SCOTTISH INTERCOLLEGIATE GUIDELINES NETWORK: MANAGEMENT OF DIABETES (SIGN 55)

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INTRODUCTION

The Scottish Intercollegiate Guidelines Network (SIGN) is a professionally-led, multi-disciplinary organisation which was established in 1993 by the Scottish Medical Royal Colleges and includes representatives from all of the medical specialties, dentistry, nursing, professions allied to medicine, pharmacy, health service managers, social workers and patients. It was established to improve the effectiveness of clinical care for patients in Scotland by developing, publishing and disseminating evidence-based guidelines which identify and promote good clinical practice and which, if implemented locally, will help to address variations in clinical practice throughout Scotland. The cost of the guideline development programme is funded by the Clinical Resource and Audit Group (CRAG) of the Scottish Executive.

The Scottish Intercollegiate Guidelines Network has published over 50 evidence-based guidelines, on a variety of clinical conditions including asthma, attention deficit and hyperkinetic disorders (ADHD), control of pain in patients with cancer, fractured hip, epilepsy, primary and secondary prevention of coronary heart disease (CHD), chlamydia, early rheumatoid arthritis, diabetes and safe sedation in children to name but a few. The Scottish Intercollegiate Guidelines Network is also now working closely on guideline development with both the World Health Organisation (WHO) and with the Council of Europe which has recently adopted the SIGN guideline development methodology as a baseline for future guideline development in over 50 member states. All SIGN guidelines can be downloaded free of charge from the SIGN website at www.sign.ac.uk.

In 2001, it was estimated that more than 150 million people worldwide had diabetes mellitus. Increases in both Type 1 and Type 2 diabetes have been seen in all strata of societies worldwide over the last 30 years. It is Type 2 diabetes that accounts for more than 85–90% of all diabetes and it is showing the greater rate of increase, with the global prevalence of diabetes predicted to exceed 220 million by 2010 and 300 million by 2025.[1]

Diabetes mellitus is not just a problem because of increasing numbers but it is also a major increasing health problem for all age groups. Presently in the UK, one in 20 people >65 and one in five people >85 has diabetes.[2] A population of 100,000 in the UK would be expected to include between 2,000–3,000 people with diabetes, about 25–30 of whom will be children.

Guideline 55,[3] launched on 14 November 2001, provides the cornerstone for the Scottish Diabetes Framework.[4] This guideline, dealing with the management of diabetes mellitus, provides a clinical evidence base on which future standards of diabetes care in Scotland, and further afield, will be based.

BACKGROUND

The St Vincent Declaration (SVD) of 1989 formulated a series of recommendations for improvement in health in diabetic subjects, and in particular set five-year targets to prevent the costly complications of diabetes (see Table 1).[5] In Scotland, the SVD was implemented by evidence-based medicine through SIGN which published six guidelines in the period 1996–97 (see Table 1). In addition, in 1998, SIGN published a recommended minimum dataset for collection in people with diabetes (SIGN 25). These earlier SIGN guidelines were drawn up by different subgroups, each chaired by a physician with a special interest in diabetes, but also included a wide spectrum of other professionals, medical, nursing and paramedical with public health representation, drawn together from a wide geographical background throughout Scotland to encourage 'ownership' to facilitate the local implementation of the guidelines into clinical practice.

These initial diabetic SIGN guidelines were widely accepted throughout Scotland, both in primary and secondary care. As an example, in a combined primary and secondary care setting in Fife, an audit was performed to assess the targeting of a blood pressure of 140/80 mmHg as evidence-based from SIGN guideline 19, dealing with the management of cardiovascular disease in diabetes mellitus. This study in Type 2 diabetic subjects showed a significant improvement in life expectancy compared to an earlier audit of mortality in this region of Scotland.[6]

Problems were encountered with the initial guidelines. Guideline 25 recommended a minimum dataset for diabetic subjects with the hope that this would lead to a national Scottish diabetes register. There have been problems and delays with the technology to implement a 'common' IT system in all Scottish Health Boards to achieve this ambitious goal. However, the preliminary results of an all-Scotland diabetes register were published in late 2001 in the Scottish Diabetes Survey.[7] It is hoped to have the appropriate computer systems in place in Scotland by late 2002 and to have the first detailed results from a national diabetes register about one year later in autumn 2003.

TABLE 1
The five-year European targets outlined in the St Vincent Declaration and the corresponding original six diabetic SIGN guidelines.

The St Vincent Declaration targets (1989)	SIGN guidelines (1996–97)
• To reduce new blindness due to diabetes mellitus by 30 per cent or more	• SIGN 4: Prevention of Visual Impairment
• To achieve a pregnancy outcome in diabetic women that approximates to that in non-diabetic women	• SIGN 9: Management of Diabetes in Pregnancy
	• SIGN 10: Good Practice in the Care of Children and for Young People with Diabetes
• To reduce the number of patients entering end-stage diabetic renal failure by at least 30 per cent	• SIGN 11: Management of Diabetic Renal Disease
• To reduce the rate of limb amputations for diabetic gangrene by 50 per cent	• SIGN 12: Management of Diabetic Foot Disease
• To cut morbidity and mortality from coronary artery disease	• SIGN 19: Management of Diabetic Cardiovascular disease and stroke by vigorous programmes of risk factor reduction

RECENT DEVELOPMENTS

The new SIGN guideline, SIGN 55, dealing with the management of diabetes mellitus, updates the six previous guidelines and includes a seventh, a new section on life-style management. These revised guidelines encompass all the advances made in the four-year period since the earlier guidelines were introduced. The aim was to provide an updated evidence-based approach to influence current practice in diabetes mellitus in order to reduce the burden of long-term micro- and macrovascular complications, as well as to improve pregnancy outcome for the mother with diabetes. As with the earlier guidelines, SIGN 55 was developed by seven multi-disciplinary groups, each with a diabetologist as chairperson, each with at least one diabetic patient representative; Dr Moray Nairn, SIGN Programme Manager, acted as a facilitator for all the groups. Almost 100 people from all over Scotland, with a widespread interest in diabetes management, were involved with these subgroups.

The systematic literature review was synthesised in accordance with SIGN methodology.[8] The grading system for levels of evidence and grades of recommendations are fully documented in the SIGN 55 guideline and are available on the SIGN website. Almost 400 references were cited in the guideline production. As part of the consultation process, a national open meeting was held in the Royal College of Physicians of Edinburgh in December 2000, where approximately 400 people from all branches of diabetes and healthcare attended. In addition, the draft guideline was on the website for a limited period to allow those unable to attend the meeting to contribute to the development of the guideline. The guideline was reviewed by a panel of independent expert referees who were asked to comment primarily on the comprehensiveness and accuracy of the interpretation of the evidence-base supporting the recommendations in SIGN 55. The different aspects of diabetes covered within the guideline have been reviewed in two other recent publications.[9, 10]

KEY POINTS IN SIGN 55

The key to evidence statements and grades of recommendations is summarised in Table 2.[11] Guideline 55 is a comprehensive 50-page document with recommendations arranged in seven sections with a short introductory summary regarding diagnosis and screening for diabetes mellitus. All of this information is on the SIGN website but, in addition, a quick reference guide (QRG) in the form of a 16-page booklet has been produced to provide a summary of the main recommendations contained in the full guideline. As an example of how the recommendations are given, the QRGs for (a) children and young people with diabetes, (b) management of diabetic nephropathy, (c) diabetic cardiovascular disease, (d) prevention of visual impairment, and (e) diabetes in pregnancy are shown in Tables 3–7.

THE FUTURE

In December 2000, the Scottish Executive made a commitment in the Scottish Health Plan[12] to develop a *Scottish Diabetes Framework* which would lead to improved standards of care in Scotland. The Clinical Standards Board for Scotland has identified key clinical standards for diabetes services.[13] *The Scottish Diabetes Framework* aims to draw together existing guidance and best practice, including plans to establish a national screening strategy

TABLE 2
Levels of evidence and grades of recommendations.

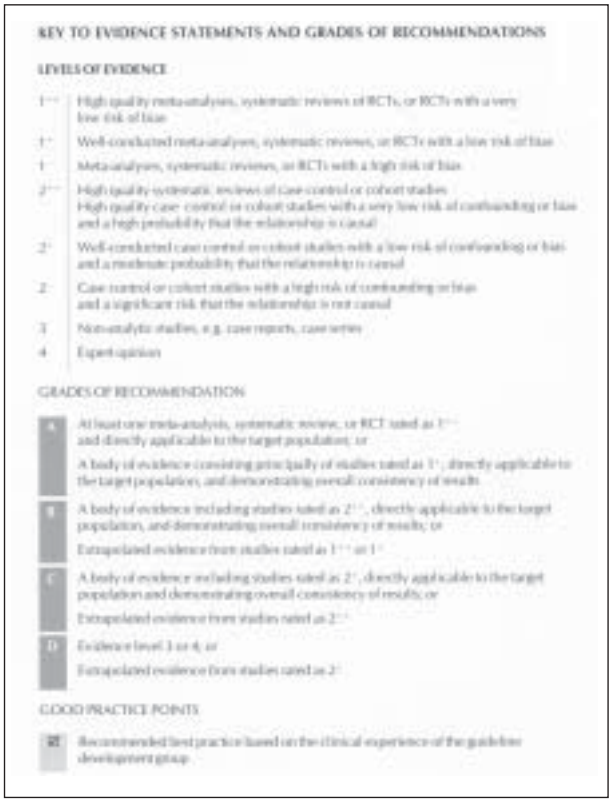

TABLE 3
Children and young people with diabetes.

TABLE 4
Management of diabetic nephropathy.

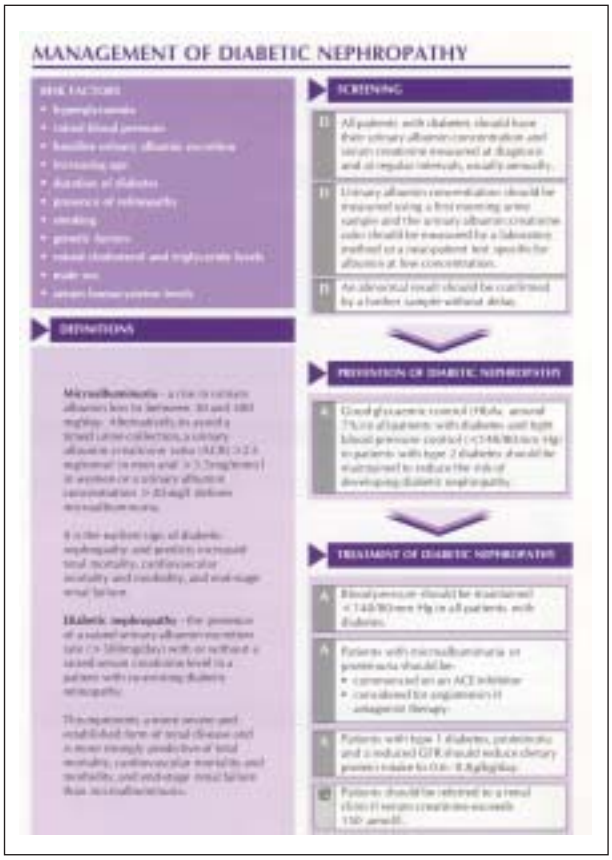

TABLE 5
Diabetic cardiovascular disease.

TABLE 6
Prevention of visual impairment.

TABLE 7
Diabetes in pregnancy.

for diabetic retinopathy as outlined by the Health Technology Board for Scotland retinal screening programme.[14]

The earlier SIGN guidelines, 1996–7, stressed the importance of diabetes care. The willingness of all concerned with diabetes in Scotland to implement these guidelines has hastened national initiatives from the Scottish Executive. Guideline 55 on the management of diabetes will be the cornerstone of evidence-based clinical practice for the Framework and the Clinical Standards to move forward the improvement of diabetes care in Scotland. A national conference on diabetes is planned for November 2002 to further promote diabetes care in Scotland. Guidelines can and do improve quality of care and as seen from the SIGN guidelines in diabetes mellitus can act as a catalyst for national initiatives.

ACKNOWLEDGEMENTS

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