



## Getting it Right: Improving the Classification, Diagnosis and Coding of Diabetes

The report '*Coding, Classification and Diagnosis of Diabetes: A review of the coding, classification and diagnosis of diabetes in primary care in England with recommendations for improvement*' was commissioned by NHS Diabetes and the Royal College of General Practitioners (RCGP) with support from the Department of Health. It outlines:

- The results of a systematic review examining existing evidence on misdiagnosis, misclassification and miscoding
- The results of an analysis of two primary care databases of nearly one million patients to establish the extent of misdiagnosis, misclassification and miscoding
- Pragmatic Guidelines to improve diagnosis and classification
- Audit tools to improve diagnosis, classification and coding in clinical practice and the results of a pilot using them.

The report uses the following definitions:

- **Misdiagnosis** is when someone is diagnosed with any form of diabetes when they don't have it
- **Misclassification** is when someone is incorrectly classified as having a type of diabetes that they don't have
- **Miscoding** is when the wrong computer read code is used meaning that it is not possible to determine the type of diabetes precisely.

The report can be seen at:

[http://www.diabetes.nhs.uk/our\\_work\\_areas/classification\\_of\\_diabetes/](http://www.diabetes.nhs.uk/our_work_areas/classification_of_diabetes/)

### Systematic Review

After carrying out an extensive online search the systematic review identified a total of 17 papers for detailed review. The selected papers described a range of instances where incomplete or incorrect coding or classification of diabetes either was the main focus of the paper or an incidental finding. The papers examined contained both qualitative and quantitative data and implications for both

people with diabetes and healthcare professionals. These included inappropriate treatment and the challenges of correctly diagnosing a complex condition.

In summary the review found:

- Diagnosing diabetes is a complex task especially in the young adult
- There is substantial evidence of the miscoding and misclassification of diabetes
- In the absence of universal access to definitive clinical tests there is a need for pragmatic and relevant clinical classification
- More studies are needed to examine the extent of the problem and the impact on people with diabetes.

### Analysis of Routine Primary Care Data

This study examined routine primary care data from two sources; the Cutting Out Needless Death Using Information Technology (CONDUIT) and Quality Improvement in Chronic Kidney Disease (QICKD) trial. Both these studies required the identification of people with diabetes. They provided nearly one million records for analysis.

Using Read codes, prescription data, blood test results and other information such as BMI, an audit of the databases revealed that some form of error was present in 14.5 per cent of all diagnosed diabetes cases. The analysis indicated that:

- 85 to 90 per cent of data on diabetes is fit for purpose but there is room for improvement
- Diagnostic data quality can be improved by triangulation with other data in practice electronic records, usually therapy and biochemical markers
- A simple search tool, embedded in GP computer systems could identify cases for review, which could take place as an integral part of usual diabetes management in primary care

## Audit Tool Pilots

- Standardisation of the data collection forms and picking lists would also aid standardisation of data recording
- There are possibly unmet educational needs about the diagnosis, classification and treatment of diabetes in primary care.

### Guidelines for Classification

The diagnosis of diabetes is complex. The reasons behind errors in classification and diagnosis are also complex; whilst computer data quality is improving all the time in UK primary care the aim is to accelerate this improvement in diabetes. It is important that patients are classified and diagnosed correctly as it is vital for the appropriate management of the patient. The guidelines for managing type 1 and type 2 diabetes differ and incorrect classification will lead to inappropriate management plans.

A simple algorithm has been developed to support accurate classification and diagnosis and all practices are encouraged to adopt it. It is primarily based on age of diagnosis and how soon treatment was started; it also takes into account other clinical factors such as the degree of obesity. The aim of this is to provide a simple pragmatic solution that can be used in primary care. See diagram below.

Six MIQUEST (Morbidity Information and Export Syntax – a Department of Health sponsored computer data extraction tool) queries were developed to look for evidence of misdiagnosis or misclassification, for example: people diagnosed type 1 but no record of insulin being prescribed.

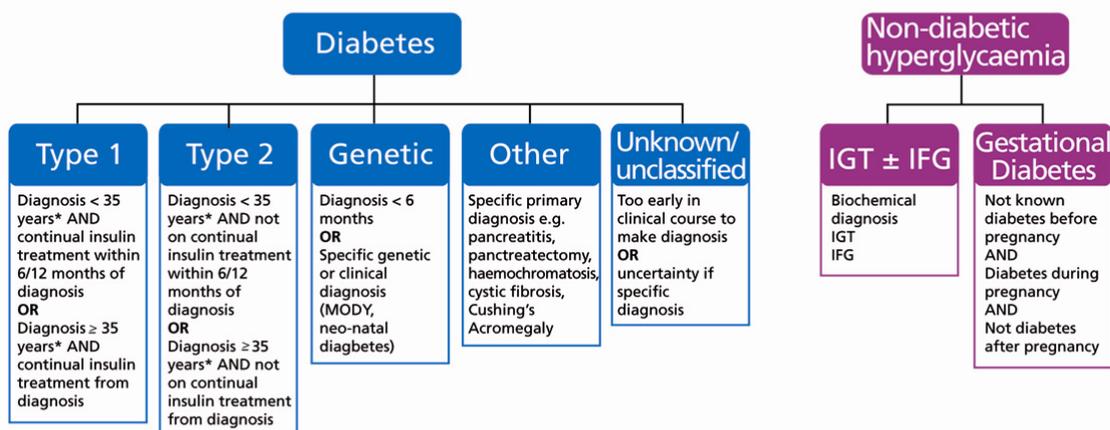
These searches were run in five practices in southeast England with a combined list size of approximately 45,000. The searches flagged 203 out of the approximately 1,600 people with diabetes of whom 83 had errors. This means around 5 per cent had any errors with 2.2 per cent being misdiagnosed, 2.1 per cent being misclassified and 0.9 per cent being miscoded.

	n	%
No change	120	59.1
Miscoded	15	7.4
Misclassified	33	16.3
Misdiagnosed	35	17.2
<b>Total</b>	<b>203</b>	<b>100.0</b>

### Tools Available

The MIQUEST searches are available for EMIS LV, EMIS PCS (LAN+Enterprise edition), INPS Vision, iSoft Premier/Synergy, Advanced Crosscare, TPP System One. They can be downloaded free of charge from: [www.clininf.eu/cod](http://www.clininf.eu/cod)

## Practical Classification Guidelines



\* In high risk racial groups a cut off of 30 years should be used

Further copies of this leaflet can be ordered from Prontaprint, by emailing [diabetes@leicester.prontaprint.com](mailto:diabetes@leicester.prontaprint.com) or tel: 0116 275 3333, quoting DIABETES 144