courage to pass legislation requiring car drivers to wear seat belts, but such legislation was passed in the end.

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Competing interests: SSB is a trustee of the Parenting Education & Support Forum, a charitable organisation that exists to support those providing parenting programmes.

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Standardisation of glycated haemoglobin

Is a scientific advance, but it could worsen overall blood glucose control

The detection of sugars in the urine of people with diabetes usually is attributed to Matthew Dobson. However, first attempts at quantification of urine sugars seem to have been made by Francis Home, an Edinburgh physician. Estimation of urine sugar as a measure of severity of diabetes had two major problems that, until recently, were shared with its contemporary equivalent, estimation of glycated haemoglobin. Firstly, both are surrogate measures of the average concentration of plasma glucose that is responsible for the microvascular and arterial damage that manifests itself in later years. Secondly, both also included in their measurement non-specific (non-glucose) substances when using available assays. Very recently, the glycated haemoglobin assay has been standardised by the scientific community to remove this non-specificity, but switching to this more accurate method for everyday reporting of results could lead to confusion and worsening of the control of diabetes.

Urine glucose remains of value only where the cost of self monitored blood glucose control is out of reach, but glycated haemoglobin (as HbA_{1c}) has become central to any level of diabetes care. In the diabetes control and complications trial (DCCT) and the UK prospective diabetes study (UKPDS), HbA_{1c} was the measure used to define the relation between glucose control and outcomes such as retinopathy.^{1 2} As a result, HbA_{1c} is the measure by which clinicians can relate blood glucose control to the microvascular and arterial risk in any patient with diabetes. Jeffcoate usefully reminds us, in a recent issue of *Diabetic Medicine*, of some of the many caveats that underlie interpretation of a series of HbA_{1c} results in an individual.³ However, taken together with self monitored blood glucose profiles and assessment of hypoglycaemia (both of which also have problems related to reliability), HbA_{1c} is likely to remain a cornerstone of management of diabetes for some decades.³

In the 1980s, difficulties with assays in the Kroc study (the feasibility study for the diabetes control and complications trial) led to urgent and successful

attempts to standardise the assay, anchored on methods in David Goldstein's laboratory in Minneapolis. The assay of the UK prospective diabetes study was subsequently aligned with this. With the success of the two studies, the clinical and biochemical communities sought to harmonise clinical laboratory assays to that standard, an exercise that remains a remarkable example of informal international cooperation.

Such harmonisation served the needs of people with diabetes and their healthcare advisers to near perfection, but unfortunately the ultimate reference standard being used included a fixed non-specific element amounting to approximately 2.0% (HbA_{1c} units) of total haemoglobin, and thus around one third of the measured HbA_{1c} at the upper end of the quoted reference range (6.1% (HbA_{1c} units)). Thanks to the commendable efforts of the International Federation of Clinical Chemists, which has developed a reference standard based on mass spectrographic analysis of a glycated peptide fragment of haemoglobin (summarised by Manley et al,⁴) the extent of the error is now securely described. With the cooperation of diagnostics' manufacturers (mandated in the European Union), specific results could be available to all people with diabetes, clinicians, and researchers.

But is this desirable? Nearly every guideline for diabetes has based its intervention and target levels on the standard of the diabetes control and complications trial, and the curves describing the relation between HbA_{1c} and complications from that trial and the UK prospective diabetes study are widely recognised. A further problem, incompletely understood, is that higher numbers of a pathological entity lead to greater clinical action independent of true clinical import—a quirk of human numeracy. Accordingly, a study from Sweden shows that changes in HbA_{1c} standardisation leading to smaller numbers lead to a worsening of overall blood glucose control.⁵ As a result, adoption of the International Federation of Clinical Chemists' standard in reporting of HbA_{1c} might not only risk losing the benefits of years of professional education

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on the quantitative relation between overall blood glucose control and complications, but might also risk increasing blindness and cardiovascular events through higher attained blood glucose concentrations.⁴

Is there a way out? Not to make use of the advance introduced by the International Federation of Clinical Chemists would be unreasonable. Alternatives considered at a recent meeting convened by the International Diabetes Federation included continued reporting to the diabetes control and complications trial's standard (using the defined relation between the two standards), a coordinated global switch to reporting to the new, lower standard of the International Federation of Clinical Chemists, reporting in absolute units (such as g/kg rather than percentage), or reporting in average blood glucose equivalents. As people with diabetes already measure their own glucose concentrations by self monitoring, the last of these has some attraction. However, even this approach would still need a major global education initiative, and whether the globally influential North American community would be prepared to carry through any such change is unclear at present.

Meanwhile one message seems clear. Piecemeal switching of the reporting standard by individual laboratories or even countries is likely to lead to confusion and ignorance among patients and healthcare professionals that could seriously damage individual

health outcomes in people with diabetes. Therefore, individual practitioners need to remain sensitive to these risks, while requiring the international diabetes community to continue to move forward in achieving a coordinated programme, which makes use of the new standard.

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Full engagement in health

Needs to begin in primary care

In his review of future funding needs for the British NHS, Derek Wanless called for a new focus on moderating demand by investing in effective health promotion and disease management with the active involvement of individual patients and local communities.¹ The fully engaged scenario, which entailed a radical change in professional and public roles, was the most ambitious of the three alternatives modelled by his team, but they concluded that it offered the best and most cost effective means of matching demand to supply of health care in the longer term. Achieving this involves promoting self care—for example, by encouraging patients to adopt healthy behaviours and to diagnose and treat minor ailments, involving them in treatment decisions, and supporting them in active self management of chronic conditions. This strategy is now enshrined in official policy for the NHS in England,² but to what extent is it being implemented in primary care?

A new international study published last week by the Commonwealth Fund of New York shows that British patients are a long way from being fully engaged.³ Drawing on a survey of 8672 adults selected at random in Australia, Canada, New Zealand, the United Kingdom, and the United States and interviewed between March and May 2004, the study focused on patients' experience in primary care. It found that British patients were generally more positive about the organisation and funding of health care than those in the other countries, but patient centred care is not yet the norm. Although

patients in Britain experience greater continuity in primary care and much lower out of pocket costs than those in the other countries, there are indications that health care is delivered in a more paternalistic fashion in the NHS. The United Kingdom performed worse than the other countries in relation to information about medicines, shared decision making, patients' access to records, preventive advice, and self management of chronic disease.

More than a third (37%) of those in the United Kingdom taking regular prescription medicines said their doctor had not reviewed their medication in the past two years and 39% said they had not been given an explanation of likely side effects of their medicines, a notably worse result than the other countries. British patients also reported the worst results in relation to involvement in decision making: only 27% reported that their doctor always tells them about treatment choices and asks for their ideas and opinions, compared with 41% in New Zealand and 43% in Australia. Only 28% said they had access to their medical record, again the lowest proportion of all the countries. Advice on weight, nutrition, and exercise was also not forthcoming from British general practitioners. Only 28% of British patients reported receiving this advice, compared with 52% in the United States. Similarly only 28% reported receiving counselling about emotional issues that might be affecting their health, compared with 38% in Canada.