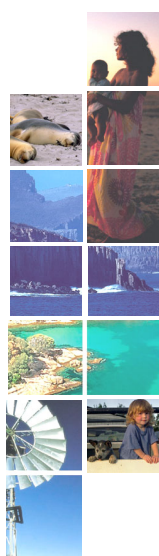


# Some key elements for developing a case management model of care to optimise outcomes in diabetes in a rural setting

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## ABSTRACT

At a time when diabetes is reaching epidemic proportions in many communities, diabetes care has never before been able to so successfully prevent end organ complications through proactive monitoring and early intervention. However, in rural communities, access to diabetes care remains a major issue. This paper presents findings from 52 semi-structured, face-to-face interviews with diabetic residents of the Goulburn Valley and health professionals from the Goulburn Valley and Melbourne who are involved in diabetes care. It explores the extent to which these stakeholders understand case management; some important considerations for its organisation in a rural setting, and stakeholder beliefs in the influence of case management to improve proactive monitoring; and early intervention in diabetes care. Key elements emerging from the analysis include: increasing the knowledge of and use of local services; improving access to care; promoting patient autonomy and self-efficacy; protecting consultation time; and co-ordinating diabetes information. The importance of the case manager having medical or diabetes education skills is discussed from various stakeholder viewpoints. We recommend that time spent by health care professionals for diabetes case management is explicitly funded in order to improve diabetes related outcomes.



## BACKGROUND

Optimising care for people with diabetes can delay or reduce the number and severity of complications of diabetes.<sup>1,2</sup> Optimal care includes interventions that emphasise the importance of tight metabolic control, promote education and develop diabetes self-management skills. A structured approach to care is more likely to produce better outcomes for patients with diabetes<sup>3,4,5</sup> than unstructured care. Structured care attempts to overcome many of the problems associated with the current health system – for example its inclination towards acute treatments, fragmentation and random care delivery.<sup>6,7</sup> Case management has been an effective approach to structuring care<sup>8,9-15</sup>, and it has been strongly recommended as a strategy to improve care of those with diabetes<sup>15</sup> through proactive monitoring and early intervention. In many studies, the case manager is a nurse with diabetes education qualifications.<sup>10,12,13,16,17</sup> Diabetes case managers co-ordinated services<sup>10,14,18</sup>, planned and facilitated treatments<sup>10,14,19</sup>; allocated resources<sup>18</sup>; monitored glycaemic control, screening and follow up<sup>12,13,16,20-22</sup>; adjusted medication and reinforced lifestyle change consistent with diabetes self management.<sup>12,13,22,23</sup> Brown et al<sup>24</sup> believe the excellent results of clinical case



management are more a reflection of having the right person in the job than due to the model of care, while Rubin et al<sup>25</sup> found that stratifying patients with the lowest level of health professional necessary to achieve outcomes was both effective and economical. Successful diabetes case management programs look after more than diabetes specific needs<sup>25</sup>, and ensure that elements of care, not able to be delivered during the consultation process, are executed.<sup>22</sup>

Diabetes case management is resource intensive, and both patients and health workers need to understand its role for optimal implementation. To our knowledge, the level of understanding amongst these stakeholders and their perspective on the value of diabetes case management in a rural setting has not been explored previously. With the known paucity of GPs and diabetes nurse educators in most rural areas of Victoria<sup>26,27,28</sup> we further examined stakeholder's beliefs about the importance of a diabetes case manager also having clinical diabetes qualifications.

## METHODS

The research was undertaken in the Goulburn Valley region of rural Victoria and Melbourne between June and October 2002. Rural Victorians have a greater risk of developing diabetes complications than those in metropolitan areas<sup>29</sup> and this is particularly so in the Goulburn Valley.<sup>30</sup> The Goulburn Valley has a population of approximately 100,000 and its major centre, Shepparton, has a population of almost 34,000.

The non-probability, purposive sampling strategy involved the co-operation of local health workers (from disciplines such as diabetes education, podiatry and general practice) who recommended the research to their clients (n=22), and a further 11 were recruited through snowball sampling. Clinicians (those directly or indirectly involved in delivery or organisation of care; n=19) were recruited through direct written invitation and follow up telephone call. All of those approached agreed to participate, perhaps highlighting the personal significance of diabetes care. We interviewed adults with diabetes (Type 1, Type 2 and gestational diabetes; n=29 – see Table 1), lay carers (n=4) and a limited number but diverse range of diabetes health workers (doctors, diabetes educators, podiatrist, dietitian, nurses, pharmacy assistant, community case managers; n=19). All participants shared an understanding of living with or caring for someone with diabetes.

Participants with diabetes completed a brief survey to identify demographic data. Each participant was interviewed face-to-face, utilising a semi-structured interview schedule. The interviews took between 30 and 60 minutes. The interviews were audio-recorded and transcribed. Sections of transcript were organised according to emergent themes. Participants received summary documents to verify their accuracy. The University of Melbourne Human Research Ethics Committee approved the study, and written, informed consent was obtained from each participant.

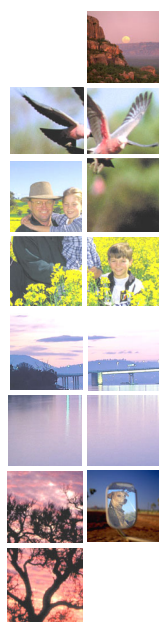
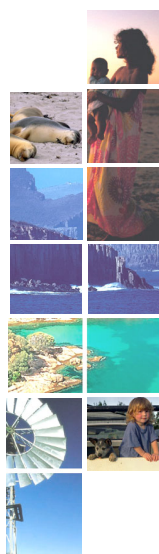


Table 1 Study participants

	Male	Female	Type 1	Type 2 and gestational <sup>*</sup>
Type 1	4	3		
Type 2	6	15		
Gestational	0	1		
On insulin alone	5	5	7	3
On oral medication only	4	10	0	14
On combination of oral and insulin	0	2	0	2
Diet and exercise	1	2	0	3
Drs (GPs and diabetes specialists)	5	1		
Allied health – podiatrist, diabetes educator, dietitian, case manager, pharmacy assistant, practice nurse,	1	11		
Lay carers	0	4		

\* Details of respondents with type 2 and gestational diabetes are combined in this column because only one respondent was diagnosed with gestational diabetes at the time of the interview; and four respondents with type 2 diabetes had previously had gestational diabetes



## RESULTS

This research explored diabetes case management. Although there were occasional differences between responses from stakeholder groups, there was consensus on most issues. Results reported below reflect this consensus. Where responses between or within stakeholder groups differed, the stakeholder's (eg health workers, lay carers, diabetic respondents) views are identified separately in the discussion section. The sample was a non-probability sample, and in an absolute sense cannot therefore be claimed to be representative. However, because representatives from nearly all health care specialties in the area involved in diabetes care were interviewed, this does provide a reliable indication of current issues, concerns and views for these stakeholders. While no such claim can be made regarding the people with diabetes who were interviewed, the agreement of these participants regarding the major questions asked does suggest a high degree of shared understanding and experiences in managing their diabetes in a rural setting.

From the wide range of themes arising from the interviews, some responses were more closely related to care co-ordination and case management than others. These are the major results:

- co-ordination and promotion of diabetes care are components of proactive monitoring and early intervention
- diabetic participants believe that diabetes health workers are not aware of many community based services or subsidies for them
- barriers to proactive monitoring and early intervention, for the patient, include cost of GP consultations, difficulty in getting an appointment with the GP, occasional discontent with the consultation (in terms of content, outcome or time available)
- continuity of carer was often associated with greater patient autonomy, especially in relation to adjusting medication



- health workers focussed more on the immediate or acute problem and did not allow enough time for chronic, social or emotional issues. There is no clear understanding of who is responsible for proactive monitoring and early intervention; diabetes educators and other health workers leave this part of care to the GP. Patients are often taking a passive role in the organisation of regular screening – expecting health workers to refer or recommend other services
- retaining and recalling verbal information and education is often difficult for patients. Although communication occurs between health workers, many diabetic respondents felt left out of this
- diabetes case management was a phrase not well understood by diabetic and health worker respondents. Health workers disagreed with diabetic respondents about the importance of medical or diabetes specific qualifications. Health workers believed that medical or diabetes qualifications are mandatory for a diabetes care co-ordinator; non-medical respondents believe that communication, friendliness and accessibility were the most important skills and qualities of the diabetes care co-ordinator – with medical or diabetes qualifications as an advantage.

To help understand some of these issues, participant quotes are included in the discussion of the results.

## DISCUSSION

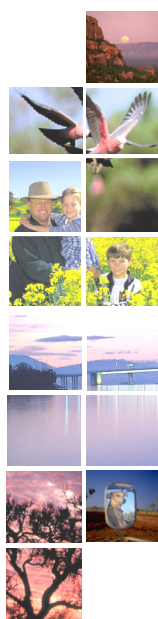
Many of the respondents did not clearly understand the term case management but were familiar with and supportive of care or service co-ordination. The discussion of the themes focuses on reducing the risk of diabetes related complications by promoting and co-ordinating care.

### Proactive monitoring

Co-ordination of care is one important aspect of diabetes care that most respondents identified as a priority – even the respondents who were unsure of the term case management agreed that care co-ordination was important in diabetes care. Non-GPs thought a care co-ordinator could be a useful adjunct to GP care, but believed care co-ordinators would be only part of the solution to achieve tight metabolic control. A diabetes specialist thought that major functions would be to support the work of the GP and to ensure that clients knew about the various screenings:

They could work through the sort of intensity steps of treatment that are required, as a reminder. The two sides of it are firstly as an organiser for twelve month reviews – that's a very important function that may be missed when somebody doesn't follow up on an appointment [for example pathology tests], especially if somebody is being seen [consultation] every six minutes it's likely to happen very frequently. Because we don't have good treatment for diabetes I think a case manager is necessary but I think that it would be naive to think that [as a result of case management] everyone will get an HbA1c of 7, normal blood pressure and normal lipids. I think it [case management] will just make it easier for the doctor. (Interview 23, diabetes specialist physician)

The GP is well situated to undertake the care co-ordinator role, but accessing a GP costs the patient money and on each occasion this cost is a potential barrier to care.<sup>31</sup> Although Medicare covers some of the cost of GP consultations and some GPs bulk



bill (charge the rebateable amount), the Goulburn Valley area has the highest proportion of consultations requiring a co-payment in Australia.<sup>28</sup> One respondent suggested that case managers would be an alternative (lower cost) to the GP:

A case manager would probably cost less money. So case managers working with GPs and other health professionals would be a very valuable and helpful thing. (Interview 4, diabetes specialist)

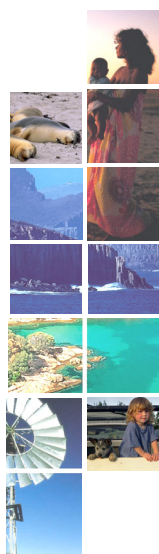
Diabetic respondents felt unsure of the recommended frequency for routine diabetes screening, although all of them had attended optometrists in the past twelve months. Diabetic respondents felt there was insufficient encouragement to attend screening and that health workers did not make enough effort to explore personal barriers to accessing screening. As well, in many cases, no single clinician is taking responsibility for co-ordinating the care – each expecting someone else or the client to be doing it. As a result, there is little direct encouragement of the patient and screening results are not proactively followed up to determine what, if any, clinical treatment needs to be initiated. Nurses working in General Practice could be ideally situated to undertake the co-ordination and follow up of diabetes screening, because he or she has daily contact with the GP, access to the patient's medical record and access to correspondence (including screening results). The practice nurse is less involved in the clinical care of patients than is the GP and similarly, the main purpose of the co-ordinator is to strengthen the role of the GP<sup>32</sup> by triaging and reducing the workload of the GP or diabetes educator – not as a substitute.<sup>13</sup> The diabetes care co-ordinator clarifies individual access barriers (such as cost, transport and referral) and in consultation with the patient identifies possible steps to minimise them.<sup>9</sup>

## Knowledge of local services

All respondents recognised the value of knowledge of, and use of, local services including allied health practitioners and community based support services. Diabetic respondents relied on their clinician to refer or to make a verbal recommendation for health and community services. Some diabetic patients are passive and dependent on health workers highlighting the risk of default from screening if health workers then do not proactively refer for screening. If the clinicians leave it up to the patient to attend to routine screening, many patients will fail to initiate self-referral, as one participant implied, simply because they are unsure of where to seek this service:

If someone could sit down and talk to you and say well this is what I do is there anything that you'd like that I can maybe put in the pipe works and most times you find out that somebody will want something but they just don't know where to turn. (Interview 1, woman with Type 2 diabetes)

Responses indicated that there are some gaps in this part of the knowledge base of some clinicians. Clinicians in rural Victoria claim that they are very busy and it is understandable that GPs who are involved in managing a wide range of acute and chronic conditions do not know about all local allied health or community services. Specialists, particularly diabetes educators and endocrinologists, see patients with a limited range of diseases and problems. They are focussing on a particular part of diabetes care and as specialists may be self sufficient for most of this care. As a result, they may not have regular contact with other community-based services. Most clinicians were vaguely aware of many local services but not personally familiar with the personnel or service. When there is a cost involved for the client, this adds to their reluctance to make recommendations to an untried service, because they do not want



to feel responsible for unsatisfactory outcomes. Instead, they tend to make referrals to a limited number of usually well-known agents/agencies. Non-GP health workers leave the responsibility of referral for the care co-ordinator and, in most cases it was assumed by health workers, this will be the patient's GP. This situation can be frustrating and confusing for patients:

.. the diabetes education nurse, when I went to see her, she said go and see a podiatrist. I said do you know a good one or can you refer me to someone? She said No. She wants me to go and see these people and she can't give me a list. (Interview 1, woman with Type 2 diabetes)

## Continuity of health worker

Diabetic respondents believed continuity of health worker was very important, and they were prepared to delay appointments in order to see their preferred health worker. Part of the reason for this preference was the relationship they had developed with the health worker over time.

It's very important to see the same person. It makes it so hard to have to go over my history again, even though it's written down in front of them they still need to ask me things that [diabetes educator] already knows. (Interview 10, woman with Type 2 diabetes)

Continuity of health worker was often associated with greater patient autonomy. For example, respondents who described a long association with one particular GP reported a greater degree of freedom in adjusting his or her own medication (usually insulin) within a specified range or protocol. They also reported easier access to the GP (less delay in getting an appointment and getting an appointment at a more convenient time), greater satisfaction with consultations, mutual respect and greater trust in the clinical decisions.

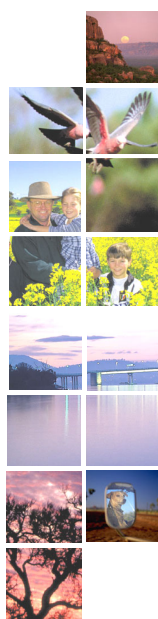
Diabetic respondents described health workers as being unhelpful when the worker was unable to identify or satisfy the patient's main concerns within the time available for consultation. Diabetic respondents who had good rapport with their health worker rarely mentioned this; saying they had more than enough time for each consultation and are pleased by the way their clinician thinks laterally, collaborates with them and communicates.

Continuity is an important component of comprehensive care co-ordination. With a named care co-ordinator, and development of trust and awareness in the patient/care co-ordinator relationship, the care co-ordinator can ensure incremental progress towards meeting the individualised care plan goals.<sup>33</sup>

## Protected time

Diabetic respondents said that often consultation time with health workers was inadequate. They did not blame the health worker for this but felt that both the large number of people with diabetes and the care system were to blame.

[GP] tends to sort of rush you in and rush you out you know and I don't like that. ... you get the feeling that.. you know .. go away just leave the 35 bucks on the counter and let the next one in. Anyone, it doesn't matter I still like [GP] and if I ask him a question he'll answer it and there are no problems there at all. (Interview 5, male with Type 2 diabetes)



One GP agreed that in his experience, often consultation time is limited but it is possible to augment care using a team approach:

[I give] a proper explanation within the confines of the GP consultation and I realise that that's limited but then the use of the diabetes educator and or the dietitian who do have more time to then fully explore the ins and outs the vagaries the needs the necessities. (Interview 42, GP)

Early intervention and intervention at diagnosis were differentiated by respondents. Early intervention aims to identify early stages of organ damage and initiation of effective treatment. It requires dedication to frequent patient contact time to ensure that patients do not accidentally miss important, regular patient monitoring. In contrast, intensive interventions at diagnosis included education, psychological support and skill development with a view to promoting self-care. One diabetic person who thought his diabetes educator was a case manager said:

I think probably in the early stages it probably is very good, I think you need somebody to show you because it's all too new. All of a sudden you've got this insidious disease and you don't know how to handle it. You need somebody to lead you down the path and tell you what you should have to do. ... I was very lucky with [diabetes educator] because she's absolutely fantastic and she was virtually a case manager. And it was good in that way, yes. (Interview 5, male with Type 2 diabetes)

Norris et al<sup>34</sup> believe adequate consultation time is a predictor of glycaemic control. For effective co-ordination of care, the co-ordinator must be accessible when the diabetic person needs it, for example, when they were first diagnosed and then periodic contact even when the diabetic person has achieved a significant level of autonomy.

## Communication and co-ordination of information

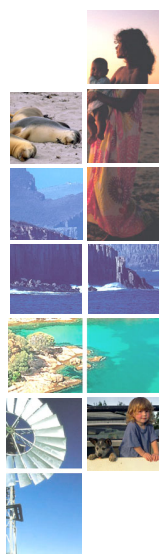
Health workers and diabetic respondents agreed that it is often hard for patients to accurately retain and recall all verbal information given during consultations. Other methods supporting spoken communication are being increasingly used:

We sometimes send copies of the letter to the patient. I think it's something we should be doing more of. So that the patient actually knows what went on because they're pretty stressed sometimes. Often they have no recollection of exactly what happened but if you say that they have been advised to stop smoking for the tenth time at least they can read it. (Interview 23, diabetes specialist.)

My doctor never tells me very much. They never tell you very much. I'm always looking for more information and I try to read as much as I can about diabetes. (Interview 9, woman with Type 2 diabetes.)

Most diabetic respondents emphasised the importance of communication, saying that good communication involved having enough time and a shared language. Most diabetic respondents reported that they had found a GP who provided enough time and communicated clearly. Friendliness and interpersonal skills are also important for good communication. Some diabetic respondents said they had met "top clinicians" who did not have good interpersonal skills:

He was an excellent clinician but ... I just won't accept that from people – if they want to treat me like a number I'm not going to be on their list. (Interview 39, man with Type 2 diabetes)



## Health worker qualifications in diabetes care co-ordination

People with diabetes suggested the following skills and knowledge are important in diabetes care co-ordination:

- counselling and communication skills – the ability to engage the patient and to be able to clearly communicate (“talking your lingo”) with people with diabetes as well as health workers and diabetes specialists is critical
- empathy – the ability to understand the needs of the diabetic patient, to be compassionate for the person’s situation and supportive would help in the development of rapport
- diabetes knowledge – people with diabetes said they forgot some of the information they had been given when they were first diagnosed, so it would be valuable if the diabetes care co-ordinator had enough knowledge of diabetes and skills to go over some of the components of diabetes education, and “the steps to take to stay well”
- organisational skills – to be able to refer and follow up referrals, the ability to think laterally, to work as a team member would be very helpful.

Diabetic respondents were not able to agree on the minimum level of clinical diabetes knowledge or qualifications for a diabetes care co-ordinator. Some thought the care co-ordinator would have to be very knowledgeable in order to be an authoritative source of information for people with diabetes, so an endocrinologist could be a care co-ordinator. Most respondents thought that diabetes educators would be perfect for the role, but a couple of respondents thought the qualifications and expertise depended on what the care co-ordinator did:

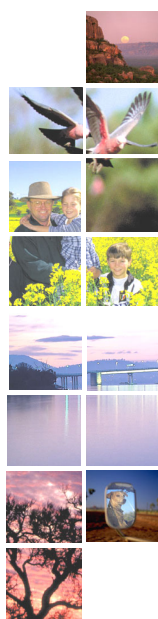
Depends on what she’s doing. I don’t know what the qualifications of the diabetes educators are, if it’s just providing things for HbA1c, anyone could do that. Anyone could organise it – they’d have to know a bit about what’s going on, it would help if they were good at communicating and they were friendly. (Interview 26, male with Type 1 diabetes.)

Excellent clinical skills do not always accompany good interpersonal skills. Diabetic respondents rated diabetes knowledge equal in importance to mutual respect and rapport. Diabetes health workers said that the diabetes care co-ordinator must be a clinician already involved in the care of the patient. They believe explicit clinical knowledge is a minimum requirement, and one respondent stressed:

They’d need to know what you’re trying to achieve – need to know what are acceptable levels of blood glucose at certain times of the day, what sort of tests one ought to be doing and at what intervals and what the results meant, a basic understanding of the oral agents and the various insulins – you’d probably have to know all that. (Interview 40, GP.)

Health workers, especially Doctors, felt it was important for them to retain the clinical care function but they recognised the value of other health workers in helping patients with social and emotional issues:

I think that the social angles and the sugar angles of diabetes type 2 care are, and could be done by a number of people but the complications assessment needs a medically qualified person. We’re not so much focussed on social worker type advice or morale building, compliance building and we tend to leave that to the diabetes educators. We actually refer people who have



an HbA1c of 11 back to the diabetes educator and the dietitian with a view to going through the basic principles of diabetes self care. (Interview 23, diabetes specialist.)

The GPs were also more likely to weigh up the care obligations and legal responsibilities of the care co-ordinator and were concerned about who would be vicariously liable. For these reasons and risks, most health workers thought it was imperative that the care co-ordinator undertakes accredited training for the role. Two of the GPs believed the GP would be the ideal person to co-ordinate care, and the remaining health workers believed the diabetes educator was most appropriate.

Empowering the patient to eventually become self-managing – that includes co-ordinating all aspects of their own care – potentially removes the patient from the safety net of the care co-ordinator. In this case, the patient's primary care clinician (usually the patient's GP) still needs to ensure that the proactive monitoring is sustained especially in consideration that metabolic control is likely to deteriorate over time<sup>35</sup> and one's ability to independently self-manage may be at risk. By locating the diabetes care co-ordinator in the GPs rooms, with access to a diabetes register, screening results can be monitored independently of patient visits to the GP. Initiation of recall for review could also be initiated spontaneously and proactively by the care co-ordinator.

Not all respondents were convinced that diabetic residents in the Goulburn Valley would benefit from access to a diabetes case manager. There were three main reasons why respondents disagreed with the idea of diabetes case management or could see no value in it.

- The client is very satisfied with their current relationship with their health worker – usually GP. They believe their health worker is providing care to a high standard and are satisfied with the current care arrangement

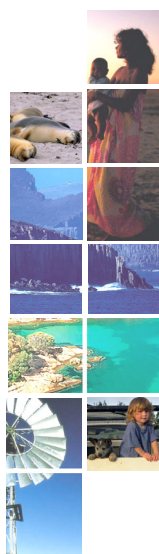
No, for now no, because diabetes very down and my doctor very, very special doctor. Look very well to me. I got no worry. Every time I go over there she took my dress, look for my heart and my back, and mark my test for the blood. She's beautiful lady very, very nice, me very, very happy. (Interview 13, woman with Type 2 diabetes.)

- Lack of evidence that diabetes case management produces better outcomes, and a belief that scarce resources could be better spent

That's contentious issue isn't it? Is it valuable? I don't know because we haven't had any experience with it – the trials that I've read show that it hasn't made any difference. I think if you had the funding for another diabetes educator who perhaps would say work in Nathalia, Cobram, Numurkah and in Shepparton if they did so many days a month in outlying areas and then gave additional support to Shepparton I would see that as a better use of funding. (Interview 38, GP.)

- Concern that case management would make the care system even more complicated

What for? Why have somebody else in the chain to, I guess, add confusion and difficulty? Most patients' primary focus with any chronic illness will be their GP. I think if you have a GP who is well focussed on diabetes and is happy to manage that diabetic patient then I don't see any reason why you need to involve anybody else who doesn't contribute to the clinical management – except perhaps to phone people up or remind them that they've got this appointment or that appointment. With today's computerisation you can automatically put in recalls for yearly diabetic checks and, as I say, having services on site or close by



you're able to access them fairly easily so I'm not convinced another person in the chain is going to in actual fact improve outcomes. (Interview 42, GP.)

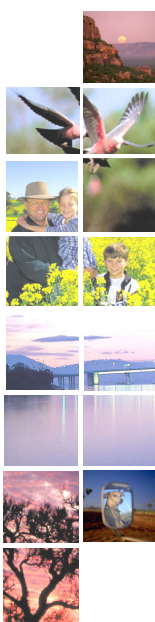
## CONCLUSION

Improving proactive diabetes monitoring and early intervention is important for many reasons including reducing complications of organ damage, preventing early death due to diabetes and reducing the overall cost to the health care system. Diabetes case management is commonly recommended as part of best practice<sup>15</sup>, but not well understood within this rural community of stakeholders. Improving the understanding of case management as a strategy appears to be a useful and essential first step toward optimising diabetes care.

This research identified six essential elements for developing an effective local case management model:

- greater knowledge and use of local services
- improved access to proactive monitoring
- named and helpful care co-ordinators
- promotion of client autonomy and self sufficiency
- protected time for care co-ordination
- excellence in communication.

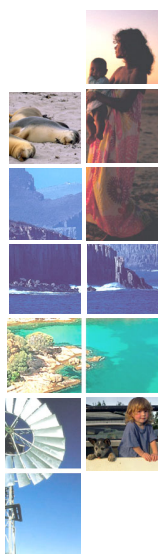
Four other, broader, contextual issues also arose from this research. These issues must be considered for a case management model in this locale. Firstly, diabetes case management is part of recommended best practice, but health workers and people with diabetes do not clearly understand the system. Secondly, for health workers to endorse the model, it must make allowances for their beliefs in the importance of medical or diabetes educator roles. Thirdly, for diabetes care consumers who are progressing towards autonomy in their diabetes care, diabetes case management can be a care safety net. Finally, in recognition of case management's potential to improve diabetes related outcomes, it needs to be explicitly funded so that health workers can dedicate adequate time to case management.



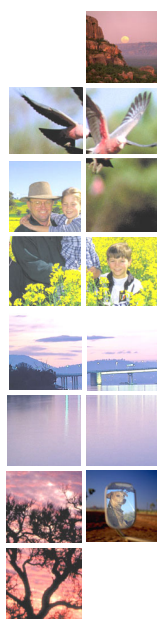
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## PRESENTER

**Judith Artridge** is a Master Rural Health candidate at the School of Rural Health, University of Melbourne, Shepparton campus. Her thesis explored case management as a model of diabetes care for rural Victorians.

Judith grew up in the Strathbogie Ranges of north-east Victoria, and experienced the isolation of farm life. She trained at Goulburn Valley Health in the last intake of hospital-trained nurses and went on to critical care nursing. With a deep interest in rural health and early health promoting interventions, she completed BA Public Health at La Trobe University in Bendigo. This was followed by a few years of learning about rural health “on the ground” with a number of state government funded projects.

Judith is currently manager of the three-year Integrated Diabetes Care Program with Goulburn Valley Health and four other regional health services.

