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Insulin in general practice

Barriers and enablers for timely initiation

Background

Insulin is effective at lowering blood glucose, and most people with type 2 diabetes need insulin within 10 years of diagnosis. However, initiating insulin is often delayed in general practice. This study explores barriers and enablers to insulin initiation in general practice.

Method

A qualitative study using semistructured, in-depth interviews. Ten general practitioners, four diabetes nurse educators and 12 patients were interviewed. Participants were purposively selected and recruited through snowballing. Data analysis drew on the Normalisation Process Model framework.

Results

The understanding of the primary aim of diabetes care and its context (improving pathophysiology, complex multimorbidity, the patient-doctor relationship, impact of living with the condition) was important. There was disagreement and uncertainty about whose role it is to initiate insulin. It was also important whether insulin initiation was conceptualised as a simple, protocol driven intervention, or as a complex and demanding addition to an overwhelming clinical picture.

Discussion

Insulin initiation seems more likely if the multiple perspectives on the primary aim of clinical care are acknowledged, and if roles are explicitly discussed and clarified.

Keywords: diabetes mellitus, type 2; general practice; office/practice nursing; delivery of health care; insulin

Most patients with type 2 diabetes require insulin therapy within 10 years of diagnosis to maintain normoglycaemia.¹ Insulin is effective in improving glycaemic control, and simple patient driven algorithms using long acting insulin analogues are safe, effective²⁻⁵ and acceptable to patients.⁶ Yet, progression to insulin is often delayed, causing unnecessary prolonged periods of hyperglycaemia and preventable complications downstream.⁷

This 'therapeutic inertia' may be driven by general practitioner and patient concerns about hypoglycaemia, fear of needles, lack of confidence in how to start insulin, as well as competing health and lifestyle priorities, and the complexities of living with diabetes.⁸⁻¹¹ The practice of referring patients to an endocrinologist for commencing insulin may also be a significant cause of this delay. While routine in some countries such as the United Kingdom, insulin initiation by GPs is uncommon in Australia. A recent study in general practice showed that less than 20% of patients on insulin had it initiated by their GP.¹²

Embedding commencement of insulin treatment within routine diabetes care in general practice requires an understanding of the current context of general practice diabetes care, and the complex social processes involved. In this article we report an exploratory study of the views of GPs, diabetes nurse educators (DNEs) and patients about starting insulin in general practice. We were particularly interested in the way the decision to start insulin was made or deferred, and what factors were important to this.

Method

This was a qualitative study using semistructured, in-depth interviews. General practitioners were

approached by a letter and follow up telephone call through a local division of general practice. General practitioners were purposively selected based on gender, experience, practice size and private/community health practice setting. Diabetes nurse educators, all of whom had some experience of working in the general practice and primary care setting, were recruited from programs and local networks of division staff and through 'snowballing'. Patients were recruited through the participating GPs and DNEs. Each GP and DNE was asked to approach two patients to be interviewed: one who had commenced insulin in the past 12 months (allowing recent recall of events leading up to initiation of insulin) and one who was on maximal oral therapy with HbA1c out of target, who had not yet made the transition to insulin. Patients were excluded if they had type 1 diabetes, terminal illness, psychiatric comorbidity, or were unable to be interviewed in English. A total of 10 GPs, four DNEs and 12 patients were interviewed. Where possible, GP-patient dyads or GP-DNE-patient triads were interviewed (*Table 1*).

Interview schedules for GPs and DNEs covered stories of 'success' and 'failure' in initiating insulin from their own practice, perceptions of their own skill, knowledge and confidence in relation to starting insulin, their views on the importance of practice level and system factors and of the attitudes of patients and other health professionals about the role of each in insulin initiation. Interview schedules for patients used an illness narrative approach of which the issue of transition to insulin therapy formed one element.

Data analysis drew on the Normalisation Process Model (NPM)¹³ in developing initial coding categories. The NPM focuses on healthcare as collective work, dependent

on collaboration and cooperation. Social, interactional and contextual factors promote or constrain such collaborative work. Interprofessional relationships, norms and roles, practice and professional cultures are all important within this framework. NVivo software was used to assist the initial phase of data analysis. Analysis involved close reading and re-reading of the interview transcripts by two researchers, with coding of text drawing

on the NPM framework and the broader literature. Coding and notes were then shared and discussed, consensus was reached where differences existed, and new themes were identified for subsequent coding. As this process continued, coding categories were reviewed and thematically grouped.

Ethics approval was granted by the University of Melbourne. All names used in this article are pseudonyms.

Results

We identified three broad thematic areas in relation to the decision to start insulin.

Understanding the primary aim of diabetes care

Three different perceptions of the primary aim of diabetes care emerged from the analysis. These different aims influenced how starting insulin was viewed and how the process was managed.

Table 1. Participant characteristics

General practitioners	Age (years)	Gender	Years in practice	Practice type	Completed program*	Attached**
Dr Elizabeth	50–59	Female	~25	Community health	No	Yes
Dr Gabriella	40–49	Female	~20	Group	No	No
Dr Kate	50–59	Female	~25	Group	No	No
Dr Ken	60–69	Male	28	Solo	Yes	Yes
Dr Marian	40–49	Female	~20	Community health	No	Yes
Dr Mel	70–79	Male	42	Group	No	No
Dr Tim	60–69	Male	~40	Solo	Yes	Yes
Dr Vaughan	50–59	Male	26	Solo	No	No
Dr Vince	50–59	Male	~28	Group	Yes	Yes
Dr Wendy	20–29	Female	2	Community health	No	Yes
Diabetes nurse educators	Age (years)	Gender		Practice type		
DNE Georgina	40–49	Female	–	Primary care	–	–
DNE Steven	40–49	Male	–	Primary care	–	–
DNE Ursula	40–49	Female	–	Royal District Nursing Service	–	–
DNE Cathy	30–39	Female	–	Primary care	–	–
Patients	Age (years)	Gender	Diabetes duration (years)	Using insulin		
Patient Barbara	60	Female	7	Yes	–	–
Patient Bianca	68	Female	30	No	–	–
Patient Enza	68	Female	8	No	–	–
Patient Kay	70	Female	7	Yes	–	–
Patient Kelly	53	Female	11	Yes	–	–
Patient Margaret	62	Female	10	Yes	–	–
Patient Michael	53	Male	>10	No	–	–
Patient Michelle	39	Female	4	Yes	–	–
Patient Roy	52	Male	13	Yes	–	–
Patient Sabina	68	Female	9	Yes	–	–
Patient Therese	80	Female	12	Yes	–	–
Patient Vic	60	Male	6	No	–	–

* Completed division's diabetes education program; ** Attached to a DNE or diabetes clinic

One view focused primarily on the pathophysiology of diabetes. Here the primary aim was the control of blood glucose. Some GPs, but particularly the DNEs, in the study saw this as the primary aim of clinical care:

‘He (the GP) was a bit resistant because of the patient’s feelings... and he didn’t want to rock the boat, and... make her feel bad... I’m talking about the physiological reason why she needed to go onto insulin.’ (DNE Georgina)

At times this could mean putting the patient’s concerns second:

‘Often... that’s been the main focus of [the patient’s] concern, you know “I haven’t got my job, things are going bad at work”, and he talks about all those things but [I] keep bringing him back to the diabetes side of things.’ (DNE Ursula)

In contrast, some of the GPs in the study saw diabetes care as a part of an ongoing relationship with the patient. Diabetes care was part of a wider context, and other conditions to be managed and the primary aim was to nurture and sustain a viable ongoing relationship with the patient. That could mean downplaying clinical interventions, including the possibility of insulin:

‘I usually try to normalise it in the sense that I say, “well we should all be doing what people with diabetes do; we should all be eating sensibly and exercising; and so that aspect is no different from anybody else.” And then the next thing they often ask is, “do I have to go on injections?” And I usually reassure them and say “well no”.’ (GP Elizabeth)

The aim of diabetes care for these GPs was to help the patient to manage their diabetes in the context of psychosocial problems and other physical illness. Starting insulin could be seen to threaten that.

The third view saw diabetes care as a means to an end. For patients their job was to control their illness within the context of their life and in this context insulin could be a ‘double edged sword’. Insulin could be seen as threatening these wider life goals, rightly or wrongly. For example, insulin could be perceived as hampering travel plans:

‘I want to have done some travel overseas before I do that... The minute you say to the insurance organisation that you are diabetic, insulin dependent, they go “ooh”.’ (Patient Vic)

Deciding who should do what in diabetes care

The second factor that influenced the initiation of insulin was the way the roles of GP, DNE and patients were understood. For the health professionals there was often a tension in this, which needed to be resolved before insulin could be started. The DNE participants saw initiating and stabilising insulin as legitimate roles for them in their work:

‘I often write to a GP about a patient, or ring them, saying, “I think the situation is such that we need to start insulin”... I suppose I’m a general practice diabetes specialist, in a way.’ (DNE Steven)

Nevertheless, the DNEs struggled to achieve external legitimacy in this role, which could make starting insulin difficult and unnecessarily delayed. They felt a need to be seen, in the eyes of GPs and patients, to carry this authority. They saw themselves as setting the clinical agenda (covertly at times), and needing to ‘manage the GP’ as a part of this:

‘I have always discussed it with Dr Tim and said, “Look we don’t have any more options, this is ridiculous, we have been at this HbA1c now for X years, this is not right, we have to do something about it,” and then if I know that we are going to sing off the same hymn sheet, then I know I can sit here with Sabina and say, “Look I have discussed it with Dr Tim and we have to do it, we have got no choice”.’ (DNE Cathy)

General practitioners, particularly those with a focus primarily on disease, saw starting insulin as their role, with the DNE playing a support role:

‘On the insulin itself, I do the initial discussion... But using techniques and how to store the insulin and how to prepare it, and prime it, and you know, the diabetes educator nurse has more time.’ (GP Vince)

In contrast to these professional tensions, some of the GPs and most patients were unclear about who ought to be the person to start and manage insulin, variously supporting the DNE, the endocrinologist and primary and secondary care:

‘A variety of people that can do that, whether it’s a diabetes educator or whether it’s a GP or whether it’s a hospital or whether it’s a diabetic nurse who’s trained.’ (GP Marian)

Patients similarly held diverse views about who could or should do this:

‘She [the DNE] had to get permission from Dr Ken to put me on insulin, but it was her that decided... and he had to say, “yes”.’ (Patient Barbara)

‘Look, Dr Ken’s alright, but not being unkind... GP stands for “general practitioner”, he steered me to a diabetes specialist, an endocrinologist.’ (Patient Roy)

Barriers and facilitator to starting insulin – simplicity vs. complexity

The final theme identified from the analysis covered the important contextual factors that framed the work of starting insulin. These coalesced from two different views of the nature of the ‘work’ of starting insulin. One view held that while diabetes was a serious disease, insulin initiation was a simple process. With planned protocol driven approaches this was easily achieved. The opposing view was that diabetes was one of a number of problems requiring attention and that insulin initiation added complexity to an already overwhelming clinical picture. Uncertainty about guidelines, the lack of time and capacity to plan all made starting insulin difficult.

These views tended to align with how participants understood the aims of diabetes care. Where a blood glucose focus predominated, starting insulin was seen as a simple process.

Enablers were clear protocols, and a plan of action. The problem, according to some DNEs was that GPs did not appreciate this simplicity:

‘It appears that they’re just not sure where to start. So, we say to them, “it’s pretty easy for you to have a basic set of guidelines”.’ (DNE Georgina)

Patients could be brought to an understanding of this simplicity through overcoming the barrier of ‘the first needle’:

‘Once they actually get over that first injection, the needle going in, you can see this whole weight coming off their shoulders – it’s amazing.’ (DNE Georgina)

Where the focus was on diabetes as one of many clinical conditions and the wider psychosocial context of a patient’s life, insulin initiation was seen as a complex task that added to the overwhelming burden of care:

‘Talking about barriers, it’s just the overwhelming nature of the thing... the diabetes is so out of control, he hasn’t had his

eyes checked, hasn't seen podiatry... he's still smoking, not monitoring... they're all over the place. And he's come in for something else in fact. And you don't quite know where to start. So it is a bit overwhelming.' (GP Elizabeth)

In this situation, having someone in the practice that could be delegated to take on the discussion around initiating insulin and to implementing it was an enabler to the process:

'You really don't want to go that next step and initiate insulin. But since we have had a DNE on board we have instituted insulin much earlier.' (GP Ken)

For patients, a key enabler was having a sense of control over the process. Access to information in a form that was meaningful and resonated with their focus on living with diabetes was important:

'If it hadn't been for the course at Diabetes Australia... it really helped me... an opportunity to talk about our illness both with people who have got it and with people who understand it.' (Patient Michael)

One important finding relates to the support offered by Medicare payments (GP Management Plan and Team Care Arrangement) as support for insulin initiation. Most thought these were adequate to cover the work involved but not particularly facilitators to the work. No mention was made of quality care payments (Service Incentive Payment or Practice Incentives Program payments) as influential on this work.

Discussion

Our findings support the notion that initiating insulin for the treatment of diabetes in the setting of general practice is a complex social intervention.^{14,15} It potentially involves two or more practitioners, diverse settings (including practice or clinic, home and public spaces), a range of important behaviours that must be brought into play by the patient as they interact with health professionals and manage family, friends and social outings and public presentation of self. This is a small qualitative study that cannot offer findings generalisable to the whole of general practice. The patients we interviewed are not representative of all patients seen in general practice. Nevertheless, the findings, drawn from the experiences of GPs and DNEs in that setting and patients who recently commenced or considered insulin, suggests

that while it is possible to initiate insulin in the general practice setting, certain factors may make this more or less likely.

Normalisation process theory provides a framework for analysis of the findings through focusing on how the 'work' of diabetes care is understood, given meaning, undertaken and supported.

How the work is understood – the centrality of glucose

Participants varied in whether they saw the primary aim of diabetes care as a task of controlling blood glucose levels, of controlling multiple risk factors and behaviours, of sustaining the GP-patient relationship, or of minimising the impact of diabetes on their life. Early insulin initiation seems more likely when diabetes is viewed simply as a disturbance of blood glucose that can be easily corrected.

Who does the work – competing or collaborating

Patients are happy to work with a range of health professionals, yet health professionals themselves were often not in agreement about roles. Clarification (but also flexibility) in the roles of each health professional in initiating insulin may be an important prerequisite for making therapeutic progress, yet clinical guidelines for type 2 diabetes care in general practice make little direct reference to this issue.

How the work gets done

Diabetes work in general practice is usually embedded within the busy, reactive, time pressured day-to-day clinical work, whereas insulin initiation is seen as systematic, protocol driven, repetitive and time consuming work. Many GPs delay a decision to initiate insulin, as the process of initiating insulin is not congruent with their usual work practices. Developing and clarifying a local, in-practice system for the initiation of insulin can facilitate the timely GP based initiation of insulin.

How the work is supported

Current structures and supports for diabetes care in the Australian general practice system (eg. payments for annual cycles of care, for developing management plans and establishing

team arrangements for complex chronic conditions) are supportive of comprehensive diabetes care in general practice yet did not feature in discussion of barriers or enablers to insulin initiation.

Conclusion

Many people who require insulin for type 2 diabetes do not get it either early enough or at all, and the resultant prolonged, uncontrolled hyperglycaemia leads to complications and potentially early death. General practice is central to addressing this delay in initiation of insulin treatment.

Previous studies have suggested that barriers to insulin initiation lie in 'psychological resistance': patient fears and misconceptions, or health providers' incomplete knowledge of the rationale and belief in the safety of starting insulin.^{16,17} This study identifies that barriers and enablers to insulin initiation also occur because of how patients and health providers interact, give meaning to their work, and to their relationships and how they integrate the demands of insulin initiation within this. This is more complex than simply correcting misconceptions. Better understanding of how to integrate insulin initiation within routine, day-to-day processes and available resources in general practice may improve patient outcomes. This study has identified the conditions most likely to support the transition to insulin in general practice currently, but also identifies a number of tensions, problems and gaps.

Insulin initiation is a complex social process and this should be reflected in clinical practice guidelines.

A technical disease focused approach to insulin initiation may achieve treatment intensification but at a cost of being less patient centred and undermining important aspects of therapeutic relationships. Patients value an ongoing trusting relationship with one or more health professionals who are accessible and able to provide continuity of care and it is within such a relationship that they want to make treatment changes. Both views are important and must be supported if insulin initiation is to become part of routine care. We need better understanding of how patients and providers balance recommendations of single disease

guidelines against the needs of patients with multiple conditions and complex psychosocial circumstances.

Implications for general practice

Practice nurses could play a key role in facilitating the initiation of insulin in general practice. General practitioners are unlikely to facilitate insulin initiation without some in-practice support systems. Given the numbers of patients who will require insulin and the availability of DNEs, practice nurses may need to play a more prominent role. While quality payments based on disease outcomes may drive more rapid insulin initiation in practice, this will need to be done in a way that recognises and supports the patient in addressing their concerns and priorities. Practice nurses can play a key role here.

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