

An education care pathway for people newly diagnosed with type 2 diabetes

Margaret Daley, Jackie Rooney, Maureen Wallymahmed

Article points

1. This article describes the development of an education care pathway for people newly diagnosed with type 2 diabetes.
2. The results of a pilot study, performed in both primary and secondary care, evaluating the care pathway in people newly diagnosed with type 2 diabetes are reported.

Key words

- Education
- Pilot study
- Patient-held records

The journey towards providing a minimum standard of education for people with diabetes began with the publication of the National Service Framework (NSF) for diabetes (DoH, 2001a). The NSF highlighted the importance of structured education in enabling people with diabetes to manage the condition on a day-to-day basis. Trusts were challenged with the task of developing education programmes that would meet national recommendations (DoH, 2003). This article describes the development of an education care pathway for people newly diagnosed with type 2 diabetes. The pathway includes both individual and group education sessions, patient-held records and a comprehensive patient-held education folder. The authors also report the results of a pilot study, performed in both primary and secondary care, undertaken to evaluate the care pathway in people newly diagnosed with type 2 diabetes.

The study occurred in three phases. Phase 1 was an assessment of previous educational experiences and future educational needs of people with type 2 diabetes; phase 2 was the development of a care pathway to meet the needs identified in the assessment; and phase 3 involved piloting the pathway.

Phase one: Assessment of previous educational experiences and future educational needs of people with type 2 diabetes

In developing any diabetes education programme, healthcare professionals should actively involve people with diabetes (DoH,

2001b; Diabetes UK, 2003). Therefore, we conducted an assessment of the educational needs of 290 people with type 2 diabetes attending primary and secondary care services in our locality (Daley et al, 2006). Results of this assessment highlighted the need for both group and individual education sessions supported by written patient information (Daley et al, 2006). The information gathered during the assessment – for example, the specific information people with type 2 diabetes require – has helped us develop a pathway that meets the needs of our patient population.

Prior to the educational needs assessment, the only education we provided was a 2-hour group education session for people newly

Margaret Daley is a DSN, University Hospital Aintree, Liverpool. Jackie Rooney is a Service Manager, Sefton PCT, Liverpool. Maureen Wallymahmed is a Nurse Consultant in Diabetes and an Honorary Lecturer, University Hospital Aintree, Liverpool.

diagnosed with type 2 diabetes that was called 'Diabetes and You'. Individual education was delivered on an ad hoc basis in both primary and secondary care. We quickly realised that the group education did not meet the needs of the local population with diabetes or the key criteria that a structured education programme should meet to fulfill the NICE requirements (2003). Therefore, the education care pathway was developed.

Phase two: The education care pathway

The pathway (Figure 1) is delivered over 12 months following a diagnosis of type 2 diabetes and includes both individual and group education sessions. Individual education is provided at a minimum of three visits, with the fourth visit being the annual review. The person with diabetes is also invited to attend two half-day, patient-centred education sessions, again entitled

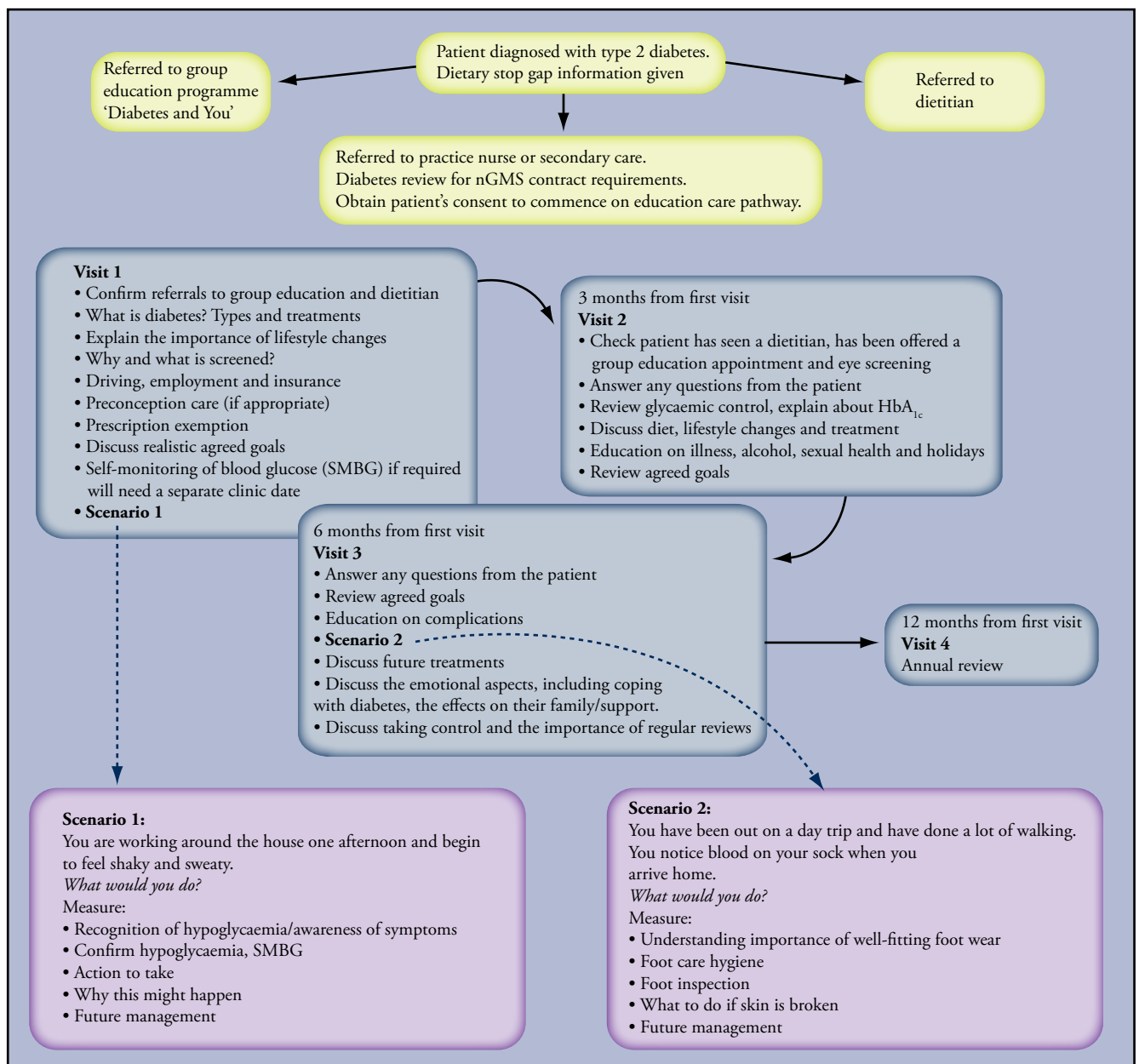


Figure 1. Education care pathway for people newly diagnosed with type 2 diabetes.

'Diabetes and You'. The pathway includes:

- the setting of agreed realistic individual goals
- the use of problem-solving methods
- education about change of treatments
- referral to other services (such as the dietitian or podiatrist).

All the education topics highlighted in the original local assessment are provided within the care pathway. People with diabetes wanted information about a variety of aspects of diabetes care, including an explanation of what diabetes is and information on diet, exercise, complications, foot care, driving and emotional aspects of the condition. While each visit follows a logical process, the exact content of the visit is flexible and is determined by individual needs.

Education folder and patient-held records

A patient education folder was developed during the pilot study (Figure 2). The folder was designed collaboratively by primary and secondary care staff and people with diabetes. The main body covers general information about diabetes; for example, what diabetes is, what care to expect and management of the condition. Additional leaflets were subsequently designed to be added to the folder as individuals proceed through the pathway. These leaflets (for example, 'illness and diabetes' or 'hypoglycaemia and diabetes') can be used by people with established diabetes (both type 1 and type 2). The folder incorporates patient-held records, which is an NSF recommendation (DoH, 2001a).

Phase three: Piloting the education care pathway

Methods

The pathway was piloted in five GP practices and the Walton Diabetes Centre. The pathway involved 50 consecutive individuals newly diagnosed with type 2 diabetes; 37 people attended clinics in secondary care and 13 attended primary care clinics. An explanation about the pathway was given, confidentiality assured and verbal consent obtained.

The following measurements were recorded at the start of the pathway and 6 months later:

- HbA_{1c}
- Weight

- BMI
- Diabetes knowledge levels

In addition, patient satisfaction was assessed at 6 months.

Knowledge levels

The participants were asked to complete a locally designed knowledge questionnaire at the first visit and again after 6 months. The questionnaire comprised 28 questions and is divided into nine themed sections (shown in Table 1); each section has a number of different questions about a specific subject. Examples from the diet section include: 'Does reducing fat in your diet help protect your heart?' and 'Is it true that you should not drink alcohol if you have diabetes?' People were asked to respond by ticking a 'yes', 'no' or 'unsure' box.

Satisfaction questionnaire

After 6 months, the participants were asked to complete a locally designed questionnaire to assess satisfaction with the pathway. The questionnaire was divided into seven sections: introduction, time, content, self-impact, method, effects and service satisfaction.

Staff feedback

At the end of the pilot study, we asked the

Page points

1. People with diabetes wanted information about a variety of aspects of diabetes care, including an explanation of what diabetes is and information on diet, exercise, complications, foot care, driving and emotional aspects of the condition.
2. A patient education folder was developed during the pilot study.
3. The pathway was piloted in five GP practices and the Walton Diabetes Centre.
4. Measurements (HbA_{1c}, weight, BMI and diabetes knowledge) were recorded at the start of the pathway and 6 months later: In addition, patient satisfaction were assessed.



Figure 2. The education folder and patient-held records.

practice nurses and diabetes nurse educators who ran the education clinics to critically analyse the pathway, highlighting its strengths and weaknesses.

Results

Data were collected over an 18-month period from September 2004 to February 2006. Fifty people with diabetes took part in the study: 26 (52%) were male and 24 (48%) female. The mean age was 59 years (range: 38–81 years).

Physical measurements

There were significant improvements in HbA_{1c} (7.6% versus 6.9%; *P*<0.05), weight (91.1 kg versus 88.7 kg; *P*<0.05) and BMI (33.01 versus 32.08; *P*<0.05) from baseline to 6 months (*Table 2*).

Knowledge measurements

The knowledge questionnaire was given to all 50 individuals on the first visit and again at the 6-month assessment. Thirty three individuals (66%) completed both questionnaires at the initial and 6-month visits. Over the 6-month period, diabetes knowledge improved in all areas (*Table 1*). Results are based on the correct answer being given and are reported in percentages.

Prior to commencing the pathway, 22 (67%) of the 33 people who completed both questionnaires correctly identified their diabetes as type 2. This increased to 30 (91%) at the 6-month assessment.

Patient satisfaction survey

Of the 50 patient satisfaction questionnaires given out, 37 were returned. The questionnaire was divided into seven sections. Results are reported below.

- *Introduction.* Of the 37 individuals who responded, 30 said that they fully understood why they were attending an appointment

Table 1. Knowledge levels before and after taking part in the education care pathway. The nine themes were derived from 28 questions.

Subject	Initial assessment (% correct answers; n = 33)	6-month assessment (% correct answers; n = 33)	Improvement in knowledge
Cause of diabetes	46 %	56 %	10 %
Diet	61 %	73 %	12 %
Illness	25 %	47 %	22%
Physical activity	56 %	72 %	16 %
Complications	57 %	74 %	17 %
HbA _{1c}	25 %	58 %	33 %
Hypoglycaemia	36 %	62 %	26 %
Driving	67 %	82 %	15 %
Holidays	73 %	88 %	15 %

Table 2. Changes in mean HbA_{1c}, weight and BMI in 50 people with type 2 diabetes following completion of the education care pathway.

Variable	Baseline (n = 50)	6 months (n = 50)	P-value
HbA _{1c} (%)	7.6	6.9	<0.05
Weight (kg)	91.1	88.7	<0.05
BMI	33.01	32.08	<0.05

with the nurse on that occasion and 7 partly understood.

- *Time.* Twenty-two people felt the amount of time spent with the nurse was about right, 3 reported it was too short, nobody stated it was too long and 12 people did not answer the question.
- *Content.* Twenty-two individuals found the information they received very useful, 3 felt it was quite useful, nobody stated 'not very useful' and 12 did not answer the question. Thirty-six people felt that they had received enough information although one felt that he/she had not received enough education. All the participants stated they felt they had the chance to ask questions.

We then asked people to list two things that they felt they had learnt from taking part in the pathway. Responses are shown in *Table 3*.

- *Self impact.* Thirty-six individuals said that they felt more in control of their diabetes since beginning the pathway and one person did not feel more in control. Thirty-one individuals stated they felt more confident in asking questions about their diabetes, four stated they felt the same, one person did not feel any more confident in asking questions and one did not answer.
- *Method of education.* Of the 37 people who completed the satisfaction survey, 12 stated that they would prefer individual education sessions, 4 preferred group sessions, 10 preferred both group and individual sessions and 11 did not answer the question. Seventeen people said they had attended the 'Diabetes and You' group education sessions, 19 had not and one did not answer. Of those who attended, 16 stated it was very useful.
- *Effects of the pathway.* Thirty-three people stated that they had made, or had

considered making, lifestyle changes as a result of the pathway and four did not answer the question. The main areas of change were diet, smoking, alcohol and exercise.

- *Service satisfaction.* Thirty-three people rated the education care pathway as very good, one as good, one stated average and two did not answer the question. Twenty-five individuals felt that the clinic did not need to be improved, seven stated that there could be some improvements, one stated 'maybe' and four did not answer the question. Unfortunately, no constructive comments were made about how to improve the service.

Feedback from staff delivering the pathway

Seven trained nursing staff (three diabetes nurse educators and four practice nurses) were asked to critically analyse the pathway, highlighting its strengths and weaknesses. Six nurses replied; one diabetes nurse educator had left to work elsewhere.

The advantages of the care pathway were perceived as the following.

- Individuals were fully involved in their care.
- It followed a structured approach.
- It encouraged changes in behaviour.
- It empowered people with diabetes.
- No aspects of diabetes were missed.

The disadvantages of the care pathway were perceived as the following.

- The pathway was in paper form and, therefore, was time consuming for practice nurses, who

Page points

1. Thirty-six people felt that they had received enough information although one felt that they had not received enough education. All the participants stated they felt they had the chance to ask questions.
2. Thirty-one individuals stated they felt more confident in asking questions about their diabetes, four stated they felt the same, one person did not feel any more confident in asking questions and one did not answer.
3. Seventeen people said they had attended the 'Diabetes and You' group education sessions, 19 had not and one did not answer. Of those who attended, 16 stated it was very useful.
4. Seven trained nursing staff, three diabetes nurse educators and four practice nurses, were asked to critically analyse the pathway, highlighting its strengths and weaknesses.

Table 3. Areas where the study participants felt their knowledge had improved after completing the pathway.

Subject	Responses
Diet	12
Illness	2
Feet	1
Heredity	1
Medication	1
Self care	1
Empowerment	1
Understanding diabetes	1
Attaining good control	1
Total number of responses	22

Page points

1. Both the practice nurses and diabetes nurse educators felt that ongoing education sessions besides 'Diabetes and You' should be available.
2. The introduction of an educational care pathway has helped standardise care for people newly diagnosed with type 2 diabetes in the authors' locality.
3. All people with diabetes involved in this study were invited to the 'Diabetes and You' education sessions but less than half attended. We need to consider the reasons for this.
4. Some individuals felt that the pathway could be improved but unfortunately did not suggest how and we need to consider how to investigate this issue further.
5. This project shows the importance of collaboration between primary care, secondary care and people with diabetes in developing pathways to standardise education across organisational boundaries.

requested an electronic version.

- Not all people wanted to attend group education sessions.

Both the practice nurses and diabetes nurse educators felt that ongoing education sessions besides 'Diabetes and You' should be available.

Discussion

The introduction of an educational care pathway has helped standardise care for people newly diagnosed with type 2 diabetes in the authors' locality. It has also resulted in significant improvements in HbA_{1c}, weight and BMI. We acknowledge that these improvements are not purely due to education as many individuals commenced oral hypoglycaemic agents throughout the course of the pathway. However, the pathway may have helped people with diabetes and healthcare professionals to focus on issues relating to diabetes likely to have an effect on glycaemic control and weight. Many people felt more in control of their diabetes and were considering making lifestyle changes. In addition, diabetes knowledge levels increased in all areas; however, we acknowledge there are still areas for improvement. For example, there was a 33% improvement in patients' knowledge about what an HbA_{1c} result meant, but 42% did not know what it meant after attending the education course, possibly due to the volume of information they had to take in.

A report from the patient education working group (Diabetes UK, 2005) highlighted a service gap for one-to-one education and we need to plan services to meet the needs of the local population. However, as resources are generally scarce, group education may appear to be the more cost-effective option. All people with diabetes involved in this study were invited to the 'Diabetes and You' education sessions but less than half attended. We need to consider the reasons for this.

Some individuals felt that the pathway could be improved but unfortunately did not suggest how and we need to consider how to investigate this issue further. Perhaps asking each person to state two things that they have enjoyed about the pathway and two ways of improving the pathway would be a possible solution that could enable people to stress the positives as well as areas for

improvement.

The results from the pilot study have reinforced the message that structured education is very important. During the course of developing the pathway, we have developed a structured curriculum, commissioned a 'train the trainers' programme and organised a quality control programme. These are all key criteria for delivering structured education (DoH, 2005). All of this has required time and resources with no additional funding. If we are to deliver effective structured education, trusts must be prepared to fund the development of such programmes, including staff training.

In addition, patient choice should be taken into account and group education should not be the only education option offered. It should also be remembered that all staff delivering education to people with diabetes, whether in groups or individually, should be adequately trained and quality assurance and audit programmes should be developed.

Conclusion

This project shows the importance of collaboration between primary care, secondary care and people with diabetes in developing pathways to standardise education across organisational boundaries. We need to ensure that recent changes, such as the implementation of payment-by-results, do not put up barriers to effective, collaborative working making such projects more difficult to develop. ■

Daley M, Rooney J, Marks J, Wallymahmed ME (2006) Newly diagnosed type 2 diabetes: Building a comprehensive education programme. *Journal of Diabetes Nursing* 10: 270-6

Diabetes UK (2003) *Guidance for Primary Care Trusts: User Involvement and the Diabetes National Service Framework*. Diabetes UK, London

Diabetes UK (2005) *Structured Patient Education in Diabetes: Report from the Patient Education Working Group*. Diabetes UK, London

DoH (2001a) *The National Service Framework for Diabetes: Standards*. DoH, London

DoH (2001b) *The expert patient: a new approach to chronic disease management for the 21st century*. DoH, London

DoH (2005) *Key criteria that a structured education programme should meet to fulfil the NICE requirements*. Department of Health, DoH, London

NICE (2003) *Guidance on the use of patient education models for diabetes. Technical Appraisal 60*. NICE, London