Insulin initiation in primary care: Helping it happen

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Article points

1. Focus on diabetes in primary care has led to expectations that insulin initiation will be initiated in the primary care setting.
2. With increasing numbers of people with type 2 diabetes, one may expect to see an increase in the use of insulin.
3. The course emphasised that insulin initiation needed to be considered in tandem with lifestyle advice with the input of a dietitian being crucial.
4. A coordinated approach to diabetes education ensures the effective use of resources.

Key words

- Insulin initiation
- Education
- Support

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Attaining specified HbA_{1c} targets in people with type 2 diabetes increasingly necessitates the commencement of insulin therapy if glycaemic control cannot be achieved through first-line treatments such as metformin. Although traditionally initiated in secondary care, the focus on management of diabetes within primary care has led to expectations that insulin initiation will be undertaken by GPs and practice nurses. Reluctance to initiate insulin therapy among both people with diabetes and healthcare professionals indicates a need for specific training in this area. The Pan-Peninsula Diabetes Education Initiative developed an insulin initiation course in response to local need. This article describes the course development, and its attendance and evaluation, over a 34-month period.

The importance of improving glycaemic control in those with type 2 diabetes is evident. The UKPDS demonstrated that intensive glycaemic control has the potential to significantly reduce the risk of long-term microvascular complications in type 2 diabetes and result in an increase in quality adjusted life years compared with those with conventional glucose control (Clarke, et al 2004). Various guidelines suggest that an HbA_{1c} of below 7.5 % is desirable, although the specifics vary.

NICE recommends a target HbA_{1c} for people with diabetes of between 6.5 and 7.5 %, based on the risk of macrovascular and microvascular complications (NICE, 2002). The NSF for diabetes highlights the need for PCTs to maintain practice-based diabetes registers to be used as a basis for systematic treatment regimens with HbA_{1c} targets of < 7.5 % (DoH, 2003). As a result the pressure has increased on primary care to provide high quality diabetes care, maintain accurate diabetes registers and fulfil the requirements of the nGMS contract.

The introduction of Payment-by-Results (PbR) proposes a system of reimbursement for specialist services (DoH, 2004a) and the QOF recommends that GPs should aim for 50 % of people with diabetes in their care to have an $HbA_{1c} \leq 7.4$ % (BMA, 2006).

The mainstay of treatment in type 2 diabetes is diet and lifestyle but if after three months HbA_{1c} is inadequately controlled then oral therapy should be initiated. Metformin should be the first-

line agent in all those with type 2 diabetes and doses titrated to the maximum tolerated dose. Control should be reassessed following 3–6 months of metformin at the maximum tolerated dose and if HbA_{1c} remains > 7.5 % and further lifestyle changes such as additional dietary change, weight loss and exercise are unlikely to occur, a sulphonylurea or in certain circumstances a glitazone should be added. Where glycaemic control remains poor on sulphonylurea plus metformin, and the individual has strong reasons for avoiding insulin conversion then triple therapy may be considered.

However, despite these recommendations insulin treatment in type 2 diabetes is often not initiated early enough to enable people with diabetes to achieve glycaemic goals that have been proven to reduce morbidity and mortality (Meece, 2006). The reluctance to initiate insulin therapy could relate to healthcare professionals' and the person with diabetes' misconceptions about the efficacy and side effects of insulin, as well as the perceived complexity of the treatment regimens (Brunton et al, 2006).

Healthcare professionals may perceive insulin initiation to be a complicated and time consuming process. There may of course be other issues to consider; for example for those people with type 2 diabetes who hold HGV licences whose employment may be threatened if insulin treatment is commenced or for individuals where the potential risk of hypoglycaemia needs to be contemplated in light of other concerns for example the very elderly or mentally ill who are living alone.

For people with diabetes there may be additional barriers, including anxiety about injecting and the perception that they have 'reached the end of the road', that their diabetes is now 'more serious'. Collusion between healthcare professional and the individual with diabetes in terms of avoiding the issue of insulin treatment in the early stages of type 2 diabetes and subsequently delaying the commencement of insulin is not uncommon (Rodgers, 2006).

With increasing numbers of people with type 2 diabetes one may expect to see an increase in the use of various pharmacological treatment options, including insulin. Education to enable primary care teams to develop expertise in insulin initiation is therefore essential.

The Pan-Peninsula Diabetes Education (PPDE) initiative aims to improve care through a standardised, collaborative approach to diabetes education throughout the South West of England. As part of this initiative an insulin initiation course was developed by clinical specialists from the South West in response to local need.

Aims

To provide a successful course for healthcare professionals in primary care that would increase knowledge, confidence and competence in insulin initiation in people with type 2 diabetes.

Course development

Professionals who expressed an interest in becoming involved in the course development after having been invited to attend an initial proposal meeting were then invited to attend a series of planning meetings. Professionals from primary and secondary care teams were invited and included: GPs, practice nurses, dietitians, GP facilitators, DSNs, diabetologists and educational experts. Five meetings were held over 12 months to design the course structure and content; and reference was made to the Royal College of Nursing document which provides guidance for starting insulin in people with type 2 diabetes (RCN, 2007).

It was considered important that GPs and practice nurses should attend together as a team as it was perceived from consistent feedback from practice nurses attending previous PPDE courses that attending with other professionals from their team was more likely to result in changes in practice. Course costs were £60 per practice team (i.e. GP and practice nurse) and venues were

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1. The reluctance to initiate insulin therapy could relate to healthcare professionals' and the person with diabetes' misconceptions about the efficacy and side effects of insulin, including concerns regarding weight gain.
2. For people with diabetes, there may be additional barriers, including anxiety about injecting and the perception that they have 'reached the end of the road', that their diabetes is now 'more serious'.
3. With increasing numbers of people with type 2 diabetes, one may expect to see an increase in the use of various pharmacological treatment options, including insulin.

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1. The course is interactive, with delegates encouraged to reflect on their own practice, and lasts for a day and a half.
2. Course participants were asked prior to the course to identify potentially suitable people with type 2 diabetes for initation onto insulin within their practice.
3. Nine insulin initiation courses were held over a 34-month period in three different locations across the South West.

Box 1. Insulin initiation course details.

Day 1
- Course aims and introduction to competency framework
- Assessing diet and lifestyle in relation to insulin
- Challenges of insulin initiation
- Types of insulin and pen devices and injection techniques
- Providing education and support
- Case history discussion

Day 2
- Treating to target and long term challenges of insulin initiation
- Case histories
- Competencies in insulin initiation
- Key messages

arranged across the South West.

The courses were supported by a minimum of two pharmaceutical companies and the companies had no controlling input into the design or content of the course.

The course is interactive, with delegates encouraged to reflect on their own practice, and lasts for a day and a half (*Box 1*). It was emphasised that insulin initiation needed to be considered in tandem with lifestyle advice with the input of a dietitian being crucial. Participants were asked to bring indicative cases to the course for discussion.

A range of teaching methodologies including: structured talks; practical sessions; case history discussions; and use of video clips of people with type 2 diabetes both before and after commencing insulin therapy. These video clips, in which people with diabetes reported their stories, fears and anxieties, were a particularly helpful tool to generate relevant discussion within the group. Primary care professionals often describe being overwhelmed by the range of insulin and insulin devices on the market. Simplifying this and deciding on one or two regimens and devices to be used in initiation was greatly appreciated.

Sessions on dietary assessment, types of insulin, use of pen devices and the long-term challenges of insulin initiation were included. Course participants were asked prior to the course to identify suitable people with type 2 diabetes for initiation onto insulin within their practice. These cases were then discussed during the sessions and suggestions taken back to their practice. Thus far, there has been no feedback on how many of these potentially suitable people have been initiated onto insulin.

A 4-week gap was allowed between the first study day and the half-day session to allow reflection on current practice and ideally initiation onto insulin of at least one person with type 2 diabetes during this time. Individuals with diabetes' educational priorities have informed the content of the courses.

There is no consensus of opinion as to which insulin regimens are best for people with type 2 diabetes. Current local policy was followed suggesting either using an intermediate insulin or long-acting analogue once-daily or twice-daily biphasic insulin or analogue.

The PPDE steering group of key diabetes healthcare professionals from each area in the South West reviews the progress of the course three times a year. This has led to more practical time being allocated for the session on insulin pen devices.

Course outcomes

Nine insulin initiation courses were held over a 34-month period from September 2003 to July 2006 in three different locations across the South West. Local diabetes professionals and educational experts delivered the programmes using a consistent format with assistance from the PPDE coordinators. GPs and practice nurses attended together with a total of 165 participants.

All courses were well subscribed reflecting the need for a coordinated course relating to insulin initiation in people with type 2 diabetes.

At the end of each course all participants completed a written evaluation which identified how they rated the course in terms of relevance, enjoyment and value for money. These aspects were evaluated using a 5 point Likert scale and were found to have a mean score of 4 out of 5. Feedback from participants indicated an increase in confidence as a result of attending the study days:

> *'I am not afraid to try insulin initiation now'.*

The course also highlighted the need to consider other aspects as well as the insulin itself:

> *'I learnt about the importance of taking another look at the patient's diet when initiating insulin'.*

Questionnaires were later sent out to practices to determine whether attending the course had changed their practice and whether or not they had subsequently started any people with type 2 diabetes on insulin. Thirty questionnaires were returned from the 80 practice teams who had attended the course since 2004 (37.5 % response rate). Of these, 22 practices felt that attending the course had changed their practice and reported starting people on insulin. Five felt the course had changed their practice in terms of being 'generally more confident managing those on insulin' or 'tightening up diabetes control' but had not actually started anyone on insulin. Only three stated that they had not changed their practice but did still indicate feeling 'more confident in dealing with insulin-dependent patients' or that they were now 'altering doses of patients already on insulin'.

Those practices who were starting people with type 2 diabetes on insulin were mainly using insulin in combination with tablets or twice-daily regimens. Frequency of starting people with diabetes on insulin ranged between monthly to two individuals in a year. Respondents indicated increased confidence; 'more confident in initiating insulin treatment'; increased understanding; 'greater understanding of insulin and its effects'; and changes in practice; 'was not doing insulin adjustments at all before'. Referral patterns to secondary care had also changed as a result of attending the course: 'sending less patients to hospital for initiation of insulin and follow up' and 'now manage almost all type 2 individuals in primary care rather than referring'.

Discussion

The course has evolved and been revised in response to the course evaluation forms completed by the participants. For example the need for a competency based approach was indicated and was addressed by introducing the Skills for Health competencies for insulin initiation (Skills for Health, 2004a, 2004b) as part of the course allowing practice teams the opportunity to self assess their skills and develop their own learning action plan. GPs and practice nurses access support as required from their local DSNs to aid competence and confidence to achieve these targets.

In order to assess competence at the start of the course a quiz is used to highlight to participants aspects of insulin initiation that they may be less familiar with. This is revisited at the end of the course to ensure that individual learning needs have been addressed. Participants have been encouraged to draft an action plan which identifies what is needed for them to be able to commence insulin initiation in practice. The action plans may highlight barriers to insulin initiation, for example the need for protected time or specialist support.

Ensuring ongoing support in practice has been difficult and although it has been offered there seem to be some reservations in accessing this support although the reasons for this remain unclear. While the response rate seems low, the return rate is not unexpected for questionnaire surveys, particularly as some practices had attended the course 2 years prior to the survey. It seems likely that there was a positive bias on questionnaires returned, in that these may represent those more enthusiastic about the course, the learning undertaken and the change in practice resulting in them being more willing to respond. The percentage of practices that have changed practice (73 %) may be over-represented.

This is perhaps not surprising as the educational intervention was relatively

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short for a therapy which is still often considered potent and viewed with caution. Accessing further supported education may be helpful but it may also be necessary to recognise that for some practices insulin initiation is unlikely to become part of the portfolio of services provided.

The course and means of self assessment using competencies has been taken up by Torbay Healthcare Trust as a key component in a national project with the NHS Institute for Innovation and Improvement (http://www.institute.nhs.uk/ [accessed 30.05.07]) to provide optimal support for staff and improve care given by practice teams in order to facilitate a smooth transition to insulin in primary care.

Conclusion

This coordinated approach to diabetes education ensures the effective use of resources by reducing the proliferation of individual uncoordinated activities. The PPDE insulin initiation course has been successfully incorporated into diabetes education throughout the South West Peninsula.

Development and continuation of the course encouraged collaborative working resulting in a high-quality, needs-led course in insulin initiation. A multidisciplinary approach in design and course attendance has been achieved. In response to the needs of the participants who have attended the course, further study days in 'advanced insulin skills' are planned which will include sessions relating to titration of doses, monitoring weight gain and assessing incidence of hypoglycaemia.

An audit of the effectiveness of the course in terms of altering practice is planned. ■

BMA (2006) *Revisions to the GMS contract, 2006/07 – Delivering investment in general practice*. BMA, London

Brunton SA, Davis SN, Renda SM (2006) Overcoming psychological barriers to insulin use in type 2 diabetes. *Clinical Cornerstone* **8** (Suppl 2): S19–26

Clarke PM, Gray AM, Briggs A et al (2004) A model to estimate the lifetime health outcomes of patients with type 2 diabetes: the United Kingdom Prospective Diabetes Study (UKPDS) Outcomes Model (UKPDS no. 68). *Diabetologia* **47**: 1747–59

DoH (2003) *National Service Framework for Diabetes: Delivery Strategy*. DoH, London

DoH (2004a) *Sharing the learning: Payment by Results*. DoH, London

Meece J (2006) Dispelling myths and removing barriers about insulin in type 2 diabetes. The Diabetes Educator **32**(1 Suppl): 9S–18S

NICE (2002) *Inherited Clinical Guideline G: Management of Type 2 diabetes – management of blood glucose*. NICE, London

RCN (2007) *Starting insulin treatment in adults with Type 2 diabetes. RCN guidance for nurses*. RCN, London

Rodgers J (2006) Treating type 2 diabetes: Are we proactive enough? *Diabetes & Primary Care* **8**: 207–9

Skills for Health (2004a) *HA11 Assess the need for an individual to start insulin therapy*. http://www.skillsforhealth.org.uk/tools/view_framework.php?id=110 (accessed 29.05.2007)

Skills for Health (2004b) *HA12 Enable an individual with Type 2 diabetes to start insulin therapy*. http://www.skillsforhealth.org.uk/tools/view_framework.php?id=110 (accessed 29.05.2007)