Newcastle NHS
Primary Care Trust

Newcastle City Council

Newcastle upon Tyne JSNA: Diabetes
December 2008

Where are we now?

Facts and figures

A health equity audit on adult diabetes conducted by Newcastle PCT in 2006 found that:

- 9,363 people with diabetes were identified as either living in Newcastle upon Tyne and/or having a GP from Newcastle upon Tyne
- 9,125 residents were identified as having diabetes
- The estimated prevalence of diagnosed and undiagnosed diabetes (Type 1 and Type 2 combined) was 12,478, which equates to a prevalence rate of 4.69%. This is higher than the prevalence rate for England (4.37%) but slightly lower that the rate for the North East as a whole (4.73%) and for the Northumberland, Tyne & Wear area (4.79%)
- There are substantial numbers of people with undiagnosed diabetes in the population – approximately 3,350. The un-diagnosed appear to be mainly women, aged over 60 years, with Type 2 diabetes although there were issues with the population model used. The likelihood of diagnosis does not appear to be related to deprivation.

Source: HEA, 2006

Numbers of people with diabetes

Figure 1 - Number of people with diabetes in Newcastle upon Tyne by type of diabetes (taken from Diabetes Register and practice data)

Type of Diabetes	Actual Number	%
Type 1	933	10.2
Type 2	6,905	75.7
Secondary	54	0.6
Discrepancy between type of diabetes recorded in GP and Newcastle Diabetes Centre data	62	0.7
Type of diabetes unspecified/ unknown	1,171	12.8
Total no. of people with diabetes	**9,125**	**100**

Source: HEA 2006

Local clinical knowledge suggests that the number of individuals with secondary diabetes may be an under-estimate and that some patients with secondary diabetes may be recorded as having Type 2 diabetes.

Prevalence of diabetes by age

The HEA found that the number of people with diabetes increases with age that is also reflected in the prevalence predicted by the Diabetes Prevalence Model (PBS).

Figure 2 - Diagnosed population by age group in Newcastle upon Tyne compared with the diabetic population predicted by the PBS model[1]			
	Aged 0-29	**Aged 30-59**	**Aged 60+**
Number diagnosed	375	3,276	5,474
Actual prevalence (%)	0.34	3.2	9.99
Predicted number	398	3,594	8,486
Predicted prevalence (%)	0.37	3.51	15.49
% recorded/ diagnosed	94.2	91.2	64.5

Source: HEA 2006

Prevalence of diabetes by gender

The PBS model predicts greater prevalence of diabetes in women than in men in Newcastle upon Tyne. However, this is not reflected in the actual number of people with diabetes identified in the HEA (2006).

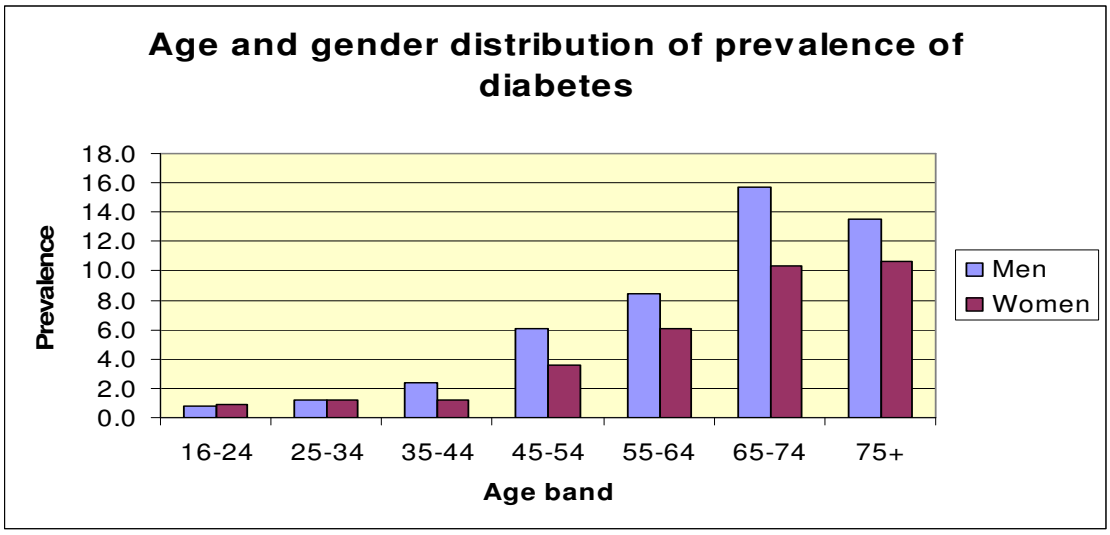
Figure 3 - Diagnosed population by Gender compared with the diabetic population predicted by the PBS model			
	Persons	**Males**	**Females**
Number diagnosed	9,125	4,806	4,319
Actual prevalence (%)	3.43	3.72	3.15
Predicted number	12,478	4,904	7,574
Predicted prevalence (%)	4.69	3.79	5.53
% recorded/ diagnosed	73.1	98.0	57.0

Source – HEA 2006

Local clinical experience suggests that this is likely to be a significant over-estimate of undiagnosed diabetes amongst women and an under-estimate of prevalence in men.

Figure 4 – Age and gender distribution of prevalence of diabetes

[1] Developed by the Yorkshire and Humber Public Health Observatory, Brent PCT and University of Sheffield School of Health and Related Research (ScHARR) to predict diabetes prevalence. This model generates estimates of expected numbers of cases of diabetes (both diagnosed and undiagnosed) at PCT and electoral ward level. http://www.yhpho.org.uk/PBS_diabetes.aspx

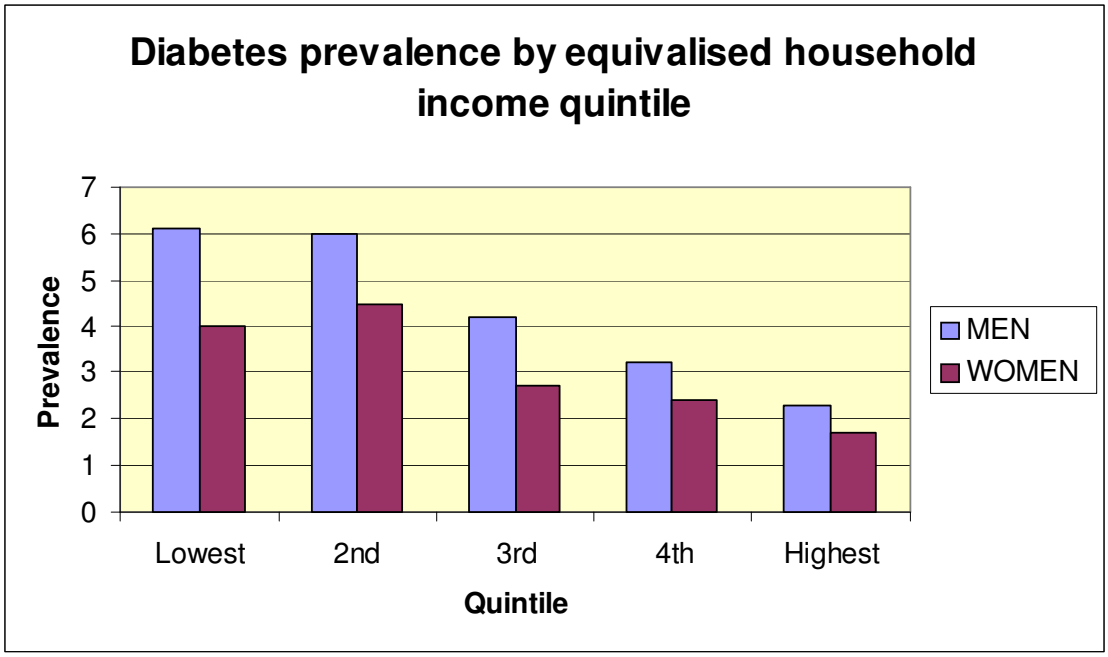


Source: Health Survey for England (2006) (Diabetes Review Data)

Diabetes and socio-economic status

Diabetes is linked to socio-economic status. People who live in more deprived areas are more likely to suffer diabetes than those from less deprived areas. (IPS, 2008)

Figure 5 – Diabetes prevalence by equivalised household income quintile



The HEA estimated the link between deprivation and diabetes. People with diabetes were allocated to a Super Output Area (SOA) based on postcode. The SOAs were grouped into five bands (quintiles). Half of the people with diabetes in Newcastle upon Tyne reside in the city's two most deprived quintiles, whereas these two quintiles contain only 40% of the population. The two most deprived quintiles contain 25% more people with diabetes that would be expected, all

things being equal. However, the audit also concluded that deprivation did not appear to be a *major influencing factor* in achieving treatment targets. (HEA, 2006)

Figure 6 - Number of people with diabetes in Newcastle upon Tyne by deprivation banding

	No. of diabetics	%
Quintile 1 – most deprived	2,395	26.2
Quintile 2	2,141	23.5
Quintile 3	1,791	19.6
Quintile 4	1,396	15.3
Quintile 5 – least deprived	1,402	15.4
Total	9,125	100

Source: HEA 2006

The HEA highlighted the following wards which have a low prevalence of diabetes, but above average prevalence of the risk factors.

- **Walkergate** ward has 23.5% of the population that are aged over 60 (Newcastle upon Tyne average = 20.4%), but the ward has just below average prevalence of diabetes.
- **Castle** ward, which has a slightly higher than average proportion of elderly people, has a significantly lower diabetes prevalence rate (2.5% compared to the Newcastle upon Tyne average of 3.4%). However, Castle is the third most affluent ward in Newcastle upon Tyne.
- Both **Moorside** and **Scotswood** have above average levels of deprivation, but lower than average prevalence of diabetes. In addition, over 16% of the population of Moorside are from BME groups, compared with 6.9% for the city as a whole.
- **West City** *is currently not a ward in the city but was previously part of Westgate and Elswick wards and was the second most deprived ward in the city. It has* a slightly higher than average proportion of BME residents, although the proportion of its population that is over 60 is just below average. Despite these statistics its diabetes prevalence rate is about average.
- **Wingrove** has the second highest proportion of BME residents of any ward in the city (24.7%), but only just above average prevalence of diabetes, and a much lower prevalence than Elswick, which has a similar BME population. (HEA 2006)

The HEA suggested that general practices with patients resident in Scotswood, Moorside, Wingrove, West City, Walkergate, Jesmond and Castle should consider more active screening of those at high risk of diabetes.

Diabetes in people from Black and Minority Ethnic (BME) backgrounds

Diabetes is linked to ethnicity with higher levels particularly in people from Black Caribbean, Indian, Pakistani and Bangladeshi ethnic groups. 4.4% of Newcastle upon Tyne's population are Asian and 0.4% are Black (IPS 2008).

Figure 7 - People with diabetes in Newcastle upon Tyne by ethnicity			
	No. of diabetics	**%**	**% (2001 Census)**
White	7,241	79.4	93.1
Asian	832	9.1	4.4
Black	47	0.5	0.4
Other	121	1.3	2.1
Unknown	884	9.7	-
Total	9,125	100	100

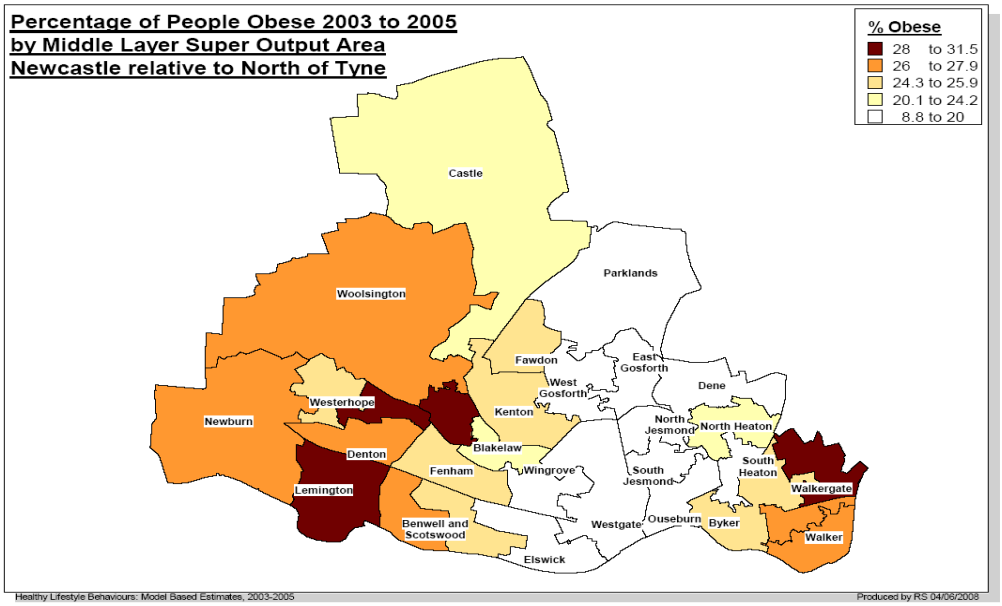
Source: HEA 2006

The HEA identified more diabetics in BME groups than the PBS model predicted. It was noted that there is significant room for improvement in the quality of the ethnicity information recorded in patients' records.

Diabetes and obesity

Diabetes is closely associated with obesity and physical activity is a preventive factor for diabetes (IPS 2008).

Figure 8 - % of people who are obese in Newcastle upon Tyne 2003-2005



Source: Diabetes Review Data (2008)

Trends

The PBS model predicts a 0.5% increase in prevalence of diabetes by 2010 from 2001 levels (due to an increase in obesity, an ageing population and better case ascertainment) (IPS 2008).

Figure 9 – Predicted prevalence of diabetes

	2001 estimate	Scenario 1[2]	Scenario 2[3]	Scenario 3[4]
Number	12,096	12,614	13,772	11,544
Prevalence (%)	4.66	4.81	5.25	4.4

Source: PBS Diabetes Population Prevalence Model – Phase 2 June 2005 (http://www.yhpho.org.uk/PBS_diabetes.aspx) - Diabetes Review Data (2008)

TARGETS

The NHS in England: the Operating Framework for 2008/09 requires 100% of people with diabetes to be offered screening for the early detection (and treatment if needed) of diabetic retinopathy.

Targets for HbA1c, cholesterol and blood pressure for people with diabetes have been published by the National Institute for Health and Clinical Excellence (NICE) (Appendix B, HEA 2006)

PERFORMANCE

National indicators

The core dataset published by the Department of Health provides an indicative list of indicators to assist partnerships in preparing their JSNA (DH, 2008)[5]. The core dataset for falls includes:

1. **Indicator 36** - Diabetes - modelled v. recorded prevalence

The Diabetes Prevalence Model (PBS) estimates diagnosed and undiagnosed prevalence as outlined in the **Trends** section.

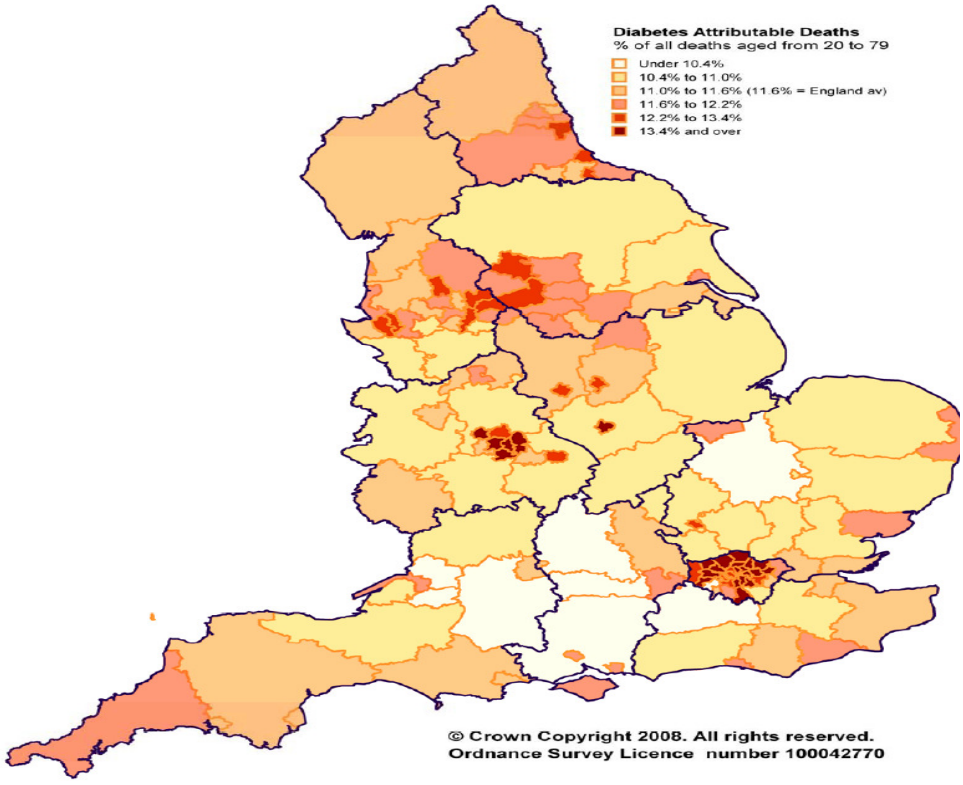
2. **Indicator 37** - Estimated excess deaths among people with diabetes

[2] Scenario 1 - Population change only and holding the 2001 BMI pattern constant
[3] Scenario 2 - Population change and the predicted BMI pattern that will occur in 2010 if trends in overweight and obesity prevalence continue. 2010 BMI patterns were predicted using BMI time series from the HSE
[4] Scenario 3 - Population change and a return to 1995 BMI patterns
[5] **The JSNA Core Dataset** DH, 2008

Figure 10 - Diabetes Attributable Death aged between 20 and 79 years			
PCT	**PCT name**	**Attributable deaths 20-79**	**% of all deaths 20-79**
5D7	Newcastle	167	12.16%

Figure 11:

Diabetes attributable deaths by PCT
Percentage of all deaths who were aged 20 to 79

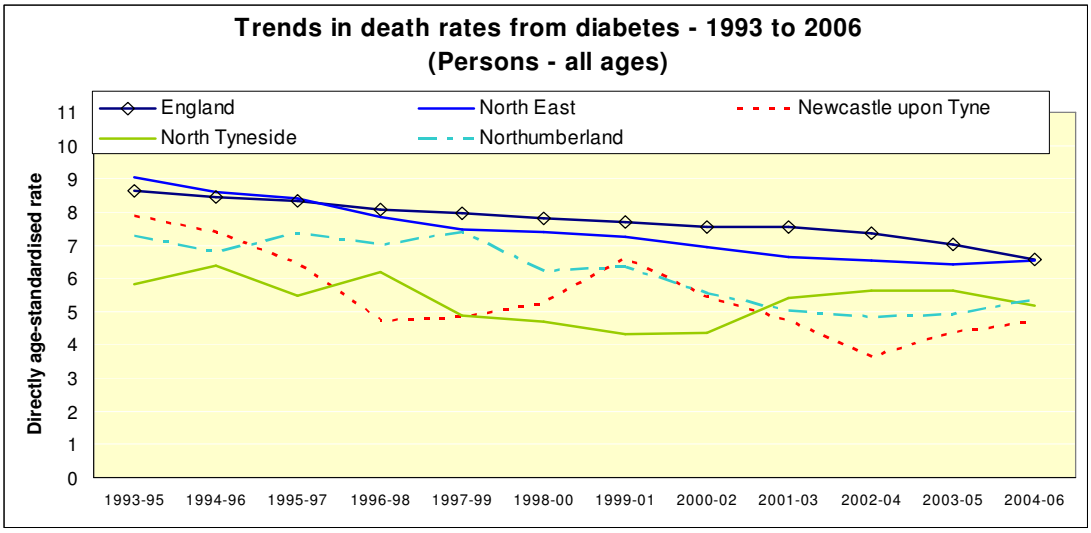


Source: YHPHO, 2008

Death rates from diabetes

Death rates from diabetes are reducing. However, the National Centre for Health Outcomes Development reports that there is a significant underreporting of diabetes as a cause of death '*as deaths in diabetic patients are often coded to the secondary complications associated with diabetes*'. Newcastle upon Tyne appears to have a lower death rate than England and the North East region for (Figure 12).

Figure 12 - Deaths from diabetes, classified by underlying cause of death (ICD-10 E10-E14, ICD-9 250 adjusted)



Source: www.nchod.nhs.uk or nww.nchod.nhs.uk - Diabetes Review Data (2008)

Emergency hospital admissions

Emergency hospital admissions have wide confidence intervals due to small numbers. However, there appears to be a significantly lower rate from patients in Newcastle upon Tyne compared to neighbouring PCTs - North Tyneside and Northumberland, for 2007/08 and compared to Northumberland in 2005/06.

Figure 13 – Number of admissions for diabetes and diabetic ketoacedosis and coma – 2005/06-2007/08

Newcastle PCT	2005/6	2006/7	2007/8*
No. emergency admissions – Diabetes	167	171	181
No. emergency admissions – Diabetic Ketoacedosis and Coma	59	61	55

* Data for 10 months has been grossed up to give an annual figure

Source: http://www.nchod.nhs.uk/or nww.nchod.nhs.uk[6] - Diabetes Review Data (2008)

Amputation

The rates for lower limb amputations in diabetic patients reduced slightly between 2005/6 to 2007/8 in Newcastle upon Tyne.

[6] Note: Accessing nww.nchod.nhs.uk i.e. from an NHS site will give access to more detailed data than the public version at www.nchod.nhs.uk

Figure 14 - Number of Hospital Procedures for Lower Limb Amputations in Diabetic Patients			
	2005/6	**2006/7**	**2007/8***
Newcastle PCT	35	25	24

* Data for 10 months has been grossed up to give an annual figure

Source: Diabetes Review Data, 2008

Local Views

What have our partners said?

A diabetes service review interactive workshop was held in June 2008. The day agreed the following principles:

- Services should be close to home, with multi-disciplinary involvement (including social, and non-NHS). There should be equity of access, taking into account cultural sensitivities and diversity.
- A consistency of care and co-ordination of services across provider organisations.
- There needs to be clear information about the system and how to use it. Family and carers' needs should be addressed in information and support given.
- It is important that support is on-going, but particularly important at diagnosis and critical times. There should be support for self-management.
- Providers should involve users in designing services. Patients should have choice in their management and involvement in the care process.
- Every aspect of care should be planned and systematic. Guidelines need to be followed (diagnosis, case finding & registration; communicating significant news; podiatry medication; information transfer; retinal screening; newly diagnosed Type 1 and patients with complex needs including Type 2.) There should be pro-active case finding and screening, getting research into practice quickly.
- Healthcare professionals must be appropriately trained.
- There should be a systematic approach to prevention across North of Tyne.
- Services need to be affordable and offer value for money.

The Healthcare Commission's **National Diabetes Service Improvement Review**, completed in November 2006, involved data collection (mainly from the Quality and Outcomes Framework) and patient surveys. Over 1200 patients (57% of those surveyed) responded to the survey across the North of Tyne.

Key findings for North of Tyne were:

- Patients were more likely to have not experienced further education and to see themselves as having had recent poor health;

- Newcastle upon Tyne patients (37%) were twice as likely than the national mean to have had their annual review at a hospital, whereas North Tyneside (14%) and Northumberland patients (10%) were much more likely to have used a community setting –the clearest single difference evident in the results;
- Newcastle upon Tyne residents were more likely to have been admitted to hospital;
- But, across all three PCOs, patients felt that such admissions were not caused by their diabetes;
- Only 8% of Newcastle upon Tyne residents were given their HbA1c results in writing whereas North Tyneside and Northumberland patients were more likely than the national average to receive written results, but still constituted a minority of all patients;
- The percentage of patients on medication for high blood pressure straddles the national average with Northumberland being highest;
- Newcastle upon Tyne and Northumberland scored higher than the national average for primary care access within two days, with North Tyneside just below the average, and;
- All three PCOs scored well on patient perceptions of involvement in care.
- Patients from Newcastle upon Tyne were less likely to be admitted for diabetes complications hypoglycaemia and DKA [0.77 observed/expected] than those from North Tyneside and Northumberland [1.21 and 1.25 respectively (IPS, 2008)

National and local strategies

National

A number of national strategies and policy guidance give a clear direction for the re-design of diabetes services.

The **National Service Framework for Diabetes** (DH, 2001) provides standards for quality of diabetes care centred on:

- Prevention of Type 2 diabetes
- Identification of people with diabetes
- Empowering people with diabetes
- Clinical care of adults with diabetes
- Clinical care of children and young people with diabetes
- Management of diabetic emergencies
- Care of people with diabetes during admission to hospital
- Diabetes and pregnancy
- Detection and management of long-term complications

NICE guidelines and technology appraisals that refer to the management and prevention of diabetes include:

- Type 2 diabetes: the management of type 2 diabetes (update) (2008)

- Diagnosis and management of type 1 diabetes in children, young people and adults (2004)
- Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period (2008)
- Type 2 diabetes: prevention and management of foot problems (2004)
- Continuous subcutaneous insulin infusion for the treatment of diabetes (review) (2008)
- Inhaled insulin for the treatment of type 1 and type 2 diabetes (2006)
- The clinical effectiveness and cost effectiveness of long acting insulin analogues for diabetes (2002)

Our health, our care, our say: a new direction for community services (DH, 2006) set a new direction for the whole health and social care system to deliver a radical and sustained shift in the way in which services are delivered, ensuring that they are more personalised and that they fit into people's busy lives. This brought about a shift from care in hospital to care outside of hospital.

The **Generic choice model for long term conditions** helps commissioners understand the process and range of services needed to be commissioned, to improve and personalise services and support people with long term conditions through chronic care models and guidance on disease management.

Practice based commissioning: achieving universal coverage (DH, 2006) describes the process to devolve commissioning decisions (with or without real or indicative budgets) to practices or practice clusters

Reforming NHS Financial Flows: Introducing Payment by Results (DH, 2003) was developed as a driver for improved efficiency & patient choice.

Local strategies

The Diabetes Service across the North of Tyne is currently under review. North of Tyne Commissioners are supporting a bid to pilot Year of Care for Diabetes across North Tyneside and West Northumberland. The proposal for redesigning diabetes services across North of Tyne is closely aligned with the remit of the Year of Care project. An integral part of the Year of Care project is how to test and develop systems which link micro and macro commissioning processes and ensuring that there are a range of service providers within the health economy. North Tyneside/Northumberland is one of the three pilot sites for this project. (Re-design briefing, 2008)

Newcastle PCT undertook a Programme Budgeting and Marginal Analysis (PBMA) exercise in 2005/06 involving all key stakeholders through the Diabetes Clinical Network. The PBMA process included clinical guidelines for referral and management of diabetes, and evidence gathered from a variety of clinical and policy sources. The exercise identified a new three tiered, community based model of care that:

- Adapts the chronic care 'whole system' model for long term conditions to diabetes care in Newcastle upon Tyne;

- Incorporates the agreed clinical pathway, practice and referral guidelines. The pathway and guidelines facilitate demand management and optimal quality of care;
- Shifts care to community based consultant, GP with special interest or nurse led clinics (tier 2);
- Shifts care to practices (tier 1);
- Could potentially provide the opportunity to use devolved budgets and locally negotiated tariffs, through Practice Based Commissioning, to manage demand, drive further service re-design, and stimulate the delivery of innovative new services. (IPS 2008)

Specific elements of care were identified within the tiered model. Each element is associated with a cost, but not all elements of care could be assigned to one of the two existing tariffs. Four additional local tariffs were therefore proposed:

- Tariff 1: annual review or first OP attendance, including specialist clinic (existing national tariff)
- Tariff 2: OP follow up, including specialist clinic (existing national tariff)
- Tariff 3: non-medical first assessment / annual review, including podiatry & dietetics (local tariff)
- Tariff 4: non-medical follow up, including podiatry & dietetics (local tariff)
- Tariff 5: patient education (local tariff)
- Tariff 6: retinopathy screen (local tariff)

A survey of Newcastle upon Tyne practices was undertaken in 2006 to ascertain: the level of support for the proposed new model; support for PBC and for indicative budgets; how much activity GPs would provide themselves and how much they would be likely to commission from tier 2 and tier 3 through their referrals. 81% of practices responded with a majority of those (67%) in favour of the proposed service re-design. 50% of those responding were interested in indicative budgets for diabetes care. The majority of practices felt able to provide more elements of diabetes care subject to availability of resources and the receipt of training.

Although the proposal to develop local tariffs and to devolve commissioning budgets to practices was not implemented, and new community based facilities in the North, East and West of the city were not established, the basic architecture of the tiered model has been implemented. A new clinical assessment clinic was established within the existing diabetes centre at the Newcastle General Hospital site, and a significant proportion of patient care for type 2 diabetics has shifted to primary care during 2007 (Re-design briefing, 2008).

Current Activity and Services

Service redesign

Work is underway to review and redesign services. It is proposed to develop new clinical pathways with PBC groups toward the end of 2008. Formal consultation on proposed service delivery models will take place in early 2009, with market

testing of whole or parts of proposed service models from April to September 2009, and new services to commence from October 2009.

What outcomes are being achieved?

Care processes

The HEA assessed the percentage of patients with diabetes in Newcastle upon Tyne who were receiving a structured programme of care (Figure 16) and the percentage of those included in the audit who were achieving the targets set by NICE (Figure 17). Figure 18 shows the achievement against the NICE targets as collated from QOF data:

Figure 15 - Rate of recording of care processes

Care process	% recorded
HbA1c	88.7
Cholesterol	87.9
BMI	86.2
Blood Pressure	91.4
Retinal Screening	81.8
Foot examination	74.8

Source: HEA 2006

Figure 16 - Overall percentage of people registered with diabetes in Newcastle upon Tyne achieving the NICE targets

Target	% Achieving target
HbA1c < 6.5%	25.9
HbA1c <= 7.5%	61.9
Cholesterol < 5mmol/litre	74.1
BP <= 135/75 mm Hg	30.2
BP < 140/80 mm Hg	41.3

Source: HEA 2006

Figure 17 - Levels of achievement on a range of QOF indicators 2007/8

	BP <145/85 DM12	HbA1c <7.5 DM20	Cholesterol <5mmol/l DM17	Record of retinal screening DM21
Newcastle PCT	83.99%	70.6%	85.4%	91.8%

Source QOF 2007/8 – Diabetes Review Data (2008)

The key findings of the HEA (2006) suggested:

- The carrying out and recording of key tests and processes increases with age, up to age 75, but tails off in the population above this age. This suggests that although older people are accessing services to a greater extent than younger diabetics, access for those aged over 75 years may be an issue, particularly those in residential and nursing homes.

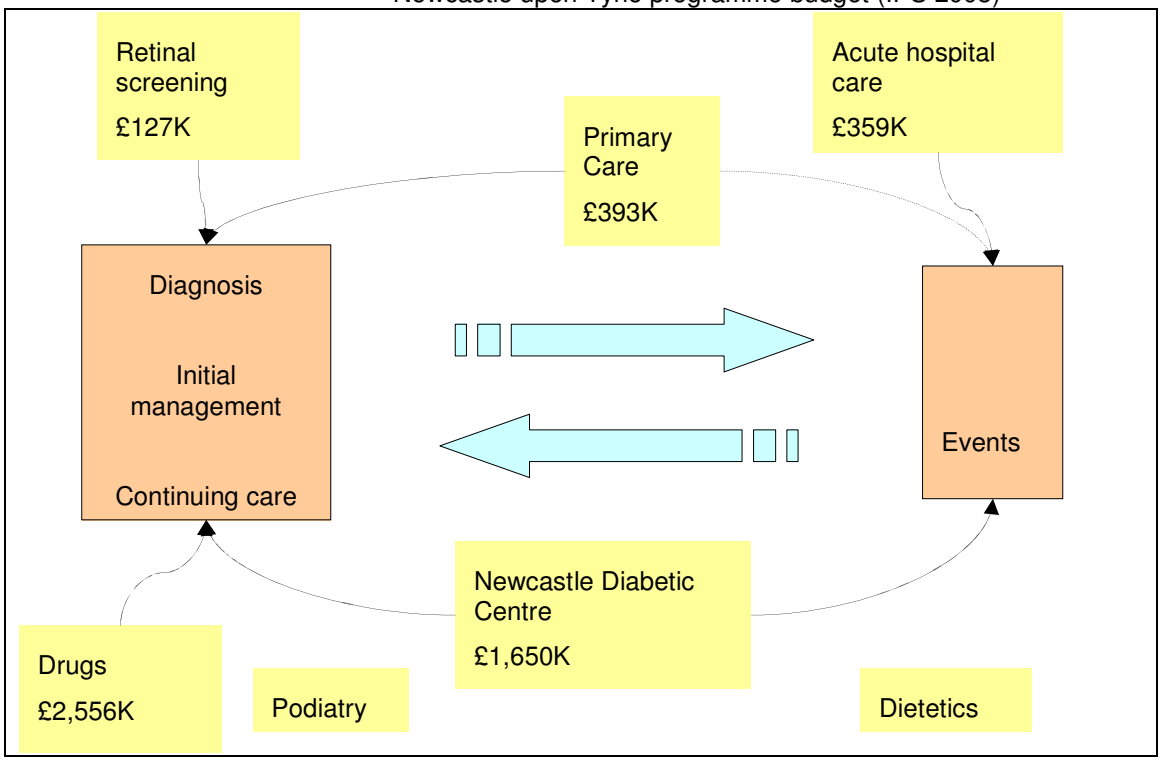
- The likelihood of Black and Minority Ethnic (BME) groups having key tests and processes recorded appears to be lower than average, particularly in relation to podiatry.
- Those who live in areas at the more deprived end of the deprivation spectrum appear to have retinal screening and foot examinations less frequently than those living in more affluent areas.
- Type 1 diabetics are less likely than Type 2 diabetics to be receiving structured diabetes care, possibly linked to the fact that they are on average younger and thus less likely to be accessing services.
- Diabetics in residential and nursing homes are less likely than all other groups in the population to be receiving a structured programme of diabetic care, with access to retinal screening and podiatry being particularly problematic.
- Retinal Screening also appears to be a problem for the housebound requiring domiciliary care. Only 62% of this group had a retinal screening test within the previous 15 months, compared to 82% for the population as a whole.
- Some significant variations between GP practices are evident, particularly in the recording of eye and foot examinations. The practices which appear to have low levels of recording of one process tend to have low levels of recording on all diabetes related processes examined in the audit.
- Targets for HbA1c, cholesterol and blood pressure for people with diabetes have been published by NICE. There are significant variations between practices in the achievement of targets.
- A higher proportion of people with diabetes achieve the cholesterol target (74.1%) than any of the other targets. Only a quarter of patients achieve the best HbA1c target (<6.5%), but this increases to over 60% as the target increases to <=7.5%. Four in ten patients achieve the blood pressure target of 140/80 mmHg or below, with three in ten having blood pressure of 135/75 mmHg or below.
- Men are more likely to be achieving the NICE cholesterol target than women.
- Achievement of HBA_{1c} targets improves as patients get older, but patients of Asian ethnicity appear less likely to be achieving this target.
- With the exception of the blood pressure target, patients with type 2 diabetes are more likely to be within the recommended levels compared to those with type 1 diabetes. Deprivation does not appear to be a major influencing factor. (HEA 2006) (IPS 2008)

What investment/spend is there?

- Diabetes services in Newcastle upon Tyne were ranked second highest spender amongst all PCOs, and first amongst 19 similar regional centre PCOs, spending £1.77m per 100,000 people (98%) more than average. (This does not include the costs of preventable diabetic admissions.)
- When relative spend was correlated against clinical outcomes, Newcastle upon Tyne's diabetes service emerged as an extreme outlier 'high cost / good outcome' service.

- Prescribing costs for insulin, oral diabetic agents and screening and monitoring agents are £59.69, £64.53 and £78.39 per registered diabetic patient for Northumberland, North Tyneside and Newcastle upon Tyne respectively.
- The overall costs for diabetes care is Newcastle upon Tyne £5,085,585 (Figure 19). This works out at an indicative cost of £529 per diabetic patient using QoF prevalence data or £1,880K per 100,000 population. (IPS 2008)
- The 2008 report on health expenditure and outcome data by Newcastle PCT commented that in diabetes services there is the potential for efficiency savings (Health Expenditure 2008).

Newcastle upon Tyne programme budget (IPS 2008)[7]



What is this telling us ?

What Are The Key Inequalities?

Undiagnosed diabetes

Overall there may be over 3,350 people with undiagnosed diabetes in the Newcastle upon Tyne area. In particular it seems likely that number of men with undiagnosed diabetes may currently be underestimated.

[7] The programme budget has looked at all diabetes care excluding paediatric and maternity care only. In-patient hospital activity has only included those admissions directly for diabetes (HRGs K11-17).Other admissions for diabetic patients with HRGs which could be related to their diabetes (e.g. renal replacement therapy) have been included for information below the total costs. Newcastle Hospitals diabetes outpatient activity was not possible to include as the diabetes specialty code is not used in outpatient activity recording. Primary care costs have only included where there is a direct cost to the PCTs. Activity rates from three GP practices of different staff group time were used to estimate costs of primary care staff time. This has been included for information but not included in the total costs.

Deprivation

Diabetes is associated with deprivation and half of those with diabetes live in areas classed as deprived. However, these areas include only 40% of the city's population, thus there are more people with diabetes than one would expect. Walkergate, Castle, Moorside, Scotswood and Wingrove have a low prevalence of Diabetes in the context of above average risk factors (e.g. age, deprivation, BME). See p.3 for details.

Overall, the review (drawing in particular on the Health Equity Audit) suggests that whilst deprivation is linked to the prevalence of diabetes it is not a major factor in reaching treatment targets.

What Are The Key Gaps In Knowledge / Services?

A more precise estimate of the number of people with undiagnosed diabetes.

What Are The Risks Of Not Delivering Our Targets?

An increase in the both the numbers of people with diagnosed diabetes and those with undiagnosed diabetes.

Is What We Are Doing Working?

Clinical care
Newcastle upon Tyne appears to be managing the clinical care for people with diabetes well in that the level of complications and emergency hospital admissions are lower than the surrounding areas. In addition deaths from diabetes are decreasing. However, the Health Equity Audit revealed a number of differences in care among specific groups e.g. older people in residential/nursing homes and people from black and minority ethnic groups were less likely to have received core tests.

Primary care
Marked variations in the quality of care were observed between different general practices. These variations could not be satisfactorily explained by differences in the socio-demography of practices.

What Is Coming On The Horizon?

The implementation of the service redesign.

An increase in demand for services given the estimated numbers with undiagnosed diabetes as well as an increase in the known risk factors such as an ageing population and increasing rates of obesity.

What Should We Be Doing Next?

Implement a tiered model of diabetes care which is primary care and community nurse based in order to reduce variation in care.

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