

Partnership for better diabetes care in the developing world

Novo Nordisk and the National Diabetes Programme



Cover photo: Halfan Muhingo (type 2 diabetes) and his children, Tanzania.

Building bridges to better diabetes care



The diabetes pandemic is escalating faster than many countries can handle, particularly in the developing world. As a global leader in diabetes care with a long tradition of being present in the developing world, Novo Nordisk is helping to address this healthcare crisis.

With our commitment to social responsibility, we think it is important to get diabetes on the public agenda, drive earlier diagnosis and treatment and improve the quality of life for people with diabetes.

The National Diabetes Programme (NDP) is a partnership approach. No one company, organisation or institution can tackle the diabetes pandemic alone, particularly in poor countries with limited economic resources and many competing healthcare needs. In communities across Africa, South and Central America and Asia, we are working with our local partners to make a difference.

A handwritten signature in blue ink that reads "Lise Kingo". The signature is fluid and cursive, with the first name "Lise" and last name "Kingo" clearly distinguishable.

Lise Kingo

Executive Vice President, Novo Nordisk

Diabetes: a silent killer

Few headlines report the devastating human, social and economic impact of diabetes. But the fact is that diabetes kills more people each year than HIV/AIDS. About 194 million people worldwide have diabetes – 5.1% of all adults. In 20 years, according to the World Health Organisation (WHO), this number is expected to soar to 333 million, or 6.3% of all adults.

Many do not even know they have diabetes. For every person diagnosed with diabetes, it is estimated that two to three are unaware that they have the condition.

While communicable diseases like malaria and HIV/AIDS should be prioritised, non-communicable diseases like diabetes cannot be ignored. Diabetes is increasingly affecting poor countries. Rapid cultural and social changes and increased urbanisation, which often lead to unhealthy diets and reduced physical activity, are creating an unprecedented boom in type 2 diabetes in the developing world. Most of the explosion in diabetes worldwide will occur in these countries.

Yet, despite this grim scenario, not even 1% of total global spending on healthcare, both private and public, is devoted to fighting chronic, non-communicable diseases like diabetes.

Health systems failing chronic care

Chronic diseases like diabetes are complex conditions that require education and lifelong monitoring and care by the person with diabetes and his or her healthcare professionals. However, people with type 2 diabetes can often be treated effectively with proper diet and exer-

cise. Good diabetes care is as dependent on education and awareness as it is on insulin or other pharmaceutical products.

Unfortunately, most healthcare systems – particularly in the developing world – are not equipped to offer this essential package of education, constant monitoring and psychosocial support. Most healthcare systems are geared to treating acute problems. But too often, due to late diagnosis, diabetes does become an acute problem – in the form of complications like cardiovascular disease, renal failure, blindness and amputations. In the meantime, a precious opportunity to improve quality of life and save healthcare money has been lost.

A new approach to chronic care

To address chronic diseases, countries need to make sure the infrastructure for chronic disease care is available – the health professionals, facilities, government support, education and training as well as the funding. Once this is in place, all people with chronic diseases will benefit from the more efficient use of the entire healthcare system.

If more people can be diagnosed and treated before they develop complications, hospitalisation and treatment costs will drop and society will have more productive people enjoying a higher quality of life.

We cannot do it alone

The diabetes pandemic is too big a problem for any single company, organisation or government body to solve on its own. As a leader in diabetes care, we are focused on doing everything we can to defeat diabetes. But with more than 80 years of insight into diabetes care, we know that successfully treating this disease is much more than prescribing insulin.

For us, solutions lie in partnership. Novo Nordisk has long collaborated with many different partners in the healthcare sector to improve the quality and life of people with diabetes. Over time, we have developed close relationships with diabetes organisations, ministries of health and other stakeholders.

For example, Novo Nordisk is actively supporting a joint WHO and IDF initiative to develop the African Declaration on Diabetes. This is more than just a piece of paper. Similar commitments, such as the one for the Western Pacific region and another for the Americas, have focused attention on diabetes and inspired governments and other stakeholders to take action.

“Only comprehensive approaches which cover the entire spectrum of interventions have a chance of controlling a chronic health problem in a community.”

Rafael Bengoa, Director of the Department of Health Systems Policies at the WHO.



Building a sustainable approach

At Novo Nordisk, we have modelled our approach to the diabetes pandemic based on the four priorities of the WHO for addressing chronic conditions:

- ⦿ Development of national healthcare strategies
- ⦿ Building national healthcare capacity
- ⦿ The best possible pricing
- ⦿ Additional funding

National strategies and capacity building are at the heart of the National Diabetes Programme. To address additional funding, in 2001



WDF board of directors visit a diabetic foot clinic in Tanzania.

Novo Nordisk established the World Diabetes Foundation (WDF) with an endowment of DKK 500 million (about USD 82 million) to be spent over a ten-year period to help prevent and treat diabetes in the developing countries.

The National Diabetes Programme in developing countries was launched in 2001 with a compendium of our initiatives in the developing world. Next, we analysed the state of diabetes care in Bangladesh, Malaysia, Tanzania, Zambia, El Salvador and Costa Rica and created a model for access to diabetes care in the developing world (see p. 9). The model is now being put into practice in these countries as well as in China and India.

The goal of the National Diabetes Programme is to leave behind something of value – a foundation for local intervention and local capacity building. All efforts on the ground need to be sustainable so that our partners can continue the activity independently in the long term. We also make our products more affordable to poor countries through our best possible pricing scheme.*

* Under the best possible pricing scheme, Novo Nordisk allows public health systems in the Least Developed Countries (LDC) to purchase insulin products at a price not to exceed 20% of the average price in North America, Europe and Japan.

“Creating national diabetes programmes where they do not exist and implementing where they do will help to reduce the burden of diabetes on individuals and society.”

Professor Pierre Lefèbvre, President of the International Diabetes Federation and Chairman of the WDF.



Sustainable diabetes care model

The model recognises critical success factors in addressing access to diabetes care in the developing world. To make the model work in practice, we, together with our local partners, identify areas where we can make a difference. We exchange expertise and knowledge, help find funding, and set measurable goals and targets.

Drivers

- ⊙ Local champions
- ⊙ Government's political will
- ⊙ Economic resources

Diabetes awareness and education

- ⊙ Awareness of burden of diabetes
- ⊙ National plans and strategies
- ⊙ Public education programmes for people with diabetes
- ⊙ Clinical practice guidelines
- ⊙ Professional continuing medical education programmes

Infrastructure

- ⊙ Access to diabetes care facilities
- ⊙ Access to medicine and equipment

Halfan Muhingo and his children. Halfan has type 2 diabetes and lives in Tanzania.



CASE STORY: TANZANIA

Bringing hope to Tanzania

In Tanzania, Dr Kaushik Ramaiya, the honorary general secretary of the Tanzania Diabetes Association (TDA), is a local champion for better diabetes care. In his 20 years of working with diabetes in the country, he has seen too often that people first learn they have diabetes when they come to the hospital with serious complications such as blindness, foot ulcer or stroke.

The TDA wants that situation to change, which is why it is working to organise and coordinate a diabetes treatment strategy. A national diabetes centre, three district clinics and 19 regional clinics have been established throughout Tanzania and Zanzibar through funding and technical and expert assistance from Novo Nordisk and the WDF.

The national diabetes centre at Muhimbili National Hospital in Dar es Salaam, which opened in March 2003, is staffed by three nurses and several diabetes specialists working in rotation. It will serve as a centre of excellence in Tanzania, eventually incorporating a medical laboratory, a foot clinic and a diabetes information centre that trains doctors, nurses and people with diabetes from around the country.

Novo Nordisk has a partnership agreement to help run the diabetes centre, which was funded by money raised by Novo Nordisk employees, until the end of 2005. Novo Nordisk is funding the training and education of some 200 healthcare professionals in Tanzania during 2004/2005.

The Ministry of Health (MOH) in Tanzania has shown political support for diabetes care and provided the basic infrastructure for the diabetes clinics, which are located in public hospitals. It is also providing



Women waiting for diabetes treatment in Tanzania.

doctors and nurses for the diabetes clinics. The government is now considering the development of a national diabetes plan, long advocated by the TDA.

The centre and clinics are expected to eventually serve some 100,000 Tanzanians with diabetes. The goal is that the Tanzanians will eventually be able to run the clinics and programmes entirely on their own, as a truly sustainable solution.

"Thanks to these regional clinics and the doctors and nurses being trained to staff them, people will now be able to get the medicine, treatment and continuous monitoring they need."

Dr Kaushik Ramaiya, honorary general secretary of the Tanzania Diabetes Association.



CASE STORY: ZAMBIA

Putting diabetes on the agenda

Until recently, diabetes was a low priority on the healthcare agenda of Zambia, which focuses its limited resources on fighting major infectious diseases such as HIV/AIDS, malaria and tuberculosis. But thanks to advocacy from the national diabetes association, the government is now drafting a strategy for non-communicable diseases that includes diabetes.

In November 2003, Novo Nordisk worked with the association to open the country's first diabetes centre at the university hospital in the capital, Lusaka. The costs of running the diabetes centre is paid for by Novo Nordisk and it is run by the diabetes association.

The diabetes association is also given administrative assistance in its efforts to raise awareness about diabetes among the general public. This includes events on the annual World Diabetes Day; in 2003 the association went to the Parliament to offer free blood glucose measurements and to draw lawmakers' attention to the growing problem of diabetes in Zambia.

Under the NDP in Zambia, nurses from around the country have also begun training in diabetes care.

CASE STORY: EL SALVADOR

Support on the ground in El Salvador

The people with diabetes of El Salvador have an advocate in Ana Gladys.

She works tirelessly on their behalf as the president of the diabetes association of El Salvador, ASADI. But while the association has the will to spread awareness and education, it lacks funds.

That is where Novo Nordisk has stepped in to bolster the work of ASADI by providing funding for patient education. Novo Nordisk is also providing the necessary infrastructure to set up chapters of ASADI outside of the capital, San Salvador.

Now, working together with the association and the Rosales National Hospital, doctors will soon be coming from all over the country to be trained in diabetes care at the capital's main hospital. And importantly, Novo Nordisk and its partners in El Salvador, including the Pan-American Health Organisation, are supporting the Ministry of Health in putting into action a draft plan on national diabetes care.

"Combating diabetes is not something an association like ASADI can do alone. It involves teamwork with participation of people with diabetes, doctors, and the pharmaceutical industry. Novo Nordisk's support has enabled us to strengthen the association and improve educational activities."

Ana Gladys Aparicio de Cortez, president of ASADI.





Godofredo Aguilar from El Salvador. Godofredo is blind because of diabetes. Bottom: Children with diabetes participating in an educational games organized by ASADI.



CASE STORY: COSTA RICA

Reducing complications in Costa Rica

Compared to many developing countries, Costa Rica is in an enviable position.

In Costa Rica, access to healthcare and medicine is provided free of charge to all citizens. But access alone is sometimes not enough. For example, there is an unusually high number of complications that could be avoided through better education and self-care.

Insulin treatment and other self-care measures administered at home by people with type 1 diabetes can help prevent repeated visits to the hospital for acute complications.

A programme run by Novo Nordisk in coordination with a major hospital in the capital, San Jose, employs a nurse and a dietician to educate people with diabetes in their home setting about how they can take better care of themselves. This complements the government-run diabetes education programme that takes place at the hospital. Through this joint effort, it is hoped that the rate of acute complications will decline.

The NDP in Costa Rica also offers courses and training to help doctors become even more informed about diabetes treatment.

CASE STORY: BANGLADESH

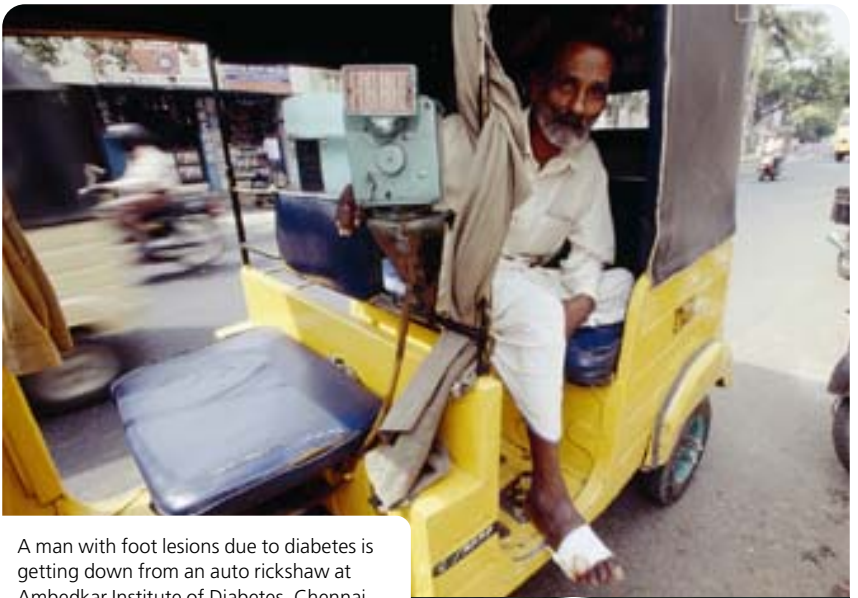
Working with diabetes associations

In Bangladesh people with diabetes have come to rely on the Diabetes Association of Bangladesh (DAB). The association owns a network of hospitals through which it makes enough profit to subsidise diabetes care for those too poor to pay. The idea of establishing hospitals that treat many kinds of disease, and use the profits to help poor people with diabetes, is a model for other developing countries.

Novo Nordisk has been working with the DAB since 1972. In one project, we provide funding for distance learning programmes developed in collaboration with the United Kingdom's Open University that provide continuing education in diabetes treatment for doctors.

During 2004–05, some 300 doctors will take part in intensive diabetes care training over six month periods taught by Bangladesh health care professionals. Also in 2004, some 30 nurses will receive additional education and training and will in turn train other nurses on diabetes. A programme aimed at the needs of children with diabetes is also being developed.

Foot complications is another serious challenge that needed to be addressed. Through the NDP, Novo Nordisk helped set up a foot clinic at the major diabetes hospital in the capital, Dhaka (BIRDEM). The clinic opened in autumn 2003.



A man with foot lesions due to diabetes is getting down from an auto rickshaw at Ambedkar Institute of Diabetes, Chennai. Bottom: Diet display at one of the awareness exhibitions organised in India.



CASE STORY: INDIA

Taking on a huge challenge in India

India leads the world in the largest number of people with diabetes. This presents a huge challenge to everyone seeking to address the diabetes pandemic in India.

The Novo Nordisk affiliate in India, through the Novo Nordisk Education Foundation (NNEF), is working closely with the WHO Collaborating Centre in Chennai and the government of India to formulate the National Diabetes Control Programme (NDCP). The NDCP will focus on capacity building, training doctors and paramedics and raising public awareness about diabetes.

Novo Nordisk holds regular public exhibitions on diabetes in major cities across India, visited by about 250,000 people. Entry is free, or at a nominal amount. In addition to informational displays, there are free health screenings and talks given by dietitians, exercise specialists and doctors. In the cities where the exhibitions are held, people are more likely to visit doctors afterwards boosting diagnosis rates.

NNEF also conducts courses for training doctors and paramedics on diabetes foot care, with some 500 people trained so far. In a joint co-operation between the University of Newcastle, Australia, and NNEF, about 438 doctors have received further education on all aspects of diabetes care.

CASE STORY: CHINA

Driving a national approach in China

In a country as vast as China, efforts to halt the alarming spread of diabetes must be coordinated at a national level. That is the aim of the China National Diabetes Management Programme launched in 2002.

Working closely with the Ministry of Health, Novo Nordisk and the WDF have invested USD 2.9 million to develop and promote this programme of national diabetes prevention and treatment over the next five years.

The goal is to bring diabetes treatment programmes to hospital and community health centres in 311 cities and townships and train about 20,000 doctors annually in diabetes care.

Meanwhile, the Novo Nordisk affiliate in China is offering an education programme called NovoCare for people with diabetes. They can visit one of 70 patient education centres located at hospitals or any of the 20 community diabetes education centres.

Novo Nordisk formed the NovoCare Club, with over 170,000 members, aimed at raising awareness among people with diabetes. It also sponsors a camp for children with diabetes to learn better self-care. Getting the word out about diabetes has resulted in articles or programmes appearing in some 135 media outlets.



Beijing Insulin Diabetes Hospital, China. Gui Yuming (type 2 diabetes), nurse Teng Zhixin and doctor Lei Guohong.

CASE STORY: MALAYSIA

Building on a strong foundation

Malaysia has a national healthcare system that provides free access to doctors and medicine. This means that thanks to adequate healthcare professionals and facilities – and a national diabetes programme – people with diabetes in Malaysia have the opportunity for good care.

Helping healthcare professionals stay up to date on the latest diabetes treatment advances, including earlier treatment with insulin for type 2 diabetes, is the goal of the NDP programme in Malaysia.

With the support of the Ministry of Health in Malaysia, our main partner in the country, national diabetes seminars and smaller regional meetings have been attended by more than 500 doctors. These seminars provide more in-depth knowledge of treatment of diabetes so doctors can provide even better care to patients.

Helping patients take proper care of their feet to avoid complications that can lead to amputation is another focus of the education programme for doctors in Malaysia.

Making a difference

These are only a few examples of what can be accomplished through partnership. The National Diabetes Programme can be tailored to meet the needs of any developing country trying to stem the diabetes pandemic. As the examples show, such efforts need not be costly. Education and training for professionals, people with diabetes and the general public is a model for dealing with many other chronic diseases.

Novo Nordisk welcomes cooperation with those who share our goals in improving the current state of diabetes care in the developing world.



For more information on Novo Nordisk's National Diabetes Programme in the developing world, please contact:

Mapoko Mbelenge Ilondo, MD, PhD
Senior Advisor, Corporate Diabetes Programmes
Novo Nordisk A/S
Tel: +45 4442 1622

milo@novonordisk.com

Global health remains more a promise than a reality. As a world leader in diabetes care, we believe we can play an important role in helping people with diabetes around the world achieve greater access to health.

Novo Nordisk A/S
Novo Allé
2880 Bagsværd
Denmark

Tel +45 4444 8888
Fax +45 4449 0555

novonordisk.com

