

Together for Health

Diabetes Delivery Plan
Annual Report 2014





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1. Introduction

In Wales, we want to minimise the number of people affected by diabetes and prevent complications, by promoting healthy lifestyles and ensuring those affected by any kind of diabetes are well informed about their condition and have timely access to high quality services. Access to these services should not be affected by where people live or whether these services are delivered through hospitals or in the community.

Spending in Welsh hospitals in 2012-13 on diabetes was almost £90m¹, this is an increase of 4% when compared to 2011-12. However NHS expenditure on diabetes related care is almost £500m a year².

"Together for Health – a Diabetes Delivery Plan" published in September 2013 sets out our vision for diabetes care in Wales until 2016. We are monitoring three high-level outcomes to track over time how well our services are doing. These are:

- how many people are diagnosed with type 2 diabetes each year ("incidence");
- how many people die prematurely from diabetes and circulatory disease more generally each year ("mortality"); and
- whether or not people living in poorer parts of Wales are more likely to suffer from diabetes and its complications than those living in more prosperous areas.

These outcomes are intended to show changes over the long term and it could be a number of years before we see any significant changes.

This is the first of the all-Wales annual reports on NHS diabetes care, as required by the delivery plan. It provides a national overview, complementing the individual reports that have already been produced by health boards. Taken together, the reports demonstrate our commitment in Wales to improving diabetes care and reporting on progress.

It presents an overview of how well the NHS across Wales is performing in this area, and identifies what more NHS organisations need to do to improve diabetes care. It reports on a number of important initiatives already in place and establishes a baseline against which future progress can be monitored.

Through this and future annual reports, the Welsh Government aims to give a clear account of its diabetes care to the public and indicate to the NHS where it is doing well and where it needs to improve care. Information like this is the best way to support continuous improvement in services so that we can ensure that people of all ages, wherever they live and whatever their circumstances, have access to excellent NHS diabetes care.



Andrew Goodall
Chief Executive, NHS Wales

A handwritten signature in black ink, appearing to read 'Andrew Goodall'.



Adam Cairns
Chair, Diabetes Implementation
Group

A handwritten signature in black ink, appearing to read 'Adam Cairns'.

¹ NHS Expenditure Programme Budgets – Wales 2012-13.

² Together for Health – a Diabetes Delivery Plan.

2. Executive Summary

Diabetes³ is a well known health problem that is becoming more common world-wide. It can affect people of all ages in every population. Diabetes is serious. If left uncontrolled, it can lead to heart disease, stroke, amputation, blindness and kidney failure. Diabetes can have a major impact on the physical, psychological and material well-being of individuals and their families.

Diabetes is a condition in which the amount of glucose (sugar) in the blood is too high because the body can not use it correctly. This relates to the body's supply of Insulin, the hormone which helps glucose to enter body cells where it is used as fuel. There are two main types of diabetes:

- Type 1 diabetes develops if the body can not produce any insulin. Type 1 diabetes usually appears in children and young people. It accounts for around 10% of all people with diabetes, and can affect growth and pregnancy and cause long term eye, kidney and vascular complications.
- Type 2 diabetes develops when the body can still make some insulin, but not enough, or when the insulin that is produced does not work correctly. In many cases, this is linked with being overweight. This type of diabetes usually appears in people over the age of 40. Recently, however more children and pregnant women are being diagnosed with the condition.

It is widely accepted that Wales is facing a huge increase in the number of people with diabetes. The numbers of adults aged 17 and above registered at a GP practice with diabetes has increased by just over 24,000 people in the last 5 years. Much of the increase is type 2 diabetes due to the aging population and the increases in the numbers of overweight people.

There is evidence to show that:

- the onset of type 2 diabetes can be delayed, or even prevented;
- effective management of the condition increases life expectancy and reduces the risk of complications; and
- supported self-management is the essential element of effective diabetes care.

The publication of this first all-Wales annual report for diabetes is a major step towards making the NHS more accountable and visible to the people of Wales. For the first time it brings together simple, clear information on how diabetes services are performing. It highlights the progress we have made in diabetes care in Wales and identifies areas for future improvement. It demonstrates how health boards are taking local ownership through their delivery plans to improve diabetes services and drive up standards of patient care in their communities.

In 2013-14; 177,212 people over the age of 17 were registered with their GP as diabetic. This is 3,913⁴ more people than in 2012-13. There were 1,469 children and young people with diabetes, under the age of 25 in Wales. Almost all have type 1 diabetes. Gestational diabetes is a type of diabetes that some women get during pregnancy. Between 2 and 10% of expectant mothers develop this condition, making it one of the most common health problems of pregnancy.

³ In this document the term diabetes refers to diabetes mellitus.

⁴ Stats Wales.

We have developed a number of outcome and assurance measures, which together, will demonstrate how diabetes services are improving in Wales. Some progress against these measures has been made giving us the reassurance that diabetes care in Wales is developing in line with our vision:

- Deaths from diabetes is not a common cause of death in Wales. In 2013, 300 people died from diabetes. This has fallen from 420 deaths in 2001.
- Half of all deaths from diabetes result from cardiovascular disease including heart attacks and strokes. In 2001, in Wales, almost 14,000 people died from cardiovascular disease, by 2011 this had fallen to just over 9,000 deaths.
- People with diabetes have a substantially higher risk of serious illness, hospitalisation and premature death compared to the non-diabetic population.
- In Wales in 2012-13, 98.9% of patients under the age of 25 years had their HbA1c measured and 97.6% in England. This is considerably improved from 2011-12, where 89.3% of patients in England and Wales had their HbA1c measured.
- In 2011-12 there has been a decline in the diabetic ketoacidosis (DKA) incidence rates for children and young people from 9,662 in 2010-11 to 5,683.
- 84% of inpatients stated that they were satisfied or very satisfied with the overall care of their diabetes while in hospital.
- In 2013-14, 93% of patients on the diabetes register had a record of retinal screening, and 91% of patients on the register had a record of a foot examination, in the preceding 15 months.
- Emergency admissions for diabetics have dropped by over 230 patients from 2,815 to 2,584 between 2010 and 2013.

We need to continue to improve in these areas as well as ensuring that progress is made where performance has not been as good as anticipated:

- Type 2 diabetes is more prevalent among less affluent populations. Those in the most deprived one-fifth of the population are one-and-a-half times more likely than average to have diabetes at any given age⁵. 9% of those people living in the most deprived areas of Wales report being treated for diabetes compared to 6% of those living in the least deprived – showing the pronounced impact of poverty and the socio-economic determinants of health.
- A child with HbA1c levels above 9.5%, according to the National Institute for Clinical Excellence, would be at risk of medical complications in the future. In Wales, 27.1% had poor glycaemic control (HbA1c over 9.5%); with 59.5% having moderate control (HbA1c between 7.5 and 9.5%).
- Obesity is the top risk factor for type 2 diabetes at all ages. 58% of all adults in Wales in 2013 are overweight or obese. The prevalence of those overweight or obese children aged 4-5 years in Wales (reception year) (26%) was significantly higher than that for England (22%).
- It is estimated that there are around 66,000 people with undiagnosed type 2 diabetes in Wales.

⁵ National Diabetes Audit.

- High blood pressure is an important risk factor for diabetes, and while 20%⁶ of adults are being treated for high blood pressure, it has been estimated that across the UK around half of people with high blood pressure are not receiving treatment⁷.
- Less than 8% of newly diagnosed patients in Wales received structured education in 2012-13.
- 60% of adults with type 1 diabetes and 33% of adults with type 2 diabetes are not having the annual tests and investigations associated with the national standards. Of those having the annual tests, 86% of type 1 diabetic patients and 65% of adults with type 2 diabetes do not meet the agreed treatment targets.

Progress, where seen, is a great tribute to the dedicated staff that work tirelessly to support patients and carers to manage their conditions.

⁶ Welsh Health Survey 2013, Welsh Government Statistics released September 2013.

⁷ Scarborough P, Bhatnagar P, Wickramasinghe K, Smolina K, Mitchell C, Rayner M (2010). Coronary heart disease statistics 2010 edition. British Heart Foundation: London.

3. How well are we doing in diabetes care in Wales?

3.1 Overview

Analysis of how many people are diagnosed with diabetes, how many people die from diabetes or diabetes related complications provides an important insight into the effectiveness of our work to prevent, detect and treat diabetes. Understanding the impact of lifestyle choices linked to where people live offers more detailed understanding on the geography of diabetes incidence.

They are showing that incidence rates are increasing, death rates are falling and that patients suffering from diabetes related complications are increasing in areas of low deprivation. The percentage of those treated for diabetes is much higher for those aged 65 and over.

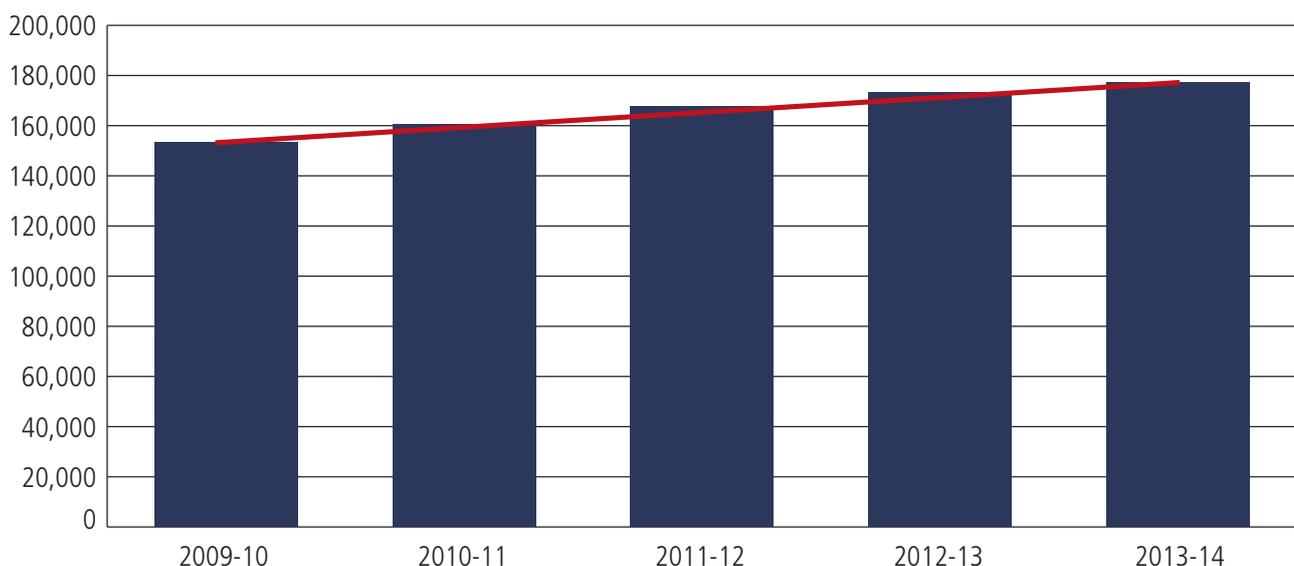
3.2 How many adults in Wales have diabetes?

This measures how many people aged over 17 are diagnosed with diabetes each year. It provides a feel for how well we are doing at preventing diabetes in Wales. If we are achieving our objectives, we would expect to see over time:

- A slower rise or fall in the rate of increase.
- A reduced gap between the most and least deprived areas of Wales.
- Lower incidence rates comparable with the best in Europe.

All GPs are required to keep a register of all patients aged 17 years and over with diabetes and specifies whether the patient has type 1 or type 2 diabetes. Using the information provided by GPs it is possible to estimate the percentage of the population diagnosed with diabetes. Figure 1 clearly shows the growth in the number of people aged 17 plus diagnosed with diabetes.

Figure 1: Number of patients in Wales registered as diabetic with their GP

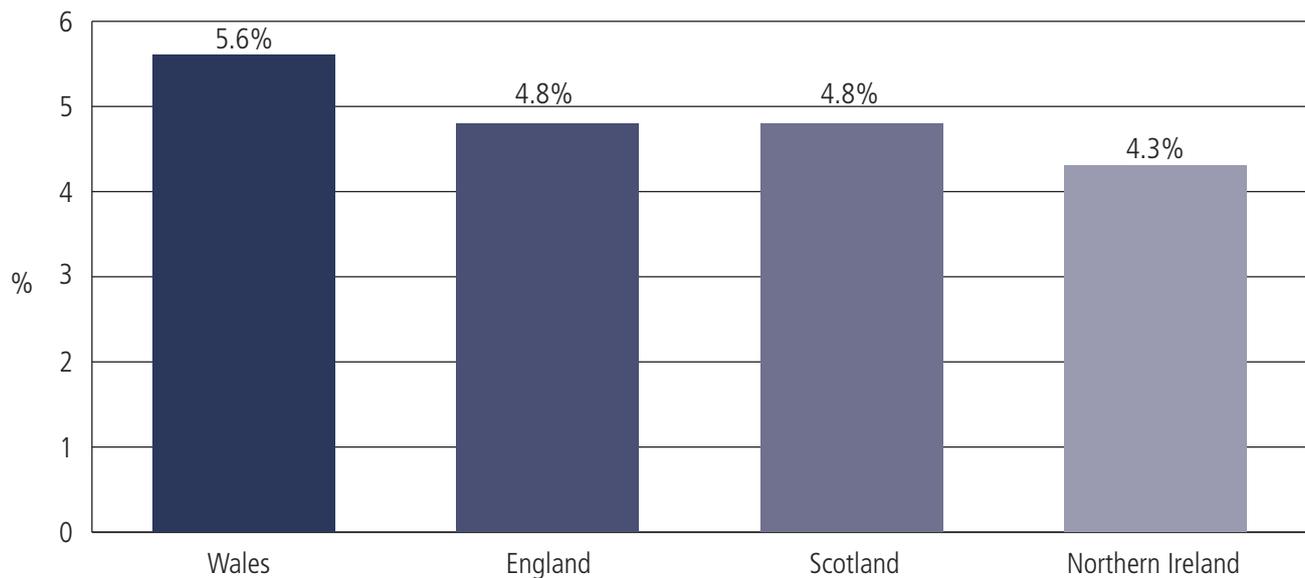


Source: Stats Wales

Between 2009-10 and 2013-14 an additional 24,037 people were registered with their GP as having diabetes. This translates to over 177,000 people in total in Wales in 2013-14⁸ being registered on a GP register as diabetetic. This is over 5% of the total population and around 7% of the population aged 17 or over. This has resulted in an increase in the amount of time that doctors and nurses spend treating and supporting diabetetic care. If trends continue at this rate then it is estimated that this number will rise to almost 288,000 people by 2025⁹.

We would like to increase our focus on prevention as this will achieve better outcomes.

Figure 2: Raw prevalence per 100 patients (of all ages)



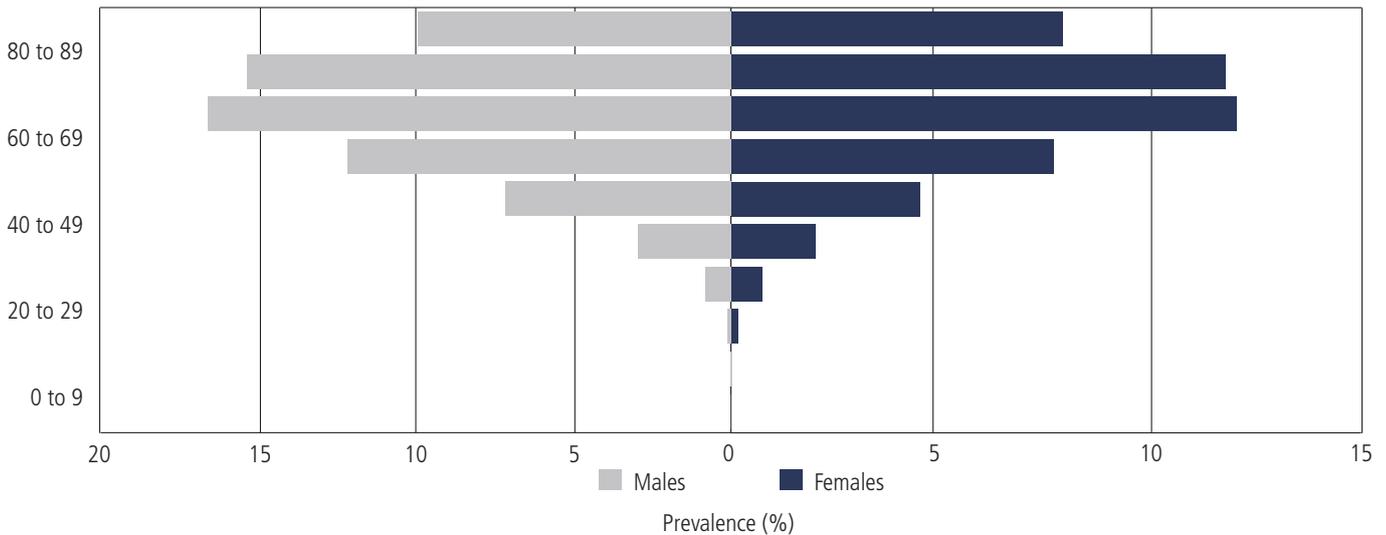
Source: *Quality and Outcomes Framework 2013-14*, Wales data from *Stats Wales*, England data from *ONS*, Scotland data from *ISD* and Northern Ireland data from *DHSSPS*.

Figure 2 highlights that with a raw diabetes prevalence of 5.6% Wales has a significantly higher percentage of people aged 17 and over with diabetes than Northern Ireland (4.3%), Scotland (4.8%) and England (4.8%). The prevalence of type 2 diabetes increases with age and is higher in men than in women as highlighted in figure 3.

⁸ Financial year.

⁹ AHPO diabetes prevalence model: www.yhpho.org.uk/resource/view.aspx?RID=87792

Figure 3: Age and gender of patients with type 2 diabetes, Wales, 2011



Source: National Diabetes Audit

3.3 How many children and young people have diabetes in Wales?

There are 1,469¹⁰ children and young people with diabetes, under the age of 25 in Wales. The age groups 10-14 and 15-19 years (figure 4) comprise the two largest groups of registered children and young people with diabetes. Slightly more boys (52%) have been registered with diabetes than girls (48%).

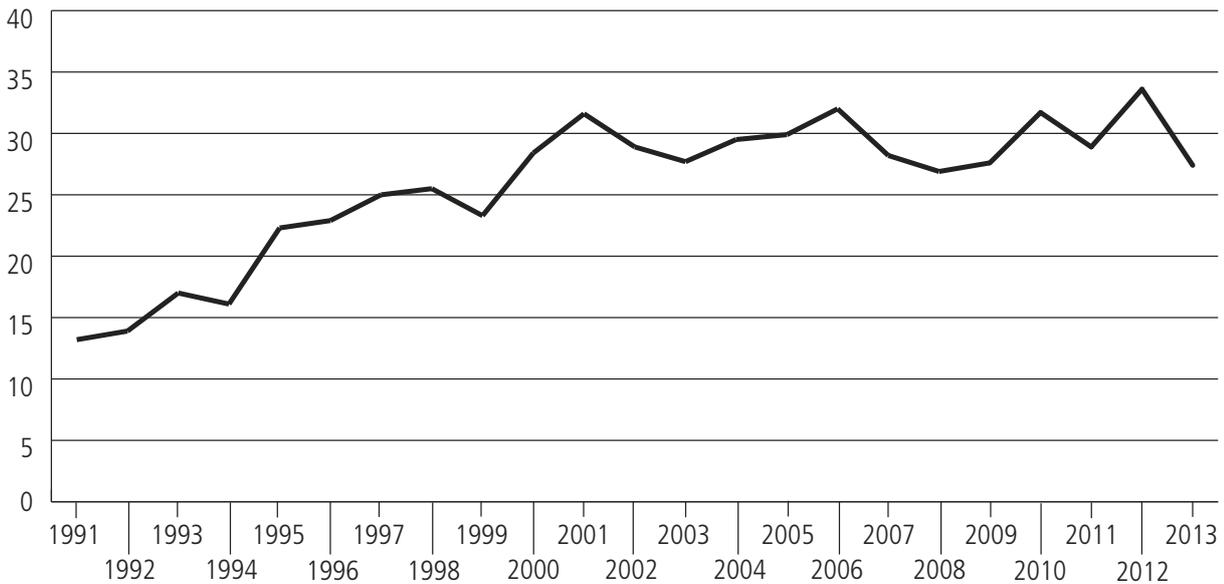
Of children with diabetes in Wales, almost all (98.1% of boys and 96.5% of girls) have type 1 diabetes. Type 1 diabetes is one of the most frequent chronic diseases in childhood and has major short term and long term impact on health, lifestyle and life expectancy. Children and young people with type 1 diabetes, along with their families, have specific needs which differ from the needs of adults.

Incidence rates of type 1 diabetes in childhood

Contrary to many other countries, the Brecon group register data demonstrates that the incidence of type 1 diabetes in children in Wales has not risen over the last decade (figure 4), despite previous increases.

¹⁰ National Paediatric Diabetes Audit.

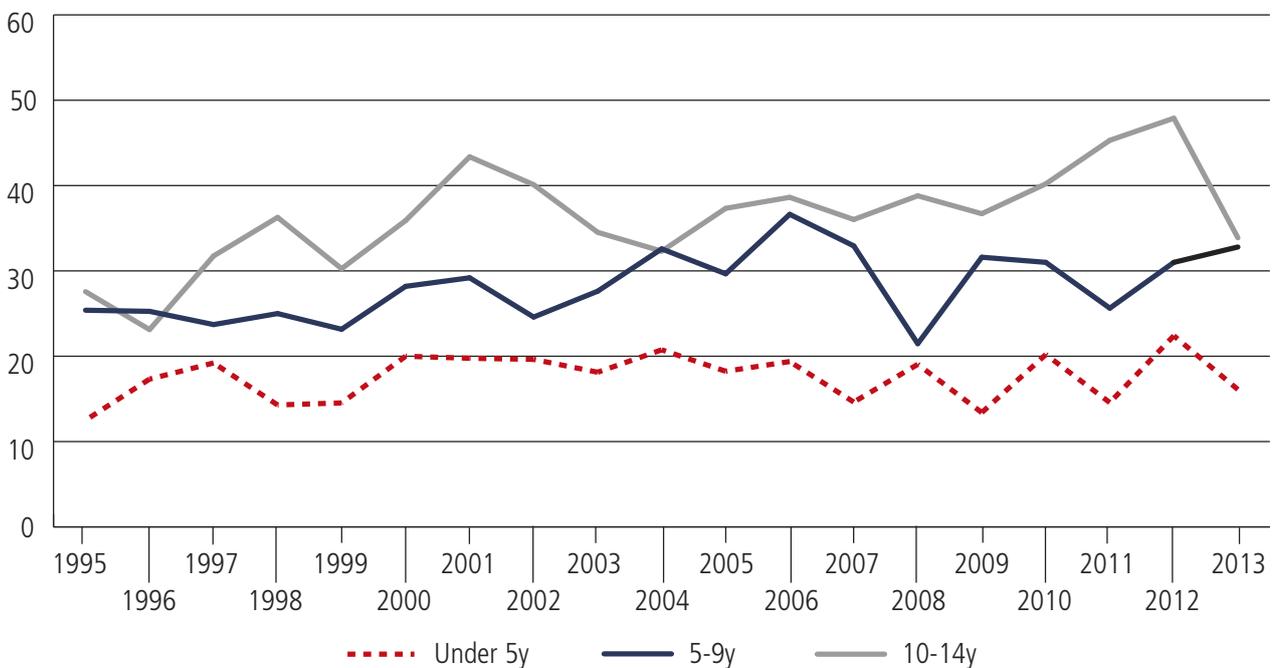
Figure 4: All Wales type 1 diabetes before age 15 incidence rate per 100,000 population



Source: Brecon Group, 2014

In England, there is a suggestion from recent national audit data that the age at diagnosis may be falling. If this trend is confirmed, it will have significant resource implications as younger children often need more intensive multi disciplinary team input (such as pump therapy, training for schools and carers). The Brecon group register data does not show this trend occurring in Wales (figure 5).

Figure 5: All Wales type 1 diabetes before age 15 incidence per 100,000 population by age at diagnosis



Source: Brecon Group, 2014

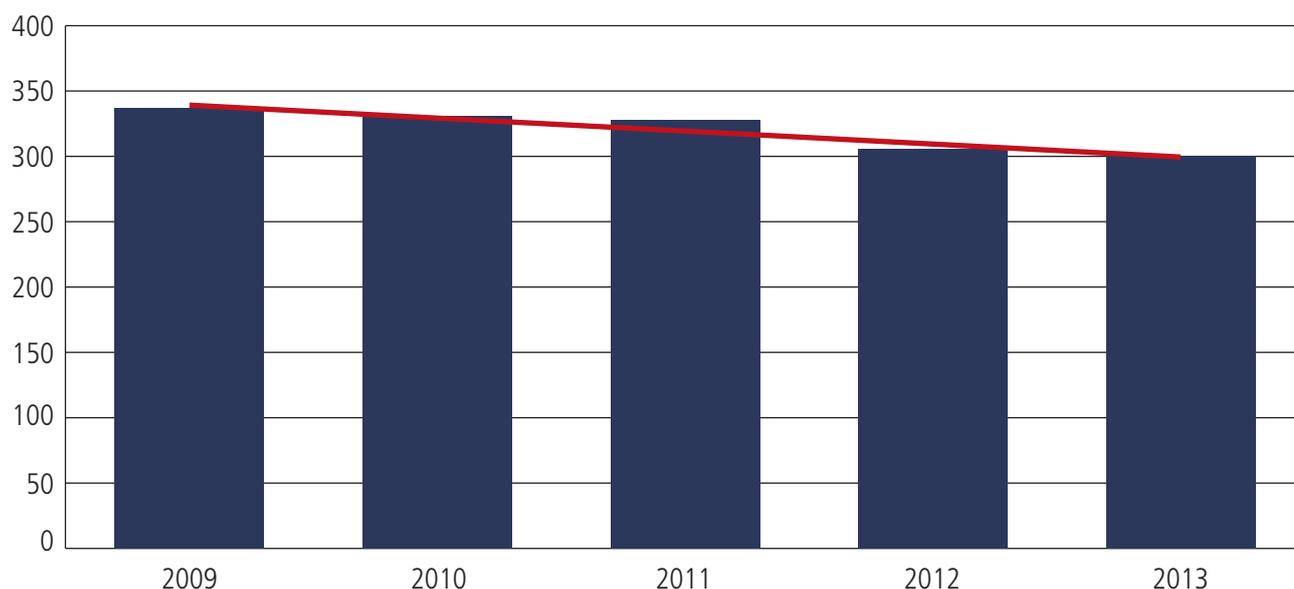
Children with type 2 diabetes

With increasing levels of obesity, type 2 diabetes is now occasionally seen amongst children and young people. These children are likely to have serious diabetic complications in later life. At the moment these numbers are small in Wales (between 2 and 12 new cases per year) and are not rising.

3.4 Diabetes mortality rate

This tells us how many people die from diabetes each year¹¹. If we are successful, over time we would expect to see a continued fall in the number of deaths from diabetes and lower mortality rates comparable with the best in Europe.

Figure 6: Diabetes crude mortality in Wales – numbers



Source: NWIS via Office of National Statistics (ONS)¹²

Deaths from diabetes are relatively low in Wales as can be seen from figure 6. In 2013, 300 people died from diabetes. This has fallen from 420 deaths in 2009 – a 28% reduction in five years.

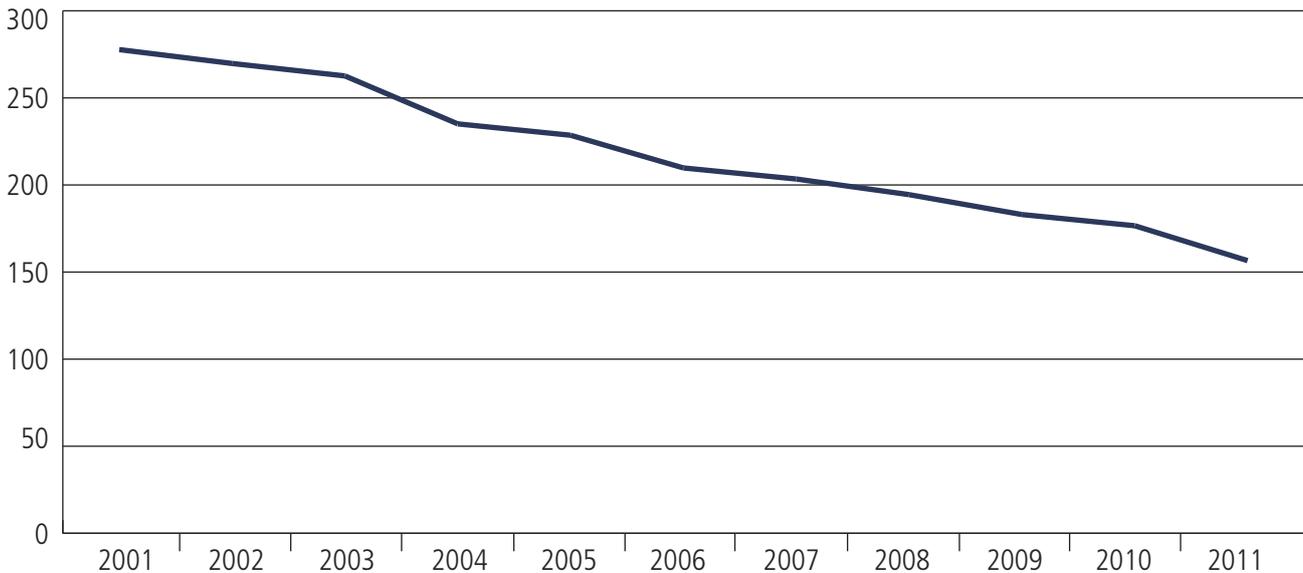
A better indication of the impact diabetes has on an individual's mortality is the rate of deaths from cardiovascular diseases. It is estimated that half of all deaths from diabetes result from cardiovascular disease including heart attacks and strokes¹³.

¹¹ Expressed as an age standardised rate to allow comparisons between years and countries.

¹² Death registrations where causes of death was Diabetes Mellitus (E10-E14).

¹³ Diabetes UK.

Figure 7: Death rates in Wales (age standardised) per 100,000 population for all cardiovascular diseases



Source: *Health Maps Wales*

Figure 7 shows that there has been a steady decline in the rate of people in Wales dying from cardiovascular disease since 2001. In 2001 almost 14,000 people died from cardiovascular disease, by 2011 this had fallen to just over 9,000 deaths. The main factors associated with the sharp decline in avoidable deaths from cardiovascular disease are advances in the field of medicine and improvements in lifestyle behaviors which increase the risk of developing or dying from cardiovascular disease.

3.5 Impact of geography on diabetes

Diabetes does not impact upon everyone in our society equally. Significant inequalities exist in the risk of developing diabetes, in access to health services and the quality of those services, and in health outcomes, particularly with regard to people with type 2 diabetes.

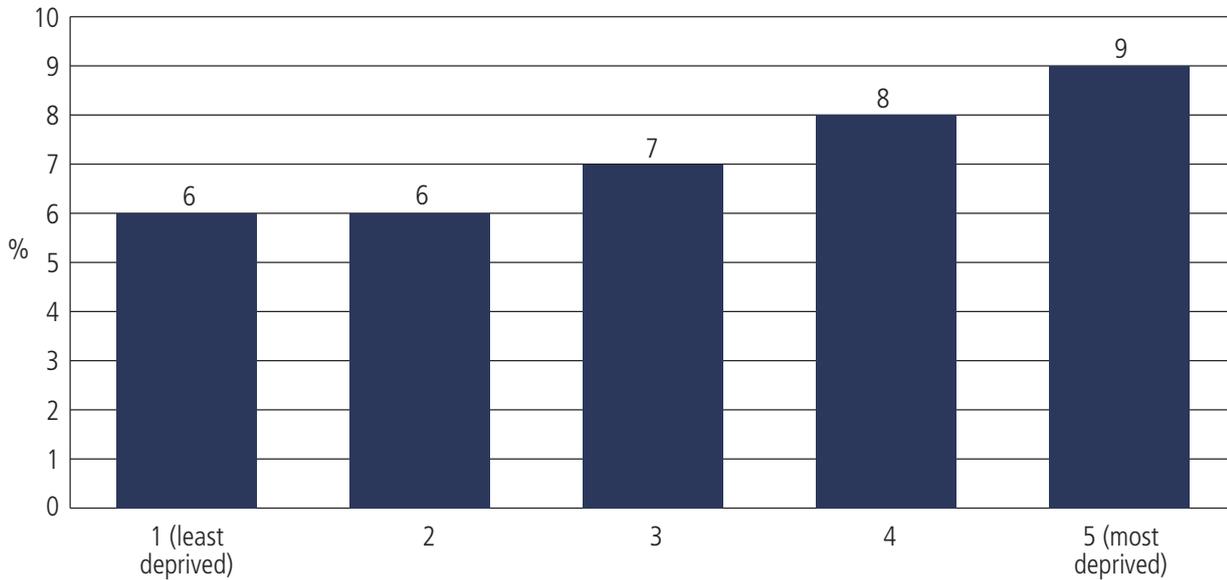
Type 2 diabetes is more prevalent among less affluent populations. Those in the most deprived one-fifth of the population are one-and-a-half times more likely than average to have diabetes at any given age¹⁴.

Both mortality and morbidity are increased by socio-economic deprivation. Illness because of diabetes complications is three-and-a-half times higher in people in social class five compared with those in social class one. Deprivation is strongly associated with higher levels of overweight and obesity, physical inactivity, smoking and poor blood pressure control, but also with other factors including poorer blood glucose control; lower education, employment and housing status; worse access to services; and less chance of being referred for help. In addition, those who are socially excluded may experience a sense of hopelessness that reduce their confidence to manage their diabetes and any complications.

¹⁴ National Diabetes Audit.

Figure 8 highlights that 9% of those people living in the most deprived areas of Wales report being treated for diabetes compared to 6% of those living in the least deprived. Health boards need to take action to reduce this gap.

Figure 8: Percentage of adults in Wales (16+) who reported currently being treated for diabetes by Welsh Index of Multiple Deprivation, 2013



Source: Welsh Health Survey, 2013

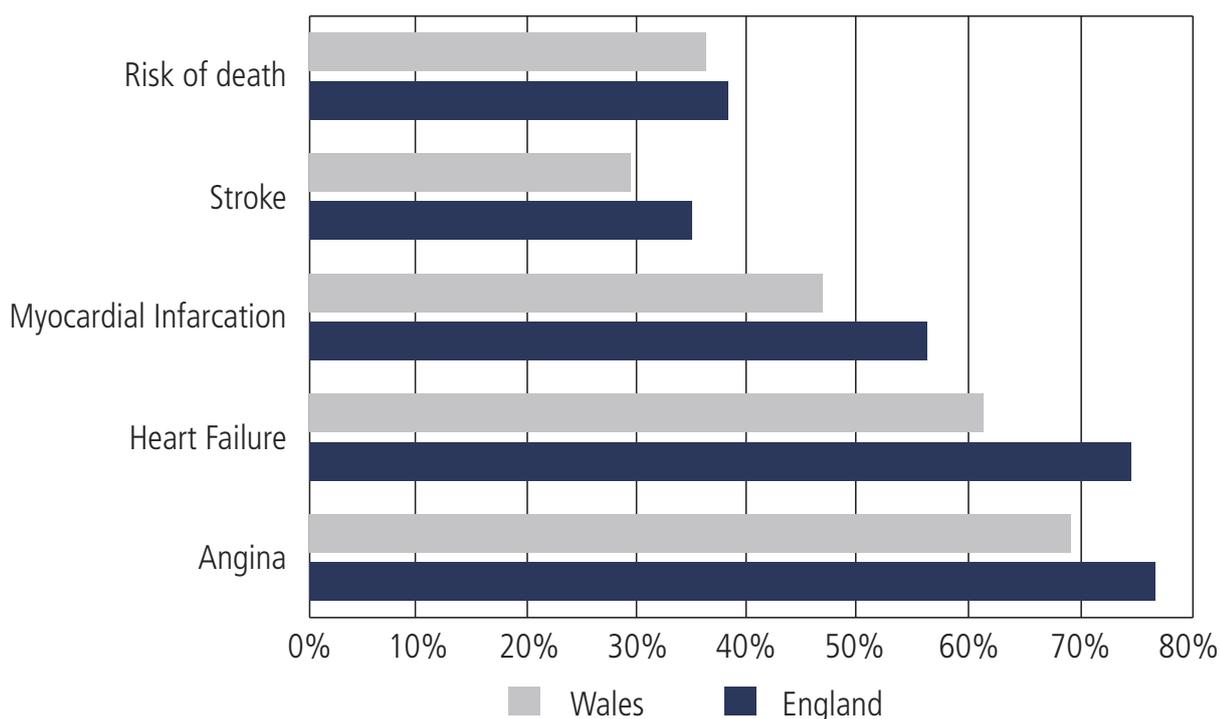
3.6 Complications associated with diabetes

People with diabetes have a substantially higher risk of serious illness, hospitalization and premature death compared to the non-diabetic population.

If diabetes isn't treated, it can lead to a number of other health problems. Diabetes causes damage to both large and small blood vessels. This damage is related to blood sugar control, and over a long period results in medical problems with the eyes, kidneys, heart, brain, legs, nerves, reproductive system and resistance to infections.

People living with diabetes may also have sudden illness which may need urgent hospital treatment as a result of their condition, including hypoglycemia, diabetic ketoacidosis (DKA), and hyperosmolar hyperglycemic state (HHS). All these complications are more common where diabetes is poorly controlled.

Figure 9: Additional risk of complications for people aged over 17 with diabetes



Source: *National Diabetes Audit 2011-2012, Report 2 Complications*¹⁵

Figure 9 highlights that a person aged over 17 suffering from diabetes is more likely to develop heart disease or have a stroke. Prolonged, poorly controlled blood glucose levels increase the likelihood of atherosclerosis, where the blood vessels become narrowed by fat, reducing blood supply. This may result in angina (heart pain in the chest) and also increases the chance that a blood vessel in the heart or brain will become blocked, leading to a heart attack or stroke. The risks of complications are slightly less in Wales than England.

Diabetes also damages the eye by injuring small blood vessels in the retina. It is the most common problem causing blindness that starts between ages 20 and 74. This is known as diabetic retinopathy. 93% of diabetes patients in Wales have had a retinopathy examination in the last 15 months.

Damage to the nerves of the foot can mean small nicks and cuts are not always noticed, and this, in combination with poor circulation, can lead to a foot ulcer. About 1 in 10 people with diabetes get a foot ulcer, which can cause a serious infection. 91% of diabetes patients have had a foot exam in the last 15 months.

¹⁵ The expected complication count is that which would occur if the observed subject population experienced the standard population's age and sex specific complication rates.

4. Diabetes care in Wales

We have developed a number of NHS quality assurance measures to help us understand how well we are preventing, detecting and treating diabetes in Wales. These form the basis of the health boards' delivery plans on diabetes that were published in 2014. To improve outcomes, health boards have been asked to develop strategies that address the needs of their area and report on in the following areas:

- Children and young people
- Preventing diabetes
- Detecting diabetes quickly
- Delivering fast, effective treatment and care
- Living with diabetes
- Improving information
- Targeting research

We are confident that the strategies and initiatives undertaken by local health boards together with Public Health Wales and the Welsh Ambulance Services NHS Trust will achieve improved outcomes for patients.

5. Children and young people

Cwm Taff University Health Board have undertaken the following to support children and young people:

- An audit of early recognition of diabetes within primary care to identify how many children and young people are referred within 24 hours of seeing their GP. This will enable them to assess the impact of the collaborative working between primary and secondary care on raising awareness of the symptoms of diabetes.
- Working with Diabetes UK and school nurses to improve early recognition and referral to raise awareness of the four common symptoms of Type 1 diabetes.
- Support local schools to ensure that children and young people with diabetes are well managed and supported while they are in school.

The National Paediatric Diabetes Audit (NPDA) report highlights the main findings on the quality of care for infants, children and young people with diabetes in Wales and England. The 2012-13 report noted a marked improvement in the completion of all the individual key¹⁶ care processes. The percentage of children and young people over the age of 12 years with all care processes recorded has almost doubled from 6.7% in 2011-12 to 12.1% in 2012-13.

Assurance measure one – Percentage of children and young people achieving improved glycaemic control

The test for HbA1c (glycated haemoglobin) measures the amount of glucose that is being carried by the red blood cells in the body. It is used as the agreed marker for measuring blood glucose levels in the blood and the test is one of the key care processes for children and adults. HbA1c is recommended as the best indicator of long-term diabetes control.

In Wales 98.9% of patients under the age of 25 years had their HbA1c measured and 97.6% in England. This is considerably improved from 2011-12, where 89.3% of patients in England and Wales had their HbA1c measured¹⁷.

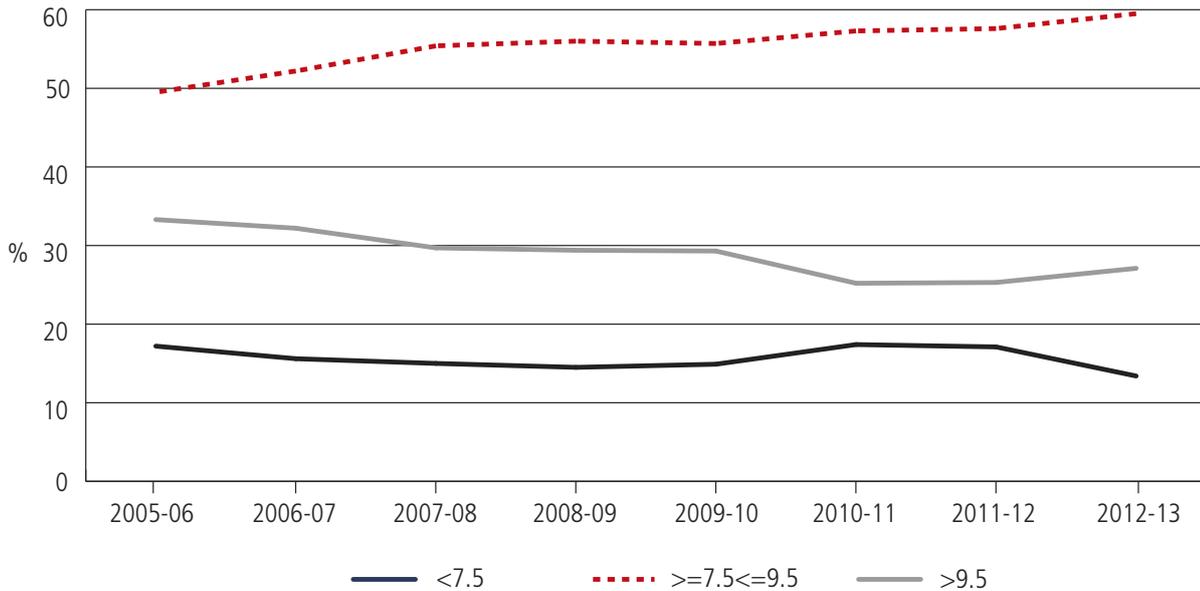
The National Institute for Clinical Excellence (NICE) recommendations are that an HbA1c level of less than 7.5% represents well managed diabetes and HbA1c levels above 9.5% would be putting children at risk of medical complications in the future.

The results, as highlighted in figure 10, for Wales in the 2012-13 diabetes audit show that: 13.4% had good control (HbA1c under 7.5%); 27.1% had poor control (HbA1c over 9.5%); with 59.5% having moderate control (HbA1c between 7.5 and 9.5%).

¹⁶ The 7 key care processes for paediatrics are: glycated haemoglobin body mass index, blood pressure, urinary albumin, cholesterol, eye screening and foot examination.

¹⁷ National Paediatric Diabetes Audit.

Figure 10: Percentage of patients in Wales (children and young people) with Hba1c recorded levels of:



Source: National Paediatric Diabetes Audit

It is clear from figure 10 that many children and young people with diabetes have poor control of HbA1c levels. The diabetes delivery plan requires health boards to deliver year on year improvements in these outcomes.

Assurance measure two – hospital admissions with diabetic ketoacidosis

Consistently high blood glucose levels can lead to a condition called diabetic ketoacidosis (DKA). This happens when a severe lack of insulin means the body cannot use glucose for energy, and the body starts to break down other body tissue as an alternative energy source, creating ketones.

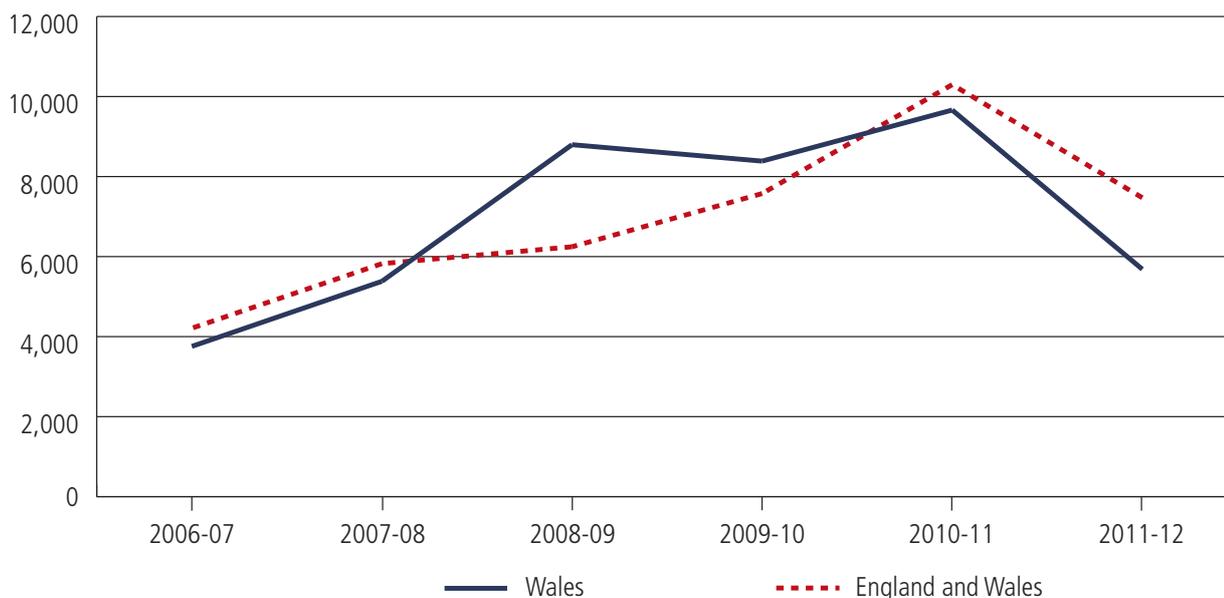
The most likely times for DKA to occur are:

- At diagnosis. (Some people who do not realise they have type 1 diabetes and do not get diagnosed until they are very unwell with DKA.)
- During another illness like flu or an infection.
- During a growth spurt/puberty.
- When insulin is not taken for any reason.

DKA usually develops over 24 hours but can develop faster particularly in young children. Hospital admission and treatment is essential to correct the life-threatening chemical imbalances, with closely monitored intravenous fluids, insulin and glucose.

Figure 11 shows that there has been an increase in the DKA incidence rates for children and young people between 2006–07 and 2011–12, but that the last 12 months has seen a decline in the incidence rate.

Figure 11: DKA Incidence Rate (per 100,000)



Source: National Paediatric Diabetes Audit

Insulin pump treatment

Recent collaborative work between diabetes registries in the USA, Germany, Austria, England and Wales demonstrates that access to insulin pump treatment is much lower in England and Wales¹⁸.

Country	Percentage
USA	47%
England	11%
Wales	12%
Germany	41%
Austria	41%

There is a pressing need to implement the National Institute of Clinical Excellence technology appraisal regarding insulin pumps fully and equitably across all health boards in Wales.

Progress in delivering the all Wales diabetes delivery plan for children and young people

Three priorities have been identified by the All Wales Implementation Group for Diabetes to help improve outcomes for children and young people with diabetes in Wales. Good progress is being made against all three:

- The establishment of an all Wales paediatric diabetes network.** This network will be a major step forward in trying to align paediatric diabetes services across Wales. All 14 children’s centers for children with type 1 diabetes will meet together, share some of the latest thinking in diabetes research, and make sure all children’s services in Wales all deliver the same high quality care. Participation from young people, parents and third sector organisations will be invited.

¹⁸ ESPE Abstracts (2014) P-D-1-3-83.

- **A quality assurance peer review programme of centres delivering care in Wales.**
The power of the peer review is that it is externally validated against an agreed set of standards and part of a nationally agreed quality improvement programme. All health boards in Wales have participated in the DQUINs programme hosted by NHS England, which is the established quality assurance process for English diabetes units. Reports will be published early in 2015.
- **The development of a structured education programme for type 1 diabetes in children.** The Brecon group¹⁹ are collaborating with English units to develop a structured diabetes education programme for England and Wales.

¹⁹ The Brecon Group was established in 1994 and maintains a register of children with diabetes in Wales.

6. Preventing diabetes

Obesity is the top risk factor for type 2 diabetes at all ages. According to Diabetes UK, it accounts for 80-85% of the overall risk of developing type 2 diabetes and underlies the current global spread of the condition.

Childhood obesity

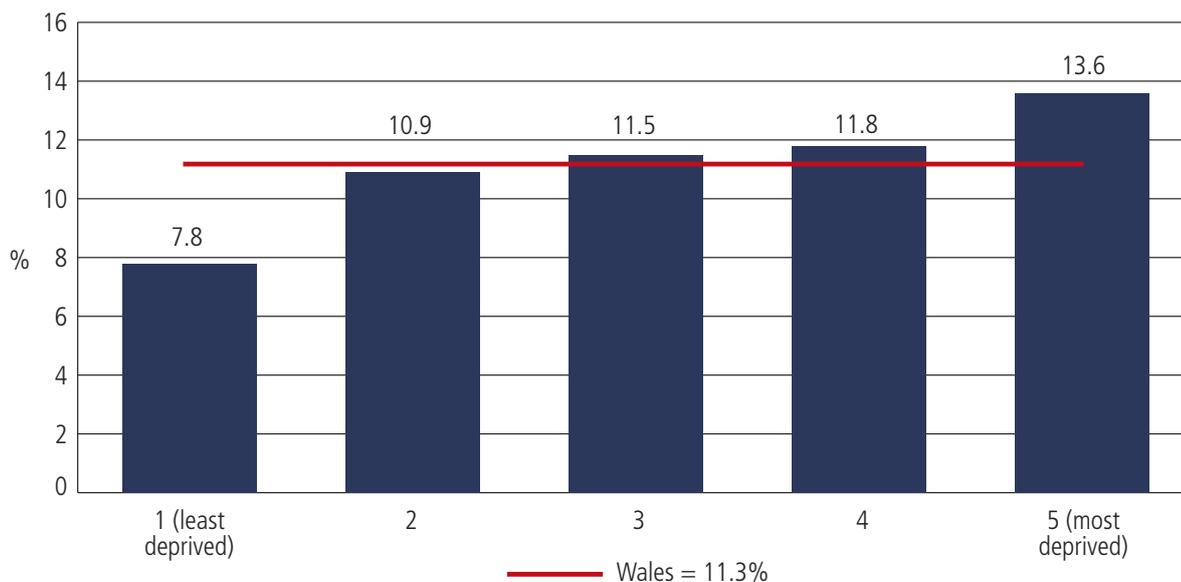
Prevalence of childhood obesity is an ongoing concern in Wales which has one of the highest prevalence rates in Europe²⁰. Children who are obese are reportedly being diagnosed at a much younger age with obesity related diseases such as type 2 diabetes.

The Child Measurement Programme for Wales is an annual programme that identifies the prevalence of overweight and obesity amongst children. Almost 30,000 children aged 4 and 5 participated in the programme in 2012-13.

- Nearly three quarters of the children measured (73.2%) had a body mass index classified as being a healthy weight.
- The prevalence of those overweight or obese in Wales in reception year (26%) was significantly higher than that for England (22%).
- 11.3% (3,316) of children measured were obese.
- There is a strong relationship between levels of obesity and deprivation as can be seen in figure 12. 29.4% of children living in the most deprived areas of Wales were overweight or obese, compared to 21.4% in the least deprived areas. For obesity alone, 13.6% of children in the most deprived areas were obese, compared to 7.8% in the least deprived areas.

²⁰ World Health Organisation/ENHIS (December 2009) "Prevalence Of Overweight And Obesity In Children And Adolescents, Fact Sheet 2.3" Code: RPG2_Hous_E2.

Figure 12: Proportion of children in Wales aged 4-5 years who are obese, Welsh Index of Multiple Deprivation quintiles, Child Measurement Programme for Wales, 2012-13



Source: Public Health Wales Observatory, using CMP data (NWIS), WIMD 2011 (WG)

Adult obesity

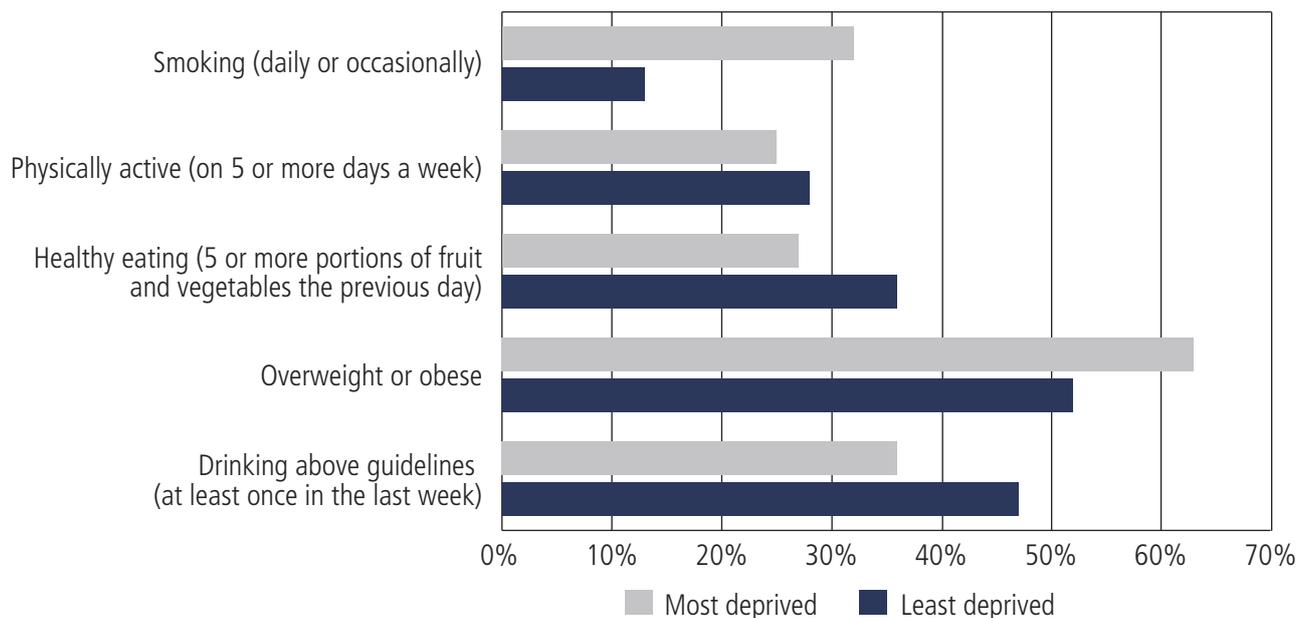
58% of adults in Wales are overweight or obese (54% of women and 63% of men)²¹.

Losing weight, increasing levels of physical activity, stopping smoking and reducing alcohol intake can all help to lower the risk of developing type 2 diabetes.

Figure 13 clearly shows that those individuals living in the most deprived parts of Wales are more likely to smoke and are overweight or obese than those in the least deprived parts of Wales. These individuals are at a higher risk of becoming diabetic and therefore health boards will need to ensure that their preventative strategies focus upon the needs of all their residents.

²¹ Welsh Health Survey – 2013.

Figure 13: Adults who reported ...age standardised by deprivation in 2013



Source: Welsh Health Survey 2013

People over the age of 50 can perform online health checks through the Addtoyourlife.co.uk website. The site developed by Public Health Wales, is set to provide tailored health and wellbeing information, advice and direct people to necessary support to help them live healthier lifestyles.

The service, which is also available by telephone, is a self-assessment for the 1,148,030 people in Wales over the age of 50 to provide them with an overall picture of their health and wellbeing and to help them make better lifestyle choices.

It can be accessed through computer, smart phone, or tablet computer and targeted community support will also be available through Communities First, Age Cymru and NHS Direct Wales. As people get older, they are more at risk of developing cancer, heart disease, kidney disease, diabetes and other long term conditions. The earlier risk is detected, the greater the chances of taking action to prevent that risk from becoming a reality. It is part of a greater shift in emphasis in health services in Wales from focusing solely on treating illness to a greater focus on improving and protecting health for all.

7. Detecting diabetes quickly

NHS Wales needs to be in a position to develop a more preventative, primary and community care led NHS to ensure that those individuals at risk of diabetes can be identified and then supported to manage their condition.

According to Diabetes UK there are about 66,000 people with undiagnosed type 2 diabetes in Wales and if they remain undetected may present with serious complications. They also estimate that another 350,000 people could be at risk of developing diabetes and the numbers are rising each year. If current trends continue then it is estimated that by 2025 that 288,000 people in Wales will have diabetes.

Diabetes UK Cymru has been working with Public Health Wales to identify the estimated 66,000 people in Wales who have diabetes but have not been diagnosed. In the last three years with the help of all pharmacies across Wales, they have conducted over 30,000 diabetes risk assessments and thousands of people have been referred to their GP for further tests or pre-diabetes.

Assurance measure three – Reducing the number of people with untreated hypertension and reducing the number of people with high levels of blood pressure

In Wales, almost 500,000 people (15.5%)²², have high blood pressure (hypertension). It is less common in younger adults. High blood pressure is more common in people with diabetes. Around 3 in 10 people with type 1 diabetes and around 8 in 10 people with type 2 diabetes develop high blood pressure at some stage. Diabetes plus high blood pressure is a particularly strong combination of risk factors. Having diabetes raises the risk of heart disease, stroke, kidney disease and other health problems. Having high blood pressure also raises this risk. Diabetes and high blood pressure together raises the risk of health problems even more.

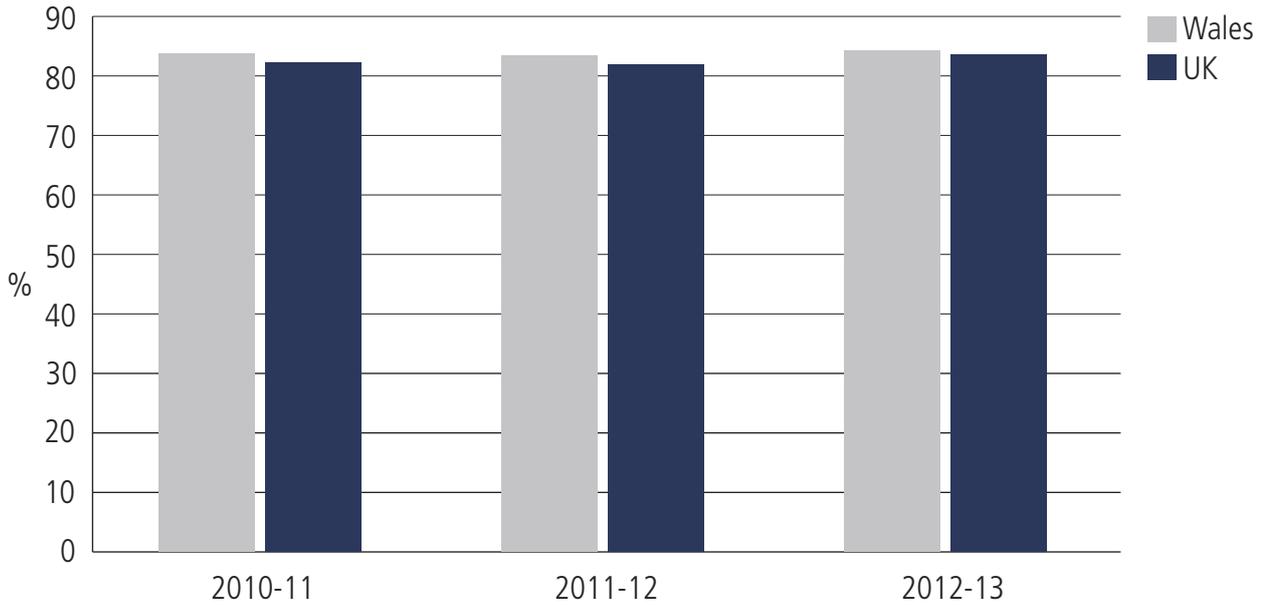
In addition, some other complications of diabetes are more common if you have high blood pressure. For example, damage to the back of the eye (diabetic retinopathy) and kidney damage related to diabetes (diabetic nephropathy).

It is important that people are given advice to ensure that their blood pressure remains at recommended levels. For those with high blood pressure their condition needs to be managed and controlled and appropriate advice given.

It is encouraging to note in figure 14 that more than 80% of those patients on the Cardiovascular disease – primary prevention (CVD-PP) register and diagnosed with hypertension were given lifestyle advice from their primary care service. The actual number of patients given lifestyle advice rose by 12,797 to 68,793 in 2012-13. Through active support and management of those individuals on the CVD-PP register with hypertension, it is hoped that primary care services will be in a position to either prevent diabetes or diagnose very quickly the start of diabetes.

²² Quality and Outcomes Framework 2014.

Figure 14: Percentage of people diagnosed with hypertension after 1st April 2009 who were given lifestyle advice in the last 15 months



Source: *Quality and Outcomes Framework – September 2014*

Assurance measure four – Increase the numbers newly diagnosed with diabetes receiving structured education

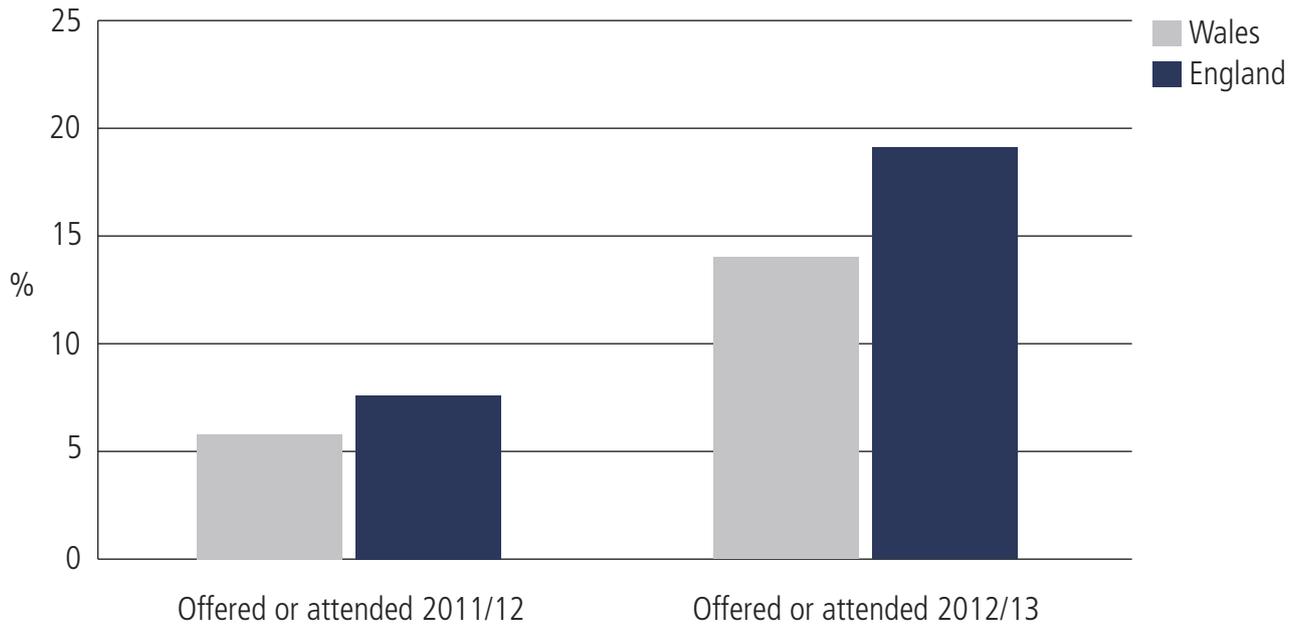
A new diagnosis of diabetes presents an opportunity to influence lifestyle changes that can positively affect the future health of the person diagnosed. The person diagnosed with diabetes should be educated about their type of disease, and where appropriate referred to the national exercise scheme and to other organisations that can provide support.

Patient empowerment and effective self management of diabetes is best achieved through education.

Figure 15 highlights that the percentage of newly diagnosed diabetics receiving structured education has improved from 5.8% in 2011-12 to 7.6% in 2012-13. However the percentages receiving structured education in Wales is considerably below that in England (19.1%).

The Diabetes Implementation Group has agreed that this will be a national priority for 2015. The Welsh Government has also identified the provision of structured education as a priority and will expect health boards to make progress in this area.

Figure 15: Structured education for people newly diagnosed with diabetes



Source: National Diabetes Audit 2011-12 and 2012-13

Hywel Dda University Health Board is undertaking a feasibility study with Aberystwyth University looking at the introduction of the Stanford Diabetes Self Management Programme for adults. The health board has also planned and delivered a recognised structured diabetes education service across three counties. They now have a robust single point of referral for all structured education that meets the necessary recommendations for quality and audit, which is in line with NICE (2011) guidance.

Work is also in progress with Swansea University and a digital healthcare company to assess the impact of using on line interactive film content for people newly diagnosed with type 2 diabetes in primary care.

8. Delivering fast, effective care

Diabetes care can be provided effectively and efficiently within primary care ensuring that patients have easy access to high quality, local services.

An enhanced service for diabetes was introduced in Wales in 2008-09. This has resulted in the majority of diabetic patients being managed largely within primary care following the development of local services. Only some patients at high risk or with complicated diabetes should need hospital attendance. The expansion of capacity and skills within primary care has improved the quality of diabetes care provided in the community. It has also promoted a safe, co-ordinated shift of patients from secondary care to primary care.

An integrated primary and secondary-care service for diabetes is a great way to achieve optimal care and support for diabetic patients. Since September 2012, specialist clinicians in Cardiff and Vale University Health Board, working with primary care GP leads, have led an approach to implementing a community model of care through a reconfiguration of services. The model includes the following features:

- Individual practice-linked secondary care support.
- A named consultant diabetologist for every GP practice, where all referrals from a practice are seen by the named consultant.
- A half day visit twice annually to each practice from the named consultant, for case note discussion.
- E-mail consultant to GP support.
- A new pathway to guide treatment choices in hyperglycaemia in type 2 diabetes.
- Complex patient cases referred by agreement.
- The model is supported by a team of diabetic specialist nurses.

The diabetes community model has reduced new referrals to secondary care by just over 35%. It has been evaluated extremely well by GPs with a high level of satisfaction and has resulted in practices doing more and feeling more confident in diabetes management.

Every person with diabetes should receive a planned programme of nationally recommended checks each year. This is part of the personalised care planning that enables them and their healthcare professionals to jointly agree how they will manage their diabetes. There are nine key care processes²³ that all people with diabetes should receive annually.

The National Diabetes Audit (NDA) is a major national clinical audit, which measures the effectiveness of diabetes healthcare against NICE Clinical Guidelines and NICE Quality Standards, in England and Wales.

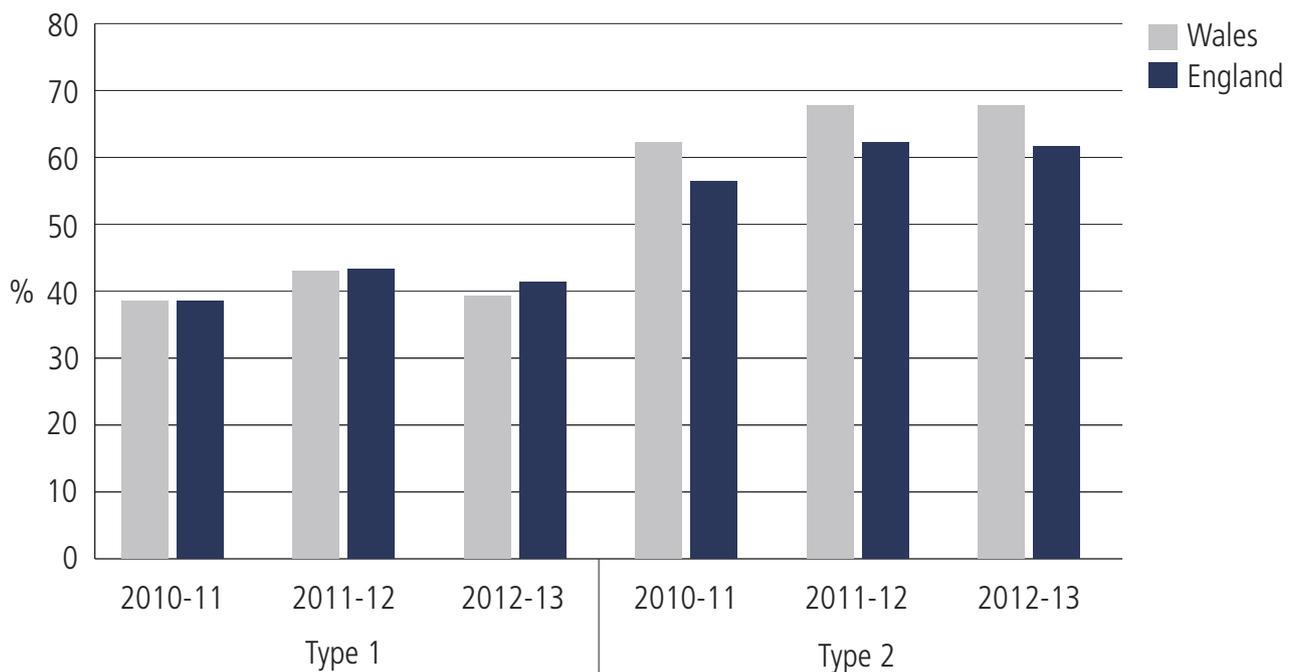
²³ The processes of care are: blood glucose level measurement, blood pressure measurement, cholesterol level measurement, retinal screening, foot and leg check, kidney function testing (urine), kidney function testing (blood), weight check and smoking status check.

Assurance measure five – Increase the number of diabetic patients receiving all of the agreed care processes

Data from the NDA gives a really clear indication as to how well the NHS in Wales is delivering fast effective care. It audits the performance of health boards against eight of the nine processes of care – retinal screening is not included in the 2012–2013 data.

Figure 16 shows that 60.7% of adults with type 1 diabetes and 33.2% of adults with type 2 diabetes are not having the annual tests and investigations associated with the national standards.

Figure 16: Percentage of patients receiving all eight care processes



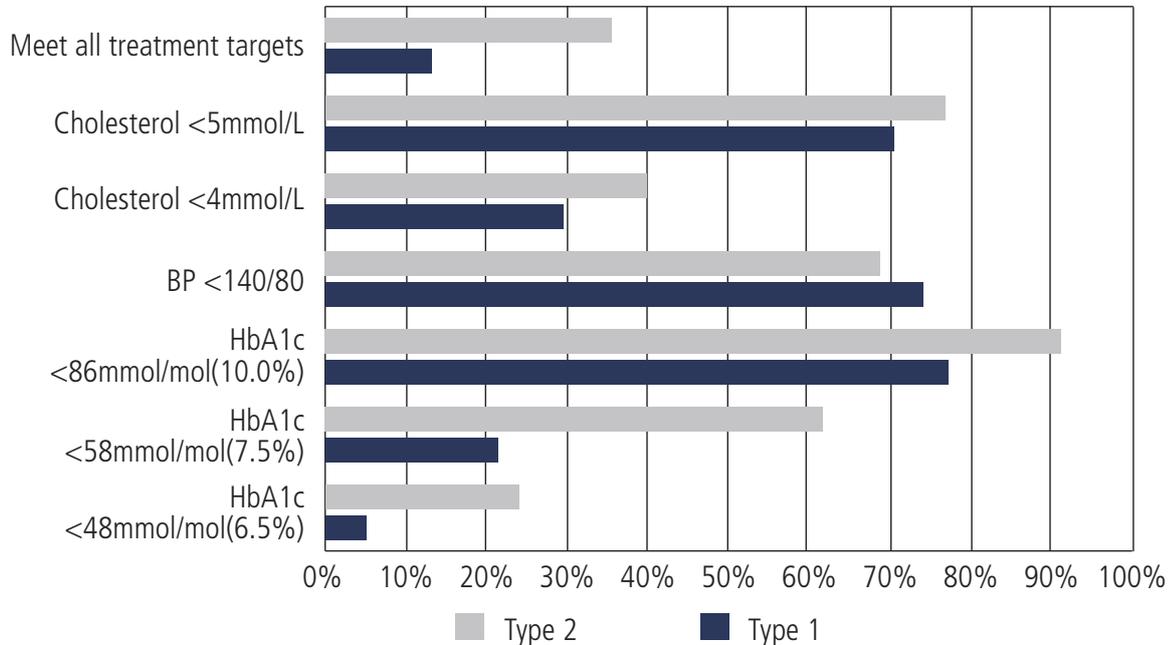
Source: National Diabetes Audit 2011-12 and 2012-13

Analysis undertaken as part of the NDA has highlighted that care process completion was usually higher in those 60 years and above and usually lower in non white ethnic groups except for urine albumin testing.

Assurance measure six – Increase the number of patients achieving the agreed treatment targets

Figure 17 shows that 86% of type 1 diabetic patients and 65% of type 2 diabetic patients do not meet the agreed treatment targets.

Figure 17: Percentage of patients in Wales meeting treatment targets by diabetes type, 2012-13



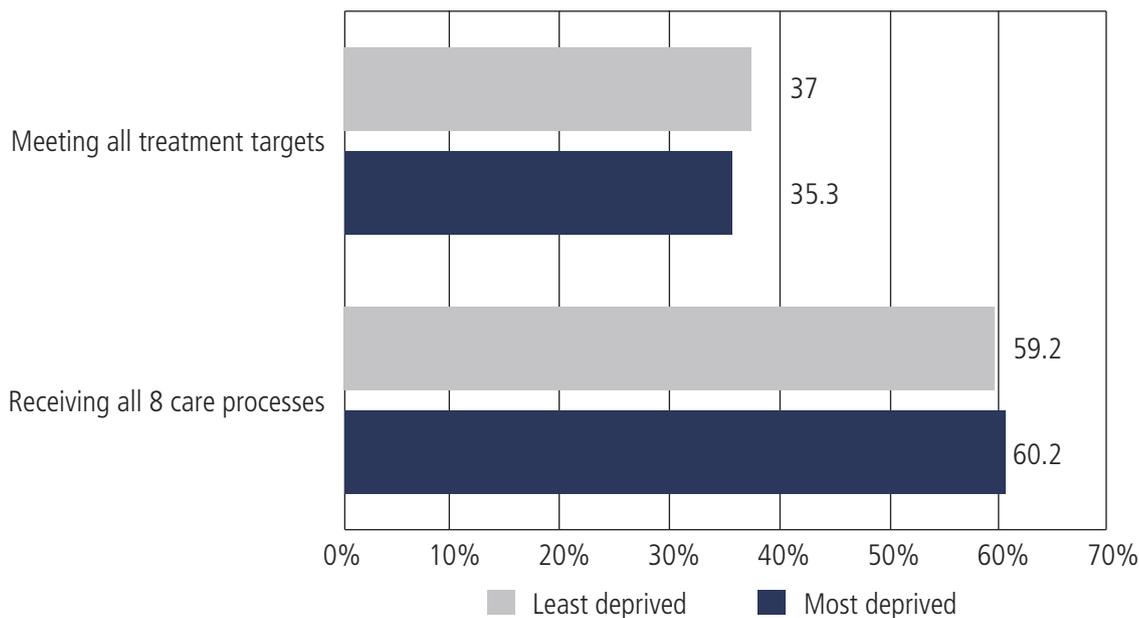
Source: National Diabetes Audit 2012-13

Analysis in 2012-13 undertaken as part of the NDA has highlighted that:

- Concurrent achievement of all three NICE recommended glucose, blood pressure and serum cholesterol levels continues to improve very slowly.
- NICE recommended glucose control (HbA1c ≤ 58mmol/mol) was recorded in 21.4% of people with type 1 diabetes and 61.7% of people with type 2 diabetes, a slight reduction on the previous year.
- NICE recommended blood pressure (less than 140/80 in all) was recorded in 74.1% of people with type 1 diabetes and 68.8% of people with type 2 diabetes. This is a marked improvement on the previous year when the figures were 55.5% for type 1 and 44.2% for type 2.
- NICE recommended cholesterol less than 4mmol/l was recorded in 29.5% of people with type 1 diabetes and 39.9% of people with type 2 diabetes; cholesterol less than 5mmol/l (incentivised) was recorded in 70.5% of people with type 1 diabetes and 76.8% of people with type 2 diabetes.

There is a geographical variation in the achievement of care process delivery as highlighted in figure 18. This shows that those patients living in the most deprived parts of England and Wales are less likely to access all care processes and meet the treatment targets than in the least deprived.

Figure 18: All diabetes patients in England and Wales, 2012-13, by deprivation



Source: National Diabetes Audit 2012-13

Hywel Dda University Health Board has implemented the ThinkGlucose programme across all of its main hospital sites and one community hospital. This has included the introduction of one agreed referral form, hypoglycaemic guidelines, diabetes medication chart, self management plans for all. They have also implemented a self administration policy for insulin use for inpatients developed for people with diabetes.

A ThinkGlucose web page has been developed and the health board use Hywel’s House to sign post and promote health and well being to prevent diabetes as well as provide information on local diabetes groups.

Inpatient Care

Increasing numbers of referrals to the diabetes specialist nurse within primary care prompted closer examination of the clinical pathway for the management of diabetes within community hospital sites across Cwm Taf University Health Board. It was found that those patients requiring insulin at home were often discharged from hospital without an individualised treatment plan.

The training and education programme commenced in May 2013 with the following outcomes to date:

- 55 registered nurses have been trained, all sessions have evaluated well, with positive changes made to working practice.
- Timely and appropriate referrals to diabetes nurse specialists from community hospital staff.
- Appropriate management of hyperglycaemia involving reduced use of rapid acting insulin has resulted in reduced risk of hypoglycaemia.

The sessions have highlighted the need to review the documentation of insulin administration times on medication charts. The pharmacy department is reviewing this issue.

The National Diabetes Inpatient Audit (NaDIA) 2013 gives a good Indication of patient satisfaction whilst in hospital. The majority of inpatients (83.8%) stated that they were satisfied or very satisfied with the overall care of their diabetes while in hospital (compared to 84.1% in 2012, 85.5% in 2011).

Of the inpatients who responded to the patient experience questionnaire, 51.6% stated that they had not been able to take control of their own diabetes care while in hospital to the extent they would have liked.

An essential aspect of the management of diabetes is the timely provision of suitable food. In the 2013 audit, 65.5% of inpatients (compared with 76% in 2012 and 67.1% in 2011) reported that timings of meals were suitable. 60.4% reported that the choice of meals was suitable (66.8% in 2012 and 57.3% in 2011).

The majority of inpatients (67.9%) stated that all or most staff knew enough to meet their needs while they were in hospital (compared to 73.4% in 2012 and 70.3% in 2011).

Inpatients were also asked about the provision of emotional support from staff while in hospital, with 83.8% of inpatients (compared to 84.1% in 2012 and 83.8% in 2011) stating that they did receive enough emotional support from staff to manage their diabetes.

Overall 41.3% of inpatients (compared to 49.5% in 2012 and 46.5% in 2011) thought that the staff were very good at working together as a team in managing their diabetes.

Work at Cwm Taf University Health Board demonstrated that some ward staff lacked knowledge and confidence in diabetes care.

The health board has strengthened the multidisciplinary diabetes inpatient teams. They changed the diabetes ward education to a focussed, structured and dynamic educational programme integral to the work of the inpatient team. They improved insulin documentation and introduced hypo boxes and algorithms to improve the management of hypoglycaemia.

Cwm Taf University Health Board's in-patient diabetes teams and ward based diabetes education have increased patient safety, reduced errors and length of stay, whilst also improving quality of care, staff satisfaction, knowledge and confidence.

9. Supported living with diabetes

An informed and confident diabetes patient will require fewer unplanned primary care consultations, visits to outpatients departments, hospital admissions and a reduced length of stay if they have to be admitted to hospital.

More patients needing intravenous antibiotics are now treated at home thanks to the success of a community intravenous antibiotic service operated by Cwm Taf University Health Board. Between October 2013 and September 2014 28 patients with diabetic osteomyelitis have received this service which prior to its establishment would have equated to 2,390 inpatient bed days.

Effective intervention and support services delivered in the community will help avoid unscheduled care and inappropriate hospital admission of those at risk, and will integrate better with social services and the third sector to 'pull' people away from hospital-based care.

There is an increasing role for GP clusters in planning, coordinating and delivering care at or close to home to meet those needs.

Assurance measure seven – Increasing the number of people with diabetes who have appropriate primary care checks

Local early intervention services will help avoid unscheduled care and inappropriate hospital admission of those at risk, and can integrate better with social services and the third sector to 'pull' people away from hospital-based care.

There is an increasing role for GP clusters in assessing local diabetes need and identifying those at increased risk of diabetes and in planning, coordinating and delivering care at or close to home to meet those needs.

Table 2 highlights that in 2013-14, 91% of diabetic patients are recorded as having a foot examination and risk classification in the preceding 15 months. 93% of diabetic patients have a record of retinal screening in the preceding 15 months. Patients recorded as having a neuropathy test in the previous 15 months has increased from 71% in 2004-05 to 90% in 2012-13.

	2004-05	2012-13	2013-14
Foot examination		90%	91%
Retinal screening		93%	93%
Neuropathy test	71%	90%	

Source: Stats Wales – Quality and Outcomes Framework

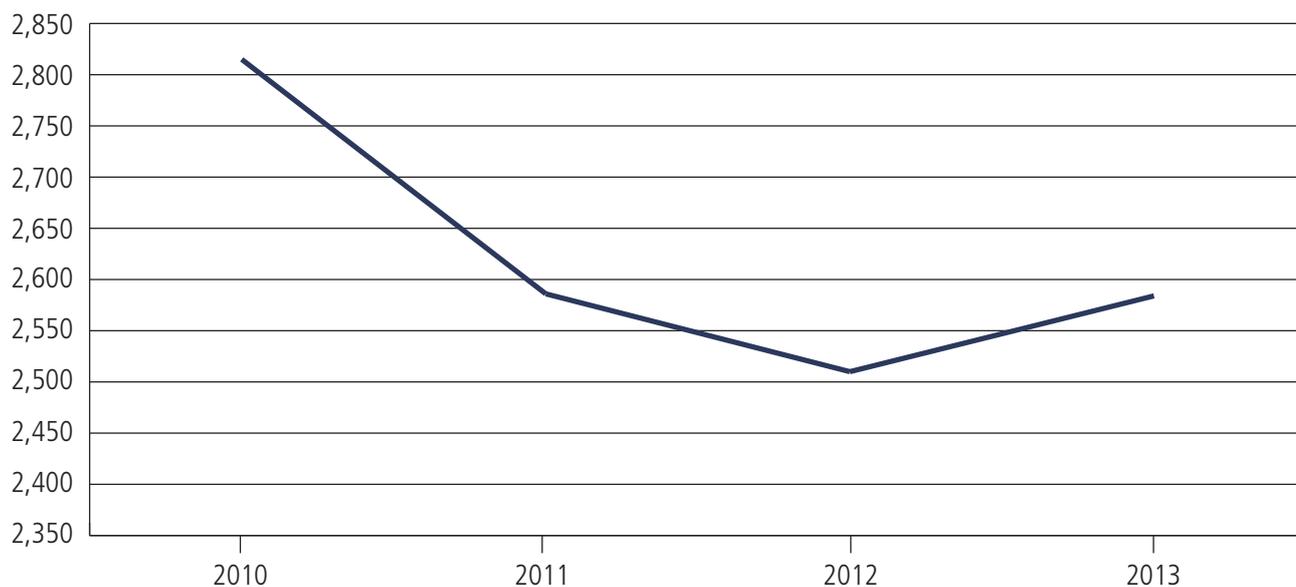
The Diabetic Retinopathy Screening Service for Wales (DRSSW) was established in 2003 by Welsh Government as an approach to improve diabetes care and prevent sight loss. Since becoming fully operational in 2006, DRSSW has screened 1.2m eyes, captured 6.5m digital retinal photographs and referred 29,000 patients, identified as being at risk of sight loss, to specialist eye services. DRSSW has also established an international reputation for the quality of its clinical screening service.

Assurance measure eight – Reduction in emergency admissions for diabetic patients

A good indicator as to how effective we are at supporting those living with diabetes is emergency admissions for individuals with diabetes.

Figure 19 shows that there has been a positive downward trend in emergency admissions for diabetics and that these have dropped by over 230 patients between 2010 and 2013. This reduction has also been supported by a reduction in the average length of stay for diabetic patients. In 2010 the average length of stay was 9 days and over 25,500 bed days in a year were allocated to diabetic patients. In 2013, the average length of stay had fallen to 7 days, and 18,819 bed days – a reduction of almost 7,000 bed days.

Figure 19: Emergency admissions for diabetes (principal diagnosis code E10-E14)



Source: NWIS – October 2013

10. Targeting research

Assurance measure nine – Recruitment to diabetic NISCHR CRP studies

Advances in diabetic research can improve quality of life, influence patient care, and save resources. The Diabetes Research Network (DRN) works to promote existing strengths and potential in diabetic research and care in Wales. It aims to ensure that the full advantages of multi-disciplinary research are applied to areas of diabetes and endocrinology and to develop the manpower, skill-base and capacity for research. It also aims to increase patient involvement in the research process and the dissemination of knowledge. DRN Wales is funded by the National Institute for Social Care and Health Research (NISCHR).

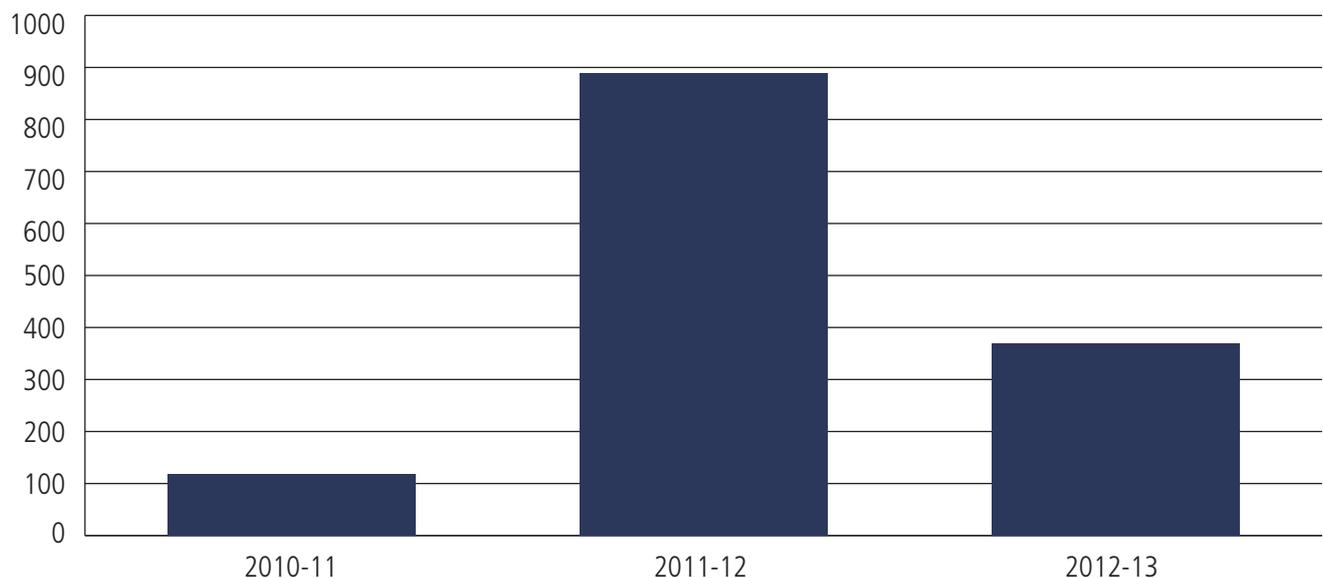
DRN Wales has set up specialist groups to direct research into particular subject areas within diabetes treatment and care. The subject areas span the range from clinical research to lifestyle management for patients.

The following studies are underway:

- Lifestyle and exercise
- Diabetic retinopathy and other small vessel complications
- Pre-diabetes, obesity and metabolic surgery
- Self monitoring of blood glucose
- Autoimmunity in diabetes

Figure 20 highlights that recruitment to research trials increased from 118 in 2010-11 by 252 to 370 in 2012-13. 755 of the additional recruits in 2011-12 were due to a single study (UKCRN Study ID2257) which closed to recruitment in June 2011.

Figure 20: Recruitment to diabetes NISCHR CRP studies



Source: National Institute for Social Care and Health Research

The following studies are underway in Cardiff and Vale University Health Board and the University:

- The Paediatric Diabetes Unit has participated in two randomised controlled trials.
- DECIDE: a randomised controlled trial exploring home versus hospital for initial management of type 1 diabetes has been completed and is awaiting publication.
- SCIPI: a randomised controlled trial for pump versus MDI insulin from diagnosis (ongoing).
- INDUCE study: podiatry currently participating in research looking at developing an on-line educational tool and use of point of care testing to guide clinicians to identify infection in patients with diabetic foot wounds (ongoing).

11. Conclusion: looking ahead to 2015 and beyond

There has been progress in the care for diabetes patients in Wales over the past 12 months. This is a tribute to all those involved in the planning and delivery of this important area. This includes staff in the NHS and those in other parts of the public sector. We must also acknowledge the invaluable work of the community and voluntary sector. We have now established firm foundations for further positive development.

In several areas, we have performed well and now have a strong sense of strategic direction. We have for the first time produced some key performance indicators that will allow us to track our developments on our journey to achieve our vision.

There is still a tremendous amount to be done in Wales and the Diabetes Implementation Group in order to support focused improvement has agreed that it would focus its attention on identifying areas where it could make a real difference by focussing on a few challenges nationally, rather than a large number of changes. The priority themes were agreed at a national workshop towards the end of 2013, which was attended by clinical and managerial representatives from across Wales. These have then been further refined into the following priorities for 2015:

- Implementation and development of the paediatric diabetes managed network.
- Mandatory participation of all paediatric sites in a quality assurance programme.
- A focus on prevention of diabetes, particularly pre-diabetes or those at a high risk of getting diabetes.
- Delivery of a single diabetes ICT system for Wales, providing a clinical, multi-disciplinary record, with information shared across primary, community and secondary healthcare settings.
- Developing a whole patient pathway for foot care and ensuring education for both patients and healthcare professionals.
- Improving in-patient care for people with diabetes, including the potential for secondary prevention.
- Improving patient and carer engagement in service planning and delivery.
- Completion of a review of current levels and types of “structured diabetes education” across Wales to inform future planning and provision.
- Ensure a phased improvement in the uptake of structured diabetes education.
- Developing and quality assuring peer support education programmes.

The challenges ahead are many, and significant, but we can look to the future with a sense of shared direction and confidence. We must keep this momentum going in order to deliver sustainable improvements.

In next year’s Annual Report we will look at how we have progressed during the year.