

Extending nursing roles in diabetes to achieve clinical targets

Michael Kirby

Nurses have an important role in achieving new General Medical Services contract diabetes clinical targets in primary care. The role of nurses can be expanded through nurse-led clinics, supplementary prescribing and the use of clinical medical plans. This article discusses the evidence to support role expansion for nurses and how this benefits both practice and patients.

Managing cardiovascular risk factors in people with diabetes offers clear benefits to both patients and clinicians, but achieving risk factor targets is complex. Taking advantage of recent changes in prescribing legislation and extending the role of nurses offers a practical solution. Most practices have found that practice nurses' skills and experience in providing systematic care make them ideally suited to managing cardiovascular risk in patients with diabetes and in meeting the new General Medical Services (nGMS) contract requirements. Nurse-led clinics offer the opportunity for patients with diabetes to benefit from organised, systematically delivered care, with:

- Efficient maintenance of an up-to-date register of all patients with diabetes, ensuring systematic call and recall of patients to the practice or hospital so that a full review is carried out at initial diagnosis and at least annually.
- Effective record keeping regarding the process of care and its outcomes (including information, where appropriate, from other healthcare

professionals involved in the care of patients with diabetes, such as dietitians and chiropodists, and secondary care colleagues).

- Targeted, patient-centred education and provision of essential advice on lifestyle issues (particularly regarding diet, exercise and alcohol consumption).

Cardiovascular disease management

Organised care delivered systematically to all patients with established coronary heart disease has been studied in a number of randomised clinical trials. These have shown that dedicated nurse-led clinics can improve the uptake of secondary prevention (Cupples and McKnight, 1999; Murchie et al, 2003; Moher et al, 2001; Allen et al, 2002). Trials with long-term follow-up have shown that nurse-led clinics reduce total mortality (Cupples and McKnight, 1999; Murchie et al, 2003), the benefits persisting for as long as four years, resulting in significantly fewer total deaths and coronary events. Several trials have shown benefits in patients' quality of life, particularly with respect to physical functioning (Cupples and McKnight, 1999;

Article points

1. Nurse-led clinics offer the opportunity for patients with diabetes to benefit from organised, systematically delivered care.
 2. They have been shown to improve assessment, and increase prescribing and attainment of clinical targets.
 3. As a supplementary prescriber, nurses can dose-titrate drugs and add additional therapies in accordance with patients' clinical management plans.
 4. Training practice nurses as supplementary prescribers ensures medication will be modified as necessary to achieve clinical targets.
- Key words:**
- Nurses
 - Cardiovascular risk
 - Supplementary prescribing
 - Clinical management plans
 - Targets

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Campbell et al, 1998).

A number of trials have looked at the benefit of nurse-led care in patients with diabetes. One study showed that nurse-based care was superior to conventional care with respect to blood pressure target attainment in patients with type 2 diabetes and uncontrolled hypertension (Denver et al, 2003).

The SPecialised nurse-Led INTervention to treat and control hypertension and hyperlipidaemia in diabetes (SPLINT) randomised controlled trial (New et al, 2003) was a specialist nurse-led intervention consisting of additional in-hospital clinics for type 2 diabetes patients receiving their annual review. Nurse-led clinics were shown to improve the achievement of the *National Service Framework for Diabetes: Standards* (Department of Health, 2001) hypertension and cholesterol targets (New et al, 2003). Overall, specialist nurse-led clinics were associated with a significant improvement in patients achieving blood pressure and total cholesterol targets (<140/80 mmHg and <5 mmol/l, respectively) after one year (odds ratio 1.37 [95 % confidence interval 1.11–1.69], $p=0.003$). Intervention was associated with a reduction in all-cause mortality (odds ratio 0.55 [confidence interval 0.32–0.92], $p=0.02$) (New et al, 2003).

However, Education outreach in Diabetes to Encourage practice Nurses to use primary care hypertension and hyperlipidaemia guidelines (EDEN), a sister trial conducted by the same group, found that the use of specialist nurses performing educational outreach in primary care was not an effective

means of improving target adherence (New et al, 2004). This chimes with an audit carried out within our own practice following the introduction of nurse-led clinics. We found that nurse-led clinics had:

- significantly improved assessment
- significantly increased prescribing
- improved target attainment, but with a smaller improvement than for assessment.

Overall, the coronary heart disease secondary prevention trials suggested that the benefits of the nurse-led interventions with respect to risk factors, such as lipid levels and blood pressure, were only seen when clinic attendance was continued and when it is accompanied by appropriate prescribing.

In SPLINT (New et al, 2003), the specialist nurses were able to increase the dose of antihypertensive or cholesterol-lowering medication in a stepped-care approach in accordance with protocols agreed on by the local drugs and therapeutic committee and supported by patient group directives. By contrast, the authors of the EDEN (New et al, 2004) study noted that: 'Many practice nurses recalled those patients failing to achieve target blood pressure and cholesterol and wanted to modify therapy, but found their general practitioners reluctant to alter the patient's treatment. This caused confusion among the patients and some difficulties between practice nurse and GP.'

Supplementary prescribing

If we are to ensure that care results in improved target achievement, perhaps the best way to ensure that

Table 1. Areas that would need to be addressed by a clinical management plan for a person with diabetes

- Lifestyle factors, such as diet and physical activity, including drug therapies when appropriate
- Blood glucose levels – specifying the range and circumstances within which the nurse could vary the dosage of agents, such as metformin and sulphonylureas, and at which stage he/she might add in an insulin sensitiser, such as rosiglitazone
- Blood pressure – specifying the preferred order and dosage range of antihypertensive medications
- Blood lipids – specifying a schedule for up-titration statin dosages.

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1. Becoming a supplementary prescriber requires at least 26 days of university tuition, 12 days of learning in practice and self-directed study.
2. Supplementary prescribing is likely to be most useful when dealing with long-term conditions, such as diabetes.
3. The CMP is a patient-specific document drawn up in conjunction with and agreed by the independent and supplementary prescribers, and with the arrangement endorsed by the patient.
4. CMPs should contain enough detail to ensure patient safety and state when to refer back to the independent prescriber.
5. Present nGMS targets are conservative and healthcare professionals should consider the lower recommendations in the revised British Hypertension Society and Joint European Societies guidelines.
6. Achieving blood glucose, blood pressure and lipid targets often requires multiple therapies.

diabetes nurses are fully empowered to achieve targets is for them to become supplementary prescribers.

Supplementary prescribing is defined by the Department of Health as 'a voluntary prescribing partnership between an independent prescriber and a supplementary prescriber, to implement an agreed patient-specific clinical management plan (CMP) with the patient's agreement' (National Prescribing Centre, 2003). As supplementary prescribers, nurses may dose-titrate drugs and add in additional therapies in order to achieve targets set out in an individual patient's clinical management plan (CMP) drawn up by the GP.

Naturally, becoming a supplementary prescriber requires training, and the legislation requires that this consists of:

- at least 26 days of university tuition, of which a substantial proportion will be face-to-face contact time
- an additional 12 days of learning in practice with a medical prescriber
- self-directed study.

Importantly, there are no legal restrictions on the clinical conditions that a supplementary prescriber may treat. Indeed, it is likely to be most useful when dealing with long-term medical conditions, such as diabetes. Furthermore, unlike district nurse, health visitor and extended nurse prescribing, there is no specific formulary or list of medicines for

supplementary prescribing. Provided medicines are prescribable by an independent prescriber at NHS expense, and that they are referred to in the patient's CMP, supplementary prescribers are able to prescribe any medicine with the exception of controlled drugs.

Clinical management plans

The CMP is central to supplementary prescribing: it is a patient-specific document drawn up in conjunction with and agreed by the independent and supplementary prescribers, and with the arrangement endorsed by the patient. *Table 1* gives details of the clinical issues a CMP for a patient with diabetes would need to address.

In each case, the CMP should contain enough detail to ensure patient safety, by including relevant warnings about known sensitivities of the patient to particular medicines, and including arrangements for notification of adverse drug reactions. It should also specify the circumstance in which the supplementary prescriber might refer the patient back to the independent prescriber, for instance at a given level of poor control of blood pressure, or for serious adverse drug reactions. It should also contain the date of commencement of the arrangement and date for review (usually one year). Sample templates are available at www.npc.co.uk (accessed 24.03.05).

The present nGMS targets are somewhat conservative, particularly when compared to the latest British Hypertension Society guideline recommendations (Williams et al, 2004, *Table 2*). The financial rewards for achieving nGMS contract targets will encourage primary care to improve management in this vulnerable group of patients by implementing more systematic approaches to care. However, it is important that in writing CMPs,

Table 2. Blood pressure and lipid targets given in the General Medical Services (GMS) contract (British Medical Association, 2003), National Institute for Clinical Excellence (NICE; Department of Health, 2001) and British Hypertension Society (BHS; Williams et al, 2004) guidelines

Risk factor	Targets recommended by guidance		
	NICE	GMS	BHS
Blood pressure	<140/80 mmHg	<145/85 mmHg	≤130/80 mmHg
Blood lipids			
Total cholesterol	<5.0 mmol/l	<5.0 mmol/l	<4.0 mmol/l
LDL cholesterol	<3.0 mmol/l	<3.0 mmol/l	2.0 mmol/l

healthcare professionals consider the new lowered recommendations for blood pressure and lipids contained in revised national and international guidelines (Williams et al, 2004; DeBacker et al, 2003).

Achieving clinical targets

Achieving targets for blood glucose, blood pressure and lipids in people with diabetes will often require multiple therapies. The UK Prospective Diabetes Study (UKPDS) 38 showed that a high proportion of patients need multiple antihypertensive therapies to achieve adequate blood pressure control (UKPDS, 1998), while UKPDS 49 showed that around 50 % of patients treated with a single anti-diabetic agent required additional therapy to achieve glycaemic targets three years after diagnosis (Turner et al, 1999). By nine years this had declined to just 25 %. A single lipid-lowering agent will often be sufficient, but patients will nevertheless be taking three or four drugs before aspirin and other cardioprotective agents are considered.

This has clear implications for patient compliance, which is inversely related to the prescribed number of doses a patient is required to take per day. Studies suggest that simpler, less frequent dosing regimens result in better compliance (Claxton et al, 2001). Wherever possible,

treatment approaches that combine agents should be considered, particularly where the individual agents have complementary actions. Many fixed-dose combinations of antihypertensive agents are available, and have been associated with improved target achievement and treatment adherence. Similarly, combination treatment with metformin-rosiglitazone (Avandamet) has been shown to improve glycaemic control, insulin sensitivity, and beta-cell function more effectively than treatment with metformin alone in patients with type 2 diabetes (Fonseca et al, 2000).

Conclusion

Diabetes is a progressive disease, in which patients frequently need additional therapies after short periods of time. The case for frequent monitoring and early addition of new therapies as required to achieve glycaemic and other goals is unarguable. It is essential that patient care is not hampered by unnecessary barriers.

Training practice nurses to become supplementary prescribers, working to an agreed CMP, offers an approach that will ensure that patients' medications can be modified as necessary to achieve clinical targets. Current supplementary prescribing regulations fail to recognise the current level of expertise of many nurses in diabetes

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- Polypharmacy in diabetes has clear implications for patient compliance, which is inversely related to the prescribed number of doses a patient is required to take per day.
- Wherever possible, treatment approaches that combine agents should be considered, particularly when the individual agents have a complementary action.
- People with diabetes will need increasing numbers of therapies as time progresses.
- Training practice nurses as supplementary prescribers, working to a CMP, offers an approach that will ensure that patients' medications can be modified as necessary to achieve clinical targets.

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1 As prevention is better than cure, it is worth considering early, active management of insulin resistance and other features of the metabolic syndrome, as well as targeting conventional cardiovascular risk factors.

care. Specialist nurses are often in the position of having superior knowledge compared with doctors in training or GPs without a special interest. In such a situation it would clearly be appropriate for the Department of Health to agree to add diabetes drugs to the extended nursing formulary. For many nurses the timing involved and bureaucracy around supplementary prescribing and the CMPs is a major obstacle. Comments can be made to the nurse prescribing forum at www.nurse-prescriber.co.uk (accessed 24.03.05).

As prevention is always better than cure, the current nGMS targets are conservative compared with the British Hypertension Society targets, and this needs to be taken into consideration, particularly in patients at high risk of events. It is worth considering early, active management of insulin resistance and other features of the metabolic syndrome, as well as targeting conventional cardiovascular risk factors. ■

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