

What makes Care Plus effective in a provincial Primary Health Organisation?

Perceptions of primary care workers

Kyle Eggleston¹BHB, MBChB, DipObstMedGyn, DipPaed, DIH, FRNZCGP; ¹Tim Kenealy PhD, MBChB, FRNZCGP²

¹Bream Bay Medical Centre, Ruakaka, Northland, New Zealand

²Integrated Care, Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand

ABSTRACT

INTRODUCTION: Care Plus is a New Zealand chronic care initiative. It provides funding for extra primary care visits for patients with chronic diseases and aims to improve chronic care management, primary health care team work and reduce inequalities in health care.¹ This mixed methodology study aimed to explore characteristics within practices that may contribute to improved clinical outcomes for Care Plus.

METHODS: A focus group interview was conducted with a group of health professionals involved in Care Plus in a North Island Primary Health Organisation (PHO). Participants were selected because of their 'expert status'. Interview analysis used a general inductive approach. A questionnaire was sent to all practice nurses to determine prevalence of characteristics derived from the focus group.

FINDINGS: Seven primary care workers involved in Care Plus participated in a focus group from which three major themes emerged: nursing factors, practice organisation factors and general practitioner (GP) factors. Sub-themes identified as patient-centredness, assertive follow-up, nursing knowledge, referral to other health professionals, dedicated appointment times, long consultation time, low cost, GP commitment and teamwork were all considered to be characteristics that could lead to improved clinical outcomes. Questionnaire responses from 18 practice nurses suggest that GPs are under-involved with Care Plus.

DISCUSSION: Patients with chronic conditions have complex needs. Care Plus is a nationwide initiative providing funding for chronic care. Some characteristics of nurses, practice organisation and GPs may lead to improved clinical outcomes in Care Plus. A number of these characteristics are supported in the literature.

KEYWORDS: Chronic disease; primary health care; primary nursing care; disease management; patient care team

Introduction

Care Plus is a New Zealand (NZ) chronic care initiative. It provides funding for extra primary care visits for patients with chronic diseases and aims to improve chronic care management, primary health care team work and reduce inequalities in health care.² As a result it was presumed that Care Plus would improve clinical outcomes.³

Care Plus was originally conceived by the Independent Practitioners Association Council (IPAC) to improve access to services for people with high

health needs who might otherwise be disadvantaged by the newly established Primary Health Organisation (PHO) funding formula. The structure and implementation of Care Plus varies between PHOs. However, it always includes additional funding for four 'Care Plus appointments', with a doctor or a nurse, for patients with a chronic condition, usually resulting in a subsequent decrease in patient co-payment. Other elements may include a written care plan, a focus on education and self-management and possibly a linkage to a chronic care management programme.

J PRIMARY HEALTH CARE
2009;1(3):190–197.

CORRESPONDENCE TO: Kyle Eggleston

General practitioner,
Bream Bay Medical Centre,
PO Box 132, Ruakaka,
Northland, New Zealand
kyle@breambaymed.co.nz

Patients are eligible for enrolment in Care Plus if they are expected to benefit from intensive clinical management in primary care (defined as at least two hours of care from one or more members of the primary health care team) over six months and either have two or more chronic health conditions, a terminal illness, two acute medical or mental health-related admissions in the past 12 months, a total of six primary care consultations and/or emergency department visits within the last 12 months, or are on active review for elective health services.

The characteristics of a practice or an individual health provider that result in improved clinical outcomes for general care are hard to define or quantify. There have been a few studies attempting to answer this question with some conflicting results,^{4,10} and no published studies of practice characteristics in provincial NZ general practice.

The aim of this mixed methodology study was to explore characteristics within practices that may contribute to improved delivery of Care Plus in a provincial NZ setting.

Method

This was a mixed methodology study. Stage one was a focus group interview of a group of health professionals involved in Care Plus in a North Island PHO. The PHO has an enrolled population of 79 000 of whom 24% are Maori. The PHO consists of 19 general practices, five of which are rural. As of July 2007 there were 4841 Care Plus eligible patients in the PHO, of whom 2472 were enrolled with Care Plus; 30% of Care Plus patients were aged 45–64, 66% were aged greater than 65, 48% were male, 11% were rural and 25% were Maori.

The focus group consisted of five practice nurses, the PHO Care Plus coordinator and a GP involved in clinical governance. The participants were selected because of their 'expert status'. The nurses were considered to be highly achieving by the PHO. The sampling strategy was chosen to use participants who had the most experience and would be able to communicate. This is an example of extreme participant sampling and was used in order to find out what good or effective practice

WHAT GAP THIS FILLS

What we already know: The characteristics of a practice or an individual health provider that result in improved clinical outcomes are hard to define or quantify and there have been a few studies attempting to answer this question with some conflicting results. There have been no published studies of practice characteristics in provincial NZ general practice looking at chronic care management, in particular Care Plus.

What this study adds: This study identified a number of characteristics that may be associated with improved clinical outcomes specific to Care Plus. There is supporting evidence in the literature for a number of these characteristics.

looks like. The focus group interview was loosely facilitated to allow participants to explore issues in depth while remaining relevant to the group task. Questions asked within the focus group were: What was each participant's involvement or experience with Care Plus? What are the characteristics of a practice that lead to improved clinical outcomes and what makes a really good practice (specifically relating to delivery of Care Plus)?

The interviews were recorded and transcribed. Analysis of the interview was performed using a general inductive approach in which the interviews were read repeatedly, minor themes identified and then grouped into common major themes relating to the area of enquiry. A second researcher independently coded sections of the interview and agreement on coding and interpretation were achieved by consensus.

Stage two was a questionnaire based on the themes of the focus group. This was sent to all 18 practice nurses in the PHO involved in Care Plus in order to gauge the prevalence of characteristics. The list of practice nurses was obtained from the PHO. A high response rate was encouraged by the inducement of a bottle of wine for a participant randomly selected from returned questionnaires. A reminder was to be sent out after three weeks if no response had been received. The questions were developed after an initial thematic analysis of the focus group and were piloted on three nurses in a single practice.

Ethical approval for this study was granted by the Northern X Regional Ethics Committee (Reference NTX/07/40/exp).

Table 1. Characteristics associated with improved clinical outcomes for Care Plus

| Nurse factors | Practice organisation factors | GP factors |
|--|---|---|
| <ul style="list-style-type: none"> • Patient centredness • Assertive follow-up • Nursing knowledge • Involvement of other health professionals | <ul style="list-style-type: none"> • Dedicated appointment times • Long consultation time • Low cost | <ul style="list-style-type: none"> • GP commitment • Teamwork |

Results

After thematic analysis of the focus group practice, characteristics associated with improved clinical outcomes for Care Plus could be grouped into three broad themes with a number of sub-themes (see Table 1):

Nurse factors

Patient-centredness

A consistent theme of patient-mindedness or centredness was seen in analysis of the focus group. This was expressed variously as continuity of care, maintaining rapport, being patient-focussed and expressing a caring behaviour. The return of patients for subsequent visits was felt to confirm success in establishing a good relationship with patients:

'If you don't really have a rapport with a patient, you can't discuss things with them.'

'It should be patient-focussed, it should all be about the patients. What is important to you is not important to them.'

Assertive follow-up

Assertive follow-up was felt to strengthen the relationship between nurse and patient. It was probably effective in bringing patients in for appointments and therefore contributed to relationship building that occurred with repeated consultation:

'So you are ringing them and reminding them to come in and [therefore] building up a relationship.'

Defined nurse role

The role of the nurse differed between practices. Some practices had a dedicated nurse delivering

Care Plus whereas other nurses took on Care Plus duties as part of being a practice nurse. The relative merits of each role seemed to depend on the size of the practice. Larger practices tended to split the roles. The advantage in smaller practices was that there was a perception of continuity of care with the practice nurse also being the nurse delivering Care Plus. However some nurses found the combination of roles difficult, predominately due to time pressures.

'I was initially a practice nurse at another practice doing practice nursing and Care Plus and let me tell you it was hard.'

Nursing knowledge

Having a specific primary care nursing background and knowledge base was felt to be important to Care Plus.

'Practice nurses that have been practice nursing for a while probably find this an easier process than someone who was to leave hospital and enter general practice.'

However, it was also important to extend the theoretical knowledge pertaining to chronic diseases and to bear in mind that a broad knowledge base was not necessarily enough.

'The amount that I knew about diabetes you could put in a pin pot. Just having knowledge about a lot of things doesn't seem to help.'

Involvement of other health professionals

Where the nurse did not have the required knowledge or skill set for a problem, then referral to other agencies or liaising with appropriate medical specialists or nurse specialist occurred. Involvement of other health professionals was felt to be beneficial for the Care Plus patient. As Care Plus developed, then communication between nurses improved, indicating a change in practice.

'Yeab I think to be a good Care Plus nurse you have to accept the fact that there are lots of people out there that you can draw on to make this person's condition a whole lot better.'

'A lot of the nurses didn't communicate with each other, they didn't communicate with secondary services. Now it is like second nature.'

The skills of nurses were felt to be complementary but separate to general practitioners.

'Nurses have got skills that they [GPs] don't have.'

Practice organisation factors

Dedicated appointment times

Having dedicated time or protected time was considered to be important. This was so that reception staff knew that the nurse was taking a Care Plus clinic and was not to be interrupted. The relationship and training of the reception staff was important for this point. There emerged also the theme that having dedicated Care Plus appointments separated normal practice nurse duties from chronic care management.

'I don't think that I would be able to do it if I didn't have dedicated time... I never get interrupted on the phone when I am with a [Care Plus] patient. Never, never, never, unless it is God phoning, then I might get interrupted.'

Long consultation time

Care Plus appointments were longer in order to receive and impart more information. This was felt to be more effective.

'From those quarterly follow-ups the amount of information you gain from that patient is huge. And the amount of changes you can make with patient. You would never be able to do that with a normal consult.'

The idea was also expressed that it was the length of time that made a difference rather than the type of clinician in the consultation. It was felt that compliance improved and process of care improved.

'As a GP I know that those people [Care Plus patients] are being better looked after than when I was looking after them myself because they have got more time.'

Low cost

Having extra funding for Care Plus appointments contributed to better outcomes in that it encouraged patients to return. The nurse-led consultations were free to Care Plus patients. In lower socioeconomic areas this was seen as very important. One practice received a substantial amount of its funding via Care Plus.

'Care Plus works in our environment because it funds the client.'

However, in other practices a loss was made on employing a dedicated nurse to deliver Care Plus. The loss in finances was felt to be worthwhile in reducing GP workload and improving quality of care.

'It was actually a business decision we will lose some money but it will be better for our patients and better for us in the long term but that is not something a lot of practices are willing to do because it is going to cost.'

General practitioner factors

General practitioner commitment

Nurses felt that they could not provide a good service without the support of GPs. It was acknowledged that nurses and doctors have different roles and the involvement of doctors in adjusting medication when required was crucial to the success of the programme.

'If the GP is not going to back it and commit to it 100% and believe it, then it is not going to work. Because once you are in there talking to a patient and you realise that there needs to be a medication adjustment, because this isn't working, then you need the GP to do that at the time preferably.'

GPs who were not supportive were also felt to have low key performance indicators such as low immunisation rates, low cervical smear rates and low mammogram rates. Some GPs were felt not to commit to a programme such as Care Plus because of the time and financial commitments involved. Commitment to the programme also depended upon committing time to ensure its success, at least initially.

I don't want any more work to do so I am not going to get involved with this process.

'And some of them [GPs] don't like it when the nurse says "Have you thought about introducing a statin here". Like where did you suddenly get your degree from!'

Teamwork

Developing respect and teamwork between GP and the nurse delivering Care Plus was felt to be crucial. Where GPs did not respect the nurse, Care Plus did not seem to work.

'There are some practices out there where the doctors aren't working closely with the nurses... The nurses are still doing it, they are doing it well but they are struggling.'

On the other hand, when nurses and GPs had good communication skills the nurses felt valued and the sense of the team was further developed.

'If I have got any problem I can knock on the doctor's door. "Ob look at this microalbumin. What do you think we should do? Should we increase the Inhibace and monitor the renal [function]." Or I will print off the results and write a note and get back in contact with the patient.'

Table 2. Characteristics of nurse respondents (N=18)

| | |
|---|-----------|
| Year of nursing graduation. Mean, (SD) | 1986 (11) |
| Hours per week worked as a nurse. Mean (SD) | 34 (5) |
| Hours per week doing Care Plus. Mean (SD) | 7 (8) |
| Number of nurses having designated time for Care Plus | 12 (67%) |
| Number of nurse having done a Flinders training course | 12 (67%) |
| Number of nurse having done a brief interventional training course | 7 (39%) |
| Number of nurses having done a Flinders training course or a brief interventional training course | 13 (72%) |

Table 3. Items in postal questionnaire to all practice nurses in PHO (N=18)

| Item | Strongly Agree or Agree |
|--|-------------------------|
| During my Care Plus appointments with patients I do not get interrupted by telephone calls/receptionist/GP requests etc. | 14 (78%) |
| For initial Care Plus appointments the GPs in my practice see the patients as well | 4 (22%) |
| For quarterly Care Plus appointments the GPs in my practice see the patients as well | 2 (11%) |
| There is good communication between the Care Plus patient's GP and myself regarding management | 16 (89%) |
| The GPs in my practice are respectful of my opinion regarding management of Care Plus patients | 18 (100%) |
| Regular clinical meetings are held to discuss Care Plus patients | 4 (22%) |
| I frequently refer Care Plus patients to other agencies or organisations | 18 (100%) |
| Practice finances are not a consideration of mine when I see Care Plus patients | 12 (67%) |
| Our practice has good recall rates for cervical smears, mammograms and immunisations | 15 (83%) |

Some GPs saw the patient with the nurse for the first Care Plus appointment. Most of the nurse interviewees appeared to see patients by themselves. There appeared to be a general handing over of patients from doctors to nurses.

'My quality of life in not having to deal with this very heavy workload was massively improved.' (GP)

'Dr X is quite funny. She said that she [patient] is not my problem any more she is yours.' (Practice nurse)

Questionnaire responses

Questionnaires were sent to all 18 nurses in the PHO involved with Care Plus with a 100% response rate. Background details of nurses are tabled in Table 2.

Questions were based on a Likert scale from 1 to 5. A response of 1 indicated strong agreement and response of 5 indicated strong disagreement. See Table 3 for the number of those who responded with a 1 or 2 to the question.

Discussion

In this study of Care Plus, practice characteristics considered to be associated with improved clinical outcomes could be grouped into three broad themes: nurse, practice organisation and GP factors. Within each of these broad themes were number of sub-themes. Nurse factors included patient-centredness, assertive follow-up, nursing knowledge and involvement of other health pro-

professionals. Practice organisation factors included dedicated appointment times, long consultation time and low cost. GP factors included GP commitment and teamwork.

Previous studies of practice characteristics leading to improved clinical outcomes in general practice have had conflicting results. There has been shown to be positive correlations between practices that are group practices and teaching practices with higher performance indicators.⁴ Conversely, other studies have shown no difference with practice size.^{8,9} Practices in more deprived areas have been associated with poorer performance indicators.⁴ Other studies have shown positive relationships between younger physician age, practices in affluent areas and larger practices with improved clinical outcomes.⁵⁻⁷ In a NZ study, practice characteristics associated with greater immunisation rates were practices with less deprivation, higher rates of

diastolic blood pressure and higher LDL cholesterol levels. It was concluded that in treating asymptomatic conditions such as hyperlipidaemia or hypertension, which are treated more effectively with medication, there may be little opportunity, beyond compliance, for patients to have control or involvement in their treatment.¹³ In a review of patient-centred studies, Michie found that those studies in which patients were activated to take control of their chronic illness were more likely to achieve better outcomes than those studies in which the approach to patient-centredness focussed on understanding the patient's perspective.¹⁴

In other words, providers who assist patients to become more actively involved in their own illness will achieve better outcomes than those providers who are patient-centred, but whose patients remain passively involved. The Flinders Model is a formalised method of teaching self-

Providers who assist patients to become more actively involved in their own illness will achieve better outcomes than those providers who are patient-centred, but whose patients remain passively involved

NZ European patients, lower staff turnover and practices that enrolled children early.¹⁰

The focus group felt that being patient-centred was important in improving clinical outcomes. Wagner describes patient-centredness as promoting 'a fuller understanding of the patient's life and preferences, activation or empowerment of patients, and tailoring of management to patient preferences'.¹¹ In the literature there is some evidence that a patient-centred approach improves management of chronic conditions and leads to improved clinical outcomes.¹² There is also some evidence of poorer outcomes with a patient-centred approach. Baldwin et al. studied 189 patients with hypertension and showed that those patients who identified as preferring a more patient-centred approach had higher systolic and

management and is a patient-centred approach. There is some evidence that the Flinders Model can lead to improved clinical outcomes.¹⁵ Two-thirds of practice nurses involved in Care Plus had undertaken further training by attending a Flinders course.

Having an uninterrupted consultation seems intuitively to improve communication and increase patient satisfaction. Primary care consultations have rates of external interruptions ranging from 15-78%.^{16,17} This has been shown to decrease satisfaction levels of patients.¹⁶⁻¹⁸ The results of the questionnaire suggest that just under one quarter of respondents would get interruptions during their Care Plus consultations. These would typically be telephone enquires, according to the focus group. While interruptions

may occur, Care Plus consultations are generally longer than a normal GP consultation and this may negate the negative effect of interruptions. Longer consultations may lead to greater time spent problem-solving, educating and eliciting concerns that may lead to improved outcomes. Evidence suggests that doctors who have longer consultation length are more likely to include lifestyle advice and preventive activities and to adopt a style of practice in which more problems are dealt with and more information exchanged.¹⁹ However, there is no strong evidence currently to demonstrate a link between improved clinical outcomes and longer consultation length.¹⁹ A longer consultation length may reflect underlying characteristics or attributes of the health practitioner, such as patient-centredness, which is related to performance, rather than the length of the consultation itself.²⁰

Evidence suggests that doctors who have longer consultation length are more likely to include lifestyle advice and preventive activities and to adopt a style of practice in which more problems are dealt with and more information exchanged

There were a number of comments regarding the relationship between the GP and the practice nurse delivering Care Plus in the focus group. These picked up on the themes of support, respect, communication and commitment. Questions pertaining to the GP–nurse relationship in the questionnaire showed only a small number felt that communication between nurse and doctor was not good. It is possible that the questions asked were not sensitive enough to pick up deeper aspects of the nurse–GP relationship.

It is likely that communication and teamwork between nurse and doctor will enhance patient care for chronic conditions.²¹ The focus group identified collaboration and teamwork as increasing the opportunity for appropriate interventions such as medication adjustment. In the DAWN study most doctors and nurses felt that good

communication would improve collaboration and that this was best achieved by regular meetings between providers.²² Only a small number of practices from the questionnaire respondents had regular clinical meetings.

There was evidence seen in both the focus group analysis and the questionnaire that GPs were not becoming involved in Care Plus but were handing over care of patients with chronic conditions to the practice nurse. Only a small number of GPs in the PHO would see patients in conjunction with the nurse at the quarterly visits. It is presumed they would see patients enrolled in Care Plus for acute illnesses or for repeat prescriptions (unless the prescriptions were generated by the nurse). The opportunity for medical intervention is maximal at the time of review of a patient's chronic conditions and unless the

GP can adequately review chronic conditions, without being diverted by dealing with an acute illness—‘the tyranny of the urgent’—then this is an opportunity lost.²³

This study has a number of weaknesses. The first is that while opinions were collected from all practice nurses involved with Care Plus, only the opinion of one GP, in the focus group, was sought. GPs may have different opinions regarding characteristics associated with improved clinical outcomes for Care Plus. However Care Plus was conceived and implemented as a nurse programme. It was originally felt that because nurses were delivering Care Plus, they would have a more intuitive knowledge as to the various factors associated with better outcomes. In addition, although opinion on clinical outcomes was asked for, clinical outcomes were neither defined nor independently measured.

The questionnaire achieved a 100% return rate of all nurses delivering Care Plus in a single PHO. The implementation of Care Plus in PHOs varies around the country and it may be difficult to generalise the findings from this study to Care Plus as a whole. However the themes picked up in the focus group were not considered by participants to be specific to the study PHO and some generalisation may be possible. Only one focus group was interviewed, however this focus group represented one-third of all nurses delivering Care Plus and was selected by the PHO which perceived that they provided a very good service. It was felt that seeking the opinion of an 'expert' group was more likely to lead to answers as to what characteristics are associated with improved clinical outcomes.

Patients struggling with chronic illness have complex needs. Care Plus is a programme that attempts to meet those needs. This study identified a number of practice characteristics that may be associated with improving the effectiveness of Care Plus and these are likely to apply to any chronic care management programme. There is supporting evidence in the literature for a number of these characteristics. From the findings of this study it is recommended that practice nurses are supported to attend nursing education sessions focussing on a patient-centred approach to chronic care, that practice systems are reorganised to allow for the differing requirements for a chronic care consultation, and that GPs are encouraged to become more involved in Care Plus.

References

1. Ministry of Health. Primary Health Care. Care Plus [Internet]. Wellington: Ministry of Health; 2007 Oct [cited 2007 Nov 2]. 1p. Available from: <http://www.moh.govt.nz/moh.nsf/indexmh/phcs-projects-careplusservice>.
2. Ministry of Health. Care Plus: An overview. Wellington: Ministry of Health; 2004.
3. CBG Health Research Ltd. Review of the Implementation of Care Plus. Wellington: Ministry of Health; 2006.
4. Ashworth M, Armstrong D. The relationship between general practice characteristics and quality of care: a national survey of quality indicators used in the UK Quality and Outcomes Framework, 2004–5. *BMC Fam Pract* 2006;7:68.
5. McGinn J, Davis C. Geographic variation, physician characteristics, and diabetes care disparities in a metropolitan area, 2003–2004. *Diabetes Res Clin Pract* 2006;72(2):162–9.
6. Saxena S, Car J, Eldred D, Soljak M, Majeed A. Practice size, caseload, deprivation and quality of care of patients with coronary heart disease, hypertension and stroke in primary care: national cross-sectional study. *BMC Health Serv Res* 2007;7:96.
7. Landon BE, Normand SL, Meara E, Qi Zhou, Simon SR, Frank R, McNeil BJ. The relationship between medical practice characteristics and quality of care for cardiovascular disease. *Med Care Res Rev* 2008;65(2):167–86.
8. Byrne M, Murphy AW, Walsh JC, Shryane E, McGroarty M, Kelleher CC. A cross-sectional study of secondary cardiac care in general practice: impact of personal and practice characteristics. *Fam Pract* 2006;23(3):295–302.
9. Hippisley-Cox J, Pringle M, Coupland C, Hammersley V, Wilson A. Do single handed practices offer poorer care? Cross sectional survey of processes and outcomes. *BMJ* 2001;323(7308):320–3.
10. Turner N, Grant C, York D, Goodyear-Smith F, Petousis-Harris H, Jones R, et al. Characteristics of general practices associated with higher immunisation coverage. Paper presented at: RNZCGP Annual Scientific Conference; 2007 July 11–14; Rotorua.
11. Wagner EH, Bennett SM, Austin BT, Greene SM, Schaefer JK, Vonkorff M. Finding common ground: patient-centredness and evidence-based chronic illness care. *J Altern Complement Med* 2005;11 Suppl 1:57–15.
12. Glazier RH, Bajcar J, Kennie NR, Willson K. A systematic review of interventions to improve diabetes care in socially disadvantaged populations. *Diabetes Care* 2006;29(7):1675–88.
13. Baldwin AS, Cvengros JA, Christensen AJ, Ishani A, Kaboli PJ. Preferences for a patient-centred role orientation: association with patient-information-seeking behavior and clinical markers of health. *Ann Behav Med* 2008;35(1):80–6.
14. Michie S, Miles J, Weinman J. Patient-centredness in chronic illness: What is it and does it matter? *Patient Educ Couns* 2003;51(3):197–206.
15. Lawrence J. Statewide Chronic disease self-management initiative. Final summary and evaluation report June 2003 executive summary [Internet]. Adelaide: Flinders University; 2004 Aug [cited 2008 Oct 16]. 4p. Available from: http://som.flinders.edu.au/FUSA/CCTU/pdf/Statewide_Exec_Summary_Aug_04.pdf
16. Rhoades DR, McFarland KF, Finch WH, Johnson AO. Speaking and interruptions during primary care office visits. *Fam Med* 2001;33(7):528–32.
17. Shvartzman P, Antonovsky A. The interrupted consultation. *Fam Pract* 1992;9(2):219–21.
18. Abdulhadi N, Al Shafae M, Freudenthal S, Ostenson C-G, Wahlstrom R. Patient-provider interaction from the perspectives of Type 2 diabetes patients in Muscat, Oman: a qualitative study. *BMC Health Serv Res* 2007;7:162.
19. Wilson A, Childs S. The relationship between consultation length, process and outcomes in general practice: a systematic review. *Br J Gen Pract* 2002;52(485):1012–20.
20. Wilson A, Childs S. The effect of interventions to alter the consultation length of family physicians: a systematic review.[see comment]. *Br J Gen Pract* 2006;56(532):876–82.
21. Bower C, Campbell S, Bojke C, Sibbald B. Team structure, team climate and the quality of care in primary care: an observational study. *Qual Saf Health Care* 2003;12:273–279.
22. Peyrot M, Rubin RR, Lauritzen T, Skovlund SE, Snoek FJ, Matthews DR, et al. Patient and provider perceptions of care for diabetes: results of the cross-national DAWN Study. *Diabetologia* 2006;49(2):279–88.
23. Bodenheimer T, Wagner E, Grumbach K. Improving primary care for patients with chronic illness. *JAMA* 2002;288(14):1775–9.

ACKNOWLEDGEMENTS

The Auckland Faculty RNZCGP for a study grant.

CONFLICT OF INTEREST

None declared.