



WORLD **DIABETES** FOUNDATION

ANNUAL REVIEW 2008

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Scientific studies indicate that maternal malnutrition, particularly protein and micronutrient deficiencies, are associated with small babies. When these babies are overnourished during infancy and early childhood, they develop anthropometric and biochemical markers of the metabolic syndrome and, hence, are at increased risk of developing diabetes, impaired glucose tolerance, arterial hypertension, coronary heart disease, lipid abnormalities and stroke in adult life, often prematurely.





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Public announcements through drums and loudspeakers are used to create awareness and raise the noise about diabetes in the Indian village of Inam Agaram.

BREAKING THE SILENCE

Referred to as “the silent killer”, diabetes and its devastating complications are sweeping across the developing world, taking and destroying lives at random. To slow the diabetes epidemic, a unified effort is required, starting with raising awareness and increasing measures to promote primary prevention. Creating awareness about its dangers is imperative in order to fight this silent killer and prevent the ultimate disaster from striking.



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Prof. Pierre Lefebvre

Health promotion and primary prevention are our most effective weapons in the fight against diabetes and other chronic non-communicable diseases, as these efforts do not only have the potential to prevent or delay the onset of type 2 diabetes, but also have a salutary effect on the risk of the other common non-communicable diseases such as obesity, arterial hypertension, cancer, stroke and heart diseases. Therefore, raising awareness of diabetes in an attempt to reduce the burden of the disease and its complications will be an important part of future projects funded by the World Diabetes Foundation.

Targeting obesity and the coming generation

Addressing obesity is an area where primary prevention efforts can truly make a difference, particularly among children. In the wake of rapid economic development and globalisation, developing countries are experiencing an increasing prevalence of obesity, especially in children, due to nutritional transition and reduced physical activity associated with rapid

urbanisation. Worldwide, an estimated 10% of children are overweight or obese. In South-East Asia, which is already fighting a growing diabetes burden, the number of overweight children is expected to increase by 27.5% from 2005 to 2010. Obesity is a major risk factor for type 2 diabetes, arterial hypertension and cardiovascular diseases, and the immense rise in obesity among children has the potential to “fuel” the diabetes epidemic. To stem the increasing morbidity and mortality related to chronic non-communicable diseases in developing countries, primary prevention in the form of large-scale, school-based intervention programmes focusing on increasing physical activity and healthy nutrition must be implemented.

Women’s health is a nation’s wealth

Gestational diabetes represents another area in which primary prevention efforts are most likely to pay rich dividends. Undiagnosed or poorly managed, gestational diabetes threatens the life of pregnant women and their children and significantly increases the risk of both mother

and child developing type 2 diabetes later in life. Similarly, there is considerable evidence to suggest that maternal malnutrition, particularly protein and micronutrient deficiencies, is associated with small babies. When these babies are overnourished during infancy and early childhood, they develop anthropometric and biochemical markers of the metabolic syndrome and, hence, are at increased risk of developing diabetes, impaired glucose tolerance, arterial hypertension, coronary heart disease, lipid abnormalities and stroke in adult life, often prematurely.

Pregnancy offers a window of opportunity for intergenerational prevention of several chronic diseases. Public health initiatives addressing maternal malnutrition and diabetes during pregnancy can easily be integrated into existing programmes for maternal and child health care, as demonstrated through an initiative funded by the World Diabetes Foundation in Tamil Nadu, India. Therefore, integrated interventions to improve maternal health have potentially far-reaching health and economic benefits in the developing world. This realisation prompted the experts attending an important UN stakeholder meeting on Women, Diabetes and Development, organised by the World Diabetes Foundation, to coin the slogan "Women's Health is a Nation's Wealth".

The silent killer feeds on ignorance

One of the greatest barriers to controlling diabetes is ignorance and apathy, not only amongst lay people, but even amongst many caregivers and policymakers. Placing diabetes on the agenda and making it everyone's business are important steps in addressing the issue. Involving the media and making them partners in our efforts to raise awareness about diabetes is, therefore, another important part of the Foundation's strategy. By organising regional summits and field visits, we give the media an opportunity for firsthand experience of the pain and suffering diabetes and its complications cause and demonstrate how the right interventions can effectively contribute to alleviating the suffering.

In India, a unique partnership with one of the largest media companies, Jagran Peהל, enables us to get our message across to millions of people and spur them to visit awareness camps to learn more about diabetes and receive a check-up. Under the slogan "Janch se Bache Jan", which means "check-up will save lives" in Hindi, the campaign has built awareness about diabetes through print media, radio, TV and SMS, in parts of India with widespread illiteracy and rampant apathy to health issues. The campaign has also managed to attract the attention of state ministers of health, politicians, key opinion leaders, non-governmental organisations and school children.

Another example of our efforts to place diabetes on the global agenda is the annual Global Diabetes Walk, which is promoted by the World Diabetes

Foundation. This awareness initiative attracts the attention of the media and mobilises the global diabetes community in collaboration with multiple stakeholders.

Setting an example on primary prevention

Acknowledging how primary prevention is the key to slowing the diabetes epidemic, the main focus of this year's Annual Review is on prevention projects. It includes examples of best practices from across the world, showing how small and simple projects can evolve into sustainable programmes and yield replicable models. At the World Diabetes Foundation, we seek to create alliances and partnerships aimed at preventing diabetes, linking people and resources to advocate globally and provide care locally.

Strategies for preventing non-communicable diseases cannot depend on governments alone. Health promotion programmes at workplaces and in schools provide important opportunities for influencing large segments of the population. Improving the health of employees reduces absenteeism and improves productivity and thus benefits employers. In Thailand, a project funded by the World Diabetes Foundation involves 20 companies and 2,000 employees in a concerted effort to promote lifestyle change among the working population in Bangkok.

The World Diabetes Foundation currently supports major health promotion and prevention interventions in developing countries. These projects aim to develop comprehensive, sustainable models involving lay people, school children, parents, health care professionals, primary health care centres, non-governmental organisations and development groups, as well as the media in a joint effort to promote healthy living. Within the next few years, school-based projects supported by the World Diabetes Foundation for diabetes awareness, prevention and education are estimated to reach more than 1.3 million school children in China, India, South Africa and the Caribbean.

Fortunately, in the last couple of years, diabetes and non-communicable diseases have slowly begun to claim their rightful place on the global health agenda as well as in the media. But there is still a long way to go. If we are to break the silence and win the fight against the silent killer, it is essential that we join forces with several stakeholders in a coordinated effort to raise the noise about awareness of diabetes and to promote primary prevention.



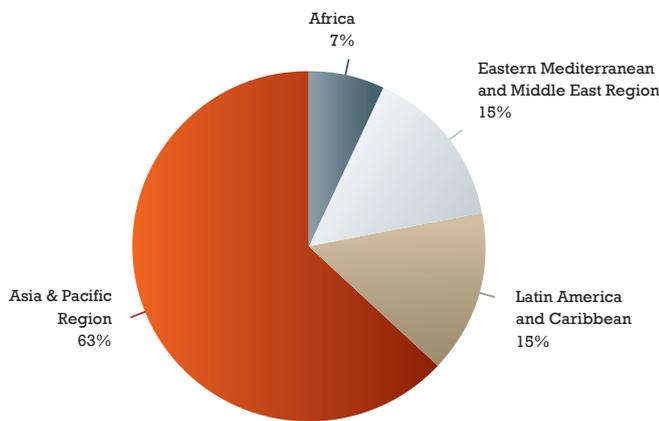
Prof. Pierre Lefebvre
Chairman
World Diabetes Foundation



^ Worldwide, about 1.6 billion people are overweight or obese, and by 2015, an estimated 2.3 billion adults will be overweight and more than 700 million will be obese.

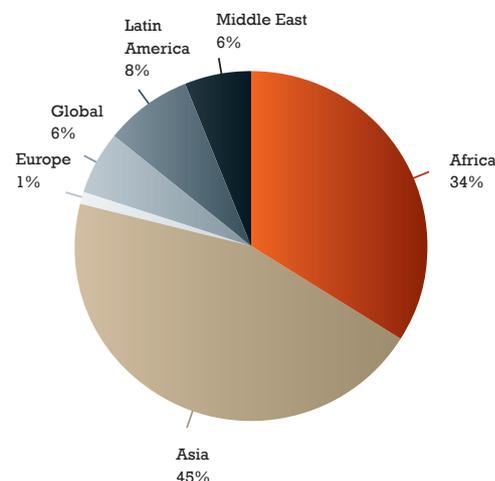
An obese person experiences a 50% decrease in productivity and visits a doctor 88% more than a healthy person. Thereby, obesity poses a threat to developing countries' health budgets and economies.

Every minute, a woman dies in pregnancy or childbirth, and every year, more than 1 million newborns die within their first 24 hours of life for lack of quality care.



Regional Burden of Diabetes (WDF Eligible Areas)

Source: IDF Diabetes Atlas, 3rd ed., 2006



WDF Funding Distribution per Region

2002 - 2008

FIGHTING DIABETES WITH A TWO-EDGED SWORD

Diabetes and other non-communicable diseases are spreading across the developing world like wildfire, leaving in their wake immense suffering among individuals and their families as well as massive economic consequences for low resource and financially strained economies. The World Diabetes Foundation strives to fight diabetes with a two-edged sword, advocating resources globally and providing care locally.



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Dr. Anil Kapur

The Chennai Call for Action resolution asked for urgent actions to address and mitigate the threat posed by diabetes and related non-communicable diseases through the following measures:

Strengthen and adjust health care systems to address the prevention and care of chronic non-communicable diseases at the primary health care level. Participants recommend that prevention and control of diabetes and arterial hypertension offer a model for initiating such activities.

Since its establishment in 2002, the World Diabetes Foundation has grown into a leading international funding agency devoted solely to funding projects within diabetes care and prevention in the developing world. Although we recognise that our work is far from over, we can be proud that our efforts are starting to bear fruit. The World Diabetes Foundation has funded 182 projects in 83 countries, focusing on awareness, education and capacity building at local, regional and global levels. The total project portfolio has reached USD 191.4 million of which USD 62.2 million were donated by the World Diabetes Foundation. A projection based on achievements to date and milestones of ongoing projects indicate that the initiatives funded by the World Diabetes Foundation will positively impact the lives of 66 million people across the developing world.

A catalyst for change

At the World Diabetes Foundation, we strive to fund projects in areas that bear the brunt of the disease burden and have the least resources to deal with it. Asia, which accounts for almost two thirds of people with diabetes living in countries eligible for World Diabetes Foundation project funding, receives 45% of the Foundation's funds, whereas Africa receives 34% of the funds despite accounting for only 7% of people with diabetes eligible for funding from the Foundation.

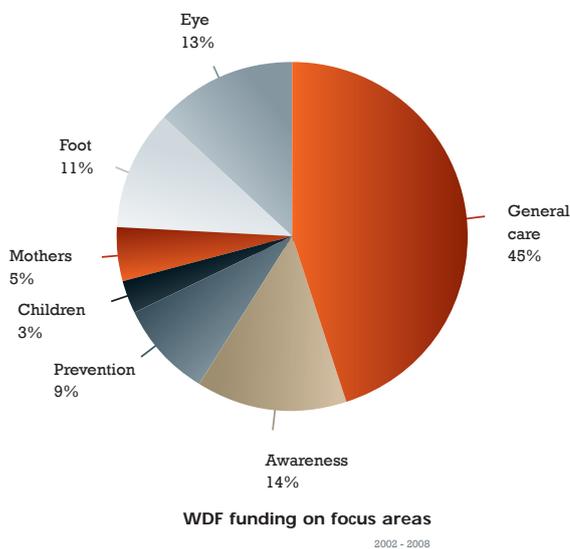
These are also the very same countries where resources for diabetes prevention and treatment are very scarce and where the projected future burden of diabetes is high. Likewise, we allocate our funding to areas where it truly makes a difference. For instance, 45% of our funding is spent on general

care such as strengthening health care systems and building health care capacity, which constitutes the basic element for diabetes prevention and care. Furthermore, we allocate 13% of our funding to eye care (prevention of blindness) and 11% to the diabetic foot (prevention of amputations), as diabetes-related blindness and lower-limb amputations are the most devastating complications and the majority can be prevented by relatively simple measures.

Improving access to care

All too often, people in the developing world discover they have diabetes when it is too late and start to have serious complications. Diabetes screening, awareness camps and the establishment of clinics supported by the World Diabetes Foundation bring diagnostic equipment and trained staff to detect not only diabetes but some of the most disastrous yet easily preventable and treatable complications such as the diabetic foot, eye complications such as retinopathy, cataract and glaucoma that can lead to unnecessary blindness. To date, more than 5,103,470 people have attended 4,427 screening camps, and 2,876,565 people have been screened for diabetes. More than 229,829 documented cases of people have been treated at the 754 established clinics funded by the Foundation.

Training health care professionals in proper screening and care of the diabetic foot and eye care is essential for preventing needless amputations and blindness. Presently, the World Diabetes Foundation has supported the training of 14,433 doctors, 12,835 nurses and 27,852 paramedics. In addition, more than 32,090 cases



of diabetic retinopathy have been detected, and 21,991 eyes and 18,232 feet saved, thus rescuing thousands of people from certain disability and their families from lifelong indebtedness.

Advocating the need for action and awareness

Access to care is important, but so is awareness about diabetes and its devastating complications. Therefore, we constantly seek to place diabetes and non-communicable diseases higher on the global health agenda, and in 2008, we supported and facilitated a number of global awareness initiatives, some of which are highlighted in this year's Annual Review.

In order to bring attention to the impact of diabetes on women's health and convince governments, UN agencies, donors and non-governmental organisations to include gestational diabetes in their maternal and child health agendas, we organised a meeting of leading global health experts at the UN headquarters in New York in April 2008 in cooperation with the Global Alliance for Women's Health. The meeting concluded that pregnancy offers a great window of opportunity to provide maternal care services not only to reduce the traditionally known maternal and perinatal morbidity and mortality indicators, but also for intergenerational prevention of several chronic diseases such as diabetes, arterial hypertension, cardiovascular diseases and strokes.

Another successful advocacy initiative was the Diabetes Summit for South-East Asia in Chennai, India. In a region where more than 53 million people are currently living with the condition, the summit, organised by the World Diabetes Foundation in cooperation with the World Health

Organization, Regional Office for South-East Asia (WHO SEARO), the International Diabetes Federation (IDF) and the World Bank attracted more than 200 delegates from South-East Asia, including leading global health experts, ministers of health, donors, non-governmental organisations, international media and national health authorities. During the summit, *the Chennai Call for Action* was approved by the attending organisations and unanimously endorsed by the summit participants.

Breaking barriers and bringing hope

The mission statement of the World Diabetes Foundation reads: "The aim is to alleviate human suffering related to diabetes and its complications among those least able to withstand the burden of disease." Every day since the World Diabetes Foundation was established in 2002, we have fought to achieve this goal and were delighted when, in March 2008, the shareholders of Novo Nordisk A/S approved an additional endowment of DKK 575 million over another 10-year period, bringing the total endowments from Novo Nordisk A/S to a total maximum of DKK 1.2 billion in the period from 2001 to 2017, equal to USD 255 million. At the World Diabetes Foundation, we see this as a sign of faith in the work of the Foundation and are grateful for this additional endowment.

The challenges posed by diabetes in the developing world are immense. However, the work of the Foundation and others already provides care and relief to millions of people and the footprints of these interventions can be seen across the world. To me, these initial years mark the beginning of a journey of hope for people with diabetes in the developing world. While funding is essential to get the job done, more important are dedication, commitment and trust, values we get in abundance from our project partners and I salute them for their efforts and the continued success of the projects. On behalf of the World Diabetes Foundation's Board of Directors and secretariat, I wish to thank our sponsors, project partners and well-wishers for their support during the year, and it certainly was a momentous year in the short life of this Foundation!

Dr. Anil Kapur
Managing Director
World Diabetes Foundation

Develop and implement culturally appropriate programmes for education and awareness relating to the common risk factors for non-communicable diseases, as well as programmes to reduce these risks through healthy diet, increased physical activity, smoking cessation and avoidance of harmful use of alcohol.

The Chennai Call for Action resolution asks for actions to promote "life cycle" as well as "life style" approaches for prevention of diabetes and related non-communicable diseases to accrue multigenerational benefits of the interventions. Strengthen surveillance systems to track and monitor the health and economic burden of non-communicable diseases and their risk factors. Recognise that survival and optimal development of children with type 1 diabetes are dependent on daily injection(s) of insulin. Creating access to an uninterrupted supply of insulin is therefore not merely a matter of making a treatment available, but tantamount to the child's basic human right to live.

Facilitate the creation of an essential drug list for rational and optimal care of common non-communicable diseases at the primary health care level, as well as ensure availability and distribution of these medications at all times.

Endorse and support a call for a UN General Assembly special session to discuss and include chronic non-communicable diseases into the United Nations Millennium Development Goals and the creation of a global fund for health including both communicable and non-communicable diseases.



MEDIA CAMPAIGN FOR PREVENTION AND CARE OF DIABETES IN INDIA

INDIA

Can mass media change lifestyle behaviour? Based on the assumption that it can, a major diabetes awareness campaign ran in India throughout 2008. The media house Jagran Pehel embarked on the project as one of corporate social responsibility, and they were as keen to accomplish success as their partner, the World Diabetes Foundation.



The media campaign covered 96 districts in 14 states. At 410 screening camps, a total of 114,027 people were screened and 15,760, or 13.8% were detected to have diabetes. More than 500 doctors participated in the campaign. The total population reached with awareness activities during the road shows exceeds 350,000 people.

Having sensitised more than 350,000 people and screened more than 100,000, the Media Campaign for Prevention and Care of Diabetes in India reached much further than expected. Despite the obvious quantitative effects, the real success is to be found in the qualitative effects of the awareness campaign. One obvious indicator of such a success is that 13.8% of those screened were detected to have diabetes, allowing them to seek care and avoid serious complications. Another indicator of success was the multi-stakeholder involvement created across non-governmental organisations, key opinion leaders, medical associations, civil society, local Rotary clubs, local Lions clubs and local health care professionals. All joining forces in creating awareness about diabetes, these are precisely the kind of partnerships that can bring about momentous changes in diabetes care.

Mr. Sanjay Gupta, CEO and Editor at the daily Dainik Jagran sums up the success: "India has witnessed several examples of social commitment from profit-making businesses. The recent developments in the area of corporate social responsibility have opened up new horizons for the corporate sector, not only in terms of mere formalities, but tangible

impact on their brand value and acceptance among their consumers. Jagran Pehel in association with the World Diabetes Foundation has created an example of mutual leverage for a social cause. The big success of this campaign again proves that the media can be used as a tool of social change and bring about a mass awakening."

Cabinet Minister of Health in the government of Bihar, Mr. Nand Kishore Yadav, expressed his great appreciation for the mass media approach run by Jagran Pehel to the challenge that diabetes poses to the Indian society and health care system: "The key solution to the diabetes problem in India lies in the steps required towards generating awareness amongst the masses regarding prevention and care." As an example of a policymaker impacted by the campaign, he added: "I would like to reconfirm that the state government of Bihar will prioritise diabetes prevention and care in our future course of action."

Cinema on wheels

The entire campaign ran for 193 days throughout 2008 and lasted between four and 50 days in each state, depending on the size and number

of districts covered. In Rajasthan, the campaign lasted only four days, whereas it lasted for 50 days in Uttar Pradesh and Bihar. In the first two days preceding the screening camps, radio spots, street adverts, posters and banners, motorcycle rallies and public awareness initiatives announced, when and where the diabetes screening camps would be held. On the day of the road show, a van, which was actually a mobile cinema mounted with loudspeakers, folded out a screen and showed a short film about the Sharma family where the father is the protagonist in a story about diabetes.

The turning point in the fictitious Indian drama comes when the father approaches the doctor describing all the symptoms and is diagnosed with diabetes. At first, he thinks that his life is over, and this has a dramatic effect on the family members, but the key learning point shows that it is possible to live with diabetes by adopting the right lifestyle and taking medication. During the film display, people were informed about the common risk factors and symptoms of diabetes, key messages of prevention, and how to live a productive and healthy life avoiding the disease in a simple manner.

After the film, information and education material was handed out. In order to further involve the local crowd in the theme of diabetes, people could participate in a quiz and win prizes. They were also encouraged to attend the free screening camp the following day. A screening camp typically took place in a community centre or semi-urban area where local doctors, nurses and self-help groups volunteered to screen people. If a person was found to have diabetes or high sugar levels, he or she was given a paper slip with all the essential data and referred to the local hospital, ward or clinic. Even the time spent in the endless lines of people waiting for their blood sugar tests was utilised in a productive manner: Education material was distributed, the film displayed, and a diabetologist or a doctor was available for consultation.

A triple media approach

The campaign was well rooted in the media with regular articles and news releases about diabetes in Dainik Jagran, India's largest daily read with 56.6 million readers. Furthermore, a radio campaign featuring the fictitious Dr. Mantra was aired with informative jingles and question & answer sessions. The radio programmes were essential in order to sensitise the poorer, illiterate population, and they reached an estimated population of more than 6 million. A third leg of the media campaign was the implementation of an SMS hotline, primarily targeted at the younger generation. The toll free number 57272 reached a response rate of more than 58,871 messages which provided important information about diabetes and questions and answers addressed in the campaign.

Looking at the cost effectiveness, Communication Manager of the World Diabetes Foundation, Mr. Jamal Butt is impressed with the outcome. "In

general, the campaign proved highly effective. The media reached extremely widely, awareness was raised and the local population was mobilised and screened for diabetes. Presently, the total average cost of road shows and screening camps is estimated to be less than USD 3 per person, and information and education about the risk factors and preventive measures reached millions of people," he explains.

According to local studies in India, the estimated annual cost to treat a person with diabetes is USD 460, rising by 48% for those with complications, and diabetes treatment may consume up to 15-25% of a monthly household income.

Mr. Jamal Butt continues: "Those who require the most advanced, expensive care for diabetes-related complications are often the people least able to afford it, and they may have to borrow money for treatment, thus entering a cycle of debt with disastrous consequences to the individuals, their families and society. This is exactly why the World Diabetes Foundation has joined forces with Jagran Peהל to increase the level of awareness of diabetes amongst the rural population."

Awareness in new territories

Out of 14 states covered by the Media Campaign for Prevention and Care of Diabetes in India, the World Diabetes Foundation currently supports projects in six states. With the poorer states of Bihar, Jharkhand, Orissa and Uttar Pradesh on the list, supporting the campaign serves a two-fold objective: Entering new territory and at the same time collaborating with existing World Diabetes Foundation partners to consolidate experience and build even greater awareness and capacity. Non-communicable diseases and diabetes in particular have to a large extent been neglected and devoid of proper awareness in the northern part of India. Low awareness along with poor health infrastructure aggravates the matter further, and access to diabetes care at community level has remained an elusive goal.

"Health care service providers cannot make a desirable change, unless the community has access to the right information and gets involved," says Mr. Anand Madhab, National Head of Jagran Peהל.

"Therefore, Jagran Peהל is proud to partner with the World Diabetes Foundation and of having co-sponsored this major media campaign, which has made a substantial change in creating awareness of diabetes in semi-urban communities. The momentum of the campaign and our key findings about the diabetes pandemic and its devastating complications have been a real eye opener for us. The next crucial step will be to strengthen the referral mechanisms for those who have been diagnosed with diabetes during the campaign," he says. It will take time for significant changes to happen, but the fact that political leadership took notice and promised action augurs well for the future.



The media coverage exceeded the initial commitment by far. In total, the editorial coverage amounted to approximately 30 pages of a broad sheet newspaper, while advertisements amounted to 14.5 pages. An estimated 431,870 seconds of air time were dedicated in Radio Mantra – this equals almost five entire days.

The total media and radio coverage of the campaign is estimated to have reached more than 40 million people. According to the World Association of Newspapers, Dainik Jagran is the largest daily read in the world with a readership of 56.6 million.



FIGHTING DIABETES AT THE WORKPLACE

THAILAND

Unhealthy diet, stress and lack of exercise have led to a significant deterioration of health amongst Bangkok's working population. Now, a project funded by the World Diabetes Foundation and initiated by a local hospital and foundation seeks to improve the level of health by involving the employers. The objective is to shift focus from treatment to prevention and to induce lifestyle changes among the employees in order to reduce the risk of developing diabetes and other non-communicable diseases.

According to the recently released "Social Determinants of Health" report from the World Health Organization (WHO), people's lifestyle and the conditions under which they live and work strongly influence their health. For instance, stress makes a person more vulnerable to diabetes and a number of other non-communicable diseases.

"In Bangkok, both men and women work long hours, which leaves little time to exercise or prepare healthy food. The traditional, healthy

Thai diet has been replaced by fast food, coffee with cream and lots of juice and soft drinks, which has led to a rise in obesity. The combination of obesity, stressful working conditions and lack of exercise increases health risks significantly and has resulted in a rise in diabetes and other non-communicable diseases. If we are to turn the tide, preventive measures must be taken immediately," says Ms. Tanya Himathongkam, Assistant Director at Theptarin Hospital in Bangkok.

Improving health and productivity

The WHO report concludes that a poor working environment can have severe human consequences for the employees as well as significant economic consequences for the employer due to decreased productivity. Improving working conditions will result in a healthier workforce, consequently reduce sickness and absence and improve productivity, which should effectively motivate employers to improve their employees' health. However, engaging employers in such preventive initiatives is not easy in Thailand. Although many companies offer annual health screenings to their employees, focus is on detection and treatment rather than wellness and prevention.

The Theptarin Hospital and the Foundation for the Development of Diabetes Care in Bangkok, both widely acknowledged for their effort to treat and prevent diabetes, have initiated a project, which aims to involve and empower selected employers in Bangkok to create awareness of health risks among the employees and provide a risk-reducing work environment.

"Cooperation with the employers offers several possibilities. Many people do not feel they have time for exercise in their spare time, and offering them the opportunity to exercise at work helps them overcome that particular barrier. At the hospital where I work, we have introduced half an hour of aerobics for the employees every day. At first, they thought it was a bit strange, but now they really enjoy it. Another reason for approaching people at their workplace is the peer support, which is crucial for behaviour modification and changing lifestyles: When healthy behaviour becomes the norm, it is easy to sustain it," Ms. Tanya Himathongkam explains.

The project's objective is to educate and support the employees on behaviour modification in order to improve their overall health. Since many of the risk factors associated with diabetes are also associated with a number of other common non-communicable diseases, diabetes prevention activities will also reduce the risk of hypertension, cancer and cardiovascular diseases.

Getting the employers on board

For Ms. Tanya Himathongkam, the first challenge has been to get the employers on board: "The project is still in its early stages, and so far we have contacted 10 companies. The aim of the project is to enter into cooperation with 20 companies. We try to get the employers on board by emphasising how healthy employees translate to less sickness and absence, better work quality and lower medical expenses, and therefore prevention is cost-effective. We want to change their mindset and convince them to invest in prevention rather than spend money on treatment," she says.

During the next three months, Ms. Tanya Himathongkam and her colleagues will work with the companies' human resource departments and support them in offering behaviour modification activities such as exercise and healthy diet for all employees. To raise awareness of health risks, instruct on prevention, and to gain support for the project among the selected companies and employees, the project team offers to host a one-day fair on-site. The fair is interactive, which allows the employees to initiate activities, play games and test their knowledge about health risks, healthy diet, exercise and stress.

They also receive a book about diabetes prevention, which they can take home and share with their families. In addition, an estimated 100 high-risk employees from the 20 selected companies will be screened using blood sugar and body composition tests. Once the high-risk individuals have been identified, they will be invited to the hospital for further preventive education, behaviour modification activities and tests to determine their stress level, strength and endurance.

A model for change

After three months, the high-risk individuals will return to the hospital to be tested again to see if their health risks have decreased as a result of the behaviour modification activities. The project team will then invite representatives from the human resource departments of the 20 selected companies to a knowledge sharing session where they can share their experience on how to get the employees involved and which activities have been particularly popular. The best practice sharing will enable the project team to develop a behaviour modification model which can be implemented by other employers as a health benefit for their employees.

"Hopefully, we can develop a model, which can pave the way for increased resource spending on prevention. Due to rising health care costs, the National Health Security Organisation has recently changed its focus from disease treatment to prevention and made diabetes prevention a top priority. In the future, I believe a lot of companies will see the importance of taking preventive measures and sharing knowledge of effective models and best practices," Ms. Tanya Himathongkam explains.

The World Diabetes Foundation sees a great potential for this approach: "Behaviour modification is a very difficult but extremely important part of diabetes prevention. If our local partners succeed in developing a behaviour modification model that really works, we will be very proud to have been a part of it. The model would have great potential, because it could be applied in other regions as well, thereby ensuring a replicable effect," says Ms. Hanne Strandgaard, Programme Coordinator of the World Diabetes Foundation.



^ Apparently, many slim-looking Thais have a high percentage of body fat, which increases the risk of developing diabetes and other non-communicable diseases.

From 2001 to 2006, the number of people with diabetes in Thailand doubled. More than 3 million people are living with diabetes, and by 2025, the number is expected to exceed 4.6 million.

Non-communicable diseases are now the leading cause of morbidity and mortality among the Thai population.

10 million Thais are overweight or obese. Especially among the urban population, obesity is a problem.



DIABETES PREVENTION IN BANGLADESH

BANGLADESH

Several studies suggest that diabetes prevention activities can delay the onset of type 2 diabetes. However, for such activities to be effective, they must be adapted to the environment in which they are to be applied, taking into consideration biological, socio-economic and cultural issues. In Bangladesh, the Diabetes Association of Bangladesh (DAB) has initiated three projects funded by the World Diabetes Foundation, aimed at delivering culturally sensitive diabetes prevention and management in the country.

Today, more than 3.8 million people are living with diabetes in Bangladesh, and according to the International Diabetes Federation, the number is expected to reach 7.4 million by 2025.

“It is important to know the beliefs and taboos of the target population and adapt the health messages and activities accordingly. For instance, in Bangladesh, there is a widespread belief that all root crops are unhealthy for people living with diabetes, and such misconceptions must be addressed. Furthermore, information about the glycemic index value of foods is a useful tool to educate people on healthy diet, but one must know what foods the local population eats. A list of healthy and unhealthy foods must therefore be adapted according to local consumer habits,” explains Prof. A. K. Azad Khan, President of the DAB.

Comprehensive care

Despite DAB’s pioneering efforts during the past several decades, knowledge about diabetes

continues to be limited amongst the Bangladeshi population, and the country has no national policy on diabetes or non-communicable diseases. In January 2006, DAB initiated the first project funded by the World Diabetes Foundation. The objective was to develop culturally sensitive strategies to promote healthy diet among people with diabetes as well as the general public and provide educational tools for health care professionals to educate people about proper nutritional management of diabetes. The project is still ongoing and has gathered information about nutrition in the Bangladeshi population and calculated glycemic index values of various local food items. A number of awareness campaigns have been initiated, and in addition, calendars, leaflets and a nutrition-based website with information about chemical composition and

glycemic index values of local foods have been established in order to promote healthy diet. Educational tools for health care professionals have been developed and are already in use in various diabetes care centres under the leadership of DAB. The target is that about 2,700 health care professionals will be using these tools in the nutritional management of diabetes, and in the long run, the tools will benefit almost all of the 1 million registered patients with diabetes.

Taking the next step

The findings of this project provide valuable input on nutritional aspects in DAB's second project, initiated in January 2007, with support from the World Diabetes Foundation. The second project aims to develop strategies specifically designed for primary prevention of diabetes in the form of lifestyle interventions among the general public as well as high-risk individuals and people with diabetes in Bangladesh. The strategies will be piloted in 20 of DAB's affiliate associations across the country, before a wider implementation is considered.

The aim is to train 1,200 doctors and 124 community counsellors, enabling them to educate 40,000 people on diabetes prevention, and to reach 4 million patients with diabetes and their relatives through awareness campaigns. In order to test the effect of different communication channels, a diversified group of stakeholders is trained in teaching healthy lifestyles, including school teachers, priests and imams to promote healthy living based on religious texts. In addition, folksingers are hired to sing about healthy living and the risk factors of non-communicable diseases.

Based on an evaluation of the impact of the strategies, DAB has developed a draft national policy for preventing diabetes, which was submitted to the government in Bangladesh in November 2008:

"The government responded well to our draft national diabetes prevention policy, and the next step is to distribute and integrate the policy into the routine services of our 56 affiliated associations. To ensure local ownership and sustainability, all 56 affiliate associations will be equipped with the developed tools and strategies, and hopefully, the results will encourage the health authorities to create a partnership between our association and relevant public organisations to ensure financial sustainability," Prof. A.K. Azad Khan explains.

Improving diabetes education

In June 2007, DAB initiated its third project funded by the World Diabetes Foundation. Despite DAB's committed effort to provide diabetes care in the country, approximately 80% of people with diabetes do not receive any organised health care, and as diabetes rates increase rapidly, so will the need for health care capacity. The project therefore seeks to improve diabetes management

by expanding DAB's existing health care services to include diabetes education.

The project aims to develop country-specific curricula and educational tools. Due to a lack of physicians in the country, the project also focuses on training nurses and other health care workers. Presently, recruitment and training of 150 educators are in progress, and they are expected to sensitise and educate an estimated 300,000 people with diabetes. In addition, 20 of the diabetes educators are trained to function as in-house trainers, providing on-the-job education and training of nurses, nutritionists and health educators from DAB's affiliated associations. Subsequently, the impact of the diabetes educators' efforts will be evaluated, and, based on the evaluation, educational tools and strategies will be modified to form an outline for a national diabetes education programme.

An integrated approach

The three projects funded by the World Diabetes Foundation interact and complement each other. As part of the third project, diabetes educators are trained to use the educational tools on nutrition and diabetes developed during the first project. By building the community level health care capacity framework that was developed during the second project, the diabetes educators provide an important link between clinical services and a community-based approach to diabetes prevention and management.

"These culturally sensitive projects are an example of how working with a committed and competent local partner with an established infrastructure can have a major impact and ensure sustainability. The Diabetes Association of Bangladesh has 56 affiliated associations across the entire country, and if they take ownership and implement the strategies and programmes developed in the projects, the impact on the country's health care capacity and diabetes care delivery will be significant," says Programme Coordinator of the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen.

Sustainability is further ensured by the fact that DAB owns the Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM). BIRDEM is the world's largest diabetes hospital and is situated in the country's capital Dhaka. People who are able to pay subsidised care for those unable, following the vision of DAB's founder Prof. Mohammed Ibrahim: "No person with diabetes must remain untreated whether or not he/she can pay for the service." The most unique feature of the Ibrahim Model is its self-reliant financial management, where expenditures for free diabetes care are covered by selling general health services to affluent people. Primary care is given to patients with diabetes free of charge irrespective of their socio-economic, racial or religious status.



According to the World Bank, nearly half of Bangladesh's population live below the poverty line, making Bangladesh one of the poorest countries in the world. To avoid the severe socio-economic burden of diabetes, prevention, early detection and management of the disease are crucial.

A study among 4,063 adults in Bangladesh found that 84.4% had an unacceptably low knowledge of diabetes and nutrition.

DAB provides diabetes care to almost one million people in 88 health care facilities across the country, owned by DAB and its affiliated associations.



TURNING THE TIDE IN CHINA

CHINA

During the past three decades, China has experienced rapid economic development leading to improved standards of living and increasing urbanisation. As a downside, this development has brought about unhealthy lifestyles and, consequently, a significant rise in obesity and diabetes rates. For the first time, a large-scale community-based intervention programme seeks to turn the tide by means of lifestyle interventions.

According to WHO estimates, by 2015, 2.3 billion people, almost one third of the global population, will be overweight. Overweight and obesity increase the risk of diabetes and other non-communicable diseases.

A few decades ago, obesity was not a problem in China. Today, one in five is overweight or obese. Close to 40 million Chinese suffer from diabetes, and the number is expected to rise to almost 60 million by 2025 if adequate preventive measures are not taken. Many Chinese are not aware of the health risks associated with obesity, and public awareness of diabetes is poor.

To address these problems, Dr. Qing Qiao, Department of Public Health at the University of Helsinki in Finland, with administrative support from the Qingdao Municipal Health Bureau and in cooperation with the Qingdao Centre for Disease Control and Prevention (CDC), developed and initiated the Qingdao Diabetes Prevention Programme in 2005. The programme's objective is to promote health through awareness activities and lifestyle interventions such as healthy diet and physical activity. The programme, which is supported by the World Diabetes Foundation, addresses high-risk groups as well as the general population in four of Qingdao's 12 districts, covering almost 2 million people.

A three-fold strategy

The programme consists of three strategies: A "population strategy" aims to raise diabetes awareness and promote health in the general public; a "high-risk strategy" seeks to prevent or delay the onset of diabetes by training health care personnel in identifying people with a high risk of developing diabetes and offer education and counselling on lifestyle changes; and finally an "early diagnosis and management" strategy to avoid diabetes-related complications.

From 2005 to 2008, the programme reached a number of milestones. However, due to the need for carrying out a baseline survey in order to be able to measure the impact of the programme, some of the activities were delayed.

Proving prevention effective

The evaluation of the programme is also a very important element, because a number of clinical trials have shown that lifestyle changes such as improved physical activity and a healthy diet can prevent or delay the onset of type 2 diabetes.

"Presently, no study has yet determined if this is also the case in a real-life environment outside the clinical trials. The programme therefore seeks to determine, whether the trial results can be translated into real life, which was one of the reasons why the World Diabetes Foundation decided to fund the programme for an additional three years," says Programme Coordinator of the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen.

"If the programme proves that lifestyle intervention can prevent or delay the onset of type 2 diabetes in a general population, we can convince the national policymakers that investing in diabetes prevention is efficient. If we also succeed in providing a formal outcome report, documenting the preventative effect of lifestyle interventions, the programme could possibly be adopted by the Ministry of Health and be applied in other regions in China," explains Dr. Qing Qiao.

For the next three years, the programme will focus on implementing lifestyle interventions amongst people at high risk of developing diabetes,



educating school children on healthy lifestyle and evaluating the effect of the community-based lifestyle intervention.

The children are the future

In South-East Asia, overweight and obesity rates are increasing faster than anywhere else in the world. From 2005 to 2010, the number of overweight children in the region is expected to increase by 27.5%. The rising obesity rate among children is a serious problem, since overweight and obese children are much more likely to suffer from obesity-related health issues later in life. Therefore, educating school children on healthy lifestyle such as proper diet and exercise is one of the key focus areas of the programme. To date, 520 school nurses have been trained to give regular lectures on diabetes prevention and management, and educational material has been developed. The aim is for more than 200,000 school children from 340 schools to receive diabetes education. Originally, kindergarten teachers were to be trained as well. However, since these children were too young to understand the educational material, this part of the project was shelved.

Furthermore, a questionnaire survey on diabetes awareness has been carried out among approximately 20,000 students in 23 primary schools and 16 middle schools. The results will offer an indication of the level of diabetes awareness among school children in the Qingdao area and determine the need for further awareness and educational activities.

Support from authorities ensures sustainability

The World Diabetes Foundation seeks to act as a catalyst, helping others do more, and therefore significant emphasis is put on long-term sustainability of the projects funded by the Foundation. In 2008, the Qingdao Diabetes Prevention Programme entered into cooperation with the Qingdao Health Insurance Centre of the Qingdao Labour and Social Security Bureau,

which is responsible for making annual financial plans for the community clinics, according to their performance. The Health Insurance Centre has added the programme's intervention activities to its performance check list, which will further motivate the community clinics to identify high-risk individuals and carry out the intervention activities. It also plans to increase insurance coverage for people who participate in the intervention studies. Furthermore, the Qingdao Municipal Health Bureau has agreed to include the programme in its framework of community-based non-communicable disease control and prevention in Qingdao, which will enhance the sustainability of the project.

"One of the great achievements of this project is that it has strengthened the cooperation, involvement and ownership among the various stakeholders such as the municipal health bureau, the centre for disease control and the health insurance centre. Also, the local media have been roped in, and the local radio stations, websites and the Qingdao daily newspaper regularly run programmes, talk shows or publish articles highlighting the issue and providing useful information. These activities are expected to reach 1.94 million people," explains Managing Director of the World Diabetes Foundation, Dr. Anil Kapur.

Promoting health and preventing diabetes are a big challenge in a country undergoing such rapid socio-economic changes as China. However, Dr. Qing Qiao is optimistic that the programme will prove that lifestyle interventions can reduce or stabilise the diabetes prevalence rates.

"Despite the difficulties, I think it is possible. Especially since the Chinese Ministry of Health has recently recommended to shift focus from treatment to prevention of non-communicable diseases. In our effort to fight diabetes, we have to remember the old Chinese philosophy: The superior doctor prevents rather than treats," says Dr. Qing Qiao.

2,093 health care professionals from 610 primary care clinics have been trained in early diagnosis and diabetes management. Presently, there are 452 clinics working to identify and register people with high risk of developing diabetes. In addition, lifestyle counselling sessions for high-risk individuals were initiated in one of the four project areas in December 2008 and will be extended to three additional areas in 2009.

A total of 328,757 people have been screened using a risk score based on waist size, age and family history of diabetes. To date, 174,544 have been identified as high-risk individuals.

Worldwide, overweight and obesity cause 2.6 million deaths each year.



SPECIALLY TRAINED TO TREAT CHILDREN WITH DIABETES

KENYA

In developing countries, less than half the people with diabetes are diagnosed. Without timely diagnoses and adequate treatment, diabetes-related complications and deaths rise exponentially. For example, in Sub-Saharan Africa, mortality from diabetes is four times higher than the world average. In these locations, the situation for children living with type 1 diabetes is even bleaker, the most pressing problem being that few are diagnosed, and many die before they reach the age of five.

Diabetes in Kenya/Africa

The disease burden relating to children living in Sub-Saharan African countries is to a large extent from malaria, respiratory infections, diarrhoea, malnutrition and HIV/AIDS. Non-communicable and chronic disorders have to a large extent been neglected, including diabetes and other endocrine disorders.

The Pan-African Fellowship

Programme in Paediatric Endocrinology and Diabetes is funded by the World Diabetes Foundation and seeks to reach 1,500 children with diabetes in Kenya during the four-year project period.

Part of the problem is that few health care professionals are well trained to diagnose or treat diabetes and they lack the necessary equipment. A collaboration between the European Society for Paediatric Endocrinology (ESPE) and three hospitals in Nairobi has established East Africa's first specialised training programme in paediatric endocrinology, the Pan-African Fellowship Programme in Paediatric Endocrinology and Diabetes. During the programme's four-year project period, 36 paediatricians from five African countries will be trained, and 1,500 children with diabetes are expected to be diagnosed and treated. In Kenya's 45 years of independence and 40 years of medical training, this is the first specialised training programme. Previously, specialist training took place overseas.

From text book to patient

Although located in Kenya, the programme is regional and currently trains paediatricians from Kenya, Tanzania, Nigeria, and Sudan. It is open to applicants from other Sub-Saharan countries. "We decided to start the programme in East Africa because it has a better economy, political stability, and because it was easier for us to be able to communicate in English," explains Prof. Ze'ev

Hochberg, coordinator for ESPE's Developing Countries Programme and Scientific Advisor to the Nairobi Programme. "The choice fell on Nairobi because it has better medical infrastructure, including three different hospitals and an excellent laboratory," he explains.

The fellowship programme was initiated in May 2008 with the first batch of paediatrician fellows. The 15-month programme starts with six months of theoretical and clinical training at the three collaborating hospitals in Nairobi: The public Kenyatta University Hospital and two private hospitals, Gertrude's Children's Hospital and Aga Khan University Hospital. Following six months' training in Nairobi, the fellows return to their respective countries for another six months' practical training in their home institutions, while they also pursue their research project under the supervision of ESPE members. The three-month clinical training in Nairobi is finalised with an exam certifying the fellows as specialised in paediatric endocrinology. A second group started in November 2008, and the plan is to have new fellows enter every six to nine months.

The tutoring is conducted by European paediatric

endocrinologists, who stay and teach for a month at a time. Prof. Martin Ritzén, European tutor from Karolinska Institutet in Sweden, reveals his motivation for volunteering: "During a visit to Nigeria in 2005, I realised that the doctors have good text book knowledge, but need to develop their patient history taking, examination and treatment skills." At the three collaborating hospitals, Prof. Ritzén has ample opportunity to work with the doctor-patient relationship, as the training is centred on patients. "My mentoring consists in discussing with the fellows how the patient needs to be examined and treated and how to prepare further plans," he explains.

Dr. Paul Laigong, a Kenyan fellow, finished his post-graduate studies as a paediatrician in 2003. In May 2008, he entered the Fellowship Programme at Gertrude's Children's Hospital in Nairobi, Kenya. "Previously, when working with emergency care, I saw a lot of patients being admitted and discharged and then re-admitted. I wondered what was going on, and I wanted to understand the diseases. My motivation for joining this programme was really to learn more, and so far, I have learned a lot and can handle patients better," he says.

Challenges

Diabetes is one of the most common chronic diseases affecting children. It can strike children of any age, even toddlers and babies. If not detected early enough in a child, the disease can be fatal. Yet, diabetes in a child is often completely overlooked: It is often misdiagnosed as the flu or it is not diagnosed at all. Dr. Sidney Nesbitt, who is responsible for the project, describes two main challenges in Kenya: "When children with diabetes are treated, finance is an issue due to the cost of drugs and testing. "All three hospitals involved in the Fellowship Programme are working on raising funds from the government as well as from other private sources. "We decide on a patient-to-patient basis, who needs free treatment, and who is able to pay for treatment," he says. "The second challenge is directly linked to the training of health care personnel: The capacity to teach patients and their families cost-effectively. Government clinics have not had the capacity to educate patients and families on how to manage a child's diet and insulin treatment," he explains.

Why paediatric endocrinology?

Half of Kenya's population is under 18 years old and an estimated 17% is under the age of five. Out of the children born, more than one out of ten does not live to celebrate his or her fifth birthday. "I am sure there are children out there, who die of ketoacidosis," says Prof. Martin Ritzén. "The problem is that few among the health personnel are adequately trained; they do not really know how to diagnose, and they do not have the equipment needed for proper management of the disease."

"In a way, you can say that it does not make sense to have paediatric endocrinologists trained, when

the majority of endocrine diseases are diabetes," says Dr. Nesbitt. "Nevertheless, taking the endocrinology approach creates a pool of experts, and it ensures institutionalised training skills. At the development stages, there is a difference in treating children and adults, and in how the body works," he explains. The Fellowship Programme is first and foremost important for health care professionals working with children.

Teaming up to improve care

Until now, the treatment of children with diabetes has been managed by general physicians or nurses who have treated them without having specialist knowledge. Prof. Martin Ritzén explains: "There is a tendency that the practitioner consulting children with diabetes does not share knowledge with other health care professionals that may be relevant to improve the treatment of children with diabetes. The most important contribution ESPE can give to our African colleagues is relaying what is common knowledge in most developed countries. Set up diabetes teams – introduce the team approach," he says.

Kenyan doctor, Paul Laigong, who is seven months into the training programme, seems to have understood the message: "A team consists of a primary physician, an endocrinologist, a diabetes educator and a nutritionist. Together, we can provide a much better treatment than if only one of these persons was in charge," he says. "Now we can modify the treatment, the diet, and the care for the patient. Better skills simply mean better results," says Dr. Nesbitt. "ESPE's approach has always been that rather than sharing bread, we ought to share seeds, and for us, education of paediatricians is seeds for future independence of our African colleagues," says Prof. Ze'ev Hochberg, Coordinator for ESPE's Developing Countries Programme. And no doubt the professional specialisation is an important seed for the trained fellows in their future work with children living with diabetes.

Ensuring sustainability

The Fellowship Training Programme is unique, as it is the first of its kind in Africa. "It has several catalytic effects, the most important being that it strengthens the relationship among African fellows, and it empowers training institutions in East Africa," says Dr. Nesbitt. "Furthermore, the fact that the specialised training programme takes place in Africa enhances the feeling of ownership among the fellows and their institutions."

In order to ensure future sustainability and implementation of the obtained knowledge, the fellows commit to setting up endocrinology clinics in their home countries when finishing the 15-months' theoretical and clinical training. "All the fellows have ambitions," says Prof. Ritzén. "Several of them are already working with paediatric endocrinology units at home. They are keen to return home and recruit more people."



Paediatric endocrinology

is a medical subspecialty dealing with variations of physical growth and sexual development in childhood, as well as diabetes and other disorders of the endocrine glands. By age, paediatric endocrinologists care for patients from infancy to late adolescence. By disease, the most common disease of the speciality is type 1 diabetes (50%) followed by thyroid problems and growth disorders, especially those amenable to growth hormone treatment. Because of a lack of money, the latter treatment is rarely possible in the developing world.

Millennium Development

Goal number four is to reduce child mortality. The set target is to reduce the under-five mortality rate by two thirds between 1990 and 2015.



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Pyramids, Egypt ©IDF

GLOBAL DIABETES WALK™ 2008 – WORLD DIABETES DAY

GLOBAL DIABETES WALK

On 14 November 2008, more than 1,000 iconic monuments and buildings around the world were illuminated in the blue colour of the diabetes circle, which is the global symbol for diabetes, to mark the second United Nations-observed World Diabetes Day (WDD). The Sydney Opera House, the Pyramids in Egypt, the Little Mermaid in Copenhagen, the UN Headquarter in New York City and Sanctuary of Christ the Redeemer overlooking Rio de Janeiro were among the beautifully illuminated monuments.



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A historic moment – the UN headquarter in New York was illuminated in blue to mark the celebration of WDD 2008. ©IDF

This year, more than 282,375 people from 70 countries registered to take part in the annual Global Diabetes Walk to help raise awareness about diabetes. Thanks to the impressive support from people in every corner of the world, the 2008 Walk broke the impressive record from 2007 in being the biggest ever in the history of the World Diabetes Foundation.

Prof. Martin Silink, President of the International Diabetes Federation, highlighted the serious impact of diabetes that underlies the campaign. “While we want people to enjoy the celebrations, we do not want them to lose sight of the serious global impact of diabetes. The stark truth is that many, children included, are dying in the developing world because they do not have access to the basic medication, monitoring and education they need to survive. It has been 87 years since Banting, Macleod and the team in Toronto discovered insulin, yet it still does not reach many of the world’s most vulnerable citizens.”

Special thanks are due to Novo Nordisk affiliates and employees around the world, who were responsible for major walks in India and Europe, mobilising a total of 92,523 participants. Other pharmaceutical companies such as Merck and

Pfizer in Mexico participated with more than 8,000 participants. As an incentive to create additional awareness, media agencies were invited to take part in the World Diabetes Day, including World Diabetes Foundation project partner Jagran Peהל, one of the largest media outlets in India, which mobilised an impressive 25,100 children and adults in a major walk across India. In the United Arab Emirates, Media Solutions arranged a walk for the second consecutive year with 7,500 people taking to the streets in collaboration with the Emirates Foundation.

Spreading the message across the continents

While the World Diabetes Day has been celebrated since 1991, the Global Diabetes Walk is still young. From 68,582 participants in the first Walk that took place in 2004 to 282,375 registered walkers in 2008, the Walk has grown to become an integral part of the globally celebrated World Diabetes Day. Comprising hundreds of campaigns, activities, screenings, lectures, meetings and more, the Global Diabetes Walk on World Diabetes Day has proven to be internationally effective in spreading the message about diabetes. And the message was spread like ripples in a pond in a variety of manners worldwide.

Students go interactive in Pakistan

In the Pakistani town of Faisalabad, the All Pakistan Diabetes and Endocrine Society mobilised 1,300 students from the Kohinoor Grammar School and Beacon House School for the Walk.

Workshops and lectures about regular exercise and junk food are held at the schools, so the students were already aware and relatively educated. The children have started to make pod casts on diabetes and they have developed a blog "The Digital Mine" where they share their ideas and knowledge about diabetes. At the third annual scientific conference at the end of December, skits and posters on diabetes made by children were presented and exhibited. But the popular attraction was the launch of a song about diabetes "Unite for Diabetes" by the pop star, Ali Sher.

Exercising in the House of Government

In Banja Luka, Bosnia & Herzegovina, the Ministry of Health and Social Welfare, the Republic of Srpska and Novo Nordisk celebrated the World Diabetes Day. The celebration involved 150 children in primary schools in Banja Luka. Originally, they were to walk, but due to rain they were invited inside the House of Government in the Republic of Srpska. During a one-hour session the children exercised and symbolically played with blue hula hoops. They also learned about healthy meals and how it is to live with diabetes as a child. "We are in the fortunate situation that our government takes diabetes seriously," says Walk Coordinator Alma Popovic. In addition, a drawing competition was organised for children with diabetes in a paediatric clinic in Banja Luka.

Raising the warning flag in Nigeria

At the Hospital for the Sick in Port Harcourt in Nigeria, Dr. Iroro Yarhere took the opportunity to educate 40 mothers about diabetes in children while they were on a routine visit at the hospital's immunisation centre. While the lecture was mainly about type 1 diabetes, the mothers were very interested in learning how to prevent type 2 diabetes through healthy diet and physical activity. Out of 40 mothers, only one had adequate knowledge about diabetes, and they were all surprised to hear about the implications of the disease and that the prevalence rate in Nigeria is likely to increase.

"I was really shocked about the level – or rather lack – of knowledge the women had. But it convinced me of the need for awareness campaigns and it encouraged me to do more," says Dr. Yarhere. "The mothers were worried about the complications of diabetes and we spoke a lot about avoiding ketoacidosis. At least, we managed to convince them to come to a hospital as soon as they recognise any of the signs we spoke about," he continues. Dr. Yarhere is currently doing his practical training in his home country from the fellowship training programme in Paediatric Diabetes and Endocrinology at

Gertrude's Children's Hospital in Kenya which is supported by the World Diabetes Foundation.

"Not so difficult to avoid"

In Lebanon, one fiery soul, who did not accept that Lebanon was not participating in the World Diabetes Day campaign, managed to team up with the historic Harissa Church as venue for the Walk followed by lectures on endocrinology and nutrition. The renowned Chronic Care Centre, which treats some 1,400 children with diabetes, participated and launched a drawing competition under the theme "My life with diabetes will be better".

Nutritionist and Walk Coordinator, Samia Khoury, is eager to do more: "Childhood obesity is on the rise in Lebanon, and schools and parents seem unaware. There is no culture of eating healthy here," she says. "But at least all the publicity around the World Diabetes Day made people understand the importance of diabetes and how easy it is to prevent with relatively simple measures. It is not so difficult to avoid," she says.

Cuban hope in blue

In the Cuban town of Ciego de Avila, more than 500 people – patients, family members and the general public – walked through the main streets of the town, passing a variety of activities on the way. In the Central Park, José Martí, a group of elderly people did taichi to show their well-being. Educational talks were held, blood glucose tests offered and flyers distributed. At the younger end of the scale, three-year-old Alejandra Estéfani, who is the youngest child with diabetes in the province, shone and led the walk with her blue dress.

A local journalist captured the celebration in a rather poetic way: "Cuba woke up painted in blue. And it was not the elves that had been doing tricks all night. It was hope in the form of hands, feet and banners walking through the streets to commemorate the World Diabetes Day."

Small ideas empower people

"The concept of the Global Diabetes Walk has proven to be a high-impact awareness and image building platform, reaching out to global stakeholders in a cost-effective manner and underlines the Foundation's mission," says Ms. Brit Larsen, Communication Coordinator of the World Diabetes Foundation.

"The Global Diabetes Walk is a powerful demonstration of how small ideas can evolve into major interventions and empower individuals, non-governmental organisations, corporate partners, local diabetes associations, World Diabetes Foundation project partners and media agencies to promote healthy living and primary prevention. In November 2008, we had more than 2 million hits on the Global Diabetes Walk website, demonstrating a clear interest in the event and highlighting that diabetes is slowly beginning to claim its rightful place on the global health agenda as well as in the media".



The theme of the World

Diabetes Day was: "Diabetes in Adolescents and Children." Every day, 200 children under the age of 15 develop type 1 diabetes and the rate is growing. Each year, type 1 diabetes is growing by 3% in children and adolescents, and at an alarming 6% per year among pre-school children. An estimated 440,000 children worldwide live with type 1 diabetes; more than a quarter of these children live in South-East Asia and more than a fifth in Europe.



In Chittagong, Bangladesh, Dr. Mamun's Diabetes Specialities Centre organised a seminar on prevention, detection and management of diabetes. On the same day more than 250 people with diabetes participated in the walk.



In the Pakistani town of Faisalabad, the All Pakistan Diabetes and Endocrine Society mobilised 1,300 students from the Kohinoor Grammar School and the Beacon House School for the walk.



In the United Arab Emirates (UAE), Media Solutions arranged a major walk for the second consecutive year with 7,500 people taking to the streets. The walk in 2008 was part of the largest public health awareness campaign in the UAE under the patronage of HRH Sheikha Fatima Bint Mubarak and was organised in partnership with the Abu Dhabi's Imperial College Diabetes Centre, the Emirates Foundation and the National Insurance Company – Daman.



In the Cuban town of Ciego de Avila, more than 500 people – patients, family members and the general public – walked through the main streets of the town, passing a variety of activities on the way.



Three-year-old Ishaan was a premature baby and had to undergo retinal laser surgery for aggressive posterior retinopathy of prematurity in both eyes. Here he is participating in a walk and leading 450 people. The event was organised in Cochin in the state of Kerala, India, and supported by the Indian Medical Association, Cochin branch, the Ranjini Eye Hospital, Vyttila and Airtel.



Jagran Pehel, a social initiative of Jagran Prakashan Limited, arranged a major walk in India, which was held simultaneously across 20 districts in six states, namely: Bihar, Jharkhand, Punjab, Uttar Pradesh, West Bengal and Uttrakhand. In total, 25,100 people participated across the country.

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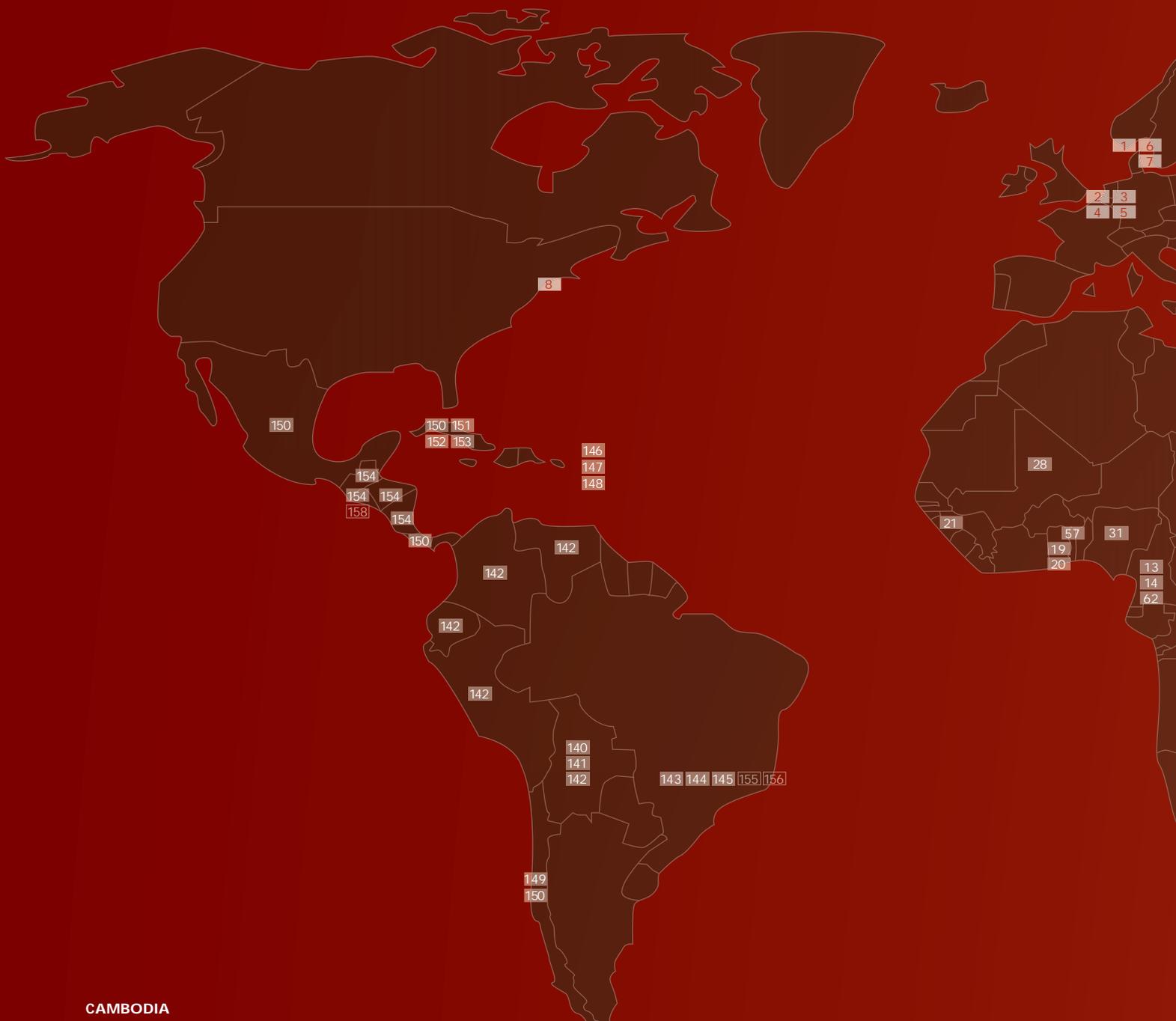
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For full details on the projects funded by the World Diabetes Foundation, please visit; www.worlddiabetesfoundation.org

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PURSUING THE MILLENNIUM DEVELOPMENT GOALS

By establishing eight Millennium Development Goals, governments from all over the world and leading development agencies have committed themselves to supporting the developing world in their efforts to eradicate poverty. To achieve these goals, governments, non-governmental organisations and the private sector must join forces, bringing together expert knowledge, resources and the power to make things happen. In low-resource countries with no or limited social security, costly treatment of diabetes-related complications is driving millions of people into indebtedness.

The Millennium Development Goals

1. Eradicate extreme poverty & hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

In September 2000, world leaders gathered in New York to adopt the United Nations Millennium Declaration. The objective was to form a global partnership between governments and leading development agencies and set out concrete plans and practical steps for action in the developing world. As a result, eight Millennium Development Goals were set, all contributing to one overarching goal: To put an end to poverty by 2015. With its strong focus on helping the poorest of the poor and a vision to alleviate human suffering related to diabetes and its complications among those least able to withstand the burden of the disease, the World Diabetes Foundation fully subscribes to the United Nations Millennium Development Goals.

“The UN Millennium Declaration is a landmark decision, outlining a ground-breaking framework for integrated approaches for achieving sustainable development and poverty alleviation, with indicators to measure progress against set targets. While countries may have different priorities, the “roadmap” obligates the global community to align action and optimise the use of available resources towards realising the Millennium Development Goals”, says Mrs. Sanne Frost Helt, Programme Manager of the World Diabetes Foundation.

“While not seeking to dilute the Millennium Development Goals, at the World Diabetes

Foundation, we do strive to bring attention to the grossly underestimated and under-resourced area of chronic non-communicable diseases and advocate for their inclusion in the Millennium Development Goals”, she further elaborates.

Diabetes hits the poorest hardest. According to the International Diabetes Federation (IDF), the number of people living with diabetes will rise to a staggering 380 million by 2025, affecting one in 14 adults worldwide, with 80% of cases occurring in the developing world. Despite the fact that low and middle-income countries will bear the brunt of the diabetes burden, they only account for less than 15% of global diabetes spending.

“This issue must be addressed if we are to prevent diabetes from undermining the benefits of improved standards of living, education and economic growth in the developing countries. The economic consequences of the increasing diabetes rates are immense, ranging from increased health care costs to lost productivity and lost economic opportunities. If diabetes is not already keeping entire nations trapped in poverty, it certainly will if left unaddressed,” says Prof. Ib Bygbjerg, an internationally recognised public health expert from the University of Copenhagen, Faculty of Health Sciences, in Denmark and a member of the World Diabetes Foundation’s Board of Directors.

Double disease burden

Although diabetes is not specifically mentioned in the Millennium Development Goals, the fight against diabetes and its complications is linked to several of them, e.g. the sixth goal, to combat HIV/AIDS, malaria, tuberculosis and other diseases. Undiagnosed diabetes may be adding to the high burden of communicable diseases in countries where the burden is already high. Recent systematic reviews of studies show that diabetes increases the risk of developing tuberculosis, especially among young people and in developing countries with a high incidence of tuberculosis.

“The sixth Millennium Development Goal calls for the incidence of infectious diseases such as tuberculosis to be halted and reversed by 2015. To succeed in achieving this goal, it is important to focus resources in poor countries not only on HIV/AIDS, but also on the growing epidemic of diabetes as a significant epidemiological risk factor,” says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

Relieving the burden

Studies suggest that people with HIV/AIDS receiving anti-retroviral drug treatment appear to have a high risk of developing the metabolic syndrome including diabetes, and people with both HIV/AIDS and diabetes have an increased risk of developing tuberculosis. In many countries struggling with a high prevalence of HIV/AIDS, malaria and other communicable diseases, non-communicable diseases are not a priority and the health care personnel are not trained in detecting and treating diabetes.

“Sometimes, diabetes symptoms are misinterpreted as malaria symptoms, which may have disastrous consequences. It is, therefore, important to raise awareness of diabetes and its complications in these areas to ensure that proper care is given,” explains Dr. Kaushik Ramaiya, Vice President of the International Diabetes Federation and member of the World Diabetes Foundation’s Board of Directors.

“To really relieve the double disease burden, governments in Africa need to develop more comprehensive and appropriately balanced and focused prevention and management strategies, encompassing both communicable and chronic non-communicable diseases. Totally neglecting one in favour of the other may have grave public health consequences,” he elaborates.

Mr. Lars Rebien Sørensen, President and CEO of the pharmaceutical company Novo Nordisk A/S and member of the World Diabetes Foundation’s Board of Directors, believes the corporate world can play a vital role in reaching the Millennium Development Goals and creating a global partnership for development:

“The critical situation with lacking access to care and extreme poverty in Africa was one of

the reasons for establishing the World Diabetes Foundation. In an ideal world, we would prefer to focus on doing business, but we live in a complex world and realise that we have to pull our weight as a corporate citizen and give something back to society. Our expertise and knowledge lie within the field of diabetes, and we realise that a lot needs to be done within this area, particularly in the low-resource countries,” he says.

Integrating efforts increases sustainability

An integration of the efforts to prevent and treat diabetes and other non-communicable diseases along with communicable diseases such as HIV/AIDS and tuberculosis would increase sustainability significantly. By applying the same infrastructure and health care capacities, important synergetic effects would be created:

“Creating parallel vertical systems, focusing solely on communicable diseases or non-communicable diseases, is counterproductive in low-resource economies as it further erodes the already low health care capacity. Instead, focus should be on building community-based primary care for chronic diseases and acute hospital-based emergency care. In addition, health promotion should be brought into focus as a common strategy to promote wellness,” explains Dr. Kapur.

“Diabetes, hypertension, HIV/AIDS and tuberculosis services can easily be integrated and offer an excellent model to develop community-based primary care for chronic diseases. Given that non-communicable diseases receive no funding from health-related development assistance, we continue to advocate and help build capacity for diabetes and related non-communicable diseases within existing public health structures which can easily be integrated,” he elaborates.

Improving maternal health and gender equality

Millennium Development Goals three, four and five focus on promoting gender equality and empowering women, reducing child mortality and improving maternal health. During recent years, the World Diabetes Foundation has started focusing its efforts on linking these Millennium Development Goals to the adverse impact of malnutrition and diabetes in women in general and during pregnancy in particular.

“The World Diabetes Foundation is a small player in this context, but, nevertheless, the Foundation’s efforts contribute significantly to many of the health-related development goals, even though diabetes and other non-communicable diseases are still not specifically mentioned in the Millennium Development Goals, despite their grave consequences for the low-resource countries,” says Ms. Ida Nicolaisen, Senior Research Fellow at the Nordic Institute of Asian Studies at Copenhagen University, member of the World Diabetes Foundation’s Board of Directors and an acclaimed expert on development assistance.



In April 2008, the World Diabetes Foundation and the Global Alliance for Women’s Health organised an expert meeting of leading global health experts and UN agencies. The objective was to shed light on how malnutrition and diabetes affect women’s health and how this influences their children. In addition, the aim was to convince governments, UN agencies, donors and non-governmental organisations to include gestational diabetes in their maternal and child health agendas.



WOMEN'S HEALTH IS A NATION'S WEALTH

MATERNAL HEALTH

There are many good reasons for the World Diabetes Foundation to increase its focus on maternal health. When enlightened, women can play a vital role in changing the habits of the family and potentially improve their health. Pregnancy is an important opportunity for making enlightening interventions; it has a short-term consequence and an intergenerational effect on non-communicable diseases. In developing countries, women are the most vulnerable segment of society, and, seen from a cost-benefit perspective, focusing on women will be highly rewarding for the World Diabetes Foundation.

A special supplement of the International Journal of Gynaecology and Obstetrics to be brought early 2009 will feature presentations from the expert meeting.

The reported prevalence rate of diabetes during pregnancy varies from 3% - 15% of pregnancies based on the background rates of diabetes. While 10% of pregnancies worldwide are estimated to be associated with diabetes, the prevalence rates among high risk groups may be as high as 30%. Almost 90% of all cases of diabetes during pregnancy are gestational diabetes.

In April 2008, the Global Alliance for Women's Health (GAWH) and the World Diabetes Foundation organised an expert meeting at the United Nations headquarters in New York to take a first step in bringing diabetes on the global agenda for maternal health. Leading global health experts, UN agencies and Permanent Missions met to discuss policy issues and make recommendations for initiatives with a specific focus on Diabetes, Women and Development and their link to the Millennium Development Goals. The main meeting was attended by 22 leading experts and 32 delegates of whom seven represented the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the UN Division for the Advancement of Women (DAW), the World Health Organization (WHO), the Pan American Health Organization (PAHO) and the World Bank.

During the meeting, high-quality presentations and lectures documented that, in most cases, gestational diabetes can be adequately controlled with dietary

modifications and increased physical activity. But it also emphasised the enormous benefit of screening for diabetes during pregnancy, thus seeing pregnancy as a window of opportunity to provide maternal care services and reduce traditionally known pregnancy and birth complications.

Diabetes, maternal health and gender equality

Particularly in developing nations, women live with misconceptions and poor diet, and they face social struggles because of their gender. Diabetes is just one of their many problems. Worldwide, it is estimated that one out of ten pregnancies is associated with diabetes, and the tendency is increasing. The causes are to be found among a rising prevalence of obesity, diabetes and impaired glucose tolerance (IGT) in the background population and among young adults in the reproductive age. The pregnancies associated with diabetes are either detected when women previously known to have diabetes become pregnant (pre-gestational diabetes), or

when diabetes is first recognised during pregnancy (gestational diabetes).

Many women in developing countries have their first encounter with the health care system during pregnancy. Member of the World Diabetes Foundation's Board of Directors, Ms. Ida Nicolaisen, explains why this is a unique opportunity: "Pregnancy offers a great window of opportunity to provide maternal care services, not only to reduce the traditionally known maternal and perinatal morbidity and mortality indicators, but also for intergenerational and primordial prevention of several chronic diseases such as diabetes, hypertension, cardiovascular and cerebrovascular diseases. High-quality interventions to improve maternal health have potentially far-reaching health and economic benefits."

Maternal health initiative in Tamil Nadu

Ms. Flory Gnanakumari was pregnant with her second child when she was diagnosed with gestational diabetes. Luckily for her and her family, she lived in Tamil Nadu in India and was part of a project on gestational diabetes funded by the World Diabetes Foundation. As part of the antenatal care services, she was screened, and action was taken, so that she could complete her pregnancy under supervision and without complications. Yet, most women in developing countries do not have the opportunity Flory had. Many of them suffer from undetected diabetes causing complications during both pregnancy and birth.

Building on experiences

At the expert meeting, public health initiatives to address diabetes during pregnancy which can be easily integrated into the existing programmes for maternal and child health were recommended. The experience from Tamil Nadu clearly indicates a need for awareness-raising, advocacy and training. There is an urgent need for initiating such programmes more widely, considering the fact that in addition to the known enhanced risk of maternal and perinatal morbidity and mortality, undiagnosed and untreated diabetes during pregnancy may be fuelling the epidemic of diabetes through foetal programming.

Strategies to reduce gestational diabetes and improve maternal health in general will have a salutary effect on strengthening health care systems in such a way as to benefit all. Indeed, maternal health indicators are used to gauge health care system performance in terms of access, gender equity and institutional efficiency.

Making an integrated approach

In January 2008, the UNFPA established the Thematic Fund for Maternal Health in response to the developing countries' demand for addressing the high maternal mortality rates. In September 2008, UNICEF, UNFPA, the United Nations Development Fund for Women (UNIFEM) and the World Bank issued a joint statement on the

increasing efforts on maternal and newborn health, pledging to intensify their support to achieve the fifth Millennium Development Goal – to improve maternal health. "Together, the four organisations are committed to delivering the whole package within maternal health, starting in 25 out of 60 priority countries, where the maternal mortality rate is above 300 per 100,000 live births," explains Dr. Hedia Belhadj, Executive Coordinator for Global Health in UNFPA.

Programme Manager of the World Diabetes Foundation, Mrs. Sanne Frost Helt, comments: "It is beyond doubt that we require an integrated approach and a package focusing on maternal health as a whole. If gestational diabetes is not included in such a package, it merely becomes an appendix, not receiving sufficient attention. The World Diabetes Foundation consciously works towards inclusion of gestational diabetes into the package by advocating and facilitating that international organisations like the WHO and UNFPA include diabetes on the agenda," she says.

In 2005, the WHO established the Department of Making Pregnancy Safer and appointed Dr. Q.M. Islam as Director. Within this department, the WHO works to make people aware of the increasing magnitude of the problems related to maternal and newborn mortalities and morbidities and for developing appropriate policies and programmes, increased investment by national governments, donors and UN agencies. They also produce guidelines for antenatal care, childbirth and postnatal care and set standards for what should be routine procedures. Dr. Islam welcomes further collaboration with the World Diabetes Foundation: "Within our main work areas, we can draw on the experience of the World Diabetes Foundation as an already established player within diabetes care in developing countries. We do not want to duplicate, but tap into the existing knowledge and experience the Foundation has accumulated, so that we can complement each other's work," he says.

A dream scenario

Programme Manager, Mrs. Sanne Frost Helt, would like to see more maternal health projects in the Foundation's portfolio. "The World Diabetes Foundation is demand-driven, and as a result, we cannot control the applications we receive. Yet, we witness a growing recognition that diabetes in pregnancy should be factored into maternal health programmes, as well as an increasing interest in integrating a maternal health component into existing projects. And we strongly encourage new project applications focusing on maternal health," she says.

Managing Director, Dr. Anil Kapur's dream scenario is very clear: "That all maternal health services emphasise screening women for diabetes, so that they may receive the optimal care. In that way, we will be able to break the chain of intergenerational diabetes, thus working towards the joint Millennium Development Goals, three, four and five," he says.



Children born to women with uncontrolled diabetes have a four to eight-fold increased risk of developing diabetes in adult life. Although genetic factors may contribute, intra-uterine exposure to high blood sugar contributes very substantially to this risk.

Gender barriers

Health and well-being continue to elude the majority of women in the developing world, especially in the rural areas. A major barrier is continuing gender inequality.

Since 2004, the World Diabetes Foundation has funded the project on gestational diabetes in Tamil Nadu, India. More than 13,000 pregnant women in rural and urban areas have been screened, finding an overall prevalence of gestational diabetes of 13.4%. As a result of the project's activities, the government of Tamil Nadu has issued a government order that screening for gestational diabetes in all antenatal women should be mandatory and free of charge. The government introduced standard gestational diabetes screening of all pregnant women in the beginning of 2008 at all 1,417 public health clinics in the state, covering a total population of 62 million people.



BRINGING OPTIMUM FOOT CARE TO RURAL INDIA

INDIA

In Karnataka in South India, a project has succeeded in bringing the most advanced foot care treatment to rural, underserved villages. One of the most successful components of the project is the establishment of the first mobile foot clinic in the country. The mobile foot clinic is based on methods developed in a mobile eye care project funded by the World Diabetes Foundation and is an example of how innovative ideas from one project can be successfully replicated to another.

A number of sociological factors influence the long-term outcome of health conditions. For instance, a person's access to care is dependent on the distance to health care facilities, resources available to travel to health care facilities and even knowledge of the existence of such facilities.

"The mobile foot clinic saves lives because it enables us to provide screening in remote, underserved areas and detect diabetes cases that would otherwise not have been detected until major complications had occurred. Diabetes is often referred to as "the silent killer" because the early stages show few symptoms, and, therefore, conducting screenings and building awareness about diabetes and its complications are imperative," says Dr. A.S. Vinaya from the Jain Institute of Vascular Sciences (JIVAS) in Bangalore, Karnataka.

In the summer of 2006, JIVAS initiated a project called Padasamrakshane, which means "foot protection and preservation" in Sanskrit, the ancient Indian language. The objective of the project is to improve diabetes foot care in the state of Karnataka and especially the semi-urban and rural areas surrounding Bangalore city. And there was plenty of room for improvement: Despite a

population of 7 million people, Bangalore only had one well-equipped foot care centre. Furthermore, the semi-urban and rural areas surrounding the city had no foot care centres, which meant that the Bangalore centre had to cater for more than one million people with diabetes living within 150 kilometres of the city.

With more than 40 million people suffering from diabetes, India has the largest diabetes population in the world, and the number is expected to rise to an alarming 69.9 million by 2025. The country's health care system tends to concentrate on caring for acute illnesses, as health care capacity is insufficient, especially in the rural areas. People with diabetes living in remote rural areas are diagnosed on average four years later than people in urban areas. The delayed diagnosis and poor access to care lead to higher rates of diabetes-related complications in semi-urban and rural areas compared to urban areas.

Saving legs – saving lives

Only a minority of the population is covered by health insurance, and since India has no effective social security system, people with diabetes have to carry an immense economic burden of the disease and its complications themselves.

“Treatment of a foot ulcer costs about USD 300, which is more than three months’ earnings for at least one third of India’s population. If the foot ulcer develops into gangrene, and amputation is required, the economic consequences can be devastating for the entire family,” Dr. A.S. Vinaya explains.

Rough estimates suggest that more than 40,000 diabetes-related lower limb amputations are carried out in India each year. Due to poor prosthetic support, most people who lose a foot or a leg to diabetes receive no rehabilitation and, consequently, have to rely on financial support from their families or borrow money, leaving the entire family heavily indebted: “Often, children and adolescents have to leave school to help provide for their family. The consequent lack of education will have a negative impact on their long-term earning capacity, and thus diabetes-related complications may set off a negative economic spiral, which will affect the family for generations,” explains Managing Director of the World Diabetes Foundation, Dr. Anil Kapur.

Building health care capacity

The Padasamrakshane project, which was successfully completed in June 2008, but extended till May 2009, has addressed these serious issues by training health care professionals in diabetes foot care, assisting in establishing foot care centres across the state and establishing a mobile foot clinic to bring advanced foot care treatment and education to underserved rural areas.

To date, 44 health care professionals from across the state have received one month’s training in diabetes foot care, and ten foot care centres have been established. The centres offer free foot care and education on prevention and treatment of foot complications for poor people. Three of the centres have already established their own outreach activities and satellite clinics. So far, they have served approx. 1,800 people, some of whom would otherwise have had to travel 300-400 kilometres to Bangalore.

The mobile foot clinic has been a major success. It is a van equipped with the most advanced gear for screening and foot care treatment and a staff consisting of two or three nurses, a driver, a secretary and a ward boy, all trained in operating the equipment and patient counselling. All staff members are very committed to the project and often spend their weekends on the road, as the mobile unit makes 20-22 visits to rural areas within a 150 kilometre distance of Bangalore each month. Presently, the mobile unit has served 19,800 people, providing screening,

treatment and education on diabetes-related foot complications.

In India, most people do not wear footwear indoor for social and religious reasons. Many poor people cannot afford proper footwear, which makes them vulnerable to foot infections. Therefore, the mobile unit also educates on the importance of wearing proper footwear and provides customised Plaztazote orthotics, footwear designed to relieve pressure on the foot. Last but not least, the mobile foot clinic has conducted 36 diabetes camps in the area, providing screening, diabetes education and foot care for another 3,890 people.

Leading the way

Programme Coordinator of the World Diabetes Foundation, Ms. Astrid E. Hasselbalch, is confident that the current project will inspire others to establish similar projects in India: “It is the first mobile foot clinic funded by the World Diabetes Foundation, and it has already served as inspiration for a similar project in Kenya. Hopefully, JIVAS’ success will lead the way and inspire others to replicate the idea and bring access to advanced diabetes foot care to poor people in remote areas throughout India and in other countries as well,” she says.

In the future, the mobile foot clinic will continue to bring advanced foot treatment to the doorsteps of the people who need it the most, and further initiatives are already being planned. For instance, joint screening camps will be carried out together with the mobile eye care clinic in Karnataka. Furthermore, shoemakers will be trained in making proper footwear for people with diabetes, and Dr. A.S. Vinaya hopes to be able to train local health care workers in rural areas in providing home dressings for foot ulcers, so people will not have to travel several hundred kilometres to the nearest hospital.

Helping others do more

The Padasamrakshane project is an example of how the World Diabetes Foundation empowers others to do more. Dr. A.S. Vinaya and her colleagues cooperate with a number of social organisations. One of them is Grameena Abyudaya Seva Samsthe (GASS) whose network of 40 volunteers conducts camps in 200 remote villages, screening for cerebral palsy. In continuation of the Padasamrakshane project funded by the World Diabetes Foundation, JIVAS has trained the 40 GASS volunteers in diabetes screening, detection of the diabetic foot and footwear counselling, and so far they have served 1,800 people in 30 remote villages. These volunteers are extending their services to the villagers beyond foot care by checking the patient’s blood sugar, blood pressure and educating them in other aspects of diabetes.

“This is truly a great example of how dedicated local partners and committed local volunteers can multiply the effect of a project,” says Dr. Anil Kapur.



▲ Mobile foot clinic in action

The mobile foot clinic is equipped with a couch, a foot examination chair, a foot lab including a computerised foot pressure scanning system, a biothesiometer to test for neuropathy, a hand-held Doppler to test for blood flow in the feet, a TV screen for patient education videos and a power generator which is often necessary in rural India.

Presently, the mobile unit has served 19,800 people, providing screening, treatment and education on diabetes-related foot complications.

On average, college-educated people with diabetes are diagnosed seven years earlier and have considerably fewer diabetes-related complications than people with diabetes with low or no literacy.

An estimated 85% of all diabetes-related foot and leg amputations begin with a foot ulcer, and up to 80% of diabetes-related amputations can be prevented by means of simple, low-cost preventive measures.



SAVING FEET IN PAKISTAN

PAKISTAN

The number of people with diabetes in Pakistan is growing at an alarming rate. Due to the lack of an integrated diabetes care strategy and insufficient diabetes education, the number of diabetes-related leg amputations can be expected to increase. A local institution has initiated a project with the objective of raising awareness of diabetes, initiating diabetes prevention and improving diabetes care in the country. For the first time, the World Diabetes Foundation is funding a project in Pakistan.

For twelve years, Prof. Abdul Basit from the Baqai Institute of Diabetology and Endocrinology at the Baqai Medical University has worked on improving diabetes care in Pakistan. He is one of the leading

forces behind the establishment of diabetes clinics in the country, and now he and his team have set out to establish a network of diabetes foot clinics, the first ever in Pakistan.

According to the International Diabetes Federation (IDF), almost 7 million Pakistanis are currently suffering from diabetes, and, by 2025, the number is expected to reach 11.5 million. Therefore, immediate action is required to avoid that alarmingly many people find themselves in a terrible situation as a result of diabetes-related amputations.

“Of Pakistan’s almost 7 million people living with diabetes, about 400,000 suffer from diabetes-related foot ulcers. Due to inadequate knowledge about the disease among patients and health care personnel and a lack of sufficient resources, an estimated 40,000 of them face the dire prospect of amputation, if preventive measures are not taken,” says Prof. Abdul Basit.

Investing in prevention

If diabetes is poorly managed, it can cause nerve damage, leading to loss of sensitivity in the feet and toes. In Pakistan, most poor people do not use proper footwear, which makes them vulnerable to foot injuries. Left unattended, such injuries can develop into infections, foot ulcers and ultimately gangrene, leaving amputation as the last resort.

The economic and psychological impact of foot ulcers and the consequent amputations are enormous. People with complicated foot ulcers are unable to work and provide for their families during their hospital stay and may permanently lose their job, which makes paying for treatment and medicine extremely difficult. Amputations have even worse consequences; in addition to the social and psychological trauma, these people and their families have to deal with the loss of earnings due to permanent incapacity and large costs for treatment, which may doom the entire family to lifelong indebtedness.

Fortunately, most diabetes-related amputations can be prevented by means of early detection of foot complications and organised foot care. According to a local study conducted by Prof. Abdul Basit and his colleagues in Pakistan, prevention is very cost-effective.

“In Pakistan, treatment of an advanced and complicated foot ulcer costs approximately USD 563 and an above-knee or below-knee amputation costs about USD 530. In comparison, education of a person on proper diabetes foot care only costs USD 14, which shows that prevention is the most cost-effective investment for avoiding the ultimate disaster from striking,” explains, Programme Coordinator of the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen.

Raising awareness and building capacity

Currently, most Pakistanis suffering from diabetes do not receive proper foot care. To address this problem, the project focuses on two components: Education of people with diabetes and the general public and training of health care personnel.

Through awareness campaigns, diabetes patients

as well as the general public will receive education on diabetes prevention, proper management of the disease and how to avoid complications, for instance by using proper footwear. In addition, three or four diabetes camps will be conducted annually in areas where access to care is limited, each screening about 200 people for diabetes. To improve diabetes foot care and thereby ultimately reduce the number of amputations, 50 podiatrists will be trained in foot care, and nationwide 112 diabetes foot clinics will be established.

Furthermore, 120 foot care teams, consisting of a doctor and a nurse, will be trained in diabetes foot care, following the Step-by-Step model. The reason why people develop foot ulcers is that their diabetes has not been properly treated, and therefore an important element of prevention of diabetes-related foot ulcers is to ensure that people with diabetes are detected early and that the disease is managed correctly.

Due to the lack of educated health care personnel, many people do not have access to diabetes screening and proper diabetes care. In order to address the problem of shortage of educated health care personnel, 60 to 75 diabetes educators will be trained to educate diabetes patients and their families. Furthermore, 75 doctors will be trained in diabetes management, enabling them to establish peripheral diabetes clinics, and 1,600 family physicians will be trained.

Where there is a will...

Obviously, 112 diabetes foot clinics are not enough in a country with more than 150 million inhabitants and almost 7 million people suffering from diabetes. However, it is an important start, and Prof. Abdul Basit is confident that the project will have a great impact:

“The health care personnel at the established clinics have, so far, sent numerous photographs of the people, whose foot ulcers they have prevented from ending in amputations, and I am sure their success will inspire their colleagues to follow in their footsteps. Doctors need to be aware of the problem and see others succeed first, and then it will spread like wildfire,” he explains.

The project has only run for one year, but already 16 diabetes foot clinics have been established. The project runs for three years, and during that period, Prof. Abdul Basit and his team expect 60,000 patients with diabetes foot complications to be treated at the clinics, leading to a 50% reduction in amputations. If they succeed, they will save not only the feet but the future of thousands of people.

“Nothing is impossible. Although we have a large population, and the resources are limited; but if we all join hands – health care personnel, the public and private sector, the media, the government and organisations like the World Diabetes Foundation – we can really make a difference,” explains Prof. Abdul Basit.

To date, the project has trained 19 diabetes educators, 31 doctors, 191 family physicians, 33 podiatrists and 56 foot care teams, and approx. 6,000-10,000 people with diabetes-related foot ulcers have been treated.

The Step-by-Step model was developed in 2003, when the World Diabetes Foundation brought together a team of experts for the purpose of developing a model for improving diabetes foot care in the developing world. It is a simple yet extremely efficient model, focusing on teaching simple ways of preventing and treating diabetes foot complications. The training enables the foot care teams to establish sustainable, integrated and low-cost capacity for early detection of high-risk feet and preventive care.



LOCAL COMMITMENT – NATIONWIDE IMPACT

TONGA

Implementing sustainable health care systems in economically strained small Pacific island nations like Tonga is difficult. The main obstacles are economic and infrastructural challenges and the lack of trained health care personnel. A project in Tonga initiated by a committed local partner aims at implementing a sustainable system of care to improve diabetes care and reduce the burden of diabetes-related eye and foot complications.

According to the International Diabetes Federation, 6,500 people are living with diabetes in Tonga, and, by 2025, the number will exceed 9,000 people.

Due to changes in lifestyle, the number of people suffering from diabetes in Tonga has increased dramatically, placing Tonga among the top 10 countries for diabetes prevalence. This has led to a significant increase in the number of diabetes-related eye and foot complications and higher mortality in surgical wards. In addition to the burden this places on the individual patient and his or her family, it overwhelms the country's health care system.

Diabetes and other non-communicable diseases are important focus areas for the government of Tonga, but providing optimum diabetes care in an island nation is a challenging task. Tonga consists of 176 islands, 40 of which are inhabited, scattered in approximately 360,000 km² of ocean, resulting in logistical challenges. In an economically challenged nation lacking trained health care personnel, prevention is crucial.

Strong local commitment

Dr. Paula S. Vivili from the National Diabetes and Cardiovascular Prevention and Control Centre at Vaiola Hospital in the capital of Nuku'alofa is responsible for planning, coordinating and providing care for patients with diabetes in Tonga. Dr. Vivili initiated the project aimed at reducing the burden of diabetes-related complications. The project focuses on secondary prevention in the form of early detection and management of diabetes-related eye and foot complications and identifying barriers to accessing follow-up visits to health facilities.

“Often, all that is required are simple preventive measures to avoid severe diabetes complications. Today, services for caring for patients with severe diabetes-related complications do not exist in Tonga, which is why prevention is really the only hope. By improving management skills at the local

health care clinics and training the staff to detect diabetes and related complications at an early stage, serious complications on a large scale can be prevented," says Dr. Paula S. Vivili.

The project is supported by expert knowledge from Associate Prof. Ruth Colagiuri of the Diabetes Unit at the Australian Health Policy Institute in Sydney and is funded by the World Diabetes Foundation.

However, for a project like this to succeed, the support of local partners and authorities is important. "In a country like Tonga with a high prevalence of diabetes, a dedicated and coordinated effort is essential. The World Diabetes Foundation is confident that the combination of Dr. Vivili's competent management, the government's will to take proactive measures to address the growing burden of diabetes and the strong support of local authorities will ensure great results," says Programme Manager of the World Diabetes Foundation, Mrs. Sanne Frost Helt.

Improving care

Less than 40% of Tonga's diabetes patients receive an annual eye check. One of the reasons is that despite a population of approximately 104,000 there is only one eye doctor, Dr. Vivili. The project provides an advanced non-mydratic fundus camera for improved eye screening to a hospital in Tongatapu, where almost 70% of the patients with diabetes live. The aim is to increase the number of diabetes patients receiving annual eye screenings to 70% of the inhabitants in Tongatapu and 60% nationwide.

"If a diabetes-related eye complication is detected at an early stage, it can be treated locally with laser treatment. However, if it has developed into advanced diabetic retinopathy, the patient needs expensive surgery, which is not available locally," Dr. Vivili explains.

In order to promote early detection of diabetes-related foot complications, the project has adopted the Step-by-Step model. "In Tonga, we lack health care personnel trained to diagnose and treat diabetes in its early stages. Often, the personnel are not aware of how important it is to pay attention to early signs of diabetes-related foot complications. The Step-by-Step model systematically builds up the skills of the personnel, enabling them to specifically address complications related to the diabetic foot," says Dr. Vivili.

The aim is to enrol 15 teams of doctors, physician assistants and nurses from remote areas to be trained using the Step-by-Step model. The training will enable the health care providers to establish foot care clinics as part of their routine care for diabetes patients at their local health care facilities with the aim of reducing the number of amputations by 50%.

Identifying the barriers

One of the great challenges in preventing diabetes-related complications in Tonga is the high degree of non-compliance with follow-up visits to health care facilities. The project also seeks to identify the reasons why up to 80% of patients who are admitted for diabetes foot sepsis fail to attend follow-up appointments.

"We are currently conducting a survey among 200 diabetes patients in order to gather concrete evidence to understand the existing barriers to access to care. One reason may be that patients prefer to see a traditional healer instead of a professional health care provider. Consulting traditional healers is common in Tonga; in a 2004 survey, up to 65% of respondents confirmed that they had been to a traditional healer at least once during the past six months. Another barrier may be the travel distance to health care facilities," explains Dr. Vivili.

Sustainability is essential

In 2004, the Ministry of Health in Tonga launched its National Strategy for the Prevention and Control of Non-Communicable Diseases.

"The prevalence of diabetes is very high among the population in Tonga, and we know the numbers have increased over the last thirty years. Obesity and overweight are very common as well. The government of Tonga, through the Ministry of Health, is very much concerned about this issue. We are fully committed to trying to improve these very alarming health problems in Tonga. In fact the "Health Promotion Foundation Act" was passed in the Parliament in 2007 and is just about to be enforced with full support from the government. I would like to thank the World Diabetes Foundation sincerely for their support and assistance with our diabetes programme in Tonga. I am certain that together we can make significant improvements to the prevention, education and care of diabetes and its related complications for the betterment of our country," says the Deputy Prime Minister and Minister of Health in Tonga, Dr. Viliami T. Tangi.

The fact that the project is rooted in the Tongan Ministry of Health is essential for its sustainability and thereby future success.

"Experience from other projects has shown us that a strong sense of responsibility and ownership of a project among the local authorities lead to a greater level of sustainability.

The strength of this project is that it is linked to an existing health care system, giving access to personnel, equipment and facilities. The World Diabetes Foundation supports the start-up of the project by funding training of personnel, basic equipment and the survey. Subsequently, we expect the project to proceed on its own through the commitment and resources of the Ministry of Health," says Mrs. Sanne Frost Helt.



According to local studies conducted in 2004, 18% of the adult population aged 30-64 had diabetes. A further 22% had either impaired fasting glucose or impaired glucose tolerance.



IMPROVING PREVENTION AND ACCESS TO CARE IN INDONESIA

INDONESIA

In Indonesia, seven projects are building health care capacity to improve primary prevention and diabetes care in the country. The Indonesian Society of Endocrinology (PERKENI) and the Indonesian Diabetes Association (PERSADIA) are involved in six of the projects. Together, the projects are expected to create momentous changes in access to diabetes care in the country.

Together, the seven projects in Indonesia funded by the World Diabetes Foundation are expected to have a significant impact:

150 families of children with type 1 diabetes will be trained in management of the disease at home, and 100 children with type 1 diabetes will participate in diabetes camps.

3,000 people with diabetes will be screened for diabetic retinopathy, and 375 people will be treated for diabetic retinopathy.

In order to build health care capacity, PERKENI has trained almost 1,237 health care professionals in primary diabetes care, advanced diabetes management and diabetes education. These efforts have resulted in the number of diabetes patients receiving diabetes education increasing from 50% to 67% at the district hospitals and from 46% to 67% at the puskesmas.

The seven projects funded by the World Diabetes Foundation play an important role in improving primary prevention and diabetes care in Indonesia, where improvements are much needed. Diabetes is associated with many co-morbidities and complications, and Indonesia's current health care capacity is severely insufficient to provide care for the estimated three million people living with diabetes.

"In our country, we only have 50 endocrinologists, and they all work at university hospitals in the large cities, and since Indonesia consists of more than 17,000 islands, people living in remote areas do not have access to proper diabetes care. Therefore, building health care capacity by training health care personnel is an important part of the projects we initiate and support," says Prof. Sidartawan Soegondo, President of PERSADIA and initiator of several of the projects funded by the World Diabetes Foundation in Indonesia.

Improving primary care

In July 2006, PERKENI initiated a project in collaboration with the World Diabetes Foundation and supported by the Ministry of Health to improve diabetes care in the country by building health care capacity and establishing a national diabetes prevention and control programme. The ambition was to train internists, general practitioners, community nurses, and health care providers in primary and advanced diabetes care. "In Indonesia, the district hospitals carry out most of the primary diabetes care, which places a major constraint on the hospitals. To be able to provide a more comprehensive and continuous management

of diabetes and to reduce the strain on the hospitals, health care capacities at the puskesmas, which are primary health care centres owned by local authorities, must be improved. This will enable them to provide basic diabetes care such as prescription of medicines, which in turn gives the hospitals more time to concentrate on the more advanced care," says Programme Coordinator of the World Diabetes Foundation, Mr. Ulrik Uldall Nielsen.

Creating an efficient health care system

For a health care system to be well-functioning, its different levels must efficiently complement each other. In Indonesia, the referral system for chronic diseases has been ineffective for a long time. In order to solve this problem, 18 specific meetings have been held in eight districts, with the objective of identifying barriers to the implementation of a referral link between the puskesmas and the district hospitals and ways to overcome these barriers. The meetings were attended by local health authorities, representatives from the Ministry of Health and more than 1,000 health care providers from the puskesmas and hospitals.

"One of the barriers identified is the fact that people covered by the health coverage system for poor people or the national health insurance can only get prescriptions for diabetes medicine for a maximum of three days at the puskesmas, compared to 10-14 days at the district hospitals. Furthermore, medicine is not always available at the puskesmas, or the centres lack the facilities to detect diabetes-related complications. All these elements make people prefer the district

hospitals instead of the puskesmas,” Dr. Pradana Soewondo from PERKENI explains.

“The local health authorities in six districts now recognise the burden of diabetes in their districts, and the local health authorities and the representatives from the Ministry of Health have promised to look into the possibility of amending some of the regulations,” explains Dr. Pradana Soewondo. Overall, the project has been a success, and the Indonesian Ministry of Health, which is responsible for the development and coordination of the country’s national health care system, has agreed to try to integrate the project’s methods into the existing health care system: “First, the Ministry of Health will coordinate the implementation of our methods in selected areas in cooperation with local PERKENI chapters, and gradually the methods will be implemented nationally, forming Indonesia’s first national diabetes prevention and control programme,” explains Dr. Pradana Soewondo.

Building on a success

In July 2008, PERSADIA initiated a project with the objective of establishing a sustainable model for diabetes care and primary care in remote areas of the country. The setup involves the establishment of three community-based diabetes management centres, located on three different islands, and training 20 teams of health care professionals aimed at providing access to care for 6,000 people living with diabetes. Furthermore, 50,000 people will be sensitised through primary prevention programmes.

The current efforts to prioritise diabetes care in the country have resulted in the involvement of the Directorate of Non-communicable Diseases and Control under the Ministry of Health in Indonesia, which has initiated another project, funded by the World Diabetes Foundation in May 2008. The objective is to obtain evidence of how an effective community-based intervention programme can prevent or control non-communicable diseases, covering three provinces and training 60 health care workers in the management of integrated prevention and control of non-communicable diseases and diabetes.

Preventing amputations and blindness

Another example of the involvement of multiple stakeholders in building capacity was initiated in July 2008, with formal collaboration between PERKENI and PERSADIA with the non-profit organisation Helen Keller International, the University of Indonesia, the Rumah Sakit Cipto Mangunkusuno Hospital in Jakarta, the Indonesian Ophthalmology Association (PERDAMI) and an expert on diabetic retinopathy from the Dartmouth-Hitchcock Medical Centre in USA. The project is funded by the World Diabetes Foundation and aims at improving access to screening and treatment for diabetes-related eye complications in Jakarta.

The project will reach out to 125,000 people

through a social marketing and information campaign, screen 3,000 people with diabetes for diabetic retinopathy and refer 375 people for laser treatment. Another important part of the project is to train 295 medical professionals, 75 general practitioners, 150 community nurses, 40 medical specialists and 30 eye care professionals in the management of diabetic retinopathy.

To further strengthen the capacity in the area of diabetes foot care and prevention, a project was initiated in July 2008. Presently, only four hospitals have a diabetes foot care clinic, serving a population of more than 234 million people. With this particular foot care project, an additional five advanced foot care centres will be established, and basic foot care will be provided at 30 provincial hospitals. As part of the project objectives, 30 internists and 30 nurses will be trained in order to provide proper foot care for an estimated 3 million people with diabetes.

A long-term impact

Despite the seven projects funded by the World Diabetes Foundation, the financial resources and health care capacity for preventing and controlling diabetes and other non-communicable diseases are still scarce in Indonesia. The realisation of the health as well as economic burden of diabetes, as a result of advocacy from the various projects, has helped create a sense of urgency. In addition, the strengthening of local health care capacity, as part of the project initiatives, has provided an incentive for the government of Indonesia to prioritise prevention of chronic diseases, including diabetes. In 2006, the Indonesian Ministry of Health established its first non-communicable disease directorate. Furthermore, a national policy and strategy for prevention and control of non-communicable diseases, including type 2 diabetes, have been developed.

“We do our best to overcome the barriers by training health care personnel and bringing the serious consequences of diabetes and its complications to the attention of the government and by assisting them with advice on how diabetes prevention and care can be optimised. I believe the projects funded by the World Diabetes Foundation will greatly improve prevention and treatment of diabetes and other non-communicable diseases in Indonesia,” says Prof. Sidartawan Soegondo, who spends 12-16 hours every day fighting diabetes at the hospital, teaches at the university and trains health care personnel on weekends as part of the PERKENI and PERSADIA projects.

“PERKENI and PERSADIA are very competent and committed local partners, and all of these projects are truly remarkable examples of how the implementing partners are contributing to creating awareness, building capacity and increasing the level of prevention and care in Indonesia. Our committed partners and stakeholders will play an important role in establishing a nationwide system for diabetes care in Indonesia,” says Mr. Ulrik Uldall Nielsen.

Three community-based diabetes management centres and 18 integrated health posts for monitoring and controlling non-communicable disease risk factors will be established.

Tens of thousands of people with diabetes will receive improved access to diabetes care and, similarly, hundreds of thousands will be exposed to primary prevention programmes.

1,800-3,600 people will be monitored for non-communicable disease risk factors.

The first project in Indonesia funded by the World Diabetes Foundation was initiated by the non-governmental organisation Yayasan Peduli Sesama. The project ran from December 2005 to December 2008 and contributed to the improvement of prevention and management of diabetes, by raising public awareness and training an estimated 2,000 professional health care workers in two rural areas of Indonesia.

In October 2008, the World Diabetes Foundation granted support to a project in collaboration with the Indonesian Paediatric Society. The project aims at reaching out to potentially 10 million people, by raising awareness about type 1 diabetes, including multiple stakeholders such as policymakers, health care system managers, non-governmental organisations and the general public.



DIABETES SUMMIT FOR SOUTH-EAST ASIA IN CHENNAI, 2008

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One of the most distinguished and important key note lectures was delivered by the Indian Union Minister of Health and Family Welfare, Dr. Anbumani Ramadoss.

More than 200 delegates from the South-East Asian region, leading global health experts, ministers of health from India and Sri Lanka, senior representatives from the World Bank, the World Health Organization (WHO), national health authorities, health care providers, academics, policymakers, non-governmental organisations and international media convened at the Diabetes Summit for the South-East Asian region to discuss strategies aimed at tackling the escalating rates of diabetes, one of the most significant public health challenges of the 21st century.



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Delivering his address at the opening ceremony of the summit, Dr. Samlee Plianbangchang, WHO Regional Director for the South-East Asian region said: "If appropriate public health action is not taken, disability and premature deaths from heart disease, cancer, diabetes and chronic respiratory diseases will increase by more than 21% over the next 10 years in the South-East Asian region. Almost half of the 89 million non-communicable disease-related deaths projected in the region during the next 10 years will happen prematurely, thus hindering social and economic development of member countries."

The summit was organised by the World Diabetes Foundation in collaboration with the World Health Organization, Regional Office for South-East Asia (WHO SEARO), the International Diabetes Federation and the World Bank. The Diabetes Summit for South-East Asia highlighted approaches to tackle diabetes and related non-communicable diseases across the region through a number of replicable projects.

In his opening remark, the Minister of Health Care and Nutrition, Leader of the house in the Sri Lankan Parliament and Chairman of WHO's executive board, Sri Nimal Sripala De' Silva, addressed the magnitude of the problem:

"The problem of diabetes is big enough for the United Nations to recognise it as a significant global health challenge and for the member states to pass a unanimous vote recognising 14 November as World Diabetes Day. By doing so, they also accepted the responsibility of taking appropriate actions to address the issue. The global diabetes community must be congratulated for coming together and advocating this to happen. South-East Asia is particularly affected by the diabetes epidemic, which kills more people each year than the tragic tsunami of 2004," he said. Accompanied by a loud applause, he declared the summit open and wished the organisers success.

Delivering his address at the opening ceremony

of the summit, Dr. Samlee Plianbangchang, WHO Regional Director for the South-East Asian region said: "We are pleased to be involved in this summit and welcome key stakeholders, not only from South-East Asia, but from across the globe with whom we will discuss measures for tackling chronic diseases."

Addressing the need for action

Prof. Martin Silink, President of the International Diabetes Federation, reminded the delegates that the UN Resolution on diabetes provides the diabetes community with a huge opportunity to press policymakers to address the diabetes burden. He expressed extreme concern that: "Even 85 years after the discovery of insulin, children are dying in many developing countries because insulin is either not available or inaccessible, and adequate knowledge on how to diagnose and treat these children is lacking. This can no longer be tolerated." In a passionate address, he asked the delegates to support a call for a special session of the UN General Assembly to discuss and include chronic non-communicable diseases into the United Nations Millennium Development Goals and the creation of a global fund for health to include both communicable and non-communicable diseases.

Welcoming the delegates, Prof. Pierre Lefèbvre, Chairman of the World Diabetes Foundation and former President, of the International Diabetes

Federation stated that: "The summit brings together one of the largest assemblies of the most influential people capable of changing the course of diabetes in the region. The fact that so many people have come together on this platform is not merely a coincidence. The fact that this summit has speakers and participants ranging from political leaders to policy planners, researchers, academics, health professionals, funding agencies, economists, teachers, representatives from the industry, non-governmental organisations and distinguished members of the media shows that the problem will have to be addressed at multiple fronts, and that there is a need for collaboration."

In his short welcome, Dr. Anil Kapur, Managing Director of the World Diabetes Foundation, thanked the partners for their constructive support for the summit. Referring to the tragic events in Mumbai two days back, he said: "The fact that so many of you chose to travel from far and wide to attend the meeting, even considering the security situation, speaks volumes of your commitment to the cause." He asked the assembled guests to rise and observe a minute of silence as a mark of respect to the many innocent victims of the contemptible violence.

The dual burden

Dr. Michael Engelgau, Senior Public Health Specialist of the South-Asian Human Development Unit of the World Bank, indicated the need to strengthen and adjust health care systems to address the prevention and care of chronic non-communicable diseases at the primary health care level and for strengthening surveillance systems to track and monitor the health and economic burden of non-communicable diseases and their risk factors. He said that failure to address the growing burden of non-communicable diseases will not only impoverish individuals and families, but could set back economic development in many countries. He indicated that there was an urgent need to find funding mechanisms to ensure health equity.

Prof. Anthony Harries from the International Union Against Tuberculosis and Lung Diseases addressed the issue of the double burden of disease and highlighted the sixth Millennium Development Goal, specifying that the incidence of infectious diseases such as tuberculosis should be halted and reversed by 2015. "To succeed in achieving this target, it is important to focus on poor resource countries and not only on HIV/AIDS, but also on the growing diabetes epidemic as a significant epidemiological risk factor. The link between tuberculosis and diabetes has been established; what is now needed is high quality implementation research to screen, monitor and care for this dual burden of disease," he stressed.

Expert discussions

The three-day summit from 28 to 30 November 2008 was packed with high-quality lectures and lively discussions. Two high-level panel

discussions and an open forum, moderated by Mr. Quentin Cooper from the BBC's Material World programme, were the star attraction of the summit. The two panel discussions consisted of a diverse group of leading experts in the field of development assistance and diabetes care and research, senior government officials, representative from the Confederation of Indian Industries, the Chief Editor of the Hindu, one of the leading national newspapers in India, representatives of diabetes associations, senior representatives from the health industry, public health specialists and academia. The summit provided a platform for all the stakeholders to network, share ideas and take inspiration from what is already being done.

A joint call for action

One of the most distinguished and important key note lectures was delivered by the Indian Union Minister of Health and Family Welfare, Dr. Anbumani Ramadoss. In his half hour key note lecture, he addressed and emphasised the importance of policy actions and preventive measures required to halt the epidemic of diabetes and other chronic non-communicable diseases. He pointed out the measures taken by the Indian government on tobacco control and announced that new regulations with regard to food labelling and advertising food products to children will soon be implemented.

"India is experiencing a rapid health transition, with a large and growing burden of chronic diseases, accounting for 53% of all deaths and 44% of disability-adjusted life years in 2005. The close link between diabetes, hypertension, obesity, cardiovascular disease and stroke is well-known," he said.

He added that "the leading causes of non-communicable diseases, and diabetes in particular, are harmful consumption of alcohol, lack of exercise and intake of unhealthy processed food. The Indian Health Ministry wants to remove junk food. It should not be available in school canteens, and labelling rules should be amended under the proposed food standards. Also, Indian health authorities want to make arrangements to introduce yoga in all schools and screen students for risk factors for non-communicable diseases."

At the concluding session, the *Chennai Call for Action* was approved and presented by the collaborating organisations and unanimously endorsed by the participants. The overall aim of the *Chennai Call for Action* is to try to increase attention, focus and allocation of resources to address the burden of chronic non-communicable diseases and to endorse and support a call for a UN General Assembly special session to discuss and include chronic non-communicable diseases in the United Nations Millennium Development Goals and creation of a global fund for health to include both communicable and non-communicable diseases.



^ Many prominent guests were present at the opening ceremony and during the summit, which included the ministers of health from India and Sri Lanka, the WHO SEARO Regional Director, the President of IDF, senior representatives from the World Bank, senior government officials and distinguished members of the international media.

During the summit, the World Diabetes Foundation showcased six major projects for the media across India in the area of capacity building of health care professionals, public awareness in rural areas, gestational diabetes, primary prevention interventions in schools and innovative diabetic foot and eye care projects to demonstrate how interventions funded by the Foundation work at a practical level.

Media outreach

Already one week after the event, more than 80 newspaper articles, online articles, radio interviews, television coverage and pod-casts were published and broadcasted. Attending the event and seeing the projects in action at grass root level, journalists were not only better informed about the growing burden of diabetes, but also could not help being moved by the impact of this disease on the people in India and other developing countries, thus helping to create major awareness of the problem.



A CAUSE FOR CELEBRATION

THAILAND

On 26 November 2008, more than 200 prominent guests including two royal families; TRH the Crown Prince Couple of Denmark and HRH Princess Soamsawali and HRH Princess Bajrakitiyabna of Thailand gathered at a charity dinner at the residence of the Danish Ambassador in Thailand, Mr. Michael Sternberg. Each guest had paid a significant sum to dine and the funds raised were earmarked to support a mobile eye clinic in the Northern province of Thailand. On the same day, Thailand celebrated the World Diabetes Day.



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HRH Princess Soamsawali and HRH Princess Bajrakitiyabna of Thailand attended the charity dinner along with HRH Crown Prince Frederik and HRH Crown Princess Mary of Denmark.

Apart from this fundraising activity, the World Diabetes Foundation currently supports two projects in Thailand in partnership with the Foundation for the Development of Diabetes Care and Theptarin Hospital.

The event was organised in cooperation with YWCA (Young Women's Christian Association) of Bangkok, the Diabetes Association of Thailand, the World Diabetes Foundation and Novo Nordisk A/S. Every single ticket was sold at a price of USD 285 per seat. "We had 204 seats available, and we could easily have sold twice as many seats, if only we had the necessary space to accommodate the guests. With the strong royal attendance, the charity dinner was a huge attraction and every important person in Thailand wanted to be there," explains Ambassador Michael Sternberg.

Being responsible

Besides the Danish Crown Prince Couple, the guest list included the top of Thai society, including representation from the Thai Royal House, dignitaries, the Danish Minister of Foreign Affairs, Mr. Per Stig Møller, key opinion leaders, Danish companies, artists and academia. During the dinner, 30 of Thailand's leading models performed a fashion show sponsored by the Danish fashion company, Evita Peroni. In addition to their show, the company donated USD 4,500. The evening

entertainment also included performance by the Danish jazz musician Mr. Chris Minh Doky and traditional dance performances by the Chuchpimook Dance Company. In order to emphasise how the proceeds of the charity dinner would improve access to diabetes care in Thailand, a five minute film about the World Diabetes Foundation's mobile eye care project in India was projected on large screens.

For the companies present at the event, the dinner was very much about corporate social responsibility. In his speech, the Executive Vice President, Mr. Kaare Schultz, explained what exactly that means for Novo Nordisk A/S: "Corporate social responsibility means changing diabetes – for people in Europe, in America, in Africa and of course in Asia. Therefore, Novo Nordisk A/S is proud to support this unique project, supporting the establishment of a mobile eye clinic here in Thailand." Mr. Kaare Schultz took the opportunity to announce a USD 10,000 donation from Novo Nordisk A/S for the setting up of the mobile eye clinic.

Seeing is believing

In 2008, the World Diabetes Day was celebrated on two different dates in Thailand. On 12 November, hospitals in every Thai province celebrated the World Diabetes Day by conducting screenings and educational activities for the public. The second celebration on 26 November coincided with the visit of the Danish Crown Prince Couple along with a delegation of Danish business entities, marking the official celebrations of the 150 years of diplomatic relations between the Royal Kingdoms of Denmark and Thailand. For Ambassador Sternberg, this provided the perfect platform for organising a charity and diabetes awareness event, combined with the celebrations of 150 years of diplomatic relations and illustrating the Danish business community's support to the concept of corporate social responsibility.

During the official programme on 26 November, Her Royal Highness Crown Princess Mary of Denmark visited the Bang Kayang Community Medical Unit, where she met diabetes patients. At the clinic, the Crown Princess saw with her own eyes some of the problems that people with diabetes must endure in the developing countries, including the complications that occur if left untreated.

The Bang Kayang Community Medical Unit is responsible for providing primary health care to a population of 12,122 from four surrounding villages. A total of nine health care personnel attend the patients at the medical unit. The number of patients with diabetes visiting the provincial hospital has been increasing every year. As a result of the increasing rates of patients with diabetes in Thailand, the Ministry of Public Health regularly provides general health checks and screening for diabetes and hypertension at the community medical units to detect cases early.

Inspired by India

The initial idea to raise funds for a mobile eye clinic in Thailand occurred in the beginning of 2008, when Ambassador Sternberg travelled with the Managing Director of the World Diabetes Foundation, Dr. Anil Kapur, to Cambodia to inaugurate two diabetes clinics. But the seed for supporting access to diabetes care for the poor was sown years back when he visited one of the World Diabetes Foundation's first eye care projects in India. At that time, he was Danish Ambassador to India.

"One of the experiences that made a long-lasting impression was a visit to a mobile eye clinic in Madurai, India. I saw this poor rice farmer who came into the mobile van and had his eyes checked by a specialist, who was 300 km away, via satellite connection. He was told to come back for laser treatment the following week. To me the set-up of the telemedicine van was absolutely fantastic, and I am convinced that it can be replicated to a successful project in Thailand as well," he says.

Eye care on wheels

The set-up to be replicated from India is to bring the most advanced eye care to the very doorstep in remote rural areas. An advanced, fully equipped mobile eye care van will visit villages in Northern Thailand and treat patients on the spot in the van. The mobile unit will allow local ophthalmologists and specialists to get access to diagnostic and therapeutic equipment. In addition to this, installed video conferencing will allow for consultations with specialists at the nearby provincial hospital.

To overcome the barriers to access to care and the vast distances, the World Diabetes Foundation has funded several mobile eye care units in developing countries which use highly advanced equipment to diagnose and treat people with retinopathy in semi-urban and rural settings. In addition, training in diabetes detection, management and counselling are given to several levels of health care professionals; ophthalmologists, general practitioners and health workers. By using a specially built bus, screening, consultation and treatment facilities are brought to poor and disadvantaged people in the rural areas.

Blindness can be prevented. But if there is no access to care and if the health care available is unable to diagnose, blindness will prevail.

In developing countries, diabetic retinopathy is one of the major causes of preventable blindness. It is estimated that millions of people worldwide are affected by sight-threatening diabetic retinopathy. To date, retinopathy treatment is very limited in Thailand and 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.

Long-term effect

After the charity event, eye care in rural Thai areas is one step closer to becoming real. Profits from the sale of seats and corporate and individual sponsorships amounted to USD 25,569. While this is a sizeable amount, it is not enough to set up the mobile unit and an estimated additional USD 325,000-350,000 will be donated by the World Diabetes Foundation. It is expected that the first steps to establish the mobile eye unit will be initiated in 2009. The Thai Ministry of Public Health will be the implementing partner who will also carry all the running costs associated with the mobile unit and provide the health care staff needed to man the unit.

Apart from the money raised, the value of such events lies in the awareness they help create. "The event was a success beyond all expectations. I am sure that the presence of so many prominent people at the event will mobilise interest and action within diabetes care in Thailand in the long term," says Mr. Leif Fenger Jensen, Vice Chairman of the World Diabetes Foundation, who represented the Foundation at the charity dinner.



^ In his speech Mr. Kaare Schultz, Executive Vice President of Novo Nordisk A/S, took the opportunity to announce a USD 10,000 company donation for the establishment of the mobile eye care clinic.

The number of people with diabetes in Thailand is growing at an alarming rate. According to the International Diabetes Federation, more than 3.1 million people in Thailand are affected by diabetes. This number is estimated to increase to 4.6 million by 2025. Diabetes is common in Thailand, but 50% of all cases are undiagnosed.

The concept of bringing access to treatment to rural areas is not new in Thailand, and this is an advantage when establishing the mobile eye care unit. Bang Kayang Community Medical Unit arranges an outreach clinic to communities every year. Screening includes diabetes and hypertension. Those who have high blood sugar levels will be referred to the doctor of the Bang Kayang Community Medical Unit and they will receive information on a proper diet and a healthy lifestyle. Patients with diabetes that need attention from specialists are referred to the Pathum Thani Provincial Hospital for further treatment. All diabetes patients are sent to an ophthalmologist at the hospital for an eye check-up to detect any possible diabetes-related retinal problems.

ANNUAL ACCOUNTS 2008

Profit and loss account, 1 January - 31 December 2008

	DKK '000
Donations from Novo Nordisk A/S and others	69,371
Administration expenses	-5,530
Project expenses	-7,841
Profit before financial income and expenses	56,000
Financial income	8,012
Net profit for the year	64,012
Appropriation of net profit for the year	
Distributions from the World Diabetes Foundation	79,345
At disposal for future distributions	-15,333

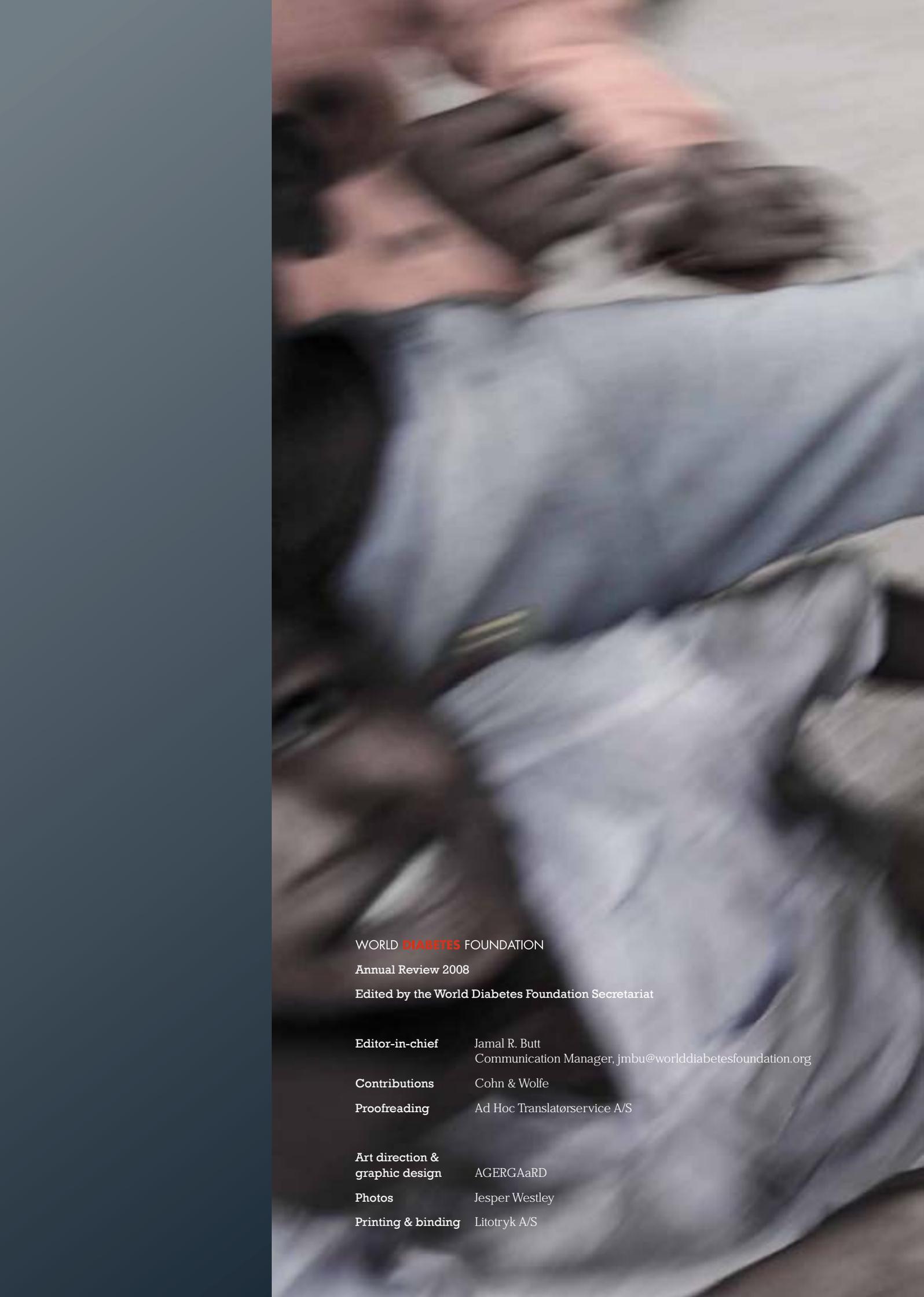
Balance sheet as at 31 December 2008

	DKK '000
Assets	
Tied up capital	260
Fixed assets	260
Receivable donations from Novo Nordisk Group	12,310
Interest receivable	4,522
Other receivables	4
Total receivables	16,836
Bond holdings	113,273
Cash at bank	77,037
Current assets	207,146
Total assets	207,406
Equity and liabilities	
Tied up capital	260
Disposable capital	47,946
Total equity	48,206
Accrued distributions	158,210
Other provisions	990
Total short-term liabilities	159,200
Total equity and liabilities	207,406

The above is a non-audited abstract of the Annual Accounts 2008

Administrative expenses amounted to 7.15% of the Foundation's total income in 2008

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



WORLD **DIABETES** FOUNDATION

Annual Review 2008

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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