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ORIGINAL RESEARCH

Peer-to-Peer, Interactive GP Education can Reduce Barriers to Best Practice in Diabetes Management

Gary Deed [iD] · Gary Kilov · Patrick Phillips · Anita Sharma ·
Stephen Leow · Ian Arthur · John Barlow · Mark Kennedy

ABSTRACT

Introduction: Perceived difficulties in initiating insulin in patients with type 2 diabetes (T2D) may prevent many general practitioners (GPs) from using insulin even when recommended in guidelines. This paper describes a Royal Australian College of General Practitioners accredited education program on starting insulin in T2D, and its impact on GPs' attitudes and behavior.

Methods: A faculty comprising GPs with diabetes expertise, Credentialed Diabetes Nurse Educators, and endocrinologist developed and implemented the education program. The program content was highly procedure focussed, emphasizing simple, best-practice processes for starting insulin therapy and focussing on multidisciplinary models of care. The highly interactive format of the workshops included peer-to-peer learning, in which education was led by diabetes-experienced GP educators, as well as case study-based approaches and small group discussions. GP attendees were asked to rate their individual confidence and attitudes at the beginning and end of the meeting. In addition, participants ($n = 220$) from two workshops in 2013 were sent a survey

G. Deed (✉)
Mediwell, Coorparoo, QLD, Australia
e-mail: g.deed@uqconnect.net

G. Kilov
Seaport Practice, Launceston, TAS, Australia

P. Phillips
Queen Elizabeth Specialist Centre, Adelaide, SA, Australia

A. Sharma
Platinum Medical Centre, Chermside, QLD, Australia

S. Leow
University of Adelaide, Adelaide, SA, Australia

I. Arthur
Toormina and Sawtell Medical Centre, Coffs Harbour, NSW, Australia

J. Barlow
Bankstown Medical Centre, Bankstown, NSW, Australia

M. Kennedy
Corio Medical Clinic, Geelong, VIC, Australia

3 months after the meeting to gauge the longer-term impact on their clinical practice.

Results: Since 2008, more than 2500 GPs have attended the workshops, and report substantial improvements in confidence; after attending, more GPs were willing to start insulin within their practice. Evaluations at 3 months post-meeting indicate that the increased confidence was associated with behavioral changes in the subgroup evaluated at this time ($n = 48$). Success of this program was attributed to peer-to-peer education, multidisciplinary input, easily implemented best practice procedures and checklists for starting insulin, and constant adjustment of meeting process and content based on feedback and guideline changes.

Conclusion: A peer-to-peer, interactive GP education program reduced GPs' perceptions of the difficulties of starting insulin in T2D and achieved changes in attendees' clinical practice. This education program offers an effective approach to overcome the therapeutic inertia that is too common in diabetes management.

Keywords: Australia; Continuing medical education; General practitioners; Primary care; Insulin therapy; Type 2 diabetes mellitus

INTRODUCTION

Approximately 70,000 adult Australians develop type 2 diabetes (T2D) each year. With a limited number of diabetes clinics and endocrinologists, general practitioners (GPs) will increasingly need to manage T2D patients on insulin. On average, in a survey of Australian GP's, diabetes encounters comprised 67.4% of chronic health conditions managed [1]. However, many GPs are reluctant to prescribe insulin [2, 3], even though Australian guidelines highlight the need for it [4–6]. GPs perceive that

starting insulin is difficult because of uncertainty about guidelines, lack of time and limited procedural guidance for managing the process [7].

Therapeutic inertia in the management of T2D among GPs is a major concern given the current and future burden of T2D in Australia [8, 9], and the importance of achieving glycemic targets for reducing complications [10]. Indeed, the National Diabetes Strategy and Action Plan includes education on insulin commencement as one of the key actions needed to achieve goals of preventing and reducing diabetes-related complications [11]. To address this need, an education program was developed for Australian GPs aimed at improving their knowledge, confidence and attitudes towards starting insulin. This article describes the development of the program, the format that contributes to its success and some recent research into the impact on GP behavior 3 months after the educational activity.

METHODS

Program Development

The program was initiated in 2008 by a number of the authors (GD, GK, PP, AS, SL, IA, JB, MK) in conjunction with the sponsor (Sanofi—Sydney Australia). They then sought assistance from an accredited continuing medical education (CME) provider (Vivacity Health, Sydney Australia), who worked with a faculty of GPs with diabetes expertise, Credentialed Diabetes Nurse Educators (CDEs) and an endocrinologist to develop the content and format of the educational program. Using published evidence and their own experience, the faculty identified the key learning issues for

GPs around starting insulin and the most appropriate learning techniques for education.

The content of the workshops focussed on multidisciplinary models of care, involving endocrinologists and local CDEs as well as GPs. A key barrier to GPs starting insulin therapy is a perception that it is a difficult process, requiring time and planning [3]. Therefore, the program was highly procedure focussed, reinforcing a simple, best-practice process for starting insulin that was both practical and easily implemented in the surgery, with or without the aid of a CDE/practice nurse [7, 12]. The program also reviewed situations that GPs were likely to come across once patients were established on insulin, such as sickness, weight gain, managing hypoglycemia and travel. Participant learning was reviewed with pre-workshop questions on diabetes and insulin management compared with an identical post-workshop survey for all participants, and as with the basis of this paper, sampling at 3 months in a smaller representative sample. It is beyond the scope of this article to describe the content fully, but it covered the range of lifestyle interventions and oral treatments available in Australia, while focussing on when and how to initiate insulin in T2D, including the appropriate use of basal and premixed insulin.

Key elements of the educational format were:

- *Using peer-to-peer group learning* The education was led by diabetes-experienced GP educators. This approach of using peers who 'either know more or know differently' is an established success factor in physician education [13]. In addition, learning with GP colleagues exposes people to variability in how issues are addressed, enabling self-reflection and providing support [12].

- *Extending invitations to GPs interested and motivated to learn about insulin therapy* A

systematic review of interventions to change physician performance highlighted the importance of individuals' readiness to change as a determinant of effectiveness [14]. Therefore, a decision was made to invite GPs who were interested and motivated to learn about insulin therapy. Initially, these GPs were identified through feedback from the sponsor, but subsequent meetings have been subscribed to mainly through word-of-mouth.

- *Interactive format* The format was highly interactive, utilizing case study-based approaches, audience response systems, small group discussions, and question and answer sessions with the faculty. Common questions, when asked by attendees, such as "what is a safe starting dose of insulin? What time does a patient inject insulin? and If a patient travels overseas, what advice do I give?", were incorporated in workshops or addressed specifically at the Q&A session incorporated within the workshop format.

The final meeting format is outlined in Fig. 1. The meetings were facilitated by the faculty, and attendees were split into groups of 25 (maximum) to optimize interactivity.

Content for this education initiative was developed by the faculty with the assistance of an accredited CME provider, and accredited with 40 Category 1 Royal Australian College of General Practitioners (RACGP) points. The sponsor had no input into the content of the program, but provided an unrestricted educational grant for the development of workshop materials, and provided funding for facility hire, faculty and attendees' transportation, accommodation, and meals in accordance with Australian regulations.

The first workshop was held in 2008. Since then, 41 workshops have been held throughout Australia, with over 2500 GP participants. The
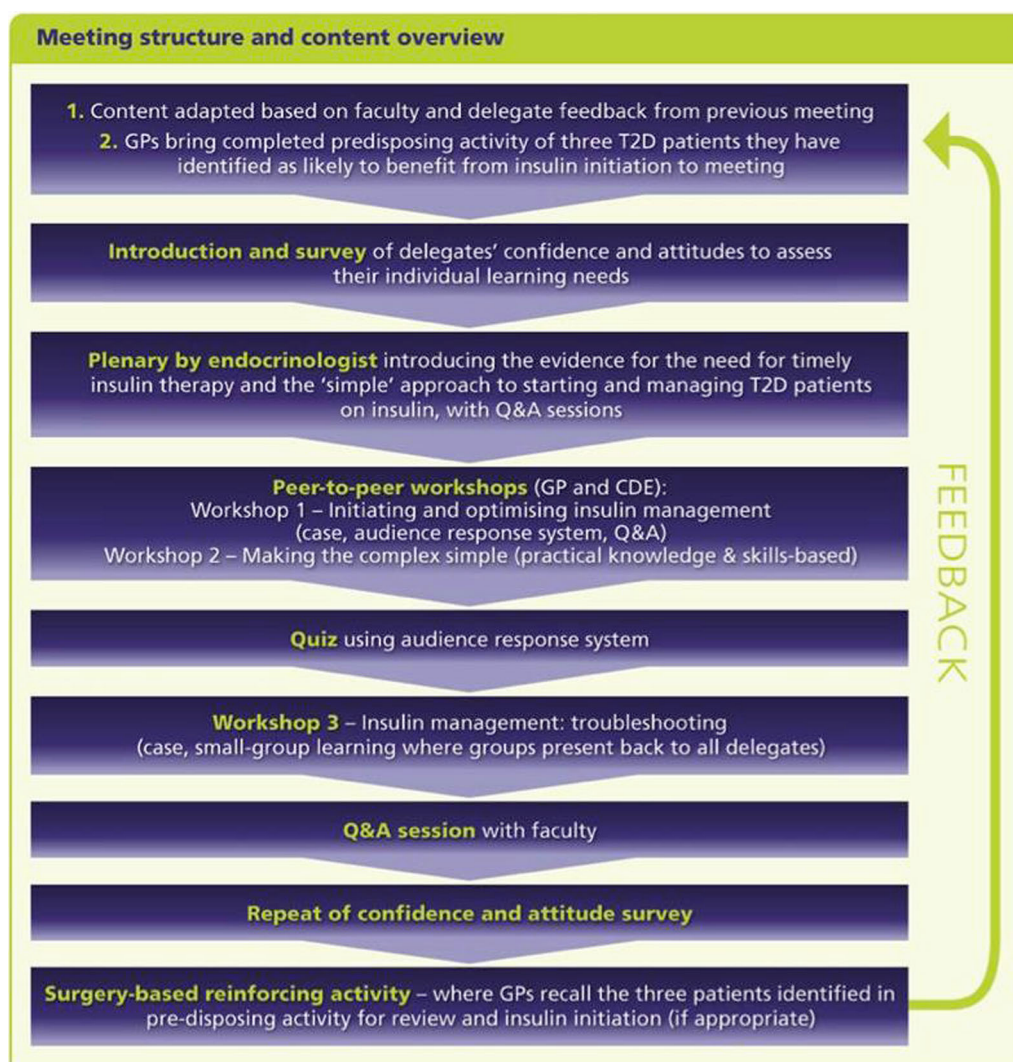
Meeting structure and content overview

1. Content adapted based on faculty and delegate feedback from previous meeting
2. GPs bring completed predisposing activity of three T2D patients they have identified as likely to benefit from insulin initiation to meeting

Introduction and survey of delegates' confidence and attitudes to assess their individual learning needs

Plenary by endocrinologist introducing the evidence for the need for timely insulin therapy and the 'simple' approach to starting and managing T2D patients on insulin, with Q&A sessions

Peer-to-peer workshops (GP and CDE):
Workshop 1 – Initiating and optimising insulin management (case, audience response system, Q&A)
Workshop 2 – Making the complex simple (practical knowledge & skills-based)

Quiz using audience response system

Workshop 3 – Insulin management: troubleshooting (case, small-group learning where groups present back to all delegates)

Q&A session with faculty

Repeat of confidence and attitude survey

Surgery-based reinforcing activity – where GPs recall the three patients identified in pre-disposing activity for review and insulin initiation (if appropriate)

FEEDBACK

Fig. 1 Meeting structure and content overview. *T2D* type 2 diabetes, *GP* general practitioner, *Q&A* question and answer, *CME* continuing medical education

attendance was open to any rural, regional as well as urban GPs who had identified an interest in insulin management.

Facilitator Training and Ongoing Program Refinement

GP attendees were asked to rate their individual confidence and attitudes at the beginning and end of the meeting, and to evaluate workshop content and format using an evaluation form.

Faculty members developed a training process to fine-tune both their delivery of the program and the meeting content. After each workshop, the faculty agreed on what needed to be incorporated or amended for the next meeting based on facilitator and participant feedback, and the publication of any new relevant evidence-based information. For example, based on attendee's feedback, changes to workshop structure included a substitution of a workshop on "Setting up a Diabetes Clinic" to

workshops incorporating practical patient resources to facilitate discussion and implementation of physical activity and diet changes in diabetes.

Compliance with Ethics Guidelines

This article is based on previously conducted studies and does not involve any new studies of human or animal subjects performed by any of the authors. Permission was obtained from the de-identified survey participants.

RESULTS

Measuring the Workshop's Success

Data from pre- and post-meeting assessments from 2008 to the end of 2013 showed that GPs' confidence in starting and up-titrating insulin improved substantially as a result of the meeting ($n = 1368$). Fewer GPs needed to refer patients to an endocrinologist and more were willing to start insulin within their practice with help from CDEs (Fig. 2). However, it was not clear whether this immediate post-meeting
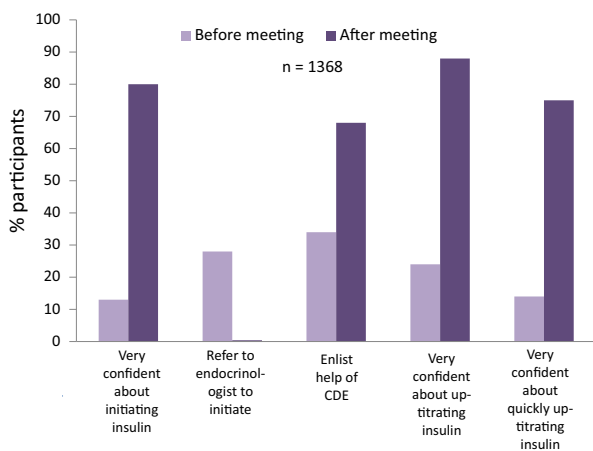
Fig. 2 Initiating and up-titrating insulin before and immediately after meeting survey results: aggregated data from the 1368 GP attendees. *CME* continuing medical education, *GP* general practitioner

NA = Not applicable. GPs were unable to initiate insulin before the end of the meeting.
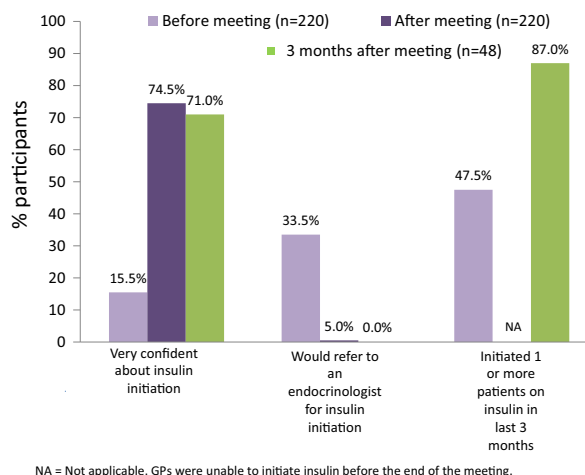
Fig. 3 3-month follow-up cohort: GP confidence, referral for initiation and actual insulin initiations before and after the meeting and 3-months post-meeting in patients with type 2 diabetes. *N/A* not applicable because this question was not asked in the immediate post-meeting evaluation, *GP* general practitioner

confidence translated into practice improvements. Therefore, at the last two workshops in 2013, participants ($n = 220$) were also sent a survey 3 months after the meeting to gauge the impact of the education on their clinical practice. Overall, 48 participants returned completed survey forms (21.8% response rate); these participants were representative in sex and area of practice (urban/rural) of the overall attendees.

Before the meetings, 73% of the 220 GPs surveyed had a negative perception of insulin therapy (e.g., too many barriers, can't manage patients' fears). This dropped to 9% after the meetings, with 91% thinking that managing patients on insulin was not as hard as they had thought. This change in attitude persisted after 3 months, as did the improvement in GPs' confidence to address patient concerns, such as fear of injections. Moreover, a larger percentage of GPs reported starting one or more patients on insulin 3 months after versus 3 months before the meeting (87.0% vs 47.5%),

suggesting that this improved confidence resulted in more initiations (Fig. 3).

DISCUSSION

Emerging evidence has supported use of "Local Opinion Leaders" and the use of interprofessional and peer-to peer education in enabling positive health educational programs [15–17]. This program achieved its objectives of reducing GPs' perceptions of the difficulties of starting insulin in T2D. Importantly, surveys conducted 3 months after the last two workshops in 2013 demonstrate that attendee confidence is maintained and results in a real change during clinical practice.

We believe the success of this program can be attributed to:

- Use of peer-to-peer learning methodology, which had a positive effect on interaction and freedom of discussion, and consequently on meeting outcomes.
- *Choice of GP and CDE facilitators* In our view, facilitators need to be experts in the subject and passionate about it, and good educators, but open to learning more themselves. Interestingly, the benefits of peer-to-peer learning applied as much to the faculty members as it did to the attendees: the faculty became more skilled at educating their peers, and their interest in diabetes grew. Many faculty members have since founded the RACGP diabetes special interest network together.
- *Providing content that is easily applied during clinical practice* Previous research has shown the importance of developing content that is useful for implementation by GPs in routine clinical practice. For example, two Canadian studies of multidisciplinary peer-to-peer education programs demonstrated success

in increasing and maintaining GP confidence by including content that was 'useful and doable in real GP time' [18, 19].

- *Reinforcing a multidisciplinary approach to diabetes management* Many GPs who did not consider involving a CDE in starting patients on insulin before the meeting had altered their opinion by the end, which will help time-poor GPs to manage their patients on insulin. It also helped to clarify the roles of the various health professionals involved in managing T2D.
- *Keeping the content relevant, interesting and up-to-date* Having an efficient, workable process in place to refine both the content and its delivery that takes into account meeting feedback and changes to clinical practice is crucial to maintaining the relevance and quality of the program [20].

A key limitation of this analysis is that the impact of education on 3-month outcomes was only examined in recent cohorts of attendees, and only 21.8% of these attendees responded to the 3-month evaluation. While this response rate is somewhat disappointing, it is higher than the 16.3% rate reported in a recent study of responses to surveys among Australian GPs [21]. Since the 3-month evaluation will be conducted at all subsequent workshops, there is an opportunity to accumulate further data on the medium-term impact on attendee behavior, as well as to integrate initiatives to improve response rates to the 3-month evaluation. The program did not aim to assess any long-term effects on GP practice or patient health outcomes.

CONCLUSIONS

This education program addressed an important need in Australian general practice—to educate

GPs about starting insulin, and thereby overcome the therapeutic inertia that is too common in diabetes management. It was developed by a passionate multidisciplinary faculty who set out to deliver a program that would change GP behavior in relation to insulin initiation. The recent data collected 3 months post-workshop attest to its success in achieving this goal. Even after 7 years, each workshop continues to be fully subscribed to, and the faculty is committed to continuous improvement based on feedback and changes in evidence-based guidelines.

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Compliance with Ethics Guidelines. This article is based on previously conducted studies and does not involve any new studies of human or animal subjects performed by any of the authors. Permission was obtained from the de-identified survey participants.

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