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Improving Diabetes Care for Residents in Care Homes in a Rural Setting

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Summary of project
This project used an action research approach to improve diabetes care of residents in three care homes in rural Wales. Current practice was assessed using questionnaires, staff focus group discussions and interviews with residents. Diabetes working groups were developed in each home and the information about current practice was used to inform discussions, identify key issues and actions. Staff knowledge and confidence in diabetes care improved during the project as did communication between care home staff and other health care professionals. Diet for the residents also improved through the care home staff learning that 'a regular healthy diet' is the current recommendation for people with diabetes. Blood glucose monitoring remains an area for further work. The DSNs will continue to work with the participating homes and also broaden their work to include all care homes across Powys.

Background
Approximately 127,000 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, 2002). The prevalence of diabetes in older people is around 10% and managing and diagnosing diabetes presents many challenges as this group can be vulnerable and may be ill-equipped to communicate needs or problems. Diabetes UK have identified that older 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 (DSNs) in Powys 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 it is essential that care home staff have the required knowledge and skills to provide good diabetes care.

Powys is the largest and most rural county in Wales. With a population of 130,700 living in an area covering 2,000 square miles (about a quarter of the area of Wales), it is one of the most sparsely populated local authority areas in England and Wales. There is no district general hospital, but there are 17 general practices and 10 community hospitals offering a varying level of service. Three DSNs are employed to provide specialist care across north, mid and south Powys.

Aim of the project
The aim of the project was to work with staff and residents (using an action research approach) to develop a set of methods (appropriate to use in a rural setting) to improve diabetes care for residents in three care homes in Powys (one nursing home, one residential home and one dual care home).

Methodology
Action research studies 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 involving problem identification, action and impact appraised prior to commencing a repeat cycle. Reason and Bradbury (2001, p1) suggest that action research; 'seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people'.

There are four main stages of an action research cycle – plan, act, observe, reflect (Carr and Kemmis, 1986). One complete cycle of action research has been followed in this project as outlined in the sections below.

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 older people 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 project and this was followed up with an invitation letter and information sheet. Each of the three homes approached agreed to participate and verbal consent to participate was obtained from the management. NHS ethical and research governance approval were obtained prior to starting work.

Planning
The first phase of the cycle involved assessing current practice, knowledge and attitudes of staff and residents in each care home. This started with a self-administered questionnaire which was given to all staff to identify current levels of knowledge and confidence in diabetes care. Focus groups facilitated by one of the DSNs and the research manager were held with staff in each home to identify opportunities and barriers to improving diabetes care. A total of 25 staff were involved, seven in the residential care home, nine in the dual care home and nine in the nursing home. Semi–structured interviews were also undertaken by the DSNs with 13 residents with diabetes (four residents in the residential care home, four residents in the dual care home and five residents in the nursing home) to gather their perceptions on the current care they receive for their diabetes.

The information from each of these approaches was analysed by the project team and fed back to the staff at meetings held in each of the care home to inform discussions about appropriate actions.

Findings from the knowledge questionnaire
Forty five staff knowledge questionnaires were returned. Analysis of the responses identified:

- The number of staff getting over 50% of the answers correct

varied from 20%, 44% and 76% over the three homes. Levels of knowledge and confidence were lower in non-qualified staff
- At least one respondent in each home had received training in diabetes
- Most respondents had good knowledge in relation to the effect of insulin on blood glucose and the correct level of blood glucose for a person with diabetes
- Most respondents had good knowledge in relation to diet and lifestyle
- Respondents seemed less clear about the type of diet that people with diabetes should eat with most answering that they should have a special diet
- Respondents were not so knowledgeable about blood glucose testing with few answering correctly the questions about urine testing and blood testing for HbA1C
- A high proportion of respondents answered correctly that controlling blood glucose levels to as near as normal as possible is the best way of limiting long term complications from diabetes

Findings emerging from the interviews with residents and focus groups

A number of themes and issues emerged from the interviews with residents and focus group discussions with staff. These included:

- **Knowledge** – there was a higher degree of knowledge and confidence about diabetes amongst nursing staff in comparison to caring staff, however all staff, including kitchen staff expressed an interest in education
- **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. An example of good practice in one care home is that low sugar jam is used for all residents regardless of whether they are diabetic. In this same care home sugar substitute is used in home made cakes. In the other two care homes however, there was more uncertainty about the dietary recommendations for people with diabetes and diabetic puddings were still being provided
- **Annual reviews** – regular 'review of people with diabetes can improve the quality of diabetes care and subsequent outcomes' (Department of Health, 2001, p25) but it was found that annual reviews were not happening in the care homes and was therefore an area of care that needed to be developed
- **Feet checking** – the feet of residents with diabetes were checked across the three care homes, but it varied as to who did 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 is unclear why residents were not attending
- **Timing of blood glucose monitoring** – for residents on oral hypoglycaemics, blood glucose monitoring is done on a routine basis at the same time each week. This identified the need for education as blood glucose monitoring should 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. An example of this was highlighted in the residential care home during an interview with a resident. During the interview the resident was very vague about diabetes and seemed unwell. Consequently, the DSN checked the resident's 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 had not in fact been diagnosed with diabetes
- **Link nurses** – none of the care homes had a lead nurse or link nurse for diabetes. All care homes referred to the GP or DSN when necessary. All care homes were interested in developing a link nurse role

Acting

In the second phase of the action research cycle, a diabetes working group was set up in each of the care homes. These groups were facilitated by the DSN and involved representatives from all levels of staff including cooks. The DSNs worked with the groups to decide on actions to improve diabetes care based upon the findings from the first phase of the project, and to enable the implementation of these actions. Over a ten month period, three meetings were held in two of the homes (residential and dual care home) however, it was only possible to hold one meeting 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 therefore involved in the first phase of the project but was withdrawn from subsequent phases.

At each meeting a set of actions was agreed. A summary of these actions and progress from the residential and dual care homes is outlined below:

- **Treating hypoglycaemia** – ensuring appropriate treatment for hypoglycaemia (e.g. lucozade, dextrose, glucogel) is available for residents who might require it was discussed within the working groups. In the dual care home this was already available. The group in the residential care home agreed to monitor this for each new resident and at the time of writing this report one resident was keeping a supply of lucozade in their own room
- **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 of the homes, the kitchen staff 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 (nine staff attended) and the dual care home (ten staff attended). The training was provided by the DSNs and a dietician and 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 were less aware of checking feet for people with diabetes. It was agreed that more senior staff would demonstrate this with staff. The DSNs also sent relevant information sheets to the homes which were displayed on the notice boards. The residential care home was updated with the phone number of the new podiatry service
- **Blood glucose testing** – this is not currently carried out in the residential care home due to standard policy and there are no residents on insulin treatment. It was however acknowledged that it may have to be explored in future. In the dual care home regular blood testing was discussed and at the first meeting the manager agreed to disseminate the

message that blood glucose testing should be done randomly. Routine testing however proved to be a difficult practice to change, partly because the residents themselves were used to a regular check and asked staff to do it. By the end of this project this was still an issue and the DSN will continue to work with the home to resolve it. In the same home it also emerged that the finger pricking devices for the blood glucose meters were not always being changed between patients. This was discussed in the meeting and the DSN provided blood glucose testing training, new meters and disposable finger pricking devices

- **Annual reviews** – In all care homes the responsibility for annual reviews is with the general practices and district nurses however, the DSNs felt it 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 general 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 both care homes. Staff felt that communication links were now good with the DSNs 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 working groups to act as the main link with the DSNs in future

Observing

The third phase involved collecting data to evaluate the changes made in nursing practice and diabetes care. The main measures of change were the minutes of the diabetes working groups and progress against the action plans. Many of these have already been outlined above. Staff knowledge and confidence was reviewed by repeating the initial questionnaire. The impact on patient care was identified by the DSNs reviewing changes in the routine HbA1C readings of residents with diabetes.

Improvement in knowledge and confidence

At the last working group meeting in each home, the group revisited the knowledge questionnaire. Table 1 shows the overall results for the 1st and 2nd questionnaire.

Table 1. Comparison of results from knowledge

Care Home	Number of staff (%) achieving over 50% correct	
	1st questionnaire	2nd 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

questionnaires

Overall, there was an improvement in knowledge as measured through the questionnaire as there was an increase in the proportion of staff achieving over 50% of correct answers. However, there are limitations with this data as the first questionnaire was completed by a much larger group and the second questionnaire was completed by a sub-set of this group, i.e. those who were involved in the diabetes working groups. 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.

There was a similar rise in the levels of self reported confidence in relation to current level of knowledge of diabetes; knowledge of diet for people with diabetes; caring for the feet of a person with diabetes and blood glucose monitoring.

Reviewing HBa1c readings

HBa1c readings are a key measure for monitoring diabetes and are taken as part of the annual review. They show the level of blood glucose control over the past two to three months and the target is currently presented as a percentage of 6.5% - 7.5% (National Collaborating Centre for Chronic Conditions, 2008; Welsh Assembly Government, 2008). Table 2 shows the last two recorded HBa1c results for patients in the residential and dual care home.

Residential	Date of	HBa1c	Comment
Resident 1	Nov 07 April 09	7.4% 7.5%	No significant change
Resident 2	Nov 07 June 08	8.0% 8.5%	No significant improvement
Resident 3	Nov 08 Sept 09	6.0% 6.6%	No improvement but still within target range
Dual Care Home			
Resident 1	March 08 March 09	7.4% 6.6%	Improvement
Resident 2	March 08 Nov 09	7.4% 7.2%	Improvement
Resident 3	Sept 07 Sept 09	9.1% 5.5%	Significant improvement
Resident 4	Feb 08 Jan 09	6.6% 7.5%	No improvement but still within target range

Table 2. Comparison of HBa1c results

The results are all within reasonable range. Four patients showed an improvement (one being significant) and three did not improve but were still within a reasonable range. It is likely that the next set of results will be a better indicator as changes or improvements will take time to show. It should also be noted that diabetes is a progressive, chronic condition and therefore some residents may require changes in treatment over time.

Reflecting

The final phase of the action research cycle enabled the project team and working groups to reflect on the achievements of the project, identify areas for continued development and make recommendations for future practice.

There have been concerns over the care for older people with diabetes in care homes for many years and as yet, there is no evidence to suggest that the standard of care has improved (Breslin, 2009). Anecdotal evidence in Powys also highlighted a desire amongst care home staff to receive more support and gain more understanding about diabetes. The initial knowledge questionnaire showed that knowledge of diabetes was variable and the focus groups and interviews suggested a lack of organised care for people with diabetes.

The care homes and the project team were able to identify areas of diabetes care which needed improvement and work together to improve practice in these areas. Improved communication between health care professionals and care home staff enabled better knowledge and understanding of annual reviews and the responsibilities of the general practice, the district nurses and the DSNs. Staff in the care homes are more aware of who to contact

for diabetes advice and when; and staff report being more confident in contacting other health care professionals such as the dietician and podiatrist. Issues relating to feet checking and blood glucose monitoring have also been addressed.

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 feel that their diet has to be different, in other words prevented from having tea time cakes and deserts at mealtimes.

Staff knowledge about diabetes and confidence in providing care has increased across the homes through the training sessions but also through staff involvement in the project. The working groups felt that this will impact on care and quality of life for the residents.

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 does not have qualified nursing staff on site and the level of knowledge and confidence about diabetes was lower. The DSNs are committed to maintaining contact with the participating care homes and also aim to engage with the remaining care homes to offer support and education. Working in such a large geographic area, it is difficult to provide training, courses and practice development events in a central location. An individual approach such as working through an action research cycle with each home has been effective in identifying the key issues in each home and areas for improvement. The DSNs will now focus attention to other care homes in Powys on these main issues and the other areas flagged up by this project.

Recommendations

- All care home residents with diabetes should have regular structured care which includes an annual review, feet checks and eye photography as appropriate. The 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 care home staff should also request this information
- 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

Reflections of 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 were 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.

References

Breslin, E. (2009) The standard of diabetes care in nursing homes in South and East Belfast. *Journal of Diabetes Nursing*. Vol. 13. No. 3. pp 109-117.

Carr, W. and Kemmis, S. (1986) *Becoming Critical*. Lewes: Falmer Press.

Department of Health (2001) *National Service Framework for Diabetes: Standards*. London: HMSO.

Diabetes UK (2002) *Care Homes Fail People with Diabetes*. 13 March 2002. Available at: 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.

National Collaborating Centre for Chronic Conditions (2008) *Type 2 Diabetes: National Clinical Guideline for Management in Primary and Secondary Care (update)*. London: Royal College of Physicians.

Reason, P. and Bradbury, H. (2001) *Handbook of Action Research: Participative Inquiry and Practice*. London: Sage Publications.

Welsh Assembly Government (2002) *The Diabetes NSF Standards (Wales)*. Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2008) *Designed for the Management of Adults with Diabetes Mellitus across Wales: Consensus Guidelines*. Cardiff: Welsh Assembly Government.

Further reading

A full project report is available to download from www.fons.org

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