



Diabetes



Insulin Pump Audit – Findings for England

Background

The NHS IC was commissioned by the Office of Life Sciences to evaluate the uptake of several new technologies including insulin pumps in March 2009. The project (Clinical Innovation Metrics) reports in to the Ministerial Metrics Technology Strategy Group (a cross government departmental group). Within this project trawls of existing NHS databases demonstrated that despite NICE guidance in 2003 and 2008 no systematic data was being routinely recorded or reported about insulin pump use.

The Medical Technology Group¹ together with Ministerial support initiated a meeting for all interested organisations to raise awareness of the use of insulin pumps by people with diabetes. The National Technology Adoption Centre (NTAC)² was also in the advanced stages of producing a How to, Why to Guide on the use of insulin pumps.

The National Diabetes Information Service (NDIS) had earlier ascertained that there was no routinely recorded data from which it would be possible to deduce the present use of insulin pumps or the extent to which their use was in accordance with NICE guidance. Diabetes Health Intelligence, a strategic programme of Yorkshire and Humber Public Health Observatory was commissioned by NHS Diabetes and the Information Centre for Health and Social Care to undertake an audit of current insulin pump service provision. The findings are presented below.

Key Findings

This is the first attempt to audit provision of insulin pump services across England. It has been found that whilst paediatric insulin pump care is predominately provided by secondary and tertiary providers, the pattern of adult insulin pump care is more complex. Services are provided by a

¹ The Medical Technology Group (MTG) is a coalition of patient groups, research charities and medical device manufacturers working to make medical technologies available to everyone who needs them <http://www.mtg.org.uk/>

² NTAC works with NHS Trusts to embed innovative technologies in real-time NHS environments. The Centre's team work with a range of organisations to promote the uptake of technologies. <http://www.technologyadoptionhub.nhs.uk/>

combination of secondary providers, tertiary providers, provider arms of Primary Care Trusts, commercial organisations and hybrid arrangements. This audit has tried to capture the full range of services provided.

Given the complexity of service provision uncovered and the inability at this stage to guarantee comprehensive or even representative participation the findings of this audit need to be treated with appropriate caution.

The interim key findings presented below are based on data from 73 adult units and 76 paediatric units. This is approximately half of the units known to provide insulin pump care.

The audit has identified 1812 children (defined as less than 18 years old) and 3855 adults aged 18 years or older currently using an insulin pump. Insulin pumps are approved by NICE for the treatment of Type 1 diabetes. There is no single data source that identifies the number of children and adults with Type 1 diabetes in England but approximations can be made using existing data. The National Diabetes Survey undertaken by the Royal College of Paediatrics and Child Health indicates that there were approximately 22,500 people aged under 18 years old with Type 1 diabetes in 2009. This suggests that at least 8% of children with Type 1 diabetes are currently using an insulin pump. Approximately 10% of diagnosed adult diabetes is Type 1³. This suggests that there are approximately 221,000 adults with Type 1 diabetes in England⁴ and at least 2% of these are currently using an insulin pump. As these figures are based on the estimated total number of people with Type 1 diabetes but only those people being treated at the units who have supplied data to the Insulin Pump Audit they are probably considerable underestimates and should be used with extreme caution.

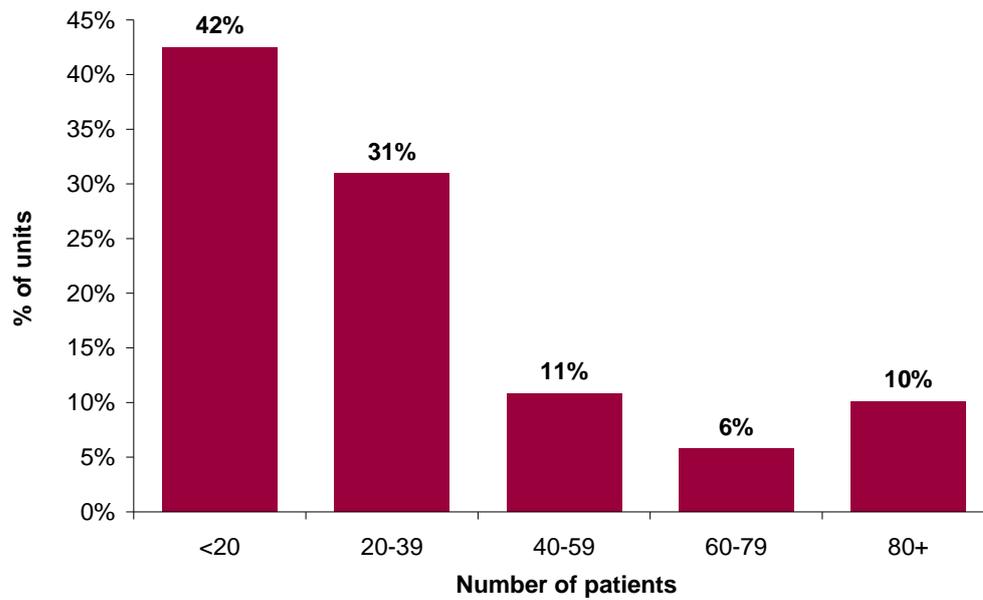
The audit data reported 35 patients with Type 2 diabetes on insulin pump therapy. This is approximately 1 in 140 of the patients known to be using an insulin pump. NICE does not currently recommend pump treatment for people with Type 2 diabetes.

The number of patients reported to be using insulin pumps varied considerably between provider units. Of those participating in the audit 42% have less than 20 patients on insulin pumps, 31% between 20 and 39 and 16% of units were providing pump services for more than 60 patients. Thus the majority of units are providing a pump service for a relatively small number of patients. There is no guidance on the appropriate number of patients to be treated by units but it may have an impact on clinical safety and clinical and cost effectiveness.

³ Lusignan S, Khunti K, Belsey J, Hattersley A, van Vlymen J, Gallagher H, Millet C, Hague NJ, Tomson C, Harris K, Majeed A, A Method of identifying and correcting miscoding, misclassification and misdiagnosis in diabetes: a pilot and validation study of routinely collected data *Diabetic Med* 2010, 27 203-209

⁴ Based on Quality and Outcomes Framework data

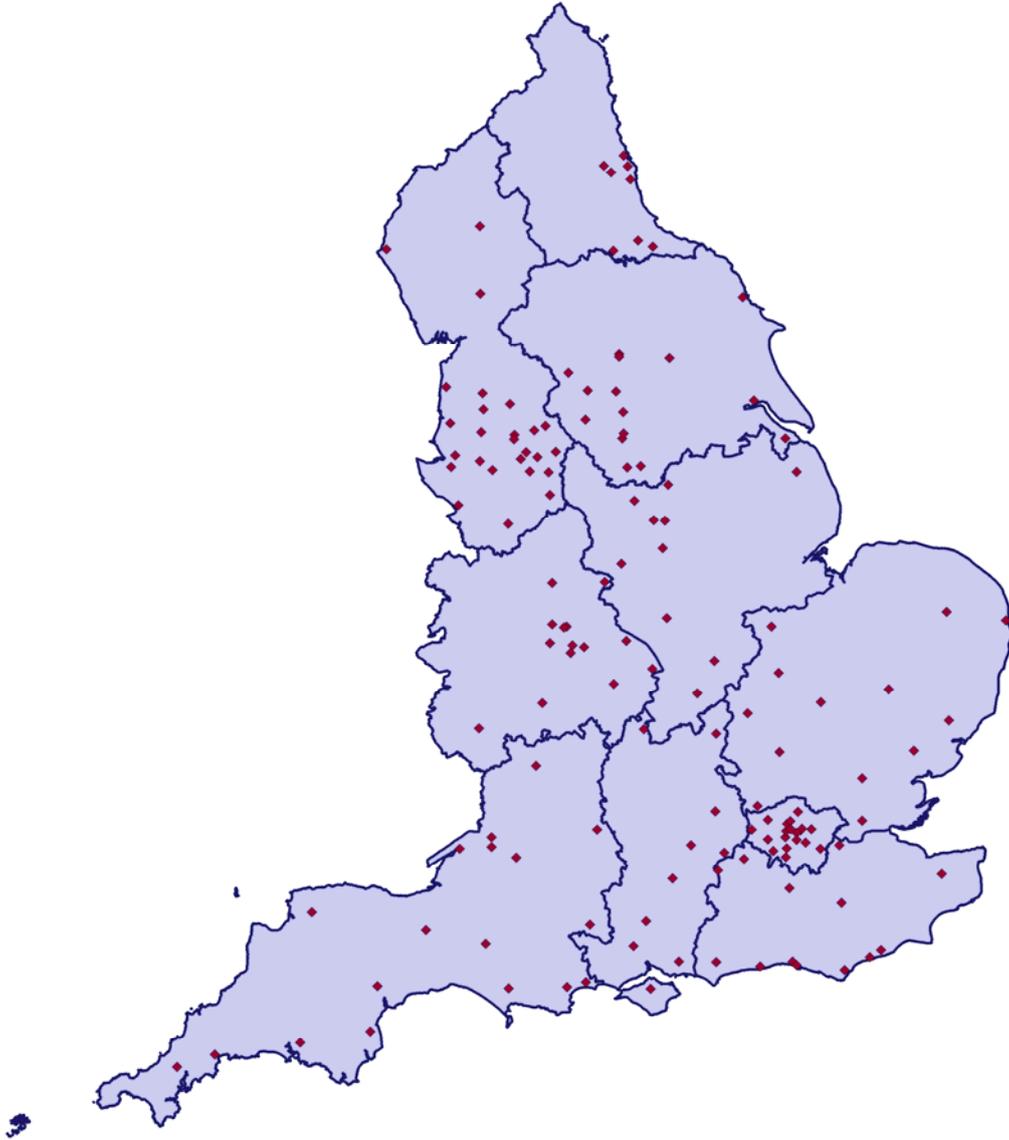
Number of patients per unit



The maps overleaf show the locations of units known to be providing insulin pump services (irrespective of whether they have provided data to the audit or not). There are no obvious geographic patterns in the units providing insulin pump services for adults and children⁵.

⁵ Note: It has not been possible to identify whether or not insulin pump services are provided at a small number of potential providers.

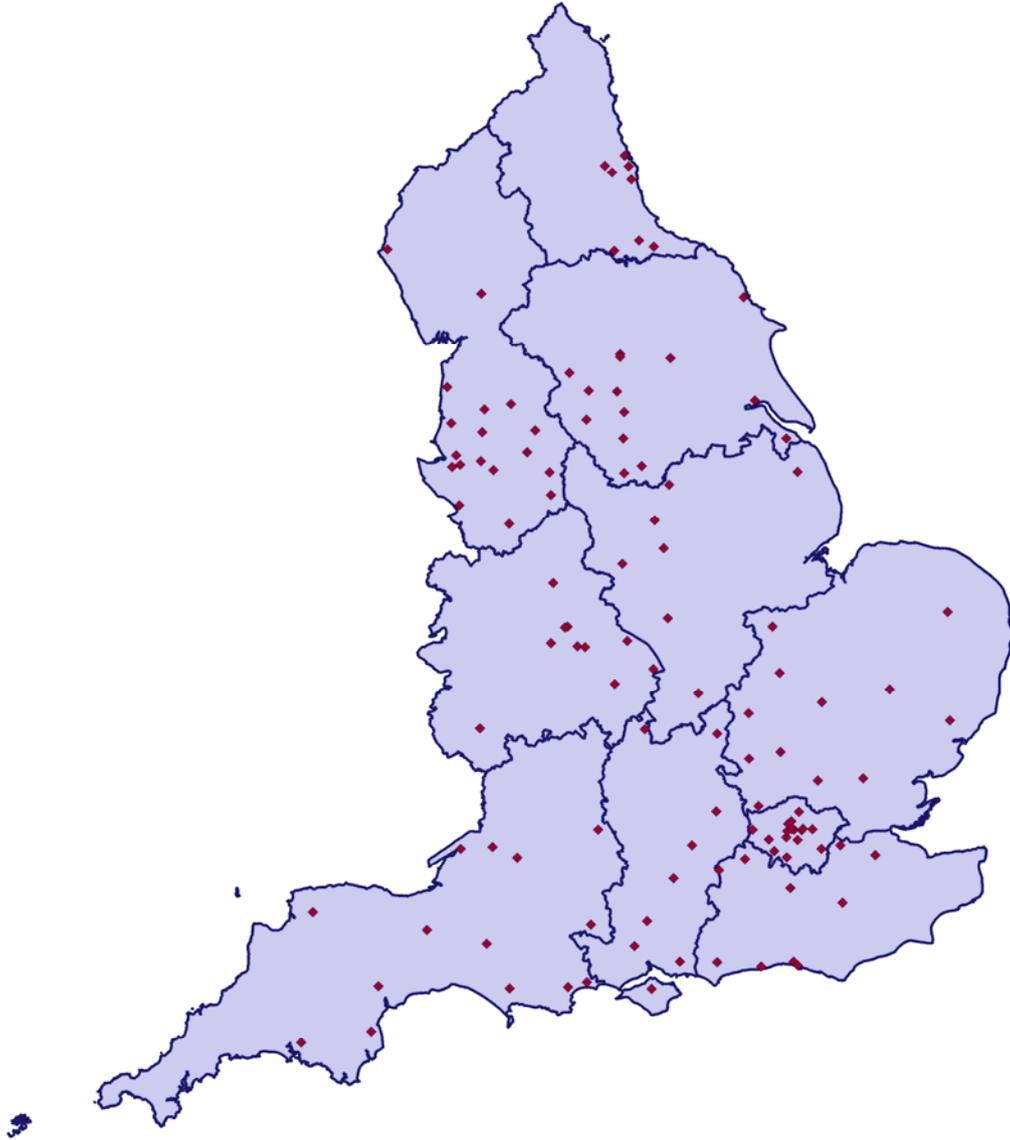
Location of units providing insulin pump care for adults



Contains Ordnance Survey data
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Location of units providing insulin pump care for children

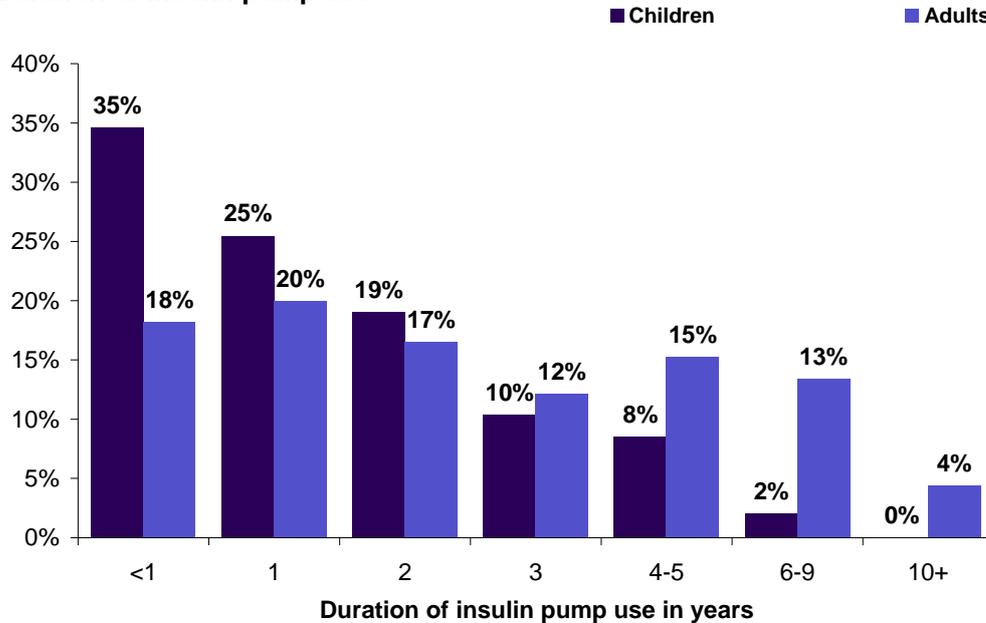


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Analysis of how long people have been using insulin pumps shows that the majority have started this therapy relatively recently. Of the adults including in the audit, 18% had been using an insulin pump for less than a year. A further 20% have been using an insulin pump for more than one year but less than two years. Over half of children on insulin pump therapy have been using the technology for less than two years⁶.

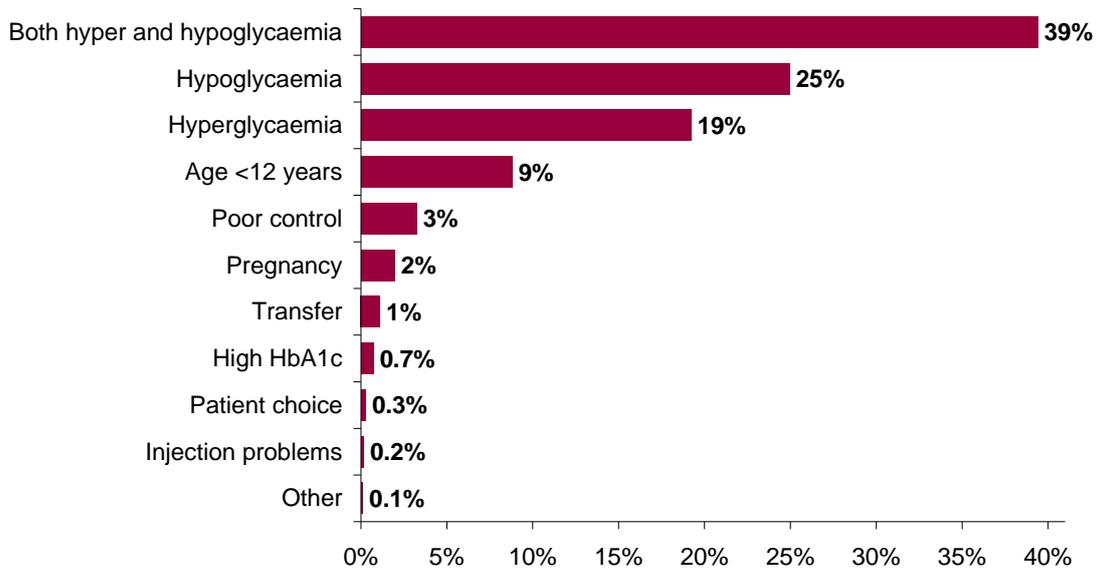
Duration of insulin pump use



NICE recommends that insulin pump treatment be considered for all patients with Type 1 diabetes if, despite optimisation of their Multiple Injection Basal Bolus Treatment they still have disabling hypoglycaemia or are unable to get close to the safe glucose control targets. If the patient is a child less than 12 years old pump treatment is recommended to be considered as a primary treatment option. The reasons for starting insulin pump therapy were provided for 87% of patients. These are shown overleaf and are predominantly in line with NICE guidance.

⁶ On average, children will have had diabetes for a shorter period of time and therefore it is expected that a greater proportion of children than adults will have only just started on insulin pump therapy.

Reason for starting insulin pump therapy



Feedback to participating units

Summary sheets for feedback to individual units that provided data have been produced. These can be obtained by contacting Diabetes Health Intelligence, a strategic programme of Yorkshire and Humber Public Health Observatory (email yhpho-coordinator@york.ac.uk or 01904 567740).