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IMPROVING DIABETES FOR RESIDENTS IN CARE HOMES IN A RURAL SETTING – AN ACTION RESEARCH PROJECT

FINAL REPORT

25th January 2010

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Summary of project

There is a prevalence of around 10% of diabetes in the elderly and research has shown that the elderly with diabetes in care homes may be at risk due to a lack of organised care. Anecdotal evidence from the Diabetes Specialist Nurses in Powys also suggests that staff in care homes wish to have support to improve care for residents with diabetes. Good care for patients with diabetes is essential in a rural setting because of the distance from secondary care and specialist services. This was an action research project for the project team to work with staff and residents in three care homes in a rural setting (one nursing home, one dual care home and one residential home in Powys). One complete cycle of an action research framework was planned: assessment of current practice including level of knowledge and attitudes to diabetes care amongst staff; setting up of diabetes working groups to plan action; implementing action to improve diabetes care; and finally to reflect on changes in practice.

The main outcomes from this project have been improving communication between the Care Homes and other health care professionals outside the homes to ensure that regular structured care (annual reviews and eye photography) is carried out and that the homes are informed of the results of these tests. Diet for the residents has also improved through the Care home staff learning that 'a regular healthy diet' is the current recommendation for people with diabetes. This means that staff are now confident in allowing residents with diabetes to have a small piece of birthday cake or regular pudding and also has reduced workload for the kitchens that now no longer produce diabetic alternatives. Blood glucose monitoring remains an area for further work – the residential care home does not currently undertake this due to standard policy but will investigate options to undertake this if they have an insulin dependent resident in future. The Dual Care home continues to work against ingrained practice and expectations of residents to undertaken blood glucose monitoring at a regular time each week. The DSNs will continue to work with the participating homes and also broaden their work to include all Care Homes across Powys.

Acknowledgements

We would like to thank the staff and residents of the participating care homes who have been enthusiastic in their involvement and without whom the project would not have been possible. Thank you to the GP practices and District Nurses linked to these Care Homes. Thank you also to Powys Teaching Health Board R&D Committee who have supported this project and finally thank you to the Foundation of Nursing Studies and Kate Saunders for the funding and helpful advice.

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1.0 Introduction

Approximately 127000 people in Wales have diagnosed diabetes (Diabetes UK, 2006) and it is thought that tens of thousands may also be as yet undiagnosed (NSF Diabetes for Wales, 2003). The prevalence of diabetes in the elderly is around 10% and managing and diagnosing diabetes in the elderly presents many challenges as this group is highly vulnerable and may be ill-equipped to communicate needs or problems. They may suffer multiple conditions/morbidities and may receive little organised care (Tattersall and Page, 1998). Diabetes UK have identified that elderly people with diabetes are at serious risk in care homes through a lack of adequate care (Diabetes UK, 2002). Anecdotal evidence noted by the Diabetes Specialist Nurses in Powys has identified a real need for work with staff and residents in rural care homes to improve diabetes care. Care homes in rural settings such as Powys are at a distance from both secondary care and specialist knowledge and therefore good diabetes care is essential.

Powys is the largest and most rural county in Wales, with a population of 130700 living in an area covering 2000 square miles, that is about a quarter of the area of Wales. With only 1 person in every 10 acres (4 hectares) it is one of the most sparsely populated local authority areas in England and Wales. There is no District General Hospital in Powys, there are 17 general practices and 10 community hospitals offering a varying level of service. There are three Diabetes Specialist Nurses employed in Powys, covering north, mid and south Powys.

This report outlines an action research project set in three Care Homes in Powys - one nursing home, one residential home and one dual care home.

1.1 Aim

The aim of the project was to work with staff and residents (using an action research approach) to develop a set of methods (which is appropriate in a rural setting) to improve diabetes care for residents in residential and nursing homes.

1.2 Project Team

The project team includes the three Diabetes Specialist Nurses (DSN) in Powys, each covering an area either north, mid or south Powys. The team also includes the Research Manager from the Institute of Rural Health.

2.0 Methodology

Action research is an approach designed to study social systems with the aim of changing them. It allows the researcher to work with the community to define needs and problems, devise methods to deal with the problems and improve services. It is a cyclical process where the problem is identified action is taken and then the impact is appraised prior to commencing a repeat of this cycle. Reason and Bradbury (2001) define action research as *“an interactive inquiry process that balances problem solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes enabling future predictions about personal and organizational change”*.

There are four main stages of an action research cycle – plan, act, collect, reflect - as shown in Diagram 1 below.

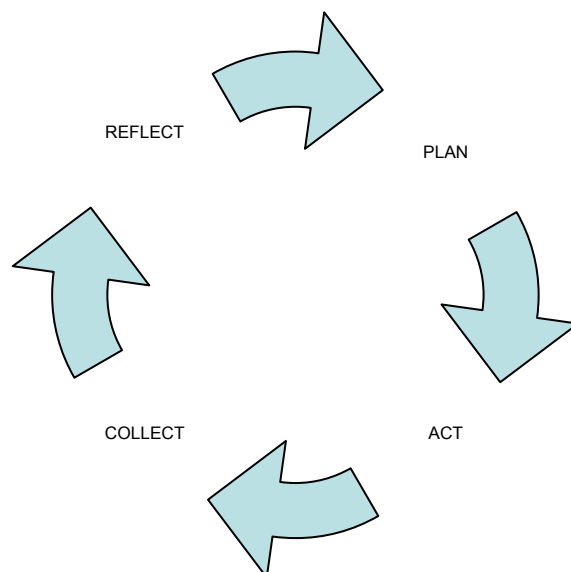


Diagram 1 Four main stages of an action research cycle

One complete cycle of action research has been followed in this project as shown in diagram 2 below.

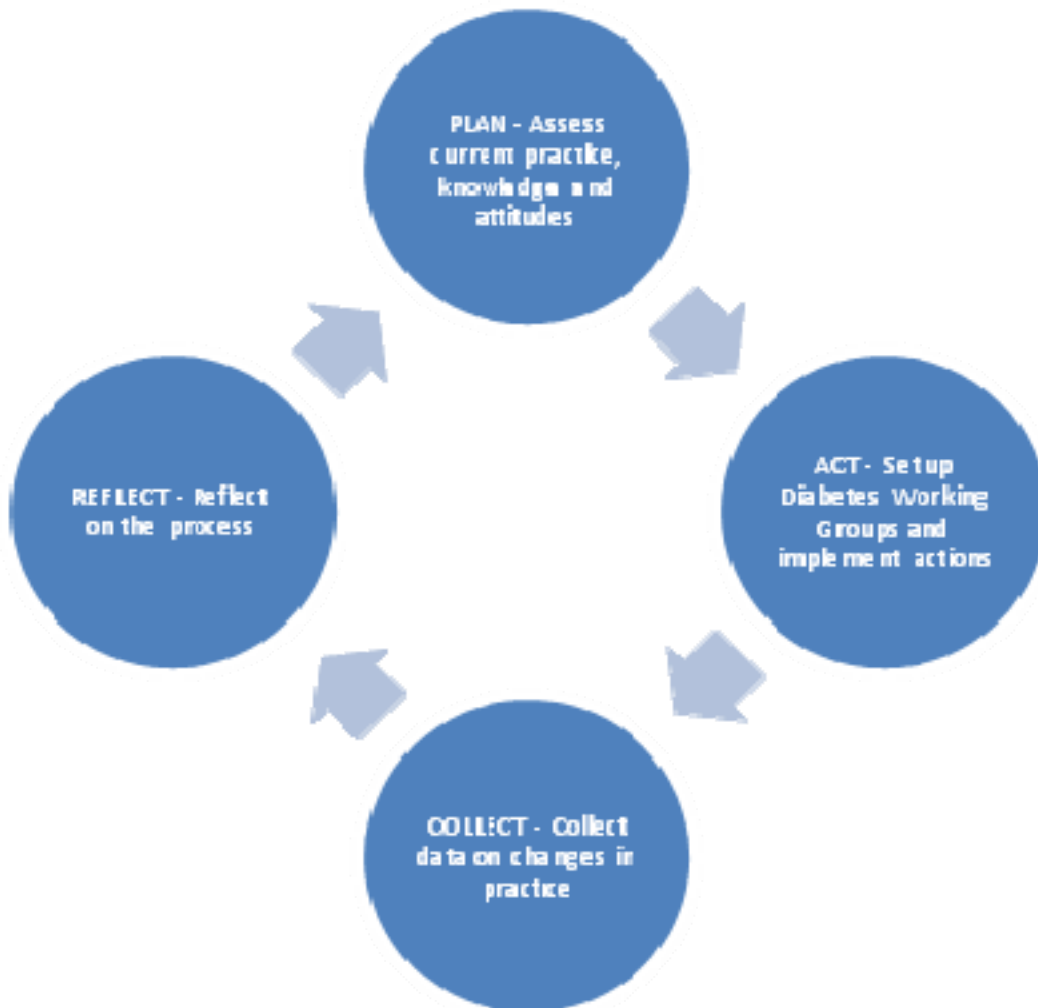


Diagram 2 The stages in the action research cycle

Three Care Homes in Powys were invited to participate based on geography (a Care home in north, mid and south Powys) and also because of size (the prevalence of diabetes in the elderly is approximately 10% so Care homes with over 50 residents were selected). The Care Homes were contacted by the DSN covering the geographical area to explain the study and this was followed up with an invitation letter and information sheet. Verbal consent to participate was obtained from the management of each home.

Each of the three homes approached agreed to participate. NHS ethical approval and research governance approval were obtained prior to starting work with the Care Homes.

PLAN - Assess current practice, knowledge and attitudes of care home staff and residents

Phase 1 focused on assessing the current situation in each Care Home. This started with a knowledge questionnaire to all staff to identify current levels of knowledge and confidence in diabetes care (questionnaire included in Appendix A). This was followed by focus groups with staff in each home to identify opportunities and barriers to improving diabetes care in the home (focus group topics included in Appendix B). Semi-structured interviews were also undertaken with residents with diabetes to gather their perceptions on the current care they receive for their diabetes (interview schedule included in Appendix C). This information was fed back to the staff at a staff meeting in each Care home. The detailed individual reports for Phase 1 in each care home and the overall Phase 1 Planning report are available alongside this final report.

ACT - Set up Diabetes working groups and implement actions

In Phase 2 each of the Care Homes set up a Diabetes Working Group with representatives from each level of staff in the Home. The DSNs worked with the Diabetes Working Group in each home to decide on actions to improve diabetes care and implement the actions. The groups met to discuss progress and review any additional changes that may be necessary.

COLLECT - Collect data on changes in practice

Phase 3 involved evaluating the changes made in nursing practice and diabetes care. The main measures of change were through minutes of the Diabetes Working Group and progress against the action plan as noted by the Diabetes Working Group. The impact of the action plan on staff knowledge was identified through a repeat of the knowledge questionnaire from cycle 1. The impact on patient care was identified through the

Diabetes Specialist Nurses reviewing any changes in the routine HbA1C readings of residents with diabetes.

REFLECT - Reflecting on the process

The outcomes from the action research process were discussed with each of the Diabetes Working Groups and a set of recommendations for improving diabetes care in Care homes was developed and shared with the Diabetes Working Groups for their input. The project team also reflected on their own learning experiences and outcomes from being part of this project and this is detailed below.

3.0 Outcomes

3.1 Emerging issues for action in the homes

The full reports from phase 1 of this study accompany this final report. However below is a summary of the issues that emerged across the three care homes in phase 1.

Annual reviews

A structured approach to Annual reviews is important for people with diabetes (NSF for diabetes) and this is not always happening in the care homes. This is an area that needs to be developed across all three care homes.

Development of a link nurse

At present none of the care homes have a lead nurse or link nurse for diabetes. All care homes were interested in developing a link nurse role but there was concern over taking time out and resources to attend meetings.

Feet checking

Feet are checked across the three care homes, but it varies as to who does this (the carer, chiropodist, GP, nursing staff). The caring staff in particular felt the need for education as to signs and symptoms to look for when checking feet.

Eye photography

There did not appear to be a regular system for residents receiving eye checks in any of the homes. All digital retinal screening is undertaken by Diabetic Retinal Screening Service for Wales (DRSSW). However, it may be that a resident has been deemed unable to attend for screening or recommended treatment by the GP.

Diet

There was variation across the three homes in terms of knowledge, confidence and practice in relation to the appropriate diet for residents with diabetes. Current advice is that a regular healthy diet is appropriate for people with diabetes and it is unnecessary to provide special diabetic foods. The amount of sugar in the diet should be moderate for all residents and this is also appropriate for residents with diabetes. An example of good practice in one care home is that low sugar jam is used for all residents regardless of whether they have diabetes or not. In this same care home candarel is used as a substitute for sugar in homemade cakes otherwise the diet is the same as for all residents. In the other two care homes however there was more uncertainty about the dietary recommendations for people with diabetes and diabetic puddings are still being provided. In addition staff feel that residents are being left out when birthday cakes are being provided and sometimes allow residents with diabetes to have a small slice but do not feel confident that this is acceptable.

Timing of blood glucose monitoring

For residents on tablets blood glucose monitoring is done on a routine basis at the same time each week. This identifies the need for education as blood glucose monitoring needs to be undertaken according to an individual need.

Communication with GPs and other health care professionals

The lack of structured care for residents with diabetes in particular with relation to the Annual Reviews highlighted concerns around communication with GPs and other health professionals. In the Residential Care home this was highlighted during phase 1 during an interview with a resident. During interview the resident was very vague about diabetes and seemed unwell. The DSN checked the blood glucose which appeared to be normal. On checking with the GP it appeared that although the Care Home appeared to think that this resident was diabetic, the individual has not in fact been diagnosed with diabetes.

Knowledge

Staff in all the care homes were keen to increase their knowledge. There is a higher degree of knowledge and confidence about diabetes amongst nursing staff in comparison to caring staff as might be expected, however all staff expressed an interest in education including kitchen staff.

Confidence

Closely tied with knowledge was the issue of confidence. A concern about lack of knowledge impacts on confidence, and staff in the dual care home and the residential care home (but not the nursing home) both highlighted a lack of confidence around diet and foot checking.

3.2 Membership of Diabetes Working Groups

In each of the care homes the results of phase 1 were fed back to the first meeting of the Diabetes Working Group. Three meetings were held in total during the project in two of the homes (Residential and Dual care home) and one meeting held in one home (Nursing home)¹.

Membership of the working groups was drawn from different staffing groups.

Residential Care Home

- Health Care Assistant,
- Team Leader
- Senior Health Care Assistant
- Manager
- Cook

¹ Only one Diabetes Working Group meeting was held in the Nursing Home as the DSN covering this home was on long term leave from work during the project and the project team were unable to cover the workload. The Nursing home was involved in phase 1 but was withdrawn from subsequent phases in the project.

Dual Care Home

- Cook
- Qualified Nursing staff
- Health care assistants
- Senior Health Care Assistant
- Manager

Nursing Home

- Manager
- Cook
- Nursing staff

3.3 Actions

At each meeting a set of actions was agreed to be undertaken by the next meeting. A summary of these actions and progress from the Residential and Dual Care homes is outlined below:

Treating hypoglycaemia –Ensuring appropriate treatment for hypoglycaemia (lucozade,dextrose,glucoge) is available for the treatment of anyone who is hypoglycaemic. In the nursing homes this was already available. In the Residential Care Home at the time of writing this report one resident keeps a supply of their own lucozade in their own room. The Group in the Residential Care home agreed to monitor this for each new resident.

Diet – all care homes now provide a healthy normal diet for residents with diabetes and the Residential Care staff in particular are now confident that they can allow residents with diabetes to have a small piece of regular cake or pudding. In both the Residential and Dual Care homes the kitchen's reported that it was easier now that they do not have to produce two types of pudding.

Training – the care homes were all keen to increase their general knowledge about diabetes and therefore training sessions were organised in both the Residential Care Home (9 attended) and the Dual Care Home (10 attended). The training was provided by the DSN and a Dietician. Training covered the following topics:

- What is diabetes?
- Medication – different types and when they should be taken/given,
- Healthy eating, portion sizes and carbohydrates,
- Hypoglycaemia – what it is, causes and treatment,
- Foot care

Feet checking – in the Dual Care Home it was noted that newer staff are less aware of checking feet for people with diabetes. It was agreed that more senior staff would demonstrate this and this was taken forward by the Team Leader in the care home. Information sheets were also sent to the homes and these were disseminated and displayed on the notice boards. The Residential Care Home was updated with the phone number of the new podiatry service.

Annual Reviews – In all Care Homes the responsibility for Annual Reviews is with the General Practice and District Nurses. The DSNs felt this was their responsibility to follow this up on behalf of both homes. Both practices involved agreed that routine blood test results would be made available to the care home staff. Staff are now more aware that they can access blood results from the GP practices and District Nurses.

Communication – Both homes decided to put up a notice board to share information amongst staff. Information from the project was regularly included in the notice board, and staff intended to continue to use the notice board to share information on diabetes and other health issues.

Link nurse – the link nurse role was further discussed in the Dual and Residential Care homes. Staff felt that communication links were now good with the DNSs and other health professionals and felt able and confident to contact them if they were concerned. A link person was put forward by each of the Diabetes Working Groups to act as the main link with the DSN in future.

Blood glucose testing – this is not currently carried out in the Residential Care Home due to standard policy. However, whilst it was decided at the present time it was not appropriate as there are no residents on insulin treatment, this could be explored in future. In the Dual Care Home the fact that tests were being done on a regular basis was discussed in each of the meetings and at the first meeting the Manager agreed to disseminate the message that this should be done randomly. However at a subsequent meeting it emerged that this practice still continues. This is partly because the residents themselves are used to a regular check and will ask staff to do it. It appears that this therefore has become ingrained practice for both staff (because of managing workload and being able to ‘tick off’ the job) and for residents. By the end of this project this was still an issue in the Dual Care Home and the DSN will continue to work with the home on this issue.

In the Dual Care Home it also emerged that the finger pricking devices for the blood glucose metres were not always being changed between patients. This was discussed in the meeting and the DSN provided new meters and disposable finger pricking devices. Training was provided to this home on blood glucose monitoring, use of the meter and the disposable finger pricking device and quality control of the meters.

3.4 Improvement in knowledge and confidence

At the last Diabetes Working Group meeting in each home the group revisited the knowledge questionnaire from phase 1. The table below shows the overall results for the 1st and 2nd questionnaire.

Care Home	Number of staff (%) achieving over 50% correct (range in scores)	
	1 st questionnaire	2 nd questionnaire
Residential Care Home	2/10 staff (20%) scored >50% Scores ranged from 22% to 65%	3/3 staff (100%) scored > 50% Scores ranged from 57% to 78%
Dual Care Home	8/18 (44%) scored > 50% Scores ranged from 35% to 61%	6/9 staff (67%) scored >50% Scores ranged from 39% to 78%

Nursing Care Home	13/17 (76%) scored > 50% Scores ranged from 43% to 83%	Not undertaken
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Overall there has been an improvement in knowledge as measured through the questionnaire. There has been an increase in the proportion of staff achieving over 50% of correct answers in the questionnaire at the end of phase 2.

The following tables show the change in levels of self reported knowledge and confidence between the two questionnaires. The first questionnaire undertaken at the outset of the project, and the second undertaken during the last working group meeting.

How would you score your current level of knowledge of diabetes?

	1 no knowledge	2	3	4	5 High level of knowledge
Dual Care Home – 1st	4	5	7	1	
Dual Care Home – 2nd		2	4	2	
Residential Care home – 1st	4	3	3		
Residential Care home – 2nd			3		

How confident do you feel about your knowledge of diet for people with diabetes?

	1 no confidence	2	3	4	5 High level of confidence
Dual Care Home – 1st	5	6	3	3	
Dual Care Home – 2nd		1	4	3	
Residential Care home – 1st	4	2	4		
Residential Care home – 2nd			2	1	

How confident to you feel about blood glucose monitoring?

	1 no confidence	2	3	4	5 High level of confidence
Dual Care Home – 1st	7	2		5	3
Dual Care Home – 2nd	1	4	1	1	1

Residential Care home – 1st	6	1		2	1
Residential Care home – 2nd			2	1	

How confident do you feel about caring for the feet of a person with diabetes?

	1 no confidence	2	3	4	5 High level of confidence
Dual Care Home – 1st	4	5	1	7	
Dual Care Home – 2nd		3	3	1	1
Residential Care home – 1st	5	2		3	
Residential Care home – 2nd			2	1	

The data shows that there has been a general shift towards a higher level of knowledge and confidence in both the Care homes, however there are limitations with the analysis of this data. The first questionnaire was completed by a much larger group whilst the second questionnaire was completed by a sub-set of this group, i.e. those who were involved in the Diabetes Working Group. As the questionnaires were anonymous it was not possible to link the data between the two stages and in hindsight this would have been preferable.

3.5 Improvement in care of people with diabetes

HbA1c readings are the key measure for determining diabetes and are taken as part of the annual review. They show the level of blood glucose control over the past 2-3 months and the target is 6.5% - 7.5% (NICE GUIDELINES 2009, The Management of Type 2 Diabetes and “Designed for the Management of Adults with Diabetes Mellitus across Wales” Consensus Guidelines 2008). The tables below show the last two recorded HbA1c results for patients in the Residential and Dual Care Home

Residential Care Home

Pt 1 Nov 07 – 7.4% April 09 – 7.5% No significant change

Pt 2 Nov 07 – 8.0% June 08 – 8.5% No significant improvement

Pt 3 Nov 08 – 6.0% Sept 09 – 6.6% (not improved but still within target)

Dual Care Home

Pt 1 2008 - 7.4%. March 09 - 6.6% (improved)

Pt 2 March 08 - 7.4%. November 09 - 7.2% (improved)

Pt 3 September 07 - 9.1%. September 09 - 5.8% (significant improvement)

Pt 4 February 08 - 6.6%. January 09 - 7.5% (not improved, but still within target range)

The results are all within reasonable range. Four patients have shown an improvement (one being significant) and three have not improved but are still within a reasonable range. It is likely that the next set of results will be a better indicator as the results look back over the previous 3 months and therefore changes or improvements will take time to show. It should also be noted that diabetes is a progressive chronic condition and therefore would possibly require change in treatment, which would be undertaken by the GP

3.6 Differences between homes

There were more similarities than differences between the homes and anecdotal data from the DSNs suggests that the findings from this project will be relevant across the Care Homes in Powys. The main difference between the homes was that the Residential Care Home do not have qualified nursing staff on site and the level of knowledge and confidence about diabetes was lower. Blood glucose monitoring is not carried out at this home and therefore the main concerns were over diet and foot care. In the Dual Care home these were still issues, but there was also additional support needed over the timing of blood glucose monitoring and the use of the equipment. Support to further homes across Powys can be tailored to reflect these differences in the levels of care offered by the type of home.

4.0 Discussion

4.1 Improvement in practice

Existing research has shown that the elderly with diabetes in care homes can be at risk due to a lack of organised care for their diabetes. Anecdotal evidence in Powys also highlighted a desire amongst Care Homes in Powys to receive more support and gain more understanding about diabetes. The initial knowledge questionnaire showed that knowledge of diabetes was variable, and as could be expected, with lower levels of understanding and confidence among non-nursing staff. The focus groups also highlighted that there did appear to be a lack of organised care for people with diabetes with no clear system of care such as annual reviews and feet checking. There was also uncertainty around diet and blood glucose monitoring which was being done routinely at the same time and day each week rather than being done randomly.

As a result of this action research project the following vision has been identified and agreed with the Care Homes.

Residents in care homes have equality of care for their diabetes.

Through phase 1 the Care Homes and the project teams were able to identify areas which needed improvement. Phase 2 allowed the DSNs to work together with the Care Homes to improve practice in these areas. Improved communication between Health Care Professionals and care home staff has enabled a better knowledge and understanding of annual reviews and the responsibilities of the General Practice, the District Nursing Staff and the DSNs. Staff in the Care Homes are more aware of who and when to contact for diabetes advice and staff report being more confident in contacting other Health Care Professionals such as the dietician and podiatrist.

Diet has been one of the biggest changes in the Care Homes with the kitchens now no longer producing diabetic puddings and the staff having confidence to follow the guidance for a 'normal healthy diet'. Staff at the homes have stated that the residents are happier and no longer felt that their diet had to be different, in other words prevented from having tea time cakes and deserts at mealtimes.

Knowledge about diabetes has increased across the homes through the training session but also through the involvement in the project. The working groups felt that this

improvement in knowledge will impact on care and quality of life for the residents in the homes. The staff now have an improved knowledge and understanding of diabetes and felt more confident in the care they provide for the residents

4.2 Reflections from the DSNs

It has been a challenging, steep learning curve as we have not been involved in a research project prior to this. The action research process has enabled us to look more objectively at the needs of the nurses, carers and residents and allowed us to work collaboratively to identify ways of improving practice. We were encouraged to see and hear how motivated the staff are within the homes, and their enthusiasm to engage in the process. This action research process which provides a framework for working collaboratively with patients and other staff could be utilised within all of our Community Hospitals / areas when we are looking at improving care for people with diabetes.

5.0 Recommendations for other Care Homes in Powys

Recommendations

- All Care Home residents with diabetes should have regular structured care which includes an annual review, feet checks and eye photography as appropriate. This GP and District Nurses responsible for the home have the lead on this.
- The results of the above checks should be fed back to the relevant staff within the care home. This is the responsibility of the GP or District Nurses, but for the Care Home staff to request this.
- All staff should be aware of the structure of care available to people with diabetes.
- Each care home should establish a lead person with a responsibility for diabetes that will act as the main link with the DSN and take responsibility for disseminating information and sharing good practice within the home.
- That care home staff contact the DSNs and that the contact is appropriate.
- That residents/patients are receiving a regular healthy diet and that staff have confidence with regard to what people with diabetes can eat.
- All staff have a good understanding of diabetes.
- Blood glucose testing is carried out appropriately based on individual patients needs.

6.0 Future work

The DSN's will maintain contact with the participating Care Homes and also aim to engage with the remaining care homes in Powys to offer support and education about diabetes. In a large geographic area such as Powys it is difficult to provide training and courses and practice development events in a central location, as illustrated in the discussions about holding link nurse meetings. An individual approach such as working through an action research framework with each home has been effective in identifying the key issues in each home and identifying areas for improvement. Some key issues identified here were common across all the homes, i.e. diet and communication with other health care professions around the structured care for residents with diabetes. The DSNs will now focus attention to other care homes in Powys on these main issues and the other areas flagged up by this study.

References

Diabetes UK (2002) *Care homes fail people with diabetes*. 13 March 2002.
http://www.diabetes.org.uk/About_us/News_Landing_Page/2812/

Diabetes UK (2006) *Diabetes: State of the Nations 2006. Progress made in meeting the National Diabetes frameworks*. A report from Diabetes UK.

Reason P & Bradbury H, (2006) *Handbook of Action Research*. Sage, London.

Tattersall R and Page S (1998) Managing diabetes in residential and nursing homes.
BMJ; 316: 89.

Welsh Assembly Government (2003) *NSF for Diabetes Wales*, Cardiff.

Appendix A

DiARCH Powys Questionnaire for Care Home staff

The questionnaire has been formulated to assess the level of knowledge amongst staff and will help develop an action plan for improving diabetes care, for example through an education programme for staff. Please answer honestly without referring to textbooks or colleagues. The questionnaire is completely anonymous and the results will be analysed and collated in order to inform the development of the next stage of the project. Please answer as many questions as you can.

N.B. There may be more than one correct answer.

1. Insulin causes blood glucose to:
 - (a) Rise
 - (b) Fall
 - (c) Stay the same
 - (d) Fluctuate

2. The blood glucose level (in mmol/l) of a person with diabetes should be:
 - (a) 4 or less
 - (b) 10 or more
 - (c) 4-8
 - (d) None of these

3. Urine tests for glucose should always:
 - (a) Show negative
 - (b) Show a trace of glucose
 - (c) Show large amounts of glucose
 - (d) Show both positive and negative results

4. When a person with diabetes becomes stressed and worried, their blood glucose is most likely to:
 - (a) Rise
 - (b) Fall
 - (c) Stay the same
 - (d) None of these

5. The blood test HbA1c measures blood glucose control over the past:
- (a) Day
 - (b) Week
 - (c) 2-3 months
 - (d) 6 months
6. Glucose in your diet comes from:
- (a) Meat
 - (b) Wholemeal bread
 - (c) Breakfast cereals
 - (d) Butter or margarine
7. For a person with diabetes, regular physical activity can:
- (a) Reduce blood glucose
 - (b) Raise blood glucose
 - (c) Raise blood pressure
 - (d) Reduce blood cholesterol
8. The dietary recommendations for people with diabetes include:
- (a) A total sugar free diet
 - (b) Reduce carbohydrate intake
 - (c) Use lots of olive oil
 - (d) Increase dietary fibre
9. A person with diabetes should:
- (a) Have a special diet compared to non-diabetics
 - (b) Eat the same food at the same time each day
 - (c) Eat a variety of healthy foods each day
 - (d) Replace sugary foods with special diabetic products

10. Blood glucose will rise after eating:
- (a) Bread, cereals and potatoes
 - (b) Meat or fish
 - (c) Butter or margarine
 - (d) Fruit and vegetables
11. Saturated (animal) fat should be eaten less often than polyunsaturated or monounsaturated (vegetable) fat because:
- (a) Saturated fat is higher in calories than unsaturated fat
 - (b) Saturated fat may contribute to heart disease
 - (c) Saturated fat is generally more expensive
 - (d) Fewer animals would be needed for our food supply
12. Dietary fibre can be increased by eating more:
- (a) Fruit and vegetables
 - (b) Cornflakes
 - (c) Porridge
 - (d) Rich tea/morning coffee biscuits
13. Which types of foods have the greatest effect in preventing hyperglycaemia i.e. high blood glucose levels.
- (a) Pasta and rice
 - (b) Wholemeal bread and cereals
 - (c) Oats and pulses
 - (d) Cakes and biscuits

14. Immediate treatment for severe hypoglycaemia would include:
- (a) One glass of diet coke
 - (b) Three or more glucose tablets
 - (c) One glass of milk
 - (d) One glass of lucozade
15. Long-term complications of diabetes can be minimised by:
- (a) Resting as often as possible
 - (b) Ensuring insulin is injected in the same place each day
 - (c) Controlling glucose levels as near to normal levels as possible
 - (d) Showing a trace of glucose in the urine
16. Everybody with diabetes can look after their health with:
- (a) Insulin injections
 - (b) Pills to lower the blood sugar
 - (c) Strenuous exercise
 - (d) Eating more healthily
17. Which of the following complications is the most important for the person with diabetes to be aware of:
- (a) Changes in bowel habits
 - (b) Changes in vision
 - (c) Changes in the liver
 - (d) Changes in breathing

18. Have you received any training in the management of people with diabetes?
Yes/No
If yes, please list training received with dates (approximate)

19. How would you score your current knowledge of diabetes? (please circle a score)

(No knowledge) 1 2 3 4 5 (High level of knowledge)

20. How confident do you feel about your knowledge of diet for people with diabetes?

(No confidence) 1 2 3 4 5 (High level of confidence)

21. How confident do you feel about blood glucose monitoring?

(No confidence) 1 2 3 4 5 (High level of confidence)

22. How confident do you feel about caring for the feet of a person with diabetes?

(No confidence) 1 2 3 4 5 (High level of confidence)

THANK YOU FOR TAKING THE TIME TO FILL THIS IN
PLEASE RETURN IN THE ENVELOPE AND PLACE IN THE BOX IN THE OFFICE

Appendix B

DiARCH Powys Focus group topic guide

Preamble

Thank you for taking part today. Before we start I'll just give you a bit of background to the focus group. The aim of this focus group is to gather your views on current practice and the opportunities and barriers for improving diabetes care in the Care Home.

We are recording the focus group just to make sure that we don't miss any thing when we analyse the information from the discussions. We will write the findings of the focus group up in a report but we won't attribute any comments to any individual. We'll aim to finish within 45 minutes.

Questions

1. Can you describe current practice for residents with diabetes?
(prompt: new residents, annual reviews, lead/link nurse, medication, blood glucose monitoring, diet, knowledge, checking feet and eyes).
2. Are there any areas that could be improved?
3. Are there any barriers to making improvements?
(prompts: lack of knowledge, turnover of staff)

THANK YOU FOR TAKING PART TODAY

Appendix C

DiARCH Powys Interview schedule for Residents in Care Homes

1. How long have you been a resident here?
2. What type of diabetes do you have?
3. How long have you had diabetes?
4. Do you know what medication you are on for your diabetes?
If yes, what is it?
5. Do you check your own blood glucose levels?
If no, who does it?
Were you checking your own blood glucose levels before you came to the home?
6. Do you give yourself your own medication?
If no, who does it?
Were you giving your own medication before you came to the home?
7. Do you check your feet regularly?
If no, who does it?
Were you checking your own feet before you came to the home?
8. Are you having your eyes photographed every year?
9. Do you see the District Nurse or GP annually for a review of your diabetes?
10. Do you feel your diet is different to the other residents in the home?
 - a. If yes, how is it different?

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