



## TRAINING FOR TACKLING PATIENT DIABETES -A REVIEW ON NURSING EDUCATION

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### ABSTRACT

Individuals with diabetes have been shown to make a dramatic impact on the progression and development of their disease by participating in their own care. Despite this fact, compliance or adherence to these activities has been found to be low, especially when looking at long-term changes. Though multiple demographic, socio-economic and social support factors can be considered as positive contributors in facilitating self-care activities in diabetic patients, role of clinicians in promoting self-care is vital and has to be emphasized. Restore fluid/electrolyte and acid-base balance. Correct/Reverse metabolic abnormalities. Identify/Assist with management of underlying cause/disease process. Prevent complications. Provide information about disease process/prognosis, self-care, and treatment needs. The importance of regular follow-up of diabetic patients with the health care provider is of great significance in averting any long term complications.

**Key Words:** Diabetes, Nursing Education, Primary Diagnosis.

### INTRODUCTION

**Diabetes mellitus** – usually known as diabetes – is an incurable and progressive condition. It is caused by a failure of the pancreas to produce insulin (type 1) or to produce enough adequately functioning insulin (type 2) to enable the glucose from food to enter the body cells and be used as a source of energy. As a result, in both types the glucose level in the blood remains too high. Blood glucose is commonly determined as HbA1c, which is the haemoglobin bound by glucose.

Poorly managed diabetes can lead to a range of complications including amputation, kidney disease, strokes, heart attacks, depression and blindness. As a result diabetes increases the chance of a person needing hospital admission by five times. This predisposition to complications is further compounded by the fact that over half of people diagnosed with Type 2 diabetes already

show signs of complications at the point of diagnosis[1]. This is a widely reported statistic and the Yorkshire and Humber Public Health Observatory (YHPHO) acknowledge that early diagnosis and treatment can reduce the risk of complications that can be found to be well developed at the point of diagnosis[2]. It is also important to look at those patients who are admitted to hospital where diabetes is an additional complication and not the primary diagnosis. A report by the National Diabetes Support Team noted that in patients with diabetes stay in hospital longer, irrespective of the primary cause of admission[3]. As part of the process of striving for early diagnosis, it is important that we identify those groups who are not only physically at risk of developing diabetes related complications, but also those whose demography and social circumstances place them



in a vulnerable position. Identification of at-risk groups by primary and community health care professionals is part of the solution, however patient awareness and engagement is also crucial. It was noted that patients need to be aware if they are at risk, and should be able to identify if they need to visit the hospital.

### Improving the care pathway

There is significant evidence to suggest that proven care models can reduce the incidence of: hospital admission, excess length of stay, acute metabolic complications, diabetic foot disease and amputation[4]. However, when sharing and adopting best practice it is important that outcomes are clearly presented and evaluated. The Audit Commission and ACCA noted that “community and outpatient care data is not good enough” and it is clear that moving forward, the quality of data collection needs to be significantly improved[5].

### Objectives

By expanding the capacity and skills within primary care this enhanced service aimed to:

1. To prevent diabetes in those known to be at risk, and where prevention fails, diagnose early to prevent complications;
2. To improve the quality of diabetes care provided in the community;
3. To help deliver the National Service Framework standards; and
4. To promote a safe, co-ordinated shift of the delivery of care for patients from hospital clinics to primary care services.

The aim of this Local Enhanced Service was to address the physical healthcare needs of pre-diabetic patients i.e. those with impaired glucose tolerance (IGT), impaired fasting glycaemia (IFG), previous gestational diabetes and other relevant type 2 diabetic patients through recognising and encouraging the development of the necessary expertise in primary care.

The patient and, where appropriate, their carer should be at the centre of care and practice staff should support them in self-management wherever possible. For patients with IGT, IFG and previous gestational diabetes, specific responsibilities in delivering this agreement include:

1. The development and maintenance of a register. Practices must produce up-to-date registers of patients who are IGT, IFG or who have previous gestational diabetes.
2. Practices will ensure the systematic recall of all IGT, IFG and previous gestational diabetic patients using appropriate read codes.
3. Practices will review all patients on the IGT and IFG registers annually, which must include fasting sugar check, blood pressure and cardiac risk assessment as a

minimum. Women who have had gestational diabetes and have tested normal following delivery should be tested 1 year post-partum and then three-yearly.

A key part of the consultation at review is to emphasize the message from the DPP (diabetes prevention program) that the risk of developing diabetes can be reduced by 60% simply by implementing lifestyle changes involving a better diet and regular exercise. We believe in the positive reinforcement that patients are “masters of their own destiny” and they can achieve more by themselves than we can with drugs.

4. Practices must include education and lifestyle advice in the annual review.
5. Practices should prepare with the patient an individual care plan. A comprehensive print-out of the agreed care plan will be provided for the patient to keep.
6. Practices are to maintain records incorporating the fasting sugar levels, blood pressure and outcomes of cardiac risk assessment.
7. Each practice must ensure that all staff involved in providing any aspect of care under this service has the necessary training and skills to do so. Please see ‘Training and Accreditation’ section for further details.

Specific patients have a greatly reduced quality of life due to severe unpredictability in their blood glucose levels. These people are unable to prevent dangerous swings in their blood glucose (BG) levels and suffer from debilitating hyperglycaemia putting them at risk of admission from Diabetes Ketoacidosis and very low BG levels. Both can result in coma and death. Some of the people in this situation through planning, intelligence and persistence are able to keep themselves out of hospital by constantly thinking about what their BG levels are and testing their BG levels up to 20 times a day. Continuous Glucose Sensors continually measure glucose levels. Alarms are set at pre-determined levels so that corrections to high and low glucose levels can be made. This can significantly improve quality of life and reduce emergency admissions. In South Staffordshire Primary Care Trust the Continuous Glucose Sensors are used therapeutically and so are given to the specific patient who meets set criteria for as long as it is required and is considered to be of benefit. Almost 300 million people worldwide have diabetes, including almost half a million children under the age of 14 – and the numbers are growing rapidly[6]. By 2030, an estimated half a billion people will be living with diabetes[7]. Continued growth of type 2 diabetes – which constitutes about 90% of diabetes cases[5] – is not inevitable. By encouraging people to eat a healthy diet and exercise regularly, we can help to prevent type 2 diabetes from developing. By eliminating the risk factors, up to 80% of type 2 diabetes could be delayed or prevented[8].

• By diagnosing diabetes early and treating it effectively, we can prevent or at least delay the complications that



lead to so much human suffering, costly treatment and reduced life expectancy. Diabetes care in the UK is good, but not good enough – 40% of people with type 2 diabetes, and 71% of people with type 1 diabetes are not in optimal control. Earlier diagnosis, and use of effective modern therapies, would lead to big cuts in the human, social and economic costs of diabetes.

To reverse the epidemic and slow the rising cost of diabetes, we must work with healthcare professionals, government, the media and others to raise awareness of the risks of a sedentary lifestyle and unhealthy diet, and help people with diabetes to achieve effective self-management.

### Treatment

The treatment for type 1 diabetes is insulin required from the time of diagnosis coupled with careful management of diet and exercise. Insulin was discovered in the early 1920s, and treatment has evolved significantly since then. Today's analogue or 'modern' insulins offer more flexibility and freedom to lead a normal life than ever before. They also offer a reduced risk of blood glucose falling too low (overnight, for example), known as hypoglycemia. Insulin can be taken in several forms and combinations to suit each individual: long-acting insulin, intermediate-acting insulins, short/rapid-acting insulin taken with meals, or a mix of short/rapid-acting and intermediate-acting insulins.

Type 2 diabetes is initially treated through changes to lifestyle (healthier diet and increased physical activity), followed by oral antidiabetic drugs. These work either by increasing the production of insulin (sulphonylureas and others), by reducing release of glucose from the liver (metformin) or by delaying absorption of glucose from the gut (metformin and alpha-glucosidase inhibitors).

Many patients also move on to insulin therapy, which is increasingly acknowledged to delay the onset of complications in type 2 diabetes [9, 10, 11].

There are now new treatment options to reduce blood glucose. Among these new treatments are the hormone GLP-1, which stimulates insulin secretion and controls blood glucose levels, and DPP-4 inhibitors (gliptins), which block the action of an enzyme that breaks down hormones of the GLP-1 group (the incretins). Type 2 diabetes can be prevented. Like the other major chronic illnesses (cancer, heart disease and stroke, and respiratory diseases), type 2 diabetes is strongly influenced by poor diet and lack of physical activity (which lead to obesity). Like them, and largely due to these factors, diabetes is spreading rapidly.

But tackling the trend towards overweight and obesity, and beyond into diabetes, needs far more than individual action [12]. It needs all the different organisations, professions and sectors to work together

and in their own ways to help people NOT to develop diabetes. Individual people need to be aware of the dangers, and healthcare professionals need to be able to identify people at risk at an early stage and offer effective advice and treatment.

### Patients and healthcare professionals could work together to share the responsibility for more effective diabetes care, through:

- A diabetes charter to establish the care that patients should expect at all stages of diabetes
- Care planning: Routine care decisions and goal-setting by patients and healthcare professionals working together
- Involvement of patients in designing the care they want, where and by whom it is provided
- Redress for patients if commissioners do not provide the care needed by patients within financial constraints
- Greater focus on ring-fencing finance for structured and local education in the evenings and at weekends, when patients can attend
- Greater use of patient-related experience measures (PREMs) to help healthcare professionals and commissioners locate services that are easily accessible, culturally sensitive and cost-effective. This could significantly increase appropriate uptake of services, and reduce non-attendance.

### Ideally, good diabetes care in the future should:

- Expand initiatives on prevention by encouraging all diabetes-related organisations to educate and motivate the general public in addressing the risks of a sedentary lifestyle and poor diet
- Diagnose diabetes earlier, by providing extra education in diagnosis for doctors and nurses in primary care; and incorporating diabetes screening into general check-ups
- Improve control of diabetes by early access to the most effective therapies, to maximise the time before complications develop [13]. Poor glycaemic control leads to complications and contributes directly to 90% of diabetes cost
- Regularly monitor the nine key health indicators and adjust treatment as appropriate. A personalised, flexible care plan for each patient is needed, with the healthcare team responding to changing circumstances, and access to the full range of healthcare professionals as required
- Ensure structured education is available to everyone with diabetes [14]. All members of the diabetes healthcare team should be familiar with local programmes, which should be an integral part of patient care. Information and education of people with diabetes is vital for the best possible interaction with healthcare professionals, and to ensure that people are engaged and motivated to self-manage effectively. Healthcare professionals involved in care-planning decisions may also benefit from training in



motivational techniques and communication skills.

- Recognise that emotional and psychological support for patients is essential to maintain their commitment to effective self-care (as shown by the Diabetes Attitudes Wishes and Needs [15]. People with diabetes are two to three times more likely than the rest of the population to need emotional support from healthcare professionals, family and friends, both at the time of diagnosis and at later stages [16].
- Acknowledge that children and young people with diabetes have similar clinical needs, but have particular difficulties in relation to self-management in schools, and in their access to specialist healthcare teams who are skilled in paediatric care. Transition from paediatric to adult diabetes services is a critical time of adjustment, when many young people with diabetes allow their care to lapse, with potentially disastrous results. It is vital for young people with diabetes to keep good control, as they have the greatest number of years ahead of them.

Diabetes The human, social and economic challenge. The ideal is an efficient, supportive service, working closely with an engaged, informed patient. This

offers medical and emotional wellbeing support to the patient, and is also an effective and prudent use of healthcare resources. This partnership should be complemented by a network of preventive initiatives to reduce the number of people who develop diabetes in the future[17-22].

## CONCLUSION

It is important to detect coexisting conditions early because prompt intervention can reduce the risk of complications. However, efforts to act quickly are hampered by a lack of awareness among people with type 2 diabetes. Many are not well informed about glucose control, and at times they do not understand their management targets and lack awareness of the conditions associated with type 2 diabetes. This has proved hard to change because, despite increasing public awareness of diabetes, the stigma surrounding the condition stops people from talking about it and learning to manage their condition effectively. Education can overcome this problem provided it is delivered effectively.

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