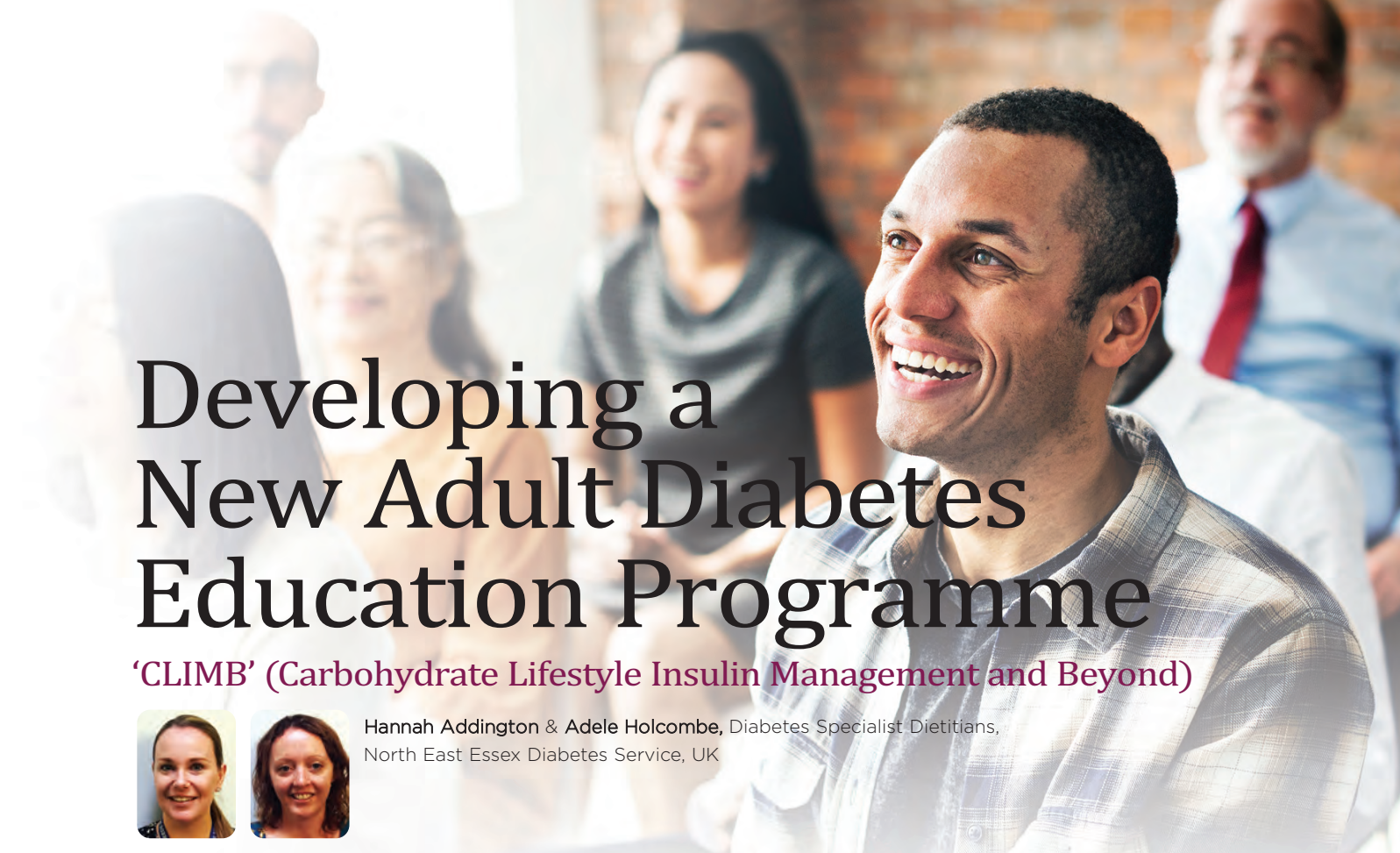

Developing a New Adult Diabetes Education Programme

'CLIMB' (Carbohydrate Lifestyle Insulin Management and Beyond)

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In 2014, the diabetes service in North East Essex remodelled into a unique entity, combining the secondary care and community diabetes team into one unit, under the title 'North East Essex Diabetes Service' (NEEDS). NEEDS is part of the Suffolk GP Federation, who have been commissioned by the local Clinical Commissioning Group to provide diabetes care in North East Essex. Our team work cohesively as a group of specialist diabetes practitioners, providing support and education to local GP practices and other healthcare professionals, delivering specialist clinics and patient education, and providing seven-day inpatient diabetes services to the local acute hospital. As a small provider, we are now able to adapt and evolve our services as required, delivering patient-led services close to home, based on current UK evidence and the National Institute for Health and Care Excellence (NICE) guidance. Although Registered Dietitians by trade, our roles have adapted over the years and we now work within the team as Specialist Diabetes Practitioners, with an interest in dietetics. Thus, any patients requiring specialist support, with an HbA1c above 63 mmol/L, may see us in clinic, particularly if they require a focus on diet.

Background to the project

At the end of 2014, our clinic appointments were escalating far beyond our clinical capacity, something needed to change. The unique nature of the service allows us to swiftly change our service depending on its needs. Clinically, we were seeing similar groups of patients, and having very similar conversations. We decided to adapt this clinic experience to a group setting, as numerous studies have identified the benefit of structured education for Type 2 diabetes.[1] We were aware that the existing structured education for Type 2 diabetes often left a knowledge gap for those on insulin, where it was added as an 'after thought' rather than being a key part of the curriculum, and not given recognition as being an essential part of their treatment, such as it is in Type 1 diabetes education. We know that the correct insulin injection technique plays a key role in diabetes management.[2] The understanding of diet is also essential and we felt it was essential to go beyond the basics of carbohydrate awareness, moving onto carbohydrate portion sizes being of huge benefit when trying to optimise this patient group. Therefore, merging these elements into a group session would combine the information we were delivering in face-to-face consultations over numerous appointments, and allow us to meet service and patient needs. Also, other diabetes education courses that were available (providing a similar structure), were typically more resource intense and delivered over a longer period of time than our proposed new course.

NICE recognises that Type 2 diabetes is a progressive long-term medical condition, predominantly self-managed.[3] The UK Prospective Diabetes Study identified that early intensive glucose control was associated with a 25% reduction in microvascular complications, and a 12% risk reduction in any diabetes-related endpoints, such as retinopathy, nephropathy, neuropathy, heart attacks, strokes, etc.[4] Between 85% and 95% of all people with diabetes have Type 2 diabetes.[5] Structured education programmes can allow adults with Type 2 diabetes to improve their knowledge and skills and also help to empower themselves.[6] We formed a working group and developed a structured education programme, focusing on carbohydrate awareness and insulin management to improve participant's health outcomes.

The aims of the working group included:

- To improve participants understanding of Type 2 diabetes and their insulin profiles, whilst acknowledging the impact of diet, specifically carbohydrates and how alterations in this can impact their diabetes control
- Empower participants to make changes to their own lifestyles and gain confidence to improve their diabetes control through reviewing diet, lifestyle and medication
- To reduce clinic wait times/improve capacity whilst still providing an excellent level of individualised care.

The philosophy

Structured education should deliver consistent messages based upon relevant, current UK evidence. The person with Type 2 diabetes has the right to expect a supportive approach, offering them a chance to share their concerns and goals, and for the healthcare professionals to be flexible, addressing individual's needs in a non-judgemental manner. The group session curriculum is patient-centred, empowering and has clear aims and learning outcomes that are shared with the participants to develop their knowledge, skills and confidence for diabetes self-management.

Course criteria:

- Type 2 diabetes on any type of insulin. +/- oral agents and other injectable therapies
- Ideally to have already completed DESMOND/Conversation maps/Type 2 conference.

Within our working group, we developed a written curriculum incorporating healthy eating guidelines and sources of carbohydrate in the diet, glycaemic index, insulin types and action times, injection technique and practical advice on living with diabetes. Learning styles incorporated into the course were based on social cognitive or learning theory.[7] We also developed a set of learning outcomes.

How it went

Over an 18-month period 10 'CLIMB' (Carbohydrate Lifestyle Insulin Management and Beyond) courses have been held, allowing 67 participants to attend a one off, three hour session taught by a dietitian and a diabetes nurse (2 diabetes practitioners). Diabetes practitioners delivering the 'CLIMB' course used a detailed lesson plan to ensure that the courses were consistent and based on our curriculum. Participants were also provided with a handbook to summarise the course content. Pre-course HbA1c was collected and then compared to a 3-6 months post-course HbA1c. Questionnaires were also used to assess quality of life and confidence/knowledge surrounding insulin and carbohydrate pre and post-course. Following completion of the course, participants requiring additional support, such as change in medication, were identified and the NEEDS team liaised with practice nurse.

The average pre-course HbA1c was 71 mmol/mol (range 36-105 mmol/l) and average post-course HbA1c 64 mmol/mol (37-102 mmol/l) – see **Figure 1**.

Sixty-nine per cent of participants saw an improvement in their HbA1c (46 patients). The reduction in HbA1c ranged from -1 mmol/L to -51 mmol/L. Eighteen per cent of participants saw an increase in their HbA1c (12 participants). Nine per cent had not had their HbA1c repeated (6 participants). Four per cent (3 participants) HbA1c had not changed within the 3-6 month period. See **Figure 2**.

We reviewed their data again one year post-course, and one participant demonstrated an HbA1c reduction of 23 mmol/L, another participant's HbA1c had dropped by 8 mmol/L, and the final participant's HbA1c remained constant.

Confidence in insulin adjustment and carbohydrate awareness almost doubled by the end of the 'CLIMB' course, a score of one being the lowest, five being the highest – see **Figure 3**. Quality of life scores (based on selected diet-related questions from the problem areas in diabetes questionnaire) showed no significant change from pre-course to post-course.

Figure 1: Mean HbA1c Pre-course and Post-course

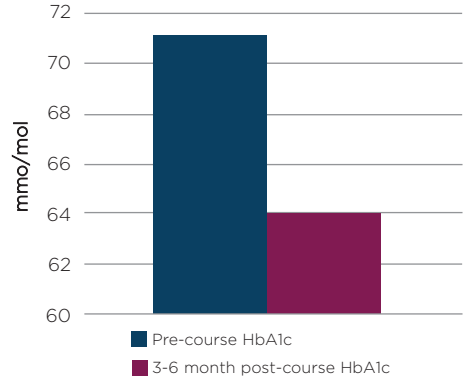


Figure 2: Hba1C Change Pre-course Compaired to 3-6 months Post-course

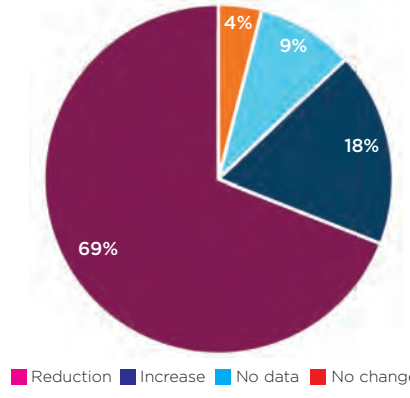
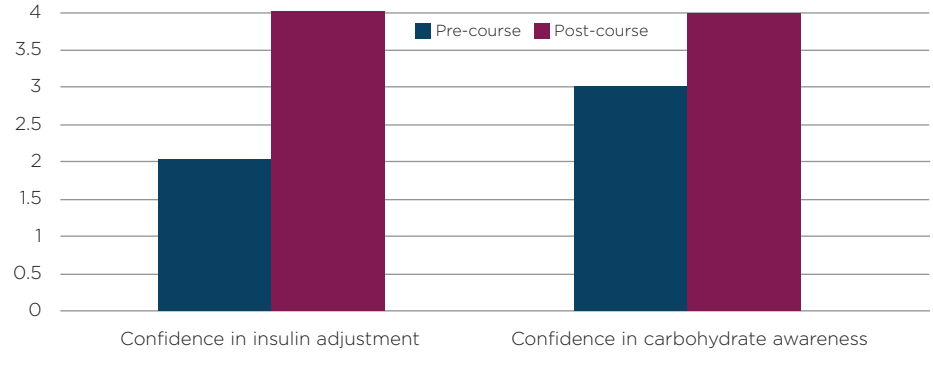


Figure 3: Mean Change in Insulin Confidence Pre and Post the 'CLIMB' Course (scale of 1 = poor to 5 = very good)



Where do we go from here?

Attending the 'CLIMB' education session has led to improvements in the majority of participant's HbA1c, confidence and knowledge – thus, empowering them to better self-manage their diabetes. We have only reviewed the effect on HbA1c up to six months post completion of the course due to the infancy of the education and resources available. Other forms of structured education have demonstrated initial reductions in HbA1c, although these changes have then reversed over time.[8] However, this course is unique in its content, structure, timing and liaison with diabetes nurse practitioners for follow up support as required post-course. 'CLIMB' has met a clinical demand and led to service level improvements – it is a more efficient use of the specialists' time. It has received positive responses from both participants and educators. We are currently developing internal quality assurance forms to use and then plan to role this programme out to other diabetes centres if they share the same need.

The 'CLIMB' course has been regularly audited. After six months the course was adapted to expand the group size to 14 participants and delivered by two specialist practitioners, ideally one with a dietetic background and one with a diabetes nurse background. This was to increase capacity and to ensure that participants who required a change in therapy could be identified by either practitioner at the end of each course. Also, increased capacity allows waiting list to stay short, meaning participants receive the education that they require, at the time that they themselves have identified a need. Post-course, the education administrators use the register to send a standard letter to the diabetes practice nurse asking them to review the patient if further support has been highlighted as a requirement by one of the course facilitators. Those requiring additional support are typically those with a very high HbA1c, which carbohydrate awareness and correct administration of insulin is unlikely to resolve, and where a change in therapy is normally required. We feel that this has closed a loop between the NEEDS education provision and primary care. Evidence has demonstrated that good communication can improve overall self-management and glycaemic control.[9]

'CLIMB' is NICE compliant as it meets their guidance for education as it has specific aims and learning objectives. 'CLIMB' has a written structured curriculum based widely on social learning theory. The curriculum has been developed by our working group based on current evidence for carbohydrate management and insulin adjustment. Participants attending the course receive a work book containing all key information and space for them to make notes. Trained diabetes practitioners deliver the course. They are all experienced and have developed facilitation skills from delivering alternative diabetes structured education courses. The next step we are undertaking to fully meet the NICE guidance is to organise external quality assurance.

Disclaimer: Sanofi Aventis have provided us with an educational grant to support some of the delivery of these groups, however the education provided has not been influenced by Sanofi Aventis.

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