

# A method to validate the accuracy of a centralised district diabetes register

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## Abstract

An accurate and valid district diabetes register is needed to identify people with diabetes. Quality assurance of such a register is vital to deliver high-standard patient care. We report the findings of a methodical process of validation of the Wolverhampton District Diabetes Register (WDDR) post extraction of information from general practitioner (GP) databases, and propose an algorithm for resolving any disparity between the two data registers.

Historic diabetes register data were matched with GP databases; discrepancies were checked with GP practices and updated on the WDDR. Unidentifiable people were subject to demographic checks with the Demographic Batch Service (DBS). DBS information was used to identify patients by contacting them directly or by contacting their GP practices. Diagnostic discrepancies were corrected by biochemical checks or identifying coding errors in the GP database.

Of 2565 people unmatched with GP databases, 2380 had an identifiable GP. After checking with GP practices, 1244 (48.5%) were identified to have coding errors, 61 (2.4%) deceased and 333 (13%) with diagnostic inaccuracy of diabetes. A total of 927 (36%) patients with no identifiable GP were subject to demographic checks. Of these, 237 (9.2%) were found to be in the area and registered with another GP, 220 (8.6%) had no identifiable GP, 422 (16.4%) patients were not in the area, and 48 (1.9%) were deceased.

To maintain a valid district diabetes register (WDDR), a rolling mechanism of demographic cross checks is required at regular intervals to reduce the number of discrepancies and increase the accuracy of such a register. Copyright © 2013 John Wiley & Sons.

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## Key words

diabetes; data

## Introduction

An accurate, centralised diabetes information system should identify all people with diabetes in an area and inform the delivery of a high-quality systematic, whole-population based service to include measures of access, process and outcome. The objective should be to utilise such information to minimise the adverse impact on the individual with diabetes of diabetes-related morbidity and mortality,<sup>1–3</sup> and diminish inefficiencies in service provision – not least the resulting high expenditure on treating complications.<sup>4</sup> Maintaining high-quality data is thus crucial to a modern-day diabetes care. A conventional approach to maintaining such registers is the extraction of information directly from general practitioner (GP) databases,<sup>5</sup> but studies show variability in their accuracy<sup>6,7</sup> and a number of deficiencies in quality assurance processes<sup>5</sup> that make their validity questionable. These include poor data sharing between primary and

secondary care, problems with case ascertainment, patient migration, and discrepancies resulting from multisource data input and acquisition. We are not aware of any published methodology to establish processes that test the validity of the demographic data within such primary care databases. We have therefore devised a methodical algorithm to validate all demographic information received into an established centralised diabetes register from multiple other data sources against the primary care database.

## Methods

The Wolverhampton District Diabetes Register (WDDR) is a historic patient record system (dating back to 1990) for people with diabetes. It is an electronic database based on the 'Diabeta3' system. Since 2008, the diabetes retinal screening programme, and more recently the local foot screening programme, are all run through this database – so it is an integrated system that was