

Organising and evaluating diabetic care in general practice

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General practitioners are particularly well placed to manage diabetes, since the condition requires high-quality and consistent care.

In South Africa routine care for patients with diabetes is available in the public sector at the primary care level as well as in specialised hospital clinics, and in the private sector by general practitioners, specialist physicians and diabetologists.

With the shift in health care provision to primary care level, much of the care is provided by general practitioners (GPs) who, for various reasons, are extremely well placed in the public and private sectors to care for patients with diabetes.

- The majority of patients with diabetes are diagnosed by GPs.
- The management of uncomplicated diabetes does not require specialised equipment or hospital-based investigations.
- Diabetes care cannot take place in isolation from the patient's general medical care and must be provided in the context of family, work, culture, and beliefs. The GP, a generalist providing holistic care, is ideally suited to attend to the needs of patients with diabetes.
- The GP is also well placed to involve the family in care and to visit the home when the patient is unable to attend.
- The GP is more accessible than the hospital specialist.
- Continuity of care is much more likely, particularly in private general practice, as the patient is seen more by the same doctor than in a hospital clinic.¹
- It is estimated that there are at least 1 million known patients with diabetes and possibly an equal number of undiagnosed ones;² therefore it is impossi-

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ble for all patients with diabetes to be cared for in specialist hospital clinics.

ORGANISATION OF CARE

The provision of optimal care to patients with diabetes requires more than just adequate control of blood glucose. It requires meticulous attention to blood pressure control, management of dyslipidaemia, reduction in associated cardiovascular risk factors, screening for complications of diabetes and assisting patients in their quest for improved quality of life. A meta-analysis of randomised controlled trials relating to diabetes care in general practice has shown the need for well-structured care to achieve these aims.³ A systematic approach is required, including a regular review of the patient's behaviour patterns and regular clinical and biochemical examinations. To manage patients with diabetes successfully, a practice will require the following:^{1,4}

- A patient register

- A recall system
- Well-designed medical records
- Accessibility to a laboratory service
- A team approach, utilising practice staff and other professionals such as dietitians, chiropractors and diabetologists on a consultant basis
- Educational resources.

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Patient register and recall system

Computers are not a necessity for establishing a patient register and recall system.

Practices without computers can start with a simple card index.³ Initially entries can be made from memory (receptionists are usually good at remembering patients and their illnesses) and others added as patients attend the practice. Patients' records can be identified, for example by flagging them with a coloured sticker. These are also particularly useful for identifying the records of other chronic illnesses, using specific colours for different conditions.

The details required for each card or record are the patient's name, record number and date of each visit. At the end of the consultation, the doctor should note the date for the next visit on the card. A designated member of staff should check these cards at regular intervals, and patients who have missed their appointments should be contacted. Telephone calls have been shown to be more effective

than sending multiple reminders to patients.⁵ Computerised systems can be of value, not only in tracking patients for follow-up, but also for providing feedback to GPs and generating reminders concerning management of their patients.

Diabetes health care checklist

The Society for Endocrinology, Metabolism and Diabetes of South Africa (SEMDSA) developed guidelines for the management of type 2 diabetes at primary care level.² The recommendations include factors for consideration at regular visits as well as examinations and investigations to be performed at the annual visit. Fig. 1 is an example of a flow chart or checklist that can form part of the patient's record by either inserting it into an A4 folder or folding it in two and attaching it to a card-based record.⁴

Annual visits should include:

- Examination of the eyes, including measuring visual acuity and funduscopy through dilated pupils using a mydriatic such as tropicamide 0.5% (Mydracil), inserted 15 minutes before examination.
- Examination of the feet, specifically for peripheral neuropathy (vibration, light touch, pinprick and reflexes) and impaired circulation. More abnormalities have been detected using the monofilament compared with cotton wool or pinprick.⁶
- Examination of the mouth for caries.
- Biochemical measurements, which include:
 - Fasting serum lipids. A random cholesterol on its own will not suffice, as this may be within normal limits in the presence of a raised triglyceride or raised low-density lipoprotein (LDL) level. It is also important to determine the total cholesterol/high-density lipoprotein

(TC/HDL) ratio, which is an independent risk determinant for heart disease.

- HbA_{1c} (glycated haemoglobin).
- Serum creatinine if proteinuria is present.
- Assessment of patient monitoring and injection technique where applicable.
- Reinforcement of education relating to diet, exercise, smoking and alcohol consumption.
- Sensitive enquiry about impotence, particularly in older men.

Many of these tasks could be achieved by referral to dietitians, nurse educators, ophthalmologists, podiatrists and dentists. There are however many patients who do not have access to these services because of financial impediments, distance or time. In these situations, GPs should be equipped to perform the necessary reviews and counselling required. A trained practice nurse with the guidance of an established protocol can also carry out many of the tasks.

Regular visits will be scheduled according to individual control and should include the following:

- Measurement of weight (waist measurement and body mass index)
- Urinalysis for glucose, protein and ketones
- Blood pressure measurement
- Inspection of the feet to identify problems such as non-healing sores.

Mini clinics

Home and Walford⁷ have described successful models of care, which include mini clinics. The system includes organised care with access to specially trained nurses, dietitians and laboratory services to assay glycated haemoglobin. In the absence of a systematic approach as described, mini clinics or diabetic clubs established at community health centres may only serve to

MAIN TOPIC

reduce the numbers in the general pool of patients without improving the quality of care.

EVALUATION OF DIABETES CARE

Considering all the changes taking place in the health care system of this country, GPs are and will be faced with increasing demands from various quarters to provide an improved and cost-effective service to patients. This increasing accountability requires an assessment of the quality of care provided to patients, particularly those suffering from chronic illnesses such as diabetes.

Medical audit

Medical audit is an accepted and popular method of assessing medical care. There are several definitions of medical audit. Marshall Marinker⁸ defines it as ‘the attempt to improve the quality of medical care by measuring the performance of those providing that care, by considering the performance in relation to desired standards and by improving on this performance.’ According to the author, many other terms such as ‘quality assurance’, ‘performance review’, and ‘standard setting’, have been used either synonymously or to identify related concepts.

Medical audit can also be viewed as a cycle (Fig. 2), with different parts indicating the stage of assessment and improvement of the quality of care being considered.⁹ The service or practice being assessed has to be evaluated against predetermined criteria and performance levels. It would only be with completion of and by repeating the cycle at regular intervals that quality can be assured.

One of the important tasks in conducting an audit is the motivation of human resources. All members of staff should be involved from the

outset, even in identifying the aspect of care to be examined. Every member of the team should have a strong sense of ownership.

Avedes Donabedian¹⁰ differentiates between three aspects of the health service, viz. structure, process and outcome. Structure includes physical and personnel resources, such as buildings, equipment, number of patients or staff. Process refers to the actions taken by all involved in the particular aspect of care, which includes frequency of measuring, investigations or examinations. Outcome refers to the results of health care related to the structure and process.

Quality assurance necessitates adequate and systematic record-keeping, which would facilitate the extraction of data for analysis, and the South African recommended guidelines could serve as criteria against which to measure performance.

Target standards for measurement and evaluation

A target standard comprises a criterion and a realistic level of performance. Criteria should be defined precisely and based on evidence showing a relationship to quality of care. For example, blood glucose is one possible criterion and good quality care might be

DIABETES HEALTH CARE CHECKLIST

Surname Given name Chart No.

ANNUAL REVIEW — Date...../...../.....

Diet	Testing technique.....	Eyes	R	L
Exercise	Injecting technique.....	Visual		
Smoking.....	Cholesterol			
Alcohol.....	Triglycerides	Acuity		
Impotence..... (male only)	Feet			
Teeth.....	Pulses			Retina
	Sensation			

REGULAR VISITS

Date	Urine		Blood Gluc.	Wt.	B.P.	HDA ₁ C	Feet Visual Insp.	Treatment and Comments
	Gluc.	Prot.						

Fig. 1. Diabetes health care checklist.

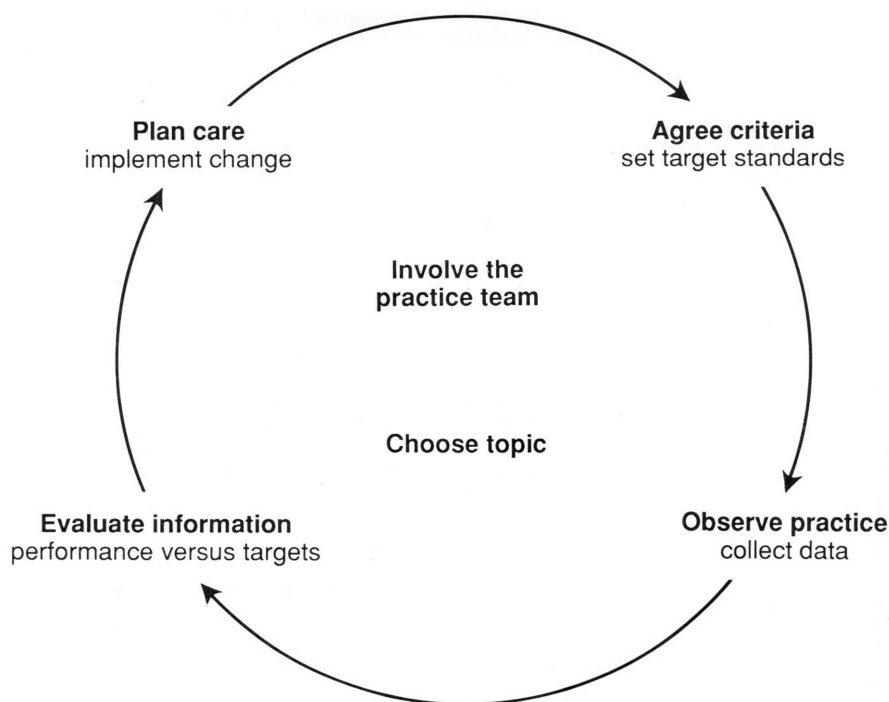


Fig. 2. Medical audit.

defined as a fasting blood glucose of < 8 mmol/l. The target performance level is set for each individual practice and should not be unrealistically high or too easy to achieve. It is set at a level that motivates change towards a higher quality of care. One could thus set a target standard of care that 80% of patients attending the practice for management of their diabetes should have a fasting blood glucose of < 8 mmol/l.

Setting standards for structure

A practice should have the following:

- A patient register categorising patients into those receiving insulin, those on oral treatment and those on dietary control
- A written management protocol
- Arrangements for review of patients not able to attend the clinic or practice
- A scale
- A tape measure
- A wall-mounted tape for measuring height
- Baumanometers with varying cuff sizes

- Glucometers and blood glucose strips
- Urine strips for measuring glucose, protein and ketones
- An ophthalmoscope
- A Snellen's chart
- A tuning fork, patellar hammer, cotton wool and disposable needles to check for neuropathy
- Education material in appropriate languages. These are obtainable from:
 - The South African Diabetes Association (sadanat@54.co.za), tel (011) 792-9888/7
 - The Department of Nutrition of the South African Sugar Association, tel (031) 508-7000.

Setting standards for process

The indicators of process will include the various measurements and clinical examinations to be carried out at regular visits and when patients present for annual review, as outlined above. It will also include appropriate interventions relating to lifestyle changes, medications, referrals and advising patients to join the South African Diabetes Association.

The following are examples of target standards for process.

In the past year:

- 90% of patients should have had the circulation and sensation in their feet assessed and the findings recorded
- 90% of patients should have had their fundi examined and the findings recorded
- 90% of patients on maximum oral therapy with a random blood glucose > 15 mmol/l should have been initiated on insulin therapy.

Setting standards for outcome

The following are examples of target standards for outcome.

In the past year:

- 80% of patients should have had an average fasting blood glucose of < 8 mmol/l
- 80% of patients should have had a blood pressure of < 140/90 mmHg at their last clinic visit.

References available on request.

In a nutshell

A structured approach is necessary for the delivery of adequate and effective care to patients with diabetes. This will require:

- A patient register and recall system
- A checklist or written management protocol
- A multidisciplinary approach using resources within and outside the practice
- Ongoing education and support relating to lifestyle changes.

General practitioners are accountable and should therefore assess and assure the quality of service they provide. Medical audit is a popular method of assessing the quality of care provided to patients with diabetes by:

- Measuring performance in relation to desired standards
- Improving on performance
- Repeating the cycle at regular intervals.