Diabetes Mellitus

Introduction

Diabetes Mellitus, one of the most common endocrine diseases affecting all age groups, is one of biggest healthcare challenges faced by the NHS. It is a group of disorders with a number of common features characterised by raised blood glucose. In England the two most common types of diabetes are:

Type 1: the pancreas makes no insulin and often develops before the age of 40, usually during the teenage years but can develop at any age

Type 2: develops when the body does not make enough insulin or the tissues become insulin insensitivity (ie resistant to its effects) and does not work properly. This is usually caused by excess body weight or obesity. It is aggravated by inactivity and usually affects people over the age of 40, although younger people are increasingly being affected. The greatest cause of mortality for people with Type 2 diabetes is cardiovascular disease. People are more at risk of developing Type 2 diabetes if they are:

- overweight or obese
- from a family where others have diabetes
- over the age of 40
- inactive
- of African or South Asian origin

Almost one in 70 people in the UK are living with undiagnosed Type 2 diabetes. It can lead to long-term complications including eye problems, kidney disease, foot ulcers and cardiovascular disease.

In addition to the personal cost to individuals, families and communities, it is currently estimated that the NHS spends about £10 billion on diabetes every year, 2016. This is 10 per cent of the NHS budget.

According to the website healthier lives, Bedfordshire CCG had significantly worse results for blood sugar control and blood pressure control compared with similar CCGs. These poor results are in general agreement with other indicators in this report.

What do we know?

Facts, Figures, Trends

Prevalence

Children & Young People (CYP)

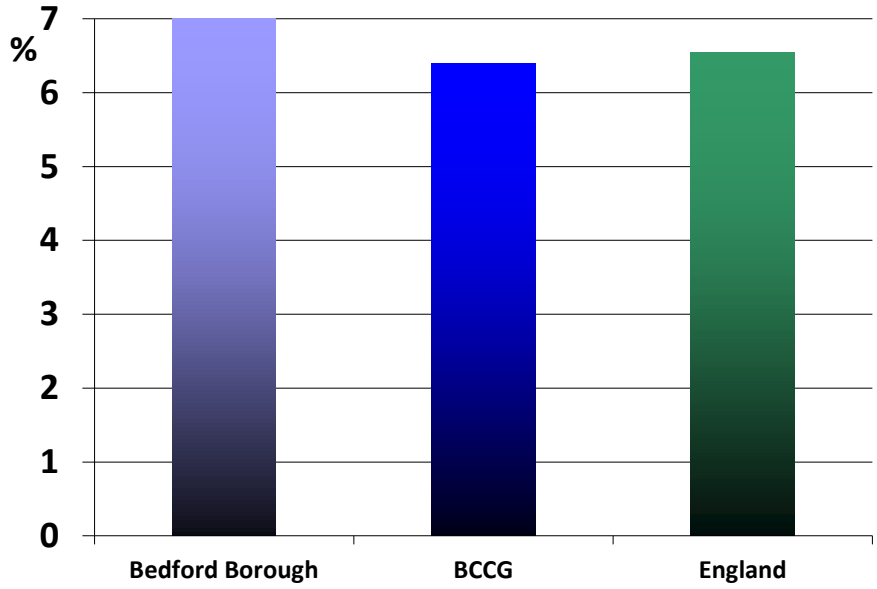
119 Children & Young People (CYP) with diabetes who received treatment at Bedford Hospital, 2014/15.

Adults

In Bedford Borough the prevalence of diagnosed adult diabetes aged 17 years and

older was 7.0% (9,668, 2015/16) which is higher than the NHS England figure (6.6%), see **Figure 1**.

Figure 1 Prevalence for diabetes mellitus aged 17 or over, 2015/16



Source: QOF, 2015/16

About 90% of people have Type 2 diabetes in England and the prevalence of diabetes overall is higher in people aged over 60.

Childhood excess weight is a recognised risk factor for developing Type 2 diabetes as an adult. For National Child Measurement Programme, 2015/16, Bedford Borough had the same levels of excess weight in Year 6 pupils (34.1%) compared to England (34.2%). However, pockets within Bedford Borough are much higher than the England average.

The diabetes prevalence model estimated the total proportion (diagnosed and undiagnosed) of people with diabetes in Bedford Borough was thought to be 9.3%, 2016. Estimates are adjusted for the age, sex, ethnic group and deprivation pattern of the local population. This suggested that there are approximately 2,750 undiagnosed people in Bedford Borough.

Diabetes is expected to rise to 9.5% by 2020 and 10.1% by 2030 in Bedford Borough. This estimate for future diabetes prevalence assumes that there was no change in the proportion of people who are overweight or obese. If changes in obesity levels are taken into account then the prevalence could rise even higher.

Clinical Management

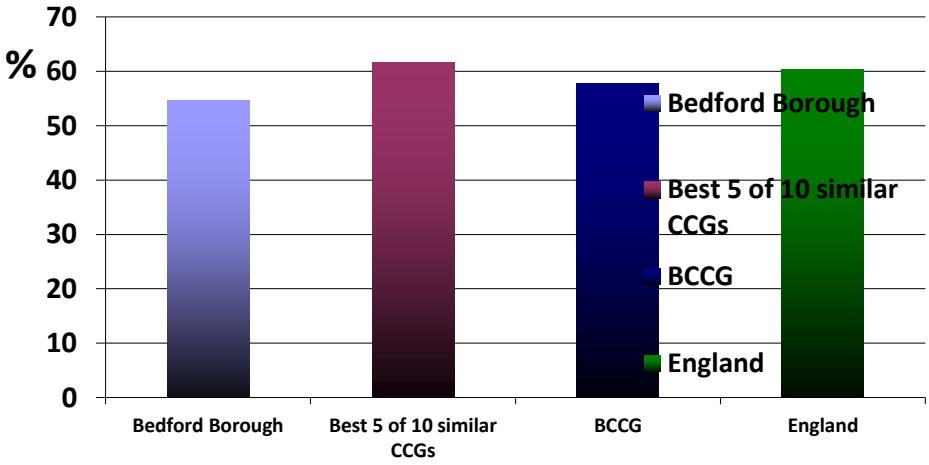
HbA1c: Haemoglobin is present in everyone's red blood cell (the Hb of HbA1c). Glucose sticks to red cells and the more glucose there is, the more is attached to the red cells. The average life span of a red cell is 120 days so the test gives a guide to the average glucose levels in blood over the last 120 days.

Children & Young People (CYP)
The median HbA1c for CYP has been falling at Bedford Hospital for three years. In 2014/15 it was 67.8mmol/mol which is worse than England's figure (66.5mmol/mol).

Adults
For most people with diabetes, the HbA1c target is below 48mmol/mol, since evidence shows that this can reduce the risk of developing diabetic complications, such as nerve damage, eye disease, kidney disease and heart disease. Individuals at risk of severe hypoglycaemia (which is low blood glucose in not very well controlled diabetes) should aim for an HbA1c of less than 58mmol/mol.

In Bedford Borough, 54.7% of patients had HbA1c of less than 59mmol/mol (2014/15). That is worse than the average of the Best 5 of 10 similar CCGs (61.6%), see below.

Figure 2 Proportion who had HbA1c of less than 59mmol/mol



BCCG: Bedfordshire CCG
Source: QOF, 2014/15; RightCare cardiovascular disease pack, 2016

NHS diabetes prevention programme think that around 15,400 (11.7%) of adults living in Bedford Borough have a high risk of diabetes, ie pre-diabetes. Those referred will get personalised help to reduce their risk of Type 2 diabetes including education on healthy eating and lifestyle, help to lose weight and bespoke physical exercise programmes.

Care processes
All patients aged 12 years and over should have measured or receive all of the nine NICE recommended care processes. These are reported through the National Diabetes Audit (NDA) and are the annual checks for:

The effectiveness of diabetes treatment: HbA1c

Cardiovascular risk factors: blood pressure, serum cholesterol, body mass index (BMI) and smoking

Emergence of early complications: urine albumin/serum creatinine (kidney

surveillance), eye screening and foot surveillance

In Bedfordshire CCG the recording of: urine albumin, foot surviillence, BMI and a combination of all eight processes[1] were higher than expected from peers, 2014/15

Treatment targets
NICE recommends treatment targets for glucose control, blood pressure and serum cholesterol to reduce the risk of diabetic complications, including:

- Blindness
- Kidney failure
- Foot ulcers and amputations
- Heart attacks
- Heart failure
- Stroke
- Premature death

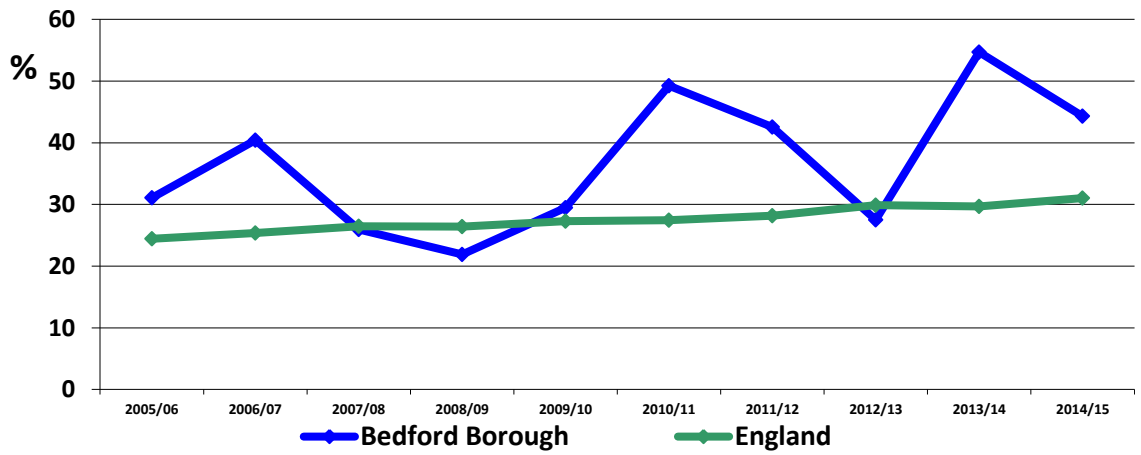
Bedfordshire CCG's results for the treatment targets are significantly worse for HbA1c and blood pressure and similar for cholesterol compared to similar CCGs, 2014/15.

Complications
Models have compared patients with diabetes with similar CCGs for complications. Of the seven complications, people with diabetes in Bedfordshire CCG had an additional risk of about 97% to have had a heart attack (statistically similar), 812% to have had a minor amputation (statistically similar) and 497% to have had a major amputation (statistically similar) than those without diabetes, 2010/11-2012/13.

Emergency admission
Adults
Figure 3 shows the standardised trend for emergency hospital admissions due to diabetic ketoacidosis and coma in Bedford Borough and England. Generally the rates are rising from 2005/06 to 2014/15 which may be a result of the increasing prevalence.

Figure 3 Trend for emergency hospital admissions: diabetic ketoacidosis and coma, 2005/06-2014/15

[1] Retinal screening is not part of this analysis



Source: Health & Social Care Information Centre, 2016

Diabetic retinal screening

Diabetic retinopathy is the commonest cause of blindness in patients of working age in the UK. The risk of developing retinopathy can be reduced by good control of diabetes and blood pressure. Early stages can be symptom free and therefore regular screening is important in detecting early signs of retinopathy which can then be treated. Early detection and treatment can help to prevent blindness. Cataracts are also more common in diabetes and will be detected by the screening programme.

All newly diagnosed patients over the age of 12 with diabetes should be referred to a retinal screening programme that complies with national standards as part of the ENSPDR (English National Screening Programme Diabetic Retinopathy). For the majority of Bedfordshire practices this service is provided by the Bedfordshire Diabetic Eye Screening Service. However there is no national database for people with diabetes. This means that accurate information from GP practices is essential in ensuring that all patients with diabetes are referred to the screening programme.

Screening locations for the Bedfordshire Diabetic Eye Screening Service are mainly at:

Bedford Hospital, (South Wing, Kempston Road)
The Enhanced Service Centre in Bedford (The Health Village, Kimbolton Road)
Luton and Dunstable Hospital (Lewsey Road)
Kingsway Health Centre (385 Dunstable Road, Luton)

In addition, two mobile services, one operating from a van and another which uses a room inside surgeries are available for use at other locations. These mobile units are moved across the county at various times to provide good access for the majority of patients.

Screening uptake's national standard is 70% and achievable target 80%. Bedfordshire CCG's results were 83.4%, above the national average, 2015/16.

Current services

There are 24 practices in Bedford Borough, all involved in the care of patients with diabetes. There are also staff members employed by SEPT and local Acute Trusts who provide services in the community for people with diabetes, including Dietitians, Podiatrists, Diabetes Specialist Nurses and a Nurse Consultant. These services are not however provided universally across the county.

Primary care

a. GP practices in Bedford Borough

Although individual practices may have different clinical skills and competency, most are able to provide a basic level diabetes service in collaboration with their locality:

- Screening and diagnosis of diabetes. The GPs in Bedford Borough diagnosed 17 patients with type 2 diabetes with NHS Health Check, 2015/16
- Initial assessment, education and management after diagnosis
- Provide appropriate information and support to patient and/or carer
- Recognition of those in need of urgent/early specialist care referral
- Arrangement of structured education programs as appropriate
- Enrolment into retinopathy screening program as appropriate
- Regular review and annual review
- Effective glycaemic and cardiovascular risk management including specialist referral as appropriate
- Effective screening and management of complications including specialist referral as appropriate
- Promote patient empowerment and self-management
- Health promotion and vaccination program

b. Integrated Community Diabetes Service

In 2012 a new model of care was introduced in Bedfordshire CCG with the introduction of a community based specialist diabetes team.

The service is provided by Bedford Hospital and Luton & Dunstable Hospital on behalf of Bedfordshire CCG. This is an innovative service with two general hospitals working together to provide one unified service for the patients of NHS Bedfordshire.

Members of the ICDS can refer patients to the Lifestyle Hub to increase their activity and make other lifestyle changes. The Lifestyle Hub's funding is presently until March 2017. There are a range of weight management interventions available to people in Bedfordshire CCG including BeeZee Bodies and BeeZee Chat which is an on-line service.

Secondary Care

Most patients with diabetes in Bedfordshire CCG access Bedford Hospital Diabetes Centre, Luton & Dunstable Hospital, Milton Keynes Hospital or Stoke Mandeville Hospital

Local Views

In March /April 2011, 138 randomly selected residents in Bedfordshire with diabetes shared their views and experience to influence the way diabetes

services are designed and delivered. This was done through a survey conducted by Bedfordshire CCG using questionnaires and face to face interviews. 75% of the respondents had Type 2 diabetes and the remaining 25% had Type 1 diabetes:

73% of the participants were satisfied with the amount of information they received at the time of diagnosis, however awareness about the diabetes educational courses were low amongst the participants as only 22% were aware about the structured education courses. Only 17% were invited to attend the course and 54% of the participants did not receive invitation to attend the courses

93% of the people with diabetes received regular diabetes check-ups from health care professionals (GP, practice nurse, district nurse and specialists from hospital). Most of the patients were treated within the NHS (82%). Most of the respondents (78%) were not being offered emotional and psychological support during their care

Some of the key recommendations extracted from the results of face to face interviews were:

- More support and information should be made available at the initial diagnosis on how to manage the illness well and support to get used to the impact of the condition on the person and their family
- More practical information about the food content (salt/sugar/fat) should be included in dietary information
- Local support groups should be promoted and publicised more and it would be better if Type 1 and Type 2 diabetics can have different groups as they need different advice and support
- Having diabetes was not necessarily taken into account when treated for other conditions by other health care professionals in different specialities
- Most of the diagnoses of diabetes were coincidental with other conditions; there should be an extra effort to diagnose unknown cases using risk factors

Impact & effectiveness

CVD focus pack for NHS Bedfordshire CCG is produced by RightCare. It is an in-depth look at our spend, activity, quality and outcomes for cardiovascular disease which includes diabetes.

National & Local Strategies (Current best practices)

NHS England

In January 2015, NHS England published three handbooks three handbooks to support commissioners and practitioners in planning services for people with long term conditions (LTCs), in order to achieve more effective, personalised care for this group. The handbooks are: case finding and risk stratification, personalised care and support planning and multi-disciplinary team (MDT) working.

A National Service Framework for Diabetes was published in 2001. More recently they have published Action for Diabetes, NHS Diabetes Prevention Programme and a Diabetes Transition Service Specification.

National Institute for Health and Clinical Excellence (NICE):

Guidance, pathways and quality standards covering several different aspects about diabetes including prevention and 'do not do' recommendations

Reducing health inequalities

What is this telling us?

What are the key inequalities?

Diabetes does not impact on everyone in society equally. Significant inequalities exist in the risk of developing diabetes, accessing health services and in health outcomes.

Age is a key factor in diabetes prevalence; the prevalence of Type 2 diabetes increases steadily after the age of 45 years. Diabetes prevalence is higher in areas experiencing deprivation. People living in the 20% most deprived neighbourhoods in England are 56% more likely to have diabetes than those living in the least deprived areas; there are 14 LSOAs[2] in Bedford Borough which are among the 20% most deprived neighbourhoods in England, 2015.

It is known that people from Asian and Black ethnic groups are more likely to have diabetes and tend to develop the condition at younger age.

Recommendations

Bedfordshire CCG is currently reviewing all clinical pathways, using a RightCare approach, and the review will not be complete until early/mid 2017. At this point, a full analysis of service provision, gaps and service needs will be summarised and shared with system partners

This chapter links to the following chapter in the JSNA:

[2] An LSOA is an area which has a population of 1,000-3,000