

Blood glucose self-monitoring: The importance of patient-centred care

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Introduction

There are well-documented benefits to regular self-monitoring of blood glucose (SMBG) but there are no standardised guidelines on frequency. The issue can be addressed with a recently published SMBG consensus paper (Owens et al, 2005). It is hoped that the consensus guidelines can be used to combat previous problems with this lack of standardisation, such as disillusionment of patients and encroachment on patient choice. This article explores this issue, with a focus on empowerment and education, and highlights cases of successful implementation.

The benefits of regular self-monitoring of blood glucose (SMBG) levels in people with diabetes are well documented (e.g. Moore and McQuay, 2005). SMBG allows people with diabetes to monitor their condition and manage it on a day-to-day basis through the adjustment of treatment and lifestyle factors.

The National Institute for Clinical Excellence (2002) emphasised the need for SMBG in certain circumstances; however, it did not give adequate direction on frequency. This current lack of national standardised guidelines concerning SMBG frequency of monitoring means diabetes care varies across the UK. This can cause confusion and distress. Therefore, healthcare professionals should ensure that people are fully educated about their condition and help them understand the reasons for regular monitoring.

People with diabetes must be at the centre of decisions relating to the choice and frequency of SMBG to encourage a sense of personal involvement and influence in the management of their diabetes. Achieving patient empowerment is crucial to successful self-management of diabetes and ultimately improves patient outcomes (Cavan, 2001).

In the past there has been little or no evidence to base clinical practice on, and while there has not been a randomised clinical trial, the issue can at least now be addressed in part with a recently published consensus paper (Owens et al, 2005).

Achieving a consensus

In April 2004, eight diabetes specialists put

together an original consensus report on SMBG (Owens et al, 2004). This was welcomed with much interest. However, in order to reflect the regional and multidisciplinary background of all those involved in diabetes care, the reach of the consensus has been widened. A series of meetings comprising presentations, debates and workshops was held in six locations across the UK. The meeting series drew 292 attendees, including diabetes specialist nurses (DSNs), general practitioners, primary care organisation (PCO) managers, secondary care clinicians and nurses from the community and primary and secondary care sectors (Tables 1 and 2). The meetings allowed the delegates to debate the original guidelines and work together on a multidisciplinary consensus.

Opportunity for change

The meeting series not only allowed the attendees to agree or disagree with the 32 statements of the original consensus report, but also gave them the opportunity to change statements. Delegates completed a questionnaire – before and after a presentation and workshop – that tested their attitude towards the 32 statements, and the level of agreement with the original consensus statements was tested using the Delphi Process, a method that includes a definition of consensus as a 50% level of agreement. (The name comes from ‘Project Delphi’, which was a Rand Corporation study on the use of expert opinion [Linstone and Turoff, 1975].)

ARTICLE POINTS

1 Patients should be educated on the benefits of regular self-monitoring of blood glucose (SMBG).

2 It is crucial that patients know how to adjust treatment and lifestyle factors according to blood glucose results.

3 The consensus has stimulated local discussion and action.

4 Successful implementation by those that attended the workshops shows that positive change can be achieved.

5 SMBG is linked to improved diabetes outcomes.

KEY WORDS

- Self-monitoring
- Patient-centred care
- Empowerment
- Education
- Outcomes

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Table 1. Attendees by speciality.

Speciality	n	%
DSN	130	44.5
General practitioner	13	4.5
PCO managers	13	4.5
Hospital clinician	7	2.4
Other primary care professional	13	4.5
Other secondary care professional	43	14.7
District/practice nurse	42	14.4
Hospital nurse	24	8.2
Other	7	2.4
Total	292	100

Results

The results from the questionnaires showed a high level of agreement (60–100%) with 29 of the 32 statements before the debate. In most cases, this agreement increased further when the questionnaire was completed for the second time.

The results also showed that over one-half of the statements achieved a consensus of greater than 90% and over three-quarters of the statements achieved a consensus of greater than 70% following the discussion. A positive change was seen in 27 of the 32 statements between the morning session and the afternoon meeting.

A difference in opinion was shown across specific locations and job roles. This could be attributed to a lack of consistent guidelines and differing practices across the country. PCO staff agreed less with the statements than DSNs, echoing the current guidelines of some PCOs to restrict SMBG strips irrespective of clinical need. This range of opinion – and the positive change in responses following the debate – clearly indicates the usefulness of, and need for, a universal agreement.

Agreement could not be reached for five of the statements. However, most objections

proved to be on the grounds of wording rather than concept. Amended wording to the statements was determined by a mailed questionnaire. For each statement a series of alternative wordings was offered and respondents were asked to rank the options. The wording of the option chosen most often was substituted to further reflect agreement.

Putting the theory into practice

Nursing professionals often look to evidence-based research to implement practice, but in the area of SMBG in diabetes this has not been possible as no clear guidance has been available. This has meant that nursing staff – and ultimately people with diabetes – could experience a wide variation in working practice from location to location.

The revised SMBG consensus statement is an important step forward, giving all those involved in the care of people with diabetes a theoretical framework to work from. It gives an authoritative and standardised viewpoint that can now be applied nationwide. It will positively change the working practice of the established DSN and serve to inform new specialist nurses coming into the field. It will provide a set of guidelines that can be applied throughout the healthcare system, regardless of whether the person with diabetes is seen in a primary care setting, secondary care clinic or hospital environment.

The consensus statements cover all healthcare settings.

- Pregnant women with type 1 diabetes and those with type 2 diabetes requiring insulin, and diet-treated patients with gestational diabetes or those requiring insulin should monitor their blood glucose at least four times per day to include both fasting and postprandial blood glucose measurements.
- People with type 2 diabetes who use insulin or oral hypoglycaemic agents should monitor their blood glucose at least once daily, varying the time of testing between fasting, preprandial and postprandial.
- Patients receiving terminal care will require monitoring to ensure that they avoid hypoglycaemia and periods of excessive hyperglycaemia.
- Metabolic emergencies such as diabetic ketoacidosis require frequent blood glucose monitoring.

Table 2. Attendees by type of care.

Type of care	n	%
Primary	69	23.6
Secondary	178	61.0
Other	45	15.4
Total	292	100

Benefiting the person with diabetes

A lack of consistency governing the frequency of monitoring has been known to encroach on patient choice and disillusion people with diabetes. It is hoped that the consensus guidelines will give people with diabetes the opportunity to test as often as they need to, or as often as is appropriate.

The consensus statements highlight this.

- Home blood glucose monitoring has an essential role to play in ensuring the safety and efficacy of glucose-lowering therapies.
- Appropriate training and education is required so that people with diabetes can safely adjust their insulin doses according to their blood glucose results.
- Drivers with diabetes should test their blood glucose before commencing any journey and at regular intervals on long journeys.

Patient empowerment represents a relatively new approach to diabetes care and promotes self-management of the condition (Department of Health, 2001). It respects the rights of people with diabetes and allows them to decide for themselves what is appropriate for their needs at that particular time. It accepts that circumstances surrounding diabetes can change. At times of concomitant illness, such as a cold or infection, people with diabetes may need, and want, to test their blood glucose levels more often. This added frequency of testing will allow the person with diabetes to control his or her condition, which may become unstable at such points. Alternatively, if the condition is stable, a person may only choose to test once daily. Different types of treatment modalities will also affect SMBG frequency need.

Promoting confidence

Whether or not changes in monitoring are necessary in an individual case, the key point is that the person with diabetes should be able to understand why he or she is monitoring. Educating individuals on SMBG is the responsibility of the healthcare professional and it is essential to encourage active monitoring of blood glucose levels. A major way to empower our patients to self-manage their condition is the provision of appropriate and effective education. When

people with diabetes are fully aware of the reasons behind the monitoring process and the significance of the results it encourages successful self-management.

On a day-to-day basis, people with diabetes need to understand what their results mean in terms of lifestyle and treatment, and to be confident that they have the ability to adjust either the medication or lifestyle factors accordingly. By monitoring changes in their blood glucose levels, people with diabetes can see how factors such as diet, exercise, stress levels, other illnesses and the weather impact upon their condition. The influence on blood glucose levels from external factors can be demonstrated through changes in the test results. The healthcare professional can then go on to educate the person with diabetes how to manage these changes. People with diabetes should be taught how to adjust their treatment or lifestyle according to their test results as this allows the change to be made as soon as is necessary instead of waiting until they can get help from a healthcare professional. It creates independence rather than dependence.

When people with diabetes are central to the education process relating to the benefits of regular SMBG, they gain the knowledge to make informed choices. This can enable them to successfully self-manage their condition and improve their long-term outcome by reducing the risk of long-term complications, if they so choose. SMBG is an effective tool through which healthcare professionals can teach people with diabetes about managing their condition and its treatment. People with diabetes who are empowered to self-manage can achieve improved outcomes for themselves.

The main benefit people with diabetes should be aware of is that the more normal the blood glucose level, the less the risk of long-term complications. Evidence of the advantages of maintaining a blood glucose level within a normal range and reducing the risk of long-term complications later in life has been provided by the UK Prospective Diabetes Study Group (1998) in type 2 diabetes and the Diabetes Control and Complications Trial Research Group (1993) in type 1 diabetes.

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2 It is hoped that the consensus guidelines will give people with diabetes the opportunity to test as often as they need to.

3 Patient empowerment represents a relatively new approach to diabetes care and promotes self-management of the condition.

4 Patient education about SMBG is the responsibility of the healthcare professional and it is essential to encourage active monitoring of blood glucose levels.

5 On a day-to-day basis, people who have diabetes need to understand what their results mean in terms of lifestyle and treatment.

6 The main benefit people with diabetes should be aware of is that the more normal the blood glucose level, the less the risk of long-term complications.

PAGE POINTS

1 The consensus process has enabled changes within both clinical practice and diabetes management.

2 The consensus document promotes good practice and the standardisation of access to all monitoring facilities.

3 Universal adoption of this consensus would mean an end to the patient inequality that has proliferated in the absence of clinical guidelines and evidence-based data.

Successful implementation

Examples of the successful implementation of the consensus paper guidelines are already available. Attendees from the workshops have returned to their areas applying what they have learnt about best practice at a local level.

For instance, Leigh Brown, a DSN from Trafford PCO, has been involved in the creation of updated and compact guidelines for primary and secondary care, to replace literature previously available in the therapy area. The preparation of the new guidelines has brought together local healthcare professionals involved in diabetes care from a range of backgrounds. This multidisciplinary team discussed the data from the original consensus document and decided how the guidelines could be incorporated into best practice. Leigh's new guidelines will now be distributed to all those involved in caring for people with diabetes at the Trafford PCO. The next phase will see the monitoring of the prescribing of SMBG strips within the PCO.

After attending one of the regional workshops and learning about patient education and empowerment, Jenny Spanton, Diabetes Specialist Nursing Team Leader, worked with her team of DSNs to produce a simple patient information guide for blood glucose monitoring. The information guide outlines who should test blood glucose levels, how testing should be carried out and what an acceptable test result is. The patient leaflet also includes useful contact details for the practice diabetes team, for the appointments service and for the DSN service. Distribution of the information guide to patients is via the practice diabetes teams in the East Kent area.

Both initiatives reflect how the consensus process has enabled changes within both clinical practice and diabetes management to be made effectively in two geographically separate areas.

Conclusion

A core aim of the new consensus framework is to encourage the self-management of diabetes using effective blood glucose monitoring. The consensus document promotes good practice and the standardisation of access to all monitoring

facilities for every person with diabetes, wherever they live in the UK. The document puts the individual at the centre of care, emphasising the requirement to assess need on an individual basis, deciding the frequency of SMBG according only to that assessment at that point in time.

Without this consensus of what constitutes good clinical practice, people with diabetes are subject to inequalities through lack of knowledge, lack of education or PCO restrictions. Universal adoption of this consensus would mean an end to the patient inequality that has proliferated in the absence of clinical guidelines and evidence-based data. A national consensus on SMBG can only serve to encourage best practice and promote equality for people with diabetes across the country. ■

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