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## Diagnosing type 2 diabetes and identifying high-risk individuals using the new glycated haemoglobin (HbA1c) criteria

In the February 2013 issue of the *BJGP* there are several interesting and useful articles about aspects of diabetes, but I would like to question just one aspect stated in the Clinical Intelligence article by Gholap and colleagues.<sup>1</sup>

Basing diagnosis on an HbA1c result has significant advantages, which are outlined in the article. They say that the HbA1c level reflects average glucose levels over the preceding 6–8 weeks (later giving the clinical situations in which that may not be the case). And they say that in a patient without symptoms any 'diagnostic' level test result needs to be repeated, or supported by another kind of test, to confirm a diagnosis with such important long-term implications. So-far-so-good. But I think it is incorrect to say that you can use an HbA1c level repeated just 2 weeks later. At this point the test result will largely cover exactly the same time period as the first, and thus it will confirm that the first test result was accurate. In order for it truly to be a 'second test' one needs to delay repeating HbA1c for at least 6–8 weeks, so that the result reflects a different time period. This is a disadvantage of relying on HbA1c.

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### REFERENCE

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We read with interest Gholap *et al's* article on the diagnosis of type 2 diabetes mellitus (T2DM) using the new HbA1c criteria.<sup>1</sup> We have been studying the diagnosis of T2DM in our general practice for several years.<sup>2</sup>

The diagnostic criteria for T2DM have long been set by the World Health Organization (WHO) and national guidelines. In 2011, WHO changed the diagnostic criterion to include an HbA1c level of 48 mmol/mol (on two occasions if asymptomatic).<sup>3</sup> The impact of this change has been debated,<sup>4</sup> but not demonstrated in clinical practice. However, it does make it easier for GPs to arrange blood testing for people for whom fasting is practically difficult, and hence may increase the incidence of diabetes.

We have tracked the incidence of T2DM since our practice adopted the changed diagnostic criterion in November 2011. There were 23 new diagnoses in the last 9 months using the old criteria (61% detected by screening) compared with 59 in the same 9 months of the following year using the new criterion (73% by screening). Thus the incidence rate increased from 2.95 to 7.46 per thousand ( $\chi^2 = 15.32$ ;  $P < 0.001$ ). This was a 2.5 fold increase in T2DM within the first year of using the new criterion.

The characteristics of patients diagnosed with type 2 diabetes in each of the time periods are summarised in Table 1 (available from the authors). Patients diagnosed after the change in diagnostic criterion were, on average, 9 years older ( $P = 0.03$ ) but were similar in terms of their gender, HbA1c, and body mass index at diagnosis.

This preliminary report appears to demonstrate a major increase in the incidence of diabetes using the new HbA1c criterion. This increase may be due to differing groups of patients being identified but may also be due to instances where patients with previous elevations of their HbA1c, but with normal blood glucose measurements, are now being retested and diagnosed. The implications are profound as diabetes currently takes 10% of all NHS hospital costs and 20% of all hospital beds.<sup>5</sup>

This may be a major advance enabling general practice to 'break into the iceberg' of undetected diabetes, or a new group of people with diabetes may be emerging.

The clinical impression of one of us (PH Evans) is that more people are now being diagnosed with T2DM with substantial comorbidity, both physical and mental. We look forward to comparing diagnosis rates with colleagues.

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