

# Diabetic foot care and prevention in Senegal: adding an extra dimension to the Step-by-Step model

*Koen Slootmaeckers, Kristen Van Acker, Maimouna Ndour Mbaye*

Every 30 seconds, a lower limb is amputated as a result of diabetes; of all the amputations in the world, about 70% are suffered by people with diabetes – foot ulceration being a key factor in developing regions. Yet these amputations can be prevented. As well as medical factors, numerous social and socio-environmental issues affect the development of diabetic foot problems. This report focuses on Africa-specific factors. Although in Africa neuropathy is a major contributing factor, it is not the only one: even a simple injury that becomes infected can be a precursor to amputation. The authors reflect on some of the factors affecting diabetes care in Senegal, and make some suggestions for improvements in the prevention and management of the diabetic foot.

Infection and neuropathy are both more common as a consequence of inadequate management of diabetes. In Africa, this can be explained to a large extent by the widespread lack of knowledge and awareness of diabetes among the general population and healthcare providers. Moreover, it is estimated that in developing countries only around half the people with diabetes are diagnosed – which makes the prevention of complications impossible. Weak healthcare infrastructures, long distances between medical centres, insufficient knowledge of diabetes care and the weak supply chains that make medical supplies inaccessible to millions are among the many possible causes of inadequate treatment and care. This lack of knowledge and infrastructure in Africa has resulted from the prioritization of care for acute illnesses, where most of the attention goes to remedial care and little to chronic disease management.

Misconceptions and/or superstitions also can lead to inadequate treatment. The use of traditional medicines can slow down the process of diagnosis and often lead to mistreatment. For example, when a person has a wound on her



The Marc Sankale Diabetes Centre in Dakar has taken important steps to integrate prevention into diabetes care services.

foot, she may go to a traditional doctor, who will provide her with a talisman, known in some regions as a 'gri-gri', that is worn somewhere on the body, which is supposed to either offer protection or boost a person's strength. The person believes that she is safe with the protection of the talisman and will not seek further medical aid.

#### **The Step-by-Step model**

Prevention has been integrated into care at the Marc Sankale Diabetes Centre in Dakar. The Centre has taken some important steps: a community worker has received diabetes education, for example, in order to provide necessary and appropriate education to people with the condition. However, to reduce the impact of the diabetic foot and enhance the process of de-centralization, the healthcare team at the Centre plans to initiate a 'Step-by-Step' model of intervention in the near future.

*The Step-by-Step model has the necessary flexibility for adaptation to particular local needs and circumstances.*

The Step-by-Step prevention programme was developed by the International Working Group on the Diabetes Foot, the

International Diabetes Federation and the World Diabetes Foundation with the main aim of reducing the number of amputations caused by diabetes.<sup>1</sup> The Step-by-Step model is the result of cooperation between professionals from developed and developing countries. As such, it is appropriate for use in low- and middle-income countries and has as part of its design the necessary flexibility for adaptation to particular local needs and circumstances.

*Secondary prevention does not address the underlying causes of diabetes foot-related problems.*

Under the Step-by-Step model, doctors and paramedics receive diabetes-specific education. The approach has as a key objective the creation of improved infrastructure and adequate and appropriate care. The prevention of wounds and lesions is also an overarching objective. Healthcare providers who have received diabetes-specific education in the Step-by-Step programme go on to train their colleagues in the field and provide education to people in their care.

Yet while this secondary prevention is very necessary, it does not address the underlying causes of diabetes foot-related problems. A change of values is required. Socio-cultural

factors, such as religious superstitions and strong belief in traditional medicine, play a role in the development of the diabetic foot. To minimize the influence of these factors, it is important that people with diabetes, including those yet to be diagnosed, develop a sense of trust and confidence in the centres and their healthcare teams.

Many people in Senegal, like many millions more living in developed as well as developing countries around the world, are unaware of the reality of living with diabetes. Widespread misconceptions condition people's reaction to diabetes. There is an urgent need for a large-scale ongoing campaign of awareness to provide the general population with information on diabetes, its symptoms and possible consequences. The mass media could be used to send out messages about healthy eating habits, for example. Traditional healers and religious leaders could be brought into a diabetes prevention programme: they could be offered diabetes education to be able to identify people at risk and redirect them to specified centres and/or make appropriate recommendations for a healthy lifestyle.

### *Medication needs to be made cheaper and more easily accessible throughout the country*

The government and policymakers must be convinced of the scale of the threat to public health and investments posed by chronic diseases. Healthcare infrastructure built around a chronic disease model is crucial; medication needs to be made cheaper and more easily accessible throughout the country in order to delay or prevent the disabling and life-threatening complications of diabetes.

Any programme needs to place a strong emphasis on evaluation, which should include people's levels of knowledge. Patient records that include assessment of a person's progress in terms of diabetes education will be valuable. Epidemiological and demographic models would be applied to gauge the evolution of diabetes and diabetic foot countrywide. With adequate investment (time, resources) in the recoding of necessary data during the implementation of an intervention, a comparison can be made after a few years between the estimated and the actual evolution of the disease.

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#### **Bibliography**

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