

# The role of the Diabetes Specialist Nurse

Susan Josephine Cable

Diabetes Specialist Nurse, Ashford and St Peters NHS Foundation Trust, UK

Correspondence: Susan Cable [susanjuncable@gmail.com](mailto:susanjuncable@gmail.com)

The following article focuses upon the essential role of the Diabetes Specialist Nurse (DSN) in the care and management of patients with diabetes. The author is a DSN in the United Kingdom (UK), where the specialist nursing role has become a fundamental and crucial part of the diabetes multidisciplinary team (MDT) and service. The author draws upon her own experiences within the UK as a DSN and discusses ways in which the role could prove advantageous for a low income country such as South Sudan. The article considers key targets for developing countries and how the DSN role could help them to be achieved.

There are two main types of diabetes: type 1 and type 2. Global statistics often do not differentiate between the two, therefore in this article the author refers to both types under the general term of 'diabetes'. There is, however, a greater emphasis placed upon type 2.

*Key words: Role, Diabetes, Specialist, Nurse, DSN.*

## Background

Diabetes has become an increasingly serious health issue on a global scale, with the number of people living with diabetes rising significantly over the last 35 years. There are now reported to be 422 million adults with diabetes (1 in 11) internationally, the majority having type 2 [1]. According to the World Health Organisation (WHO), the biggest increase is amongst low and middle income countries, such as South Sudan, where an estimated 7.43% of the population has diabetes [1]. The rise in diabetes in developing countries is suggested to be due to population growth, ageing and urbanisation: Urbanisation tends to result in physical inactivity and a greater risk of obesity [2].

In developing countries, the majority of people with diabetes are in the 45-64 age range, whereas in developed countries, the majority are aged 64 and above [1]. By 2030, it is estimated that the number of people with diabetes, aged 64 and above, in developing countries, will be over 82 million. In contrast, the number of people with diabetes aged 64 and above in developed countries by this time is estimated to be just over 48 million [1].

## Significance of diabetes

The human and economic costs of the diabetes epidemic is enormous, particularly for developing countries, where the provision of screening services can be poor. There is often limited access to diabetes treatment and a lack of awareness and understanding of the condition and its associated complications [3]. Poorly controlled diabetes can lead to serious health complications, which results in other specialist areas needing to become involved.

This means more pressure upon resources and a greater financial burden being placed upon the health system.

## Complications - See Box 1

There are both short-term and long-term complications that arise from poorly controlled diabetes.

Short-term complications include:

- Hypoglycaemia,
- Diabetic ketoacidosis (DKA) and
- Hyperosmolar hyperglycaemic state (HHS).

Long-term complications include problems with:

- The eyes (retinopathy),
- Kidneys (nephropathy),
- Nerves and feet (neuropathy) and
- Heart (cardiovascular disease) [4].

Those with cardiovascular disease are at a far greater risk of having a heart attack or stroke. Diabetes is also one of the leading causes of vascular dementia and Alzheimer's disease [5].

In South Sudan, diabetes and its associated complications account for more hospital admissions and deaths than any other non-communicable disease [1].

Such complications have dire consequences for a person's health and well-being, as well as a negative impact upon the economies of nations and the finances of individuals and families. The adequate management of blood glucose, blood pressure and cholesterol greatly helps to reduce the risk of such complications. This can only

### BOX 1: What is diabetes?

Diabetes is a life-long metabolic disorder in which blood glucose is raised. Poorly controlled diabetes causes both short-term and long-term complications which are listed in 'Role of Diabetes Nurse Specialist' on page 63.

#### How diabetes develops

Glucose is the main source of energy of the body and is released as we digest food. Insulin, a hormone which is produced in the pancreas, helps glucose to enter into the cells, where it is metabolised to produce energy. Insulin is like a key unlocking the cell so glucose can enter

In diabetes the pancreas produces insufficient insulin or the available insulin is not able to act on the cells (insulin resistance). So, instead of being used to produce energy, glucose accumulates in the blood causing high blood sugar levels (hyperglycemia); some might spill into the urine causing diabetic symptoms such as thirst or frequent urination. However many people with diabetes initially have no symptoms, or mild symptoms, and do not seek medical help until serious complications occur. It is very important for diabetes to be diagnosed as early as possible because it will get progressively worse if left untreated.

There are 3 main types of diabetes:

**Type 1** develops when the insulin-producing cells in the pancreas have been destroyed and the body is unable to produce any insulin. This can develop at any age but usually appears before the age of 40 years, and especially in childhood. About 10% of people with diabetes have type 1.

In type 1 diabetes there is no key (insulin) to unlock the cell so glucose cannot enter, and builds up in the blood

**Type 2** is the most common type of diabetes which occurs when the body becomes resistant to insulin (insulin resistance) or the pancreas does not make enough insulin.

In type 2 diabetes the key (insulin) or the lock on the cell does not work properly so glucose builds up in the blood.

The modifiable risk factors for type 2 diabetes are: obesity, especially abdominal obesity; and sedentary life style.

**Gestational diabetes** - in pregnancy, various hormones increase insulin resistance and in some women glucose levels can rise to diabetic levels. Gestational diabetes can increase the risk to:

- The mother of acquiring complications such as urinary infections, and hypertension; and
- The baby of being born large-for-gestational age and developing diabetes and obesity later in life.

Gestational diabetes usually disappears after pregnancy but mother and child are at increased risk of developing type 2 diabetes later.

Further reading

- What is diabetes? Diabetes UK <https://www.diabetes.org.uk/Guide-to-diabetes/What-is-diabetes/>
- Diabetes. World Health Organization. <http://www.who.int/entity/diabetes/en/>

**Contributed by Ann Burgess**

be achieved through prevention, treatment, education, support, regular check-ups and more specialist input for those who need it [6].

#### Management of diabetes in the UK

In the UK, the diabetes multidisciplinary team (MDT) plays an important role in the prevention and management of diabetes. The main specialist roles include Diabetologists, Inpatient Diabetes Specialist Nurses (DSNs), Community DSNs, Diabetes Dietitians, Podiatrists and Ophthalmologists. The specialist MDT works together across primary (community) and secondary (in hospital) care, providing support, education and specialist input for the management of more complex patients. The MDT helps to provide a seamless service between primary and secondary care and assists General Practitioners (GPs) and Practice Nurses in the community. The GPs and Practice Nurses are the patients' first port

of call for regular check-ups and ongoing management within the community. The MDT is essential in ensuring that patients receive the specialist input they need and this helps avoid complications and hospital admissions.

#### Role of the DSN

The DSN plays a central role in the provision of diabetic care within primary and secondary care and is one of the most active participants within the MDT. The DSN forms a key link between the patient and other healthcare professionals and provides patient-centred care that meets the physical, psychological, social and spiritual needs of the patients and their families [7]. The DSN is recognised as a highly skilled healthcare practitioner in diabetes care who is able to lead, motivate, counsel, educate, coordinate and help manage the care of the diabetic patient.

One key aspect of diabetes care is prevention. The prevention of type 2 diabetes is of utmost importance

and is initially more effective for a person's health and a country's finances, than management via medication at a later stage. Therefore, the DSN plays a key role in education, which includes the education of other healthcare professionals, families, children and young adults. Such education involves discussing any concerns, misconceptions or beliefs the patient or family may have, as well as offering advice on diet and lifestyle.

The DSN plays an important role in the early detection of diabetes and is able to intervene and manage the condition early on. The majority of DSNs have a specialist qualification in diabetes and many are qualified to prescribe as well. The DSNs have a good knowledge base of oral therapy and insulins and are therefore key professionals in deciding when treatment should be commenced and what type of treatment is appropriate. Through regular screening and continuing care, the DSN is able to decide when oral medication needs adjusting and when insulin doses need titrating. This ensures that the patient receives a high quality service that empowers them to manage their condition and avoid illness and hospital admissions. For those patients who are in hospital, the DSN is able to ensure a rapid and appropriate treatment plan for their diabetes.

A steady increase in the number of patients with diabetes results in a severe strain being placed upon the diabetes service and the resources available. The DSN can help ease this pressure by reviewing patients alongside the doctors in the community. Many diabetes clinics are specifically nurse led and these clinics are used as an opportunity to provide education and support in between Consultant appointments and to check blood glucose readings and blood results. DSNs are able to monitor the patient closely and flag up any concerns early on. For those clinics that are Consultant led, DSNs can be on hand to support the clinic and the Consultant, helping with the flow of patients and the quality of care. If the Consultant were to commence a patient on insulin, for instance, the DSN is there to then teach the patient about the regime and practise administration and injection techniques. This frees the Consultant up to see the next patient and it ensures that the patient is safe and confident to start their new treatment plan, without further delay, at home.

In the UK, the majority of patients with diabetes are community based and the DSN plays a vital role in ensuring that they are able to access care and can remain at home rather than coming into hospital. There are various ways in which the DSN is able to reach out to and monitor these patients, for instance in clinics, by visiting them in their own homes, or simply by checking in with them over the telephone.

### **Role of a DSN in South Sudan**

In low and middle income countries, where the

management of diabetes is often poor and resources are lacking, education and prevention is essential. The WHO recommends the provision of education to the general public, including school children, with a focus upon diet and exercise as ways to prevent diabetes [1]. South Sudan has high rates of undernutrition, especially among young children. The availability of affordable, healthy food, alongside the intervention of a DSN and Dietitian, would help prevent or delay type 2 diabetes, as well as improve the health of those already diagnosed.

In South Sudan, the provision of care within the community would be of significant importance in ensuring that people are able to access care and treatment. Likewise, it is in the community that education should initially be provided to individuals, families and communities and preventative measures first put into place. The role of a DSN would help ensure that even the most isolated and poorest of people within society have access to care and their treatment is not hindered or delayed.

### **Conclusion**

The role of the DSN is diverse and needs to continually evolve to respond to the needs of the population and the resources available. Unfortunately, the increasing number of people being diagnosed with diabetes and the strain this has upon resources and finance, can hinder the role from evolving [7]. There are challenges associated with restructuring roles and financing the recruitment and development of staff. It is clear, however, that the DSN role has an immensely positive impact upon the prevention and management of diabetes, which in the long term proves to be extremely cost effective. It is therefore apparent that long term investments need to be made for the future care of patients. By investing in the recruitment, development and retention of DSNs, an investment is also being made into the future healthcare system and economy of the country.

With a steady increase in people being diagnosed with diabetes, there is inevitably going to be an increase in the number of people needing treatment and management plans, especially if further complications develop. The DSN plays an integral role within the prevention, diagnosis and adequate management of diabetes. The specialist role can increase skills, knowledge and confidence, as well as support and empower the person with diabetes to self-manage their condition and reduce the chances of developing further health complications.

There is now an urgency to tackle the diabetes epidemic. World leaders have committed to reducing the burden of diabetes and have listed it as one of the four non-communicable diseases (NCD) to be tackled [8]. The 2030 Agenda for Sustainable Development has set a target to reduce premature mortality from NCDs by one third. The implementation of a DSN in low income countries

such as South Sudan would play a key part in helping to achieve this. In order to achieve targets and reduce the burden the diabetes epidemic has upon patients and the nation's economy, there needs to be a long-term plan for the recruitment and development of diabetes specialist nurses in both primary and secondary care.

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**Letter from Mrs Janet Michael**

Director General for Nursing and Midwifery,  
Ministry of Health  
Republic of South Sudan.

**Diabetes Specialist Nurse**

It is timely that we developed the role of Diabetes Specialist Nurse in South Sudan. Currently we have many people diagnosed with type 2 diabetes in South Sudan without any diabetic specialist service to care for them. Most of the diagnosed patients are middle-aged adults. Records of their demographics do not exist and as such there are no prevalence figures for this condition in South Sudan. There are no doctor run diabetes clinics.

Most people are referred to further evaluation and treatment to Khartoum. A number of patients have suffered lower limb amputations due to complications of diabetes. In the absence of a diabetic clinic patients are not routinely checked for complications of the condition. Testing is random and diabetic drugs are only available in the private pharmacies.

The current situation is dire and needs a trained diabetes specialist nurse to organise the service in order to offer the following clinical services:

- Educate patients and families with diabetes;
- Instigate changes in lifestyle, especially weight control and eating a balanced healthy diet; and
- Provide care needed in a structured environment.

I hope that these comments will stimulate interest overseas to help us set up this service in Juba (See back page for details). The Juba College of Nursing and Midwifery has graduated a number of high calibre nurses who are potentially trainable to take on this role in South Sudan.