over longer-term complications.[29,33,34] This appeared to work best when a best interest approach was used, involving the patient (as appropriate), their family and the wider MDT. This resulted in a rationalisation of medication reflecting the life expectancy and therefore a reduction of adverse effects associated with polypharmacy. It was noted that presentations in later life patients with severe mental illnesses, especially cognitive impairment or executive dysfunction syndrome (previously known as pseudodementia) may present very differently with hypoglycaemia and therefore individualised care planning is vital.

9.2.2.4 Collaborative working in a later life mental health ward in Lancashire

A further example of good practice came from involving a consultant diabetologist in conjunction with a consultant old age psychiatrist when planning ECT and re-feeding in a functional patient with a very low body mass index (<15 kg/m2).[35] Good communication and collaborative working were identified as key points in providing leadership to medical teams and mental health teams unfamiliar with the other's models of care.

9.3 Recommendations

9.3.1 Immediate

1. In mental health and residential settings, screening for diabetes in those not known to have the condition and performing a diabetes review (with particular emphasis on reducing the risk of hypoglycaemia) in those who do is always indicated in any older adult. This should include a medication review to ensure that anti-diabetes drugs with a low risk of hypoglycaemia are used, and where insulin is required, the regimen and dose schedule should be reviewed regularly to adjust to changing circumstances.[32–34]

2. In acute trust inpatient settings, older adults with diabetes should have a mental health assessment for cognitive impairment, depression, psychosis and alcohol use if there are concerns that impaired cognition is hindering diabetes self-management or may have contributed to the need for hospital admission (for example hyperglycaemia due to missed insulin administration). This should be aligned with current local definitions for 'older' and pathways for memory screening services.

3. Hypoglycaemia as a contributory part of the reason should be excluded. If present, review current medications and consider prescribing glucose-lowering agents with a low risk of hypoglycaemia.

9.3.2 Longer term

1. Acute trusts and older adult mental health and services should share the same clinical pathways for both diabetes and dementia. The focus should be on early recognition that a person has developed diabetes, applying a common set of key principles of care, safe medication usage, and implementing a 4-step approach for each condition that allows local policies of care to be adapted to enhance the quality of care in both conditions.[22] The 4-step approach is designed to provide a framework of care aligned to the stage of severity of the dementia. In the dementia care setting, the steps include: proactive screening for diabetes, symptom alleviation and assessment for complications, risk minimisation and palliative care approaches in advanced dementia. In the diabetes care setting, the steps include increasing awareness of and screening for dementia where appropriate during an in-patient admission, managing the cognitive deficit and minimising therapy risk, and in those with advanced dementia, incorporating a palliative care approach and reducing medication appropriately.[34] There are many simple screening measures for cognitive impairment which should be familiar to healthcare professionals including the Mini-Mental State Examination.[36]

2. Implement a competency framework in acute NHS trusts, primary care and care home settings that outlines the training and educational needs of direct care staff in the management of patients with diabetes and dementia. The scale of the implementation can be decided locally, whether it is appropriate for all those employed by the trust or specific clinical teams. For diabetes in mental health settings, the Training, Research and Education for Nurses in Diabetes competency framework can be used to learn about safe glucose targets, detecting and minimising the risk of hypoglycaemia and hyperglycaemia.[37] For mental health in acute medical settings, opportunities for acquiring skills in assessing for mental illness, namely, cognitive impairment, depression, psychosis and alcohol use should be made available, for example the joint RCPsych and RCP e-learning modules for common mental health problems in acute settings.[38]

3. Develop an understanding of the balance between managed risk and patient autonomy for individualised diabetes treatment. This is best demonstrated by adopting a care planning and multi-disciplinary approach.[39]

4. Implement audits of care pathways and processes in NHS and care home settings that will provide key evidence concerning: the key barriers and facilitators to improving diabetes care in dementia and vice versa, resources required, effective involvement of patients and carers, and outcomes best suited to measure good quality care. The scope and scale of the audit can be determined locally.

10 In-patients in acute hospital trusts

10.1 Epidemiology

The association between the risk of having diabetes and psychiatric disorder is strong and consistent across different settings.[40,41] A common clinical conundrum for acute medical teams is differentiating formal ICD-10 psychiatric disorders from psychological distress. The rule of thumb is to assess for both.[41–43]

The most common comorbid presentation, where diabetes is the primary reason for admission, is recurrent DKA (rDKA) in young people with type 1 diabetes. Typically, the DKA admission is not medically explained (e.g., secondary to infections or iatrogenic failure of pumps) and may be regarded as a form of self-harm or a cry for help. Although there has been little research to understand the psychological issues associated with rDKA, anecdotally physicians are aware that there may be underlying mental health issues and often information communicated to primary care colleagues following an admission is of poor quality and incomplete.[44] Eating disorders are well recognised as a risk factor in rDKA admissions.[45] When formally assessed by liaison mental health teams, previously undiagnosed psychiatric disorders such as depression and eating disorders, emerge, alongside related difficulties such as borderline personality traits and predisposing factors such as history of family conflict, and childhood adversity or abuse.[46]

The prevalence of deliberate overdose of oral hypoglycaemic agents and suicide attempts in people with diabetes is estimated at around 15%, but 'slow suicides' of deliberately not taking medications is unrecognised but anecdotally a common presenting problem when exploring adherence to self-management and is in keeping with self-neglect and low self-esteem in depression.[47,48]

Depression is a common finding in patients with diabetes, with an average prevalence of around 10%, and increases as the burden and disability from diabetes complications progresses. People with diabetes are twice as likely to have a depressive illness compared to the general population.[49–51]

10.2 Overview of models of care

Although there are clear guidelines for the management of diabetes emergencies, there are few studies or guidelines that inform the management of patients with diabetes and mental illness when admitted to the acute medical setting. Yet, the inpatient admission should be regarded as a 'window of opportunity' to identify and initiate integrating psychological care to support self-management.

10.2.1 DKA

Currently NICE guidelines for DKA in children and young adults and for adults do not include psychological assessment or management after an episode of DKA but they should do, and this should be good clinical practice.[52,53] The JBDS DKA guidelines recommend that psychological support should be given by a member of the diabetes team prior to discharge as an audit standard, but this is not incentivised as part of the Best Practice Tariff for DKA.[54,55] While laudable, this may not be sufficient to identify and manage significant psychiatric morbidity and a formal mental health assessment, ideally by a liaison psychiatrist with some expertise in diabetes, should be a minimum standard. Family therapy, out-of-hours diabetes support and active follow-up by diabetes educators have been shown to reduce the number of admissions in this group.[56,57] There is no consensus for the definition of recurrent DKA. We propose a working definition of a second or more episodes of DKA that is not medically explained in the context of persistent

hyperglycaemia.[58] The rationale is that while there are pathways and access to diabetes care, those with psychological and social problems tend not to access these. Using DKA as a red flag for a psychiatric assessment will improve detection of these problems.

10.2.2 Self-harm

If patients are admitted with self-harm, or a suicidal attempt then they should routinely be asked about suicidal ideation and whether they have considered using insulin by a member of the admitting team.[59] Self-administration of insulin whilst in hospital should be carefully considered for people who definitely self-harm and may require supervision.[60]

10.2.3 Depression

NICE Clinical Guideline 91 addresses the treatment of depression in chronic physical health conditions although not specifically diabetes.[59] These guidelines adapt the stepped care model for depression including psychological and social interventions and antidepressants. A key underlying principle is that of collaborative care, integrating the treatment of depression with optimising diabetes management, ideally within the same clinical team, is likely to lead to improved outcomes for both conditions than segregating their care.[61]

10.2.4 Personality disorder

Assessment by a liaison psychiatrist or other mental health professional is likely to be helpful, considering that a diagnosis of personality disorder should not be made just on the basis of behaviour during the current, or previous admissions, as stress, pain and abnormal glucose levels are likely to exacerbate personality traits.[62] Be aware of rare presentations of factitious disorder when patients deceive or mislead the clinical teams by deliberately over or under titrating insulin to cause hypoglycaemia or hyperglycaemia. Strategies for managing patients with personality disorder are more likely to be successful if the patient, and if possible carers, are involved. Writing these agreements down can be helpful.[63]

10.3 Examples of best practice

10.3.1 The Psychological Care of Medical Patients: A Practical Guide (2003)

The general principles for the management of patients with mental illness in the general hospital have been outlined by the above document which has been updated with a series of e-learning modules for physicians (can be accessed via the RCP website).[64] These guidelines recommend referring to a psychiatrist if:

- there is a need to exclude a psychiatric disorder as part of the assessment
- treatment of a comorbid psychiatric disorder is indicated
- the psychiatric condition has not responded to treatment
- self-harm is a risk
- behavioural disturbance needs management
- the psychiatric disorder requires follow-up after discharge
- mental capacity for consent needs a second opinion
- the Mental Health Act 1983 is indicated
- there is persistent misuse of drugs or alcohol

These provide a generic framework for joint working of diabetes and mental health professionals.

10.3.2 Cambridge intervention for admission prevention (JBDS admission prevention)

Simmons and colleagues assessed the use of a pilot multi-modal diabetes and mental health intervention in patients presenting with recurrent admissions.[65] Of the 58 patients admitted, 50 had Type 1 diabetes. Of these, 32 (64%) had a pre-existing mental health issue and 14 (28%) had a complex social situation. In all, 96% of patients were met as an inpatient by a team member, and 94% accepted at least one intervention. The mean number of admissions per patient/month dropped from 0.12 to 0.05 during the intervention, increasing once the intervention ended, to 0.16. The mean length of stay similarly decreased and increased (0.6 to 0.2 days) to 0.6 days per patient/month. The mean HbA1c level dropped from 99 to 92 mmol/mol but did not increase after the intervention. This intervention was cost-effective even after paying for the staff team.

10.3.3 Ipswich assessments for all admissions with DKA

The psychiatric liaison service at Ipswich Hospital NHS Trust offers a mental health assessment of all adults with type 1 diabetes when presenting with their second DKA admission. This is part of a CQUIN service agreement between Ipswich Hospital NHS Trust and Norfolk and Suffolk Foundation Trust and also includes ongoing training for diabetes staff in mental health presentations.

10.3.4 King's 3 Dimensions of Care for Diabetes (3DFD) model

This south London innovation integrates medical, psychological and social care for patients with type 1 and type 2 diabetes and persistent poor glycaemic control. This service led to improved glycaemic control (reduced HbA1c by 15-17mmol/mol), improved psychological well-being, improved patient satisfaction and reduced use of unscheduled care and related costs, and modest improvement in depressive symptoms at 4 months. Unlike other models, the 3DFD intervention provided an intervention which integrated with both primary care and specialist diabetes services and an inpatient consultation-liaison service to ensure equity of access wherever the patient was located.[46,66]

10.4 Recommendations

10.4.1 Immediate

1. If patients are admitted with self-harm, or a suicidal attempt then they should routinely be offered a mental health assessment, and asked about suicidal ideation and whether they have considered using insulin to self-harm by a member of the clinical team responsible.

2. Psychological factors should always be considered, assessed and excluded in all episodes of DKA. Diabetes services should seize the opportunity to ensure that non-specialist staff are made aware of the need to consider psychological factors in individuals presenting with DKA. This could be implemented through training or through a prompt/red flag in a DKA protocol.

3. Consider supervising self-administration of insulin in hospital for people who self-harm and who have a personality disorder as part of the risk assessment.

10.4.2 Longer term

1. Diabetes health professionals should be trained in conducting brief screenings for psychiatric disorders, especially depression, eating disorders and cognitive impairment. As many hospital inpatients with diabetes are not seen by a member of the diabetes team during their admission, highlighting the association between diabetes and mental ill health to other colleagues through existing educational opportunities within Trusts could be beneficial.[55] Ideally the liaison mental health service within the acute trust should ensure this training is delivered and offer supervision. Self-reported screening for mental health should always be followed by clinical assessment if positive.

2. Diabetes professionals should be confident in assessing mental capacity and using the Mental Capacity Act.[67]

3. Liaison mental health teams should be actively involved and open minded in supporting diabetes teams with complex situations even where there is no formal psychiatric disorder or typical 'psychiatric' presentation for example, where there is persistent hyperglycaemia or recurrent admissions.

4. Patients with multiple morbidities may require case management and regular MDT meetings to support self-management and continuity of care.

5. Modification of the best practice tariff for DKA to include an inpatient review by a liaison psychiatrist for episodes of DKA that cannot be explained medically. This would require renegotiation of the tariff at a national level, but is potentially achievable. This can be achieved by working with the NHS England Best Practice Tariff team and colleagues working with the team to represent the views of the diabetes community.

11 General Adult Mental Health Units including forensic and criminal justice, learning disability and substance misuse

11.1 Epidemiology

It is estimated that up to 20% of adult psychiatric inpatients have diabetes.[68] All antipsychotics are associated with some degree of weight gain, but second-generation antipsychotics have the greatest weight gain, glucose and lipid dysregulation.[68–73] Second generation antipsychotics include clozapine, olanzapine, quetiapine and risperidone, with clozapine and olanzapine conveying the greatest risk of weight gain, diabetes and dyslipidaemia.[74–76]

11.2 General adult setting

Short admissions with an acute psychiatric presentation may discourage clinical review of metabolic status but do represent a window of opportunity to initiate diabetes care plans integrated into the mental health care plan.

11.2.1 Mentally disordered offenders

The prevalence of diabetes in adult forensic inpatient units has been found to be approximately 14%.[77] Mentally disordered offenders are likely to have the more severe forms of mental illness which are often treatment resistant. They are often prescribed combinations of antipsychotics and may spend many years institutionalised in secure hospital or residential care. There is a lack of research on the level of diabetes care delivered for the mentally ill in residential care facilities.[78]

There are often many contradictions between diabetes guidelines and delivering healthy lifestyles within the confines of care homes. Although it is mandated in group home guidelines that healthy meals are provided, this is limited within the context of a limited food budget and inspections carried out by the Public Health Department focus primarily on food safety.[79]

Diabetes teams need to appreciate the limitations of the forensic environment on the management of diabetes including limited access to lancets for self-glucose testing, restricted meal choices and opportunities for physical activity and structured education. Self-monitoring of blood glucose can only be undertaken by a healthcare professional and not by the patient themselves.

11.2.2 Substance misuse

The association between alcohol consumption and hypoglycaemia has been long recognised.[80] This risk can be increased further by the concomitant use of hypoglycaemia inducing medication.[81] Individuals with substance misuse disorders, have a significantly increased risk of hospitalisation, unplanned hospital admissions and premature death from diabetes complications compared to matched controls.[82] Once in hospital, length of stay is increased.[83]

Whilst there are no studies of the management of diabetes in the context of alcohol dependency acute intoxication or increased levels of long term consumption, these may result in reduced compliance with glucose lowering medications and recommended lifestyle measures such as diet and exercise.[84–87] Furthermore, chronic alcohol dependence may lead to acute and chronic pancreatitis and in turn to diabetes, pancreatic insufficiency and chronic pain, which adds to the complexity of managing this small but difficult to treat group.

Individuals with substance use disorders and diabetes are less likely to have annual diabetes care processes than those with diabetes alone and have an increased risk of amputations and hospital admissions for diabetes related complications.[88,89]

Young people with type 1 diabetes and a history of drug use have an increased risk of mortality and are less able to self-manage their diabetes than those who do not have comorbid substance misuse.[90]

There is a clear need for care to be commissioned for people with substance misuse and diabetes given the high prevalence of diabetes-related complications and premature death in this vulnerable group.

11.2.3 Learning disability

There are no studies that report the prevalence of diabetes in learning disability (LD) units. People with LD are less likely to receive health care, see their GP and more likely to die prematurely compared to those without LD or the general population.[15,81,91,92] Obesity and type 2 diabetes is common in patients with LD due in part to institutionalisation, poor diets and lack of exercise, a lack of targeted health promotion information, and a genetic predisposition in certain groups (such as those with Down's syndrome).[93–95] Literacy and social capabilities range a great deal indicating that typically commissioned structured group education needs to be modified to meet the needs of this group.

11.3 Examples of Best Practice

11.3.1 Screening for diabetes in the Barnet and Enfield Well-Being clinic

The Barnet and Enfield Well-Being clinic is a nurse-led clinic for people with serious mental illness providing a clozapine service and a depot clinic. A simple screening programme for detecting undiagnosed diabetes was implemented along with a training programme for clinic staff. Seventeen percent of service users tested were found to have type 2 diabetes previously undiagnosed. The next step for this project is to implement lifestyle modification advice into the well-being clinic.[96]

11.3.2 Implementing a diabetes service in a medium secure unit in Hampshire

Medium secure units care for people who are detained under mental health legislation and pose a serious danger to the public. A diabetes clinic was implemented at Ravenswood House Medium Secure Unit to ensure that all those patients with diabetes had access to specialist diabetes care during their admission. In addition to improving the management of diabetes and cardiovascular disease risk factors in this challenging group of patients, the service has also resulted in two-way learning between the diabetes team and the mental health team.[97]

11.3.3 Training LD support workers to administer insulin in Hampshire

Insulin administration for frail and vulnerable people living with diabetes in the community is often limited by the availability of community care teams to administer insulin. This can mean that people with learning disabilities may not be able to attend day centres if insulin has not been administered prior to transport arriving. For over four years Southern health NHS Foundation Trust has developed a training programme to allow non-registered practitioners to administer insulin.[98] To date over 100 carers and support workers have been trained.

11.3.4 Camden diabetes and psychosis integrated practice unit

Camden CCG commissioned a diabetes service for residents that focused on diabetes outcomes rather than activity.[99] The contract is a risk and reward block contract, rewarding the providers if the agreed diabetes outcomes are met such as HbA1c and blood pressure. It gives specific focus to the outcomes of those with diabetes who are also on the SMI register. This has established a shared purpose for both the Camden diabetes team and the Camden psychosis integrated practice unit, understanding that mental health workers are often more skilled at assertive outreach and that access to diabetes care at the point of care and contact for mental health is key in the improvement in outcomes for this group.

The first year is not complete and the next step is to redesign diabetes outreach services and up skill the mental health teams to support diabetes management. A 10-point training program has been piloted across Camden including the psychosis IPU to ensure that all those working with clients with diabetes reach a minimum competency.

11.3.5 Implementation of a diabetes service in a mental health trust in Birmingham and Solihull

Birmingham and Solihull Mental Health NHS Foundation Trust is an acute mental health trust which support service users with mental health difficulties throughout the city. A diabetes service was introduced to the trust to help service users, carers and staff understand how diabetes impacts physical and mental health. Support includes helping with improving medication concordance, care planning and reviewing achievable outcomes. The team is also responsible for providing in-house training to all levels of mental health staff to ensure the staff have the knowledge and skills to provide basic diabetes clinics and inpatient diabetes management.[82]

The Diabetes Nurse Specialist service identified the risk to patients with diabetes and psychiatric problems as they did not have prompt access or support for diabetes management. Using the risk register a business case was agreed for 7.5 hours a week of Band 7 Diabetes Specialist Nurse time for an 'In-Reach' DSN service.

11.3.6 Western Sussex Hospitals NHS Foundation Trust working in partnership with Sussex Partnership NHS Foundation Trust (personal communication)

This service provides diabetes advice and education to patients and staff on Inpatient Mental Health and Rehabilitation Units, including learning disability and dementia wards. Support includes telephone and email advice, site visits, formal and informal education. A 'Breakfast meeting', lasting 45 minutes provides education for staff and patients that have or are at risk of developing diabetes. This is an interactive meeting to discuss diagnosis, reducing risks and awareness of carbohydrates and calories, using food models.

11.4 Recommendations

11.4.1 Immediate

1. Create a diabetes register for all patients registered in a mental health trust. This is particularly useful in long-stay units including secure units. This could be undertaken by any member of the mental health team who has an interest in diabetes. In Ravenswood House, Hampshire this was undertaken by the Medical Devices and Clinic Lead. The arrangements for this can be made locally but the creation of a register enables services to keep track of monitoring of diabetes and can facilitate liaison with other services including retinal screening.

2. Ensure that a named clinical staff member is responsible for ensuring that the inpatient admission is used as an opportunity to complete as many of the NICE recommended care processes as possible.

3. Enhance links between mental health and diabetes service for example by appointing diabetes mental health nurse specialists or by developing a workforce of link nurses who receive additional training in

diabetes and know when and how to contact the diabetes team. An alternative would be a single individual taking on a co-ordinator role.

4. Ensure diabetes is included in continuing professional development and training for mental health teams. This could be by holding joint educational events with the diabetes team or by lobbying mental health trusts to mandate training such as the online e-Module 'Safe Use of Insulin' for all clinical staff.[100]

5. Ensure the food provided in inpatient units meets the needs of people with diabetes. For those with obesity and type 2 diabetes not at risk of hypoglycaemia catering staff should be encouraged to control portion sizes.[101]

6. Monitoring glucose on a regular basis and appropriately for example before meals or in patients who are restrained.[102]

7. Review rationale for class and type of antipsychotic medication, weighing up its benefits versus its risk of obesity and diabetes in the context of each patients diabetes risk status based on easy to use diabetes risk engines. The Maudsley Prescribing Guidelines provide updated evidence based guidance and also have a pharmacy advice telephone helpline for healthcare professionals.[103]

11.4.2 Longer term

1. Mental health teams need clinical pathways to screen patients for undiagnosed diabetes and to manage patients with pre-existing diabetes. JBDS is currently working on producing such guidelines. They will need to be adapted and tailored to the local psychiatric patient population.

2. Patient education

a) Diabetes education should be tailored to meet the needs of people with diabetes and SMI including:

- involving formal and informal carers
- ensuring the information given matches the literacy levels of the patients
- signposting to healthy lifestyle for example exercise on prescription, weight management or smoking cessation

b) Antipsychotic education: People starting antipsychotic medication for the first time, and their carers, should be made aware of the increased risk of developing diabetes (one-third of patients treated with clozapine for five years will develop diabetes) and of the acute symptoms of diabetes.[70,104] Whilst the development of acute decompensated diabetes is reported after the initiation of clozapine, the relative risk of this occurring is not clear.[105] This information should be recorded in their care plan along with information on and how, when and where monitoring for this risk will take place. We recognise the need for this advice to be balanced against the often challenging task of initiating antipsychotic medication for the first time but usually when communicated with the patient's overall best health and interests, this is not a difficult task.

c) Invite commissioners to build into contracts outcomes that include HbA1c, blood pressure and cholesterol measurements for those with SMI not known to have diabetes and a reduction in complications for those with diabetes and SMI.

3. Collaborative working: Providing good diabetes care for people with SMI should not be impeded by organisational or operational barriers. Mental health and diabetes teams should know how, when and why to contact each other and support and education should be provided in a timely manner. An audit of local existing services could inform this.

4. Access: People with SMI with, or at risk of diabetes, should have equity of access to services as those with diabetes alone, including diabetes annual review and the NHS Health Check. Diabetes and mental health teams should champion the needs of this population and make sure local services are commissioned to meet their needs. Joint local CQUINs could be developed to align objectives and incentivise high quality care for those with diabetes and SMI.

5. Training should be provided such that care co-ordinators and inpatient teams have the necessary knowledge and skills to facilitate navigation of diabetes care pathways.

6. Ongoing care: Following discharge from an inpatient psychiatric setting arrangements should be in place for the person's ongoing management and monitoring of their diabetes. This needs to include a crisis care plan and individualised glucose and other targets and identifying which clinical team is responsible for monitoring and managing diabetes.

7. Diabetic emergencies: General inpatient psychiatric units should be able to access timely diabetes support and advice from their local diabetes team when necessary and be able to recognise acute diabetic emergencies. This could include the continuation or development of an early warning scoring system for use in psychiatric inpatient settings. The National Diabetes Inpatient Audit tool could be used in psychiatric inpatient units to demonstrate the need for improved access to diabetes care, as it was for inpatients in acute trust setting.[106]

8. Reproductive counselling and pregnancy: The combined management of diabetes and SMI may raise particular challenges in the pre-, ante- and post-natal periods. Collaborative working between mental health, diabetes, obstetrics and midwifery is vital to meet the needs of women and their babies and to manage these risks.

12 Paediatric and Adolescent inpatient wards in acute and mental health trusts: Child and Adolescent Psychiatric Inpatient Settings and Paediatric wards

12.1 Epidemiology

Severe mental illness such as schizophrenia and bipolar disorders are rare in children and young people but are very disabling, and have an increased risk of developing type 2 diabetes.[107,108] The management of diabetes is further complicated in this group as childhood onset of psychosis is usually associated with significant impairment in cognitive and executive functioning. It is also not always possible to have regular monitoring of glycaemic control and venepuncture can be unreliable.

The first onset of most other psychiatric disorders such as anxiety or substance misuse is usually in childhood or adolescence but less is known about comorbidity in young people with type 1 and even less in type 2 diabetes, with some descriptive studies excluding severe mental illnesses leading to a possible underestimation.[104,109–112]

The transfer of diabetes care from parents to the young person is a critical window for the emergence of significant psychiatric morbidity, in particular eating disorder, disturbed eating behaviours and insulin omission. Glycaemic control in young people is associated with family functioning.[113] The onset and diagnosis of type 1 diabetes are life events and can affect the mental wellbeing of parent and child and this may impact on diabetes self-management.[114] Many young people with type 1 diabetes may have psychological distress which may not meet formal diagnostic criteria for a psychiatric disorder but can be very disabling, so the rule of thumb of conducting both psychiatric diagnostic interviews and assessments of psychological distress in relation to self-management remains.

Young women with type 1 diabetes are 6 times more likely to die than those without diabetes and rates of suicide are also increased.[115] Psychological and social factors are closely associated with premature death in young people with type 1 diabetes.[90,115]

Organisational factors are a barrier to integrated care. Child and Adolescent Mental health Service (CAMHS) are commissioned separately to paediatric services. Management of diabetes in the young is complex and it is very difficult for CAMHS services to manage without input from the paediatric diabetes teams.

12.2 Examples of Best Practice

A number of complex interventions that included educational and psychological components as active ingredients for type 1 diabetes in children and young people (CYP) have been reported or are being currently evaluated:

1. Paediatric Diabetes for Best Practice Tariff

The paediatric diabetes best practice tariff (BPT) states that children and young people with diabetes must have an annual assessment by their MDT as to whether they need input to their care by a clinical psychologist. If so, they should have access to psychological support, which should be integral to the team, as appropriate. The aim is that close working relationships, including a clinical psychologist working as part of the MDT, will lead to enhanced team skills and good communication and ultimately improved health outcomes. The Best Practice Tariff has improved access to psychology services for many young people but access across the country remains variable. The BPT, however, is not sufficient to meet the needs for more serious mental illnesses such as eating disorder. In a randomised controlled trial, delivering talking therapies using motivational interviewing to 14-17 year olds with type 1 diabetes was associated with clinically significant reductions in glycaemic control and psychological distress over 12 and 24 months.[116]

2. DEPICTED was a randomised controlled trial examining whether a training programme in communication skills in the paediatric diabetes team and shared agenda setting would improve a number of diabetes-specific outcomes at 1 year. Although there were minimal differences in the biomedical outcomes between the groups, staff trained in the intervention group demonstrated improved skills and for translation this is important to keep in mind.[117,118]

3. The CASCADE study was a cluster randomised controlled trial examining the ability of a structured education programme incorporating psychological approaches to improve diabetes control and quality of life.[119] This study did not improve HbA1c at 12 and 24 months but again families who completed the course described improved family relationships, improved knowledge and understanding, greater confidence and increased motivation to manage diabetes.

4. The Sheffield diabetes transition team are currently developing a complex intervention which aims to improve physical and psychological health among 16-21 year olds with type 1 diabetes.[120]

5. Joslin Diabetes Centre affiliated with Harvard Medical School. Although an overseas example, child and adolescent mental health has been embedded within the paediatric service for over a decade. They have tested a family intervention, and in a separate study, a care manager (or ambassador) and found that both were more effective than controls in improving glycaemic control.[121,122] The Joslin has introduced their 'Jumpstart' programme providing bio-psycho-social care for all new cases of diabetes and they have a discussion forum.

12.3 Recommendations

12.3.1 Immediate

1. There should be a named or key worker in both the mental health and paediatric inpatient setting for children and young people with both conditions.

2. Provision of bi-directional support

Develop a policy for early referral and review by respective teams for example within 24 hours of admission and within 48 hours respectively weekly (or more frequently if indicated) for longer admissions.

3. Both the diabetes team and the mental health team should take every opportunity to make a review of the psychosocial and family circumstances and work closely to support parents and carers.

12.3.2 Longer term

1. Integrated Care Pathways and communication

In CYP with diabetes and a pre-existing SMI the care plans for diabetes and mental health should be integrated and shared following discharge including with the child's school to ensure co-ordinated and coherent management advice. Joint decisions on the frequency of routine blood glucose monitoring should be included in care plan based on case-by-case.

2. For inpatients, attending the respective MDT or clinical review meetings is to be encouraged and for long admissions for example over a week, essential.

3. Review needs of carers, assess carer burden and expressed emotions, and offer psychological support and carer skills development by health practitioners experienced in family work.[123]

4. Primary prevention of emerging psychological distress at the time of onset of diabetes and adolescence. This requires vigilance, opportunities for emotional ventilation and red flags such as missing appointments, recurrent DKA, weight loss, persistent hyperglycaemia, growth retardation, absence from school. A pathway from inpatient to outpatients or community services should be developed to screen and monitor for these problems. In addition appropriate arrangements should be made for transition from paediatric to adult services.

5. Evaluation of effectiveness of the psychological components of Paediatric Best Practice Tariff for diabetes care in England in improving health outcomes.

6. Education and resourcing

Training of diabetes teams to assess CYP for common mental health problems and to develop skills in delivering psychological therapy.[124] Developing resources to allow acute (or community) trust DSNs to provide inpatient cover for mental health wards, and to liaise with schools to ensure their educational needs are being met while they are inpatients and to prepare the patient and the school staff when they return to school.

7. Children who have severe mental illness and diabetes require careful psycho-education regarding diabetes and monitoring. Depending on the age of the child family psycho-education is needed. The cognitive and executive difficulties that often accompany schizophrenia and the associated changes in mood make adherence more difficult and the provision of specialised services would be an advantage. The fluctuating nature of some mental illnesses may impair capacity to self-manage diabetes.

8. A recognition that in paediatric psychiatry particularly in the fields of learning disability and autism, there can often be significant difficulty in obtaining the necessary blood tests for monitoring HbA1c and other risk factors. Avoiding duplication and the adoption of technologies that facilitate easier blood sampling and monitoring is to be encouraged.

13 Eating Disorders Units

These guidelines are predominantly to support people with type 1 diabetes and eating disorders or disordered eating behaviours (DEB). There is a smaller group of people with type 2 diabetes and binge-eating disorder but they are rarely inpatients in this setting and more likely to be inpatients in the acute setting in the context of bariatric surgery.

13.1 Epidemiology

There is increasing recognition of the extent and impact of disordered eating in patients with diabetes.[125,126] There is no consensus amongst clinicians and patients as to whether there should be a separate definition of eating disorder in type 1 diabetes (diabulimia) and therefore this should not be used as a clinical term.

The presentation can be atypical alone because: patients with both type 1 diabetes and eating disorder tend to be heavier than those with eating disorders only; unhealthy eating patterns are easier to mask with insulin reduction; purging by insulin omission (or glycosuria) is even more secretive than purging by vomiting or diarrhoeal agents or other disturbed eating behaviours (DEB) such as dieting, fasting, binge eating or excess exercise; extreme hyperglycaemia can be maintained without ketosis by low levels of long-acting insulin; disappearing under the clinical 'radar' and missing appointments.[127,128] Insulin restriction has been reported to occur in up to 40% of young women with diabetes.[127,129]

Insulin omission and DEB are associated with an increase in HbA1c and diabetes complications, and most strikingly higher mortality rates.[126,130–132] Although epidemiological studies are lacking, anecdotal observations are that many patients with type 1 diabetes and eating disorders develop early in adolescence but are diagnosed late, if at all, and may have other psychiatric (such as substance misuse, depression) and medical (such as gastroparesis) comorbidities which makes the management highly complex.

In terms of presentations to the diabetes teams these patients are often female and the poor control is at odds with the rest of their ability to conduct their lives. They may be high achievers who are able to manage the demands of a family or job but seem to be unable to manage their diabetes within target. Anecdotally this group may have been diagnosed with diabetes before or during teenage years and may have a history of recurrent DKA. Evidence of manipulation of insulin and attempted reduction of insulin for weight management that might have been difficult to achieve as a teenager becomes possible in adulthood. In addition there is often a diagnosis of gastroparesis (which may be as a result of many years of diabetes, or simply functional due to hyperglycaemia) and autonomic dysfunction with postural hypotension. It is not know why this is. It is thought that the poor control in this group means that they are highly represented in the renal failure, transplant and dialysis complications.

There is another clinical group that is quite distinct. This group has more in common with the restrictive anorexic group. These patients eat very little and are of low weight. The significant risk of recurrent severe hypoglycaemia and control is not normally an issue. This type of patients with diabetes and eating disorder is much less common but is more likely to present to the eating disorder services due to low body weight.

13.2 Overview of models of care

1. Screening

NICE recommends that diabetes professionals should be aware of the increased risk of eating disorders in adults with type 1 diabetes and that when an eating disorder is identified, the patient should be offered specialist treatment.[53] We would advise that in any patient with long term poor diabetes control despite access to education and support, an eating disorder should be suspected and screened for.

The validity of screening questionnaires to identity eating disorder behaviours in Type 1 diabetes is still not clear as insulin reduction and omission are not standard question items thus they tend to underestimate the prevalence.[133] The true prevalence of disordered eating behaviour and insulin reduction/omission may be higher and the HbA1c values worse than reported figures.[133] Longitudinal studies indicate a relapsing-remitting pattern of eating disorders in patients with Type 1 diabetes and the continued development of eating disorders as patients move into adulthood.[134]

Failure of generic eating disorder tools to identity insulin omission may in part explain the lack of improvement in metabolic control seen in treatment studies despite an improvement in other eating disorder behaviours.[125]

2. Specialist care

NICE recommends young people with type 1 diabetes and poor adherence to self-management (typically evidenced by persistent hyperglycaemia) should be screened for the presence of an eating disorder.[53] There is a dearth of NICE level 1 evidence for effective models of care for this comorbidity. Generic psychological therapies used routinely in the treatment of eating disorders such as cognitive behaviour therapy (CBT) on their own do not achieve the expected outcomes in patients with co-morbid diabetes.[135] On the other hand, residential and day treatment diabetes and ED treatment programmes have been shown to be effective.[134,136–138]

Family factors, the eating environment and conflict and criticism are known to have an impact on the development and maintenance of disturbed eating behaviours in adolescents with type 1 diabetes. Family interventions have so far had a limited impact but carer support and carer skills along the lines of the New Maudsley Approach programme can be adapted easily to the diabetes setting (**www.thenewmaudsleyapproach.co.uk**).[134,135,139]

New conceptual models are being developed that describe the interplay of predisposing factors (weight and shape concerns, BMI, low self-esteem perfectionism and emotional instability, salience of food control in diabetes self-management) with appetite dysregulation (neuro-adaption following repeated disinhibited eating and food addiction) and environmental factors (family expressed emotion and perceived criticism from professionals) in the maintenance of disordered eating in type 1 diabetes.[140–142] Testing the assumptions in these models it is hoped will lead to the development of new treatments.

13.3 Examples of best practice

13.3.1 Warwick MDT clinic

In Warwick a monthly outpatient MDT clinic supports patients with eating disorders[143] (Psychiatrist, diabetes nurse specialist, dietitian and physiotherapist), utilising a combination of 1:1 supportive, exploratory psychotherapy, nutritional counselling, diabetes education, exercise and activity. There is also a patient-led support group. Links are built with diabetes services (inviting them to CPAs) and patients are supported to re-engage with services if they have dropped out. Significant attention is given to engaging the patient, re-introducing regular insulin, addressing fears of weight gain, exploring feelings about diabetes, and

challenging dysfunctional beliefs about eating (for example, that carbohydrate is bad), utilising a non-judgmental attitude. A simple screening tool for eating disorder is being devised, specific for diabetes that can be administered quickly and easily during a routine clinical review.

13.3.2 King's Health Partners Model

The diabetes liaison psychiatrist and diabetes teams at the sister acute trusts (King's College Hospital, Guy's and St Thomas' Hospital, Lewisham Hospital) are included in multi-disciplinary team for all in-patients with type 1 diabetes and eating disorders in the South London and Maudsley Eating Disorders Unit.[137] They have developed a unique graded desensitisation programme to gently reintroduce insulin balancing patient safety with patient's goals, while at the same time helping patients to address their health beliefs about insulin, carbohydrates and challenge their fear of weight gain. The focus is on establishing effective therapeutic relationships over the long-term, regular team meetings including the patient. They have developed, in collaboration with University of Sheffield, the Diabetes-oriented learning family intervention which gives parents additional tools and skills to support their loved one.[123]

13.4 Recommendations

13.4.1 Immediate action

1. Routine monitoring for disordered eating behaviours and insulin omission

Develop confidence in asking about weight and body image concerns using motivational and coaching styles.

It is helpful to ask patients if they have ever reduced their insulin in order to control weight gain as a screening tool although this has not been validated. In addition asking if anyone else has ever suggested that they have reduced insulin for weight loss is helpful together with raising awareness and inviting the patient to visit the Diabetics with Eating Disorders (DWED) website to aid further conversations.[138]

While some diabetes professionals may be uncomfortable asking about mental health without training, there are generic opening statements that should be part of the normal diabetes consultation and therefore do not require training but do require vigilance and good listening:

Insulin omission: "You have told me that sometimes you forget to take all your insulin…Why might that be?"

Worries about weight gain: "I wonder if there is any link between wanting to take it more regularly but worrying that insulin will make you put on weight? How much of a worry is that, from 1-10?"

Helping setting new goals: "What would you like to be different in your current situation?" (motivational interviewing communication style)

Identifying strengths: "Are there any techniques you have used before?" (coaching communication style)

Management of hypoglycaemia: "What do you normally eat to correct hypoglycaemia –how much do you take?"

Identifying bingeing: "Are there times when you eat, but can't stop? I'm interested to know more about that. Can you tell me more?"

2. Joint MDT for all patients with type 1 diabetes and eating disorder

This is a simple intervention but sometimes hard to organise when eating disorders units do not have good links with the patient's diabetes teams. It should be good clinical practice to identify the lead for the diabetes care and include them in all communications and invitations to team meetings.

3.Refeeding for anorexia and type 1 diabetes.

Patients with type 1 diabetes and anorexia nervosa admitted to in-patient psychiatric units are at high risk of developing diabetes ketoacidosis but refeeding for this group is extremely rare. There is a theoretical

risk of spontaneous hypoglycaemia and hypophosphatemia from the insulin stimulus, it is often very difficult to achieve optimum glycaemic control in the best of times.[144] Some authors have recommended permissive hyperglycaemia to minimise these risks but in view of the rare occurrence and psychiatric-medical complexity, it is recommended that management of hyperglycaemia during refeeding should be in close liaison with the diabetes hospital team.[145]

4. Graded exposure to insulin

Except in medical emergency such as diabetic ketoacidosis, restarting insulin steadily may be more acceptable to the patient than administering higher doses initially. Consensus anecdotal experience is that administration of therapeutic levels of insulin after a period of omission leads to almost immediate (within a day) objective and subjective weight gain that is too distressing for the patient, and the patient is likely to omit insulin after discharge and to relapse or avoid medical attention by missing appointments. Negotiate with each patient, setting goals on the rate of increase of insulin administration that they will accept (for example increase by 1 unit/week for 2 weeks before reviewing). In terms of risk management, and keeping the patient safe, build trust and confidence in long acting insulin, identify and constructively challenge health beliefs around insulin as a cause of weight gain and support lower carbohydrate intake than one would normally support in a generic eating disorders setting. The use of furosemide to reduce the oedema can be helpful in the initial stages or re-introducing insulin.

Individuals who have omitted insulin for a prolonged period of time are often insulin resistant possibly as a result of the hyperglycaemia. Large doses of insulin may be required to reach euglycaemia. While the clinical team can reassure that this will be a temporary effect and once targets are reached the insulin dose per kilogram should reduce, it may take some time for the patient to accept this.

It is also worth bearing in mind that as a result of the insulin omission this group may have been unable to access the educational interventions that most patients with type 1 diabetes will have benefited from. It is therefore important that an experienced clinician is available for support to guide the titration of insulin and build confidence in carbohydrate counting.

Improved control can paradoxically result in the worsening of diabetes related complications such as diabetic retinopathy and painful neuropathy. It is important that this group are encouraged to attend routine screening for retinopathy and that any change in physical health is responded to.

13.4.2 Longer term

1. Training

Increased awareness through training for diabetes teams in the recognition of disturbed eating behaviours in diabetes is required. Particular focus is needed on insulin restriction, weight and shape concerns associated with insulin use, and competencies in enhanced communication skills to minimise the perceived criticism, disengagement and drop-out seen in patients with diabetes and eating problems. It is important for clinicians to understand that for patients with diabetes, DEB are more common than diagnostic eating disorders, and should not be ignored.[141,142] Training of clinical staff in diabetes care competencies to include ketone testing.

2. Clinical screening tools are needed to identify and monitor high risk groups such as transition services.

3. Regional centres for inpatients with type 1 diabetes and eating disorders to build capacity, expertise, raise awareness, networking and consensus guidelines development.

4. Research: further theoretical developments, modelling and piloting of innovations in models of care are needed to move this particular field forward.

14 Moving forward

The aims of these guidelines are to support inpatient mental health teams and medical teams in acute hospital trusts to optimise the care they provide for people living with diabetes and mental illness. In addition the guidelines should inform managers and commissioners about models of care that can improve outcomes per unit cost in this group of people with complex needs.

As inpatient admissions do not occur in isolation we have extended the guidelines to examine the care people receive both before and after hospital admissions and how this can be optimised to reduce the likelihood of admissions arising.

We have identified a need for a culture change that embraces the mental and physical health needs of people living with diabetes equally and seeks to provide individualised care and support.

14.1 The commissioners' next steps

- Commissioners have a crucial role in ensuring that local services meet the needs of people with diabetes and mental illness.
- Value based commissioning can be used to drive service improvement, care quality and improved outcomes.
- Mental Health Trusts could take on the responsibility of monitoring diabetes and screening for complications in people with mental illness and resources moved to support this. Local CQUINs can incentivise this.
- We encourage commissioners to recognise that investing now can save on costly complications in the future.
- When commissioning weight management services and diabetes structured education programmes, commissioners should ensure that there is specific provision for people with diabetes and mental illness and that they are not effectively excluded from such opportunities.

14.2 The health providers' next steps

- Inpatient psychiatric units should be encouraged to take part in a National Diabetes Inpatient Audit (NaDIA) exercise to determine the current level of provision for people with diabetes and identify priorities for improvement.
- Lifestyle modification and behaviour change form the cornerstone of diabetes management yet this may be particularly challenging for those people with diabetes and mental illness.
- Working with third sector and voluntary organisations to provide tailored help and support to achieve lifestyle modification may improve uptake and outcomes.

14.3 The policy makers' next step?

- Policy makers could seek to determine if markers for diabetes care can be included as part of Care Quality Commission inspections of inpatient psychiatric units.

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