



WORLD **DIABETES** FOUNDATION

ANNUAL REVIEW 2007

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Whereas type 1 and 2 diabetes are chronic conditions, gestational diabetes mellitus (GDM) usually disappears after childbirth. However GDM can have serious consequences for the health of the mother and child, both in the short and long term.

The elevated blood glucose levels can affect the child in the womb by increasing its weight abnormally, or causing birth defects such as malformations in fingers and toes and can affect the heart and brain.

In the state of Tamil Nadu in India, 10% of all 1.5 million annual pregnancies end as miscarriages. The stillbirth rate is 14 per 1000 live births, covering all causes. It is estimated that 15% of the total number of caesarean sections may be due to GDM.

GDM is one of the focus areas of the World Diabetes Foundation.

HAPPY NEW YEAR - 2004



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BREAKING THE VICIOUS CIRCLE

Chronic diseases and poverty are interconnected in a vicious circle; as in almost all countries, the poorest people are the ones most at risk of developing chronic diseases and dying prematurely from the severe complications, or suffering long term from the associated morbidity. This is why the World Diabetes Foundation is dedicated to improving the lives of people with diabetes in the developing world.

Every 10 seconds someone dies of diabetes. In the same 10 seconds two people develop the disease

There are currently almost 246 million people with diabetes worldwide and within 20 years this number is expected to rise to a stunning 380 million. Once considered a condition limited to the developed countries, the fact is that poorer nations are experiencing a rising prevalence of diabetes on a scale which can only be described as catastrophic

According to the International Diabetes Federation (IDF), diabetes is expected to cause 3.8 million deaths worldwide in 2007, roughly 6% of total world mortality - about the same as HIV/AIDS and malaria combined.

The burden of diabetes care threatens to undermine the benefits of improved standards of living, education and economic growth. At the individual level, the devastating effects of diabetes on families translate into significant losses for every individual in society. The mechanisms are many; loss of investments in trained labour; increased taxation for medical care and support of the disabled; the economic failure of family units and small businesses; withdrawal of children from education (especially girls) to care for ailing relatives; and the general loss of the hope and self-reliance that ultimately drives all economic growth.

The cost of not treating diabetes is much greater than the cost of proper treatment. Changes to the living environment, early detection and the adoption of proven measures to prevent diabetes can significantly and cost-effectively lower the risk of developing type 2 diabetes, delay its onset or at least reduce its complications.

“For people with type 1 diabetes, it is not yet possible to prevent the disease. However, much can be done to prevent or delay diabetes complications if people have access to adequate care, medication and monitoring equipment. Investing in improving diabetes care has a pay-off for society that far exceeds the savings in dollars,” says Professor Martin Silink, President of the International Diabetes Federation.

Sustainable involvement

A cornerstone in the World Diabetes Foundation's efforts to further the prevention and treatment of diabetes in the developing world has been to ensure the involvement and ownership of the projects amongst the implementing partners and local stakeholders – from government officials to local physicians – and the ability to create enthusiasm for local activities. “We know most of our project partners do work beyond what would be the normal call of duty. The degree of local ownership, political will and commitment has a direct impact on the success of our projects and without local involvement, the sustainability of the project is lost,” says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.



This year's Annual Review include examples of best practices from around the world, demonstrating how even the smallest investments and partnerships can accelerate a catalytic effect. The replicable projects displayed in the Annual Review are examples of how political will and personal commitment to change the dire projections for the future can secure the necessary resources and attention required to establish infrastructure, build capacity, create awareness and achieve health equity.

Impact through advocacy

An important event that took place this year was the adoption of a declaration and resolution¹ on diabetes amongst the 46 member states of the World Health Organization, Regional Office for Africa (WHO AFRO). The declaration was announced as an outcome of the fifty-seventh session of the WHO Regional Committee for Africa held in Brazzaville, Congo.

"The adopted strategy on diabetes urges member states to evaluate the magnitude of diabetes and identify and improve areas of intervention in terms of primary, secondary and tertiary prevention activities. The declaration is a significant step forward in ensuring diabetes care and prevention in the African Region and a major step forward in ensuring that national policies, plans and programmes are strengthened and the necessary resources are being allocated," says Dr. Boureima Hama Sambo, Regional Advisor for Non-

communicable Diseases Management (NDM), at the WHO's Regional Office for Africa.

A similar urge to address the challenges of chronic non-communicable diseases is pledged by a new collaborating partner of the Foundation, the World Bank. Focusing on emerging problems, the World Bank has issued a call for immediate action targeted at the international society and governments throughout the developing world.

"Addressing this challenge will require policy makers to design and implement economic, health, and social policies to address the links between non-communicable diseases and poverty and to minimise the health and economic losses among the population for example through public health interventions and improved health care. Success in reducing the non-communicable disease burden will require action across many fronts," says Senior Health Specialist from the World Bank's Middle East and North Africa Region, Dr. Anne Stæhr Johansen.

The joining of forces at global, regional and national levels is necessary to address the imminent threat to world health and break the vicious circle. At the World Diabetes Foundation, we work at all three levels, creating alliances and identifying local ambassadors to influence the health agenda, and develop health policies and programmes to support sustainable solutions. In the following we have sought to describe several of these interventions that underpin the Foundation's value compliance and mission.

Seven of the 10 countries with the highest number of people living with diabetes are in the developing world and in 2025, 80% of all diabetes cases will be in low and middle-income countries

According to a new World Bank report, non-communicable diseases will dominate health care needs in most low- and middle-income countries within a few decades as a result of the epidemiological transition and aging

¹) Diabetes prevention and control: A strategy for WHO African Region and a resolution



TOMORROW'S BURDEN, TODAY'S **BATTLE**

Chronic non-communicable diseases, including diabetes, cardiovascular disease, cancer and chronic respiratory disease are the leading cause of death and disability but are surprisingly neglected issues on the global health agenda. They are widely neglected as development issues and underestimated as diseases with profound economic consequences. It is, however, possible to significantly reduce the rates of death by applying a sustainable and tangible set of interventions directed towards whole populations and high-risk individuals. These are interventions that have not only proven realistic to implement, but also highly cost-effective in the long term.



Professor Pierre Lefebvre

At the global level, 35 million people die from non-communicable diseases each year. In the developing countries non-communicable diseases are evolving rapidly, yet a general misunderstanding is that chronic diseases affect mostly high-income countries; in reality 80% of deaths from chronic diseases occur in low-and middle-income countries. Non-communicable diseases are by far the major cause of death in lower-middle, upper-middle, and high-income countries, and according to the World Health Organisation (WHO), they will also be the leading cause of death in low-income countries by 2015. If nothing is done to reduce the risk of non-

communicable diseases, an estimated USD 84 billion of economic production will be lost from heart disease, stroke, and diabetes alone in developing countries and middle-income countries such as China, India, Russia and Brazil. The rising burden of non-communicable diseases will be particularly severe in low-income and middle-income countries which can least afford a health-related setback to development. In these countries, resources for treatment are already stretched to the limit, and chronic disease prevention – focusing on reducing known, modifiable risk factors – will therefore be central to incidence and mortality reductions.

The double disease burden

While focus in the developing countries and amongst donor countries has traditionally been on communicable diseases, the fact remains that the very same countries that are struggling to cope with issues related to maternal and child health, safe drinking water and infectious diseases, also face the huge burden of non-communicable diseases. This presents them with a double burden. Non-communicable diseases and infectious diseases like tuberculosis, malaria and HIV/ AIDS often hit the same populations.

We also know that cardiovascular disease and diabetes interact in the metabolic syndrome. Other essential studies have provided proof of evidence that tuberculosis and HIV/AIDS interact, and vice-versa tuberculosis and diabetes interact. HIV/ AIDS treatments (such as antiretroviral drugs) may induce both cardiovascular disease and diabetes in the long term. This particular double disease burden therefore calls for a dual effort taking in consideration the health issues of both communicable and non-communicable diseases and joining forces to utilize the same health infrastructure to provide sustainable access to care.

Prevention and the effective treatment of chronic and non-communicable diseases like diabetes is not particularly costly. In contrast, in both human and economic terms, not treating the condition is extremely costly. Such a lack of treatment results in costs that will stunt economic growth in the developing world, undermine the benefits of improved standards of living and education and will have a negative impact on the achievement of the Millennium Development Goals.

Non-communicable diseases on the agenda

In recognition of the interconnection between a broad range of diseases and the inherent potential for achieving obvious synergies in terms of utilising the same human resources, skills and health infrastructure, the World Diabetes Foundation – in addition to the existing projects – is actively starting to support broad non-communicable disease programmes and health promotion in the developing countries. Working with national ministries of health, local non-governmental organisations, diabetes associations, health industry, health care providers and bilateral donors we use our expertise in diabetes as an entry point to assist in the formulation of long term, comprehensive and holistic interventions that can be fully incorporated in national policies and action plans. Diabetes is associated with many more co-

morbidities and complications than any other non-communicable disease, which makes it an obvious entry point for targeting the whole range of non-communicable diseases.

Building health promotion programmes and targeting diabetes prevention has not only a salutary effect on diabetes but also on the risk of hypertension, cancer, stroke, and heart diseases. In facilitating an outpatient clinic that provides diabetes screening and care services, that clinic can also be used to provide services for hypertension, obesity and heart disease. In addressing nutrition and healthy living with school children, the preventive effect is seen across the range of most non-communicable diseases.

National programmes

Another key focus area for the Foundation is to address the apparent lack of formulated health policies, strategies and action plans to address the emerging pandemic of diabetes and other non-communicable diseases. Isolated interventions do take place, but in the absence of an overall framework guiding the process and ensuring sustainability, planning, coherence and impact may suffer. The World Diabetes Foundation has therefore found it a logical next step to facilitate sustainability of the individual projects in a country by ensuring – where possible – that the interventions are elevated to a national strategy in a national non-communicable disease programme. A national health programme combines the efforts towards improving access to health care with primary and secondary prevention, under the umbrella of a government-endorsed network of stakeholders, joined in the fight against diabetes and other non-communicable diseases.

By doing so, we ensure that diabetes and non-communicable diseases in general are included in the national health strategies and are approached with the necessary commitment and resources required to fight the imminent socio-economic burden of non-communicable diseases in the developing countries and for people who are least able to withstand the burden of ill-health.



Non-communicable disease mortality in low- and middle-income countries is alone expected to cause 27.2 million deaths in 2015 and 34.3 million by 2030. These trends are worrisome and call for immediate action!

Considering mainly the effects of premature mortality, the WHO estimates that between 2005 and 2014 diabetes, heart disease and stroke combined will cost USD 555.7 billion in lost national income in China, USD 336.6 billion in India and USD 2.5 billion in a low-income country like Tanzania

On average, people with type 2 diabetes will die 5-10 years before people without diabetes and mostly due to cardiovascular disease. Cardiovascular disease is the major cause of death in diabetes, accounting for some 50% of all diabetes fatalities, and much disability

Professor Pierre Lefèbvre
Chairman,
World Diabetes Foundation



PLANTING SEEDS FOR LONG TERM **CHANGE**

Five years ago, the World Diabetes Foundation set out with the purpose of improving the prevention and treatment of diabetes in developing countries. This was driven by an ambition to alleviate human suffering related to diabetes and its complications among those least able to withstand the burden of the disease. Our mission is far from complete, however the targeted efforts already provide care and relief to millions of people, and the footprints of these interventions can be seen across the world.



Dr. Anil Kapur

An important milestone in the global fight against diabetes was reached last year with the United Nations Resolution on Diabetes which designated November 14th as World Diabetes Day (WDD) to be celebrated each year as an UN-observed WDD. The resolution was a result of the IDF-led “Unite for Diabetes” campaign supported by an alliance of key diabetes stakeholders which resulted in the recognition of diabetes as a chronic, debilitating disease associated with major complications. The World Diabetes Foundation contributed significantly to the WDD campaign through coordinating a major awareness initiative involving the Global Diabetes Walk in collaboration with IDF and its member associations which mobilized 207,694 people from 70 countries. In addition we co-produced the official WDD film which was displayed at the United Nations non-governmental organisation meeting that took place in New York, November 2007.

Throughout the world, governments have acknowledged that diabetes is increasingly becoming an epidemic that is affecting all countries. In line with the Foundation’s quest to place diabetes higher on national health agendas, the UN Resolution has served a great purpose as it invites and encourages Member States to develop sustainable national policies and programmes to address the health problems related to diabetes. This invitation has already yielded results.

As described in several of the World Diabetes Foundation-supported projects addressed in this Annual Review, more and more of the national health authorities support initiatives aimed at reducing the burden of diabetes and other non-communicable diseases.

WDF initiatives in 2007

Of the many initiatives supported by the Foundation in 2007, I would particularly like to highlight a selection of our global awareness, advocacy and image-building programmes undertaken this year.

To mark our fifth anniversary we organised a high level panel discussion with the participation of representatives from the World Bank, the World Health Organization, the International Diabetes Federation, and the Danish Minister for Development Cooperation along with industry, public health and development experts.

The discussion highlighted how public-private partnerships can spur incentives for sustainable funding which can complement governmental as well as bilateral and multilateral programmes in developing countries.

The World Diabetes Foundation was invited to an important consultation forum on diabetes held in Brazzaville on 6-7th March 2007. The consultation aimed at strengthening the partnership to

address the growing burden of diabetes and non-communicable diseases in the African Region. The meeting concluded that partners need to work closely with WHO AFRO to set up a wide framework for assistance and collaboration in order to improve efforts directed at the prevention and control of diabetes and related non-communicable diseases. This meeting, the African Declaration on Diabetes, UN Resolution on Diabetes and the Diabetes Summit Africa all paved the way for the WHO Regional Committee for Africa in declaring diabetes prevention and care as one of the top five focus areas for the WHO African Region. These advocacy efforts will ensure that many countries in Africa will feel encouraged to develop and strengthen national policies and programmes targeting diabetes and non-communicable diseases.

Advocacy and awareness

The World Diabetes Foundation organised the Diabetes Summit Africa in Nairobi, Kenya in cooperation with the World Health Organization Regional Office for Africa (WHO AFRO), the International Diabetes Federation African Region (IDF AFRICA) and the Ministry of Health in Kenya. More than 230 delegates from 25 countries in Sub-Saharan Africa, leading global health experts, ministers of health from Niger, Guinea Conakry, Kenya, representatives from bilateral donor organisations and national health authorities convened at the Diabetes Summit Africa.

In our efforts to create public awareness of diabetes in children, and raise additional money for the work of the Foundation, a charity opera concert was organised in London this year. The opera concert - Together in Song - was arranged by opera performer Mr. Jeffrey Black - whose son James has diabetes. The event took place on October 14th 2007 at the Cadogan Hall in London with the participation of 500 people. Proceeds from the event, including ticket sales and corporate sponsorships from Novo Nordisk UK, John Wiley & Sons and other individual contributions, were donated to a World Diabetes Foundation-supported project in Cambodia.

Diabetes in the Eastern Mediterranean Region and the Gulf was in focus at a major health economics and diabetes conference co-hosted by the World Diabetes Foundation and organised by the Health Minister's Council for the Cooperation Council States in collaboration with the World Bank and other major stakeholders. The ultimate goal of the multi-stakeholder conference was to increase the knowledge of government officials, policy makers and others concerned of the disastrous

economic consequences of chronic diseases such as diabetes.

Keeping momentum

"Diabetes is a non-communicable disease, but that is no reason not to communicate about it. We need to pump up the volume so that everybody can hear about it - from the people who are potentially at risk, to the heads of countries, the NGOs and the donor community". This comment from Mr. Quentin Cooper, the host of the BBC's Material World programme who co-ordinated the panel discussion at the Diabetes Summit Africa, aptly sums up the need to raise awareness and create advocacy.

The challenges posed by diabetes and other non-communicable diseases are immense and resources are limited, particularly in low and middle-income countries. It is, however, our hope that through better awareness, education and prevention of diabetes and its potentially disastrous consequences for people's lives, resources will be found to address the underlying risk factors and the need for care and thereby prevent the ultimate disaster from striking. While the challenge is huge, there is now, it seems, light at the end of the long tunnel, making it all the more important to press ahead to make sure that the momentum is not lost.

To date the World Diabetes Foundation has funded 138 projects in 77 countries, focusing on diabetes awareness, education and capacity-building at local, regional and global levels. The total project portfolio has reached USD 125.7 million of which USD 42.6 million were donated by the World Diabetes Foundation. A projection of the impact of our work shows that the projects funded by the World Diabetes Foundation will positively impact 63 million people in the developing countries.

We hope that over time our advocacy and awareness efforts will show that it is possible to tackle the challenges posed by diabetes in the developing world in a cost-effective manner.

Our fifth anniversary marks the beginning of a journey of hope for people with diabetes in the developing world. On behalf of the World Diabetes Foundation board of directors and secretariat, we thank our sponsors, project partners and well-wishers for their support.



Diabetes in the Eastern

Mediterranean Region and the Gulf was in focus at a major health economics and diabetes conference co-hosted by the World Diabetes Foundation and organised by the Health Minister's Council for the Cooperation Council States in collaboration with the Ministry of Health, Kingdom of Saudi Arabia, the King Faisal Specialist Hospital and Research Center, the World Health Organization's Regional Office for the Eastern Mediterranean, the Arab Gulf Programme for United Nations Development Organization, and the World Bank MENA Region

As part of the policy

framework, the Executive Board of the Health Ministers Council for Gulf Cooperation Council States (GCC), presented the Riyadh Declaration - a joint statement on diabetes control as a guiding strategy to address the challenges of diabetes, particularly from the economic standpoint

Dr. Anil Kapur
Managing Director,
World Diabetes Foundation



A **HOLISTIC** APPROACH TOWARDS A NATIONAL NCD PROGRAMME

UGANDA

The recent United Nations Resolution on Diabetes, the African Declaration on Diabetes and the World Health Organization (WHO) regional committees' adoption of a resolution on diabetes have created a conducive environment for governments in the developing world, particularly the African continent, to take stock of their own policies for diabetes care. The Government of Uganda has taken the lead in formulating a holistic and integrated strategy for managing diabetes and related chronic diseases that will ultimately benefit thousands of patients. Today, diabetes and chronic diseases constitute one of the four principal pillars in Uganda's National Health Service system.

Ambitions and the ability to think holistically drove the Ugandan Ministry of Health to think further than just one step ahead. When confronted with the debilitating and costly consequences of non-communicable diseases it decided to invest in the development of a national programme. As opposed to stand-alone projects a national programme seeks to create an overall framework for the formulation of policies, strategies, action plans and sustainable implementation.

"For an effective health care system to work, political will is required in order to secure sufficient resources to establish the required

infrastructure, build capacity and achieve health equity. At the World Diabetes Foundation we strive to support locally sustainable solutions which can contribute towards national programmes that will further the prevention and treatment of diabetes in developing countries and thereby alleviate human suffering related to diabetes and its complications among those least able to withstand the burden of the disease," says Programme Manager at the World Diabetes Foundation, Mrs. Sanne Frost Helt.

With no other non-communicable diseases having as many ramifications and issues to deal with as diabetes, the disease is a natural focal

point for a national health programme. However, restricting a programme to one disease area limits the potential for achieving obvious synergetic effects of addressing a broad range of inter-related co-morbidities. As such promotion of diabetes prevention and behavioural lifestyle modifications towards a healthier lifestyle has a direct effect on the similarly increasing rates of obesity, cardiovascular disease, hypertension, cancer and stroke, making a joint effort not only the most obvious move but the most cost-effective intervention.

Collecting the evidence

In initiating the work around a national programme for prevention and control of non-communicable diseases, it was deemed necessary to provide more tangible and concrete evidence around diabetes and chronic disease risk factors in Uganda as the information was scarce. The decision was therefore taken to set off the national programme with a nationwide survey with the support from the World Diabetes Foundation. The survey will establish the prevalence of diabetes and its interlinked risk factors and enable the authorities to develop a national policy on diabetes and other non-communicable diseases and launch the appropriate interventions for prevention and control of these diseases.

“People consult the health care system only when they have severe symptoms of diabetes or even complications. Very few people carry out routine medical check-ups. In the survey we are going to test blood sugar levels and thereby be able to determine the prevalence of diabetes and its risk factors. As part of the ongoing survey we will also conduct a nationwide health facility audit to determine the capacity of our existing health facilities to prevent and treat diabetes and other non-communicable diseases. The information will provide us with inputs to plan our action for implementing the national programme and allow us to determine the most appropriate and cost-effective strategies to prevent and manage non-communicable diseases,” explains Principal Medical Officer of the NCD Division at the Ugandan Ministry of Health, Dr. James Sekajugo.

A Letter of Intent

Following the initial agreement to form a partnership around the national survey the Ministry of Health in Uganda and the World Diabetes Foundation subsequently signed a Letter of Intent extending the current collaboration to include the formulation; setting up and implementation of a national programme for

diabetes and other related non-communicable diseases. The Letter of Intent has helped the Ministry of Health to formalise the programme and attract funding from other donors. Additional contributors include as varied organisations as the World Health Organization (WHO) and the Fédération Internationale de Football Association (FIFA) as well as a national health sector donor group who alone has supported the programme with USD 200,000.

“Dr. James Sekajugo has tirelessly continued his fight to bring attention to non-communicable diseases and funding of activities, using the official system procedure as well as drawing upon personal connections. His achievements to date are truly impressive and equally impressive is his dedication to bring non-communicable diseases high on the national agenda. A local champion like Dr. James Sekajugo is invaluable when it comes to fighting the burden of diabetes and other related non-communicable diseases,” says Mrs. Sanne Frost Helt.

Building capacity

As part of the systematic information-gathering for the national programme and in response to the obvious lack of qualified diabetes care the Ministry of Health has initiated two projects funded by the World Diabetes Foundation aiming to build capacity for diabetes care at a primary care level.

In all, 14 districts – four in a pilot and subsequently 10 more – have been selected for a training programme in diabetes prevention, diagnosis and care. The pilot programme with the four districts has just been completed and was supervised by the diabetes team at St. Raphael of St. Francis’ - Nsambya Hospital. The second programme, which will run until June 2009, is supervised by the diabetes team at the Mulago Hospital in Kampala which will also continue to coach the clinics for a one-year period to ensure that the quality of care is being maintained. Guidelines for referral of diabetes patients are simultaneously being developed and distributed to the health units. At each clinic session, diabetes patients and their relatives are taught about the prevention and control of diabetes and its complications.

“The lessons learned from these initial pilots will provide valuable insight and feed into the recommendations and action plans of the national programme. At present diabetes is managed mainly in tertiary and a few secondary health care facilities in Uganda, leaving a majority of diabetes patients without access to qualified care,” explains Dr. James Sekajugo.

A similar process to one that has been initiated in Uganda has been initiated in Tanzania with the signing of a Letter of Intent between the Tanzanian Ministry of Health and the World Diabetes Foundation

In total, 340 health care workers will be trained and equipped with basic clinical tools for diabetes care enabling them to run 40 basic self-sustaining diabetes clinics within their existing health care settings



It is estimated that 96,000 patients will attend the clinics each year accompanied by at least one relative



MAKING A DIFFERENCE IN TANZANIA

TANZANIA

It is estimated that only 30% of people with diabetes in Tanzania have access to diabetes care. In 2002, when the World Diabetes Foundation funding was initiated, Tanzania had only three dedicated diabetes clinics on the mainland and one clinic in Zanzibar. Today, the country has a network of 38 clinics established with the support of the Foundation, and several other clinics funded from other sources. What started as a small project initiated by the Tanzanian Diabetes Association to improve access to diabetes care soon developed into a comprehensive project with diabetes clinics now established in 25 out of Tanzania's 26 regions, attracting additional co-funding and bringing diabetes and non-communicable diseases higher on the national health agenda.

The clinics have provided care to 17,716 people with diabetes and 3,242 new cases have been diagnosed since they were established

The estimated prevalence rate of diabetes in the Tanzanian population is 2.4 % and as in the rest of Africa, this rate is only expected to increase in coming years. Prior to the establishment of the new diabetes clinics, the infrastructure required to manage the growing number of people living with diabetes was woefully inadequate. As a result, many people remained undiagnosed and uncared for, and only few received optimum care.

“Low awareness of the disease within the general public as well as health personnel impedes early diagnosis. When the diagnosis is made it is often

too late as many patients have already developed severe late complications. The lack of trained manpower and knowledge, simple functioning equipment and common drugs made proper treatment almost non-existent. Therefore, to improve access and raise the quality of diabetes care in Tanzania, we took the initiative to establish four diabetes clinics to begin with at four regional hospitals,” says Honorary General Secretary of the Tanzania Diabetes Association (TDA), Dr. Kaushik Ramaiya, project responsible and member of the board of directors of the World Diabetes Foundation.

Broadening the reach

After the successful establishment of the initial four regional clinics, TDA ambitions took hold as the association saw opportunities to improve the standards of care at the national level. Additional partners were attracted to the project and more co-funding received, enabling the TDA to have a total of 38 clinics, covering 25 out of Tanzania's 26 regions.

"The access to and quality of diabetes care has significantly improved with the 38 clinics. The basic facilities to diagnose and treat diabetes at the primary care level and to prevent or at least delay complications have now been secured. Involvement and partnership with the Ministry of Health has not only provided the necessary infrastructure for the project by providing buildings, human resources and policy framework but has also ensured sustainability for the project in the years to come," explains Dr. Kaushik Ramaiya.

In total, 35 teams consisting of one doctor, two nurses and one laboratory technician have been trained to run the clinics that – besides being responsible for basic care – also play a significant role in informing their local communities about diabetes through IEC (Information, Education and Counselling) activities. Standard guidelines and care protocols have been included as part of the Clinic Practice Training and Guidelines developed under another regional project with support from the World Diabetes Foundation and the International Diabetes Federation (IDF), African Region, which helped create course curriculum and training material for the training of health care professionals, as well as guidelines for diabetes care on the African continent.

A catalytic effect

The project has definitely helped raise awareness of diabetes and its complications – not only among people with diabetes but also within the Tanzanian authorities. The importance of having a strategy for non-communicable diseases has been realised within the Ministry of Health and a framework for a national non-communicable disease policy is now being developed. To support the national advocacy work, 15 branches of the Tanzanian Diabetes Association have been established helping people with diabetes become more involved with local awareness activities.

Another positive outcome of the project has been in attracting bilateral funding sources to support the further strengthening of quality diabetes care

in Tanzania. A new project aiming to strengthen diabetes care from the primary to tertiary level, and to raise public awareness of diabetes, its risk factors and possible preventative measures has been initiated in the Lake Zone comprising of four regions: Mwanza, Mara, Kagera and Shinyanga with substantial financial support (USD 580,000) from the Danish International Development Assistance (DANIDA).

"The health challenges for the developing countries are immense, but not impossible to overcome. Well functioning health systems are a precondition for prevention and treatment of diseases – both infectious and non-communicable diseases. All partners – including governments, bilateral donors, private and public enterprises – must work efficiently together and coordinate efforts in true partnership if we want to improve the standards of health care for poor people in developing countries. The establishment of diabetes clinics at all regional hospitals in Tanzania is an innovative model that demonstrates an interesting way of creating partnerships and has laid out the path for the World Diabetes Foundation for further improving the quality of diabetes care in the country," says Mrs. Ulla Tørnæs, Denmark's Minister for Development Cooperation.

A comprehensive model for care

The project, which seeks to implement a holistic and cost-effective model for strengthening diabetes care and prevention, initially started in the Mwanza region and is now being expanded to the entire Lake Zone in a second phase, building on the experiences and lessons learnt from the previous projects. The Tanzanian Diabetes Association will again act as the implementing partner with sustainability being ensured through the involvement and ownership of the activities by the Ministry of Health and contributions from local non-governmental organisations (NGOs), private practitioners, community groups, churches and schools.

"The comprehensive care model being rolled out in Tanzania has the potential to form the basis of a national non-communicable disease programme because of the ownership and active involvement of the Tanzanian government. The capacity-building is fully integrated into the public health system and builds on the structures and experiences gained from previous projects, enabling them to approach diabetes management in a holistic manner," says Programme Manager of the World Diabetes Foundation, Mrs. Sanne Frost Helt.

The diabetes clinic model developed by the Tanzanian Diabetes Association is now being replicated by the Association of Private Health Facilities in Tanzania (APHFTA) in another project funded by the World Diabetes Foundation. The project involves 80 private health facilities and aims to improve access to diabetes care and prevention in the private health sector which is estimated to cater for 45% of all health care in the country

On August 28, 2002, the Danish Ministry of Foreign Affairs, through the Danish International Development Assistance, and the World Diabetes Foundation, signed a Memorandum of Understanding with the aim of creating synergy and ensuring additional highly needed resources for building a better health care infrastructure in developing countries



A CATALYST FOR CHANGE

MALI

Since the French biologist and nutritionist, Mr. Stéphane Besançon left France and formed the non-governmental organisation Santé Diabète Mali in 2001, his dedication to fight diabetes in the West African country of Mali has spread like ripples in a pond. Using a multi-partner approach Santé Diabète Mali has not only been able to raise the necessary funds to initiate a series of projects that will change the situation for thousands of people living with diabetes in Mali, but also succeeded in building almost all activities on existing health care infrastructure and thereby secure sustainability of the projects.

The first step in Mr. Stéphane Besançon's plan to change the way diabetes is managed in Mali included a nutrition study of the local diet consumed by Malians. The study investigated the popular dish: cereals with sauce, determining the glycaemic indexes of the principal cereals eaten in Mali and assessing the glycaemic effect of the main sauces eaten with the cereals. The different cereals and sauces were then categorised according to their appropriateness in a diabetic diet and the study results used in educational material for health care professionals, patients, and the general public to focus on the link between food consumption and diabetes.

"With more than 100,000 Malians suffering from diabetes and only 30% of these being able to afford the required medical treatment, we have in Mali a disproportionately high prevalence of diabetes complications. Having proven that contrary to what was thought, some of the traditionally advised cereals for people with diabetes actually have very high glycaemic values, we started exploring options for disseminating the information and raising awareness of the importance of choosing the right food irrespective of whether you are

a person already with diabetes or at risk of developing diabetes. With this notion in mind a second project was born," says Mr. Stéphane Besançon.

Reaching out

The search for qualified health care personnel who could undertake the task of disseminating the new guidelines soon revealed an urgent need for trained health care personnel in the field of diabetes care. Santé Diabète Mali therefore filed a second application to the World Diabetes Foundation and started organising the training of health care providers.

"The devotion of the team has secured an impressive impact, much higher than expected, with more health care providers trained and more people reached through the awareness activities than initially anticipated. Moreover, Santé Diabète Mali has made sure that all trained personnel were from the public health system. The programme was built on existing health structures in Mali, thereby ensuring overall sustainability of the project," says Programme Coordinator at



the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen.

Besides the funding from the World Diabetes Foundation, the project has also been supported with donations from the Swiss Agency for Development and Cooperation (SDC) and various French municipal authorities. In addition to the training of health care personnel, the project has looked into restructuring diabetes health care delivery and establishing and strengthening local diabetes groups with a link to the national diabetes association; and the results are gratifying. The number of diabetes specialists has increased up from 3 to 15 with 12 new referral doctors trained to create decentralised and simple access to diabetes care.

340 health workers have been trained in diabetes care, and the previous lack of specialised diabetes consultation outside the hospital of Bamako in the capital of Mali has been considerably improved with consultations and specially equipped screening and diagnostics facilities available in three regions.

The ideal programme

“With the two projects we proved that we have developed a useful methodology to help people control their diabetes through healthy eating that is appealing to the Malian people because of its local origin. We moreover established that in order to reach our main goal of improving the quality of care for people living with diabetes we need to integrate all the components of care and build them into one programme. With that in mind we have taken the initiative to start a third project

allowing us to continue the decentralisation of diabetes care and prevention at the secondary and primary levels in six major Malian cities,” explains Mr. Stéphane Besançon.

Running until 2009, the third project aims at reducing morbidity, the development of complications and mortality due to diabetes and is targeted at the general population, people with diabetes, their families and health care professionals. Continuation of the decentralisation of diabetes care delivery through training more health care professionals, providing equipment for testing, drugs and educational materials at peripheral levels - as well as strengthening local patient associations - will ensure consolidation of the work and results obtained with the first two projects. On top of that the project will continue to reinforce diabetes prevention by informing and educating the population on simple behavioural changes to prevent diabetes. Finally, the project has added a new component to the improvement of care by incorporating the Step-by-Step Foot care model enabling health care providers to specifically address the most recurrent complication: the diabetic foot.

The ambition and work of Santé Diabète Mali has been rewarded with a grant of Euro 642,000 from the European Commission allowing the organisation to amongst other extend the reach of the project. The project is the first project funded by the World Diabetes Foundation to receive substantial co-funding from the European Commission, demonstrating that Mr. Stéphane Besançon and his organisation has genuinely made the saying “God helps those who help themselves” come true.

More than 400,000 people have been sensitised with information material through trained educators in two target regions. In addition 340 health care workers have been trained in diabetes care

Access to medication has improved and the preventive actions are estimated to have reached more than 55,000 people in the targeted regions



SAVING FEET, SAVING FUTURES

INDIA & TANZANIA

Amputations as a result of unattended infections are sadly an all too common outcome in many developing countries. But often, all that is required are simple interventions to prevent these needless amputations. In close collaboration with foot care experts from India and Tanzania the World Diabetes Foundation has facilitated a targeted effort in India and Tanzania with the introduction and implementation of specific programmes for screening, treatment and prevention of the diabetic foot.

It is estimated, that during the one-year implementation period 35-40,000 people received preventative foot care education and out of these, 12-15,000 people with high risk feet were identified and given additional care and attention

In total, 100 teams from India and 14 from Tanzania have been through the training programme

70% of all lower limb amputations in the world are linked to diabetes. People with diabetes lose sensation in their feet and may not be aware of skin injuries developing into infected ulcers. Left untreated, the infection spreads, leading to gangrene which ultimately requires amputation.

“To lose a foot to diabetes is to lose the ability to provide for oneself and one’s family. It costs just USD 3 to educate a person with diabetes to take care of his feet to prevent foot ulcers – but an estimated USD 550 to amputate a limb and another USD 650 for a limb prosthesis. Costs like these put people living on less than a dollar a day into lifelong indebtedness, sentencing them to a life of dependence through their inability to work and support their family,” says Managing Director of the World Diabetes Foundation, Dr. Anil Kapur.

With the human consequences in mind, the World Diabetes Foundation chose the diabetic

foot as a key focus area of support and, as a first step, brought together a team of experts with the purpose of developing a model for improving foot care for people with diabetes. The rationale being that of the more than 1 million amputations that are performed each year – up to 80% are preventable with simple and low-cost measures. Moreover, it was discovered that foot care tends to be neglected in most health care settings, and is neither attended by the doctor, nor nurse with the result that many people never have their feet checked until it is too late. The model which was developed by the team of Karel Bakker, Z. G. Abbas, Sharad Pendsey, Vijay Vishwanathan and Ali Foster was named: Step-by-Step improving diabetes foot care in the developing world.

Step-by-Step

The Step-by-Step model has been piloted in India and Tanzania from November 2003

to November 2006 and is funded by the World Diabetes Foundation. The model systematically builds up the skills of the enrolled medical teams and has been developed with the purpose of establishing a sustainable, integrated and low-cost health care capacity both for the early recognition of high risk feet and for preventive care. Through the education of health care personnel and the cascading of information through the system, focus on diabetic foot problems gradually increases. Awareness and educational activities aimed at the general public will at the same time empower people with diabetes to improve foot care, detect problems earlier and seek timely help.

Walking barefoot or wearing unsuitable shoes are common causes of foot ulcers in people with diabetic neuropathy and 85% of all diabetes-related foot and leg amputations begin with a foot ulcer. A critical aspect in the efforts to reduce lower limb complications and prevent amputations in people with diabetes has therefore been to make sure that doctors and nurses and people with diabetes understand the importance of recognising feet as being at high risk, providing early preventive actions and ensuring that early foot ulcers are attended to before they develop into more serious problems.

Rough estimates suggest there are more than 40,000 lower limb amputations performed in India each year due to diabetes. In Tanzania 33% of patients admitted for diabetic foot ulcers undergo amputation with a 54% mortality rate in patients who are presented late. Altogether these alarming figures call for significant improvements. And improvements have been seen; The Step-by-Step model predicts that, as a rule of thumb, after having completed the programme, each doctor and nurse team will be able to provide prevention and treatment to about 30 people with high risk feet each month. The improved foot ulcer management will lead to a reduction in amputations among patients seen by the teams by up to 50%, saving an estimated 3,600 legs in India and 600 legs in Tanzania.

Addressing rural care

Travelling more than 100 km to access affordable and optimal foot care becomes a huge barrier for poor people living in rural and semi-urban areas. To further improve access to foot care in India, the Jain Institute of Vascular Sciences in Karnataka has launched a project named Rural diabetic foot care, which runs from June 2006 to May 2008. The concept of the project involves a one-month course for paramedics. The course, which includes both academic education and hands-on experience, will be provided to two

selected health care workers each month at the diabetic foot care clinic of the Jain Institute of Vascular Sciences. As part of the project a total of 10 foot care centres have been established across the state of Karnataka in India.

Furthermore a specially designed mobile foot care clinic provides diabetic foot care and education to people with diabetes in remote areas within a radius of 150 kilometres from Bangalore and visits approximately 20 outreach areas per month, attending about 30 people with diabetes per visit.

In total, 44 health care workers will be trained to run the clinics and the van. Presently more than 15,600 people have been provided with foot care, education and counselling. The project has received wide publicity and attention, with participation of the State Governor and Chief Minister at the inauguration of the mobile clinic and with additional funding from other donors.

Introducing the right footwear

Another project funded by the WDF, running from June 2004 to May 2008 and aimed at rural and semi-urban areas in North-East and South India has included foot care as part of a comprehensive prevention and control programme. The programme, rural and semi-urban diabetes prevention and control is led under the supervision of Dr. A. Joseph from Schieffelin Leprosy Research and Training Centre Karigiri, the Christian Medical College Vellore (CMC) and the Christian Medical Association of India (CMAI). The programme is facilitating the training of a team of doctors, nurse educators, physio-technicians/podiatrists and orthopaedic shoe makers using microcellular rubber to prevent foot ulcers. The programme envisages training of teams from at least one hundred hospitals which are predominantly based in rural areas. Thus far teams from 87 hospitals have been trained and in addition the SIH-R&L Centre is providing the microcellular rubber at concessional rates.

“All these projects are truly remarkable examples of how the World Diabetes Foundation and its implementing project partners are contributing to create awareness and knowledge about diabetes, and at the same time help to build capacity in the rural population in the most remote and poorest areas of the world. By addressing these problems and offering simple, preventative measures, each project is saving not only feet but the futures of thousands of people, thereby sustaining hope for a better future for people living with diabetes,” elaborates Vice Chairman of the World Diabetes Foundation, Mr. Leif Fenger Jensen.



More than one million amputations are performed every year – up to 80 % of these are preventable

Since 2002, the WDF has supported the training of 456 health care professionals in providing proper care for the diabetic foot

To date they have provided care for 86,908 people with high risk feet. Over the next several years, these professionals are in a position to treat many more people with diabetes. By sharing information with their colleagues, they build even greater capacity

The foot care projects in India and Tanzania have had a catalytic effect on several other partners of the World Diabetes Foundation and inspiring countries like Mali, Pakistan, The Democratic Republic of Congo, Burundi, Mauritius, Kenya and Uganda to replicate the models



GLOBAL DIABETES WALK 2007 – WORLD DIABETES DAY

On November 14, 2007 over 200 of the most iconic buildings and sites around the world were illuminated in the blue colour of the diabetes circle, which is the global symbol for diabetes, to mark the first United Nations-observed World Diabetes Day. The Empire State Building, New York's most famous landmark was the first to join the World Diabetes Day campaign and agree to light up in blue. Some of the others that joined the campaign were the Sydney Opera House, the London Eye, the Leaning Tower of Pisa, Tokyo Tower, Niagara Falls, Christ the Redeemer in Brazil, and the building currently considered the world's tallest: the Taipei 101 Tower in Taiwan.

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Bosphorus Bridge, Turkey © IDF



The Empire State Building, New York's most famous landmark was the first to join the World Diabetes Day campaign and agree to light up in blue © IDF

Professor Martin Silink, President of the International Diabetes Federation (IDF), the organization that led the World Diabetes Day campaign, explained the significance of the illuminations: "These buildings are lighting up as beacons of hope for the 246 million people living with diabetes worldwide. The illumination of so many landmarks is a prominent statement to governments everywhere: the global diabetes epidemic can no longer be ignored."

This year on World Diabetes Day 207,694 registered people representing 70 different countries took part in the Global Diabetes Walk to help raise awareness about diabetes. Thanks to the impressive support from people all over the world, the 2007 walk was the biggest ever in the history of the World Diabetes Foundation.

Special thanks are due to Novo Nordisk affiliates and employees around the world who were responsible for major walks in India, Latin America and Europe, mobilising 70,058 participants. Other pharmaceutical companies such as Sanofi Aventis in Dubai and Paris participated with more than

1,200 participants and Johnson & Johnson in the USA joined with 100 people. As an incentive to create additional awareness media agencies were invited to take part on WDD; Peהל Jaigran, one of the largest media outlets in India mobilized more than 1,800 participants. In the United Arab Emirates, Media Solutions arranged a major walk with 5,000 people taking to the streets.

It takes more than walking

Every walk is a result of hard work and creative thinking from dedicated people. Here we share some of the highlights from around the world from volunteers who devote their time and energy to raise awareness about the struggle that people with diabetes must endure in their daily lives, especially in the developing world.

The World Diabetes Day itself is celebrated on November 14, marking the birthday of Canadian-born Frederick Banting, who along with Charles Best first conceived the idea which led to the discovery of insulin in 1922. On World Diabetes Day a secondary school in Banting's home state

named after him didn't miss the opportunity to celebrate the discoverer's birthday. "The Global Diabetes Walks in London Ontario, Canada have been overwhelming with the participation of 1,300 students," explains Mr. Trevor McLellan from the Canadian Diabetes Association who partnered with the students and staff of Sir. Frederick G. Banting Secondary School in London, Ontario in hosting the walk.

Since 2004, Dr. N. Murugesan, a project partner of the World Diabetes Foundation in Chennai has arranged walks and motivated doctors and health care personnel attending training to arrange walks in their local community. Since 2004, more than 70,000 people have joined walks arranged as a result of his initiatives.

Alongside the walk, Dr. Murugesan and his project group have arranged awareness-raising activities; they call it "Diabetes Week" and schedule their activities in the week before World Diabetes Day. "I must say that the "Global Diabetes Walk" initiated in the year 2004 has grown into a mega programme with various dimensions, shades and colours of different interventions, which have definite impact on the behaviour of the targeted groups," he says. The initiatives include the distribution of information material, participation in radio shows, awareness and screening camps and lifestyle modification seminars. These educational sessions are held for the general public as well as for specific groups of school children, IT professionals, policemen, transport workers, teachers and journalists.

Screening for diabetes

In Brazil, Professor Fadlo is running one of the most ambitious projects supported by the World Diabetes Foundation covering the training of health care professionals in 51 medium-sized cities in Brazil. In Brazil health care is free, but waiting for tests and treatment takes considerable time. Dr. Fadlo and ANAD (Associação Nacional de Assistência ao Diabético) arranged a screening camp at a college in São Paulo in connection with the Global Diabetes Walk. The purpose of the campaign was to offer people with diabetes and people at risk of developing diabetes an array of tests which would otherwise take them up to one year to receive.

500 health care professionals volunteered to screen for diabetes, high cholesterol, hypertension and test eyes, feet and HbA1c-levels among other services. This year, an impressive 11,000 people took part in the event.

Children and adolescents

In November 2005, Diabetologist Dr. Jose Carlos Iramendi Gil from Brazil met a young girl, Emiliane, who had been diagnosed with type 1 diabetes at the age of nine. He describes her as being timid, not very talkative, with a faraway look, and at the time showed no signs of pubescent development; she gave the impression of being only 12 years old - when she was really 16 years old.

Emiliane lived with her family in a rickety house, isolated in the mountain forest eight kilometres from the local health centre. She often failed to show up for her appointments, which were scheduled every six months. This year, celebrating the theme of the World Diabetes Day "Children and adolescents," Dr. Gil decided with a group of 13 colleagues to walk the distance that Emiliane had often failed to travel to receive vital diabetes care. Dr. Gil describes the Global Diabetes Walk which he and his group took through the mountain forest: "My plan was really to feel this walk in my own body. I knew that a lot of us would not be able to make it all the way," he says. "After walking a while there were only six of us left."

When the reduced group, now only consisting of four, arrived at Emiliane's house no one was home, but a friendly neighbour served fruits and water, so that they could return home: "As we descended we saw how far we had come - in the distance we could see other mountain ranges, home to unknown people, with no access to proper health-care facilities".

Today Emiliane is eighteen years old and her health situation has changed remarkably since she is regularly monitored by Dr. Gil and his team. However, she now suffers from a common diabetes complication that occurs in the eyes and can cause blindness; retinopathy.

"The concept of the Global Diabetes Walk has proven to be a high-impact communication and knowledge-sharing platform reaching out to global stakeholders in a cost-effective manner and underlines the Foundation's catalytic effect," says Communication Manager, Mr. Jamal Butt of the World Diabetes Foundation. "The Walk shows how small ideas can evolve into major interventions and empower individuals, non-governmental organisations, corporate partners, diabetes associations and media agencies to support and promote healthy living. In November 2007 we had more than 1.2 million hits on the Global Diabetes Walk website, demonstrating a clear interest in the event".

To mark the importance of World Diabetes Day, the International Diabetes Federation encouraged all of its 200 member associations in 160 countries to arrange individual walks in collaboration with the World Diabetes Foundation and to incorporate and promote the blue circle - the global symbol for diabetes - in all Global Diabetes Walk activities





In Indonesia more than 40 individual walks were organised with thousands of people, covering Western, Eastern and Central regions of the country. Many of the larger walks organised on WDD were initiated by the Indonesian Diabetes Association.



London ON in Canada is the Birthplace of Insulin. More than 1,350 students and staff of the Sir. Frederick Banting Secondary School joined the WDD activities. This walk was coordinated by the Canadian Diabetes Association.



Some of the largest walks were organised in India. A total of 95,974 registered people walked in India including WDF project partners, Novo Nordisk employees, media companies, local diabetes associations and individuals.



Despite of the serious security situation in Afghanistan, over a thousand individuals and children celebrated WDD. This walk was organised by Novo Nordisk Afghanistan, the Afghanistan Diabetes Association and the Ministry of Public Health, the Diabetes Management Centre, the Roshan Company and the World Health Organization.



The local non-governmental organisation Santé Diabète Mali organised a walk in Bamako in collaboration with the local diabetes association. More than 100 participants took part in the event.



Qatar Diabetes Association organised the Global Diabetes Walk with 200 participants. In addition the Aspire Dome was illuminated in blue on the occasion of WDD.

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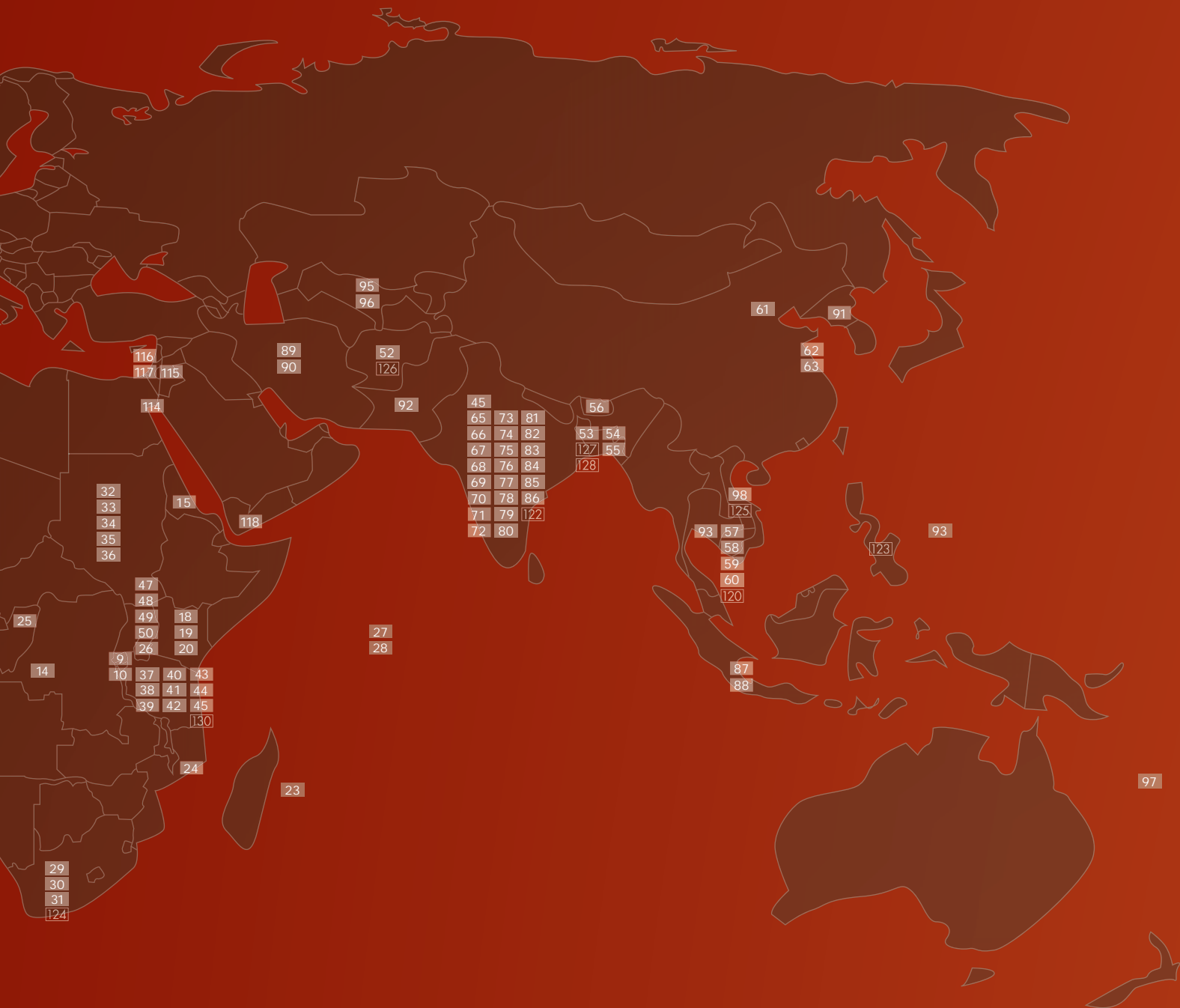
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The primary funds allocated to the fundraising activities are donated by Novo Nordisk employees and management & through the 'Take Action' programme, an employee volunteer programme where employees raise funds by taking unique initiatives or donate a monthly amount from their salary to support specific projects.

For full details on the projects funded by the World Diabetes Foundation, please visit; www.worlddiabetesfoundation.org

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PREVENTING BLINDNESS IN RURAL INDIA

INDIA

Diabetes is a leading cause of blindness worldwide. In India it is estimated that one in five people who have had diabetes for more than 10 years will develop diabetic retinopathy. To date retinopathy treatment has only been available at certain urban hospitals. This means travelling 200-300 km to access such care, resulting in a huge barrier for poor people who live in rural and semi-urban areas. Now an innovative team from the southern Indian state of Karnataka has achieved impressive results after introducing a unique way to bring the treatment out to the patients.



The mobile unit travels 25 days per month, covering 23 locations in nine districts of Karnataka serving a population of 16.3 million people. On average 33-34 patients per day benefit from a level of advanced eye-care normally only available in the best institutions in the world

With the objective of improving treatment for diabetic retinopathy in remote areas of Karnataka, a team from Vittala International Institute of Ophthalmology (VIIO) initiated a project with the support of the World Diabetes Foundation to develop and use a highly advanced, fully-equipped mobile unit to diagnose and treat people with retinopathy in semi-urban and rural settings. The mobile unit makes a fixed journey each month, stopping at pre-arranged locations. Partnered local ophthalmologists from the selected small towns pre-screen and identify people requiring advanced investigations and laser therapy.

If necessary the patients are asked to come for further investigation and treatment on the day the van is scheduled to arrive in the area. Each participating ophthalmologist has been trained to use the equipment (retinal camera, fluorescence angiography, ophthalmic ultrasound, and laser) and takes care of his/her patients. If and when

needed, expert guidance from a trained fellow accompanying the van is available. Close collaboration with local ophthalmologists, general practitioners (GPs) and physicians in the area ensures that patients are screened and referred to the van. Care delivery by the local doctor in the patients' own familiar surroundings builds respect and trust as well as ensuring ownership and compliance.

"The single biggest achievement in our opinion has been to convince the local ophthalmologists to work as a team rather than as competitors and to convince them that treating patients even with concessional fees makes economic sense as it increases the patient volume and secures guaranteed follow-up visits," says Dr. Praveen Murty of VIIO. He developed the idea and has worked tirelessly with his brother and wife, as well as his ophthalmologist and childhood friend Mr. Subbakrishna Rao, to ensure successful implementation of the project.

Treatment is offered free of charge to patients with an income of less than USD 30 per month, which is the official poverty-line set by the Indian government. Of the money received from paying patients, 70% goes to the local ophthalmologist and 30% to a VIIO project account. The payment structure offers an incentive for local ophthalmologists to participate and to refer patients. Local ophthalmologists then pay their local medical associations on a per patient basis, providing an incentive for local GPs to collaborate with the project.

A co-operative movement for diabetes care

The project is like a co-operative movement for advanced diabetes eye care. The participating ophthalmologists have a joint stake and ownership in the continuing success, and have each agreed to pay USD 35 per month for maintenance of the van once the co-operative was formed. They could not otherwise individually afford to invest in this advanced care equipment; but owned, run and maintained in this way the return on the investment is highly justified and a corpus is being created for replacement when the equipment breaks down due to wear and tear.

“What is amazing is that within weeks the most advanced and state-of-the-art eye care is being delivered literally to the patient’s doorstep in the remote rural areas of Karnataka. This is a level of care for which even people in the most developed countries would have to wait for months if not years,” says WDF Managing Director Dr. Anil Kapur, after seeing the van in action during a field trip. He continues excitedly: “People do not have to travel long distances. This saves travel costs, time, and accompanying hassles resulting in a remarkably improved compliance. This is of great value in a country where poverty and illiteracy constitute a great barrier to access appropriate health care.”

Transporting sensitive equipment

One of the biggest challenges in the project was to find a solution for transporting sensitive equipment safely on unreliable, poorly-metalled roads in rural and semi urban areas in India. Thus far no-one had been willing to fund equipment that initially should be taken out of the hospitals. This is where the engineering background of Mr. Subbakrishna Rao came in handy. The team from VIIO in consultation with Vortex Engineering and with the help from a group of students from the Indian Institute of Technology in Chennai came up with a solution allowing the mobile unit to transport the

equipment in a vibration free system of springs and dampers that absorbs shocks from the van.

“Being able to demonstrate the ability of the unit to transport the sensitive medical equipment safely was a major milestone. After that we have been able to secure unconditional support packages from equipment manufacturers, obtain comprehensive special insurance and convince local medical associations to grant us space and electrical power for the operation of the mobile unit,” says Mr. Subbakrishna Rao.

The ultimate success

Barely two years down the road, the mobile retinopathy project has already demonstrated a high level of impact that exceeds the three year targets. As a result of pre-screening carried out by local ophthalmologists, the number of people who have benefited from the project is significantly higher than initially anticipated.

“We have succeeded in bringing the treatment out to the patients. No patient has to travel more than 50 km for treatment today. Today, we have a 98% success rate with the second and third round follow-up treatments. But the ultimate success would be if we have no patients at all. If through awareness and counselling activities we would be able to completely prevent diabetic retinopathy, we would truly have reached our goal,” says Mr. Subbakrishna Rao with his usual beaming smile.

Long term sustainability

In order to secure sustainability of the project after the three year project period, all ophthalmologists are asked to sign a legally binding letter of agreement committing themselves to work with VIIO for a total of six years. After the three years, the project, including the van and all the equipment, will be co-owned by all the doctors who signed up and who will be partners on equal terms with VIIO. A proof of the project’s sustainability is the fact that within 15 months the project is earning 63% of its ongoing cash requirement (higher than planned for this stage of the project).

Following the initiation of the project, there have been an additional 17 requests from 11 districts asking that the project be extended to include them as well. This request was not least driven by the award given to the VIIO project team for best scientific paper at the 25th Silver Eyecon-2006 conference in competition with 173 other papers.

To date 229 GPs have been trained in basic, intermediate and advanced diabetes management. More than 171 local health workers have been trained in the detection, motivation and counselling of people with diabetes. Furthermore, 19 surgeons have been trained and in addition 83 local ophthalmologists have been trained in state-of-the-art treatment methods, considerably leveraging the skills of the individual ophthalmologist to treat diabetic retinopathy

The current number of patients receiving assessment and treatment through the van stands at over 16,500. A total of 2,012 (1,687 patients) laser photocoagulation treatments have been performed on site, of which half were free of charge or received concessions. The compliance rate for three laser sittings over three months is 100%

A total of 259 sight-restoring and sight-saving vitreo retinal surgeries have been performed of which 123 have been completed totally free of cost. A further 42 have received concessions ranging from a minimum of 40% to 90%, and apart from these 13 other surgeries for complicated eye conditions have been performed free of charge



SCREENING FOR DIABETES IN INDIA

INDIA

A major problem in addressing diabetes in India is related to ignorance and inaction in coping with the disease. All too often diabetes is only discovered when it is too late and serious complications have taken their toll. To help raise awareness of the disease and promote prevention and proper diabetes care the R.R. Lions Eye Hospital has initiated a series of diabetes screening and awareness camps targeted at more than 10 million inhabitants in the coastal areas of the southern Indian state of Andhra Pradesh.

More than 7,693 people have been screened for diabetic retinopathy and 569 have been detected with diabetic retinopathy. In addition 37 people have received eye saving laser treatment

In the five-year project period, a total of 1,250 camps are planned but already as of end November 2007, 823 camps have been held, screening 133,233 people of which 14,350 had diabetes

The diabetes camps in Andhra Pradesh were initiated in January 2005 and have proven to be vital in reaching out to the population in rural areas, in particular, where awareness and knowledge of diabetes is very limited.

“Screening for diabetes is simply not available in rural areas and many people are unaware of the symptoms of diabetes. That is why we often do not see people until they are faced with irreversible complications like blindness as a result of diabetic retinopathy or amputations as a result of the diabetic foot,” says R.R. Lions Eye Hospital Chairman, Dr. Krishnaji, who is responsible for the project.

The diabetes camps were initiated with the support of the World Diabetes Foundation in response to the alarming increase in diabetes discovered among those attending the general health camps facilitated by R.R. Lions Eye Hospital. The diabetes camps are designed to raise awareness and knowledge about diabetes and enable people to test their blood sugar, blood pressure and Body Mass Index (BMI) and learn more about the risks factors and early

symptoms of diabetes. The camps also involve local social service organisations and self-help groups to build advocacy and help train local health care professionals who participate in the camps.

In the five-year project period, a total of 1,250 camps are planned but already as of end November 2007, 823 camps have been held, screening 133,233 people of which 14,350 had diabetes. Without the project, many of these cases, and even those with complications, would have remained undetected due to the lack of skilled health care and proper diagnostic facilities in the villages and surrounding areas.

Creating public awareness

In the weeks preceding a camp, the word about the camps is spread through massive public awareness campaigns, including TV and radio shows, press meetings, lectures at public gatherings, distribution of educational materials, poster displays, street plays directed at lay people and seminars and workshops for medical professionals. The camps



COST EFFECTIVE PREVENTION OF DIABETES

INDIA

India has the largest population of people living with diabetes in the world, putting the health care system under great strain. The number of patients requiring care far exceeds the capacity of trained doctors and nurses, leaving an urgent need for increasing the national capacity for diabetes care. In addition, there is a great and pressing need for initiating massive, community-based prevention programmes. To satisfy this demand and address the general lack of awareness, a capacity building project was initiated in the summer of 2003, and successfully completed in the first quarter of 2007. Now in its final phase, the programme intends to expand its activities to cover a total of ten states and focus attention on training paramedics to address the need for prevention.

In total, 3,023 doctors from seven Indian states, 1,352 paramedical personnel, 120 health educators and 60 dieticians were trained as a result of the comprehensive programme funded by the World Diabetes Foundation

In total, the new project is expected to benefit 19.8 million people and thus significantly contribute to greater awareness and better management of diabetes care in India

The number of people with diabetes in India has reached more than 40 million. By 2025 the number is expected to reach an alarming 70 million people. India is experiencing economic development at a faster pace than anywhere else in the world except for China, its neighbouring country. Economic progress is inevitably associated with increasing urbanisation and changes in lifestyles. Experience shows us that this fuels the growth of diabetes and other related chronic diseases.

“Prevention, early diagnosis and provision of effective and affordable management of diabetes and its related complications at all levels of care require much more resources in the health care system than are currently available. Over the last four years and through the project supported by the World Diabetes Foundation, we have significantly increased the manpower for providing diabetes care,” says Professor A. Ramachandran, President of the Indian Diabetes Research

Foundation and Chairman and Managing Director of Dr. A. Ramachandran's Diabetes Hospitals, who is leading the capacity building programme.

Building capacity and care

Besides being trained in delivering proper diabetes care, participants were educated in primary and secondary prevention of diabetes through dissemination of guidelines already developed as part of the National Diabetes Control Programme. The participants were also encouraged to establish a network of Diabetes Management and Prevention Centres and have contributed considerably to an increased awareness of diabetes and its complications among policy makers, health system managers, non-governmental organisations and the general public.

“The participants are highly motivated and



have made a real effort to cascade the effect of the training to increase awareness of diabetes among other health care professionals and the public. More than 90% of the doctors have started educating and counselling their patients on lifestyle modification, allocating substantial efforts to disseminate information on healthy lifestyle through diabetes camps and by supporting the Global Diabetes Walk on World Diabetes Day. The efforts are well appreciated by the various state governments and have impacted strategies for primary prevention of diabetes,” says Professor A. Ramachandran.

Strengthening the national service

Following the completion of the first phase of the capacity building project, a second phase has been initiated, also under the leadership of Professor A. Ramachandran, with the purpose of continuing the strengthening of national diabetes care services by enhancing the capacity of health care providers.

“The first phase taught us that every paramedic personnel play a central role when it comes to reaching out to the general public. They have direct contact with the communities and are crucial in changing the knowledge, beliefs, attitudes and behaviour of people. In India, like in many developing countries around the world, obesity is considered a sign of prosperity. Likewise an overweight child is perceived to be a healthy child. It takes certain skills to address

these cultural misconceptions and we have found that paramedics are best able to reach out to the population and address these issues in a language and context that is appealing to their community. Therefore – when planning the second phase of the project – we decided from a cost-effectiveness point of view to place greater emphasis on this particular group and increase the number of paramedics to be trained, conducting the training as outreach training in their local settings,” explains Professor A. Ramachandran.

The second phase of the project supported by the World Diabetes Foundation will run for a period of four years. The project partners include the state governments, non-governmental organisations and civil society, including the private medical system.

At the end of the project, an additional 960 doctors from rural and semi-urban areas, 4,000 paramedical health workers and 600 health educators will have been trained. It is expected that every paramedical personnel will educate 50 people per month and thus at the end of the project it is expected that 12 million people will be reached. The doctors will provide care for 576,000 new persons with diabetes, besides taking care of existing patients. The health educators will have conducted diabetes education programmes reaching out to 7.2 million people. In total, the new project is expected to benefit 19.8 million people and thus significantly contribute to greater awareness and better management of diabetes care in India.

The average cost of medical care for a person with diabetes in India is estimated to be USD 227 per year. This increases two to threefold depending upon the presence of complications and need for hospitalisation. A recent study from India has demonstrated that lifestyle modification is a cost-effective intervention for preventing diabetes

The applied lifestyle modifications in the Indian Diabetes Prevention Study were calculated to cost USD 1,052 to prevent one case of diabetes in a period of three years



SUSTAINING HOPE FOR FUTURE GENERATIONS

INDIA

Five years ago, India had no authentic data from large populations on the prevalence of gestational diabetes (GDM). A project in Chennai, running since 2004 and funded by the World Diabetes Foundation, has been able to present impressive results and training methods that have ultimately changed the health policies in the State of Tamil Nadu. The government has issued an order that effective from 2008 mandatory screening for GDM in all antenatal women should be offered free of charge at all 1,417 public health clinics in the State, covering a total population of 62 million people.

10% of all 1.5 million annual pregnancies in Tamil Nadu end as miscarriages. The stillbirth rate is 14 per 1000 live births, covering all causes. It is estimated that 15% of the total number of caesarean sections may be due to GDM

Back in 2004, the project team set out with high hopes to make a difference for the pregnant women they provided care for at Dr. V. Seshiah's Diabetes Care and Research Institute. The team of diabetologists and other specialists partnered with the Tamil Nadu Department of Public Health and the Municipal Corporation of Chennai. Their immediate goal was to build capacity in the health care system to prevent, manage and control the problem and thereby screen women at risk of developing gestational diabetes.

The long-term project goal was to increase capacity for diagnosis and treatment and increase awareness about diabetes in the community. Implementing a surveillance system and systematic follow-up on all diagnosed women ultimately provided results strong enough to change health policies in the State of Tamil Nadu.

Now their work will benefit all pregnant women and future generations in Tamil Nadu. Fewer mothers and infants will experience trauma and

risk disability or death during delivery caused by macrosomia, a condition commonly known as large babies, where the baby has grown too large to be delivered naturally because of undiagnosed or poorly managed diabetes in the mother. Fewer mothers and babies will risk developing type 2 diabetes later in life and even fewer babies will be born with congenital defects that leave them stigmatised and outcasts.

Creating local awareness

Since the beginning of the project in 2004, health care professionals from Dr. V. Seshiah's Diabetes Care and Research Institute have worked successfully with local government health care workers and non-governmental organisations to raise awareness about diabetes and the GDM screening programme.

As an integral part of the project, pregnant women, and women ranging from adolescent girls to elderly women in selected urban and

rural communities have been informed about GDM symptoms, risk factors and complications through posters, public announcements and awareness campaigns. In many villages in India illiteracy is widespread, calling for a unique approach in reaching out to the target group. The project team has mobilised and established self-help groups consisting of volunteers from the local communities who reach out to the populations in live street plays and mobile public announcements through loudspeakers or megaphones attached to auto rickshaws. All the awareness activities have directly encouraged women to show up for free screening at the participating health posts.

In September 2005, Mrs. Flory Gnanakumari stepped into one of the health posts in Chennai for her first GDM test, which tested positive. Ideally, she would have had to start treatment earlier in her pregnancy, now she was in her third trimester. Treatment was started the next day, one part consisting of dietary advice, but Mrs. Flory was actually one of the 5% of women who needed medical treatment, in her case insulin. Two months later, she gave birth to a healthy girl. However, her diabetes stayed with her and she is now on tablet treatment. She might have had undetected type 2 diabetes even before she became pregnant, but the outcome of her visit to the health post was positive.

Local commitment

The government of Tamil Nadu recognises diabetes as a serious problem; "The incidence of diabetes is increasing alarmingly", says Tamil Nadu Director of Public Health, Dr. Padmanabhan. "We had a feeling that the numbers of GDM cases in urban areas were high and the study carried out by Dr. V. Seshiah's Diabetes Care and Research Institute provided the evidence; more than 16% of pregnant women in urban areas develop GDM. But it came as a big surprise that 10% in the rural areas developed GDM," he says. This notion and strong evidence has convinced the government of Tamil Nadu to implement the screening methods performed in pilot health care centres by the project in all 1,417 primary health centres, starting with equipping 401 centres in 2007.

Ms. Ida Nicolaisen, an acclaimed expert on development aid and member of the board of directors of the World Diabetes Foundation finds the results achieved very inspiring; "The Foundation aims to support projects that are implemented with the support and commitment of local project partners, governments and non-governmental organisations. Some projects even

inspire other institutions, municipalities or states to replicate good results. When this happens the Foundation has reached the goal of acting as a catalyst that empowers individuals and organisations to initiate a development that will multiply and become sustainable after the initial support ends".

New knowledge can optimise treatment

By including the screening methods, thousands of pregnant women were screened and unforeseen and vital knowledge was obtained. An impressive 13,139 women have been screened in the 16th week of pregnancy, and the ones who had increased blood glucose levels or GDM were followed until six months after delivery.

"It has been a surprise," says Dr. Madhuri Balaji, who is part of the core team, "that some women in our study develop some form of glucose intolerance as early as six months after delivery". The result has given the team a unique opportunity to start the treatment of what can develop into type 2 diabetes at an early stage. Until now available data have revealed that women who have suffered from GDM during pregnancy can develop diabetes or glucose intolerance 5 or 10 years after delivery. "This important and new observation took the project team by surprise as we never expected to see a problem this early. It is an extremely important finding not only for doctors to deal with, but also for the entire public health department," explains Dr. Madhuri.

"The very positive outcome from this project has been able to demonstrate that 95% of the women diagnosed with GDM can be treated by adjusting their diet and regular physical exercise, " says Tamil Nadu Director of Public Health, Dr. Padmanabhan; "presenting the economic burden of treating GDM as being very limited whereas the long term outcome will be huge. By providing early screening and diagnosis, we will be able to prevent the development of type 2 diabetes in the coming generations and reduce the socio-economic burden of complications and the morbidity caused by the disease".

As a finishing touch, the project team has started training the doctors and health care professionals who will be running the GDM activities once Tamil Nadu takes over in 2008, preparing them for the task handed to them. As part of the project, an estimated 1,200 doctors and 12,000 other health care professionals, including nurses, dieticians and extension educators, will be trained directly or indirectly in symptoms, treatment and preventive/control measures.

Gestational diabetes is one of the focus areas of the World Diabetes Foundation. The project run by Dr. V. Seshiah's Diabetes Care and Research Institute was the first GDM project to receive support. Other GDM projects are now starting to emerge and are being replicated in Sudan, Cameroon and Cuba. The methods tested and results achieved in India will benefit future project partners and coming generations

The project has to date successfully screened 13,139 women and subsequently detected 1,700 cases of GDM

On average 200 mothers a month will benefit directly from the services provided at each centre, and the State has even sanctioned 3,000 Rupees (USD 75) before and after delivery to ensure adequate nutrition and support in this important period



Mrs. Flory was fortunate enough to be screened in time, had a healthy delivery and her diabetes is being monitored



PRIMARY PREVENTION IN INDIAN SCHOOLS

INDIA

Childhood obesity is increasing at an alarming rate in India and is threatening an entire generation. Obese children and adolescents are at an increased risk of developing obesity-related co-morbidities, including early-onset type 2 diabetes, coronary heart disease, liver disease, infertility, blindness, hypertension, arthritis and cancers. In an effort to address the problem at its root, a programme has been designed to change the downward spiral in childhood health.

According to a recent survey conducted by the Diabetes Foundation (India), nearly 50% of all adults in Delhi are obese and 15% suffer from diabetes. The same survey found that 29% of school children from public schools are obese and nearly 70% of adolescents live a sedentary life. Over a period of four years (2003-2007), obesity in schools in Delhi has increased by nearly 100% demonstrating the shocking impact of a lack of physical activity and unhealthy eating.

“Childhood obesity is a major threat to our society, particularly in urban and peri-urban areas. The phenomenon is accelerated by a

westernisation of our diet, with more fast food and trans-fatty acids, sedentary lifestyles and children spending hours in front of the television or computer screens instead of being physically active. To break these patterns we need to encourage people to start thinking about the consequences of unhealthy living and encourage them already at an early age to choose a healthy lifestyle,” says Professor Anoop Misra, Chief Scientific Advisor of the Diabetes Foundation (India), Director and Head of Department of Diabetes and Metabolic Diseases at Fortis Hospital, and a WHO expert in childhood obesity.

Laying out the path

'MARG' is Hindi for path and was chosen as the acronym for a project initiated by the Diabetes Foundation (India) with the aim of changing unhealthy lifestyles of Indian school children and laying out a new, healthier path for them and their families. The project is financially supported by the World Diabetes Foundation and has been initiated as a pilot project in 30 schools in three of the major cities in North India: Delhi, Jaipur, and Agra. The project has been met with an unexpectedly high interest and midway in the implementation of the programme an additional 50 schools in Delhi alone have already approached the Diabetes Foundation (India), eager to roll out 'MARG' in their own schools. News of the project has also travelled to other cities in North India which have requested that the programme should be expanded to include their schools as well.

"We are very pleased with the interest the project has received. The Central and State Government bodies of India have informed us that they wish to join hands in the nutrition and health awareness campaign we are conducting which will enable us to roll out MARG all over India. We know that between 50-70% of the obese children will become obese adults and that they will suffer not only from diabetes but also from a number of other chronic diseases. This makes primary prevention in school children very important," says Professor Anoop Misra.

Creativity and involvement

The programme is being carried out over a period of three years among school children aged 8-18, their parents and school teachers. The project aims to create awareness about diabetes, obesity, lipid disorders, and heart disease in children and adolescents, to teach optimal dietary and lifestyle practices to prevent these diseases, and to act as change agents for healthy living in the family as a whole.

The Programme Coordinator of the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen visited the project in July 2007. He was very pleased to see how the project activities are conducted. "The popularity of the project has much to do with the chosen approach. By using creative, innovative and locally appropriate education strategies, the children are involved and take great interest in the various activities often formed as competitions. They develop posters, slogans, skits, essays, engage in school plays, debating and cooking competitions and enjoy the fact that education

is integrated in sports classes and in other extracurricular student activities."

"Childhood obesity is rapidly becoming a major global health problem. Overweight and obese children and adolescents are at a very high risk of developing early-onset diabetes mellitus and heart disease. India now faces the "double jeopardy" of under and over nutrition. Therefore supporting primary prevention of non-communicable diseases has become a prioritised focus area for the Foundation which calls for an integrated and multi-sector approach in order to fight non-communicable diseases, such as diabetes. Involving school children in this fight is a positive strategy," he adds reflectively.

Surveys conducted at the beginning and at the end of the project recording the children's knowledge, attitude and practice regarding health, nutrition, diseases, physical activity and healthy cooking methods will provide evidence of the impact.

Substantial impact

"We expect that by the end of the project the children and their families will have enhanced their awareness of non-communicable diseases and that they will have changed their behaviour to incorporate healthier lifestyle practices. Ultimately it is our hope that the project will have far-reaching implications for the prevention of obesity and its related co-morbidities and that the initiative will have a catalyst effect, and facilitate a major health movement," explains Professor Anoop Misra.

Continued labelling of the food items sold in the school canteens, ongoing awareness-raising by student volunteers and keeping focus on exercise and healthy eating habits at home will ensure continued focus on healthy living after the project's completion. To date 18 schools have actively begun the implementation of the project and the number of completed lectures on healthy living has reached 29, targeting more than 7,300 children.

Primary prevention, which means preventing a disease from developing in the population, is one of the strategic focus areas of the World Diabetes Foundation. The MARG programme is the first project which focuses 100% on primary prevention of not only diabetes but of non-communicable diseases in general. Other projects are underway and being implemented in South Africa, China and the Caribbean, and several other projects supported by the World Diabetes Foundation have primary prevention as part of their activities.

According to the World Health Organization (WHO), childhood obesity is already an epidemic in the developed part of the world and on the rise in developing countries as diverse as India, China and Vietnam. It is estimated that at least 20 million children under the age of five are overweight worldwide

At the end of the three-year period, the project will have reached more than 50,000 school children in North India

In addition 60 teachers and 120 student volunteers will have received training in the dissemination of nutrition and health messages and nearly 10,000 parents will have received lectures on healthy living



FIGHTING OBESITY AND ITS COMPLICATIONS IN CHINA

CHINA

A mere 45 years ago, China was still in the grip of a massive famine with starvation leading to the deaths of 30 million people. The situation has dramatically changed now. The trail-blazing economic growth of the last three decades, the increased rate of urbanisation and improvements in standards of living have brought in their wake new health problems. China is literally supersizing its children as fast as its economy, and obesity rates are increasing with a speed that greatly exceeds the growth trends found in developed countries. A health promotion project now seeks to change these alarming trends with support from the World Diabetes Foundation.

More than 2,093

community doctors and nurses have been trained to screen high risk individuals, carry out blood tests to diagnose diabetes, and provide education and counselling on reducing risk factors and changing life styles. Over 450 community clinics have started the identification of high-risk individuals and interventions

A generation of economic expansion has produced higher living standards and allowed Chinese families to put more food on the table. But it is not just the economy that is expanding in China. Children's waistlines are growing too, and experts warn that obesity could become the country's biggest health threat - as more and more people suffer from weight problems.

According to ministry figures the average 6-year-old in Beijing or Shanghai weighs nearly 47 pounds and is 3 feet, 10.5 inches tall. Altogether, around 200 million people or 22.8% of the existing population are thought to be overweight, and 60 million (7.1%) obese.

"Bigger children are a source of pride and proof

of prosperity for many Chinese. The old saying, 'A fat child is a healthy child,' is still too prevalent. Parents and grandparents often show love by force feeding their children, as if to make up for having had too little to eat when they were young," says the Director of the National Centre for Non-communicable Disease Prevention and Control (CDC) Dr. Wu Fan, and points out that the Chinese population is unaware of the consequence of this problem and lacks knowledge of what is a reasonable nutrition and diet.

In only two decades, China moved from a diet rich in grains and vegetables to one laden with red meat, sugar and saturated fats. Along with the changing diets, limited physical activity due to rapid urbanisation means fewer trips on foot or

by bicycle and more use of motorised transport. The ubiquitous televisions, computers and Internet are furthermore helping create sedentary lifestyles.

Promoting health

To address the health problems several interventions have been initiated by the Chinese authorities and Chinese health professionals. One project specifically aimed at addressing the growing number of people with diabetes in the city of Qingdao has been initiated by Dr. Qing Qiao in the Department of Public Health at the University of Helsinki in Finland and gets administrative support from the Qingdao Municipal Health Administrative Bureau. The project is implemented in close collaboration with the Qingdao Centre for Disease Control and Prevention. Dr. Lingzhi Kong, the Deputy Director General of the Bureau of Disease Control at the Ministry of Health, China, has also expressed her personal support to the project through attending various activities organised by the project team.

The Qingdao Diabetes Prevention Programme receives financial support from the World Diabetes Foundation. The project targets 1.94 million residents living in four districts of the city. A survey on diabetes showed that among people aged 35 years or older, 6.4 % had a prior history of diabetes, 9.8% undiagnosed diabetes and 23% IFG/IGT. Most of the diabetic individuals were not aware of their diabetes status before the survey. The project therefore aims to raise public awareness of the disease and reduce the occurrence of diabetes among the high-risk individuals through community-based lifestyle intervention.

“The Qingdao Diabetes Prevention Programme is the first large community-based intervention programme to address the problem of diabetes and we hope that the model for the primary prevention of diabetes developed in Qingdao may be replicated in other regions of China. Primary prevention is the most cost-effective approach to combat the socio-economic impact of diabetes which is why the present project is important and has tremendous significance for China. It is the first attempt to translate the results of the Da Qing study – the first study in the world to show that improving physical activity and ensuring a healthy diet can prevent type 2 diabetes - and other prevention trials in a large community setting,” says Dr. Lingzhi Kong, Deputy Director General of the Bureau of Disease Control Ministry of Health, China.

A threefold strategy

The Qingdao Prevention Programme is aimed at three different target groups: the general public, people at high risk of developing diabetes and people with undiagnosed diabetes. At the level of the general public, the project is aimed at raising diabetes awareness and promoting health in the entire population through education and interventions to promote a healthy diet and physical activity. Among people at high risk for developing diabetes, the project aims at preventing or delaying the onset of diabetes by early identification of people at risk, targeted education and practical counselling on lifestyle issues.

For those with undiagnosed diabetes, the project aims to improve diagnosis rates and ensure appropriate care to prevent the development of complications. Three different strategies are applied and by combining them, the intention is to create a platform for the prevention of diabetes and its complications.

“The health care system plays an important role when it comes to preventive measures. Health promotion, early detection and proper care are key performance indicators. Unfortunately, the capacity of the health system outside the large hospitals in the cities to address these in relation to chronic diseases such as diabetes, is very low in terms of knowledge, skills and infrastructure. Therefore, to help drive awareness and improve diabetes care, training and user friendly information and guidance are required. This is what the Qingdao project addresses,” says Dr. Qing Qiao from the University of Helsinki, the architect and the main driver of the project

Long-term sustainability of the project is expected to be high with the project being implemented by the local health bureau, the local CDC, and supported by the Ministry of Health in China.

The project received widespread attention and official commitment when it organised the 1st Qingdao Diabetes Prevention Forum. The meeting attracted participation from multiple local, regional and international stakeholders such as senior officials from the Ministry of Health, China, the Qingdao Municipal Health Bureau, the World Health Organization (WHO) country office in China, the WHO Western Pacific Region and the WHO Geneva HQ, the Chinese Diabetes Society, the Chinese Preventive Medicine Association, the International Diabetes Federation, the Oxford Health Alliance, the University of Helsinki, the Centre for Disease Control in Atlanta, USA and the World Diabetes Foundation.



A total of 68,226 people have been screened. Some 18,340 people have been identified to be at high-risk; 2,840 cases of known diabetes and 1,592 cases of previously unknown diabetes have been identified so far



In addition, 313 school nurses from schools in the region have been trained, and some of them have started using the materials provided by the project in their classes as part of the school curriculum

A comprehensive booklet providing information on diabetes risk factors, healthy lifestyles and practical tips has been printed and is being distributed to each household in the area

Qingdao Morning, the most popular newspaper in the area, has published 28 articles dedicated to diabetes

Another awareness initiative related to the project includes a 30-minute educational program on Qingdao People's Radio. The projected outreach of the media awareness campaign is a total of 1.94 million people



DIABETES SUMMIT AFRICA, KENYA 2007

KENYA

More than 230 delegates from 25 countries in Sub-Saharan Africa, leading global health experts, ministers of health from Niger, Guinea Conakry, the Republic of Kenya, representatives from bilateral donor organisations and national health authorities convened at the Diabetes Summit Africa organised by the World Diabetes Foundation in cooperation with the World Health Organization Regional Office for Africa (WHO AFRO), the International Diabetes Federation African Region (IDF AFRICA) and the Kenyan Ministry of Health.

In 2002, only 3.5% (1.53 million USD) of the total WHO budget of USD 43.6 million was spent on non-communicable diseases. Yet treating diabetes in the poorest countries does not require huge resources or huge financial investment

They came together to discuss the growing prevalence of diabetes in the developing world, especially Africa, and discuss strategies for managing what is predicted to be the major health crisis of the 21st century.

“Our health services and interventions in the past have focused on infectious diseases. Adequate emphasis has not been placed on non-communicable diseases which impose a huge burden on the overstretched health services in this country. A lasting solution for diabetes is prevention and control within a national

programme,” said Kenya’s Minister for Health, Mrs. Charity Kaluki Ngilu, in her opening remarks.

To loud applause, she announced that the Ministry of Health is currently developing a comprehensive control programme for diabetes and other non-communicable diseases. She added that she and her ministry will ensure that the programme receives the necessary resources.

The two-day summit held in Nairobi on the 29th and 30th of June, 2007 was packed with high quality lectures and lively discussions. A high

level panel discussion and open forum moderated by Mr. Quentin Cooper from the BBC's Material World programme was one of the star attractions of the summit. The panel consisted of leading experts in the field of development assistance, access to care and key representatives from the Kenya National Health Insurance Fund, the Non-communicable Disease Division of the WHO Regional Office for Africa, the Kenyan Ministry of Health, the International Diabetes Federation, the United Nations Permanent Forum on Indigenous Issues and the Danish International Development Assistance.

Professor Martin Sillink, President of the International Diabetes Federation, was one of the lecturers; "The Diabetes Summit Africa in Kenya was the first major diabetes event in Africa since the adoption of the United Nations Resolution on Diabetes and the launch of the 'Diabetes Declaration and Strategy for Africa' in December 2006. The summit organised by the World Diabetes Foundation is of major significance, marking a milestone in our joint efforts to develop effective advocacy and sustainable solutions to address challenges posed by non-communicable diseases in general, and diabetes in particular," he said.

Creating international headlines

It has been estimated that the media coverage of this year's Diabetes Summit Africa will reach well over 70 million people, providing much-needed information and focus on this often neglected problem. With 35 media participants attending the event, representing 14 African and European countries, and 25 news outlets, raising public awareness was one of the summit's key purposes.

Media coverage included newspaper articles, radio interviews, television coverage and podcasts. Attending the event and seeing a project in action at the grass roots level, journalists were not only better informed about the growing burden of diabetes, but also could not fail to be moved by and understand the impact of this disease in Kenya and other developing countries. Several articles, TV and radio broadcasts featuring diabetes appeared in the local and international media following the summit, thus helping raise awareness of the problem.

Prior to the Summit, the Kenya Diabetes Management and Information Centre (DMI) showcased their programme, which is supported by the World Diabetes Foundation, to demonstrate how effective collaboration can work at a practical level. The Foundation has provided

financial support to set up 42 clinics, 200 mini clinics, train health care professionals and create diabetes awareness programmes where people can learn about diabetes prevention through activities conducted in health facilities, faith-based organisations / institutions, community halls, schools and workplaces.

The effects of these awareness and education activities are expected to reach an estimated six million people in Kenya. The education component will also help provide training for 500 doctors, 3,000 nurses, 250 dieticians, 1,000 paramedics and 2,700 lay educators.

"These programmes demonstrate a very successful partnership between the DMI, the World Diabetes Foundation and the Ministry of Health under which diabetes care capacity is established within the existing health care system to ensure a sustainable approach and strong commitment from the government of Kenya. We sincerely hope that in neighbouring countries our efforts will encourage similar projects that can evolve into national non-communicable disease programmes in the long term. We are delighted to co-host this important summit," Minister Charity Kaluki Ngilu said.

Focus on chronic diseases

"In African nations such as Kenya, the need is becoming increasingly urgent to focus public health initiatives on the prevention of chronic diseases such as diabetes," said the WHO Country Representative for Kenya, Dr. David Okello. "We are pleased to welcome key stakeholders not only from Africa, but across the globe to the Diabetes Summit Africa, to discuss procedures for tackling chronic disease at the country level, and ensure that effective and sustainable approaches are taken."

The developing nations account for seven of the top ten countries most affected by diabetes yet governments, policy makers, public health authorities and multilateral donors are either unwilling to accept or are ignorant of the threat of diabetes.

The next regional summit to be organised by the World Diabetes Foundation is planned to take place in 2008 in Chennai, India. The summit will focus on showcasing some of the most successful projects funded by the World Diabetes Foundation in India and better practice-sharing to replicate project ideas, seek co-funding opportunities and reach out for partnerships with potential funding bodies and bilateral donors.



Many prominent guests

were present at the opening ceremony which included the ministers of health from Kenya, Niger and Guinea Conakry, the Danish Ambassador to Kenya, WHO AFRO non-communicable disease advisors, the WHO Representative for Kenya, and a representative from DANIDA – the Danish International Development Assistance



The President of IDF, the Chairman of IDF Africa and the President Elect of IDF as well as several project partners was represented. In addition local representatives from the Clinton Foundation, UNICEF, the Agha Khan Foundation and the European Commission attended the opening ceremony



HIGH NOTES FOR A **SERIOUS** CAUSE

CAMBODIA

On October 14, 2007 professional opera and theatre artists stood shoulder to shoulder in a charity concert at the "Cadogan Hall, London" to donate their time and talent in support of the World Diabetes Foundation and poor and disadvantaged people living with diabetes in Cambodia, and particularly children. An audience of 500 people, including sponsors, friends and well-wishers, theatre and opera aficionados, was thrilled and moved by the performance - a memorable evening of spoken word and song.



The concert was a culmination of months of preparation and joint collaboration of friends and colleagues of Jan and Jeffrey Black. The pharmaceutical company Novo Nordisk UK and publisher Smith, Wiley & Sons contributed significantly with corporate sponsorships to support the event along with other significant individual donations. The Cadogan Hall contributed with the venue. In addition, the Royal Danish Embassy in London endorsed the event with a reception held prior to the concert.

In his vote of thanks the Chairman of the World Diabetes Foundation, Professor Pierre Lefèbvre said; "The performance was truly a remarkable experience of song and spoken word. The Foundation is grateful for the support, magnanimity and great performance and is thankful to the artists, contributors, corporate sponsors and the attending audience. Every day in Cambodia, many children and adults die because they cannot receive the basic care and treatment they need to survive; many more die before a diagnosis can

be made. We sincerely hope that we can raise a sizeable amount to support the initiatives in Cambodia”.

Diagnosed with type 1 diabetes

Three years ago James, the teenage son of Jeffrey and Jan Black, collapsed in Brisbane, Australia and was rushed to hospital where he spent five days in intensive care and was diagnosed with type 1 diabetes. There being no history of the condition on either side of the family, the family members were literally shocked.

“Fortunately, James is robust and healthy now and the ongoing monitoring and four injections of insulin a day are a small price to pay to have him with us,” Jeffrey says. Other children, however, are not so fortunate. In Cambodia many children simply die either through misdiagnosis or lack of available treatment. “When I was approached to present a recital here in London, I was immediately attracted to the idea of arranging a charity event to raise awareness of diabetes in the developing world and to help raise funds for the wonderful work being undertaken by the World Diabetes Foundation,” Jeffrey Black explains.

Six months prior to the concert, Jeffrey Black and 13-year-old James found themselves in a less comfortable environment - in the slums of Phnom Penh, Cambodia. Something that looked and smelled like a chicken coop turned out to be the home of an entire family, including a child with type 1 diabetes.

Getting by on less than nothing

Jeffrey remembers the visit: “The 13-year-old girl we met was the same age as James, but looked only eight years old”. Unlike James, she already suffered from diabetes complications, having lost her eyesight in one eye and with deteriorating vision in the other.

Jeffrey and James visited her and her family living on a small rented farm in the outskirts of Phnom Penh. They recently moved there to be closer to diabetes treatment, underlining that access to care is one of the dire problems for people with diabetes in Cambodia. The stench of pigs, rotten vegetables and defecation in the yard was overwhelming. The girl was tending the pig sty as part of her chores, and in return the family was given access to one hour of electricity from the landlord. Without a refrigerator her insulin was instead stored in a clay pot, cooled by an almost melted ice block from the day before.

The family had no resources to improve their living environment. If crops failed and no fish were caught for dinner, the family was forced to borrow money to cover its needs.

Providing access to care

After the charity opera concert, help is one step closer. The proceeds emanating from ticket sales and corporate sponsorships amounted to GBP 24,000. This money along with donations from other fundraisers within Novo Nordisk A/S will be used by the World Diabetes Foundation to help establish new diabetes clinics at regional hospitals in Siem Reap and Kratie to improve access to diabetes care.

“Thanks to the outstanding contribution by the Blacks and their friends and colleagues and all other people involved in the event, we will actually be able to help children in Cambodia,” says Professor Lim Keuky President of the Cambodian Diabetes Association (CDA). He is eager to start a search for the forgotten type 1 children of Cambodia and hopes that more cases of type 1 diabetes in children will be detected by creating awareness messaging using the radio, television and newspapers. Once the children can be located, they would be referred to clinics running under or cooperating with CDA ensuring proper diabetes care and follow-up and ultimately finding means for the children to attend school, securing them a future.

Treatment moves closer to the people

The family visited by the Blacks had left their home to solve a problem they share with many people with diabetes in Cambodia - distance to treatment. This issue has been addressed by the World Diabetes Foundation by coordinating the establishment of two container clinics in Battam Bang and Kampong Thom. Since 2007, volunteers from CDA have run the project with the help of donations from Novo Nordisk A/S, containers sponsored by Maersk Shipping A/S and equipment from other private sponsors. Two additional clinics will be built in 2008 in the cities of Siem Reap and Kratie. The presence of these clinics will help increase awareness of diabetes and its complications and strengthen access to treatment in four cities.

“The visit to Cambodia galvanized us and made us believe that the funds raised by the concert will be put to good use in Cambodia, building on existing structures and assuring a well-integrated model for access to care in true partnership with local authorities,” Jeffrey Black explains.

Cambodia is one of the poorest countries in the world. The majority of the population lives in a rural setting, and is barely able to support itself through farming, which gives people a monthly income of less than USD 10



During their trip to Cambodia, Jeffrey and James Black visited one of the existing diabetes clinics inaugurated in February 2007. The clinic provides care and treatment for more than 1,500-people with diabetes on a regularly basis

Apart from the fundraising activities, the World Diabetes Foundation is currently supporting five projects in Cambodia in collaboration with operating partners including the World Health Organization, the Cambodian Diabetes Association and the Cambodian Ministry of Health

ANNUAL ACCOUNTS 2007

Profit and loss account, 1 January - 31 December 2007

| | DKK 1,000 |
|--|---------------|
| Donations from Novo Nordisk A/S and others | 69,107 |
| Administration expenses | -5,568 |
| Project expenses | -6,883 |
| Profit before financial income and expenses | 56,656 |
| Financial income | 7,458 |
| Financial expenses | -1,022 |
| Net profit for the year | 63,092 |
| Appropriation of net profit for the year | |
| Distributions from the World Diabetes Foundation | 71,989 |
| At disposal for future distributions | -8,897 |

Balance sheet as at 31 December 2007

| | DKK 1,000 |
|--|----------------|
| Assets | |
| Locked-up capital | 260 |
| Fixed assets | 260 |
| Receivable donations from Novo Nordisk Group | 13,593 |
| Interest receivable | 3,685 |
| Total receivables | 17,278 |
| Bond holdings | 91,878 |
| Cash at bank | 84,617 |
| Current assets | 193,773 |
| Total assets | 194,033 |
| Equity and liabilities | |
| Locked-up capital | 260 |
| Disposable capital | 64,025 |
| Total equity | 64,285 |
| Accrued distributions | 129,098 |
| Other provisions | 650 |
| Total short-term liabilities | 129,748 |
| Total equity and liabilities | 194,033 |

The above is a non-audited abstract of the Annual Accounts 2007

Administration expenses amounted to 7.27% of the Foundation's total income in 2007

For full details of the annual accounts, please refer to our website:
www.worlddiabetesfoundation.org



Cover photo by Jesper Westley

WORLD **DIABETES** FOUNDATION

Annual Review 2007

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The World Diabetes Foundation
is dedicated to supporting the
prevention and treatment of diabetes
in the developing world

The World Diabetes Foundation
creates partnerships and acts as a
catalyst to help others do more

The World Diabetes Foundation
strives to educate and advocate
globally in an effort to create
awareness, care and relief to those
impacted by the disease



WORLD **DIABETES** FOUNDATION