CELEBRATING 10 YEARS OF MAKING A DIFFERENCE

2002 - 2012

WORLD **DIABETES** FOUNDATION

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PLANTING SEEDS FOR LONG-TERM CHANGE

Ten years ago, the World Diabetes Foundation was established with the ambition to change the course of diabetes in the developing world, where relatively little attention had previously been paid to this disease. By supporting clinics, training doctors and nurses, raising awareness and advocating for national programmes, the Foundation aims to create innovative solutions that make a lasting difference.

To date the World Diabetes Foundation has funded 284 projects, which have undoubtedly responded to an urgent need in developing countries and paved the way for improved access to care and relief to those impacted by diabetes, through better screening facilities and capacity building, thereby saving millions of people from unnecessary disability and lifelong indebtedness. When we look at what has been achieved and what lies ahead, we feel absolutely certain that local grassroots initiatives will continue to play a significant role in improving access to diabetes prevention and care.

Prof. Pierre Lefèbvre, Chairman, World Diabetes Foundation

During the last 10 years, the World Diabetes Foundation has contributed to numerous networking activities and sharing of better practice. This has helped open the eyes of local policy-makers and inspired countries in Africa such as Uganda, Tanzania and in particular Kenya which has recently launched the first National Diabetes Programme, to lead the way by including a plan to tackle chronic diseases in their national health policies. Strong international and national networks are essential for influencing policy changes, attracting resources to non-communicable disease programmes and for developing and supporting sustainable actions for diabetes prevention and care.

The World Diabetes Foundation has contributed substantially to building local capacity by funding grassroots initiatives in 100 developing countries. Apart from changing the lives of millions of impoverished people with diabetes in countries where no access to prevention and care was previously available, these projects have also helped create and empower local champions for the cause of the prevention and management of diabetes and related non-communicable diseases. In addition, the Foundation has helped build advocacy platforms at the regional and global level by providing funding and technical assistance to many initiatives such as Diabetes Action Now, the International Diabetes Federation (IDF) Diabetes Atlas, the IDF Africa Clinical Practice and Training Guidelines, the Global Diabetes Walk and the promotional campaign for the UN Resolution on Diabetes.

The World Diabetes Foundation has been a catalyst for important initiatives bringing global attention to neglected issues relating to women, diabetes and development. The Foundation played an enabling role in catalysing and supporting a multi-stakeholder dialogue to develop the Collaborative Framework on Tuberculosis and Diabetes, and in placing a spotlight on indigenous peoples, diabetes and development through a recently organised expert meeting on this issue.

In addition, the World Diabetes Foundation has funded and organised major regional diabetes summits in Hanoi, Nairobi, Chennai and Salvador de Bahia, providing significant platforms for building networks for advocacy and sharing of best practice - thus planting seeds for long-term change.

By demonstrating through our projects that solutions can be found, we try to act as a catalyst for larger initiatives at the national level. More importantly, the World Diabetes Foundation has created a sense of urgency, support and hope for millions of people with diabetes. We hope that over time our advocacy and awareness efforts will demonstrate that it is possible to tackle the challenges posed by diabetes in the developing world in a cost-effective manner. Here we share some of the impact of our efforts, whilst recognising that our work is just starting to gain momentum and is far from over.

A JOURNEY OF HOPE

Driven by an ambition to alleviate the human suffering related to diabetes and its complications among those least able to withstand the burden of this disease, the World Diabetes Foundation was set up in 2002 through a generous grant from Novo Nordisk A/S. Our aim is to improve prevention and access to treatment for diabetes in developing countries.

Ten years down the line, the World Diabetes Foundation has grown into a leading international funding agency supporting grassroots initiatives in the area of diabetes prevention and care in the developing world. Our mission is far from complete, but we can be proud that our efforts are starting to bear fruit, already providing care and relief to millions of people. The impact of these initiatives can be seen across the world.

Dr. Anil Kapur, Managing Director, World Diabetes Foundation

Global advocacy is an equally important task, not only to highlight the health and socio-economic burden posed by diabetes, but also to ensure that local projects are anchored within an internationally accepted framework. Every day, the World Diabetes Foundation strives to place diabetes higher on the global agenda. Through our advocacy work and by supporting the actions of relevant stakeholders we help create alliances that have greater influence than the total sum of the individual efforts.

Since its inception, the World Diabetes Foundation has acted as a catalyst, creating partnerships in the developing world by encouraging and helping many local champions to do more for people with diabetes in their communities. We have raised awareness of the problem of diabetes among various stakeholders, including national governments in the developing world as well as international development partners.

Whilst words such as 'tsunami' and 'global epidemic' have been used to describe the phenomenal growth of diabetes, to us diabetes is a public health disaster unfolding in slow motion. Just as the disease remains asymptomatic for long periods with devastating complications, the public health aspect of diabetes has remained grossly neglected and is now starting to corrode the already fragile and weak health systems, threatening to overwhelm them if preventive efforts are not initiated. Diabetes is a development issue and, to us, changing the dire prospects caused by this disease begins and ends with the suffering and pain we see in the eyes of the people affected by the devastating, yet easily preventable, complications of diabetes.

During the 10 years of the World Diabetes Foundation's existence, we have learned to understand and respect the value of local knowledge and drive to take action. We have leveraged this to create sustainable and innovative programmes for the benefit of people with diabetes. Identifying committed partners, funding their initiatives and strengthening their capacity for advocacy has helped us create strong local champions, thereby ensuring political commitment and long-term sustainability.

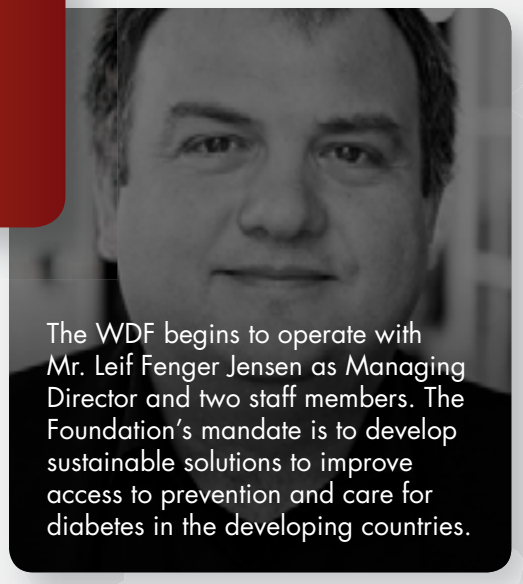
This 10th Anniversary publication includes examples of best practice from around the world, demonstrating how even the smallest investments and partnerships can have a catalytic effect. The replicable and innovative partnerships presented in this publication are examples of how political will and personal commitment can help secure the necessary resources and attention required to establish infrastructure, build capacity, create awareness and achieve health equity. The joining of forces at global, regional and national levels is necessary to address the imminent threat to world health and break the vicious circle. At the World Diabetes Foundation we work at all three levels, creating alliances and identifying local ambassadors, to influence the health agenda and develop health policies and programmes to support sustainable solutions.

While the challenge is huge there is now, it seems, light at the end of the tunnel, making it all the more important to press ahead to make sure that momentum is not lost. To us, these 10 years mark the beginning of a journey of hope for people with diabetes in the developing world. Whilst funding is essential to get the job done, more important are dedication, commitment and trust - values we get in abundance from our project partners

On behalf of the World Diabetes Foundation Board of Directors and Secretariat, we thank our sponsors, project partners and well-wishers for all their support.

WDF 2002-2012
THE FIRST 10 YEARS OF MAKING A DIFFERENCE

The WDF Board is formed comprising Chairman Prof. Sir George Alberti, Dr. Ida Nicolaisen, Prof. Ib Bygbjerg, Dr. Anil Kapur and the President and CEO of Novo Nordisk A/S Mr. Lars Rebien Sørensen.



The WDF begins to operate with Mr. Leif Fenger Jensen as Managing Director and two staff members. The Foundation's mandate is to develop sustainable solutions to improve access to prevention and care for diabetes in the developing countries.

The WDF's Mission and Code of Conduct are adopted by the BoD. These describe WDF's role as a catalyst to help others do more and create partnerships to help the most vulnerable and those with the greatest burden.

2002 Novo Nordisk General Assembly approves resolution to fund and establish the WDF as an independent trust.

2001 2002 2003

The intention to establish the World Diabetes Foundation (WDF) is announced by its founder Novo Nordisk A/S on World Diabetes Day 2001.

The WDF Board grants support to the first 12 projects focusing on improving access to diabetes care and capacity building in developing countries.

The WDF grants support to Diabetes Action Now which aims to raise gobal awareness of diabetes through increased advocacy and action in partnership with the IDF and the WHO.

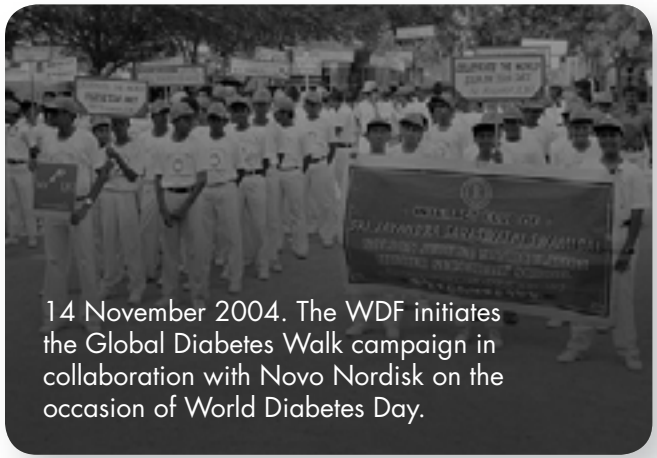
Her Royal Highness Princess Benedikte of Denmark becomes patron of the WDF.

The IDF Africa Training and Clinical Practice Guideline project is launched.

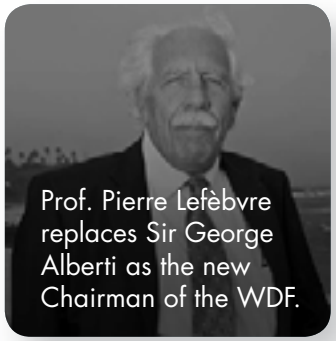
The first WDF-supported project on diabetic foot (Step by Step) is initiated in India/Tanzania.

Agreement with DANIDA is signed to support and co-fund diabetes care pilot programmes in three developing countries.

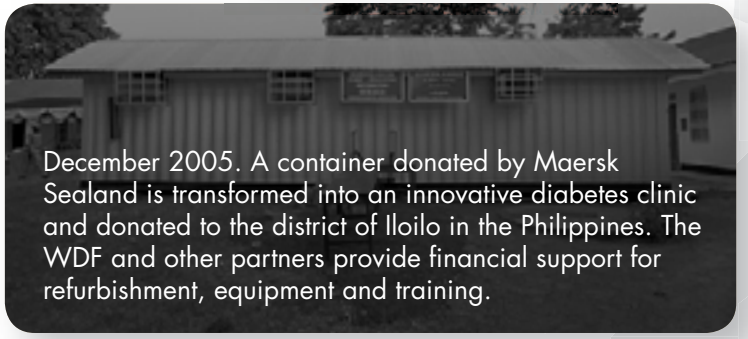
The first WDF-supported project on diabetic retinopathy is initiaded in Tamil Nadu, India.



14 November 2004. The WDF initiates the Global Diabetes Walk campaign in collaboration with Novo Nordisk on the occasion of World Diabetes Day.



Prof. Pierre Lefèbvre replaces Sir George Alberti as the new Chairman of the WDF.



December 2005. A container donated by Maersk Sealand is transformed into an innovative diabetes clinic and donated to the district of Iloilo in the Philippines. The WDF and other partners provide financial support for refurbishment, equipment and training.

Dr. Anil Kapur, then Vice Chairman of the WDF Board of Directors takes over as Managing Director of the Foundation from Mr. Leif Fenger Jensen who joins the Board as Vice Chairman.

The first WDF-supported school health promotion project focusing on the coming generation is initiated in India.

2004 2005 2006

The WDF supports the first ground breaking project on gestational diabetes in collaboration with Dr. Seshiah's Diabetes Care and Research Institute in Tamil Nadu, India.

Mr. Lars Rebien Sørensen, President and CEO of Novo Nordisk and Board Member of the WDF, is invited to participate in a new global media initiative called Principal Voices sponsored by Shell in collaboration with CNN, TIME and Fortune Magazine. He showcases Novo Nordisk's contribution to establish the WDF.

February 2006. WDF co-hosts the first Regional Diabetes Summit for the Western Pacific and the South East Asia Region in Hanoi, Vietnam in collaboration with the WHO, SPC, IDF and Ministry of Health Vietnam.

WDF support is granted to the first ever mobile foot care clinic in Tamil Nadu, India.

The WDF provides financial and strategic support for the IDF led campaign for World Diabetes Day leading to the UN Resolution 61/225 on Diabetes in December 2006.

WDF 2002-2012
THE FIRST 10 YEARS OF MAKING A DIFFERENCE

The WDF celebrates five years of making a difference with a roundtable dicussion with the World Bank, the WHO, IDF and the Danish Ministery for Development Cooperation.

The WDF enters into a milestone national partnership with the Indian media house Jagran Pehel, supporting a media campaign about prevention and care of diabetes.

In March 2008, shareholders of Novo Nordisk A/S approve an additional endowment of a maximum of DKK 575 million over another 10 year-period for WDF.

The WDF grants support to the first national NCD programmes to be developed in Tanzania and Uganda.

In February 2009 the first peers under the WDF Peer Programme start their training.

November 2009. The WDF co-hosts an Expert Meeting on Diabetes and Tuberculosis in collaboration with the Union and WHO Stop TB Department.

2007 2008 2009

June 2007. The WDF co-hosts the first Diabetes Summit for Africa in Nairobi, Kenya in collaboration with the WHO AFRO, IDF Africa and Kenyan Ministry of Health.

November 2007. The WDF co-hosts the first Regional Conference on Diabetes and Economics in partnership with the World Bank, the WHO EMRO, the GCC Council and MoH Saudi Arabia in Riyadh.

April 2008. The WDF and the Global Alliance for Women's Health co-host the first Expert Meeting on Women, Diabetes and Development at the UN Head Quarters in New York. Proceedings published in a special issue of the International Journal of Obstetrics and Gynaecology.

November 2008. The WDF co-hosts the Diabetes Summit for South-East Asia in Chennai, India in collaboration with the WHO, IDF, World Bank and the Indian Ministry of Health. The Chennai Call to Action was adopted and asks for a UN General Assembly special session to discuss NCDs as a development issue.

The WDF enters a partnership with Novo Nordisk A/S and Roche to improve access to care and treatment for children living with type 1 diabetes in developing countries.

The first WDF supported projects focusing on diabetes and tuberculosis are initiated in China and India.

June 2010. The WDF co-hosts the Regional Diabetes Summit for Latin America in Bahia, Brazil in collaboration with the IDF, PAHO and the Brazilian Ministry of Health.

The WDF supports the NCD Alliance led advocacy and awareness campaign culminating with the Political Declaration on prevention and care for NCDs at the High-level Meeting on NCDs at the UN General Assembly in New York, September 2011. Maternal and child health is included in the Political Declaration as they are "inextricably linked with non-communicable diseases and their risk factors".

CELEBRATING
10
YEARS
OF MAKING
A DIFFERENCE

WORLD DIABETES FOUNDATION

After the first 10 years of operation, the WDF has supported 278 projects in 100 countries. A total of USD 89,95 million has been distributed.

2010 2011 2012

April 2010. The WDF hosts the first International Donor Conference on the Emerging Burden of Chronic Diseases and its Impact on Developing Countries in Copenhagen, Denmark.

August 2010. With funding from the WDF, Kenya becomes the first country in Africa to launch a National Diabetes Strategy and implement a National Programme for Diabetes.

The Collaborative Framework for Care and Control of Tuberculosis and Diabetes is launched by the WHO and Union. The WDF played a facilitating role in the process.

The WDF co-host the first Expert Meeting on Diabetes, Indigenous Peoples and Development in collaboration with the IDF and senior officials from the UN Forum for Indigenous Issues.

ADVOCACY

"In developing countries, the rapidly rising burden of diabetes is a factor faltering progress towards achieving the Millennium Development Goals. Prevention can help reduce poverty, promote economic productivity and keep countries on track in their efforts to achieve the Millennium Development Goals (MDGs)."

Mr. Ban Ki-moon, Secretary-General of the United Nations.

PUTTING THE SPOTLIGHT ON DIABETES AND NCDs

While it is estimated that 60% of all deaths worldwide are attributable to non-communicable diseases (NCDs) such as diabetes, funding for the prevention and treatment of NCDs currently accounts for less than 1% of official development assistance for health. Addressing the disproportionately low attention paid to diabetes and NCDs is part of the World Diabetes Foundation's strategic global advocacy work which includes support for the UN Resolution on Diabetes and UN High-level Meeting on NCDs.

The World Diabetes Foundation is well known for the projects it supports to improve diabetes care in developing countries, but this is only part of the Foundation's work. The Foundation also builds advocacy to create more focus on diabetes and related non-communicable diseases (NCDs), by working with stakeholders such as policy-makers, donors, non-governmental organisations, the media and civil society.

Whilst communicable diseases such as HIV, TB and malaria have been in the political and public spotlight for many years, NCDs - mainly cancer, cardiovascular disease, chronic respiratory disease and diabetes - have not received proportionate attention for the health and socio-economic burden they create or for the increasing prevalence of these diseases. This imbalance is what the World Diabetes Foundation wants to change, as only then will the resources be found to address and potentially limit the diabetes epidemic.

Bringing diabetes out of the shadows

Back in early 2006, the World Diabetes Foundation joined forces with the International Diabetes Federation (IDF) to increase global awareness of diabetes by organising the largest awareness campaign ever conducted in the area of diabetes. The aim of the campaign was to convince the United Nations (UN) to adopt a resolution on diabetes, bringing diabetes out of the shadows and encouraging a coordinated action to address the burden of diabetes and its complications. For the first time diabetes was linked to the issue of poverty and

development, thereby providing an indirect link to the Millennium Development Goals - the main goals being pursued by major multilateral and bilateral development partners and donor agencies.

The Unite for Diabetes campaign under the leadership of the IDF received support from diabetes associations, allied organisations, industry partners and people living with diabetes. On 20 December 2006, the campaign achieved its ambition of bringing diabetes to a higher level of attention through the adoption of UN Resolution 61/225 on World Diabetes Day. It is impossible to quantify the impact of the Unite for Diabetes campaign on the UN's decision to adopt the Resolution, but it can be assumed that this grassroots campaign played an important role in the process.

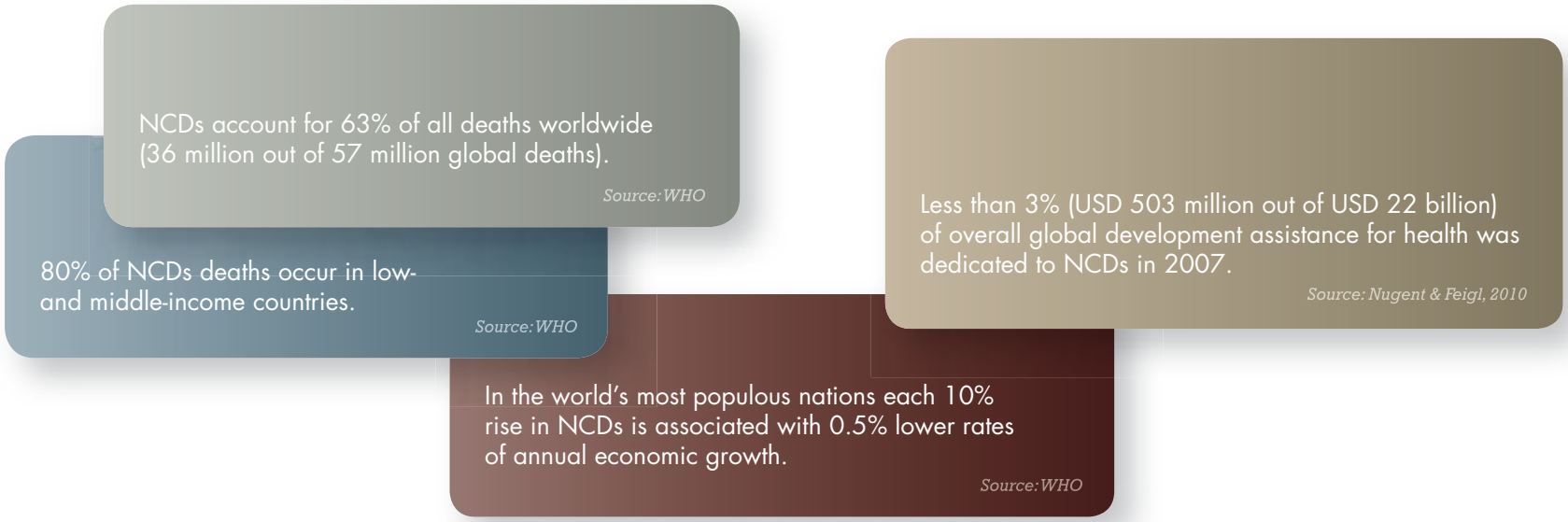
''The real beneficiaries of the Resolution will be people living with diabetes, their families and many more at risk. Passing the UN Resolution, while monumental for the diabetes world, is just the first step,'' said Prof. Martin Silink, Leader of the Unite for Diabetes campaign and President of the IDF at that time.

The entry point for NCD strategies

The UN Resolution provided the World Diabetes Foundation with a legitimate and valid framework to continue its advocacy work to raise awareness of diabetes in developing countries, and it supported the strategy of using diabetes as the entry point for countries to develop sustainable NCD strategies.

At the International Conference on the Emerging Burden of Chronic Diseases and its Impact on Developing Countries held in Denmark in April 2010, Dr.Tembu Osborn, Medical Officer at Kijabe Mission Hospital, Kenya, explained the consequence of the inappropriate health funding on people in developing countries: because of the many resources allocated to HIV treatment and care compared to the lack of even inexpensive generic drugs for people with diabetes, patients who are newly diagnosed with diabetes lament that it would have been better if they were diagnosed with HIV. This shocking truth is not limited to Kenya, as similar stories have been heard from many other countries.

The conference at which Dr. Tembu was speaking was one of two major conferences organised by the World Diabetes Foundation in 2010 with the aim of strengthening the fight against NCDs and diabetes in developing countries amongst policy-makers and donors. The Diabetes Summit for Latin America in Brazil, hosted by the World Diabetes Foundation later that year, heard from Dr. Luis Perez, Senior Public Health Specialist at the World Bank, Argentina, who spoke of NCDs as ''anti-development'', as a healthy workforce is essential for economic growth. However, in the developing countries early onset of the disease and its complications not only affects productivity; lack of health care financing and out of pocket expenses mean that catastrophic costs of hospitalisation for complications drive people into indebtedness and poverty. Dr. Perez stated it is therefore counterproductive to ignore the burden of NCDs.



Correcting the imbalance

Meetings such as these have been an integral part of the World Diabetes Foundation's effort to encourage the UN to adopt a resolution on NCDs at the High-level Meeting of the UN General Assembly in September 2011. In addition, the World Diabetes Foundation joined the NCD Alliance Supporters group and funded a project with the IDF to advocate for a successful outcome of the UN meeting and to ensure that diabetes had a strong presence in the lead up to the meeting.

Working with the NCD Alliance Supporters group prior to the meeting, the IDF conducted two international meetings consisting of diabetes experts who participated in the production of documents to guide governments on the development of NCD policies. To ensure that diabetes remained visible in the broader NCD agenda, communication activities were initiated targeting the general public, the global diabetes community, the media and key decision makers using social media such as Facebook and Twitter. Furthermore, the World Diabetes Foundation supported the powerful voice of patient associations globally through the NCD Alliance Supporters group.

The UN meeting proved a success and the World Diabetes Foundation welcomes the Political Declaration on prevention and care for NCDs adopted at the meeting. From a funding perspective, the Declaration calls for increased resources for tackling NCDs through domestic, bilateral and multilateral channels and it recognises that resources devoted to dealing with NCDs are not commensurate with the magnitude of the problem. The Declaration admits that an imbalance has been created over the past decades with the mostly one-sided attention to only certain communicable diseases.

''Addressing NCDs is critical for global public health, but it will also be productive for the economy; for the environment; for the global public good in the broadest sense. If we come together to tackle NCDs, we can do more than heal individuals – we can safeguard our very future,'' said Secretary-General Ban Ki-moon in his remarks to the General Assembly meeting.

''The World Diabetes Foundation will continue its advocacy work to help translate the words in the UN Political Declaration on NCDs into real action on the ground. Risk factors and socio-economic determinants of both communicable and non-communicable diseases are often interlinked and while different organisations may have the mandate to address one particular issue we must work together where possible in true partnership, avoiding the silo mentality, if we want to improve the health of the poor people in developing countries,'' concludes Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

THE ROUTE TO CHANGE

Over the last decade a series of global stakeholder meetings organised by the World Diabetes Foundation have brought together international experts and key opinion leaders to create a forum for interaction and a network of committed global influencers to drive the agenda forward on diabetes prevention and care. While it is almost impossible to quantify the impact of these initiatives, there can be no doubt that since their inception governments worldwide, policy-makers and funding bodies have begun to prioritise diabetes care and that the initiatives played a significant role in setting the agenda for the UN Resolution on Diabetes and the UN Political Declaration on Non-Communicable Diseases.

2003-2009
DIABETES ACTION NOW

Diabetes Action Now was a joint project of the International Diabetes Federation (IDF) and the World Health Organization (WHO) with support from the World Diabetes Foundation. The objective of the project was to raise awareness of the health, economic and social problems associated with diabetes worldwide, with a particular focus on developing countries, by initiating and maintaining advocacy work amongst policy-makers and donors. See page 36 for more details.

''At the time Diabetes Action Now was created the WHO hadn't really considered diabetes as a priority and funding was mainly directed to infectious diseases. So the first impact from the project was on the WHO itself which was extremely important. Diabetes has now definitely moved up the WHO agenda.''

Prof. Pierre Lefèbvre, President of IDF 2003-2006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Prof Pierre Lefebvre

FEBRUARY 2006
DIABETES SUMMIT FOR ASIA AND PACIFIC, HANOI, VIETNAM

The aim of the Hanoi Summit, hosted by the World Diabetes Foundation, the Ministry of Health in Vietnam and the Western Pacific Declaration on Diabetes, which includes the Secretariat of the Pacific Community, the IDF and WHO, was to highlight the rising prevalence of diabetes and its complications and develop strategies to reduce the socio-economic burden it poses with a particular focus on Asia. Over 100 participants including experts and project partners from around the world and 25 media participants also heard about two World Diabetes Foundation-funded community-based pilot projects, which the Vietnamese Ministry of Health rolled out nationally in 2006.

''We are delighted to see the success of these initial community-based projects in Vietnam and believe they demonstrate the huge potential that can be achieved by taking a community-based approach to diabetes prevention and care, and pooling the resources, skills and expertise of both national and international partners.''

Prof. Tran Thi Trung Chien, Minister of Health, Vietnam

2011-2015. A national non-communicable disease (NCD) action plan with five components including diabetes, hypertension, cancer, mental illness and chronic respiratory disease has been approved by the Vietnamese Government for 2011-2015. The plan includes specific action on the prevention of these five major NCDs.

DECEMBER 2006
UN RESOLUTION ON DIABETES

UN Resolution 61/225 on Diabetes was adopted by the United Nations General Assembly recognising diabetes as a chronic, debilitating and costly disease associated with major complications that pose severe risks for families, countries and the entire world. For the first time, governments acknowledged that a non-infectious disease is as serious a global threat as infectious epidemics. The Resolution calls on all nations to develop national policies for the prevention, treatment and care of diabetes in line with the sustainable development of their health care systems. The Unite for Diabetes campaign for a UN resolution on diabetes, led by the IDF and supported by the World Diabetes Foundation, brought together the largest ever diabetes coalition, including IDF member associations, the majority of the world's scientific and professional diabetes societies, many charitable foundations and non-governmental organizations, as well as industry. See page 18 for more details.

''The real beneficiaries of the Resolution will be people living with diabetes, their families and many more at risk. Passing the UN Resolution, while monumental for the diabetes world, is just the first step.''

Prof. Martin Silink, Leader of the Unite for Diabetes campaign and President of the IDF 2006-2009

JUNE 2007
DIABETES SUMMIT FOR AFRICA
NAIROBI, KENYA

The second Diabetes Summit, hosted by the World Diabetes Foundation in cooperation with the Ministry of Health, Kenya, the WHO's Regional Office for Africa and the IDF Africa Region, brought together leading global health experts, ministers of health, donors and national health authorities. The aim was to discuss the growing prevalence of diabetes in the African region; to develop prevention strategies to reduce the burden; and to initiate and support much needed sustainable, local national programmes for diabetes prevention and care. Over 200 participants and 35 senior media delegates attended the Summit to hear from experts, project partners and key stakeholders from across Africa about the many projects which hope to make a significant impact upon the rising prevalence of diabetes by raising awareness, improving care and implementing screening and prevention programmes.

''These programmes demonstrate a very successful partnership between the Kenya Diabetes Management and Information Centre, the World Diabetes Foundation and the Ministry of Health, whereby all diabetes care capacity is established within the existing health care system, ensuring a sustainable approach and strong local commitment from the government of Kenya. We sincerely hope that in our neighbouring nations our efforts will encourage similar projects that can evolve into national non-communicable disease programmes in the long term.''

Her Excellency Charity Kaluki Ngilu,
Minister for Health of the
Republic of Kenya, 2003-2007

August 2010. Kenya launches a National Diabetes Strategy and is the first country in Africa to do so.

''If the disease is not tackled, it will hinder the attainment of the Millennium Development Goals. In order to achieve effective diabetes control a coordinated and multi-sectoral approach must be adopted throughout the country. It is our belief that collectively we can make a difference: Let us join hands in the fight against diabetes and strive to achieve a diabetes-free Kenya.''

Beth Mugo, Public Health Minister of the Republic of Kenya

NOVEMBER 2007
REGIONAL CONFERENCE ON DIABETES AND ECONOMICS
RIYADH, SAUDI ARABIA

The goal of the Regional Conference on Diabetes and Economics was to increase the knowledge of governmental officials, policy-makers and others concerned with the economic aspects of diabetes. The conference was organised by the Health Ministers' Council for Gulf Cooperation Council (GCC) States in collaboration with the Ministry of Health, Kingdom of Saudi Arabia, the King Faisal Specialist Hospital and Research Center, the WHO's Regional Office for the Eastern Mediterranean, the Arab Gulf Programme for United Nations Development Organization, the World Diabetes Foundation and the World Bank. As a major outcome of the conference, the Executive Board of the Health Ministers' Council for GCC States presented a joint statement on diabetes control, called the Riyadh Declaration, as a guiding framework to address the challenges of diabetes, particularly from an economic standpoint in the entire region.

''The joint statement on diabetes control truly emphasises the dedication of Health Ministers in the Gulf region to control this epidemic, and take the necessary actions to help decrease the burden of diabetes and implement national strategies to reduce the risk factors and complications caused by the disease. We consider the joint statement a turning point in the fight against diabetes mellitus in the Gulf region.''

Dr. Tawfik AM Khoja, Director General of the Executive Board, and Health Ministers' Council for GCC States

APRIL 2008
DIABETES, WOMEN AND DEVELOPMENT
NEW YORK, US

Leading global health experts, UN agencies and Permanent Missions took part in an expert meeting organised by the Global Alliance for Women's Health and the World Diabetes Foundation, to discuss the adverse relationship between diabetes and women's health and wellbeing as well as to influence the public policy community to incorporate initiatives that would benefit several Millennium Development Goals. Represented at the meeting were UN agencies, including UNICEF, the World Bank, the UN Division for the Advancement of Women, the WHO, the Pan American Health Organization and the United Nations Population Fund.

''With the General Assembly Resolution 61/225 efforts need to be made to use the resolution very strategically, to increase attention to women, gender equality and diabetes. The annual observance of the World Diabetes Day provides a unique opportunity to bring attention to women and diabetes. Efforts will be needed to identify the differences and inequalities between women and men in relation to risks, causes, consequences, treatment and coping strategies for diabetes.''

Carolyn Hannan, Director of the UN Division for the Advancement of Women

September 2011. *''Maternal and child health is inextricably linked with non-communicable diseases and their risk factors, specifically as prenatal malnutrition and low birth weight create a predisposition to obesity, high blood pressure, heart disease and diabetes later in life; and that pregnancy conditions, such as maternal obesity and gestational diabetes, are associated with similar risks in both the mother and her offspring.''*

Extract from the Political Declaration of the High-level Meeting of the UN General Assembly on the Prevention and Control of Non-communicable Diseases


Diabetes Summit for South East Asia
India, 28th - 30th November 2008

NOVEMBER 2008
DIABETES SUMMIT FOR SOUTH-EAST ASIA
CHENNAI, INDIA

The Summit for South-East Asia saw leading global health experts, health ministers, donors and national health authorities discuss strategies aimed at tackling the escalating rates of diabetes, share ideas and take inspiration from the approach that the World Diabetes Foundation and development partners are taking to tackle diabetes across the region through a number of replicable projects. The Summit, organised by the World Diabetes Foundation in collaboration with the WHO Regional Office for South-East Asia, the IDF and the World Bank, unanimously agreed on a resolution – the Chennai Call to Action - asking health authorities and policy-makers worldwide to act now to stem the tide of NCDs threatening the health and economies of developing countries. In addition, the Call for Action for the first time endorsed and supported an appeal for a UN General Assembly special session to discuss and include the prevention and care of NCDs in the UN's Millennium Development Goals.

''If appropriate public health action is not initiated, disability and premature deaths from heart disease, cancer, diabetes and chronic respiratory diseases will grow by more than 21% over the next 10 years in the South-East Asia Region. Almost half of the 89 million non-communicable disease-related deaths projected in the Region during the next 10 years will occur prematurely, thus hindering social and economic development of Member countries.''

Dr. Samlee Plianbangchang, WHO Regional Director, South-East Asia

September 2011. The first UN High-level Meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases took place in New York.

NOVEMBER 2009
EXPERT MEETING
PARIS, FRANCE

The International Union Against Tuberculosis and Lung Disease (the Union), the World Diabetes Foundation and the WHO Stop TB Department began a series of consultations in January 2009 to initiate a process towards developing a policy document on tuberculosis and diabetes. An expert meeting in Paris was subsequently held in November 2009 to discuss whether recommendations about joint management of diabetes and tuberculosis could be made, as well as to identify research gaps and develop a research agenda.

''When HIV-TB became an issue we were very slow in responding to that threat, particularly in Africa and it took us a long time to get together collaborative activities to reduce the dual burden of those two diseases. We do not want to make that mistake with diabetes-tuberculosis. We must begin to act now in terms of screening patients and picking up these diseases early so that we can treat them early and hopefully get better outcomes.''

Prof. Anthony Harries, Senior Advisor at the International Union Against Tuberculosis and Lung Disease

September 2011. During the UN High-level Meeting in New York the Collaborative Framework for Care and Control of Tuberculosis and Diabetes was launched. The Framework aims to guide national programmes and clinicians on how to establish a coordinated response to both diabetes and TB. With the Framework the WHO and the Union are highlighting that prevention and care of diabetes should be a priority for all stakeholders working on TB control. See page 229 for more details.

APRIL 2010
EMERGING BURDEN OF CHRONIC DISEASES AND ITS IMPACT ON DEVELOPING COUNTRIES
COPENHAGEN, DENMARK

In an effort to underline the development concerns posed by NCDs in developing countries, an international conference was organised by the World Diabetes Foundation and the Danish Ministry of Foreign Affairs in Copenhagen, with support from the World Bank Group, the IDF, the World Heart Federation, the International Union against Cancer, NORAD, the Norwegian Directorate of Health and the Danish National Board of Health. World-renowned health experts gathered to present new knowledge and discuss the implications of NCDs in low- and middle-income countries - and addressed the consequences of not facing up to the reality of this rising pandemic. The conference called upon donors to raise the level of funding for NCDs, prioritise prevention and promote safe, affordable and accessible treatment and care for NCDs as well as invest in health system strengthening in order to further poverty reduction and development. An appeal was sent out to national governments to focus on strengthening health systems as part of a national holistic plan to encourage cross collaboration and to place health equity at the centre of all policies and to develop national plans to engage donors. Furthermore, it was requested that civil society advocate for increased awareness and prioritisation of NCDs.

''We decided to co-host this conference in order to ignite the debate on what to do about the emerging burden of NCDs in developing countries. There are many challenges in fighting NCDs - but there have always been many challenges in public health. Donors cannot solve the problem, ultimately the developing countries must take responsibility - and then we can assist. But we have to start somewhere, and getting the facts right is not a bad place to start.''

Mr. Esben Sønderstrup, Chief Technical Advisor at Danida

JUNE 2010
DIABETES SUMMIT FOR LATIN AMERICA
BAHIA, BRAZIL

The aim of the Diabetes Summit for Latin America was to serve as a forum where key stakeholders in the area of NCDs, key opinion leaders, World Diabetes Foundation partners and international media could interact to create a network of committed influencers, who were then motivated to drive the agenda on prevention and care in the developing world. Hosted by the World Diabetes Foundation with co-sponsorship of the Pan American Health Organization and the Brazilian Ministry of Health, the Summit encouraged governments, policy-makers and funding bodies worldwide to prioritise prevention and care and the implementation of much-needed sustainable solutions to address the burden of diabetes and related NCDs. The 250 delegates at the Summit unanimously agreed on the Bahia Call to Action, which appeals to health authorities and policy-makers from the Latin American and Caribbean region to address the urgent need for prevention and control of diabetes and related NCDs.

''The growing epidemic of diabetes and chronic non-communicable diseases in the Latin American and Caribbean region must be tackled head on with tangible, cost effective and preventable solutions. Effective prevention and treatment strategies for diabetes are not costly and can effectively bring down costs related to other related chronic non communicable diseases. It is time for all partners and governments to recognise chronic non-communicable diseases as closely linked to global social and economic development.''

Dr. Mirta Roses Periago, Director of the Pan American Health Organization


World Health Organization
DIABETES SUMMIT FOR LATIN AMERICA
30th June – 2nd July 2010, Salvador, Bahia, Brazil

SEPTEMBER 2011
UN POLITICAL DECLARATION ON NCDS
NEW YORK, US

The Political Declaration on Prevention and Care for NCDs was made at the High-level Meeting on NCDs of the UN General Assembly. From a funding perspective the Declaration calls for increased resources for tackling NCDs through domestic, bilateral and multilateral channels and it recognises that resources devoted to dealing with NCDs are not commensurate with the magnitude of the problem. In the process leading up to the High-level Meeting, the World Diabetes Foundation supported the powerful voice of patient associations globally through the NCD Alliance and joined the NCD Alliance Supporters group. The World Diabetes Foundation also funded a project with the IDF to advocate for a successful outcome of the UN Summit and to ensure that diabetes had a strong presence in the process leading up to the Summit. See page 18 for more details.

''Addressing NCDs is critical for global public health, but it will also be good for the economy; for the environment; for the global public good in the broadest sense. If we come together to tackle NCDs, we can do more than heal individuals – we can safeguard our very future.''

Mr. Ban Ki-moon, Secretary-General of the United Nations

OCTOBER 2011
SATELLITE SYMPOSIUM AT ASIA PACIFIC CONFERENCE ON SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS
YOGYAKARTA, INDONESIA

The Asian-Pacific Resource & Research Centre for Women (ARROW) and the World Diabetes Foundation jointly held a satellite symposium at the 6th Asia Pacific Conference on Reproductive and Sexual Health and Rights (APCRSHR).

The symposium offered an opportunity for introducing NCDs, diabetes and sexual and reproductive health and rights (SRHR) – a topic never discussed prior to this symposium - to a wide range of SRHR practitioners, researchers, advocates and policy-makers. A direct outcome of the symposium has been the publication ''A Missing Link to Achieving Sexual and Reproductive Health in the Asia-Pacific Region'' which intends to create a regional platform to call for integration of diabetes in the national and regional sexual and reproductive health agenda.

''The United Nations General Assembly recently passed a resolution on diabetes in 2006 and the more recent UN High-level Meeting on NCDs are positive actions towards addressing this issue. This is an opportune moment to recognise and advocate that effective screening for the prevention and control of diabetes be put in place in order to safeguard women's health and women's sexual and reproductive health.''

Ms. Sivananthi Thanenthiran, Executive Director,
Asian-Pacific Resource & Research Centre for Women (ARROW)

MARCH 2012
EXPERT MEETING ON INDIGENOUS PEOPLES, DIABETES AND DEVELOPMENT
COPENHAGEN, DENMARK

Despite high prevalence and an alarming death toll, NCDs in general and diabetes in particular continue to be neglected issues on the global health agenda for indigenous peoples. The Expert Meeting on Indigenous Peoples, Diabetes and Development was the first international meeting hosted by the World Diabetes Foundation and co-hosted by the IDF, aimed to build consensus around the burden of diabetes and related NCDs amongst indigenous peoples and to identify specific areas of intervention to address prevention and access to care for indigenous populations.

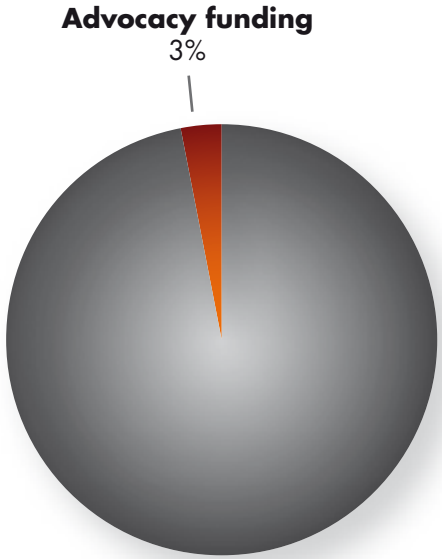
The Expert Meeting brought together a broad range of expert stakeholders including: indigenous representatives from 15 countries, international health experts, reputed researchers, special rapporteurs on indigenous issues from the United Nations, representation from the United Nations Permanent Forum for Indigenous Issues, the Pan American Health Organization, the World Diabetes Foundation project partners and academics.

Furthermore, A Call to Action was presented and later adopted to serve as an advocacy tool and to bring forward key expert recommendations to the forthcoming World Conference on Indigenous Peoples, to be held in 2014.

''Most indigenous peoples with diabetes around the world are never diagnosed; they never receive treatment for diabetes and die from the condition without knowing the reason for their suffering. Despite progress on diabetes at the global level there still remain deep-seated pockets of inequality and injustice and until we see the health disparities between communities reduced and the rights of all people with diabetes respected, we will not rest. This Expert Meeting will underline future action which the IDF looks forward to working with other stakeholders to address this neglected issue.''

Prof. Jean Claude Mbanya, President of the IDF

WDF SUPPORT FOR ADVOCACY PLATFORMS 2002-2011: USD 3.1 MILLION CORRESPONDING TO 3% OF TOTAL FUNDING



DIABETES ACTION NOW

A decade ago awareness of diabetes was low – even among policy-makers at international level. Yet the world was facing a dramatic rise in the number of people with diabetes in both developed and developing countries. Thanks to one of the World Diabetes Foundation's first major funding initiatives, the International Diabetes Federation joined forces with the World Health Organization to take action.

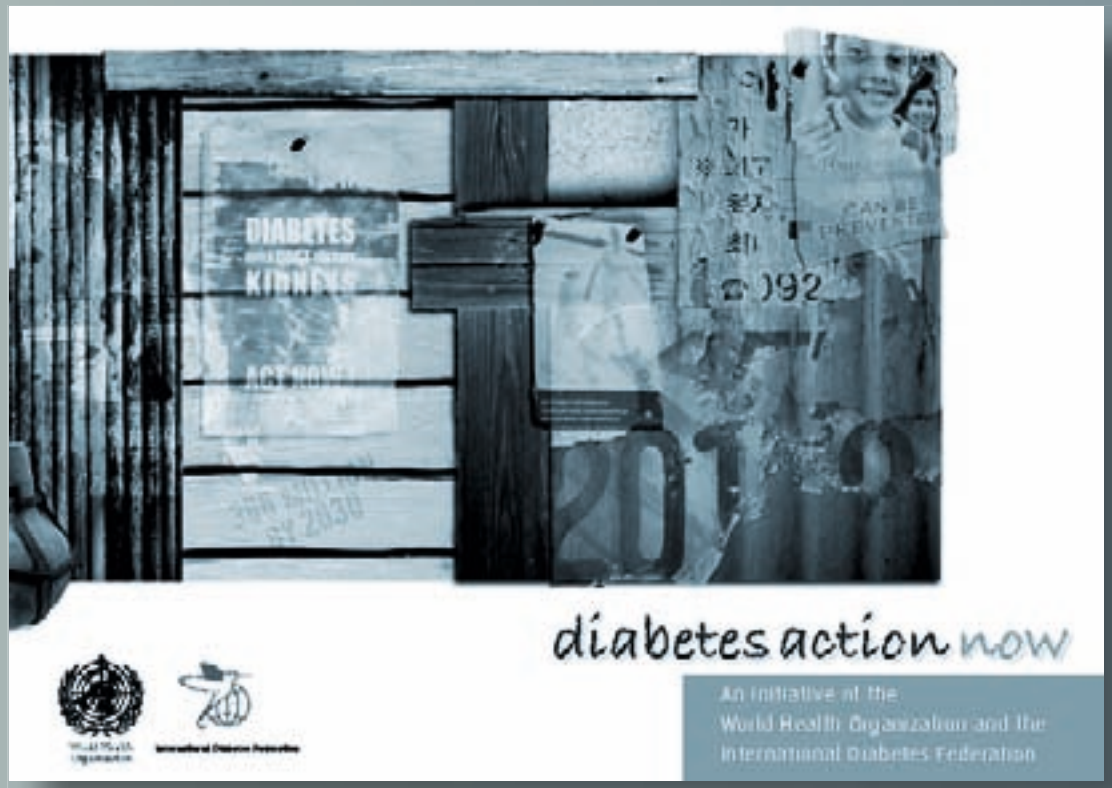
At the turn of the millennium advocacy work on diabetes was severely constrained due to lack of funding and focus at the top level. The global health agenda dealt with targets set within the framework of the Millennium Development Goals (MDGs), where diabetes and NCDs were not specifically mentioned but grouped under 'other diseases'.

Launched in 2003, the objective of Diabetes Action Now, the joint project of the International Diabetes Federation (IDF) and the World Health Organization (WHO) was to raise global awareness of the health, economic and social problems associated with diabetes worldwide, with a particular focus on developing countries, by initiating and maintaining advocacy work amongst policy-makers and donors.

"When the project was initiated there was not even one full time permanent member of staff within the WHO headquarters to cater for the rising needs of countries to develop strategies for diabetes, let alone support a global initiative. Similarly, the IDF was then a much smaller organisation run primarily through the efforts of members and the executive board volunteering time. Creating a global awareness and advocacy movement was a distant dream," explains Dr. Anil Kapur, current Managing Director of the World Diabetes Foundation, who was then the Vice Chairman of the Board.

Diabetes Action Now aimed to achieve this dream by implementing awareness activities including publications and seminars and by supporting regions

THE DIABETES ACTION NOW PROJECT 2003-2010



Diabetes Action Now booklet

IMPLEMENTING PARTNERS
WHO & IDF

PROJECT BUDGET
USD 2,448,054

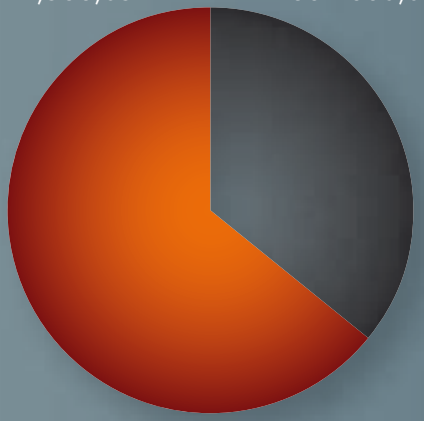
RESULTS

- Workshops held in **9** developing countries
- **250** primary care staff trained
- Diabetes Action Now **BOOKLET** produced in 3 languages
- **SURVEY** of diabetes awareness in India and Cameroon conducted and published in journals
- **STUDY** of the economic impact of diabetes in China completed
- **WEB-BASED RESOURCE** launched with guidance and best practice for policy-makers.

DISTRIBUTION OF FUNDING 2003-2010

WDF funding
64%
USD 1,568,054

Co-funding
36%
USD 880,000



in reorganising their health services with the development of programmes for the prevention of type 2 diabetes and the effective management of people with diabetes. The project also contributed to the evidence-base for diabetes prevention and its effective management by providing epidemiological data on the burden of diabetes and its complications.

A natural partnership

The idea for Diabetes Action Now was formulated at a joint WHO-IDF working group. ''The work done by the WHO and IDF is different – we're complementary,'' explains Dr. Gojka Roglic, Medical Officer at the WHO, member of the WHO-IDF working group and the Diabetes Action Now project. ''The WHO has the ear of the government while the IDF had the ear of the general public and member associations. It was a natural partnership.''

Prof. Pierre Lefèbvre, President of the IDF at this time, agrees: ''The WHO has a top to bottom approach as they work with local governments. The IDF is totally different. We are a federation of national diabetes associations, approximately 240 from 200 countries.''

The project was made possible through funding from the World Diabetes Foundation. ''In addition to funds, the Foundation brought ideas to the partnership,'' says Dr. Roglic. ''They understood the technical aspects of the project and had contact with the experts. In addition they have a strong Board with lots of experience in developing countries. The Foundation is an important player, even though they are a young foundation, as they have made a significant impact with advancements in diabetes care in developing countries.''

Publications, training and research

Over the 6 years in which the project took place, Diabetes Action Now was responsible for many tangible successes. In 2004, the WHO hosted a conference on the Prevention of Diabetes and its Complications. In the same year the Diabetes Action Now booklet was launched to raise awareness of diabetes and its complications in a clear, easily accessible format. The booklet was available in English, French and Spanish and was one of the most requested WHO publications.

Workshops on managing diabetes were held with the ministries of health in Sudan, Bhutan, Syria, Brazil, Sri Lanka, Vietnam and Eritrea targeting primary care staff. Each of these countries has a World Diabetes Foundation supported grassroots project; some of them like Sudan, Brazil and Bhutan have several. A further workshop took place in Brazil on the development of a national awareness-raising strategy and a workshop in Zanzibar looked at diabetes prevention and control for policy-makers in Africa. Altogether 250 primary care staff were trained which has facilitated the expansion from pilot sites and led to the introduction of training in other countries.

''I think Diabetes Action Now's biggest success was the training courses for low-resource primary care staff - people are demanding more courses, so we are continuing with the training,'' says Dr. Roglic.

During the Diabetes Action Now project, research was conducted in three developing countries. A survey of diabetes awareness was conducted in India (Chennai) and Cameroon (national) and reports were published in peer-

DIABETES ATLAS

First published in 2000, the International Diabetes Federation's *Diabetes Atlas* is a rich source of information on the prevalence, risk factors and level of diabetes care worldwide. Covering a broad spectrum of topics, the *Diabetes Atlas* targets a wide range of audiences including decision-makers, public health authorities, health organisations, health care professionals, the pharmaceutical industry and the media.

The World Diabetes Foundation supported the second and third editions of the *Diabetes Atlas*, which became a powerful source of reference on the global diabetes burden and a powerful tool for lobbying health ministries, public health authorities and health care professionals.

In addition, the *Diabetes Atlas* has been used by the World Diabetes Foundation, the IDF and WHO to communicate the global impact of diabetes and underline the need for immediate intervention from governments, health care professionals, international health organisations and other bodies.

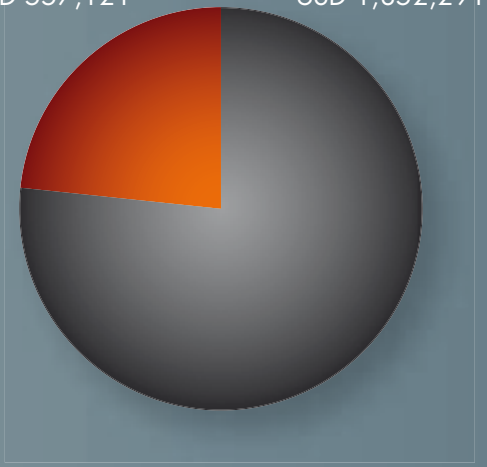
IMPLEMENTING PARTNER
IDF

PROJECT BUDGET
USD 2,409,412

SUPPORT TO DIABETES ATLAS 2nd AND 3rd EDITIONS

WDF funding
23%
USD 557,121

Co-funding
77%
USD 1,852,291



reviewed journals. A study of the economic impact of diabetes in China was conducted in collaboration with the University of Shanghai and presented at the IDF Congress in 2006. In addition, papers on the link between tuberculosis (TB) and diabetes and estimates of the likely contribution of diabetes to the TB burden in India were published. This publication helped pave the way for further action in this area by the World Diabetes Foundation, the WHO and the Union (IUATLD) (see page 234).

In 2006 the Diabetes Action Online website was launched, which targets health policy makers in low- and middle-income countries to support implementation of national diabetes plans.

Impact assessment

It is difficult to quantify the total impact of the Diabetes Action Now project as the diabetes landscape was changing globally during the project, but Dr. Kapur explains: ''One of the important contributions of Diabetes Action Now was to ensure that the WHO and IDF had the resources and adequate capacity to keep the diabetes agenda in focus''.

Significantly, in 2006 the United Nations General Assembly passed the first ever UN Resolution on diabetes which recognised diabetes as a chronic, debilitating and costly disease associated with severe complications, posing serious risks and challenges to the achievement of the MDGs. ''I believe Diabetes Action Now quite definitely helped achieve this,'' says Prof. Lefèbvre. ''It is also worth remembering that prior to this project the WHO hadn't really considered diabetes as a priority, so the first impact was on the WHO itself which was extremely important. Diabetes is now much higher on the agenda in the international arena for example with UNICEF, the World Bank and the World Economic Forum. Diabetes Action Now was the teaser - the initiator - for this process.''

Dr. Roglic agrees: ''The Diabetes Action Now project included no inbuilt awareness assessment. So how much did it contribute to these major advancements? It is difficult to say but it certainly had an impact. It was one of the first, largest, global projects, visible to the whole world. It demanded concerted action and others then picked up the issue and became more involved. It helped build awareness and improved the outcome for people living with diabetes. I believe the project had the most significant impact on policy-makers and health professionals. Diabetes Action Now energised them to continue with their work and take more action, as the project gave them support and encouragement.''

Ongoing work

The WHO and IDF are both continuing activities to raise awareness, each within their capacity and mandate, and sometimes jointly. Capacity building in primary care staff will continue in low-income countries and will be conducted by the WHO with ministries of health. The website for policy-makers will also be maintained by the WHO.

''Ten years ago people may have been aware of diabetes but not to the extent where they were spurred on to take action. Today, most stakeholders will acknowledge that diabetes is a big problem and Diabetes Action Now was a major component of this change. The next step is motivating everyone to ask what they are prepared to do about this issue and thereby getting them to take concrete action and make commitments,'' concludes Dr. Roglic.

GUIDING IMPROVEMENTS IN DIABETES CARE

Diabetes practice guidelines and a diabetes education training manual, developed over 7 years by the IDF Africa Region expert task force with the financial support of the World Diabetes Foundation, will improve care for people living with diabetes in Sub-Saharan Africa.

Diabetes is now regarded as a major health problem and challenge throughout Sub-Saharan Africa: the number of people with diabetes is growing rapidly due to urbanisation and the adoption of a Western lifestyle.

The rate at which new cases of diabetes are emerging is posing a serious burden on African countries already stretched to the limit by common life-threatening infections such as malaria, tuberculosis and HIV. In addition, late diagnosis and poor management of diabetes means the incidence of long-term complications, such as limb amputations and blindness, is growing.

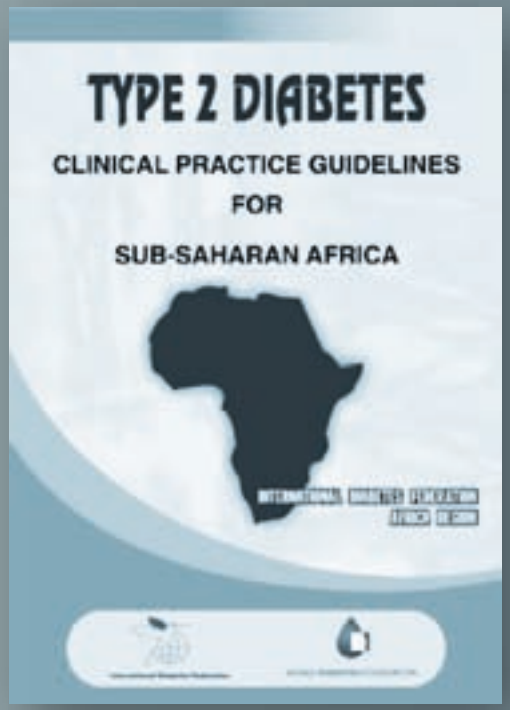
Increasing diabetes prevalence has resulted in a higher demand for diabetes care. But delivering appropriate care in Sub-Saharan Africa is hampered by a number of factors, including socio-economic, cultural and geographical issues. Inadequate knowledge of diabetes care and a structured approach to disease management among health care providers is also a major constraint.

Taking the initiative

Historically, most African countries did not have standardised guidelines for treatment of diabetes, or manuals for the education of people with diabetes. To rectify this situation, the International Diabetes Federation (IDF) Africa Region established the first task force in 2003 with the support of the World Diabetes Foundation, for developing diabetes clinical practice guidelines and a diabetes education training manual. The members of the task force represented a varied spectrum of the IDF African Region with regard to language, culture and beliefs.

IDF DIABETES GUIDELINES 2003-2010

Diabetes Education Training Manual



Diabetes Practice Guidelines

IMPLEMENTING PARTNER
IDF Africa Region

PROJECT BUDGET
USD 360,585 (WDF contribution: 100%)

DISTRIBUTION OF FUNDS
Diabetes Education Training Manual USD 276,398
Clinical practice guidelines USD 84,187

RESULTS
Development of guidelines and dissemination to countries in Sub-Saharan Africa.

Dr. Kaushik Ramaiya, a Consultant Physician and the Honorary General Secretary of the Tanzania Diabetes Association, was the IDF Regional Chair for Sub-Saharan Africa in 2003 and led the six member task force. ''The main objective of these documents is to provide the front-line health care provider, be it a doctor, clinical officer or a nurse in any setting of the health care system, with knowledge to diagnose and manage diabetes and its complications,'' says Dr. Ramaiya, who is now a Board Member of the World Diabetes Foundation.

Practice guidelines

The diabetes clinical practice guidelines for type 2 diabetes in Sub-Saharan Africa are for the use of doctors and relevant health care professionals when treating people with diabetes. They address key clinical questions that health care professionals, patients and their families ask about many aspects of type 2 diabetes and its management. The guidelines can either be used as they are or adapted locally, and can function as the basis for a local implementation plan.

The objective of the guidelines is to promote good performance of health care. During the project, existing clinical practice guidelines within the region were reviewed by the task force. The guidelines have been standardised based on the IDF's quality criteria and on dietary and socio-economic differences within the Sub-Saharan region.

Training manual

The diabetes education training manual can be used for teaching health care professionals how to provide appropriate diabetes education to people with diabetes and their relatives. The purpose is to ensure that the expertise of the health care professionals is up to date and at an acceptable level. The basis of the training is why, where and how to apply and implement the clinical guidelines.

A standard patient education programme focusing on improving patient knowledge, self-management and care has also been developed. This programme can be used by the health care professionals in their training of people living with diabetes. The project has trained health care professionals to be diabetes educators for their country and they can subsequently disseminate their knowledge and expertise at the local level.

Working hand in hand

Together, these documents have contributed significantly to improved management for people living with diabetes in Africa. ''The guidelines and training manual can be adapted for primary health care professionals and nursing assistants to use in different countries. In addition, they can be used as the basis for creating non-communicable disease training manuals for primary care centres,'' says Dr. Ramaiya.

Dissemination and implementation of both publications has been undertaken in Cameroon, Ghana, Ivory Coast, Kenya, Mali, Mozambique, Senegal, Tanzania, Togo, Uganda and Zambia. The publications are available on the World Diabetes Foundation and IDF websites in English, French and Portuguese. Countries in the African region are invited to adapt the publications to suit their environment and local needs.

GLOBAL DIABETES WALK™

Since 2004, the World Diabetes Foundation has marked World Diabetes Day on 14 November by organising and facilitating a Global Diabetes Walk™. Over the last 8 years more than 1 million people around the globe have joined the walk to promote awareness and primary prevention of diabetes.

On World Diabetes Day every year the World Diabetes Foundation tries to unite the world in the fight against diabetes through its Global Diabetes Walk. Participants join the walk to raise awareness and focus on the need for action for the many disadvantaged and vulnerable population groups with diabetes around the world. At the same time attention is directed to a low-cost physical activity which can help prevent type 2 diabetes as well as many other non-communicable diseases.

Since its inception, the Global Diabetes Walk has become a powerful demonstration of how small ideas evolve into major interventions that empower individuals, non-governmental organisations, local diabetes associations, project partners and the media to promote healthy living and prevention of diabetes.

Uniting the world to walk

The first Global Diabetes Walk which was organised by the World Diabetes Foundation in 2004 proved to be a great success, with walks taking place in 53 countries on all 7 continents around the world, including Antarctica: in freezing temperatures 29 scientists, researchers and support personnel walked on the snow and ice to promote the message that people with diabetes around the world are not alone.

Since then an increasing number of walks have been organised each year to continue to create awareness about diabetes on World Diabetes Day. In Bolivia


QATAR

a group of enthusiastic people have organised walks every year. By using social media, the organisers of the 2011 walk shared posters from previous years and involved a new group: young people.

Despite the unstable situation in Afghanistan, a small team of dedicated medical personnel have also managed to unite people to celebrate World Diabetes Day and take part in a small Global Diabetes Walk every year since 2004.

India, which has historically been the country with the most World Diabetes Foundation supported projects, has become the country accounting for the most walk activities. But other countries such as Indonesia, Brazil and the United Arab Emirates have also mobilised huge crowds at what has become an annually recurring event.

Whether large or small, all walks contribute to creating awareness about the key message of World Diabetes Day: understand diabetes and take control.

Moving with the times

To support local walk co-ordinators, each year the World Diabetes Foundation has managed a dedicated campaign website (globaldiabeteswalk.net) with toolkits containing activity suggestions and artwork for promotional material such as posters, banners and T-shirts. These toolkits have been downloaded worldwide and been replicated locally so creating a strong brand for the Global Diabetes Walk.

But as the number of walks and participants have increased every year, the campaign has had to evolve. So in 2011, the social media network site Facebook was used for the first time. Each walk organiser was encouraged to create a Facebook page for their specific walk. This enabled local organisers to share news and interact with many different stakeholders including participants for their event and fellow organisers in other countries. ''Groups and organisations are able to reach out to one another; it makes it easy for co-ordination, as well as networking,'' one survey respondent said.

By using Facebook for the Global Diabetes Walk 2011 an open platform has been created for sharing experiences after the events of 14 November. This has proved to be a great success, as much more awareness has been created over a longer time span compared with previous years and many organisers have said they will use their Facebook page throughout the year.

It is hoped that local walk organisers will be encouraged and motivated by the experiences of others to create even more ambitious events for the Global Diabetes Walk 2012, as has been the case for Bekim Ermeni from the World Diabetes Foundation supported project in Kosovo: ''By using Facebook the Diabetes


ডায়াবেটিসকে জানুন
নিয়ন্ত্রনে রাখুন
বিশ্ব ডায়াবেটিস দিবস-০৯ সফল হউক
সৌজন্যে ঃ হলিসাইড ডায়াবেটিস পয়েন্ট
World Diabetes Day'09
বিশ্ব ডায়াবেটিস দিবস'০৯
পদযাত্রা ও র‍্যালী
সৌজন্যে: হলিসাইড ডায়াবেটিস পয়েন্ট,
রিয়াজ ম্যানশন, সুবিদবাজার, সিলেট।
ডায়াবেটিস কে জানুন - ডায়াবেটিস নিয়ন্ত্রন রাখুন।
ডায়াবেটিস কে জানুন - ডায়াবেটিস নিয়ন্ত্রন রাখুন।

Association of Gjakova in Kosovo was informed about the campaigns of other diabetes associations in the world. These experiences will help our association to improve organisation of the walk campaign for next year''.

Award Scheme

For the first time in 2011, local organisers could compete for the Global Diabetes Walk Award, which consisted of two categories. Open to all organisers, the first category for awareness and advocacy honoured the largest and most engaging walk. Entrants were judged on criteria including the number of participants, the number of advocacy groups, collaborations or sponsors mobilised and the number of media articles published after the walk.

The winner for the first category was the Maldives Diabetes Walk which organised a full day Walkathon engaging a wide range of stakeholders throughout the island nation's 190 islands. A total of 20,500 walkers registered for this award-winning walk which received local and national media coverage.

The second category, the most innovative use of social media to engage people, was open to all World Diabetes Foundation project partners. The number of blogs, tweets and YouTube videos were all taken into account when judging entrants, in addition to criteria such as the creativity of online campaigning methods.

The winner of the social media walk award was the Pathanamthitta – Alappuzha Diabetes Walk in the Indian state of Kerala. The campaign used an innovative approach to highlight the ''number 14'' by holding 14 walks through 14 towns in 14 days hosted by 14 volunteers involving local youth, schools, and government councils. Alongside, the campaign ran a successful social media campaign ensuring resonance into a global sphere.

Creating a people's movement

It is hoped that the Global Diabetes Walk holds the potential to become a people's movement to put pressure on local and global decision makers to demand healthy food and a healthy living environment. The use of a social media platform has provided a springboard which will help to build more creativity in the coming years. ''I have followed the 2011 campaign closely and am touched by the enthusiasm and creativity people put into promoting the common message. The range of activities includes campaigns in rural settings where crowds walk with hand painted paper banners to professionally run campaigns with large budgets. Regardless of how simple or elaborate the individual walks are, the beauty is that all work and walk for the same goal: to create awareness about diabetes on World Diabetes Day 14 November,'' says Brit Larsen, Communication Coordinator at the World Diabetes Foundation.

TIMELINE: GLOBAL DIABETES WALK
2004-2007

1.4 MILLION WALKERS

The Global Diabetes Walk is an initiative of the World Diabetes Foundation to celebrate World Diabetes Day on 14 November. The first Global Diabetes Walk took place in 2004.


Afghanistan

W LK!
GLOBAL DIABETES WALK
WORLD DIABETES DAY **14 NOVEMBER 2005**


China


Turkey

2004 2005


Antarctica

Bolivia


Brazil


Nepal


Indonesia


Argentina


Egypt

2006

2007


Cuba


India


Iceland


Mali

United Arab Emirates

TIMELINE: GLOBAL DIABETES WALK
2008-2011

Cuba


Sweden


Occupied Palestinian Territories


Malaysia

2008 2009


Costa Rica


Philipines


Bhutan


Burundi


South Africa


Mexico

Bangladesh


Nigeria


New Zealand

2010 2011

India

Benin


India

BEATING THE DRUM FOR DIABETES AWARENESS

The media plays a significant role in shaping public opinion. Over the last few years an increasing amount of column inches and air time has been dedicated to diabetes as journalists - some through their attendance at World Diabetes Foundation stakeholder meetings - begin to appreciate the potentially huge impact this chronic disease has on their audience.

As part of its stakeholder and media strategy, the World Diabetes Foundation organises regional summits and local expert meetings in order to encourage governments, policy-makers and funding bodies to support much needed sustainable, local programmes for diabetes prevention and care as an entry point to building more comprehensive non-communicable disease programmes.

During these stakeholder meetings, in order to demonstrate to the media how interventions funded by the World Diabetes Foundation work at a practical level, the Foundation showcased major projects across developing countries. These include: 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.

Creating local, regional and global media awareness has resulted in newspaper articles, online articles, radio interviews, television coverage and pod-casts being published and broadcast around the world. By attending the event and seeing the projects in action at a grassroots level, journalists became better informed about the growing burden of diabetes and were also moved by the impact of this disease on the people in developing countries, as the headlines illustrated.

A SELECTION OF OPINIONS FROM JOURNALISTS

"It is the first time I attend an event that was truly Latin American, meaning that it provided updated information on the entire region. The best part was that the doctors agreed that there is still much to be done and it is important to continue researching and sharing information."

Lucy Calderón, Prensa Libre, Guatemala

"I have learned to better understand the disease and have certainly gained more knowledge to write about diabetes in my coming articles. It was extremely valuable that an event like this was hosted in Brazil, because we are heading towards an epidemic and we have serious problems relating to nutrition and public health care in the country."

Marcela Rodrigues Silva , Revista JT, Brazil

"The knowledge transmitted by such eminent experts has done much for my work and I am very pleased to report on this subject to my readers. I have developed reports about diabetes, its consequences, and prevention, all of which have been well received by our readers. I'm still writing about gestational diabetes, and prevention of diabetes and planning on publishing more articles."

Iris Ramirez, La Tribuna, Honduras

"It is our duty to inform people about this epidemic. It cannot be ignored any longer."

Bernard Mapalala, The Guardian, Tanzania

"I hadn't realised what a serious disease diabetes is and what a big problem this is for Africa. Many thanks for an excellent summit as well as the exposure on the reality of the diabetes epidemic."

Jane Kamau, Healthcare Journal, South Africa

Quentin Cooper presents BBC Radio 4's weekly The Material World, the UK's most listened to science programme. He has also written and presented many other TV and radio science series including New Scientist Reports on the Discovery Channel; the long-running Science Fix for BBC Knowledge and Science in Action and Soundbyte for the BBC World Service.

Interview

Do the media have a responsibility to educate people about diabetes? Is there enough coverage of this disease? And what key message should be communicated about diabetes? These are just some of the topics discussed with Quentin Cooper from the BBC and Derrick Jackson from the Boston Globe, when we spoke to them individually to discover what role journalists believe the media have in the fight against diabetes.

A decade ago, was diabetes on journalists' reporting landscape?

Quentin Cooper: ''Science journalists knew about diabetes 10 years ago but I don't think even they saw it as the enormous issue we now know it is. We didn't appreciate the scale and the time bomb that is diabetes. I could argue that this is still the case.''

Do the media have a duty to create awareness of diabetes among the general public?

Derrick Jackson: ''The news side of journalism has an obligation as it is a health crisis confronting our audiences. It is slowly killing people prematurely and is set to be a massive public health and medical industry expense. It needs to be reported and commented on, so that action is taken. The media is beating the drum - it is a growing movement - but we are still at the beginning. It is ironic that we may save Africa from HIV and malaria only to have people dying in their 50s from diabetes instead.''

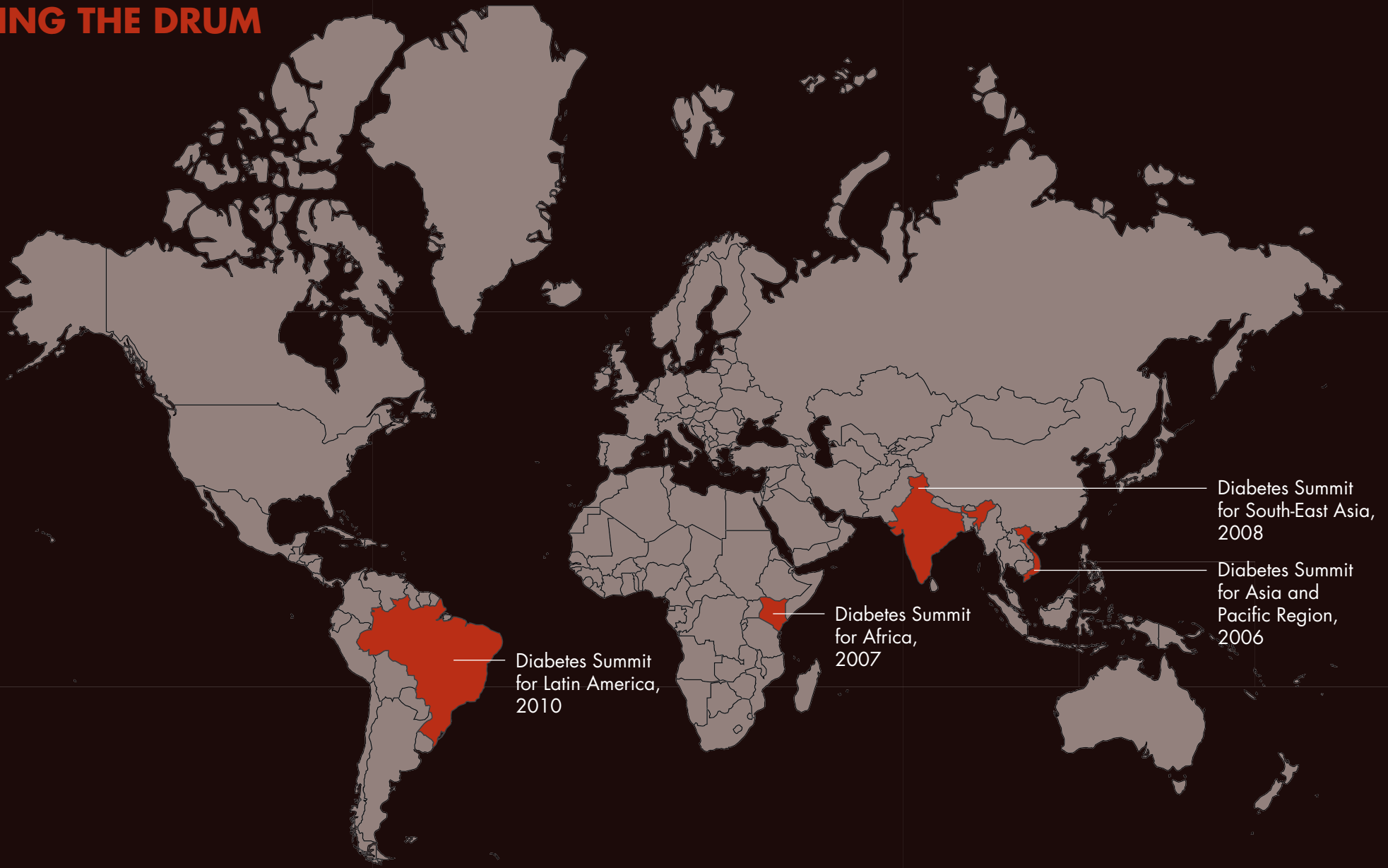
Is diabetes getting the appropriate amount of coverage today?

Quentin Cooper: ''We have a duty to reflect where diabetes is in the spectrum for humankind and give it a proportionate amount of coverage. Diabetes is not treated as seriously as HIV or 'flu, for example, as non-communicable diseases are not seen as being as big a problem as infectious diseases. However I know at least 10 people who are affected by diabetes and I would challenge that most people do, but not many know 10 people who are affected by HIV. Diabetes has not had as much coverage as it should have had, and we have a long way to go before it gets the coverage it merits.''

Do the media have a role in creating a platform for policy-makers to debate this issue?

Derrick Jackson: ''The newspapers do have a platform and must give a thorough delivery of information to help people make up their own minds. Accurate and prompt reporting and commentary cuts through the confusion people have or

BEATING THE DRUM



In recent years, the World Diabetes Foundation has facilitated interviews and published more than **400** newspaper articles, online articles, radio interviews, television coverage and podcasts through **160** reporters, representing over **60** countries.

Derrick Z Jackson was a 2001 finalist for the Pulitzer Prize in commentary. A *Globe* columnist since 1988, he has received numerous awards and honours during his career, including twice winning the commentary awards from the National Education Writers Association, winning the Sword of Hope commentary award from the New England Division of the American Cancer Society on three occasions and the human rights award from Curry College in Milton, Massachusetts, US.

that is created by corporate interests. At the government level we should be talking about taxes on trash foods and ending subsidies for farms that produce the various products that make trash food cheap to produce and buy. This is an epidemic that is out of control and so we need to establish some artificial controls. If you look at the cost of gas [petrol] in Europe it is high to reduce consumption and people have adapted by buying smaller cars or using public transport. We should do this for trash food: tax it and so make healthy food the more rational choice. We need an aggressive government to take action.''

What message do you think is the most important to communicate about diabetes?

Quentin Cooper: ''It's a mistake to think of a message for the international community, we've got to localise the message. For example there's no point talking about diets in general, but for example in Kenya talk about the local produce available to cook.''

Derrick Jackson: ''People listen to issues of money before everything else. The current explosion of diabetes and obesity will wipe out the projected economic gain for developing countries in the next 30 years – this will be a massive financial drain.''

How can the media be motivated to report more on this issue?

Quentin Cooper: ''Diseases don't have to be 'sexy' to get in the media. We are telling stories about things that affect lives and this is affecting hundreds of millions of people. It will affect the reader, viewer or listener directly or someone close to them. The media is a slow-moving beast, it's a matter of momentum and so in the beginning it all looks horribly impossible but inch by inch it gets easier. Five years ago when I spoke to people about the World Diabetes Foundation they didn't know who they were but now people know.''

Derrick Jackson: ''What journalists appreciate from advocacy organisations is accurate and trustworthy information. The corporate food and drinks industries are upping the ante and so we need verifiable sources. For me personally the data and stories the World Diabetes Foundation has assembled over the years have been very helpful. Diabetes is the number one emerging health crisis – it is preventable and I would love it if there was enough awareness for the individual person, schools and governments to take action and deal with it. The knowledge is out there but a collective will to deal with it is only just emerging now.''

BRINGING THE ISSUE OF INDIGENOUS PEOPLES, DIABETES AND DEVELOPMENT ONTO THE GLOBAL HEALTH AGENDA

Indigenous peoples' life expectancy is up to 20 years lower than their non-indigenous counterparts, as they experience disproportionately high levels of maternal and infant mortality, malnutrition, non-communicable and infectious diseases. In some indigenous communities diabetes has reached such epidemic proportions that the very existence of these communities is at risk. A Call to Action, developed at an expert meeting organised by the World Diabetes Foundation, addresses specific areas of intervention to improve access to diabetes prevention and care for indigenous peoples.

While the United Nations Declaration on the Rights of Indigenous Peoples assures individuals the right to health and social services, non-communicable diseases (NCDs) and diabetes pose a grave threat to the health and lives of the world's estimated 370 million indigenous peoples, constituting some of the poorest people and representing 5% of the world's population.

Health disparity

Malnutrition is one of the health issues that affects indigenous peoples around the world because of environmental degradation and contamination of the ecosystems in which indigenous communities have traditionally lived, loss of land and territory and a decline in abundance or accessibility of traditional food sources.

Segregated data, where available, reveals increasing rates of premature death from diabetes and cardiovascular disease and an alarming health gap between indigenous and non-indigenous populations.

WORLDWIDE, AN ESTIMATED 50% OF INDIGENOUS ADULTS OVER 35 YEARS OF AGE HAVE TYPE 2 DIABETES – A NUMBER THAT IS PREDICTED TO RISE.

Source: State of the World's Indigenous Peoples 2010.

In addition, indigenous peoples experience disproportionately high levels of poverty, maternal and infant mortality and infectious diseases such as HIV, malaria and tuberculosis. Indigenous women experience health problems with particular severity and are often denied access to education and basic health care – yet they play a primary role in overseeing the health and well-being of their families and communities.

Despite this huge health disparity and high death toll, NCDs – and in particular

diabetes - amongst indigenous peoples continue to be neglected issues on the global health agenda. Both in health and economic terms, neglecting the health of indigenous peoples will prove expensive as costs and productivity losses, as a consequence of complications, will undermine and stunt economic growth and negatively impact the achievement of the Millennium Development Goals.

A forum for interaction

Organised by the World Diabetes Foundation and co-hosted by the International Diabetes Federation (IDF), the Expert Meeting on Indigenous Peoples, Diabetes and Development was held on 1-2 March 2012 in Copenhagen, Denmark. The main objective of the meeting was to build consensus around the burden of diabetes and related NCDs amongst indigenous peoples and to identify specific areas of intervention to address diabetes prevention and access to care for indigenous peoples.

Speaking at the meeting, Prof. Jean Claude Mbanya, President of the IDF said: ''Most indigenous peoples with diabetes around the world are never diagnosed; they never receive treatment for diabetes and die from the condition without knowing the reason for their suffering. Despite progress on diabetes at the global level there still remain deep-seated pockets of inequality and injustice and until we see the health disparities between communities reduced and the rights of all people with diabetes respected, we will not rest. This Expert Meeting will underline future action which the IDF looks forward to working with other stakeholders to address this neglected issue''.

The Expert Meeting provided a forum for interaction between stakeholders to share perspectives and best practice while pursuing the realisation of the objectives of the United Nations Declaration on the Rights of Indigenous Peoples. Participants included a broad range of expert stakeholders including indigenous representatives from 15 countries, international health experts, renowned researchers, special rapporteurs on indigenous issues from the United Nations, representation from the United Nations Permanent Forum on Indigenous Issues, the Pan American Health Organization, World Diabetes Foundation project partners and academics.

''For indigenous peoples, health encompasses the physical, social, mental, environmental and spiritual dimensions. Diabetes and other diseases should not be seen only from a biological, or a scientific, or a medical point of view. They have to be perceived from a broader perspective of how and why there is an ever increasing incidence of these hitherto rare diseases among indigenous communities. They are a result of the changes in the lifestyles of indigenous peoples who currently face new and devastating problems that make them more and more vulnerable,'' explained Ms. Paimaneh Hasteh, Rapporteur of the United Nations Permanent Forum on Indigenous Issues, during the meeting.

The experts and participants worked together to produce a Call to Action which will serve as an advocacy tool and which will be used to present expert recommendations to the forthcoming World Conference on Indigenous Peoples, to be held in 2014.

Supporting indigenous peoples

In addition to the Expert Meeting, the World Diabetes Foundation has funded a number of initiatives to improve access to diabetes prevention and care amongst indigenous peoples. In Guatemala, the Foundation has entered a partnership with the local government to provide access to community diabetes care amongst the Kaqchikel-speaking populations (Maya descendants) and in Bolivia diabetes care interventions are catering for local indigenous communities. In the African region, the World Diabetes Foundation is supporting projects in Uganda, Sudan and Mali which are reaching out to nomadic and indigenous peoples. In the Pacific region, projects have been initiated to improve the quality,

accessibility and effectiveness of diabetes care and thereby reduce the burden of diabetes complications in Tonga, Samoa and Vanuatu.

Dr. Ida Nicolaisen, Board Member of the World Diabetes Foundation and former Vice Chair of the United Nations Permanent Forum on Indigenous Issues, speaking at the Expert Meeting said: ''These interventions demonstrate that it is possible to apply holistic solutions, but they also demonstrate that indigenous peoples possess the knowledge and cultural base on which to build healthier societies. However, they cannot do so alone.''

''Governments have a responsibility and an obligation to do their part as well. Many governments have not only shied away from this responsibility, but they deny formal recognition of indigenous peoples entirely. Some national governments have taken steps in the right direction, by developing comprehensive policies and strategies to address the health problems of indigenous peoples. Nonetheless, there are few examples where their actions have reduced the disparities between indigenous peoples' health and that of other people within national boundaries. Partnerships between governments, researchers, civil society, health institutions and the indigenous peoples are therefore of paramount importance; indeed they are essential. As a Board Member of the World Diabetes Foundation, I am proud to be able to bring the issue of indigenous health onto the global agenda,'' stated Dr. Nicolaisen.

Taking action on the outcome

''Importantly a Call to Action has to be to identify to the world how important it is to acknowledge and respect what indigenous peoples offer the world in terms of their generations of wisdom, about living on this planet and caring for the earth and for each other and how important it is for indigenous people to have the right to say how best to define their own way forward and their future. In relation to diabetes, as with any condition, Aboriginal people bear a disproportionate burden of disease and both the economic and social costs of these sorts of conditions. So if we as humanists accept our responsibilities to other disadvantaged populations, we accept the need to do something fundamental about improving the quality and length of life of the most disadvantaged,'' stated Prof. Alex Brown, Executive Director of the Baker IDI Heart and Diabetes Institute, Central Australia.

Amongst other important stakeholders, the issue of indigenous health and the backing for a Call to Action was further resonated by the Pan American Health Organization.

''The problem of diabetes documented in meetings like this helps show that this is an emergency – and the approach has to be multi-sectorial. We need to have alliances – with the UN, donors, indigenous communities and networks and the scientific community. Together we will be able to implement participatory models for communities. The answers already exist, but we need to learn to have a frank dialogue at all levels – to make an integrated approach and ensure primary prevention and continued follow-up and active participation of the communities,'' said Dr. Florence Levy, Regional Advisor on Cultural Diversity and Gender Issues at the Pan American Health Organization/WHO.

Following this meeting, the World Diabetes Foundation will continue to work with indigenous peoples in collaboration with like-minded stakeholders to raise awareness of the issue of diabetes and NCDs and to take action to improve access to care. The next step will be to discuss opportunities to address the agenda for indigenous health with the IDF and the United Nations Permanent Forum on Indigenous Issues and work towards creating a collaborative policy framework and action plan that can support the recommendations to the forthcoming World Conference on Indigenous Peoples in 2014.

HIV AND DIABETES: A DANGEROUS COMBINATION

The prevalence of HIV in Malawi is high and because of its link with diabetes many people are suffering with both diseases - but awareness of diabetes is extremely low. The World Diabetes Foundation is therefore embarking on an innovative project to support the NGO Journalists Association Against AIDS to create awareness and increase access to information on prevention and care of diabetes and its complications through the local media.

Out of a population of 14 million, almost one million people in Malawi are living with HIV.

AIDS is thought to be the leading cause of death amongst adults in Malawi, and is a major factor in the country's low life expectancy of just 43 years. This might also explain the historically low prevalence of diabetes as people did not survive long enough to get this condition. However, this may now be changing as the use of antiretroviral combination therapy or highly active antiretroviral therapy has dramatically improved the life expectancy and well-being of people infected with HIV and more Malawians now receive treatment for AIDS.

But this is not the only issue as some commonly used antiretroviral therapies increase the risk of drug induced metabolic complications including diabetes, impaired glucose tolerance, insulin resistance, dyslipidaemia and the excessive loss of fat beneath the skin (lipodystrophy) - not only making people vulnerable to developing diabetes but also increasing the risk of cardiovascular diseases. The occurrence of diabetes in patients with low immunity has other implications in terms of infections which further worsen diabetes control, creating a negative downward spiral. In addition, as with other parts of Africa, the prevalence of diabetes is generally increasing.

It is therefore extremely important for people with HIV and AIDS to obtain optimal diabetes management and control. However, as diabetes does not have its own separate code in the Malawian health care system but is grouped under ''medical conditions'', the Malawian Ministry of Health has no way of knowing how many people have diabetes.


ummit for South East Asia
30th November 2008

Leveraging knowledge

Journalists Association Against AIDS was established in 2003 to strengthen the capacity of local media in Malawi in the context of addressing HIV and AIDS. Since then, intensive efforts have been made to increase awareness about HIV and to prevent its spread. These efforts appear to have had a positive effect as in several urban areas, such as the capital Lilongwe, where there has been a decline in HIV prevalence, and the national HIV prevalence appears to have stabilised.

But while HIV and AIDS awareness has increased in Malawi, awareness about diabetes has remained low. ''Media coverage of HIV and AIDS in the last 10 years has been high as we have a major problem in this area, but there has been no coverage of diabetes. Not even journalists know about diabetes and this is our challenge,'' says Dingaan Mithi from Journalists Association Against AIDS, Malawi. He continues: ''We started to work on raising awareness of diabetes because people with HIV should be living longer now that we have HIV medications, but instead they are actually living shorter lives because of diabetes complications. Most people don't even know they have diabetes - they don't get tested as there is a stigma surrounding it.''

Building media capacity

Realising the rising burden and poor knowledge about diabetes, in February 2011 Journalists Association Against AIDS launched a three-year project, supported by the World Diabetes Foundation, to create awareness about diabetes in Malawi. The project aims to target the general public, non-governmental organisations (NGOs) and policy-makers through a comprehensive media campaign and various other activities such as community mobilisation campaigns, listening clubs and roundtable discussions.

Before the media campaign began, reporters and editors from Malawi's larger media houses received training. Two-day workshops focused on training staff in general knowledge about diabetes, its prevention and care to empower them to write articles and conduct sessions on diabetes on the radio throughout the project period. Dingaan Mithi explains: ''With our HIV and AIDS campaigns, we realised the importance of getting the local media to increase the knowledge of people by making them more aware of the issue, encouraging them to take care of themselves, to use condoms for prevention and to get tested. We have a similar approach with diabetes as we are using the local media to encourage people to be healthy as a way of prevention. People don't go for blood sugar testing but by using the media we can hopefully change this.''

In addition to the journalists, around ten NGO staff will also participate in the work shop. The objective is to empower the NGO staff to answer questions from people with diabetes. Six roundtable discussions will also be organised quarterly focusing on primary prevention to further rouse the attention of NGOs, the Ministry of Health, the WHO and other associations. The discussions will take place in Blantyre, Lilongwe and Mzuzu, which are placed in three different regions in Malawi. Thereby, a large area will be covered and the message of prevention will reach out to a large audience. A total of 360 people are expected to participate in the discussions throughout the project period.

Media campaigns

During the project, 20 radio programmes will be broadcast once a week during a five month period. The programmes will feature interviews with people from NGOs, health workers, ministry of health officials and people with diabetes. Topics being covered include basic knowledge on diabetes, its origin, and complications and listeners will be told which clinics offer diabetes screening, treatment and care, as established through another World Diabetes Foundation funded project. Each programme will last for 30 minutes and listeners will have the opportunity to give feedback and ask questions through text messages and letters.

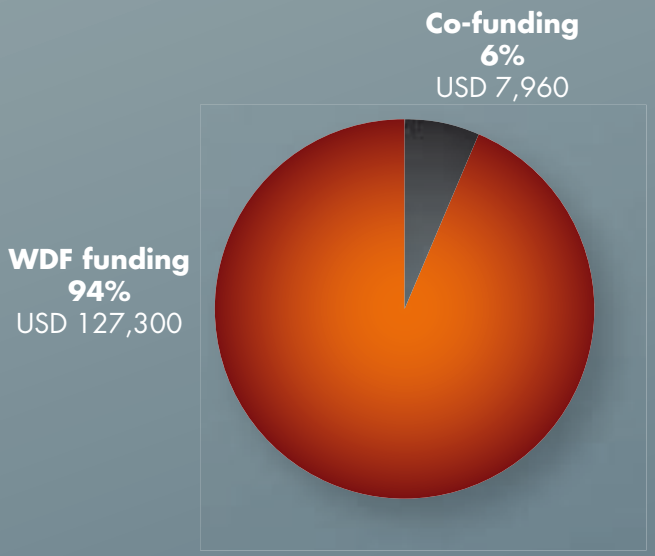
MALAWI
CREATING DIABETES PREVENTION PROJECT

IMPLEMENTING PARTNERS
Journalist Association Against AIDS

PROJECT BUDGET
USD 135,260

RESULTS
- Media training workshop conducted & media team and clubs formed
- 10 radio programmes on diabetes prevention aired reaching +4 million people
- Round table discussions & awareness camps conducted
- World Diabetes Day 2011 celebrated

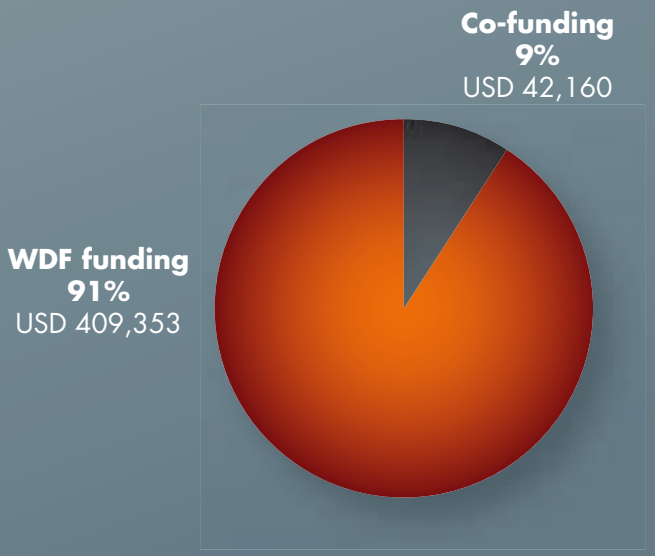
DISTRIBUTION OF FUNDING 2011-2014



ALL PROJECTS IN MALAWI

- 2009-2011 Nurse-led diabetes clinic
- 2009-2013 Improving diabetes care in Southern Malawi
- 2011-2014 Creating diabetes prevention
- 2012-2014 Diabetes peer support in Lilongwe

TOTAL DISTRIBUTION OF FUNDING 2009-2014



''We have already started airing our radio campaign with contributions from, for example, the Diabetes Association of Malawi and the Malawi Health Equity Network. The radio is very important for people in rural areas, as are our listening clubs, which are about people talking to one another, hearing testimonies from people with diabetes and discussing the radio shows,'' says Dingaan Mithi. Three such radio listening clubs for people with diabetes and other interested members of society will be formed, which will also act as a team of people informing the general public within their social network about prevention and control of diabetes.

Although still in its early phase, the project has already received overwhelming support from stakeholders and five radio programmes have been broadcast, reaching an estimated audience of 1.4 million people in Malawi. Mr. George Mkandawire, presenter and producer at Joy Radio Limited, says: ''Most people in Malawi are not aware of diabetes and how they can prevent it and live with this condition. Many people do not know where they can get services due to lack of information. However, with the airing of the programmes more people are now aware of diabetes. On average in one day our radio station was receiving 40 to 50 text messages from listeners asking to have the programmes back on the radio.''

Community mobilisation campaigns

The weekly markets in Blantyre, which attract huge numbers of people, will host four community mobilisation campaigns when messages on diabetes will be spread via traditional dances, poetry recitals, music performances and speeches. Learning material in the form of posters and stickers will also be distributed to the crowd. ''The first mobilisation campaign, held in March 2011, attracted 558 participants with local people with diabetes giving their testimonies and the crowd asking questions. It was very successful,'' says Dingaan Mithi. ''We also managed to reach out to boys and girls at a local primary school, who showed a lot of interest and were able to compose songs and poems on diabetes prevention.''

Working in tandem

To truly make a difference, advocacy work needs tangible support. ''Increasing awareness is meaningless until people have a place to go where they can be screened and receive care and advice,'' explains Mr. Bent Lautrup-Nielsen, Programme Coordinator at the World Diabetes Foundation. ''Two of our other on-going projects in Malawi are doing precisely this, and the demand for these services is so high that the facilities are struggling to cope. This dual strategy of building capacity and creating demand has attracted the attention of the Ministry of Health and an NCD and diabetes strategy is being formulated. In addition, the Ministry has expressed its desire to seek funding to initiate a national programme.''

Looking to the future

''Diabetes is a threatening non-communicable disease which is posing a challenge to Malawi's socio-economic development,'' explains Dingaan Mithi. ''By the end of the project in 2014, we want to have achieved local media coverage to significantly raise awareness of this issue and motivated policy-makers and parliamentarians to make a commitment on diabetes which is reflected in the health care budgets.'' He concludes: ''Strong partnerships facilitate good results. Together with the World Diabetes Foundation we are advancing the agenda on diabetes.''

IMPROVED ACCESS TO CARE

"In order to fulfil our vision of defeating diabetes, we have to address the needs of the developing world, where the International Diabetes Federation estimates 80% of all cases exist. My vision to establish the World Diabetes Foundation was to impart a sense of urgency to this task and help provide the local champions a platform of support and financial resources to address this in their own local settings. Over the years the Foundation has been active and we have already witnessed hundreds of initiatives that have created innovative solutions, that leverage existing systems to provide care and a sense of relief for millions of people living with diabetes in the developing world – to me, this is greatly satisfying."

Mr. Lars Rebien Sørensen,
President and CEO of Novo Nordisk A/S, Denmark.
Founding father of the World Diabetes Foundation
and Member of the Foundation's Board of Directors.

THE NEED FOR INTEGRATION IN PRIMARY CARE

When the UN announced the Millennium Development Goals in 2000, infectious diseases were the focus and so received substantial additional financial resources, while non-communicable diseases received no attention or funding. Twelve years later, non-communicable diseases are acknowledged as the bigger killers worldwide but still have scant resources allocated to fighting them. Can the existing health system be strengthened to integrate strategies to address both communicable and non-communicable diseases? Failure to do so could be catastrophic.

Non-communicable diseases (NCDs), including cancers, diabetes, cardiovascular and respiratory diseases, account for 35 million deaths each year, corresponding to 60% of all deaths worldwide. Approximately 80% of these deaths occur in low- and middle-income countries. According to the World Bank, NCDs are now among the most significant causes of illness and death in working age populations in developing countries, which are traditionally thought of as primarily affected by communicable diseases.

Yet while HIV, malaria, TB and other infectious diseases are incorporated in the Millennium Development Goals (MDGs), NCDs are not mentioned. In light of this omission it is perhaps not surprising that financing the prevention and treatment of NCDs accounts for less than 1% of official development assistance for health. Experts believe that the growing burden of NCDs will negatively impact progress towards the MDGs. ''Health has never enjoyed the priority it has today within the global development agenda. Several health priorities are currently well-established globally, but we are still missing non-communicable diseases as a major health challenge for poverty reduction and sustainable development,'' explains Dr. Ala Alwan, former Assistant Director General for NCDs and Mental Health at the World Health Organization.

However the recent adoption of the Political Declaration on NCDs at the UN High-level meeting in New York in September 2011 should help drive integration of infectious diseases and NCDs not only within the health agenda but also within the development agenda (see page 18).

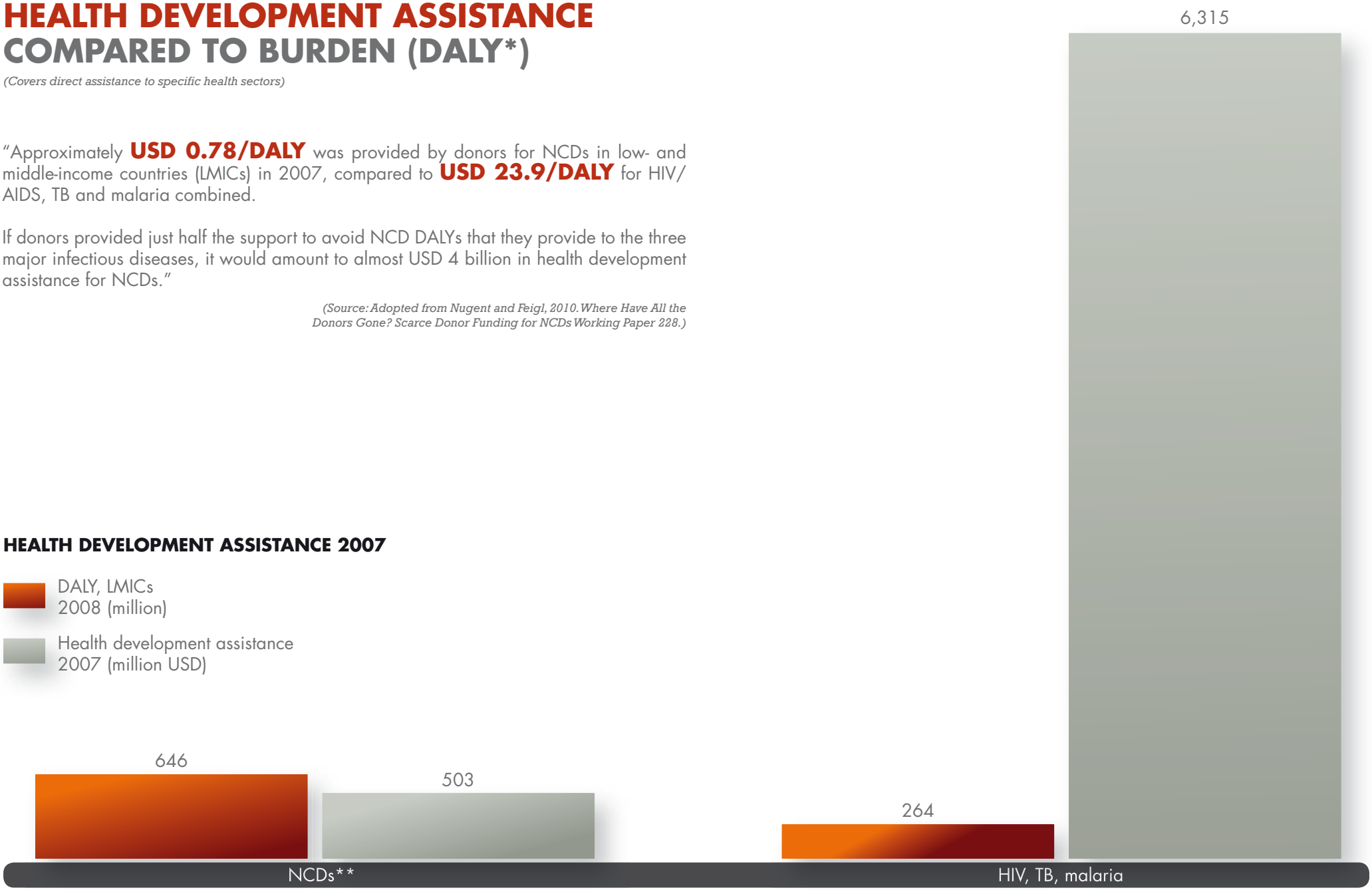
HEALTH DEVELOPMENT ASSISTANCE
COMPARED TO BURDEN (DALY*)

(Covers direct assistance to specific health sectors)

"Approximately **USD 0.78/DALY** was provided by donors for NCDs in low- and middle-income countries (LMICs) in 2007, compared to **USD 23.9/DALY** for HIV/AIDS, TB and malaria combined.

If donors provided just half the support to avoid NCD DALYs that they provide to the three major infectious diseases, it would amount to almost USD 4 billion in health development assistance for NCDs."

(Source: Adopted from Nugent and Feigl, 2010. Where Have All the Donors Gone? Scarce Donor Funding for NCDs Working Paper 228.)



** DALY = Disability-adjusted life year = The sum of years of potential life lost due to premature mortality and the years of productive life lost due to disability.*

*** NCDs defined as diabetes, heart disease, cancer, obesity, sense organ diseases and mental disorders*

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

The impact of diabetes on the MDGs

Although diabetes is not specifically mentioned in the MDGs, the fight against diabetes and its complications is linked to several of the goals, including the sixth goal, to combat HIV and AIDS, malaria, TB and other diseases. Research has shown that diabetes increases the risk of developing TB and that people with HIV and TB are more likely to develop diabetes (see page 230). Diabetes is a significant risk factor for many communicable diseases and NCDs, and people with diabetes are more vulnerable to infections. The health and economic impact of several diabetes related complications which drive poverty and indebtedness has previously been alluded to (see opposite page).

Diabetes during pregnancy (gestational diabetes) has a major impact on the fourth and fifth MDGs, which call for a reduction in child mortality and improvement of maternal health. Gestational diabetes can lead to still birth and maternal death, but by providing screening, care and education during pregnancy the risk of complications of gestational diabetes and future risk of diabetes and other NCDs for both mother and child can be reduced (see page 164). Integrating maternal and child health services with NCD care and prevention is therefore not only relevant but also important.

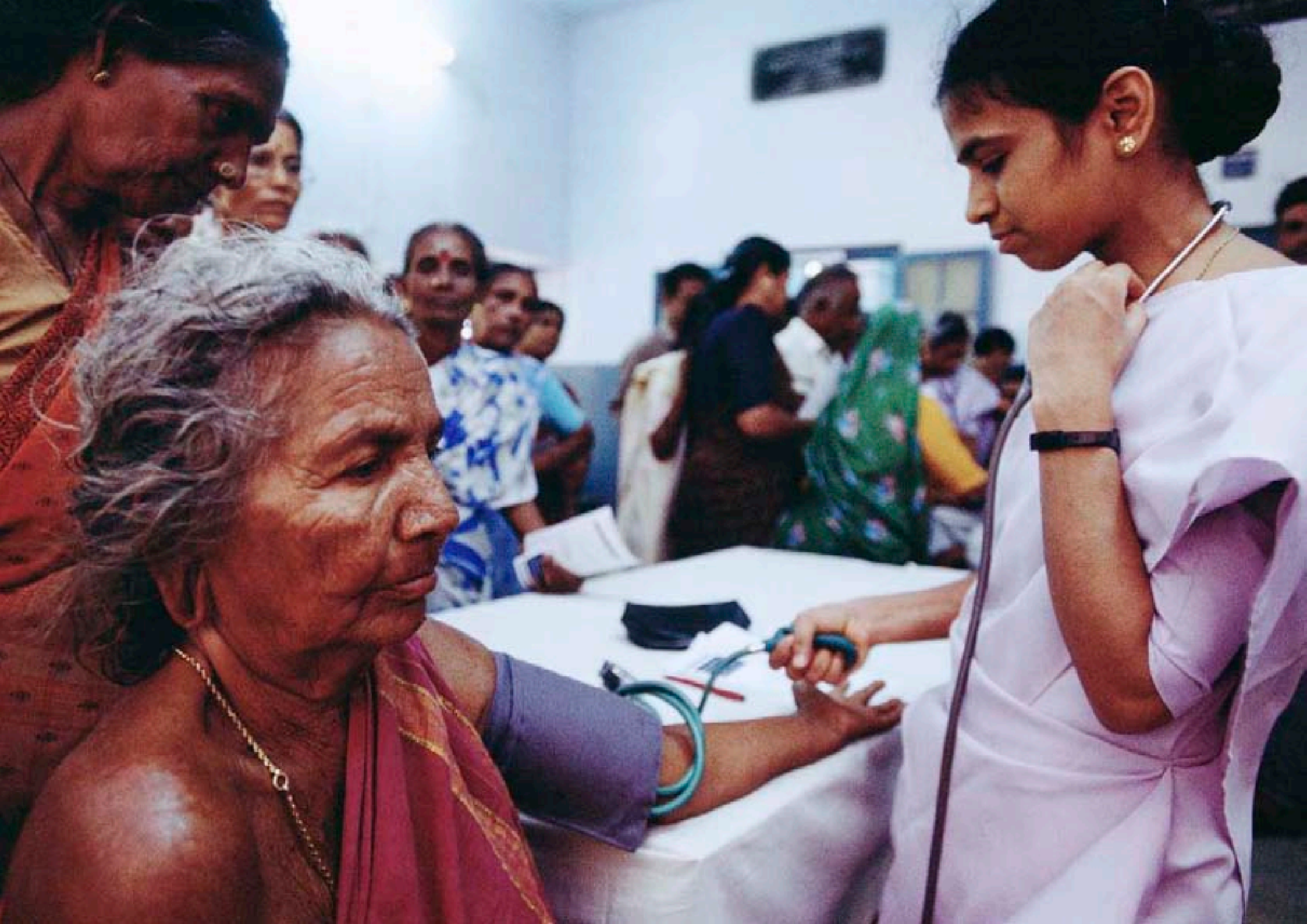
Due to its many ramifications diabetes therefore provides an ideal entry point for the integration of infectious diseases and NCDs.

Integrating care

While significant funding has been put into communicable disease health services, services for NCDs such as diabetes have been severely under-resourced. For developing countries that need to take action to correct this imbalance and address the care and prevention of NCDs, the added financial costs of creating services for NCDs could therefore be overwhelming.

Dr. Alwan further explains: ''We should not be talking about competition between the prevention of NCDs and communicable disease control. They can – and should – mutually reinforce and complement each other. What we need to realise is that NCDs pose enough of a threat to the sustainable development and security of the world that they warrant a large and commensurate response by the international community.'' He continues: ''Health systems in low-income countries are unable to respond effectively to the increasing magnitude of NCDs. As a result, health inequities are increasing. Thus, strengthening health systems is mandatory if we are to address health concerns in the 21st century and beyond.''

Integrating diabetes care and other NCD care into already existing communicable disease health services is therefore a logical solution to this dilemma. Such integration is possible due to their shared risk-factors and co-morbidities. By applying the same infrastructure and health care capacities, health systems will



be strengthened and important synergistic effects would be created. Such an integration of the efforts to prevent and treat NCDs and communicable diseases such as HIV and TB would also increase sustainability significantly.

Bringing services to primary care

Historically, in developing countries health care for NCDs including diabetes, and many communicable diseases such as TB, has taken place in hospitals in the secondary care environment. However, to improve accessibility for diagnosis and treatment, which is a major barrier to access to health care, focus should be on building community-based primary care for chronic diseases and thus relieving secondary care to deal with acute hospital-based emergency care. This would also make sense as many chronic diseases share the same social determinants and risk factors and so patients can be educated on a healthy lifestyle in the primary care setting to prevent a number of different diseases at the same time.

Prof. Srinath K Reddy, President of the Public Health Foundation of India, explains: ''A strategy to include health at the centre of all policies should unify sectors across determinants and not diseases. Thus, moving away from a focus on disease and focusing on determinants of disease.''

To date, only diabetes and TB health services are available in a few countries at the primary care level, but diabetes, hypertension, TB, HIV and AIDS services can all be easily integrated into primary care. Such integration would offer an excellent model to develop community-based primary care for chronic diseases. ''Bringing services close to the patient in the community setting is particularly important for chronic conditions – where repeated contact with the health system is required, particularly for poor and marginalised people. Even if services are free, if they are not easily accessible they will not be utilised because of the travel time, cost and inconvenience,'' says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

Given that NCDs receive no or very little funding from health-related development assistance, the World Diabetes Foundation will continue to advocate and help build capacity for diabetes care and related NCDs within existing public health structures which can and should be integrated in primary care. On the following pages are examples of projects supported by the World Diabetes Foundation which aim to achieve this, and so improve access to care for the millions of people around the globe who are in urgent need.

CREATING LIFE-CHANGING CLINICS

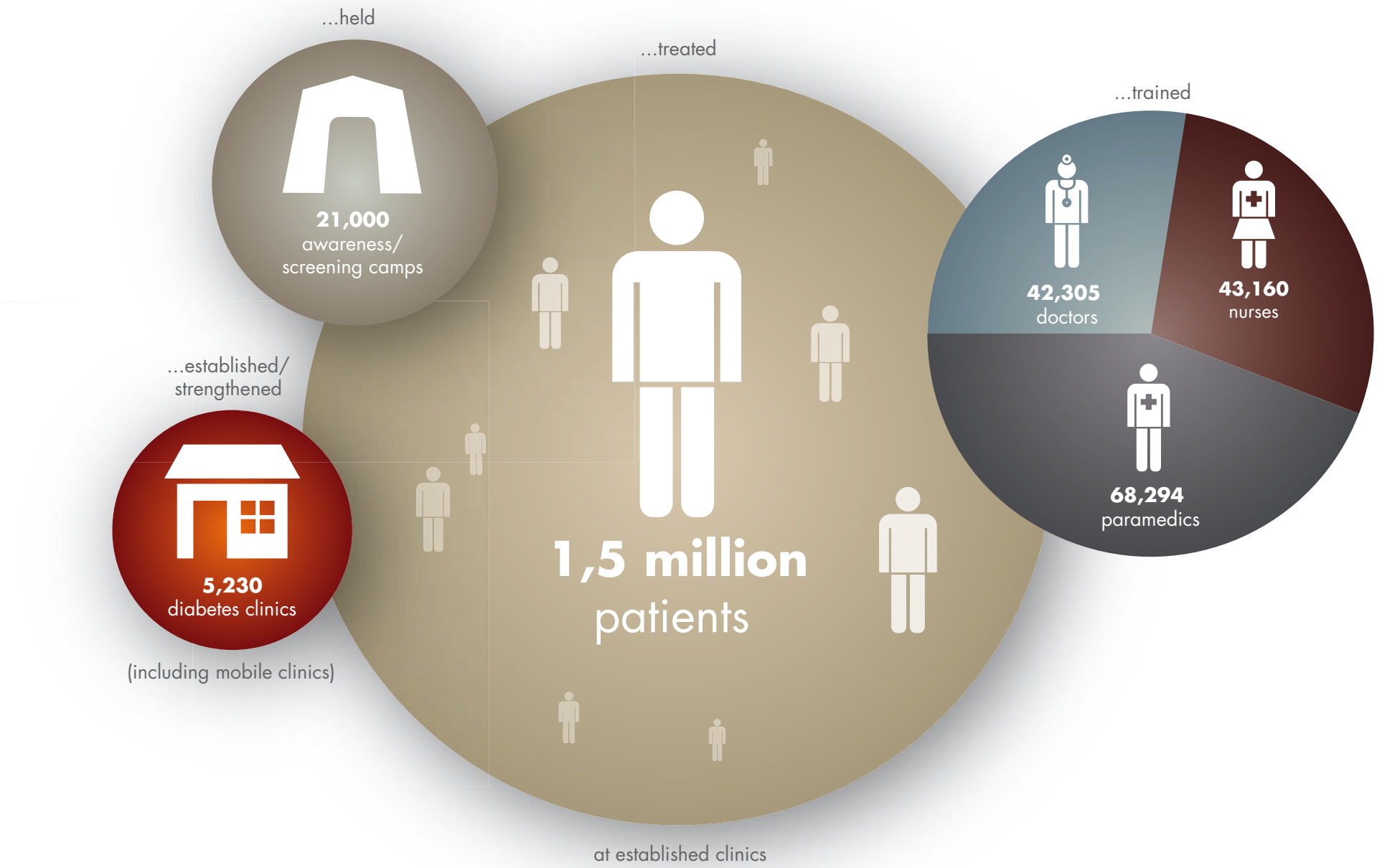
Arguably one of the most significant outcomes from the work conducted by the World Diabetes Foundation has been the establishment of thousands of diabetes clinics in developing countries. Whether the clinics are a dedicated room in an existing hospital, a mobile clinic specialising in eye or foot care, or a micro-clinic held in public or private surroundings, the impact of these clinics on people with diabetes has been life-changing.

Looking at her tiny body and sparse hair, you wouldn't think Sheila was more than 2 years old, but at the time this photo was taken in 2008 she was in fact six. Sheila was diagnosed with diabetes at the Naivasha District Hospital in Kenya when she was admitted for treatment for pneumonia. She was suffering severely from the effects of diabetes and had passed into a diabetic coma.

Sheila lives with her parents in a tiny house with her six siblings in a rural area about 40 km from Naivasha. Her mother, Saweria Wambul, stays at home to care for the family and her father is unemployed but sometimes does odd manual jobs to support his family. The parents try to take care of all their children, but poverty prevents them from giving Sheila the care she needs.

Sheila receives insulin treatment for her diabetes, but not on a regular basis – mainly due to lack of funds. Sheila and her family face another key problem when trying to manage her diabetes: their home is far from the diabetes clinic and there is no public transport to get there. Mostly they cannot afford to pay for the journey to Naivasha District Hospital and so Sheila only has her blood glucose levels tested every few months. Sheila has not attended the clinic since 2010, probably because her mother gave birth to a new baby which makes travelling even more difficult. This has most likely resulted in her diabetes being poorly-controlled which could lead to chronic health problems such as blindness, amputations or even death.

IN THE DECADE THAT THE WORLD DIABETES FOUNDATION HAS BEEN OPERATING, IT HAS SUPPORTED PROJECTS WHICH HAVE...



Access to health
In many developing countries people do not have access to a clinic where health care professionals have sufficient knowledge of diabetes to diagnose and treat it effectively. People living in remote areas have an even greater problem as visiting the nearest clinic could mean travelling vast distances with still no guarantee that once there they will be seen by someone with experience in diabetes care.

On average, people with diabetes living in remote rural areas are diagnosed 4 years later than people in urban areas. A consequence of this delayed diagnosis and poor access to care is higher rates of diabetes-related complications. Research also shows that patients who attend a clinic on a regular basis are more likely to reduce their HbA1c levels than those who do not. For optimum management, diabetes care services must therefore be as geographically close to the patient as possible, as often the cost of travel is higher than the cost of treatment. The World Diabetes Foundation therefore focuses on efforts to address the primary need for creating diabetes clinics and training health care professionals in the field of diabetes.

Typically, the development of diabetes clinics has been top-down: from provincial hospital to district hospital to community level and in some cases to micro-clinics and peer-to-peer programmes. With the recent developments within mobile clinics, the most advanced care can come to people's doorsteps and the distance travelled is minimised significantly.

Diabetes clinics
A basic diabetes clinic requires a location, trained personnel, relevant equipment, a treatment protocol and educational materials for patients. Ideally a diabetes clinic builds upon existing health care structures because by its very nature, diabetes care is connected in so many ways to other fields of medicine. Typically, a diabetes clinic is a room at a hospital which will, for example, be used by diabetes patients on a set weekday and for other purposes the rest of the week. As health care personnel are rarely trained in diabetes, training is an integral part of setting up a clinic. Therefore, setting up clinics is not about creating advanced state of the art facilities. It is about enabling health care professionals to diagnose the condition and giving them the knowledge of how best to treat it.

''In many parts of the developing world primary care services may not even have a functioning blood pressure instrument, weighing scale, knee hammer, monofilament or even a stethoscope, let alone a glucometer, fundoscope or semi-automatic analyser. Making some of this simple equipment available is a huge improvement in infrastructure,'' says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

The World Diabetes Foundation supports the creation of clinics based on a need expressed by a local partner who will often implement the project. The new diabetes clinic should not drain resources from the existing health care

BASIS FOR WORLD DIABETES FOUNDATION SUPPORT FOR CLINICS & CAPACITY BUILDING

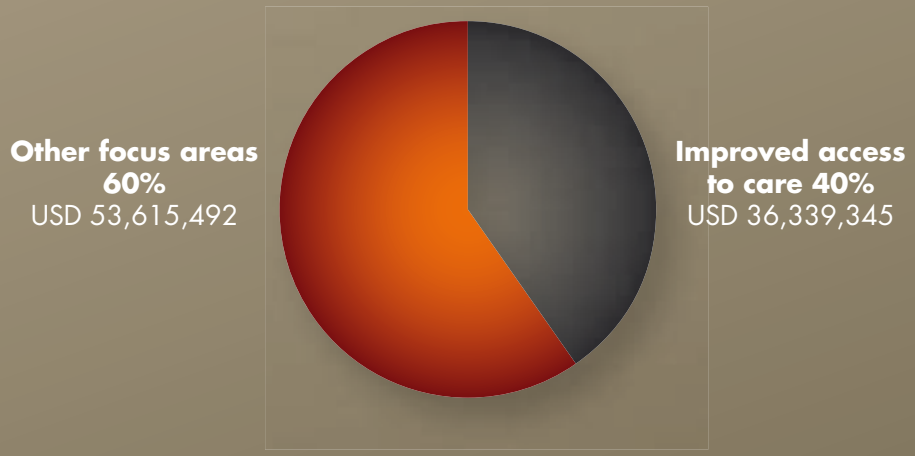
CAPACITY STRENGTHENING is founded on a wish from the ministry of health and by a health care facility. This principle expresses the World Diabetes Foundation's emphasis on local ownership in order to ensure sustainability.

THE MINISTRY OF HEALTH commits to allocate the health care personnel and resources including running costs such as salaries and consumables.

THE WORLD DIABETES FOUNDATION'S SUPPORT typically includes:

- Staff training in diabetes (continuous process)
- Strengthening infrastructure through equipment and distribution systems.
- Staff and patient education guidelines on self-management, diet and physical activity.

FUNDING FOR IMPROVED ACCESS TO CARE OUT OF TOTAL FUNDING 2002-2011



system. Rather, the aim is to strengthen the existing system through capacity building in order to make treatment better and more efficient. Continuity should by no means depend on the support from the Foundation, and so the Foundation's support never covers staff salaries or the cost of the actual building, but does cover the interior in terms of trained human resources and the most essential equipment.

The first diabetes clinics ever created with support from the World Diabetes Foundation were established in Tanzania in 2003 (see page 112). The Foundation, working closely with the Tanzania Diabetes Association, set up clinics in four of the country's regional hospitals. This involved training staff, funding furniture and equipping a basic laboratory. Since then, the World Diabetes Foundation has supported the creation of over 5,200 such clinics, including clinics specialising in type 1 diabetes, foot care, eye care and gestational diabetes care.

Mobile clinics

Since 2005, the World Diabetes Foundation has supported mobile diabetes clinics with the objective of bringing quality care to areas where diabetes complications, such as diabetic retinopathy and diabetic foot, would otherwise go undetected and untreated. So far, 11 projects with mobile components have been granted support. The vast majority of these projects have been in India, the remaining are in Kenya, Sudan and Thailand. The mobile clinics supported by the World Diabetes Foundation fall within three categories: eye clinics, foot clinics and comprehensive diabetes clinics.

Eye care

Aravind Eye Hospital in the state of Tamil Nadu in India was the partner for the first project introducing a mobile screening unit by using a fundus camera in a van with a satellite connection to the ophthalmologist at the base hospital to detect new cases of retinopathy. Since then, four other eye projects in India (in the states of Karnataka and Tamil Nadu) have replicated the model and extended care to rural areas where no secondary or tertiary eye care services were previously available. Throughout all these mobile eye projects, close to 300,000 people have been screened for diabetes and almost 25,000 have been diagnosed with diabetic retinopathy. Of these, 21,850 of these have been given sight-saving laser treatment.

Another eye project in India run by the Vittala International Institute of Ophthalmology (VIIO) uses a different mobile approach. In a specially constructed vehicle, they transport delicate equipment into rural areas and offer screening and laser treatment on site. In the 3 years in which the World Diabetes Foundation supported the project, the mobile van travelled through 13 districts in the state of Karnataka performing laser treatment on 7,750 people. As part of this project, 107 ophthalmologists have undergone continued medical education on diabetic eye disease and 229 general practitioners have received general diabetes and diabetes-related eye condition training.

In North and North East Thailand, two mobile eye clinics have been equipped and functioning since 2009, with over 1,000 health care professionals trained to


JIVAS - Diabetic Foot Care & Vascular
"Project PADASAMRAKSHANA"
World Diabetes Foundation, Denmark &

operate the equipment. In addition, a number of health volunteers have been trained to conduct awareness-raising activities and provide patient education related to diabetes and diabetic retinopathy. Thanks to these mobile units, more than 2 million people have been screened for diabetes; over 100,000 people with diabetes have been screened for diabetic retinopathy and at least 8,190 have received laser treatment free of charge.

Foot care

The mobile foot clinic in India is based on methods developed in the mobile eye care projects and exemplifies how innovative ideas are replicated from project to project. The clinic is equipped with the most advanced equipment for screening and foot care treatment and manned by personnel all trained in operating the equipment and patient counselling. Every month, the mobile clinic makes 20-22 visits to rural areas within a 150 kilometre distance of Bangalore, India.

In 2010 a mobile foot clinic was launched in Kenya as part of a wider project to improve foot care and diabetes education at country level. Staffed by trained health care professionals, it will operate on a rotating basis throughout Kenya, on average conducting screening and care 4-5 days every 4 months in each province.

Comprehensive care

The Chunampet Rural Diabetes Prevention Project in Tamil Nadu's Kancheepuram district in India uses a holistic approach to prevent and treat diabetes. The mobile clinic is a fully equipped van with a satellite connection to an ophthalmologist in Chennai, which screens people in rural areas for diabetes and related complications. To date, 24,000 people from 42 villages have been screened, especially for eye, foot and cardiovascular complications.

By combining outreach via the tele-medicine van with a base health care centre, the project aims at addressing primary, secondary and tertiary prevention of diabetes in rural areas. In practice, community health workers provide health promotion and health education to the rural population to address the risk factors for diabetes (primary prevention). Prevention of complications (secondary prevention) is done through patient education, self-care counselling and early screening for diabetes complications. Tertiary prevention (to prevent worsening of diabetes complications) is carried out by sight saving laser treatment on site or in the mobile unit as well as intensive treatment and care for foot problems.
A similar model was replicated in Sudan in 2009 where a mobile diabetes unit commenced operation from the state capital Dongola. The mobile clinic, offering secondary care with focus on feet and eyes in particular, is equipped with clinical examination kits, an ECG machine, retinal screening facilities, foot care and laboratory equipment for biochemical analyses.

This approach coupled with building a network of primary care physicians that utilise the services of a mobile advanced care treatment unit containing an ECG machine, Doppler, retinal screening facilities, foot screening and care and laboratory equipment for biochemical analyses as well as an internet based electronic medical record to provide secondary level care in small towns and villages in Karnataka India has been used in a second project by VIIO.

Micro-clinics

A micro-clinic is not a clinic in the traditional understanding of a place where a patient goes to see a health care professional. Micro-clinics are self-selected groups of people with diabetes who share education, group support and testing using a glucometer. They are a forum where people can come together and discuss their struggle with diabetes and be empowered to make lifestyle changes, face their disease as a community and help overcome the stigma that diabetes has within the community. Not only do they learn how to deal with the physical aspects of the disease, but they also learn to deal with the mental and social challenges of this chronic condition.

In 2007, the World Diabetes Foundation supported a project entitled The Global Micro-Clinic Project (GMCP): Community Ownership and Awareness in Jordan. During the project period of 2 years, 756 people with diabetes were enrolled in one of 290 micro-clinics. Once enrolled, a person participated in a 3 month-long educational course. First, their HbA1c level was tested followed by a 5 week training course on diabetes. Subsequently, they participated in three follow-up training sessions focusing on the diabetic foot; physical activity, nutrition etc. and a follow-up measuring of HbA1c. Results based on data from the two project sites suggest significant improvements among people educated in the micro-clinics. HbA1c levels were reduced by 1.25% within 4 months of joining a micro-clinic and associated activities.

With a background in social anthropology, Dr. Daniel Zoughbie, Director of the GMCP, believes that social networks are an important point of departure when dealing with health care challenges like diabetes: ''Whether we deal with biologically communicable or non-communicable diseases, many of them are somehow socially communicable. So, if negative behaviour can spread through social networks, so can positive behaviour,'' he explains. This psycho-social rather than purely medical approach of the GMCP has been so convincing that the Ministry of Health in Jordan decided to expand and implement the micro-clinic model nationwide. The World Diabetes Foundation has continued its support to specifically train 150 nurses and 54 diabetes doctors from primary health care centres nationwide in order to establish diabetes clinics in all 54 health care centres. Alongside, 1,000 micro-clinics are expected to be established.

Sustainable capacity building

Whether clinics are in a hospital building, a mobile unit or a private home, the long-term objective for the World Diabetes Foundation is the same: finding functional, sustainable and meaningful solutions to create and improve access to care. The Foundation's support for these clinics helps supplement existing health care systems and sometimes provides innovative solutions for improving capacity that will hopefully continue to function after the World Diabetes Foundation's support ends. Supporting clinics through training of health care professionals and provision of equipment is an example of sustainable capacity building that can be replicated in any country where there is a need for a diabetes clinic.

LAYING THE FOUNDATION FOR NATIONAL DIABETES PROGRAMMES

Locally sustainable projects supported by the World Diabetes Foundation can be the building blocks for the creation of national diabetes and NCD programmes. The Foundation is proud to be supporting the development and implementation of a number of such programmes, which will hopefully lead to an improved quality of life for people living with diabetes.

Historically, health systems in developing countries have focused on infectious diseases such as tuberculosis, malaria, HIV and AIDS. However, in recent years many countries have begun to realise that they are facing a double burden of both infectious and non-communicable diseases (NCDs) as the incidences of diabetes, cardiovascular disease, cancer and chronic respiratory disease are increasing at an alarming rate.

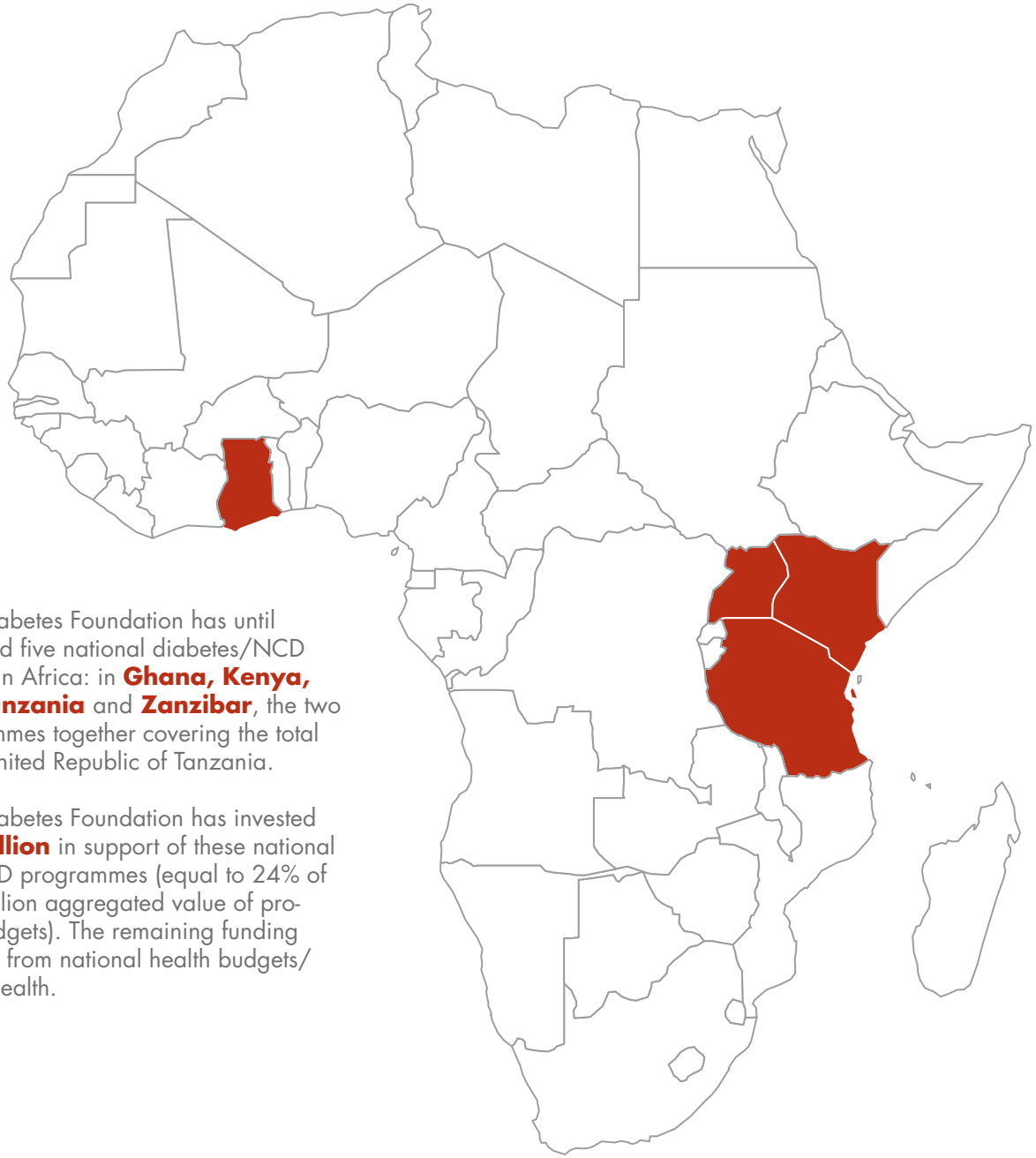
With the UN Political Declaration on the prevention and care for NCDs endorsed unanimously by the UN General Assembly in September 2011, NCDs – including diabetes – can no longer be ignored. Furthermore, as diabetes is associated with many co-morbidities and complications, it is an obvious entry point for targeting the whole range of NCDs.

Pioneering work

Long before the UN made its recommendations regarding NCDs, the World Diabetes Foundation was actively supporting local projects with the long-term goal of creating national diabetes and NCD programmes. By expanding interventions in countries where the Foundation has already been working, building on the achievements of its previous successful projects and using its networks, the Foundation has engaged and stimulated ministries of health, diabetes associations and other professional bodies to address the issue of diabetes and NCDs on a larger national scale.

In addition to offering its expertise, the World Diabetes Foundation supports national programmes by providing funding for training of health care professionals,

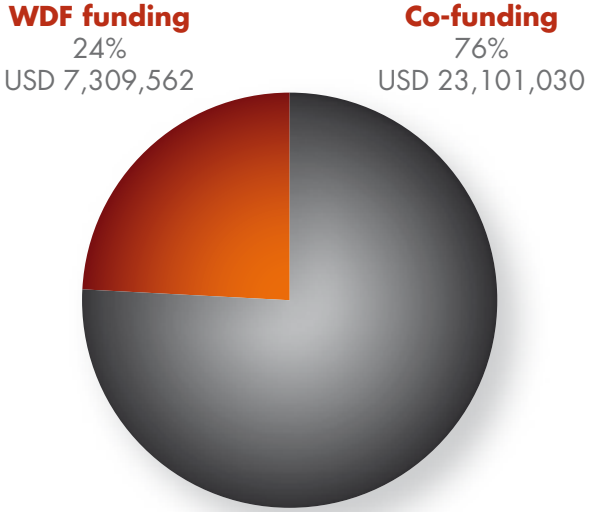
NATIONAL PROGRAMMES
FACTS



The World Diabetes Foundation has until now supported five national diabetes/NCD programmes in Africa: in **Ghana, Kenya, Uganda, Tanzania** and **Zanzibar**, the two latter programmes together covering the total area of the United Republic of Tanzania.

The World Diabetes Foundation has invested **USD 7.3 million** in support of these national diabetes/NCD programmes (equal to 24% of USD 30.4 million aggregated value of programmes' budgets). The remaining funding mainly comes from national health budgets/ ministries of health.

WDF AND CO-FUNDING FOR NATIONAL PROGRAMMES



raising community awareness, creating educational materials, treatment protocols and patient registries and establishing clinics and mobile units for care. However, the Foundation does not fund salaries for staff delivering care nor the running costs of clinics or consumables. Governments must therefore show their dedication and commitment to programmes by ensuring that there are adequate health care resources allocated within the national budgets to support the initiative and that a permanent civil servant position at a senior level is established within the ministry of health to monitor, evaluate and report on the programme implementation.

Building blocks of development

The World Diabetes Foundation's commitment to improving diabetes care in developing countries concentrates on establishing health care equity through capacity building and improving access to care, for example by establishing diabetes clinics (see page 84). Local projects that prove successful can then be replicated in other areas, with the hope that these projects will become the building blocks for developing a national programme for diabetes. Such an example is the case of Tanzania: since its inception the World Diabetes Foundation has been supporting many smaller projects in Tanzania which all attracted government attention and support and which have played a role in moving the national health agenda. This move ultimately resulted in the development and endorsement of a national NCD strategy by the Tanzanian Ministry of Health and Social Welfare in 2009 (see page 112).

The World Diabetes Foundation has committed its support for the implementation of the diabetes component of the national NCD strategy in Tanzania, an implementation which will also bring about a greater focus on preventing other NCDs. ''We will continue to strengthen the infrastructure for diabetes care from the district to the regional levels. With this infrastructure we can use the clinics to focus on NCDs with diabetes as the entry point,'' says Dr. Kaushik Ramaiya, Board Member of the World Diabetes Foundation and Chief Executive Officer at Shree Hindu Mandal Hospital, Dar es Salaam and Secretary General of the Tanzanian Diabetes Association.

A holistic approach

In addition to Tanzania (including Zanzibar), the World Diabetes Foundation also currently supports the implementation of national programmes in Uganda, Kenya, and Ghana. The countries involved are at different stages of development and face different challenges, but they all focus on integrated, comprehensive and holistic programmes and strategies for addressing prevention, detection and control of diabetes, its risk factors and associated chronic diseases. The programmes span from primary prevention over primary and secondary care to tertiary care delivery. Best practice solutions are used as models for national policies and synergies are achieved through an overall strengthening of health care systems and their ability to manage NCDs.

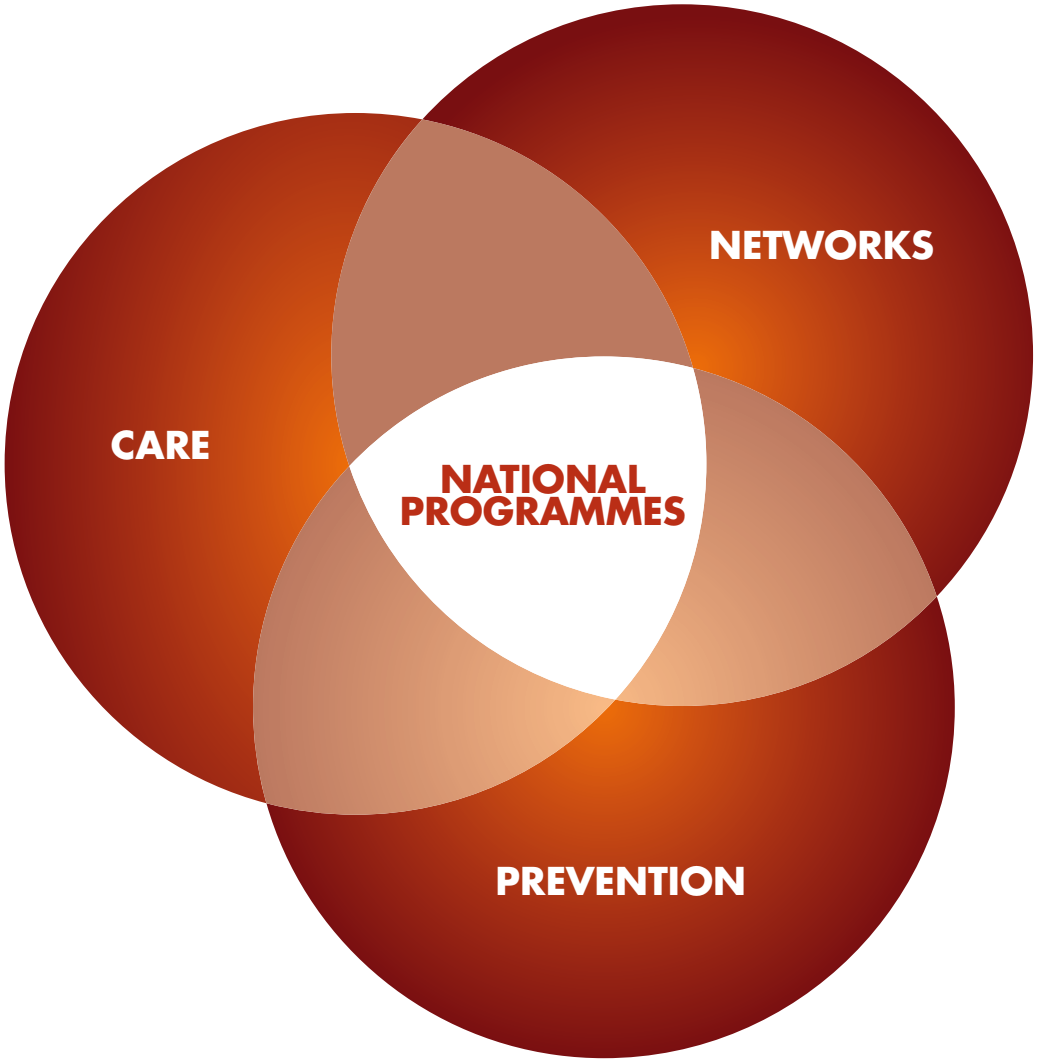
National programmes are based on a replicable model which, in general terms, has three main components. The first component consists of the development, formulation and endorsement of a national diabetes/NCD policy or strategy and of standards and guidelines for prevention, care and control of the diseases which ensure universality of best practice. The second component focuses on capacity building of health care. This may entail assessments of health care professionals' knowledge and skills to manage diabetes and its complications as well as related NCDs, followed by training to address the identified knowledge and skills gaps. It may also entail provision of equipment for basic and more advanced care and hence lead to the establishment of diabetes/NCD clinics

STRATEGY PLAN 2008-2010

NATIONAL PROGRAMMES HAVE CONSTITUTED A CENTRAL PART IN THE WDF'S STRATEGY SINCE ITS INCEPTION.

NATIONAL PROGRAMMES
Integrated, comprehensive and holistic programmes and strategies for addressing diabetes, its risk factors and associated chronic diseases, spanning from primary prevention, over primary and secondary care, to tertiary care delivery in a country.

Interface between intervention areas with activities from more than one intervention area – potential push for a national programme.



CARE
Diabetes care with focus on improving access to and quality of care through training of personnel and patients, provision of equipment, strengthening delivery and referral systems and development of guidelines.

NETWORKS
Using networks and strategic alliances at national and global levels to encourage governments worldwide, policy-makers and funding bodies to prioritise diabetes care, allowing the implementation of much-needed sustainable and far-reaching solutions.

PREVENTION
Primary prevention of diabetes by addressing its risk factors and encouraging healthy lifestyle through awareness campaigns and activities either targeted broadly or for specific target groups.

for the whole continuum of care. The third component addresses the issue of raising awareness of diabetes and NCDs among the country´s population. This component may include activities concerning diabetes/NCDs risk factors, prevention, early symptoms and complications. The focus of the activities is on promotion of healthy lifestyles and may often use community-based interventions such as those aimed at schools and workplaces.

Leading the way

Whilst not the first national programme to be supported by the World Diabetes Foundation, the project in Kenya has so far proven the most successful: ''In the past, diabetes activities in Kenya have been conducted in an uncoordinated manner. Each player did their own things in their own way following no particular standards,'' explains Dr. William K. Maina, Deputy Director of Medical Services and Head of the Division of Non-Communicable Diseases of the Ministry of Public Health & Sanitation in Kenya.

With the support of the World Diabetes Foundation, in 2010 Kenya was the first country in Africa to launch and initiate activities related to the national diabetes strategy (see page 96). ''This provides a strategic and coordinated framework for guiding the funding, planning, provision, organisation and monitoring of services for people with or at risk of developing type 1, type 2 and gestational diabetes,'' says Dr. Maina.

Enhancing sustainability

Whether a national programme is created following the momentum of smaller local projects, or through the World Diabetes Foundation's support of a project specifically focused on developing such a programme, the programme's successful implementation relies heavily on local champions like Dr. Maina. In order to enhance the likelihood of long-term sustainability of the programmes, emphasis must be given to local ownership and leadership from those responsible for the local health system. Such local champions are crucial for driving the process forward both during the time the World Diabetes Foundation is supporting the programme and after the Foundation's financial support has ceased.

Whereas local champions are essential for running individual projects, a common platform among policy-makers, donor organisations and professional and patient associations is critical for any national programme to be sustainable and successful over time. The World Diabetes Foundation therefore takes a special interest in working with networks of stakeholders at different levels to create political will. These networks make the difference between stand-alone projects and holistic, sustainable national programmes.

World Diabetes Foundation Managing Director Dr. Anil Kapur says: ''Yes, there are sometimes delays or problems getting all stakeholders engaged in such national programmes, but this is to be expected. We believe that these initiatives are the only way to create equity and strengthen health systems.''

The World Diabetes Foundation hopes that sustainable national diabetes and NCD programmes will constitute an important basis for obtaining health equity in developing countries and will serve as inspiration for others to follow - thereby alleviating the human suffering related to diabetes and its complications among those least able to withstand the burden of the disease. For more details on the national programmes in Tanzania and Kenya, see pages 112 and 96 respectively.

NATIONAL PROGRAMME IN KENYA

In 2005 a project funded by the World Diabetes Foundation in collaboration with a local partner in Kenya got the ball rolling. Subsequent projects and collaboration with the Ministry of Health increased further momentum, resulting in Kenya launching Africa's first national diabetes strategy and programme in 2010.

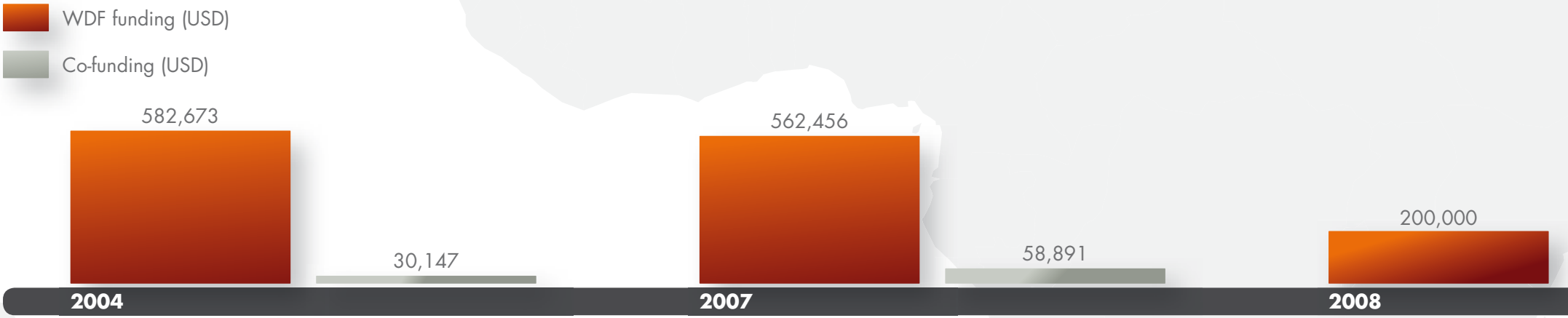
Situated on Africa's east coast, the Republic of Kenya has been described as ''the cradle of humanity'' as it is here that palaeontologists discovered some of the earliest evidence of man's ancestors. Today, Kenya has a vibrant culture due to its ethnic diversity but is also experiencing increasing urbanisation, high unemployment and poverty. Most Kenyans live below the poverty level of USD 1 a day.

It is in this setting that Kenya is battling infectious diseases such as malaria, HIV and AIDS, while also facing the increasing burden of non-communicable diseases (NCDs), in particular diabetes. It is estimated that 1.6 million people are living with diabetes in Kenya, with prevalence rates between 2.7% and 14.7% in rural and urban areas respectively. The incidence of diabetes is predicted to increase in the future due to the erosion of traditional living and eating habits which has led to declining levels of physical exercise and the consumption of growing amounts of junk food.

Showcasing collaboration

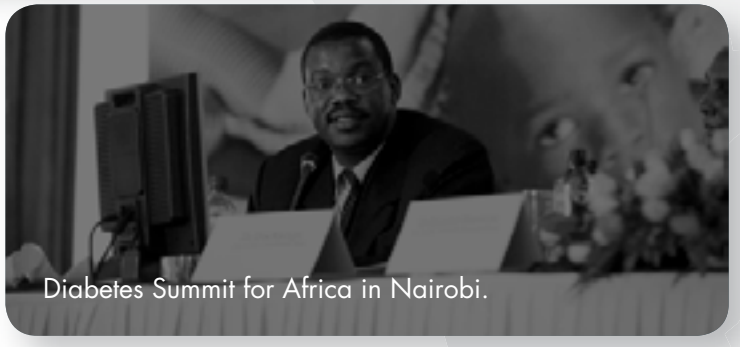
In June 2007, the World Diabetes Foundation organised the first major diabetes event in Africa: Diabetes Summit for Africa, following the adoption of the 2006 UN Resolution on Diabetes (see page 18), in Nairobi, Kenya. This Summit provided a platform for key stakeholders to show their commitment to the cause of NCDs and diabetes. At the Summit the Kenyan Diabetes Management and Information Centre (DMI Centre), in collaboration with the Kenyan Ministry of Health, showcased their education programme for health care professionals

KENYA
TIMELINE



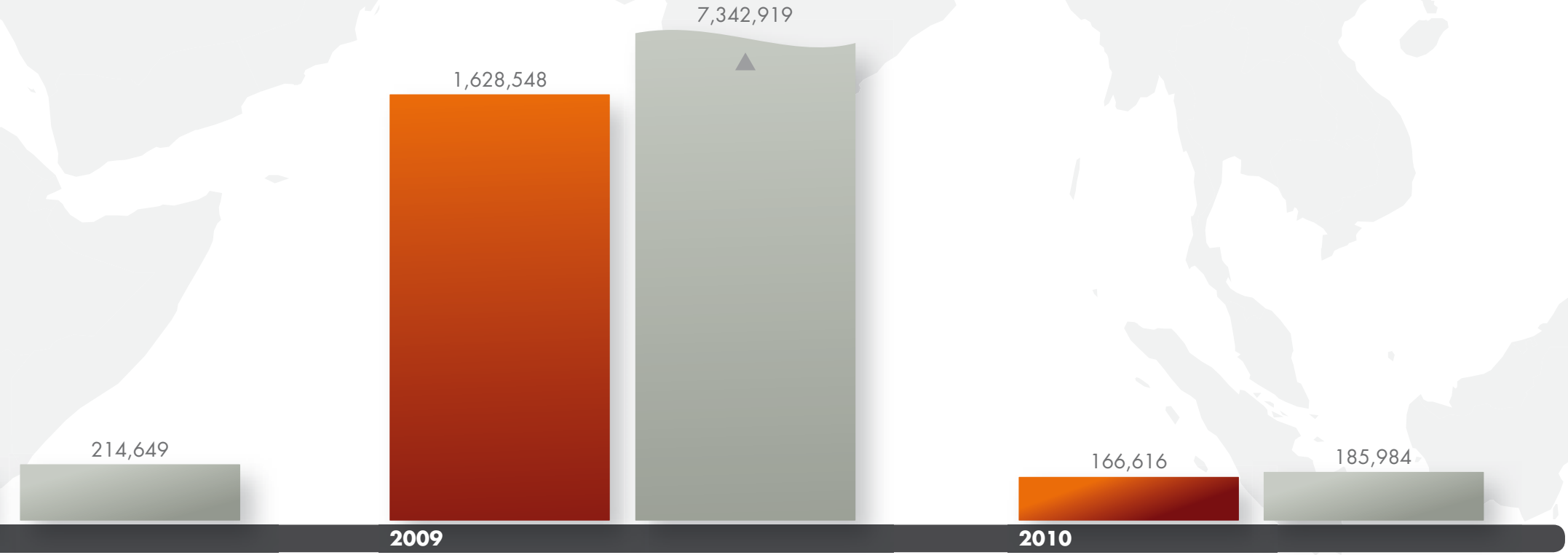
Diabetes education programme. Support to Diabetes Management & Information Centre 2005-2010. Establishment of diabetes clinics and training of health care professionals.

Diabetic foot care. Support to Diabetes Management & Information Centre 2008-2011. Improvement of diabetic foot care.



Diabetes Summit for Africa in Nairobi.

Diabetes care in Nairobi slums. Support to African Population & Health Research Center 2009-2011. Improved access to diabetes care for the population in Nairobi slum areas.



National Diabetes Programme. Support to Kenyan Ministry of Public Health and Sanitation 2009-2015. Mainstreaming diabetes care in the national health care delivery system.

Diabetic eye disease outreach programme. Support to Upper Hill Eye and Laser Centre (UHEAL) 2010-2012. Improvement of diabetic eye care.

Launch of National Strategy, guidelines and manuals.

KENYA FACTS

GENERAL DIABETES CARE

68,450
Patients treated at established clinics

290
Diabetes clinics established/strengthened

9,550
Health care professionals trained

150
Awareness/screening camps held

FOOT CARE

28,200
Patients screened for diabetic foot

1,850
Feet saved through treatment

640
Health care professionals trained in diabetic foot care

EYE CARE

750
Patients received sight saving treatment

4,750
Patients screened for diabetic retinopathy

DISTRIBUTION OF FUNDING 2004-2010

WDF funding
29%
USD 3,140,293

Co-funding
71%
USD 7,832,590

and public awareness project, supported by the World Diabetes Foundation, to demonstrate how effective collaboration can work on a practical level. This project, which began in 2005, resulted in the establishment of over 40 clinics, 200 mini-clinics, and a large scale awareness campaign whose education activities alone reached an estimated 600,000 people in Kenya.

Speaking at the Summit, Her Excellency, Charity Kaluki Ngilu, former Kenyan Minister for Health, said: ''Our health services and interventions have focused on infectious diseases. Adequate emphasis has not been placed on non-communicable diseases. This imposes a huge burden on the overstretched health services in this country. A lasting solution for diabetes is prevention and control within a national programme.''

Gaining confidence

Motivated by the success of the education programme, the DMI Centre undertook a second project with support from the World Diabetes Foundation, focusing on diabetic foot care in Kenya. Mr. Vincent Mbugua, Health Educator at the DMI Centre, explains: ''I still cannot come to terms with how long we waited before being able to make an impact of the seriousness of diabetes in the country. More so, I wonder what could have happened if the World Diabetes Foundation, who I call ''brothers'', had not come in to assist the Ministry and the DMI to set up the Education & Training programme.''

Further projects supported by the World Diabetes Foundation in Kenya since then include a project focused on improving diabetes care in the slums of Nairobi with the African Population & Health Research Centre and a diabetic eye disease outreach programme with the Upper Hill Eye and Laser Centre.

The success and replicability of the first few projects and the collaboration with the Kenyan Ministry of Health undoubtedly led to the most significant project supported by the World Diabetes Foundation in Kenya, if not Africa, to date; the creation of the national diabetes programme.

In addition to the creation of a National Diabetes Strategy, the national diabetes programme has thus far included the establishment of ten provincial diabetes clinics, twenty district hospitals and further strengthening of thirty-eight district or sub-district hospitals and health centres throughout Kenya, where currently more than 25,000 patients are being treated. Furthermore, the programme includes the organisation of screening and awareness camps.

A comprehensive strategy

Launched in 2010, Kenya's National Diabetes Strategy aims to prevent or delay the development of diabetes in the population and improve the quality of life and reduce complications in people with diabetes. The strategy is being rolled out in three phases moving from national to regional to district level. Central to the

strategy is the training of health care professionals and community health workers to detect and treat diabetes so that, ultimately, they act as 'diabetes ambassadors'. The strategy's comprehensive approach integrates and mainstreams all the previous projects supported by the World Diabetes Foundation in Kenya. Sustainability and local ownership is crucial for the success of projects to which the World Diabetes Foundation has granted support. Crucially, the Kenyan Ministry of Health and Sanitation led the National Diabetes Strategy programme and is responsible for its overall implementation in collaboration with the DMI Centre. For technical assistance and to ensure the cost-effectiveness and sustainability of the programme, the Ministry of Health is also collaborating with the World Health Organisation, the Kenya Diabetes Association, the Kenya Diabetes Study Group and Kenya Diabetes Educators.

Eliciting support

Implementing such a comprehensive, integrated and holistic National Diabetes Strategy requires substantial resources - human as well as financial. In the five diabetes projects which the World Diabetes Foundation has supported in Kenya since 2005, co-funding has made up 71% of the total project budgets. For the national diabetes programme, co-funding contribution makes up 82% and further support will be critical for the on-going success of the programme.

''We are very optimistic that many donors will come on board to support this cause,'' says Dr. William Maina, Deputy Director of Medical Services & Head of the Division of Non-communicable Diseases in Kenya's Ministry of Public Health and Sanitation. ''At the moment, Centres for Disease Control and Prevention have already indicated willingness to support NCDs and particularly diabetes and we have presented a proposal for support. The University of Sydney, Australia has joined the division of non-communicable diseases in a joint collaboration with the University of Nairobi to support research on NCDs in this country. At the moment, 20 people have undergone training on NCD research and the University of Sydney is supporting three research proposals on diabetes and cardiovascular diseases. We are looking forward to other donors such as DANIDA and USAID coming on board and supporting the country to roll out the national diabetes programme.''

Integrating NCDs

The National Diabetes Strategy has been prepared by and is anchored within the Division of Non-Communicable Diseases and it is expected that the strategy will ultimately integrate treatment of diabetes with that of tuberculosis and HIV and AIDS management.

''The diabetes strategy will provide us with a good entry point to prevention and control of most NCDs which share common risk factors,'' explains Dr. Maina. ''We aim to use this model to introduce an integrated chronic care model at health facilities to integrate diabetes, hypertension, cardiovascular and renal diseases under one roof in order to better utilise the scarce resources for maximum impact.''

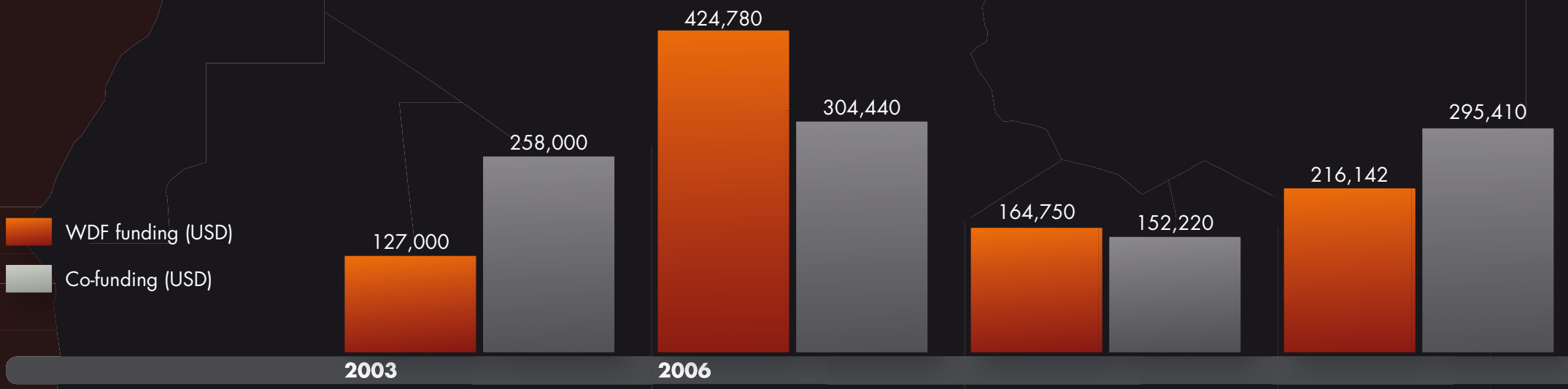
COUNTRY REVIEW OF SUDAN

Sudan is one of the poorest countries in the world. With the increasing burden of diabetes and an estimated 30% of the population having no access to health services, it qualifies as a country in which the World Diabetes Foundation operates. But venturing into a country that has suffered Africa's longest-running civil war comes with a certain level of risk. Nevertheless, the Foundation is supporting the development of diabetes care in Sudan.

When the World Diabetes Foundation first supported a project in Sudan in 2003 it was the largest country in Africa with a population of 43 million of which an estimated 3.4% had diabetes. The country has experienced two north-south civil wars resulting in the loss of 1.5 million lives and a conflict in the western region of Darfur which has driven two million people from their homes and killed more than 200,000. On 9 July 2011, South Sudan gained independence from Sudan but the challenges and barriers to operating successfully in this region continue to be significant. It is not surprising that Sudan has an inadequate health care infrastructure and serious issues regarding access to health.

A native of the Gezira State in Sudan, Prof. Mohamed Ali Eltom, Secretary General of the Sudan Diabetes Association and local project partner for several of the World Diabetes Foundation's projects in Sudan, explains: ''When I was conducting my clinical practice in 1986, I realised that diabetes was the main problem accounting for 70% of cases. But there were few resources. At that time, there were only four diabetologists in the entire country. I remember having patients and no vials of insulin to give them. Realising the burden and the almost non-existent access to care and medicine was my real motivation to start doing something on the issue of diabetes care.''

SUDAN
TIMELINE

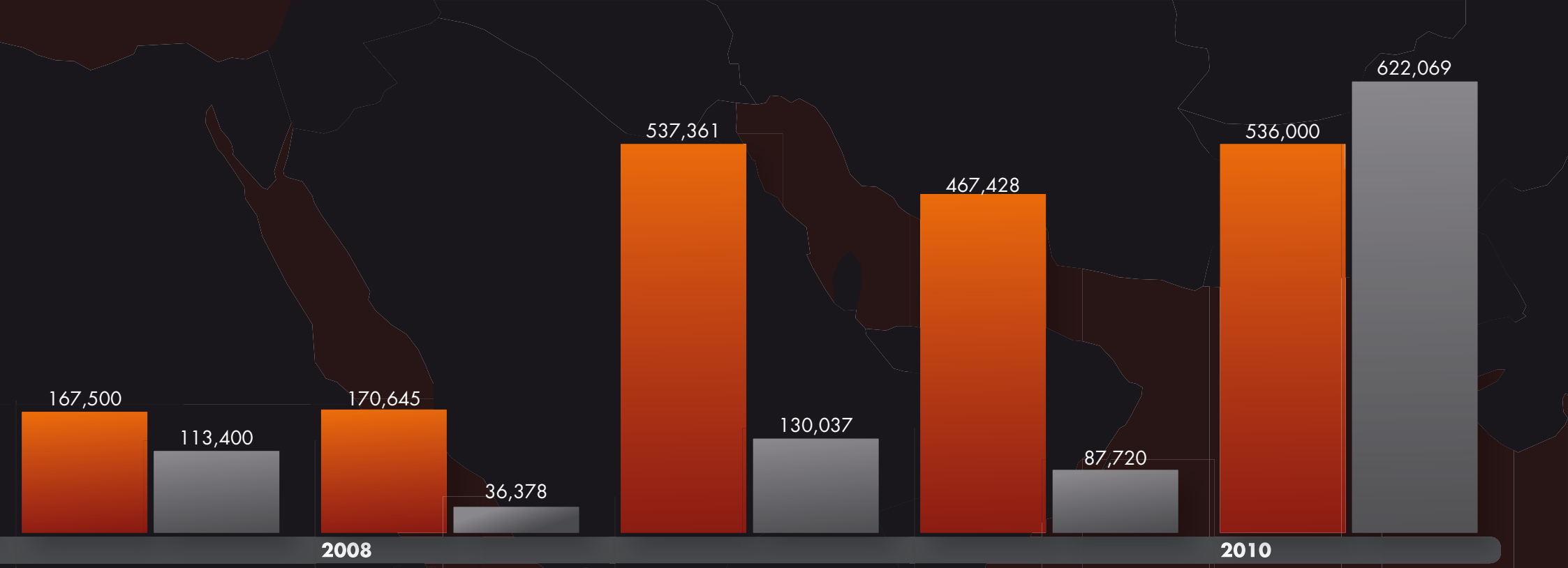


Diabetes care. Support to Ministry of Health 2004-2006. Establishment of health facilities in four states.

Integrated management of diabetes in children. Support to Faculty of Medicine, University of Geziera 2007-2009. Improved health care capacity for children with type 1 diabetes.

Diabetes care promotion. Support to Ministry of Health 2007-2009. Establishment of primary, secondary and tertiary level diabetes care in six states.

Mobile diabetes care delivery. Support to Ministry of Health 2007-2010. Upgrade of one clinic to tertiary care, establishment of mobile clinic with outreach activities.



Gestational diabetes. Support to Sudan Fertility Care Association (SFCA) & Ministry of Health 2006-2011. Establishment of Sudan's GDM clinic.

Prevention of major amputations among people with diabetes. Support to Jabir Abualiz Diabetic Centre (JDC) 2008-2013. Establishment of diabetes foot clinics.

Childhood diabetes programme. Support to Sudanese Childhood Diabetes Association 2009-2011. Improvement of diabetes care for children with type 1 diabetes.

Integrated Management of Diabetes Eye Care Project (IMDP). Support to Faculty of Medicine, University of Gezira 2009-2010. Establishment of one eye care clinic.

Promotion of diabetes associations. Support to Diabetes Programs Promotion Organisation (DPPO) 2010-2013. Establishment of 12 diabetes associations.

A step-wise manner in improving care

Since 2003, the World Diabetes Foundation has invested USD 2.8 million in nine projects in Sudan. Two initial projects led to the establishment of 57 diabetes mini-clinics and 14 diabetes units and centres. Furthermore, 180 doctors and 160 diabetes educators received training. Under a third project, the diabetes centre in the state capital Dongola was upgraded to a tertiary referral centre and has become a centre of excellence for treatment as well as for training medical students. In addition, a mobile diabetes clinic began monthly visits to satellite diabetes clinics in the Northern State.

The two projects focusing on children with diabetes, which together covered almost the entire country, have also received support from the Foundation. Building on the success of these projects, the eye care project was devised with the realistic expectation that many children with diabetes will have eye complications and will therefore need early attention to prevent blindness. To date, 291 children and adults have been detected with diabetic retinopathy and 78 of these treated with laser surgery. Amputations, another common complication from poorly managed diabetes, are being addressed in a project which aims to establish 20 diabetic foot clinics at existing health care facilities throughout Sudan following the Step-by-Step model. So far, 11 clinics have been established, 240 health care professionals trained and 14,050 patients have received diabetic foot care and wound dressing at these clinics.

Maternal health, one of the focus areas for the World Diabetes Foundation, is being tackled in a project on gestational diabetes mellitus (GDM). By training doctors and midwives in GDM protocols and providing educational material, the project is steadily being extended to more diabetes mini-clinics with the aim of replicating the project in other states of Sudan in the future.

This portfolio of projects demonstrates how the project partners have addressed diabetes care in a step-wise manner by first establishing diabetes care facilities in clinics and, secondly, upgrading these through diabetes education of health-care professionals and patients. Finally, the facilities have been further upgraded to include preventive care (secondary care) and treatment of complications (tertiary care).

The most recent project, initiated in 2010, aims to establish and empower diabetes associations in eleven regions of the country. Prof. Eltom, local partner for this project, explains: ''As main partners, diabetes associations have a vital role to play in the design and implementation of diabetes strategies. They can identify the needs of the population living with diabetes and promote acceptable methods of implementation. They can fulfil a vital watchdog role and help evaluate the outcome of programme measures. Finally, they have a powerful advocacy function.'' A recent update from the project reports that four diabetes associations have already been established, although plans for the establishment

SUDAN FACTS

GENERAL DIABETES CARE

51,250
Patients treated at established clinics

130
Diabetes clinics established/strengthened

1,400
Health care professionals trained

30
Awareness/screening camps held

FOOT CARE

14,050
Patients received treatment for foot complications

240
Health care professionals trained in diabetic foot care

CHILD HEALTH

2,000
Children receiving treatment for type 1 diabetes

EYE CARE

600
Patients screened for diabetic retinopathy

250
Patients received sight saving treatment

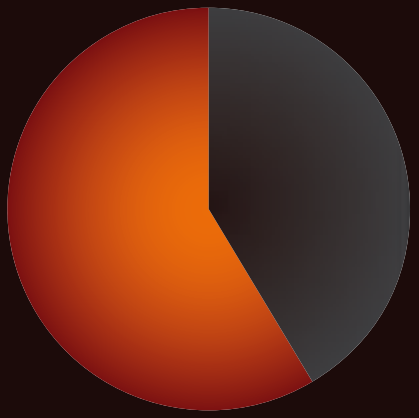
MATERNAL HEALTH

6,550
Pregnant women screened for gestational diabetes

DISTRIBUTION OF FUNDING 2004-2010

WDF funding
58%
USD 2,811,606

Co-funding
42%
USD 1,999,674



of a diabetes association for the south of the country, which now falls in South Sudan, have had to be abandoned.

Prevalence gap from north to south

On 9 July 2011, following the separation of South Sudan, the diabetes prevalence rate in Sudan jumped from an estimated 8% to 12% because the incidence of diabetes in the south is much lower than in the north. ''I remember my teacher telling me that when he worked in the south in the 1960s there was only one insulin-dependent person with diabetes living in Juba,'' says Prof. Eltom. ''This man had to have vials of insulin flown in especially for him!''

Today, diabetes is more prevalent in the centre of Sudan, where a sedentary lifestyle is becoming common, but there is no central register to quantify the number of people living with diabetes in the country. However, Prof. Eltom personally estimates that the prevalence of diabetes in Sudan's capital could be around 20%, while in South Sudan it may be as low as 1% - although he expects this to increase in the coming years due to urbanisation. ''Both Sudan and South Sudan need to look at prevention going forward, as lifestyle patterns are changing and leading to more cases of diabetes'', he explains.

Building trust between stakeholders

While investing in Sudan could have been a cause for concern due to the risks associated with a fragile infrastructure, the success of the initial World Diabetes Foundation supported projects proved such concerns to be unwarranted. This success relies on more than simply the number of diabetes clinics established or health care professionals trained. The strong collaboration between all partners involved has played a fundamental role in making these projects successful. Local stakeholders have been empowered and an environment has been created where the Federal Ministry of Health has become aware of the diabetes issue and is now participating in all projects. This active involvement of the Federal Ministry of Health has ensured strong ownership of all diabetes initiatives as well as sustainability of the projects.

Overall, the World Diabetes Foundation's ambition for diabetes services in Sudan has been to create a vibrant diabetes grassroots movement led by the patient associations. With the latest project focusing on the creation of local associations, this ambition could become a reality.

Nationwide programme

According to Prof. Eltom, a strong base has been created for venturing into a nationwide diabetes programme: ''Now that we have developed a system and formula for success, there is a level of integration between the different institutions and consensus among the partners about the levels of care. But it is important that a national diabetes programme is anchored within the Federal Ministry of Health and integrated into a wider NCD programme,'' he concludes.

NATIONAL PROGRAMME IN TANZANIA

The World Diabetes Foundation's first project focused on establishing diabetes clinics in Tanzania in 2002. Ten years and thirteen projects later, Tanzania has changed from a country with almost no diabetes care to a country with a comprehensive national diabetes programme.

Mr. Adenani Juma Nyange lived with diabetes for 25 years - often with no treatment at all. But months after stepping on a burning coal he had to travel 600 km to attend a hospital in Dar es Salaam as the wound had become infected. When the dressing came off the foot was completely black and the distinct smell of rotten flesh filled the air. ''Things like this happen when you do it your own way. When you don't know how to do it right. When you forget to take care of yourself. This is forgetting yourself,'' said Mr. Adenani at the time.

The doctor explained to Mr. Adenani that his leg would not recover and that the best treatment was to amputate it above the knee. Mr. Adenani had no choice but to agree to the operation, but was worried about how he would afford an artificial leg or how he could live and work without one.

But the operation weakened Mr. Adenani's body and his blood glucose level went out of control. The following morning just before sunrise Mr. Adenani died leaving two wives and six children.

Challenges in Tanzania

Tanzania is one of the poorest countries in the world with more than a third of its 45 million inhabitants living below the World Bank national poverty line. It is designated a country of low human development, with an average life expectancy of 58.2 years. Ten years ago, only a handful of diabetes clinics and services existed for the estimated 275,000 people living with diabetes in Tanzania at that particular time. Awareness of diabetes was almost non-existent and the

TANZANIA
FACTS

GENERAL DIABETES CARE

40,850
Patients treated at established clinics

290
Diabetes clinics established/strengthened

2,050
Health care professionals trained

400
Teachers educated in diabetes, nutrition and healthy lifestyles

200
Awareness/screening camps held

FOOT CARE

860
Health care professionals trained in diabetic foot care

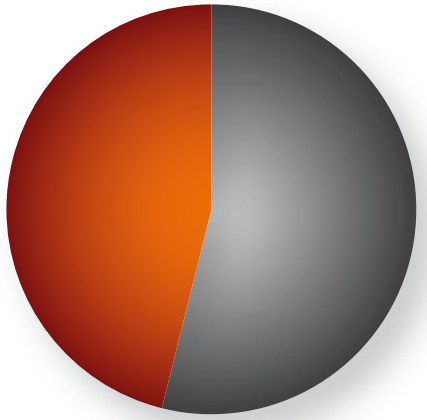
MATERNAL HEALTH

3,600
pregnant women screened for gestational diabetes

DISTRIBUTION OF FUNDING 2002-2011

WDF funding
46%
USD 4,587,898

Co-funding
54%
USD 5,464,213



supply of insulin was insufficient for those diagnosed with the disease. Following its establishment in 2002, one of the very first investments that the World Diabetes Foundation made was in a project to create diabetes clinics in Tanzania.

A decade of development

The first project supported by the World Diabetes Foundation in Tanzania set out to establish diabetes clinics at four regional hospitals to improve care at secondary level in regions which had no access at all to diabetes services. This proved so successful that all the remaining regional hospitals and four referral hospitals were subsequently included in the project. By the end of the first project in 2006, diabetes care at the regional level had been significantly strengthened and an important base was laid for expanding care to primary level in the districts. Two further projects focusing on four regions in the north western Lake Zone took diabetes care to district level with the establishment of over 100 diabetes clinics.

In addition to raising awareness of diabetes and improving prevention and access to diabetes care, further projects supported by the World Diabetes Foundation in Tanzania have focused on reducing the number of amputations by improving foot care or by training orthopaedic surgeons to perform limb-saving surgery instead of amputations. An eye project with the aim of reducing the burden of preventable vision impairment and blindness and improving access to diabetes care and prevention through the private health sector has been set in motion. Finally, an effort to reduce child morbidity has been made by supporting poor children living with type 1 diabetes (see page 192). To date, the World Diabetes Foundation has donated USD 4.59 million in support of projects in Tanzania.

Improving access to health care

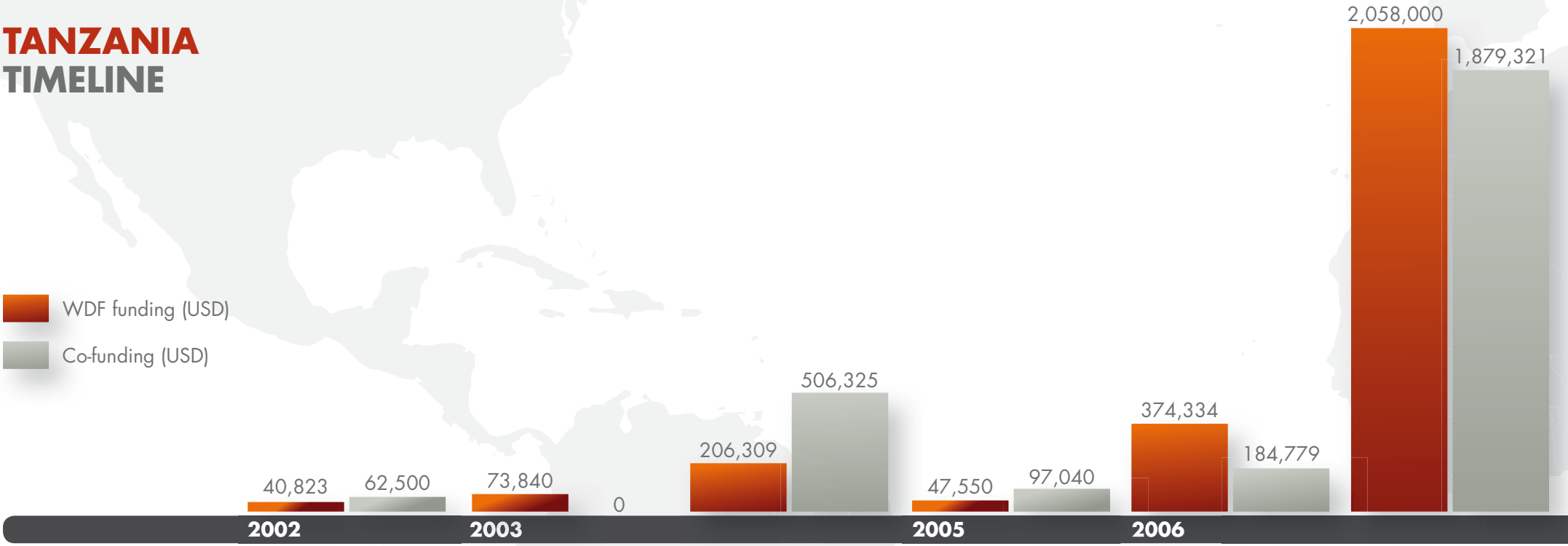
The results from all 13 projects in Tanzania have been encouraging. In total, 290 diabetes clinics have been established or strengthened throughout Tanzania with the support from the World Diabetes Foundation as well as from other donors (see page 118). The majority of these clinics were established through the Tanzania Diabetes Association and are run and sustained by the Ministry of Health & Social Welfare. Since many people in Tanzania access health services through the private health care system, the World Diabetes Foundation also supported the Association of Private Health Facilities in Tanzania to extend diabetes care through private health facilities, resulting in the creation of 79 privately run clinics.

Along with the establishment of clinics, health care professionals including doctors, nurses, ophthalmologists and surgeons have received training and teachers, people with diabetes and their families have been educated about diabetes, nutrition and exercise. In addition, the World Diabetes Foundation has supported the development of a diabetes education training manual and diabetes clinical practice guidelines for Sub-Saharan Africa and this material is being used in the clinics as an important toolkit for health care providers (see page 42).

The establishment of clinics and training of health care professionals has brought about a significant change in accessibility of basic minimal care. Dr. Kaushik Ramaiya, a Consultant Physician and Chief Executive Officer at Shree Hindu Mandal Hospital, Dar es Salaam, who is also the Honorary General Secretary of the Tanzania Diabetes Association and one of the key people behind many of the diabetes projects in Tanzania, believes that access has increased from approximately 30% of the population to more than 60%. This view is supported by Mr. Ramadhani Mongi, Vice-Chairman at the Tanzania Diabetes Association, who was diagnosed with diabetes in 1979. ''When I was diagnosed, most people did not even know the disease. I read about it in a paper and recognised all the symptoms. So, I walked into a hospital and asked if this could be me,'' he explains. For him the change in the last 10 years has been tremendous: ''In 2000 there was no specific area where a person with diabetes could go. Now we have hundreds of clinics and you will always find health staff who have been trained to diagnose and treat diabetes.''

Today, the country has a network of diabetes clinics in all regions of the country. These clinics diagnose and treat thousands of people with diabetes at primary, secondary and tertiary care level. Dr. Ramaiya firmly believes that the projects

TANZANIA
TIMELINE



2002

Improving Access to Diabetes Care. Support to Tanzania Diabetes Association 2003-2006. Establishment of diabetes clinics in regional hospitals.

2003

Diabetes foot care - Step-by-Step Support to Muhimbili University College of Health Science 2003-2008. Establishment of diabetic foot care in 14 regions.

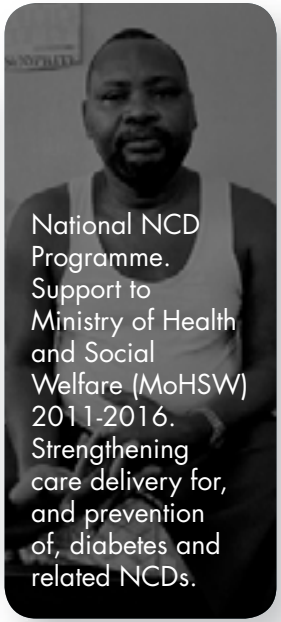
Diabetes and Hypertension Support to Tanzanian Ministry of Health 2004-2004. Establishment of diabetes clinics in Dar es Salaam.

2005

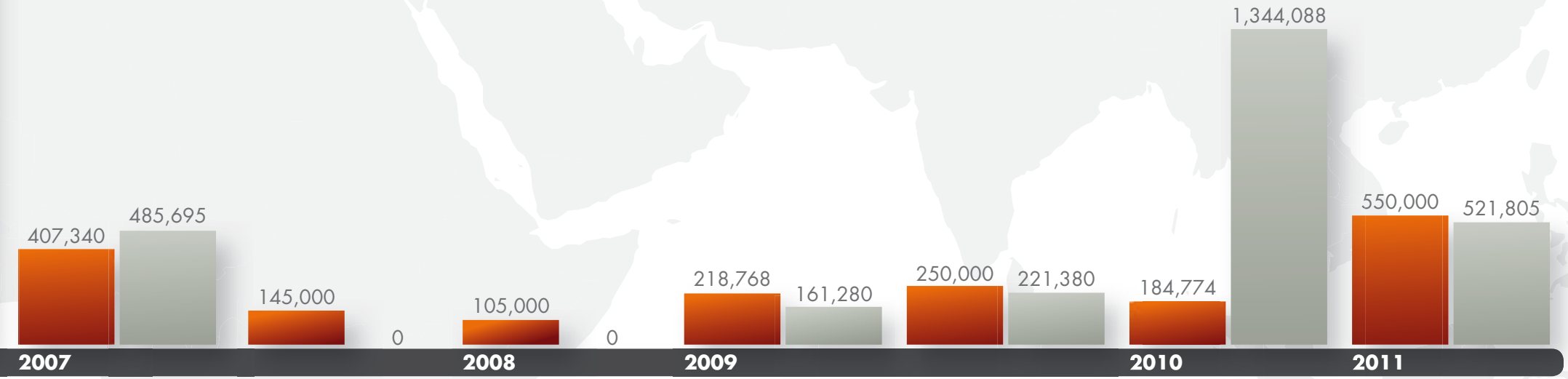
Strengthening referral system. Support to Tanzania Diabetes Association 2005-2009. Establishment of diabetes clinics in Mwanza Region.

2006

Diabetes care in the private sector. Support to The Association of Private Hospitals in Tanzania (APHFTA) 2007-2009. Establishment of diabetes clinics in the private health sector.



National NCD Programme. Support to Ministry of Health and Social Welfare (MoHSW) 2011-2016. Strengthening care delivery for, and prevention of, diabetes and related NCDs.



Diabetes awareness, care and referral in Lake Zone. Support to Tanzania Diabetes Association 2007-2012. Strengthening diabetes health care capacity.

DANIDA co-funds project in the Lake Zone.

A step ahead of Step-by-Step. Support to Muhimbili University College of Health Science 2008-2012. Establishment of diabetic foot care.

Training of orthopaedic surgeons. Support to Muhimbili University College of Health Science 2009-2011. Training to halve amputation rates among diabetic foot patients.

Improving diabetes eye care. Support to Muhimbili National Hospital 2010-2012. Improvement of diabetes eye care.

Community and school outreach. Support to The Association of Private Health Facilities in Tanzania (APHFTA) 2009-2012. Improving diabetes prevention through school programmes.

Changing Diabetes in Children. Support to Tanzania Diabetes Association 2011-2014. Improving management of children with type 1 diabetes.

NCD Support Programme, Zanzibar. Support to Ministry of Health Zanzibar 2012-2016. Strengthening delivery of care for, and prevention of, diabetes and related NCDs.

Launch of a national diabetes programme for Tanzania by the Ministry of Health & Social Welfare.

sponsored by the World Diabetes Foundation together brought diabetes on the national health care agenda and were therefore partly responsible for the launch in 2011 of a national diabetes programme for Tanzania by the Ministry of Health & Social Welfare.

The World Diabetes Foundation has most recently committed its support for the implementation of the diabetes component of the national strategy for non-communicable diseases (NCDs), an important programme that will bring about a greater focus on preventing other NCDs in Tanzania.

Dr Ramaiya says: ''I believe about 50% of people with diabetes have other NCD complications such as hypertension, dyslipidaemia, stroke, cancer and cardiovascular disease. The next round of training we conduct for health care professionals has to focus on these areas as well.''

Encouraging partnerships

The World Diabetes Foundation's strategy is to act as a catalyst and thereby motivate others to do more. The Foundation therefore seeks partnerships with established organisations in the areas of access to health, diabetes and development aid to build on existing structures and resources. The implementing partners for projects in Tanzania have been the Tanzania Diabetes Association, the Ministry of Health & Social Welfare, Muhimbili University of Health & Allied Sciences (MUHAS), Muhimbili National Hospital, the Abbas Medical Centre and the Association of Private Health Facilities in Tanzania. As a positive spin-off effect, other partners have engaged in diabetes care and helped ensure the long-term sustainability of the projects. For example, in the first project which established 38 clinics, four were initially supported by funds from the World Diabetes Foundation, an additional 19 clinics through the Foundation's fundraising programme, 12 clinics funded by Novo Nordisk and three clinics by a private donor from Italy. In addition, the Danish International Development Agency (DANIDA) was inspired to co-fund the regional projects in the Lake Zone.

The sustainability of the projects has been ensured by support from the Ministry of Health & Social Welfare, which is the formal partner for the World Diabetes Foundation on the national diabetes programme. The Tanzania Diabetes Association has worked with the Ministry of Health & Social Welfare from the beginning and hence is an integral partner of the Ministry's health care delivery system.

Nurturing the momentum

Tanzania is a good example of how the World Diabetes Foundation works to improve access to diabetes care in a sustainable and replicable way. ''Tanzania is a country in need and local champions such as Dr. Ramaiya took the initiative to formulate a project and apply to us for funding,'' explains Dr. Anil Kapur, Managing Director of the World Diabetes Foundation. ''The success of the first few projects had a number of positive side effects: it created greater confidence and willingness to take on bigger projects, it attracted other sources of funding and it encouraged further projects involving other local agencies. The projects all attracted government attention and support which ultimately created the motivation at the Ministry of Health & Social Welfare to establish a national diabetes programme.''

Going forward, Dr. Ramaiya acknowledges a number of challenges that still need to be addressed: ''Sustainability of training is an issue. After 2-3 years, about 50% of the staff we have trained have left the clinic or been transferred. We don't want the clinics to close when the trained personnel leave or to have clinics run by those not trained in diabetes care. We also need to ensure health care professionals are trained in antenatal clinics to educate expectant mothers about gestational diabetes. Another challenge we are facing are co-morbidities such as TB, HIV and AIDS, which have only been linked to diabetes in recent years. Finally, we must face the issue of medical supply, because there is little benefit to the patient if we have diabetes clinics but an inadequate amount of glucose monitors, oral hypoglycaemic tablets and insulin available to treat them.''

The suffering of people like Mr. Adenani motivates the World Diabetes Foundation to support projects that improve access to care in Tanzania and therefore the lives of people living with diabetes. Building access to health care for diabetes and NCDs in Tanzania remains a work in progress; the architects and builders are local and the basic foundations are strong – and the hope is that the system will be sustainable in the future.


2003
SHOPRITE

COUNTRY REVIEW OF INDONESIA

Spread over 1.9 million square kilometres including over 900 permanently inhabited islands, Indonesia is a vast archipelago with a population of 234 million speaking more than 300 local languages. Ensuring access to diabetes care for the estimated seven million people living with diabetes in such a geographically challenging country is therefore no easy task, but one which the World Diabetes Foundation enthusiastically supports.

Since 2006, eight projects supported by the World Diabetes Foundation have been initiated in Indonesia with the aim of building health care capacity to improve primary prevention and diabetes care in the country. The Indonesian Society of Endocrinology and the Indonesian Diabetes Association are involved in six of these projects. Together, the projects are expected to create momentous changes in access to diabetes care in a country where the current health care capacity is severely insufficient to provide care for the estimated 4.7% of the population living with diabetes.

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

Building primary care capacity

In Indonesia, district hospitals carry out most of the primary diabetes care. However, to reduce the strain on the hospitals to enable them to concentrate on more advanced care, health care capacity at primary health care centres (called puskesmas) must be improved. This will also result in the provision of a more comprehensive and continuous management of diabetes care for the

geographically dispersed population. In July 2006, the Indonesian Society of Endocrinology initiated a project in collaboration with the World Diabetes Foundation and the Ministry of Health to improve diabetes care delivery by training health care professionals in diabetes education and management. The project produced excellent results, with diabetes education being provided at significantly more hospitals and puskesmas by the end of the project in 2008 than before the project began.

Through a series of meetings with local health authorities, representatives from the Ministry of Health and more than a thousand health care professionals, the project also identified barriers and solutions for the successful implementation of a referral system between the puskesmas and the district hospitals. ''One of the barriers identified is that people served by the health coverage system catering for poor people or national health insurance can only get prescriptions for diabetes medicine for a maximum of 3 days at the puskesmas, compared to 10-14 days at 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,'' explains Dr. Pradana Soewondo from the Indonesian Society of Endocrinology. Following the meetings the Ministry of Health agreed to look into the possibility of amending regulations to address these issues.

Overall, the project was a success and the Ministry of Health 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 Society of Endocrinology chapters and gradually the methods will be implemented nationally, forming Indonesia's first national diabetes prevention and control programme,'' explains Dr. Soewondo.

Providing access in remote areas

In July 2008, the Indonesian Diabetes Association initiated a project with the objective of establishing a sustainable model for diabetes primary care in remote areas of the country. The project involved the establishment of three community-based diabetes management centres located on different islands in primary care centres and the training of 20 teams of health care professionals, to provide access to care for the estimated 6,000 people living with diabetes on these islands. During the project the prevalence of diabetes at one of the islands, Ternate Island, was identified among a survey group as being 19.6%. Each centre also carried out primary prevention of non-communicable diseases for the general population, including measurement of blood glucose and blood pressure, education on diet, physical activity and other related health topics.

''Through this project we were able to showcase that diabetes could be managed in a primary or public health centre. The role of primary or public health in the management of diabetes is imperative since the number of people with diabetes is too overwhelming to be managed by specialists alone. Before, many

INDONESIA FACTS

GENERAL DIABETES CARE

30
Diabetes clinics established/strengthened

750
Patients treated at established clinics

4,250
Health care professionals trained

FOOT CARE

12,000
Patients screened for diabetic foot

100
Health care professionals trained in diabetic foot care

1,050
Patients received treatment for foot complications

EYE CARE

2,550
Patients screened for diabetic retinopathy

60
Patients received sight saving treatment

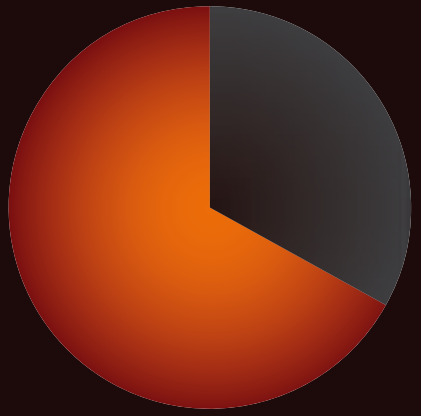
CHILD HEALTH

600
Children receiving treatment for type 1 diabetes

DISTRIBUTION OF FUNDING 2005-2011

WDF funding
67%
USD 2,206,515

Co-funding
33%
USD 1,090,920



primary and public health care physicians were hesitant to manage diabetes. The primary and public health centre is located within the community so by enabling them in diabetes management, the access to diabetes care is improved,'' reports Dr. Widyahening, from the Department of Community Medicine at the University of Indonesia.

A subsequent three-year project with the Indonesian Diabetes Association began in September 2011, aiming to educate nurses to manage care, education and empowerment of people with diabetes and their relatives. Following a comprehensive training programme, the trained diabetes nurses' main tasks will be to raise awareness, knowledge and self-care skills amongst people with diabetes and their families by implementing educational activities and improving access to diabetes information in hospitals and health care centres. Additionally, awareness activities will be conducted for the general public in order to increase knowledge of diabetes, promote early diagnosis of diabetes and create a platform for prevention of diabetes in future generations.

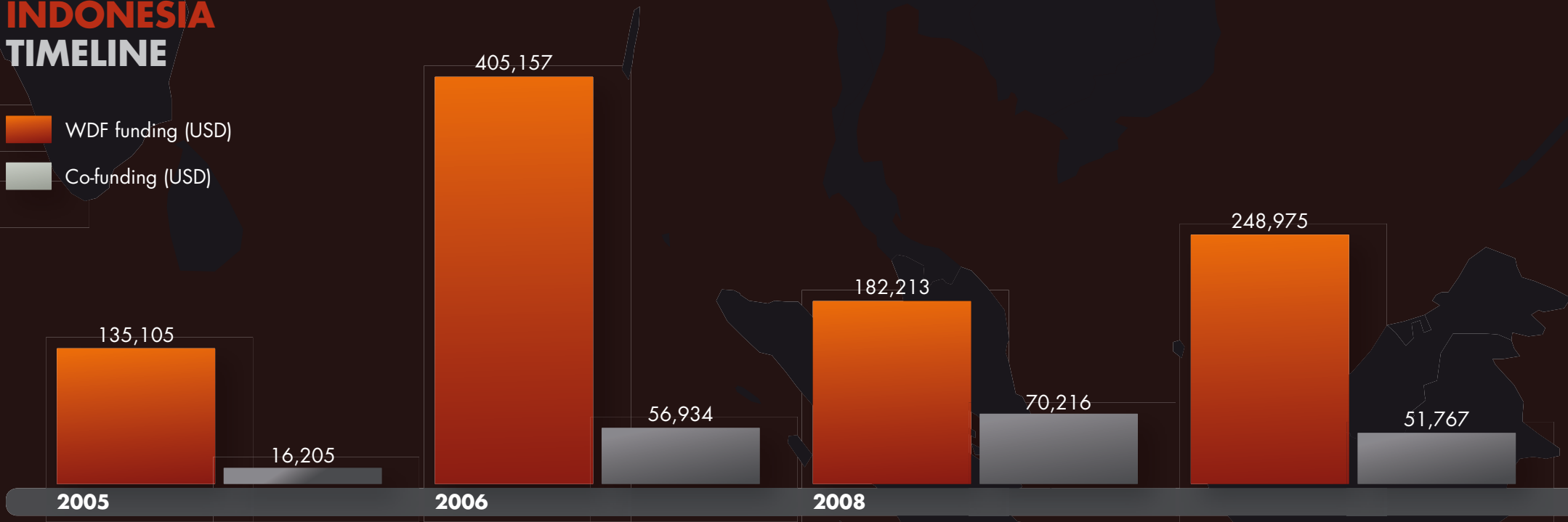
Furthermore, the Directorate of Non-Communicable Diseases (NCDs) and Control under the Ministry of Health has initiated an additional project, with the objective of reducing the prevalence of diabetes and other NCDs and associated risk factors through an integrated community-based approach. By the time this project is completed in 2013, it is expected that a local policy on prevention and control of diabetes and related NCDs will have been developed in addition to training many health care professionals in this issue and screening and educating thousands of people on risk factors.

Preventing blindness and amputations

In 2009, a project aiming to improve access to screening and treatment for diabetes-related eye complications saw the formal collaboration between the Indonesian Society of Endocrinology and the Indonesian Diabetes Association, with the non-profit organisation Helen Keller International, the University of Indonesia, the Rumah Sakit Cipto Mangunkusuno Hospital in Jakarta, the Indonesian Ophthalmology Association and an expert on diabetic retinopathy from the Dartmouth-Hitchcock Medical Centre in the US. The project will train health care professionals in the management and treatment of diabetic retinopathy, create awareness of this serious complication among people with diabetes and screen and treat people with this condition.

In Indonesia a major barrier for prevention of foot problems for people with diabetes is lack of trained staff. In 2008, only four hospitals had diabetic foot clinics to serve the millions of people living with diabetes. Following a project to strengthen capacity for foot care, an additional 14 advanced foot care centres have been established, 68 nurses and 40 interns from 28 provinces in Indonesia have undergone basic foot care training and consequently 8,000 patients have been screened.

INDONESIA TIMELINE

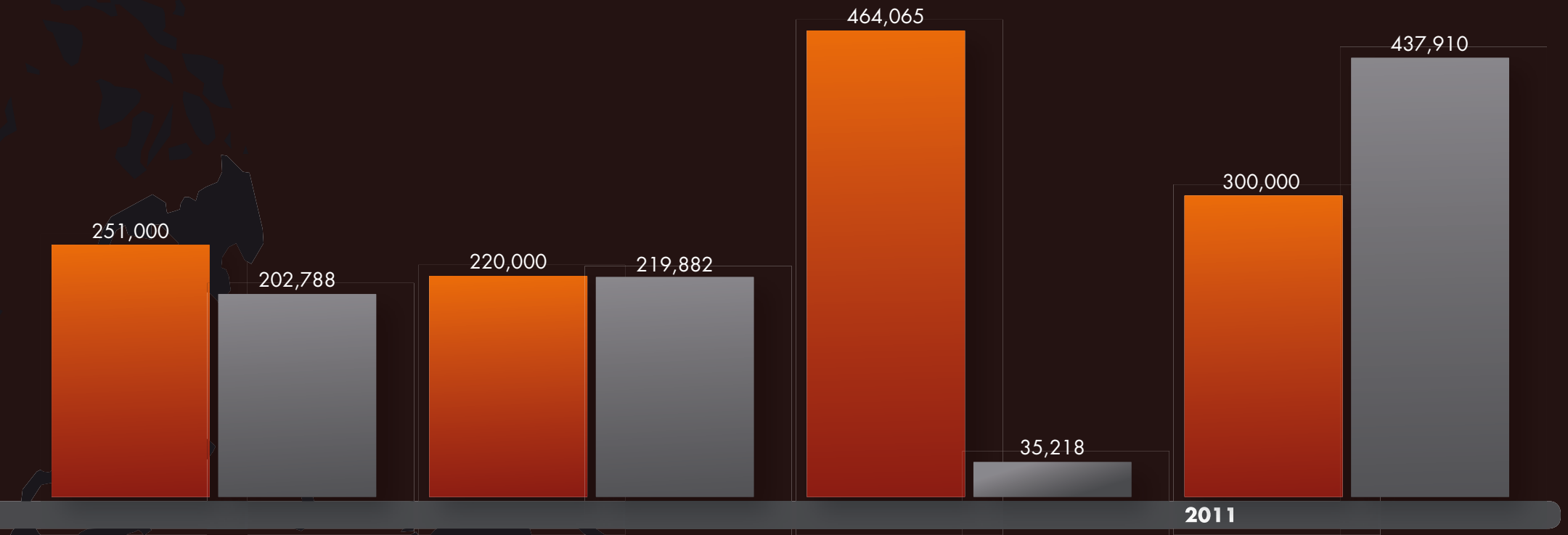


Diabetes education and prevention. Support to Yayasan Peduli Sesama 2005-2008. Training of health workers in rural areas.

Improving diabetes health care delivery. Support to Indonesian Society of Endocrinology (PERKENI) 2006-2008. Training of health care professionals in preventing, detecting and treating diabetes.

Primary health care. Support to Indonesian Diabetes Association (PERSADIA) 2008-2011. Establishment of community based diabetes centres on three islands.

Diabetes foot care. Support to Indonesian Society of Endocrinology (PERKENI) 2008-2011. Capacity building for diabetic foot care.



Prevention and control of diabetes. Support to Ministry of Health, Directorate of NCD Control 2010-2013. Devolopment of a local policy on prevention and control of diabetes and related NCDs.

Diabetic retinopathy training and treatment. Support to Helen Keller International 2009-2012. Improved access to screening and treatment of diabetic retinopathy.

Integrated and comprehensive management of type 1 diabetes. Support to Indonesian Paediatric Society 2008-2011. Establishment of comprehensive management of type 1 diabetes in children.

Diabetes nurses. Support to Indonesian Diabetes Association (PERSADIA) 2011-2014. Training of nurses in diabetes care.

Putting the spotlight on type 1 diabetes

Due to lack of awareness many children with type 1 diabetes die in Indonesia without ever being diagnosed with the disease. The prevalence of type 1 diabetes in the country is therefore not known but as the population consists of more than 80 million children the number with type 1 diabetes is anticipated to be substantial. Knowledge of type 1 diabetes and its management remains poor both among the general population and health care professionals within the country. A project initiated in 2008 by the Indonesian Paediatric Society with support from the Indonesian Society of Endocrinology, the Indonesian Association of Diabetes Educators and the Ministry of Health, aims to change this by raising awareness among the general population and health care professionals and establishing comprehensive management guidelines for type 1 diabetes. Due to an extensive focus on raising awareness to give the general population a better knowledge about type 1 diabetes and to involve health authorities and decision makers, more than two million people have been reached and 377 paediatricians and 58 nurses have been trained. In addition, over 600 children with diabetes have already started to receive care along with more than 150 families who have received training.

Prioritising diabetes care

The realisation of the economic as well as health burden of diabetes, as a result of advocacy from the various projects, has helped create a sense of urgency in Indonesia. In addition, the strengthening of local health care capacity, one part of the project's initiative has provided an incentive for the government of Indonesia to prioritise prevention of chronic diseases, including diabetes. ''The contribution of the World Diabetes Foundation projects is especially improving the awareness of local government about the diabetes burden in their respective areas and is improving the capacity in managing diabetes in several project sites,'' says Dr. Widyahening.

In 2006, the 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.

''Until now, the main strategy of the government is targeted to primary prevention of NCDs at the population level. They have a programme for early detection and community empowerment which is still being piloted in several areas, but they don't have a specific programme for continuous management of people who already have NCDs, including diabetes,'' says Dr. Widyahening. ''In the future I would like to see that all the primary health care providers have the capabilities to manage diabetes properly, including the ability to provide continuous medications for people with diabetes, and that people's awareness of diabetes is as good as their awareness of heart diseases,'' she concludes.

COUNTRY REVIEW OF CHINA

Until just over a decade and half ago, type 2 diabetes seemed rare in China. But now the country is facing an unprecedented health challenge caused by the explosive growth in diabetes. Recent research suggests that almost one in ten adults have the disease and most cases remain undiagnosed. A series of projects supported by the World Diabetes Foundation aim to help China tackle its unenviable position as the country with the most cases of diabetes in the world.

China is the world's most populous country, with an estimated 1.35 billion inhabitants. With the world's fastest-growing economy, China has experienced fast economic and epidemiological transitions and is still faced with a large economic disparity between urban and rural areas. Such rapid economic growth has affected public health through urbanisation, changed diets and more sedentary lifestyles. It was not so long ago that people in China did not have enough to eat and what they did eat was a healthy diet of vegetables, rice and soya. However, as the standard of living improves this traditional diet has been eroded in favour of an abundance of calorie-dense fat and meat-rich food, leading to growing obesity rates. It is thought that one in every five people in China is either overweight or obese.

Research published in the *New England Journal of Medicine* in March 2010 suggests that China is now estimated to have more than 90 million people living with diabetes, with nearly 150 million more with pre-diabetes – a condition associated with very high future risk of diabetes.

A health care system under pressure

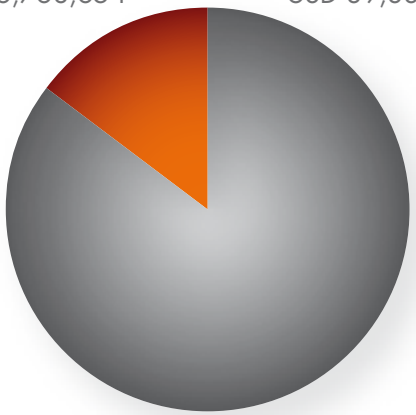
This burden of diabetes has hit a country which is already struggling to provide access to health care to the high numbers of people living in China. The health care system, particularly in urban areas, is almost entirely hospital-based and people with minor illnesses prefer to be seen by doctors in hospitals rather than by community-based general practitioners, whose qualifications and professional competence are considered insufficient because of lack of training.

CHINA FACTS

DISTRIBUTION OF FUNDING 2002-2011

WDF funding
15%
USD 6,768,654

Co-funding
85%
USD 39,337,460



GENERAL DIABETES CARE

1,250
Diabetes clinics established/strengthened

25,750
Health care professionals trained

92,350
Patients treated at established clinics

AWARENESS RAISING ACTIVITIES

920
Awareness/screening camps held

3.3 million
People reached through awareness/screening camps

DIABETES & TUBERCULOSIS

4,600 Health care professionals trained in bidirectional screening

4,400
People with TB screened for diabetes

FOOT CARE

950 Health care professionals trained in diabetic foot care

2,400
Patients screened for diabetic foot

600
Feet saved through treatment

MATERNAL HEALTH

268
Gestational diabetes centres established/strengthened

26,450
Pregnant women screened for gestational diabetes

Moreover, the existing health financing system is also heavily biased towards hospital-based care. Although community-based primary care services are widely available, they have traditionally focused on infectious diseases, immunisation and disease surveillance and have failed to function as referral gatekeepers providing routine day-to-day care for common and chronic conditions. It is common for doctors in hospitals to see large numbers of patients each day with little time to give advice on diet, physical activity and treatment compliance, all of which are crucial for optimal diabetes care.

In such a setting and with diabetes previously so rare in China, it is therefore not surprising that diabetes care is limited, with a shortage of health care professionals qualified in diabetes care. In 2004 a national diabetes programme, implemented by the Ministry of Health in China in collaboration with the Chinese Diabetes Society and supported by the World Diabetes Foundation, was launched to improve health care capacity to prevent, detect and treat diabetes. An expert group developed the National Diabetes Prevention and Treatment Guideline to standardise clinical practice in managing diabetes in different regions and at different levels. By the end of the project almost 12,000 doctors, nurses and health officials from more than 50 cities were trained in implementing the guidelines.

Focus on community health centres

The national diabetes programme also aimed to establish a diabetes management model for different levels of care, integrating hospital and community health services into one system. Managed indirectly by the Ministry of Health, the programme proved that diabetes care was possible at the community health centre level although several barriers were identified: the need for staff training, developing referral mechanisms, collaboration between hospitals and community health centres and, most importantly, addressing the financing mechanisms.

Recently, the Chinese government passed a health care reform bill to address some of these barriers and to increase the capacity of the community level health care system to reduce pressure on hospitals. ''It is most likely that these reforms would have happened without this programme, but the programme certainly helped accelerate the learning process to policy formulation,'' says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

The Ministry of Health, again supported by the World Diabetes Foundation, is aiming to improve the quality of care at the community health centre level by training health care professionals as trainers who will continue to train doctors and nurses from over 1,000 community health centres, by the project's end in 2013. Provincial and city governments supported through this project must then roll out training and treatment and prevention protocols. This approach ensures that ownership of the training is anchored at the local level and is therefore sustainable and can be replicated in the future.

It is the aim that, together with the restructuring of the health system through the health reform, this project will help to reduce the hospitals' workload, which will enable doctors to concentrate on more specialised treatment – for the benefit of the entire health system in China.

Awareness barrier

As diabetes was almost unheard of in China until relatively recently, awareness of this condition is low. Two ambitious projects in Qingdao, supported by the World Diabetes Foundation and run by the Qingdao Municipal Health Administration Bureau, focus on the whole population and those at high risk of developing diabetes.

While the concept of preventing or delaying type 2 diabetes has been proven to be effective under clinical trial settings in small population groups, the feasibility and cost-effectiveness of up-scaling to a huge population is being attempted for the first time in these projects. To this end, approximately 1.2 million people were screened using a validated Chinese diabetes risk score developed for the project, and those found to be at risk have been offered more intensive lifestyle counselling sessions. ''Making persons at risk of developing diabetes understand the consequences of diabetes is the best motivation for them to try to avoid it. If we can postpone or even avoid that people develop diabetes, we gradually accomplish our goal of reducing the burden both for the individual as well as for the entire health care system,'' explains Dr. Lingzhi Kong, Deputy Director General of the Bureau of Disease Control from the Chinese Ministry of Health.

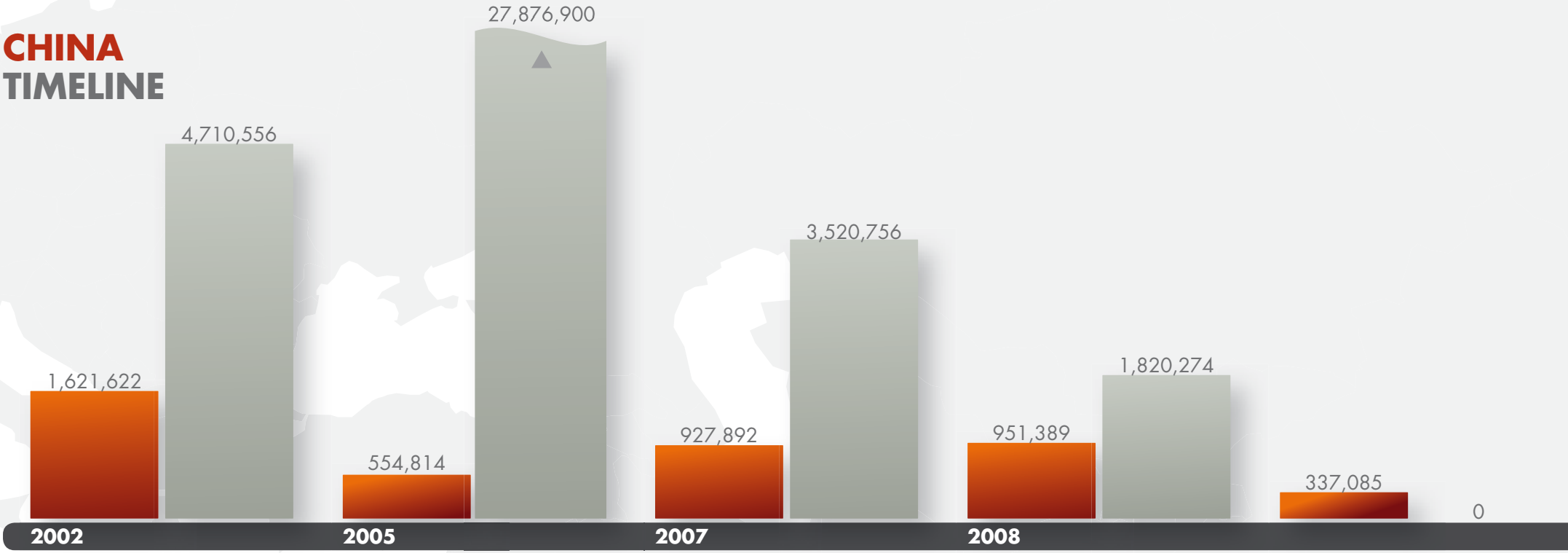
To raise awareness among the general population, during the course of the projects a comprehensive booklet providing information about diabetes was produced and distributed to over 500,000 households and over 30 articles were published in Qingdao Morning, the most popular newspaper in the area. For over 3 years the Qingdao People's Radio broadcast a daily 30-minute programme on diabetes-related health promotion to raise awareness. It is estimated that almost two million people have been reached through awareness campaigns such as these.

The dual burden of diabetes and tuberculosis

China accounts for almost 17% of the world's tuberculosis (TB) burden with an estimated 1.5 million new cases and 270,000 deaths each year. The link between diabetes and TB (see page 230) is therefore of growing concern for China. Two projects supported by the World Diabetes Foundation aim to bring attention to the dual burden and implement bi-directional screening for diabetes and TB and improve the treatment of patients with both diseases by training health care professionals and developing protocols and guidelines. One project, in collaboration with the Qingdao University and Centres for Disease Control (CDC), is screening over 7,000 people in both Shandong and Gansu with and without tuberculosis to estimate the additional burden of diabetes amongst people with TB. At the same time, health care professionals are being trained and awareness is being raised in the communities about the dual burden of diabetes and TB.

Another project, organised by the International Union Against Tuberculosis and Lung Disease, in collaboration with the Bureau of Disease control and prevention at the Ministry of Health, Chinese National TB Programme, and the Chinese Diabetes Association, will train health care professionals in bi-directional screening and care provision. The ultimate aim is to use the project's results to influence national practice and policy to make bi-directional screening and care a routine part of diabetes and TB programmes, so that earlier detection of co-morbidities will be possible, leading to better health outcomes as well as less risk of TB transmission.

CHINA TIMELINE



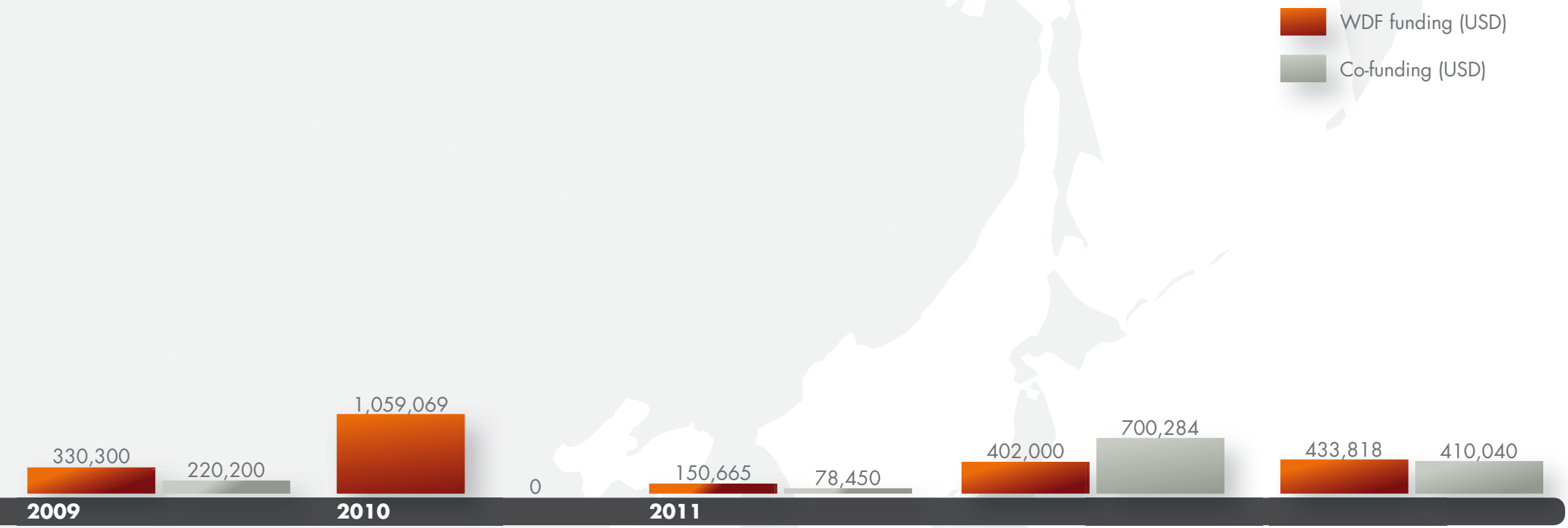
National diabetes programme. Support to Ministry of Health 2004-2010. Training of more than 10,000 health care providers.

Qingdao diabetes prevention programme. Support to Qingdao Municipal Health Administrative Bureau 2005-2010. Strengthening of 802 primary care clinics.

Qingdao prevention project II. Support to Qingdao Municipal Health Administration Bureau and the University of Helsinki 2008-2014. Health promotion for 1.9 million people from the general public.

Diabetes education at community hospital level. Support to Ministry of Health 2009-2013. Capacity building at 1,025 community hospitals.

Screening for diabetes in TB patients. Support to School of Public Health, Qingdao University 2009-2012. Improvement of treatment of patients with both TB and diabetes.



National chronic wound care training. Support to Chinese Tissue Repair Centre (CTRC) 2010-2014. Improvement of diabetic foot care.

Gestational diabetes centres. Support to Peking University First Hospital 2010-2013. Establishment of 45 gestational diabetes centres.

Diabetes and TB: bidirectional screening. Support to International Union Against Tuberculosis and Lung Disease 2011-2013. Implementing bi-directional screening of TB and diabetes in selected health centres.

Management programme for children with diabetes. Support to Tongji Hospital 2011-2015. Improving quality of care for children with diabetes.

School-based health promotion programme. Support to Chinese Young Volunteers Association 2012-2015. Health promotion in 45 schools in nine cities.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Attention to wound care
The Chinese Tissue Repair Society (CTRS) is implementing a project on chronic wound care, with focus on diabetic foot ulcers, with support from the World Diabetes Foundation and co-support from the Access to Health Program of Coloplast A/S. Apart from ignorance among people with diabetes, poor management of wounds and foot ulcers by health care professionals with limited knowledge of proper wound care techniques often leads to chronic wounds and ultimately lower limb amputations, which require prolonged hospitalisation at high costs. Training of health care professionals at the primary care level in wound care is scarce and therefore many do not have the necessary knowledge and training in foot care. This project aims to address the urgent need to educate doctors, nurses and surgeons in this area.

Looking to future generations
In addition to educating people on a healthy lifestyle to prevent diabetes, another route to reducing the diabetes epidemic in China is to tackle the issue of gestational diabetes, which in the long-term increases the risk of both mother and child developing diabetes (see page 162). A project implemented by the Peking University First Hospital in collaboration with the Chinese Medical Association Perinatology branch and Bureau of Hospital Administration at the Ministry of Health aims to raise awareness of this condition, and establish gestational diabetes centres. In addition, the project aims at training health care professionals, screening and educating women at high-risk of gestational diabetes and ensuring quality of treatment and follow-up for patients.

Another project with the Tongji University, Wuhan, the Chinese Medical Association Paediatric Endocrinology and Metabolism branch and the Bureau of Hospital Administration of the Ministry of Health will set up 26 specialised centres in 20 cities to provide care and self-care education for children with type 1 diabetes and their families, as well as train paediatricians to ensure better care and quality of life for these children. In addition, the project will plant the seeds for a type 1 diabetes registry in China.

Rising levels of obesity and type 2 diabetes amongst the young is an important issue in China. In a recently launched project, the Chinese Young Volunteers Association, Central Committee of the Communist Youth League, with support from the World Diabetes Foundation, will initiate a school-based health promotion programme in 45 schools in nine cities in China where students, teachers and volunteers from the Communist Youth league and Volunteers Association will be involved to build a foundation for a lifelong healthy life. It is expected that the results from this project will be used to further expand the initiative.

A systematic approach to prevention
In order to have any real hope of changing China's status as the country with the most cases of diabetes in the world, it is imperative that the continuing rise in the number of people developing diabetes in China is halted. However, this means addressing many challenges: ''We are not only dealing with severe changes in lifestyle in comparison to the traditional Chinese lifestyle; we are also looking at an incomplete health security system that lacks both service and capacity. And we are dealing with a low level of awareness of managing diabetes both among health care personnel and patients,'' explains Dr. Kong. The projects supported by the World Diabetes Foundation in China will therefore continue to address these challenges in a systematic and comprehensive way, by addressing and supporting policy changes, raising awareness and creating learning.

ONE PERSON CAN MAKE A DIFFERENCE

It is estimated that one billion people never see a health worker throughout their entire lives. Geography can make travelling to the nearest hospital or clinic a lengthy and expensive journey. Community outreach initiatives therefore make a huge difference to those who would otherwise go without health care.

Being part of the solution

Health workers represent the very foundation of health systems. The shortage of health workers is unanimously accepted as one of the key constraints to the provision of essential, life-saving interventions. The World Health Report 2006 argued that community health workers have the potential to be part of the solution to the human resource crisis affecting many countries[1].

Education, prevention and care for chronic diseases such as diabetes need to take place in the local community to successfully overcome the geographical barrier of access to health care. Community outreach can take many different forms, some of which can be low-cost – an important fact for resource-starved areas. For example, the provision of bicycles to health workers, so enabling them to visit patients in their own homes is making a difference in Tanzania (see page 117). Radio listening clubs and traditional dances have been educating people in Malawi (see page 66). Mobile eye and foot clinics are diagnosing and treating patients in remote areas (see page 85).

Dedication on the ground

However, most community outreach initiatives rely on at least one dedicated local community health care professional to be successful. Community health workers play a significant role in community outreach initiatives. Without such people on the ground in rural areas, many people would never see a health care professional.

For community outreach projects to be successful in the long-term it is vital that they are sustainable. The projects the World Diabetes Foundation supports in this area rely on encouraging and engaging the individuals involved, creating local ownership and building local capacity. The Foundation believes that such community outreach initiatives are crucial in the fight against non-communicable diseases such as diabetes at the grassroots level. In the following, we provide snapshots from around the world where the World Diabetes Foundation has supported community outreach programmes.

[1] *WHO & Global Health Workforce Alliance, 2010. Global Experience of Community Health Workers for Delivery of Health Related MDGs. Preface.*

MALDIVES: OBLIGED TO TRAIN BY CONTRACT

On the small island of Huraa, 1 hour's sail from Male, there is one primary level health centre which provides service to the total island population of around 900 people. The health centre is staffed by a nurse and occasionally by a general practitioner. The nurse, Ms. Aishath Shaany, has been trained in diabetes and upon return from training she has carried out screenings which has led to the identification of 20 new diabetes cases. These newly identified people attend the clinic on a regular basis.

One of the islanders, Ms. Rasheeda Mohamed was diagnosed with diabetes in 2002. During the first 8 years after she was diagnosed she had to travel to Male every 2 months for controls and examinations. But the situation has improved. Thanks to the improved capacity in the island health centre, she is now able to receive diabetes care locally.

Like Ms. Rasheeda, many people in developing countries have to travel great distances to the nearest hospital or clinic which makes seeing a health worker extremely problematic. Such a journey can also be risky if the area is experiencing civil unrest. In addition, for people paying for health care out of their own pocket, the added expense of travel may make accessing health services impossible.

The Maldivian project has a novel way of approaching the issue of retaining health workers' skills and knowledge. In order to address the likely exodus of health workers, the trained educators sign a contract which specifies that if they relocate, they are obliged to train their successor in basic diabetes care prior to their departure. In this way, the skills are not lost from the local community, but are passed on to the next health worker.

Ms. Aishath is one of 200 community health workers to be trained in diabetes under the World Diabetes Foundation-supported project in the Maldives.

CAMBODIA: PEER EDUCATION

Diabetes management does not necessarily have to depend only on health care professionals to educate patients in self-management. Rather, it takes insight, empathy, patience and follow-up, and this can be achieved by identifying and training patients or other people within the local community. The work of a peer educator encompasses identifying patients and educating them on how to self-manage their diabetes. Peer educators are able to build trust with local people as they themselves are from the same community.

In Cambodia, the World Diabetes Foundation is supporting a project which has already trained 42 peer educators in basic diabetes management. One of these is Ms. Mith Vannav, who prior to her training had left her job as a school teacher due to ill-health from her poorly controlled diabetes. Today, Ms. Mith is not only back teaching, she is also helping many other people in her local community by diagnosing their diabetes and educating patients on how to live well with diabetes.

Ms. Mith is one of 71 diabetes peer educators to be trained under the World Diabetes Foundation-supported project in Cambodia.

BRAZIL: TRUSTWORTHY COMMUNITY HEALTH WORKER

Ms. Maura Lucia Mendes is a community health worker in the Nova Esperança neighbourhood in Brazil's Minas Gerais state. ''As a community health worker I must live in the neighbourhood where I work. For my part, I cover three streets including 153 houses and 571 individuals. Because people trust the community health worker and see me as 'one of their own', my position is a powerful one,'' Ms. Maura states.

''In the morning, I am at the health care centre; the rest of the day I am with people in the community doing home visits. I love the contact with people - I feel like part of the family. In my community diabetes begins to be a problem due to bad food habits. Due to poverty some people cannot afford to buy good food and instead they eat what is bad for their health.''

Ms. Maura works from the Milton Almeida Boren basic health unit and she makes 510 Reais a month (USD 275). Over the last 3 years, she has received training in diabetes once a month at the primary health care centre in Janaúba. This has improved her skills in terms of giving adequate medicine and in terms of communicating more clearly to the patients so that they also understand the message. ''In my area, I have 11 diabetes patients; only two of them are illiterate and this of course hampers the control and monitoring of the disease. But in such cases, we work with family members who do a fantastic job in looking after their relatives,'' she says.

Ms. Maura is one of more than 5,000 community health workers who have been trained in primary diabetes care and community mobilisation under Brazil's unfolding family health strategy. The World Diabetes Foundation has supported this countrywide project via Brazil's National Federation of Diabetes Associations & Entities, FENAD.


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THE PEER PROGRAMME

The World Diabetes Foundation Peer programme is helping to develop the skills of health care professionals through training placements at centres of excellence in a South-South collaboration.

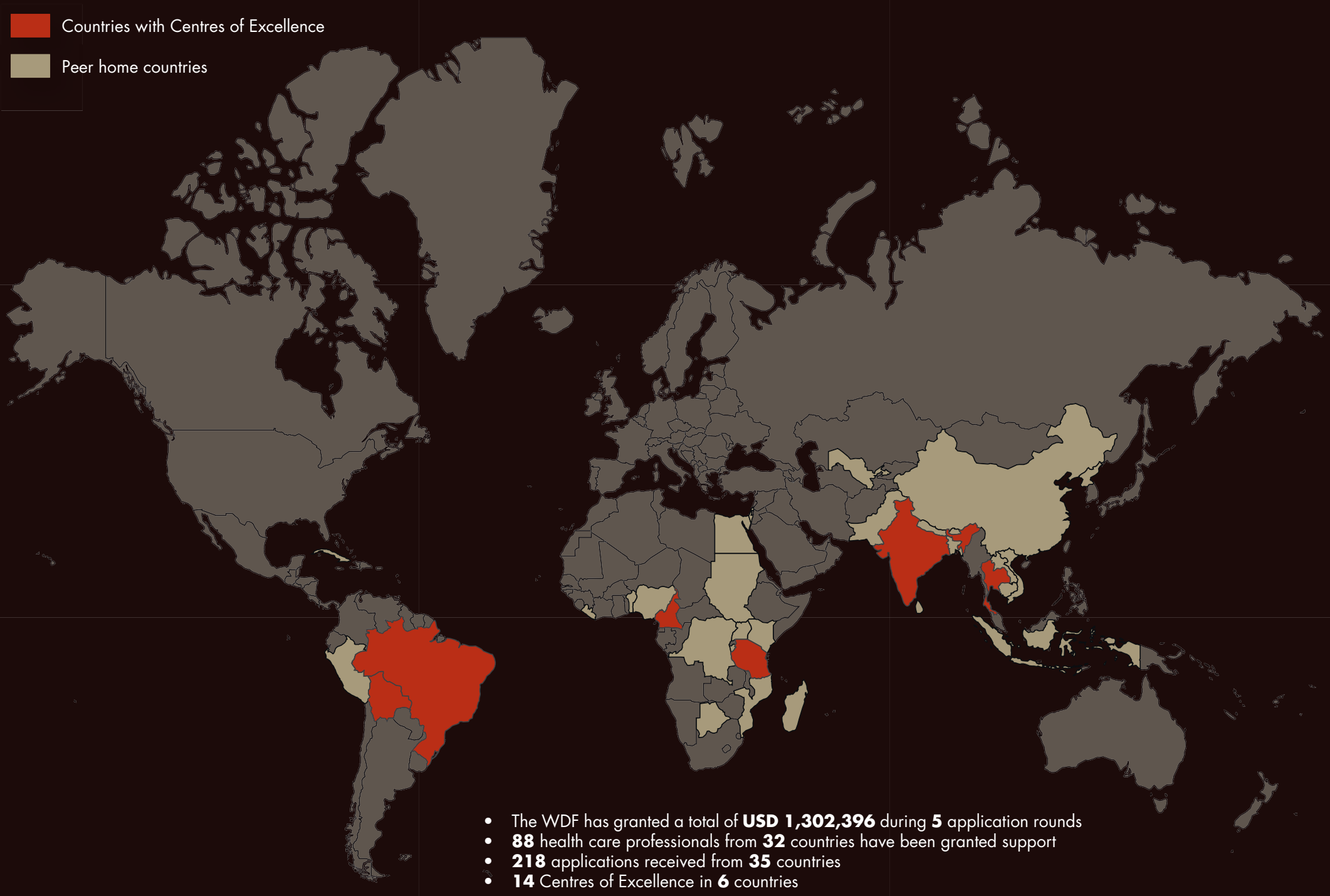
Launched in 2008, the objective of the Peer programme is to support the development skills of health care professionals who are actively involved in on-going World Diabetes Foundation projects from countries with inadequate diabetes care and to share knowledge and best practice. In this way, gaps in knowledge are addressed, expertise is strengthened, ideas and approaches are exchanged and a network of the Foundation's partners is created.

Health care professionals who participate in the Peer programme receive funding to stay with a partner organisation which has been deemed a centre of excellence by the World Diabetes Foundation. On completion of the training, the participants share their newly acquired knowledge and experience with their colleagues with the aim of improving the outcome of the on-going projects, helping to develop younger leadership and ultimately improving the quality of diabetes care in the countries in which they work.

Focused training

Once a year, the World Diabetes Foundation contacts partners from current projects to invite applications for the Peer programme. Partners can nominate candidates from their organisation who will benefit from training in a specific area, such as primary prevention, foot or eye care or gestational diabetes.

Successful applicants are selected by the Foundation's Board of Directors based on future relevance and applicability of the training for the project on



- The WDF has granted a total of **USD 1,302,396** during **5** application rounds
- **88** health care professionals from **32** countries have been granted support
- **218** applications received from **35** countries
- **14** Centres of Excellence in **6** countries

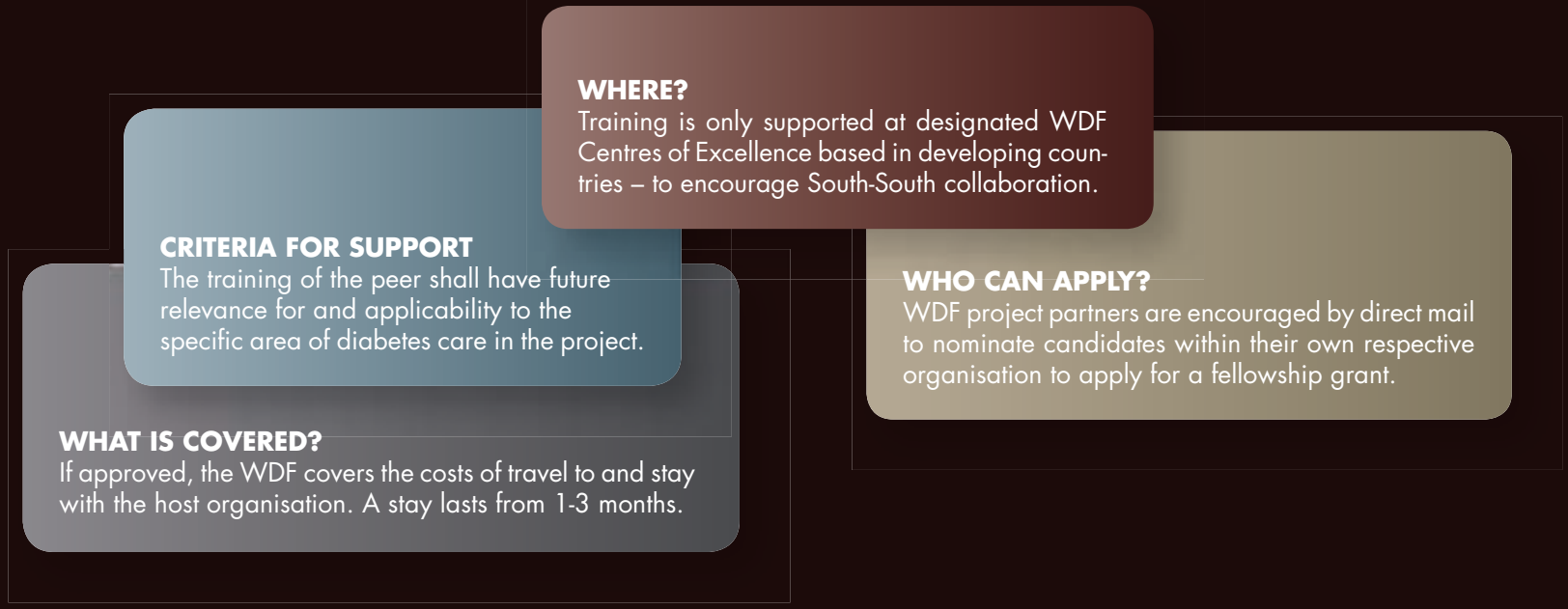
which they are working. Those selected receive a fellowship grant to cover the cost of travel, accommodation and other living expenses while they attend the training at the centre of excellence.

To date, 218 applications have been received from 35 different countries. Of these, 88 health care professionals have been selected for the programme, including doctors, nurses, midwives, diabetes educators, clinical officers and administrators, from 25 countries including Cambodia, DPR Korea, Nepal, Tanzania and Uganda.

Dr. Faraja Chiwanga, who works at Muhimbili National Hospital in Dar es Salaam, Tanzania, was a successful applicant from the 2010 candidates. A specialist physician, Dr. Chiwanga was particularly interested in diabetic foot complications and in September 2010 she went to Dr. Mohan's Diabetes Specialities Centre in Chennai, India, for a training period lasting 3 months. ''I wanted to learn about preventive strategies for diabetes complications - especially foot complications. Already in the second week of my stay the schedule was entirely focused on foot care, as I had wished for in my application. I attended surgical dressings and foot surgeries in the operation theatre,'' explains Dr. Chiwanga. ''Another aspect that I was particularly happy about was the effort made to recognize the high risk group and offer a more focused diabetic education. For example if both parents are attending the clinic they make an effort to ask about their children and educate them on factors that may increase their risk of getting diabetes especially at a young age. They are also conducting research activities to assess the quality of carbohydrates consumed in order to raise awareness of the choice of carbohydrates for example white rice versus brown rice, so I learned about looking for the glycaemic index of local food substances. All these and many more activities gave me ideas on what I can implement in my home institution.''

South-South collaboration

Dr. Mohan's Diabetes Specialities Centre in India is one of 14 centres of excellence from 6 countries including Cameroon, Tanzania, Thailand, Bolivia, Brazil and India. The centres of excellence are all located in World Diabetes Foundation project countries and to ensure that capacity building is a South-South collaboration. ''When for example people from Tanzania visit a centre in India and see what this centre has achieved despite similar socio-economic and infrastructure problems, they feel inspired that they can also make a difference. In contrast, when they go to a developed country they come back with the feeling that things can only be done if you have a high-level of support and infrastruc-



ture. It fails to build the same level of motivation,'' explains Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

Institutions are either invited by the World Diabetes Foundation to become centres of excellence or they may apply independently, in which case the Foundation's Board of Directors decides whether they meet the criteria to become Centres of Excellence for the Peer programme. Each centre has a number of selected focus areas for training depending on their specialities.

''We have been associated with the Peer programme right from its inception,'' says Dr. Mohan. ''It has been a mutually rewarding experience as we get to meet people from across the world and to learn about the diabetes practice in their own countries. For the peers it is an excellent opportunity not only to learn about diabetes and its management from our centre but also to learn about the Indian culture. Overall the programme is a grand success and one of its kind and we wish to congratulate the World Diabetes Foundation for their vision in creating the Peer programme.''

Implementing changes

According to a survey carried out by the World Diabetes Foundation in 2010, 80% of partner organisations say they have benefited from the peer training while 70% say they have adopted new procedures within their organisations following the training. ''I have improved and updated my clinical practice based on the experience that I got - for example, I make sure that I look for complications and provide education based on the risk that patients are presenting with,'' says Dr. Chiwanga following her training. ''At institution level, I am working with my colleagues in the Diabetes and Endocrinology unit to improve the structure of the clinic so that we can add activities that were lacking. I have started with proposing to establish a foot care clinic and I have prepared a plan on how to conduct the clinic including screening schedules and educational activities. I am also involved in research activities that look at unrefined carbohydrate diets as opposed to the more popular refined carbohydrate diets that have a much higher GI and therefore increase the risk of developing diabetes.''

Dr. Chiwanga would recommend the Peer programme to other health care professionals: ''The programme provides an opportunity to gain experience from other centres and to see what can be applied in your own centre. In many developing countries formal courses on diabetes are not offered and it may be difficult to have the means to take such a course in another country. Therefore the Peer programme provides an excellent opportunity to improve diabetes care.''

MOTHERS AND DIABETES

"Traditionally, our focus was the high maternal mortality ratio in low resource countries and measures to reduce the burden. NCDs are the leading causes of death in women accounting for an estimated 18 million deaths. Likewise, diabetes, obesity, and under nutrition are responsible for maternal conditions that have an important impact on maternal mortality. The close link between child and maternal health and the importance of early life origins of NCDs requires that preventive and health care interventions related to such diseases to be integrated into reproductive, maternal and child health programmes, especially at the primary care level.

The field of NCD does not focus on maternal health and has not established a place for itself in the push for greater attention paid to NCDs. We now have a unique opportunity for bringing about a change that can have a momentous impact on future generations. We therefore value the partnership with the World Diabetes Foundation to build advocacy and strengthen capacity in the area of diabetes and maternal and child health."

Dr. Gamal I. Serour,
President, the International Federation of Gynaecology and Obstetrics; 2009-2012

and **Dr. Luis Cabero Roura,**
Chair of the FIGO committee for capacity building in education and training.

MOTHERS AND DIABETES

CASE STORY: BORN WITH COMPLICATIONS

Chennai, India, 2005. A two month old boy is jumping on his mother's lap, while his father holds his tiny hands. The boy is out of the ordinary, not only to his parents, but also from a medical perspective. Several of his fingers and toes are joined together, his left foot has six toes of which three are joined, and he has a 'malformed nasal bridge'. These malformations may have developed because his mother suffered from untreated gestational diabetes during her pregnancy.

WORKING TO IMPROVE MATERNAL AND CHILD HEALTH

Gestational diabetes is a major health problem which poses a threat to pregnant women and their babies and also has consequences for the future risk of diabetes in both. Projects funded by the World Diabetes Foundation are trying to prove that short-term interventions can have long-term and multi-generational benefits.

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, which meant she was screened as part of her antenatal care. For most women with gestational diabetes a healthy diet and increased physical activity is enough to reduce blood sugar levels and therefore the health risk to mother and baby. However, Flory was actually one of the 5-10% of women who need medical treatment and was prescribed insulin. Two months later Flory gave birth to a healthy girl. In the majority of cases gestational diabetes disappears following the birth of the baby, but unfortunately for Flory, her diabetes remained and she is now on oral treatment.

Most women in developing countries do not have the opportunity Flory had. Many suffer from undetected gestational diabetes causing complications during pregnancy and birth and long-term health issues for themselves and their children.

Diabetes in pregnancy

There are two forms of diabetes in pregnancy: pre-gestational diabetes occurs in women who have diabetes before they become pregnant and gestational diabetes occurs in women after the onset of pregnancy - usually around the 24th to 28th week. Left untreated, gestational diabetes can lead to devastating outcomes for the baby such as spontaneous abortion, intrauterine death, still birth, congenital malformation, birth injuries, macrosomia and neonatal hypoglycaemia,

and the mother may experience pre-eclampsia, infections, obstructed labour and assisted labour among other complications. It is estimated that 15% of the total number of caesarean sections may be due to gestational diabetes.

Furthermore, both the mother and the baby have a higher risk of developing diabetes later in life if appropriate preventative actions are not taken. Women with gestational diabetes have a 30% risk of developing type 2 diabetes during their lifetime compared to a 10% risk in the general population and 5-10% of women with gestational diabetes develop type 1 diabetes during their life[1]. Children of women with uncontrolled diabetes during pregnancy have a four- to eight-times higher risk of developing diabetes in adult life compared to children of a non-diabetic pregnancy[2].

Overlooked and undetected

Worldwide, one in ten pregnancies may be associated with diabetes, 90% of which involve gestational diabetes. In high-risk groups, up to 30% of pregnancies may involve diabetes, but many cases are undiagnosed with potentially life-threatening consequences[3]. Data is scarce as there is no worldwide uniform approach towards gestational diabetes and people are often unaware of this condition.

In developing countries women are the most vulnerable segment of society. Diabetes affects women more severely because of their biological, cultural and socio-economic circumstances. It is estimated that 60% of the world's poor are women; twice as many women as men suffer from malnutrition and more than 580 million women are illiterate, accounting for two thirds of all adults worldwide[4,5,6]. In traditional societies dependence on men to visit the health facility means that women get delayed access to care and poor follow up care, plus outdoor physical activity for women is difficult in countries with conservative customs. These factors place women at a disadvantage not only in obtaining a diagnosis and treatment, but also in exposing them to risks and complications.

Window of opportunity

Pregnancy offers a unique window of opportunity to raise awareness of diabetes. For many women, the first encounter they have with health services is with antenatal care. Women influence their family and the next generation by feeding and caring for their children, thereby imprinting lifelong behaviour with the possibility of encouraging a healthy lifestyle. Focusing on gestational diabetes will help identify women at high risk of future diabetes while offering an opportunity for primary prevention of diabetes in the same women. At the same time, good metabolic control during pregnancy will help prevent several NCDs including diabetes in the offspring. Such a lifecycle approach will therefore have a multi-generational impact which could ultimately help slow the global rise in the incidence of diabetes.

An important focus area

It is for these reasons that in 2004, the World Diabetes Foundation made women and diabetes one of the Foundation's focus areas. To date, gestational diabetes projects account for 7% of the Foundation's funding – a relatively small amount compared to other focus areas, but as the Foundation's projects are demand

MOTHERS AND DIABETES

MATERNAL HEALTH

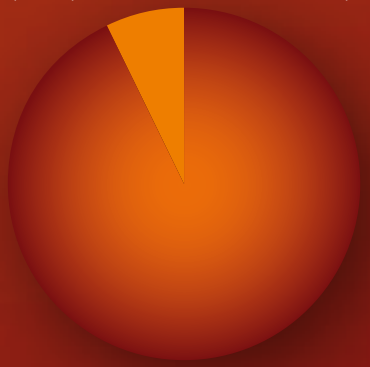
99,850
Pregnant women screened for gestational diabetes

2,242
Clinics strengthened to include care for gestational diabetes

WDF FUNDING FOR MOTHERS AND DIABETES OUT OF TOTAL FUNDING

Mothers and diabetes **7%**
USD 6,402,754

Other focus areas **93%**
USD 83,552,083



driven, this can be partly attributed to the lack of awareness about this issue. In addition to supporting several projects aiming to improve early diagnosis and treatment of gestational diabetes, the World Diabetes Foundation is taking an active approach by advocating for the inclusion of gestational diabetes in maternal health packages including screening for risk groups, and putting diabetes on the global agenda for maternal health.

It was to this end that the World Diabetes Foundation co-sponsored a meeting in 2008 with the Global Alliance for Women's Health at the United Nations headquarters in New York. Leading 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 (MDGs). The meeting was attended by representatives from the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the UN Division for the Advancement of Women, the World Health Organization, the Pan American Health Organization and the World Bank.

At the meeting it was concluded that gestational diabetes will have a negative impact on achieving the MDGs, including goals three, four and five which focus on promoting gender equality and the empowerment of women, reducing child mortality and improving maternal health.

In September 2008, the UNICEF, the UNFPA, the United Nations Development Fund for Women and the World Bank issued a joint statement on the increasing efforts on maternal and new born health, pledging to intensify their support to achieve the fifth MDG. ''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,'' explained Dr. Hedia Belhadj, Executive Coordinator for Global Health in UNFPA at the time.

Since the meeting in 2008, the World Diabetes Foundation has continued to work to move gestational diabetes higher on the donor, policy and global health agendas and was pleased that the report of the UN Secretary General to the General Assembly before the UN High-level meeting on non-communicable diseases (NCDs) in September 2011 clearly stated the need to create links between NCDs and maternal and child health programmes.

The year 2011 saw two major milestones: the first was the World Diabetes Foundation's formalised collaboration with the International Federation of Obstetrics and Gynaecology (FIGO) to conduct six seminars on maternal health and NCDs in the developing world over the next 3 years. As part of the collaboration a handbook focusing on the links between maternal and child health and NCDs will be developed. The second milestone was the Foundation's collaboration with the Asian-Pacific Resource & Research Centre for Women to conduct a satellite session on the missing links between diabetes and sexual rights and reproductive rights during the 6th Asia Pacific Conference on Reproductive and Sexual Health and Rights. The conference took place in Yogyakarta in Indonesia in November 2011 and resulted in the first separate publication on this issue.

Pioneering project led to new policy

The very first project supported by the World Diabetes Foundation began in 2004 at Dr. Seshiah's Diabetes Care and Research Institute in Tamil Nadu, India, to prevent and control gestational diabetes among women in rural and urban areas. By screening pregnant women around Chennai, an average prevalence rate of 13.8% was found for gestational diabetes. The project went on to prove that in the majority of cases, gestational diabetes can be controlled by diet and lifestyle changes and that once diabetes is under control, clear improvements in maternal and child health can be seen. Dr. Madhuri S Balaji, endocrinologist and member of the project team, says: ''This project helped us to educate not only antenatal mothers but also their entire family to make sensible changes in order to improve their diet and lifestyle. Most of all, the satisfaction gained when treating an antenatal mother and seeing her deliver a healthy baby is incomparable. We are proud that this project helped us to touch the lives of so many unborn children and their mothers. With every normal delivery without any complications, our joy and satisfaction grew.''

In addition, the project showed that awareness, education and screening for diabetes during pregnancy can be easily incorporated within the existing maternal and child health programmes with minimal additional costs. The Tamil Nadu Health Department supported the initiative from the beginning and because of the project's results screenings were made compulsory for all pregnant women in the entire state in 2007. Tamil Nadu Director of Public Health, Dr. Padmanabhan explains: ''By providing early screening and diagnosis, we will be able to prevent the development of type 2 diabetes in the coming generations and reduce the socio-economic burden of complications and the morbidity caused by the disease.''

The impact is not limited to Tamil Nadu alone, as this initial project together with a number of other projects (see page 174) have led to similar initiatives in Punjab, Bihar and Delhi and also to changes within the services offered by the large National Rural Health Mission initiative of the Government of India.

Since the success of the original gestational diabetes project, the World Diabetes Foundation has supported further projects in India to raise awareness and build health care capacity to address this issue, in addition to replicating this project in several other countries.

In Cameroon, access to antenatal care is good and almost free of charge, but there is very little knowledge of gestational diabetes – in fact it is hardly mentioned in the country's national diabetes programme. ''In our observations, we realised that there was no uniform practical approach towards gestational diabetes. And people, including health authorities, basically ignored the problem,'' explains one of the main driving forces behind the project, Dr. Eugene Sobngwi. Another important objective of the project is to find a cost effective screening method for women in Africa that can be adapted for different ethnic groups. This will enable early and appropriate diagnosis and treatment which will greatly reduce the incidence of complications. The project is being coordinated with the National Diabetes Coordinator to ensure integration into the national diabetes programme and for the first time gestational diabetes was included in the

SUPPORT TO INCREASED AWARENESS OF DIABETES AND MATERNAL HEALTH

Published as part of the project by FIGO, November 2011.

IMPLEMENTING PARTNER
International Federation of Gynecology and Obstetrics (FIGO)

OBJECTIVE
Six workshops on the link between maternal and child health and NCDs to be held a larger conferences

PROJECT BUDGET
USD 300,000 (WDF contribution: 100%)

DURATION
2011-2014

Published as part of the project by ARROW, 2012.

IMPLEMENTING PARTNER
Asian-Pacific Resource and Research Centre for Women (ARROW)

OBJECTIVE
Create awareness on the link between diabetes and sexual and reproductive health in the Asia-Pacific Region

PROJECT BUDGET
USD 75,000 (WDF contribution: 100%)

DURATION
2011-2012

country's national healthcare budget for 2010. In a country where gestational diabetes was reported to be rare the project found a 17% prevalence rate of gestational diabetes among 12,000 women screened using the cut-off values recommended by the International Association of Diabetes and Pregnancy Study Groups (IADPSG).

Another project supported by the World Diabetes Foundation in Cuba highlighted the importance of focusing on gestational diabetes and not just pre-gestational diabetes. ''Broadly speaking, for every woman with diabetes who became pregnant in Cuba in 2008, another nine women not previously known to have diabetes developed gestational diabetes,'' says Prof. Antonio Marquez Guillén, Director of Cuba's National Programme for integrated care in pregnancy with diabetes. ''These women would not have been found had we not screened them. With the establishment of service centres for diabetes and pregnancy in all provinces of the country we have now ensured extra attention to all women with diabetes of childbearing age''.

Experience from the original and subsequent gestational diabetes projects has been further utilised in Sudan, Jamaica, Panama and China where projects are on-going to improve the health of women with gestational diabetes, achieve a healthy outcome for their pregnancy and reduce the likelihood of mother and child developing diabetes later in life.

Reducing the global burden of diabetes

Not screening for diabetes during pregnancy – especially in women at high risk – is both dangerous and potentially costly. The devastating outcomes from a pregnancy with uncontrolled diabetes are far reaching. However by educating women during their pregnancy the risk of gestational diabetes can be reduced as can the risk of both mother and child developing diabetes later in life. It is also imperative that those diagnosed with gestational diabetes are not lost from the health care system once their pregnancy is over, but are regularly monitored to help prevent the development of type 2 diabetes later in life.

Projects supported by the World Diabetes Foundation within the area of gestational diabetes are not only improving the lives of women of childbearing age and their offspring, but also building health care capacity and therefore strengthening the health systems in the countries in which the projects are taking place. In addition, by involving and engaging other key stakeholders within women's health such as FIGO and groups involved with sexual and reproductive health and rights, the Foundation aims to create a coalition of stakeholders to bring the issue of diabetes in women and gestational diabetes to the forefront.

The World Diabetes Foundation will continue to create awareness for the necessity of screening for gestational diabetes at the same time as working with national and international organisations to ensure the issue of gestational diabetes receives the attention it merits.

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HELPING TO IMPROVE MATERNAL HEALTH THROUGH MEDIA PARTNERSHIPS

In India, more people are living with diabetes than in almost any other country in the world. Yet there is little awareness of this chronic condition. In 2008, the World Diabetes Foundation formed a partnership with Jagran Pehel to improve local communities' understanding and knowledge of diabetes. The partnership proved so successful that in 2010 another joint project was initiated to address the unspoken issue of gestational diabetes.

"Non-communicable diseases such as diabetes are a bigger problem if you are unaware of them. However, if you create awareness then these diseases can be controlled. The media can play an important role in this," explains Mr. Anand Madhab, National Head of Jagran Pehel, the strategic social initiative wing of Jagran Prakashan Ltd., one of the leading media conglomerates in India. "We can help create public opinion, influence policy and create a positive environment. In this way the media can do good."

The diabetes epidemic in India

India has the second highest number of people with diabetes in the world with over 60 million people diagnosed with this chronic disease, but the actual number may be even higher. The type of diabetes in India differs considerably from that in the Western world with approximately 98% being type 2 diabetes and only about a third of these patients are overweight or obese. In addition, diabetes appears almost a decade earlier in life in India, meaning that chronic long-term complications are likely to be a greater issue. Consequently, the implications for the Indian health care system are significant. 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.

It is estimated that approximately 16.5% of pregnant women in India have gestational diabetes, which can negatively impact the health of the unborn baby and result in both the mother and baby being more likely to develop type 2 diabetes later in life. Yet screening for gestational diabetes was not part of the prenatal check-ups offered to pregnant women in India and there were very few instances of structured interventions for this condition.


पहल
जागरण समूह की ओर से
जीवन में बचें दो आम
विश्व डायबिटीज दिवस
ग्लोबल डायबिटीज वॉक

Working together to make a difference

Lack of awareness of diabetes has consequences in terms of delayed diagnosis, poor outcomes and more complications. One solution to help reduce the social and financial impact of diabetes is therefore to create awareness and educate about diabetes, with the aim of limiting the number of people developing diabetes and reducing the amount of complications in those who already have this chronic condition.

In 2008 Jagran Pehel joined forces with the World Diabetes Foundation to run a year-long media campaign called 'Screening Can Save Life' for the prevention and care of diabetes in India. The aim of this project was to increase awareness about diabetes and its consequences among various stakeholders and the public and therefore to motivate them to take appropriate action for the care and prevention of diabetes. Awareness was created by organising a mass media campaign, road shows and screening camps.

Following the success of this campaign in 2010, Jagran Pehel once again partnered with the World Diabetes Foundation to tackle the issue of awareness of gestational diabetes in India, under the title 'Screening Can Save Two Lives'. This subsequent project focused on raising awareness of gestational diabetes, its consequences and how it can be prevented, particularly amongst young women, by running a multimedia awareness campaign, educating women through educational institutions, creating an interactive website and organising road shows. In addition, the project advocated for gestational diabetes screening to be included as part of the public health system by creating national, state and district level advocacy forums for stakeholders.

Media outreach

The first media campaign for prevention and care of diabetes ran for 6 months in 14 of India's 28 states. It achieved coverage of 35 pages of editorial and adverts in the newspaper Dainik Jagran, which has a readership of almost 60 million. Furthermore, the campaign had an allocated radio air time almost equal to 5 days of broadcasting. The radio campaign was particularly important for those who live in rural areas with low levels of literacy. Alongside the media campaign, more than 114,027 people were tested at screening camps where 14% were found to have suspected diabetes.

The second campaign focusing on gestational diabetes ran in four states and achieved total print space equal to approximately 48 full pages of broadsheet newspaper in Dainik Jagran, reaching 3.4 million readers along with 36,320 seconds of radio air time reaching 156,000 listeners. ''We learnt from our first campaign that awareness projects take more time, resources and patience than

we originally expected and with the gestational diabetes awareness campaign we faced some additional challenges,'' explains Mr. Madhab. ''The health service providers were negligent as well as unaware regarding different issues with gestational diabetes. We had learnt that it is vital to get the local stakeholders involved including the doctors and grassroot level health service providers like ANM and ASHA, but first they had to be sensitised and educated. Then another problem we faced was that in some communities women don't leave their homes and visit a public place, which is where we were holding our road shows. We had to convince the religious leaders about the importance of this project and they acted as the spokespersons for this project, only then did the women come forward.''

Screening camps were not part of the gestational diabetes awareness project, but local stakeholders subsequently decided to organise screening camps which, says Mr. Madhab, ''undoubtedly added value to the project''. In total, 143 screening camps were held, with 9,499 women screened.

Educating young women in educational institutions presented other challenges. ''This was the first time anyone had spoken about gestational diabetes and so when we went to schools and colleges to educate the future mothers we met resistance as the students' guardians, teachers and principals did not want us talking to them about pregnancy.'' Mr. Madhab continues: ''When we explained we weren't talking about sex but about the students' future health they were convinced and they welcomed this programme. In fact, we also started getting invitations from other schools.'' In total, 19,518 female students from 66 schools and colleges were educated about gestational diabetes. These students have agreed to act as peer educators for gestational diabetes in their communities.

The impressive public participation and deep impact of the gestational diabetes campaign can be further illustrated by the response of the renowned folk singer Kuljit Bhatti from Punjab. He was so impressed with the project in Jalandhar (a district in Punjab), that he independently composed and recorded a song about this issue and gave it to Jagran Pehel to use during the rest of the campaign. The song is also available on the Jagran Pehel website.

Advocating for change

Advocacy played an important role in the gestational diabetes awareness campaign, with three national level, two state level and 13 district level workshops organised as an advocacy initiative. In total, 1,333 participants were actively involved in the workshops, advocating for compulsory gestational diabetes screening as part of the existing public health services being offered to pregnant women. ''By making people aware of diabetes we also created a demand

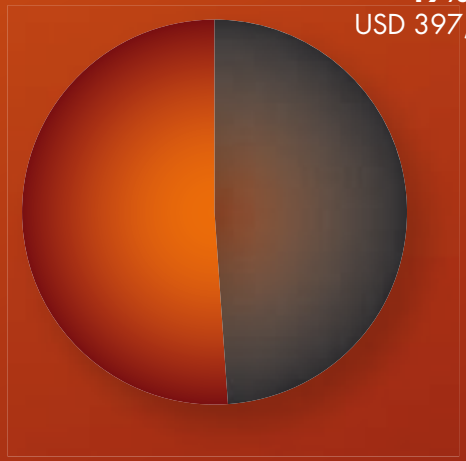
PROJECT REVIEWS

MEDIA CAMPAIGN FOR THE PREVENTION AND CARE OF DIABETES, INDIA 2008-2009

IMPLEMENTING PARTNER
Jagran Pehel

PROJECT BUDGET
USD 814,678

RESULTS
- Total media and radio coverage is estimated to have reached more than 60 million people.
- More than 350,000 people attended road shows including 410 screening camps.

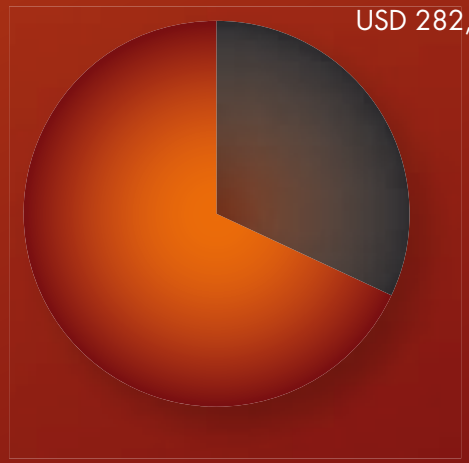


MULTIMEDIA CAMPAIGN ON GESTATIONAL DIABETES, INDIA 2010-2011

IMPLEMENTING PARTNER
Jagran Pehel

PROJECT BUDGET
USD 882,502

RESULTS
- Total media and radio coverage is estimated to have reached more than 60 million people.
- Educational activities at schools have resulted in 138,468 female students being made aware of gestational diabetes.
- National and state governments have created policies to address the issue of gestational diabetes screening.



for the service. If the demand is not there you can't expect the government to dedicate resources to this area. But by creating awareness we made people interested in what is good for them, and we were in a position to ask the government for action,'' says Mr. Madhab.

Significantly, the Minister of Health for the Government of India has announced the National Program on Non-Communicable Diseases is being implemented in 100 selected districts in India, which include screening for diabetes. Ministers of health for several states including Punjab, Bihar and Delhi have made similar announcements and a blood sugar test has been included for prenatal check-ups in the recently introduced mother and child health card by the National Rural Health Mission programme. Speaking at the launch and high level stakeholder meeting, Shri Gulam Nabi Azad, Minister of Health and Family Welfare for India, underlined that maternal health and the Millennium Development Goals share a direct linkage and the subject is one of the top priorities of the Health Ministry. He pointed out that in 2004-2005, both the maternal mortality rate and infant mortality rate were very high but that the inception of the National Rural Health Mission in 2005-2006 was a step in the direction of addressing these core issues of health care among women and children. Minister Azad also emphasized the importance of dealing with non-communicable diseases (NCDs) and sought cooperation of all interest groups in strengthening the work of the Government in setting up the mechanisms for the prevention and detection of NCDs.

The work continues

Creating awareness in India remains a priority for Jagran Pehel, with at least one dedicated diabetes article appearing in the health pages of Dainik Jagran per month, with additional case studies frequently appearing in the news pages. In addition, other media in India have now become aware of this issue and so are also publishing articles on diabetes with more frequency and have even held their own workshops to raise awareness of diabetes.

''It is good that the national and state governments have made the promise for screening policies - this is our biggest achievement. But we also need the expertise and infrastructure to make this work. How can we go about this? We need to continue to support the local stakeholders. We have convinced them of the importance of this issue, now they need support,'' explains Mr. Madhab. ''The World Diabetes Foundation is a very good, transparent organisation to partner with. We are thankful to the Foundation and the doctors who have been part of this project. We are the communications experts, not the medical experts. The project success is a credit to them too.''

Mr. Madhab concludes: ''In 2007, before our first campaign, there was hardly any coverage in the media about diabetes. Today diabetes is a key component of the health reporting in India. The media is now talking very loudly but we need more support on the ground and future projects to continue this success.''

"The explosive rise in NCDs is attributed to an ageing population, obesity and the spread of undesirable lifestyle behaviours. We have the evidence that these life style behaviours can be prevented through targeted individual action. A big barrier in achieving it on a large scale is supportive public health policies, lack of awareness and knowledge about the risks and how to mitigate them. Large scale initiatives based on evidence generated through large community programmes particularly in the developing world are needed. Several initiatives funded by the World Diabetes Foundation are addressing this issue and learnings from these initiatives will be very important to build cost effective public health interventions."

Prof. Jaakko Tuomilehto, MD, MA, PhD, Professor of Public Health at the University of Helsinki, Finland and Professor of Vascular Prevention at the Danube-University Krems, Krems, Austria and an internationally acclaimed epidemiologist and thought leader in the area of NCD prevention.

CASE STUDY:
CHILDREN FUNCTION AS CHANGE AGENTS

One of the primary prevention school health programmes funded by the World Diabetes Foundation is the kNOw Diabetes project in the Indian state of Kerala, and in many ways this project is representative of the elements such projects. Demographically, the state of Kerala can be seen as a microcosm of the demographic transition taking place worldwide – within 30 years the diabetes prevalence in the state has increased from 2.3% to 12%.

Prior to embarking on the primary prevention project, Dr. Vijayakumar had been successfully running the Medical Trust Hospital and Diabetes Care Centre for many years, but through the contact he had with patients he saw the need to do something beyond treatment. ''Given the rapid increase in diabetes, we knew that it could not be genetic; the faulty life style had caused the increase in diabetes. This includes reduced physical activity, diet, stress and alcohol consumption. Changing lifestyle is not easy but we dared to make the attempt. We expected that children would be the best target group and then initiated this project in 2007. When we approach children, they function as a change agent in their own families,'' says Dr. Vijayakumar.

The project was set up in two of the state's districts, Pathanamthitta and Alappuzha, where 100 schools were targeted. As part of the preparatory work, the project team contacted the health authorities to get their support for initiating the projects in the schools. The kNOw Diabetes team comprises 20 volunteers who are all affiliated with the base hospital. For an intervention they spend an entire day in the school starting with a health lecture for teachers in the morning and continuing to work with the pupils in the afternoon. As seen in other projects, the measurement and calculation of BMI is incorporated into the curriculum to serve the double purpose of stimulating general math abilities and health awareness. Apart from other activities, the children are given the assignment of measuring the BMI of their families, and indirectly carrying the health message to their homes.

A wide variety of educational materials have been developed by the project, which are to be housed in a permanent centre in each district HQ. The project has received extensive media publicity and as a consequence has increased public awareness about the risk factors for diabetes and given attention to the district and state health level, including education officials and ministers who have endorsed the initiative. Schools in other districts are now demanding similar initiatives.

Every year the project has strengthened awareness activities up to World Diabetes Day on 14 November with the Walk to Health campaign. In 2011, a diabetes walk lead by students took place each day between 1 and 14 November, passing through 14 towns in Kerala and covering a total distance of 196 kilometres, to promote the message about the importance of walking to stay healthy.

While it is too early to talk about an impact on health for the children and their families, as a consequence of this massive campaign one of the districts under the project has recently been appointed by the Government of India for the implementation of the National Project for the Prevention and Control of NCDs in Kerala State. In addition, the district health authority in one project district has started offering free treatment for children with type 1 diabetes and the project is lobbying for this service for the whole state.

CHANGING BEHAVIOUR WITH SCHOOL CHILDREN

Early childhood behaviours become habits that are difficult to change later in life. Education focusing on healthy living may be an important tool to influence behaviours and attitudes before they become ingrained. Through supporting school health projects, the World Diabetes Foundation aims to help prevent diabetes and other related non-communicable diseases in the coming generation.

As standards of living improve and the rate of urbanisation increases in developing countries, the cost of fresh, healthy food keeps rising. Rural areas with an agriculture-based economy produce grains, vegetables and fruits but most of it is sold for consumption in urban areas. The poor in both rural and urban areas cannot afford healthy, fresh fruits and vegetables and so rely heavily on calorie-dense processed food which is high in carbohydrates, fats and sugars. In addition, it is a sign of wealth and prestige in many countries to eat well, be overweight and use cars or motorbikes rather than walk or cycle. Children are no exception to this general trend and consumption of unhealthy food has risen dramatically while physical activity at school or leisure time has declined substantially, sacrificed in the pursuit of academic studies or physically less active pastimes, such as computer games or watching television.

According to the WHO childhood obesity is one of the most serious public health challenges of the 21st century. The problem is global and is steadily affecting many low- and middle-income countries, particularly in urban settings. The prevalence of obesity has increased at an alarming rate. The WHO estimates that over 42 million children under the age of five were overweight in 2010. Close to 35 million of these are living in developing countries.

Being overweight can be the precursor to diabetes and the rising trend of obesity in the young and adolescent is bad news. With the prevalence of diabetes increasing at alarming rates in developing countries, the cost of treating this chronic condition is becoming a huge burden on society. However, type 2 diabetes is, to a great extent, preventable if a healthy lifestyle, including a healthy diet and increased physical activity, is adopted. It is therefore imperative that health promotion and primary prevention - including raising awareness of the risks of diabetes and related non-communicable diseases (NCDs), their consequences to health and how to avoid them - takes place from a young age.


Coca-Cola

The coming generation as a focus area

Children are open to new ideas as they learn about the world around them. By conducting health promotion activities targeting school children, the World Diabetes Foundation hopes to empower them to develop healthy lifestyles that will become a habit. Hopefully they will share this knowledge with their families, local communities and, when the time comes, their own children. Children can be the agents of change – to curb the rising burden of NCDs.

The World Diabetes Foundation's support of primary prevention has steadily increased since 2002 and as of late 2011, 10% of the Foundation's cumulative grants were allocated to projects addressing primary prevention of diabetes. School health interventions account for 40% of primary prevention projects and include 18 school health projects in 11 countries. Each of these projects has different implementation strategies depending on the country or region in which it is operational, because education systems and cultures must be taken into account when devising any project.

School health projects include many different activities such as the creation of a school intervention team, which works with the school to have time allocated for an education session for teachers – in particular the physical education teacher – including diabetes and obesity screening for teachers. This helps to create reporting mechanisms, interest and learning amongst teachers and is followed by anthropometric measurements and education sessions for children, with both theoretical and practical work to engage them and encouragement for culturally appropriate physical activities. In addition, the children participate in activities such as discussions and debates, poster making, plays and healthy lunch box or cookery contests. Most projects have also engaged parents in activities or ensured they are aware of the initiatives. Changing the macro environment such as canteen food or shops near the school selling unhealthy foods is a challenge with which several projects have struggled.

Preventing tomorrow's diseases

The World Diabetes Foundation has undertaken an internal review to understand and evaluate various approaches, successes and challenges to implementing school health projects in different cultural settings. The review will guide future initiatives on which activities to include, as well as issues to be aware of when embarking on a school health intervention. The World Diabetes Foundation Programme Coordinator, Ms. Emilie Kirstein, who has been the focal point for this review, explains: ''Through the review we have noted that many projects focus on health education lectures and physical activities, whereas only a few projects have successfully made the staff in the school canteens aware of healthy food. For many project partners it has proven to be very difficult to ensure that healthy food is available for the school children. The school canteens are often privately owned and thus concentrate on making a profit and healthy food such as fresh food and fruits have a shorter shelf life than industrial packed snacks and biscuits. For these initiatives to increase the impact and effectiveness of the school health programmes it is very important to not only address the behaviour of the individual school child but also to create a healthy environment which allows the children to make healthy choices,'' says Ms. Kirstein.

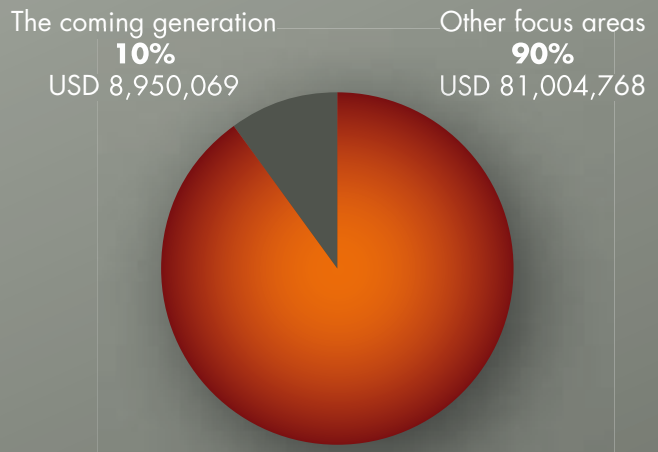
For long-term sustainability, the school health projects must make an impact on the school curriculum so that the initiatives are not singular events but are sustained through a systemic change. While the projects' overall success will not be clear for many years, the ability to generate enthusiasm and support from school authorities, teachers and parents will determine long-term success and continuity.

While the understanding of the cost-effectiveness of primary prevention interventions compared to treatment is slowly being recognised by governments, the need to treat today's diseases often triumphs over investing in preventing tomorrow's diseases. However, to not undertake primary prevention would be short-sighted and the World Diabetes Foundation will continue to invest in school health projects for the coming generation.

THE COMING GENERATION

The coming generation is the main target group for activities involving primary prevention. The WDF defines primary prevention as an action to prevent diabetes.

WDF FUNDING FOR THE COMING GENERATION OUT OF TOTAL FUNDING



COMING GENERATION PROJECTS SUPPORTED BY THE WDF INCLUDE

- School interventions
- Work place interventions
- Community interventions

WDF FUNDING FOR SCHOOL INTERVENTIONS

18 school health projects (either fully-fledged or with a school health component) in 11 countries have received WDF support.

RESULTS FOR SCHOOL HEALTH INTERVENTIONS

191,102
School teachers trained

551,153
School children reached

222,597
Parents reached and sensitised

CHILDREN WITH DIABETES

"Many children in the developing world still die because their diabetes is not detected in time or is misdiagnosed. Others may die prematurely of complications because of lack of access to treatment including access to an uninterrupted supply of insulin. The provision of appropriate treatment of diabetes is not merely a matter of making a treatment available; it is tantamount to providing the child with the basic human right to live."

Prof. Martin Silink, Professor of Paediatric Endocrinology at the University of Sydney and the Children's Hospital in Sydney, Australia. Prof. Silink is the past President of the International Diabetes Federation and leader of the Unite for Diabetes Campaign which led to the adoption of the UN Resolution on Diabetes in 2006.

CHILDREN WITH DIABETES

CASE STORY: BEATRIZ

Belo Horizonte, Brazil, 2006. Two year-old Beatriz urinated extensively, much more than the usual toddler. People who work with diabetes may already have suspected what was wrong with her, but Beatriz's mother had no clue, neither did the doctors who saw her crying daughter.

Today, Maria de Lourdes Gonsalves lives in a leaky stone house with her husband and 12 year-old Beatriz. Maria tells the story that started in 1996 in a small village far north of the Brazilian city of Belo Horizonte.

"The massive urination was a problem in itself. I tried to keep her dry but the thin fabric diapers she had were not sufficient. There was never enough and I used to dress her behind with torn pieces of old clothes."

Worried about the health of Beatriz, Maria visited a doctor who quickly diagnosed Beatriz with an internal infection. The second doctor said the same but her daughter was not getting better. Maria comes from a poor background, with minimal education and her husband lived and worked in Belo Horizonte to earn a living for the family. Feeling helpless, she took a desperate decision to travel by bus to Belo Horizonte, hoping to find a hospital that would cure her daughter's unknown condition. She managed to borrow money for the bus fare and she and Beatriz finally began a 12 hour journey towards what she hoped would become a happy ending.

"Our journey started off badly. After a few hours of travelling, Beatriz needed to urinate but the bus driver denied us to get off, so Beatriz had no choice but to wet her clothes. I felt relieved when at last my inconsolable and wet child fell asleep in my lap. But then our co-passengers started asking about my lifeless daughter. While the atmosphere among the passengers in the bus became frantic, I realised that Beatriz had drifted into unconsciousness. The bus driver realised the seriousness and finally stopped in a town where she was hospitalised. Beatriz was finally seen by a paediatrician who recognised her symptoms and measured her blood sugar which urged him to send her by ambulance to the hospital in Belo Horizonte. At last Beatriz got the diagnosis and treatment she needed all along. After 26 days she was well enough to be discharged. In the meantime, our family decided to build a home in the city, to never again have to live without professional hospital services."

Beatriz has developed into a strong and independent girl. Her mother injects her twice a day with insulin, however today she is able to manage her diabetes on her own in a home with only few means.


BON BON

HELPING CHILDREN WITH TYPE 1 DIABETES SURVIVE AND LIVE

In developing countries where health care capacity is inadequate, type 1 diabetes can be a death sentence for a vulnerable child. The life expectancy for a child diagnosed with type 1 diabetes is less than one year in some countries and many children die from diabetes without ever being diagnosed. The majority of these premature deaths could be avoided with access to proper care and treatment. The World Diabetes Foundation is supporting a programme which hopes to provide a better future for children with type 1 diabetes.

Josephine Wanjiru Mbugua was 10 years old when she was diagnosed with diabetes. Complaining of severe headache, her mother took her to a local hospital clinic in Kenya where she was first diagnosed and treated for malaria. This worsened her pain. On the third day, she was taken to Kikuyu Hospital where she was diagnosed with diabetes and admitted with very high sugar levels. She stayed in the hospital for a week until the sugar levels stabilised, but problems arose for Josephine when she wasn't always able to get insulin.

Josephine is the youngest of four children. Her father, George Mbugua Kamaara, is unable to work for a living because of a nerve condition. ''It was hard for me to afford the hospital bill. I had to look for money from friends. I am the sole breadwinner of the family, and sometimes it is hard to meet the basic requirements to survive,'' he explains.

The International Diabetes Federation (IDF) estimates that almost 500,000 children aged 0-14 worldwide may have type 1 diabetes. About half of these children live in developing countries like Josephine, and many of them have inadequate access to health care, including lack of access to insulin and a shortage of trained health care personnel to diagnose, provide care and conduct adequate follow-up.

A diabetes diagnosis often leaves poor parents in many developing countries with a hard choice - food for the family or medicine for one child. The choice is not only harsh but unjust. While shocking, it is none the less not surprising that the life expectancy of a child with newly diagnosed type 1 diabetes in much of Sub-Saharan Africa, parts of South-East Asia and Latin America might be as short as 1 year.

An obligation to help

Children with diabetes have been an important focus area for the World Diabetes Foundation for many years. ''Sustainable solutions to this problem can only be achieved by systematically addressing the issue of care and treatment through structured interventions with state involvement and participation – not merely by donations of products as some have advocated. At the same time it is imperative that help to develop the infrastructure for care as well as to procure products at lower prices be provided to governments that show a willingness to act. This is what the World Diabetes Foundation is doing in collaboration with industry partners in six projects that are part of the Changing Diabetes in Children programme,'' says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

The five year Changing Diabetes in Children (CDiC) programme was launched by Novo Nordisk A/S in 2008 in partnership with the World Diabetes Foundation, Roche Diabetes Care and the International Society for Pediatric and Adolescent Diabetes (ISPAD) and in co-operation with local ministries of health and diabetes associations.

It is not within the World Diabetes Foundation's mandate to support the procurement of medicine and this poses a challenge when trying to help children survive and live with type 1 diabetes – a condition which is insulin dependent. However, by collaborating with the industry in the CDiC programme the Foundation is able to support capacity building for care by funding the purchase of equipment for clinics and training of health care professionals, while Roche donates blood glucometres and strips. Novo Nordisk A/S donates insulin and syringes as well as providing logistical support and additional funding for education and training.

''As a diabetes care company, we have an obligation to use our resources and expertise to help these children. This project is not only providing free insulin to an extremely vulnerable group, it is also building long-term solutions for insulin distribution and sustainable diabetes care for all people with diabetes in the world's poorest countries,'' explains Mr. Lars Rebien Sørensen, President and Chief Executive Officer of Novo Nordisk A/S.

This obligation to act is reiterated by Mr. Burkhard G Piper, President of Roche Diabetes Care: ''We are committed to improving the situation of people with diabetes and their caregivers. And we are especially dedicated to projects in developing countries where structured and high-quality diabetes care is not yet established. Together with our partners, the World Diabetes Foundation and Novo Nordisk A/S, we want to change the diabetes care landscape to prepare health care systems for the future,'' he says

A new challenge

To help improve diagnosis and treatment of diabetes in children, the CDiC programme has developed a basic training manual for health care professionals through consultations with key stakeholders from African countries and in collaboration with ISPAD. The manual is available free of charge at changingdiabetesaccess.com.

While training health care professionals in the management of type 2 diabetes is perhaps straightforward, the training for type 1 diabetes has proven to be much more challenging. This is because in an ideal situation care is provided by paediatric endocrinologists, but there is a scarcity of paediatricians in African countries and even more so of paediatric endocrinologists. However, two World Diabetes Foundation-supported projects in Africa are helping to address

CHILDREN WITH DIABETES

19 CHILDREN WITH DIABETES PROJECTS IN **16** COUNTRIES

Of these projects 6 are part of the CDiC programme

6,454 Children with type 1 diabetes have received care through all WDF supported projects in this area

WDF FUNDING FOR CHILDREN WITH DIABETES OUT OF TOTAL FUNDING

WDF SUPPORT TO CDIC

The World Diabetes Foundation is involved in six CDiC projects (Cameroon, DR Congo, Guinea, Tanzania, Uganda and Bangladesh)

1,520
Children enrolled in the six CDiC projects

16
Clinics established as part of the CDiC projects


8
9

this issue. In Kenya and Nigeria the collaboration between local organisations and universities, the European Society of Paediatric Endocrinology and ISPAD is helping train paediatricians in paediatric endocrinology through fellowship programmes funded by the World Diabetes Foundation.

Educating children to live well

As part of the CDiC programme, the World Diabetes Foundation is helping to fund the development of awareness and educational material for children and their families, in addition to organising awareness camps for the children.

Experiences so far indicate that while children on the CDiC programme are surviving, in many cases their blood sugar levels are still not well controlled, which could ultimately lead to complications. The children are being taught to monitor and manage their own blood sugar levels, which is possible when medication, equipment and training are consistently available as is the case with the CDiC programme. Self-management of diabetes includes three crucial factors: adjustment of the insulin dose, food and physical activity. If one of these three parameters is changed, the two other parameters need to be adjusted accordingly.

Now 17 years old, Josephine was lucky enough to be included in a CDiC project in Kenya several years ago and has since learned to manage her diabetes and monitor her sugar levels properly. In fact, she has accepted diabetes as part of her life to such an extent that she says it makes her feel stronger than her peers. Josephine has become a role model for others who have diabetes. Her proactive attitude stood out when she moved to a boarding school - rather than seeing the new environment as a problem, she simply taught her teachers and classmates about diabetes. When she has had a hypoglycaemic attack in school, her classmates have helped by giving her some sugar. Josephine is looking forward to her future, and hopes to study civil engineering at university. But this will coincide with Josephine becoming an adult and therefore having to leave the CDiC project, which will make obtaining insulin more of a challenge.

World Diabetes Foundation Programme Coordinator Mr. Ulrik Uldall Nielsen, who has lived with type 1 diabetes for 25 years, has followed the CDiC programme closely since its inception. ‘‘This programme is about getting close to a normal life and with that the opportunity to get an education. This is only possible if children and young people are able to manage their diabetes at a certain level. If we just gave away free insulin without empowering the children to self-manage their diabetes, we would merely keep them alive to only die later from complications. We aim much higher than that,’’ he says.

A unified effort

The CDiC programme is an example of an arrangement where different stakeholders from public, private, and non-governmental sectors are working together to fulfil a common objective. By building capacity within the existing health care system in partnership with local governments, the CDiC programme is aiding sustainability of the individual projects. It is hoped that the learning from the initial projects, with the evidence and positive experience created, will ultimately encourage governments to take full ownership of the projects without external support once the CDiC programme ends.

"Diabetes is responsible for over a million amputations each year which constitutes a major threat to financially strained health care budgets in developing countries. Effective secondary and tertiary prevention in this area can, therefore, make an enormous difference. The foot care projects funded by the World Diabetes Foundation are contributing to create awareness and knowledge about diabetes and at the same time helping build capacity in the underserved, remote and some of the poorest parts of the world. By addressing these problems and offering simple, preventive measures and care, each project is providing these people the opportunity to continue to 'stand on their feet' literally and metaphorically; at the same time saving millions of dollars by avoiding costly interventions including prolonged hospitalisations and amputations."

Dr. Sharad Pendsey, Director of Diabetes Clinic and Research Centre, Dhantoli, Nagpur, India. Dr. Pendsey is an internationally renowned expert on diabetes foot and Chairman of the first Step-by-Step foot care project in India.

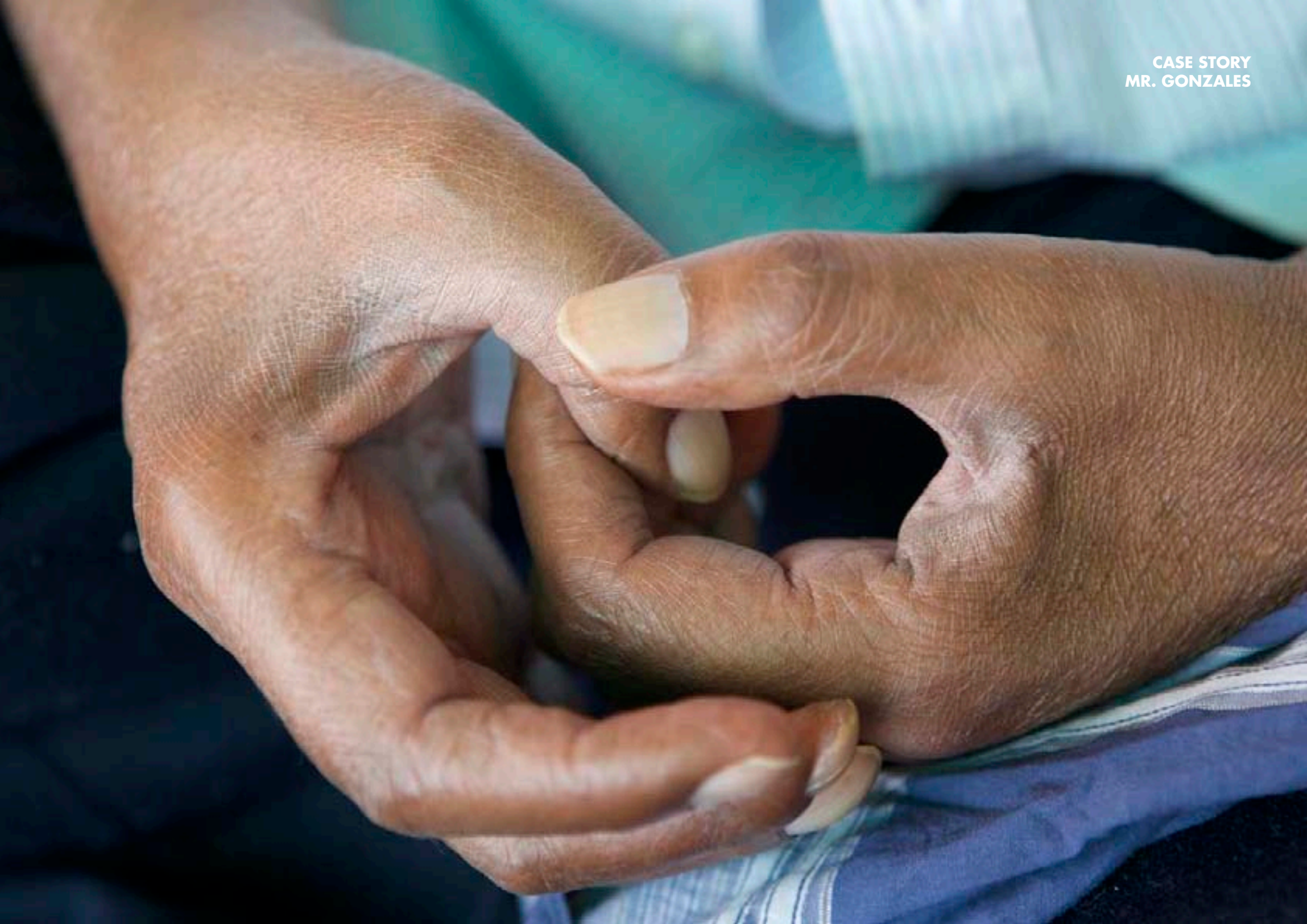
CASE STORY: MR. GONZALES

Cochabamba, Bolivia, 2005. Mr. Eliodoro Gonzales is 79 years old and is sitting in a wheel-barrow ready to be transported for various errands in the village. It is hard to imagine but this is his lucky day. He has lost both his legs to diabetes and once a month he can afford to pay a man from the village to transport him to the nearby city. Sometimes it is to go to the church or to see a football game. He wishes he could watch football games like he used to, but diabetes has taken most of his eyesight too.

At the age of 47, Mr. Gonzales was diagnosed with diabetes during a hospitalisation. At that particular time he had spent most of his adult life working as a truck driver, a sedentary occupation reflected in his body weight of 120 kilos. Knowledge about diabetes and a healthy diet could have prevented Mr. Gonzales from being in the situation he is in today.

Mr. Gonzales and his wife have seven children and seven grandchildren. Diabetes has affected and burdened all of their lives. Each amputation cost him and his family between USD 1,200-1,500. Owing the bank more than he could ever earn, the family is in debt. In a drastic attempt to pay off the debt, four of his seven children have travelled to Spain to work as illegal immigrants, leaving two small grandchildren behind.


CENTRO VETERINARIO
"CLIZA"
2006



TAKING SIMPLE STEPS TO SAVE LIVES

For most of us, getting a blister from our shoe would merely be a nuisance. But for someone with diabetes it can be catastrophic as simple injuries can lead to the loss of a leg or untimely death. These tragedies are preventable, but can such prevention be achieved on a large scale in the developing world? Results from the implementation of a foot care model supported by the World Diabetes Foundation in over 27 countries prove it is possible.

Mr. Ally Mohamed Abdallah lived in one of the poorest neighbourhoods in Dar es Salaam in Tanzania. In 2005 he had both legs amputated because of diabetes. He had easily recognisable warning signs that, if acted upon, could have saved his legs. But sadly, like many other people with diabetes in Tanzania, he was not educated about his own disease.

Ten years previously, Ally had gone to the local pharmacy when he was feeling unwell. Here he had his blood sugar tested, was given tablets and advised to follow a healthy diet. Ally did not understand the advice he received about diabetes and so it is not surprising that when he felt better a few months later he stopped taking his tablets. Over the next 10 years, Ally took the tablets when he had infections, but then stopped again once he was better.

But in October 2005, after a month of enduring leg pains caused by an infected toe, he was finally admitted to Muhimbili National Hospital, one of the largest hospitals in Dar es Salaam. The doctors hoped to save his right leg by amputating two toes, but the infection had already spread, and so his leg was amputated below the knee. During his admission a burning sensation warned the doctors of complications in the left leg. Unfortunately, years of poorly controlled diabetes had left his body vulnerable and his left leg also had to be amputated.

Having lost both legs, every day was a challenge for Ally and he spent most of his time sitting on his mattress in his single-room home. In March 2008 Ally became very sick and was diagnosed with chronic renal failure, severe anaemia and cardiac failure. He was admitted to a government hospital where he sadly died on 18 July 2008 from diabetes complications.

A focus on foot care

The diabetic foot is one of the most serious disabling complications caused by diabetes. People with diabetes lose sensation in their feet and may not be aware of simple injuries or cuts developing into infected ulcers. Left untreated, the infection spreads leading to gangrene which can ultimately result in amputation. Globally, diabetes is responsible for more than one million amputations every year but approximately 80% of these amputations are preventable. However, foot care tends to be neglected in most health care settings, as simple things like examining the feet are often neglected by both the doctor and nurse. In addition, they do not have the time or knowledge to educate people with diabetes on the necessity and technique of self-examination of feet and the importance of reporting unusual findings. The result is that many people never have their feet checked until it is too late. ''In India, prior to the Step-by-Step project, there were no screening programmes for detecting high-risk feet, and specialities like podiatry did not exist. The concept of team work for management of diabetic foot problems was lacking. Every patient with diabetic foot was blindly referred to a surgeon. Approximately 40,000 legs were amputated annually due to diabetes and unfortunately the most common indication is neuropathic foot with infection which is potentially preventable,'' explains Dr. Sharad Pendsey, Director of Diabetes Clinic and Research Centre, Dhantoli, Nagpur, India – an Internationally renowned expert on diabetes foot and Chairman of the first Step-by-Step foot care project in India.

Religion plays a role in wearing shoes

Walking barefoot or wearing unsuitable shoes are common causes of foot ulcers in people with diabetic foot. Not wearing shoes is not only an economic decision – in many cultures shoes are removed for religious reasons and in hot climates the soles of feet can get burnt in addition to injuries caused by stepping on sharp objects. But also ordinary foot problems like blisters and corns can develop into wounds as poor blood circulation, caused by diabetes, makes it difficult for wounds to heal. As 85% of all diabetes-related leg amputations begin with foot ulcers it is therefore imperative that doctors, nurses and people with diabetes understand the importance of taking care of feet and ensuring that foot ulcers are treated swiftly before they develop into more serious problems.

''It costs just USD 3 to educate a person with diabetes to take care of their feet to prevent foot ulcers, but an estimated USD 450 and 4 weeks of hospitalisation to treat a chronic wound. Should the wound not heal and if the infection spreads, it costs more than USD 550 to amputate a limb and another USD 650 for getting a prosthetic leg,'' says Dr. Anil Kapur, Managing Director of the World Diabetes Foundation. When no health care financing or social security network is available it is costs like these that put people and their families living on less than one dollar a day into lifelong poverty or debt, particularly as the person is unlikely to be able to continue to work following their amputation. ''The tragedy is that even when health financing is available, the system will pay for the hospitalisation and amputation but not for preventive education or for the rehabilitative prosthetic,'' adds Dr. Kapur.

It was the extent of this human suffering which could be prevented with relatively simple and low-cost measures which made the World Diabetes Foundation to prioritise the diabetic foot as a key focus area soon after its inception.

DIABETIC FOOT CARE

11,947
Health care professionals trained in diabetic foot

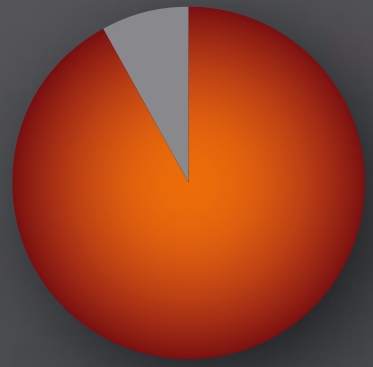
416,846
Patients with high-risk feet screened

50,554
Feet provided with treatment and care

WDF FUNDING FOR DIABETIC FOOT CARE OUT OF TOTAL FUNDING

Diabetic foot care
8%
USD 6,801,576

Other focus areas
92%
83,153,261 USD



** Diabetic foot projects include full diabetic foot projects or projects with a diabetic foot component.*

The Step-by-Step model
Taking the initiative in 2003, the World Diabetes Foundation brought together a group of international experts to develop a foot care model with the aim of reducing the number of leg amputations caused by diabetes throughout the developing world. The first project committee meeting was organised in Madras and was joined by Dr. Zulfiqarali Abbas, Tanzania, Dr. Karel Bakker, Netherlands, the late Dr. Ali Foster, United Kingdom, Dr. Sharad Pendsay, Dr. Vijay Vishwanthan, Dr. Anil Kapur, India and Mr. Leif Fenger Jensen, Vice Chairman of the World Diabetes Foundation.

The Step-by-Step model aims to educate both health care professionals and patients. People living with diabetes are empowered by the Step-by-Step model to take better care of their feet, for example by detecting problems earlier and seeking timely help. Since many languages and dialects may be used in different developing countries, and taking into account literacy levels, educational materials for patients focus on audio-visual materials and pictures.

The model offers health care professionals a sustainable, integrated and low-cost approach to foot care. Selected pairs of health care professionals – usually a doctor and nurse - receive a two-step training programme. At the basic training, participants learn the principles of foot care education and practical management guidelines and are provided with educational material. Most importantly, the participants are also given an equipment kit and practical training so that when they return to their clinics they can immediately implement what they have learned as they are required to establish foot care clinics in their respective health care facilities. The advanced training takes place a year later, with increased emphasis on practical sessions. Participants are provided with training materials aimed at other health care professionals, enabling the teams to cascade the knowledge to others in their local contexts.

By using the Step-by-Step model it is estimated that after completing the training, each doctor and nurse team will be able to provide prevention and treatment to about 30 people with high-risk feet each month. This improved foot care management will lead to a reduction in amputations of up to 50%. Dr. Zulfiqarali G Abbas, Consultant Physician, Chairman of the Step-by-Step foot project for Africa and Chairman of the Pan-African Diabetic Foot Society and Director at the Abbas Medical Centre in Tanzania, explains: ''We documented tremendous success from the start of the project. Amputation rates among persons with diabetic foot ulcers fell significantly. Patients and health care providers, including physicians and nurses, have become more aware of the problems and appropriate management compared to the status quo in 2000. Ulcers are now reported earlier leading to earlier initiation of appropriate management and a parallel reduction in amputation rates. Forty-three centres have now instituted similar programmes consisting of a physician, nurse and surgeon across all regions in Tanzania. Our trending data continue to show significant reductions in amputation rates and significantly improved patient outcomes.''

Specialised and integrated projects
Following the success of the initial pilot, the Step-by-Step model has been replicated in many developing countries, either as a project solely focusing on foot care or as part of a larger project aiming to improve diabetes care in general. In addition, following the success of the mobile eye clinics, mobile foot care clinics have been established in many countries (see opposite page). Well-equipped buses containing a foot examination chair, a computerised foot pressure scanning

system, a biothesiometer, a Doppler scan and temperature sensing devices take advanced foot care to the doorstep of people living in rural areas.

A step further

A project initiated in Tanzania in 2009 builds upon the same structures as the Step-by-Step model, but instead of doctors and nurses it targets orthopaedic surgeons. In Tanzania, 27% of patients admitted to hospital with diabetic foot complications die and more than 33% of the patients admitted with non-healing diabetic foot ulcers end up having part of their limb amputated. But studies have shown that amputation rates can be reduced by more than 50% if surgeons have the necessary training to perform limb saving surgery.

During the basic and advanced training courses for this project, participants are taught surgical techniques to save limbs with practical workshops in the operating theatre. In addition, surgeons are taught how a non-healing ulcer may be brought to the healing stage without surgery with the expectation that the surgeons will subsequently refer patients back to doctors for treatment without performing unnecessary operations.

''The practical training constitutes 75% of the training while 25% is allocated to theoretical input. This instils confidence in the candidates. Also the format includes two sessions at the interval of one year and we ask the teams to present their work done in that year. This motivates them to do proper work,'' says Dr. Arun Bal, Consultant Diabetic Foot Surgeon and Founder President of the Diabetic Foot Society of India, who helped devise the programme.

As with the Step-by-Step model, surgeons are given equipment kits to take back to their respective clinics to implement their new skills and are expected to share their acquired knowledge with colleagues.

Reducing amputation rates

First piloted in India and Tanzania, the Step-by-Step model has subsequently been implemented and used with significant success in 27 countries over the last 8 years. ''We have achieved much in terms of education and improvement in patient outcomes,'' says Dr. Abbas. ''Today, Step-by-Step has already been exported to many countries, including several across the African continent, Asia and the Caribbean. Without the World Diabetes Foundation's assistance, these achievements would not have been possible.''

''In my opinion the care across the developing world is rapidly improving with programmes like Step-by-Step and we are likely to see significant reductions in diabetic foot and the number of amputations as well as morbidity associated with foot ulcers,'' adds Dr. Bal.

However, there is still much to be done: ''The problem of diabetic foot and limb amputations will be on the rise as life expectancy of patients increases,'' says Dr. Pendsey. ''We need to continue with the Step-by-Step project on an on-going basis.''

The World Diabetes Foundation remains committed to reducing the human suffering caused by preventable lower-limb amputations and hopes that projects such as the Step-by-Step model will be further replicated around the world.

"Diabetes is a leading cause of blindness worldwide. In India, it is estimated that one in five people living with diabetes for more than 10 years will develop diabetic retinopathy. The partnership with the World Diabetes Foundation was truly remarkable as our first joint projects catalysed greater attention to diabetic retinopathy and served as a model, which I understand has now been replicated with funding and support from the Foundation, in many parts of India and abroad by our students, fellows and colleagues; bringing a highly needed service and benefitting millions of people with diabetes around the world."

Prof. P. Namperumalsamy, Chairman Emeritus, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, India, (WHO Collaborating Centre for Prevention of Blindness). Prof. Namperumalsamy is an internationally acclaimed ophthalmologist and thought leader.

DIABETES AND EYE CARE

CASE STORY: MR. ARAMUGAM

Madurai, India, 2005. ''My grandchildren think I am spectacular because I am able to do so much exercise.'' 54 year old Mr. Arumugam is in fact more energetic than most of us. At four o'clock in the morning he gets out of bed to take a morning walk close to the nearby mountain. After an hour of brisk walking he returns for his breakfast and a wash, with plenty of time to take the 7 o'clock bus to work. ''I walk to keep healthy and I eat healthily too. I need to, because of my diabetes.''

This Sunday morning he walked more than usual; he had to go to the nearby temple. The building used for worship opens its doors one Sunday each month to volunteers from the Aravind Eye Hospital in Madurai for them to conduct free diabetes screening. ''I go every month to have my blood glucose tested. If I hadn't followed the advice given to me by the doctors since I was diagnosed with diabetes, I think my life would have been in danger.''

Mr. Aramugam has taken a seat in the eye screening bus, in front of the ophthalmologic camera. Within a few minutes, the technician has taken enough pictures of his retinas and sends them via satellite to Aravind Eye Hospital.

CASE STORY
MR. ARUMUGAM


TOPCON

CASE STORY
MR. ARUMUGAM

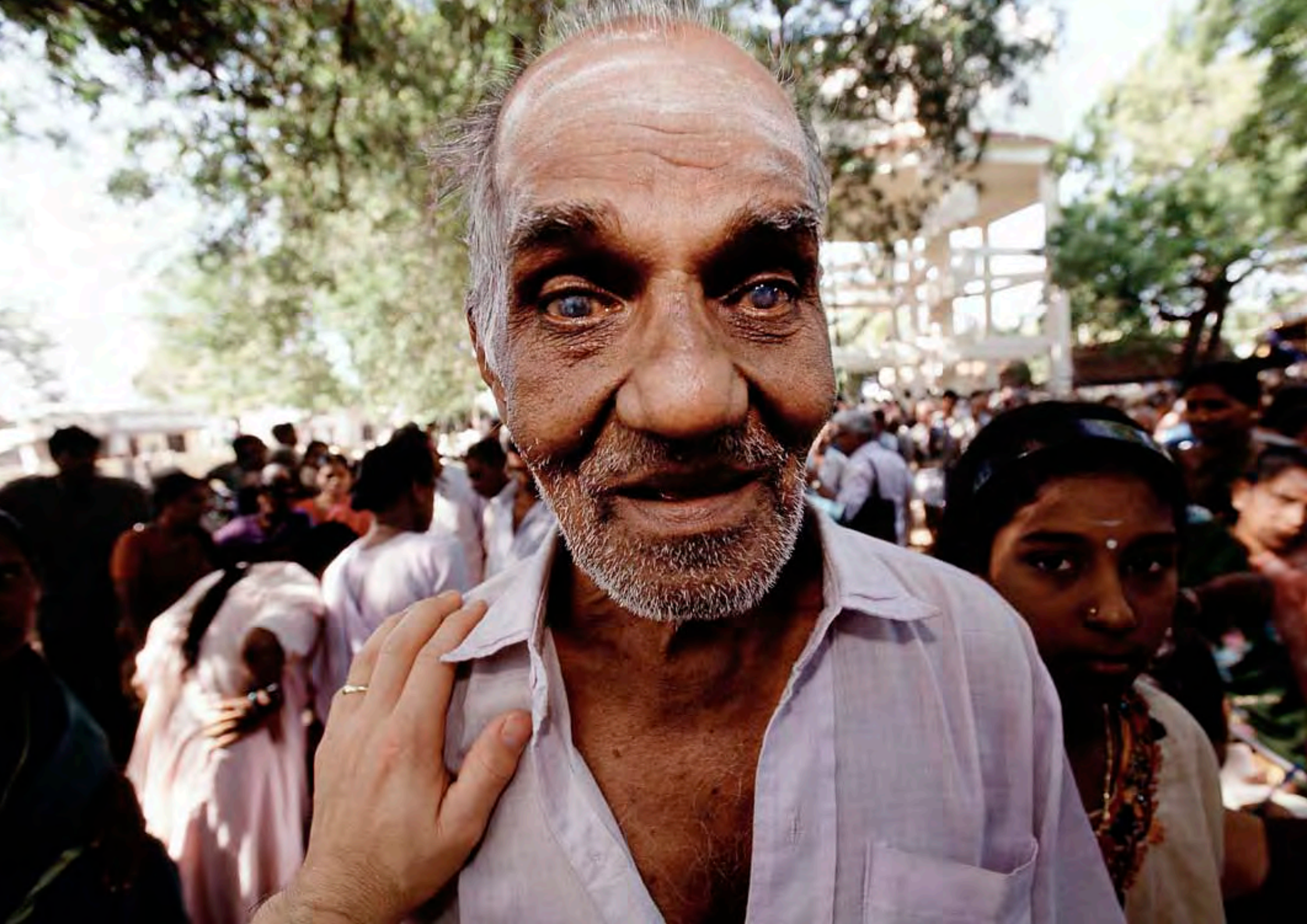
PREVENTING BLINDNESS, ENRICHING LIVES

Almost 74% of people who have lived with diabetes for 10 years or more will develop diabetic retinopathy, a complication estimated to affect more than 2.5 million people worldwide which can lead to blindness[1]. The World Diabetes Foundation is supporting projects in 25 countries to treat – but also more importantly to prevent – this debilitating complication.

Ms. Julia Toribio was diagnosed with type 2 diabetes in her mid-twenties, after having been overweight for several years. She and her husband lived in the City of Cochabamba in Bolivia with their six children. Treatment and medication for Julia's diabetes was covered by her husband's health insurance, so she was able to live relatively well with her diabetes. But that all changed when her husband was killed in an accident. Not only did Julia loose her husband; she also lost the income the family lived on – and the health insurance. As a consequence, Julia stopped taking her insulin. The lack of medicine caused such a critical deterioration in her health that she lost her eye sight.

Poorly managed diabetes can lead to high blood glucose levels, which can weaken and damage the tiny blood vessels next to the eye's retina, resulting in diabetic retinopathy. One of the major causes of blindness in developing countries, diabetic retinopathy can be prevented and treated with proper diabetes care and regular screening and monitoring. Studies suggest that timely treatment can prevent up to 60-70% of vision loss from diabetic retinopathy. Yet only a small fraction of people diagnosed with diabetes in developing countries undergo any form of eye examination. Left undiagnosed and untreated, diabetic retinopathy often results in sudden severe visual loss and blindness causing great financial and social distress that drives individuals and families to fall into the poverty trap.

Thanks to a project supported by the World Diabetes Foundation in Bolivia, Julia was able to attend a clinic and receive laser therapy for her diabetic retinopathy. Julia has been able to retain 70% of her sight, and is now able to work again and earn a minimum income to sustain herself and her children.



Challenges of eye care

The World Diabetes Foundation allocates 13% of its funding to eye care projects. Projects may include screening programmes, awareness raising activities, development of treatment guidelines and training of health care professionals and ophthalmologists. While the World Diabetes Foundation does not provide funds for bricks and buildings for eye clinics, support is granted to set up ophthalmologic screening, laser therapy and to provide other equipment necessary to perform sight preserving and saving interventions. In fact, these are often the biggest and most challenging components in eye care projects. The highly advanced equipment is not only expensive to purchase: it also needs considerable maintenance. Specialists are required to operate the equipment and often such specialists are not available in developing countries with limited health care resources. In addition, the number of patients treated must be adequate to warrant the investment and ensure cost-efficiency. Finally, there is also the dilemma that services cannot be made widely available but if services are not available close to patients, utilisation of the services is limited, turning into a negative spiral.

Ensuring a link between tertiary and primary care

Experience from previous projects has taught the World Diabetes Foundation that there is a need not only for tertiary diabetic retinopathy care, but also for strengthening general diabetes care to avoid complications and thus the need for further tertiary care. It is therefore difficult to justify high technological eye care if no basic diabetes care is available in a given country or region.

''When supporting and monitoring eye projects it is of utmost importance to ensure the link between detection, treatment and follow-up care. It would be unethical to screen people and detect eye complications without providing adequate treatment,'' explains Ms. Astrid Hasselbalch, World Diabetes Foundation Programme Coordinator. ''At the same time it is difficult to justify advanced tertiary level care for eye complications when primary level care for diabetes is inadequate or non-existent which means that people with diabetic retinopathy would not receive care to prevent further progression. On the ground this means that a prerequisite for World Diabetes Foundation to support an eye project (i.e. tertiary care) is the availability of primary diabetes care which also ensures that preventative measures for eye complications are taken into consideration,'' she concludes.

The knowledge barrier

One of the main barriers to preventing eye complications is a lack of knowledge – on the part of both people with diabetes and health care professionals. People living with diabetes are often not aware of the long-term effects of poorly-controlled blood sugar levels on the eye and health care professionals do not perform eye examinations due to lack of knowledge, training and capacity to do these tests. Local general practitioners may also not be aware of eye complications caused by diabetes and in many cases do not refer patients for treatment. And as already mentioned many countries suffer a severe shortage of ophthalmologists.

''In most instances, the World Diabetes Foundation has used the approach of supporting advanced eye care services to also show that if not properly treated, diabetes can cause blindness - thereby stimulating greater awareness for diabetes care. This approach, which I call the 'tail wagging the dog', works especially well when the disease burden from diabetes is high. The classical example of this is the two projects with the Vittala International Institute of Ophthalmology in Karnataka, India. These projects have built a great model of service delivery by engaging local ophthalmologists and primary care physicians in an effort to lift

DIABETES AND EYE CARE

683,334
People screened for diabetic retinopathy

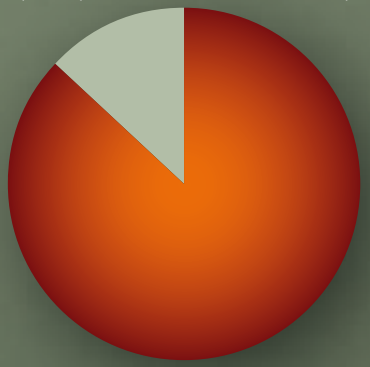
101,265
Cases of diabetic retinopathy detected (13% of those screened)

77,811
Patients received sight-saving treatment

WDF FUNDING FOR DIABETES AND EYE CARE OUT OF TOTAL FUNDING

Diabetes and eye care
13%
USD 11,770,754

Other focus areas
87%
USD 78,184,083



** Eye care projects include full eye care projects or projects with an eye care component.*

primary diabetes care delivery to a new level,'' explains Dr. Anil Kapur, Managing Director of the World Diabetes Foundation.

Perspectives from other parts of the world

In 2007, the World Diabetes Foundation supported a project in Uzbekistan to establish diabetes eye care facilities in 14 regional endocrinological centres. To increase knowledge about diabetic eye complications educational materials and a website were developed for doctors and patients, and a film on ''How to preserve vision in diabetes'' targeted at preventing diabetic retinopathy was shown in regional mass media.

As part of this project, one ophthalmologist was trained in Moscow for 2 months and in return she trained 50 ophthalmologists at regional level, and 240 general practitioners received training on diabetes and diabetic retinopathy. Dr. Nargiza Normatova, a leading specialist in diabetic retinopathy from Uzbekistan, explains that the majority of regional ophthalmologists did not have adequate knowledge on how to treat their patients with diabetic complications prior to this project. The training for regional general practitioners and ophthalmologists was intended to not only increase their knowledge but also enable them to better detect and treat people. ''As an ophthalmologist I think this project has helped ophthalmologists develop an algorithm of diagnosis and treatment of patients with diabetic retinopathy,'' says Dr. Nargiza Normatova.

Care at the doorstep

Twenty years ago, diabetic retinopathy was number 17 in the list of causes of blindness in India. Today it is number six. Several projects in India, supported by the World Diabetes Foundation, aim to combat this disturbing statistic. The first eye project supported by the Foundation with the internationally acclaimed Aravind Eye Hospital held over 100 screening camps in close collaboration with voluntary and community organisations. As part of this project, one of the largest population based epidemiological studies on diabetic retinopathy in India was carried out over 3 years. Among a sample population of 25,969 people, 10.8% were found to have diabetes and of these 12.2% were detected to have diabetic retinopathy.

It was a project with the Aravind Eye Hospital that led to the launch of the very first mobile screening clinic project supported by World Diabetes Foundation. This particular mobile clinic uses a retinal camera to examine the eyes of people with diabetes; images are downloaded via a satellite link to the hospital where an ophthalmologist detects new cases of diabetic retinopathy. While this initiative and the concept of outreach camps improved access to advanced screening, people with retinopathy still had to go to a hospital or clinic for laser therapy. Laser treatment for diabetic retinopathy can take two or three sessions, and the poor and vulnerable in particular are least able to utilise these services due to the cost, time and lost wages associated with repeatedly travelling long distances. Therefore a mobile clinic which comes to the patients' local areas and is able to not only offer screening but also to deliver laser treatment is an ideal solution.

Many eye projects in India and other developing countries use mobile clinics, but with several different approaches. A recent model to ensure sustainability within the established health care system is to have all the necessary equipment for detection and treatment on board and then train local ophthalmologists to use the equipment. This serves a dual purpose of local capacity building as

well as enabling higher detection rates in rural/poorer areas whose population is generally cut off from this type of care due to limited resources. Amongst the World Diabetes Foundation supported eye projects this concept was first pioneered by the project with the Vittala International Institute of Ophthalmology in India and subsequently by several other projects.

Replication of this model was used in Thailand, where in 2009 the Ministry of Public Health initiated a mobile outreach project in collaboration with the World Diabetes Foundation and the Danish Embassy in Thailand. Two mobile eye clinics, with all the equipment necessary for detecting and treating diabetes and diabetic retinopathy, are operated with a specially trained team consisting of an ophthalmologist, an ophthalmic nurse, technicians and community health volunteers. To ensure long-term sustainability, the project is rooted in the local communities. The mobile eye clinics are run by local teams from the existing health care system who are specially trained to operate the equipment on the mobile clinic. Furthermore, community health volunteers have been trained to conduct blood glucose testing and monitoring of patients, to raise community awareness of diabetes and its complications.

Sustainable costs and care

The cost of treatment for diabetic retinopathy is high because of the cost of equipment required and the need for specialists. But if screening and treatment is not affordable for patients, projects will not be sustainable. This problem has been overcome in some countries, such as India and Bolivia, where eye care projects operate with the principles of solidarity. At these private clinics, different pricing categories are applied to patients depending on a social assessment, and thereby affluent patients pay more and in so doing support the poorest patients who receive treatment at reduced prices or for free.

By generating large volumes, the average cost of services is reduced, so providing a business incentive for the project partner to include the less affluent, vulnerable population who pay the minimum they can afford. It is an important part of the strategy that patients make a financial contribution for the service they receive as this builds a sense of responsibility and ownership to the care process.

However, this model may not be replicable in all countries or it may not be able to provide care for all. An on-going eye care project in Kenya offers eye care on its mobile clinic at a reduced cost to low income diabetes patients to address equity issues. Though very subsidised compared to what a patient would pay in a private or mission eye hospital, the outreach screening services are still unobtainable for some patients due to the cost. These patients therefore seek treatment at the public health institutes, which do not have the necessary equipment or skills to treat diabetic retinopathy optimally.

''Despite the many barriers and dilemmas that the World Diabetes Foundation-supported eye care projects face, it is indeed highly gratifying that the funding provided by the Foundation has stimulated attention to this neglected area and built an enormous capacity to address diabetic retinopathy. The Foundation is perhaps now the largest funder of eye care projects addressing diabetic retinopathy in the developing world,'' concludes Dr. Anil Kapur.

[1] *Varma R. From a population to patients: the Wisconsin epidemiologic study of diabetic retinopathy. Ophthalmology 2008; 115: 1857-1858.*


TB

DIABETES AND TUBERCULOSIS

"Almost 95% of tuberculosis patients and 80% of people with diabetes live in developing countries. While the association between diabetes and tuberculosis has been known for centuries, new scientific evidence shows that people with diabetes are at an increased risk of tuberculosis. For the purpose of achieving the MDG targets related to tuberculosis control, it is important to focus in low-resource countries not only on improved access to diagnosis and treatment of tuberculosis and HIV/AIDS, but also on the burgeoning epidemic of diabetes as a significant risk factor for tuberculosis. We greatly appreciate and value the support from the World Diabetes Foundation in not only helping the Union to advocate for this cause but also in funding several initiatives on the ground to gain further experience with collaborative efforts to address the double burden of tuberculosis and diabetes."

Prof. Anthony D. Harries, Senior Advisor, the International Union Against Tuberculosis and Lung Disease, United Kingdom. Prof. Harries was one of the driving forces behind the genesis of the Collaborative Framework for Care and Control of Tuberculosis and Diabetes.

THE GROWING THREAT OF THE DOUBLE BURDEN OF DIABETES AND TUBERCULOSIS

Recent evidence indicates that diabetes triples the risk of developing tuberculosis. The increasing prevalence of diabetes is therefore threatening a resurgence of tuberculosis, a potentially deadly lung disease.

Diabetes and tuberculosis (TB) have existed for thousands of years. Great physicians in the ancient civilisations of Egypt, India, Greece and Rome described an illness that is now understood as diabetes and the earliest evidence of TB was found in the skeleton of a 30-year-old woman in Italy, dated to 5,800 BC. The co-morbidity of diabetes and TB was also well known in those times. Before the advent of effective treatment for diabetes and TB, a patient with both conditions would most likely die of TB if they succeeded in escaping a hyperglycaemic coma.

Since then, TB has almost been eliminated in the developed world whereas diabetes rates are starting to rise. But this infectious disease remains a major cause of death and disability in developing countries with more than 9 million people falling ill and close to two million still dying from TB each year, despite a massive global effort to control it. As diabetes was not seen as an important health issue in the developing world the association between diabetes and TB has been neglected. Meanwhile, the link between TB and HIV was widely recognised as the greater threat and so resources over the last decade have been targeted at addressing these co-morbidities through integrated health programmes.

However, recent evidence has again highlighted the significant link between diabetes and TB and found that diabetes is associated with both higher risks of TB and adverse TB treatment outcomes, and TB is associated with worsening glycaemic control in people with diabetes. Put simply, if you are one of the 366 million people with diabetes in the world, particularly from a country with a high burden of TB, you are two to three times more likely to contract TB, and the treatment will be less effective, than if you did not have diabetes.

Achieving the MDGs
The sixth Millennium Development Goal (MDG) calls for the rise in incidence of communicable diseases like TB to be halted and reversed by 2015. While the incidence, prevalence and death from TB are decreasing globally, the rate of decline may not be enough to meet the MDG target of halving TB prevalence and death rates by 2015 in all World Health Organisation (WHO) regions.

To reach this goal, governments in developing countries must therefore focus on diabetes as a significant epidemiological risk factor to prevent a resurgence of TB, as the increase in prevalence of diabetes has obvious negative implications for TB control.

Collaborative framework
The World Diabetes Foundation has advocated for an integrated approach for the management of the double burden of diabetes and TB for several years. In 2009, the Foundation played a significant role in getting the WHO and the International Union Against Tuberculosis and Lung Disease (the Union) to examine the link between diabetes and TB via a series of consultations, with the objective of initiating a process towards developing a policy document on tuberculosis and diabetes.

Following systematic literature reviews and a series of expert consultations, in September 2011 the Collaborative Framework for Care and Control of Tuberculosis and Diabetes was launched. The Framework suggests how national programmes, clinicians and other stakeholders engaged in care, prevention and control of diabetes and TB can establish a coordinated response to both diseases, at organisational and clinical level, including improved detection and management of TB in patients with diabetes and improved detection and management of diabetes in patients with TB.

Effective collaboration between TB and HIV programmes over the past decades has helped avoid unnecessary duplication of service delivery structures and this Framework builds on the experience of the TB/HIV collaboration, applying its key elements to TB and diabetes. With the Framework the WHO and the Union are highlighting that prevention and care of diabetes should be a priority for all stakeholders working on TB control.

Prof. Anthony Harries, Senior Advisor in the Union and one of the driving forces behind the framework explains: ''In brief, the evidence indicates that diabetes increases the risk of getting tuberculosis two-three times. And it indicates that tuberculosis can make diabetes worse. Furthermore, diabetes makes treatment of tuberculosis less efficient. But what we don't really know at the moment is how the best approach would be to screen for those two diseases in routine systems and how we offer the best possible control. An example is 'Do we need to extend the length of tuberculosis treatment in patients with diabetes?' We don't know that. Some people say we should do, but we have no evidence.''

Operational and clinical research is needed into the exact mechanism of how diabetes and TB interact as many hypotheses exist but supporting evidence is lacking (see box on page 235). Following a call for more research in this area, in 2-3 years' time the WHO will review all new evidence and revise the Framework accordingly. ''So the next few years will be about building the evidence around what sort of interventions we should focus on,'' explains Prof. Harries.

DIABETES AND TUBERCULOSIS

6,357 Health care professionals trained in TB/diabetes screening/management

104
Health care facilities established/strengthened

10,854
People with TB screened for diabetes

1 million
People reached through awareness activities

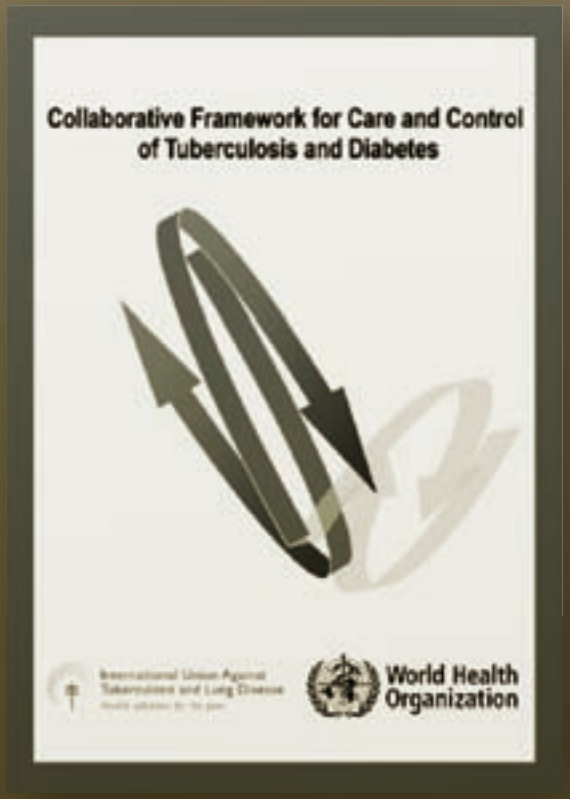
WDF FUNDING FOR DIABETES AND TUBERCULOSIS OUT OF TOTAL FUNDING

Diabetes and tuberculosis **2%**
USD 1,559,434

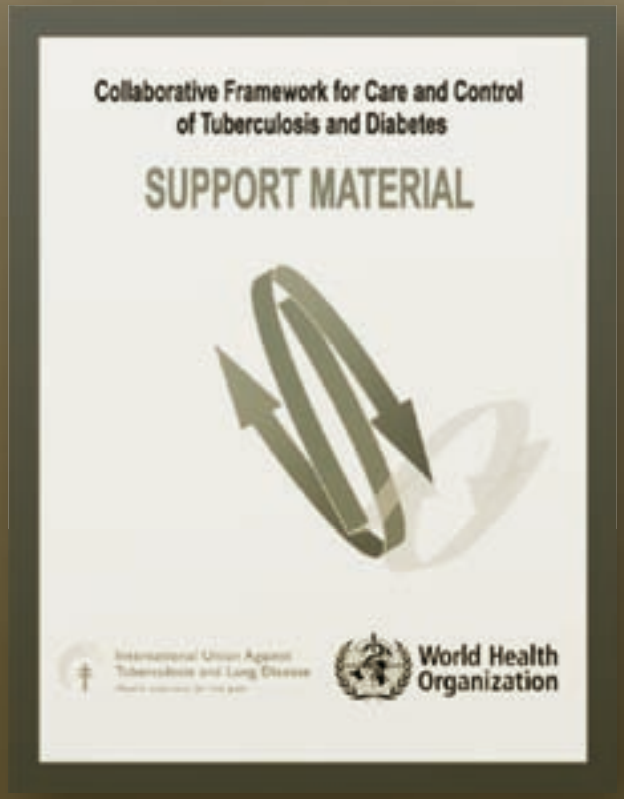
Other focus areas **98%**
USD 88,395,403

** TB projects include full diabetes/TB projects and projects with a diabetes/TB component.*

DEMONSTRATING THE EVIDENCE BETWEEN DIABETES AND TUBERCULOSIS



Collaborative Framework for Care and Control of Tuberculosis and Diabetes



Support material for the Collaborative Framework

The Collaborative Framework for Care and Control of Tuberculosis and Diabetes was launched in August 2011. The framework document was developed by the World Health Organization (WHO) and the International Union Against TB and Lung Disease (The Union). The WDF played an important role in catalysing the process.

The framework document demonstrates the evidence of a link between diabetes and tuberculosis. The evidence indicates that diabetes increases the risk of getting tuberculosis and it indicates that tuberculosis can make diabetes worse.

DOTS SYSTEM

As an example of a cost-effective model for detecting and controlling TB, the Union and WHO have developed and advocated the Directly Observed Treatment Short course (DOTS) system for TB control.

The model, which has allowed structured, well-monitored services to be delivered to millions of TB patients in some of the poorest countries of the world, consists of three steps:

1) Identify TB patients through passive case finding
2) Diagnose TB through sputum smear examination
3) Refer patients to anti-TB treatment

CURRENT THEORIES FOR DIABETES/TB INTERACTIONS

- TB infection may progress at a faster rate in people with diabetes than in those without diabetes
- Diabetes may adversely affect TB treatment outcomes by delaying the response time to treatment
- The emergence of drug-resistant TB may be accelerated by diabetes
- The onset of diabetes may be triggered by TB
- TB may worsen glycaemic control in diabetes
- Medications for TB may interfere with the treatment of diabetes through drug interactions
- Diabetes may interfere with the activity of TB medications

Work on the ground

The World Diabetes Foundation is currently supporting projects in India, China, Nigeria, Malawi, Mexico and Brazil which aim to investigate the association between TB and diabetes and improve detection and care of diabetes in people with TB and vice versa. This will be achieved through screening of people with and without TB for diabetes and awareness campaigns and training of TB health care professionals in diabetes diagnosis and management. In this way, the projects will generate important data and knowledge for developing a model for addressing the double burden of diabetes and TB. Several of the projects are also testing the adaption of the Directly Observed Treatment Short course (DOTS) system to monitor and report cases of diabetes and treatment outcomes (see box above). The DOTS system has already been successfully adapted for monitoring antiretroviral therapy for people living with HIV and so it is hoped that the model can be adapted to encompass non-communicable diseases (NCDs), such as diabetes.

Going forward, it is crucial that governments, technical agencies, funding agencies and donors recognise the link between diabetes and TB as well as the potential risk of blood glucose abnormality and diabetes as a consequence of treatment for HIV. This entails closer collaboration between the various national health programmes and stakeholders to strengthen health systems, but will benefit people with communicable diseases and/or NCDs and especially those facing a double or triple burden of diseases.

Advocating for high level recognition

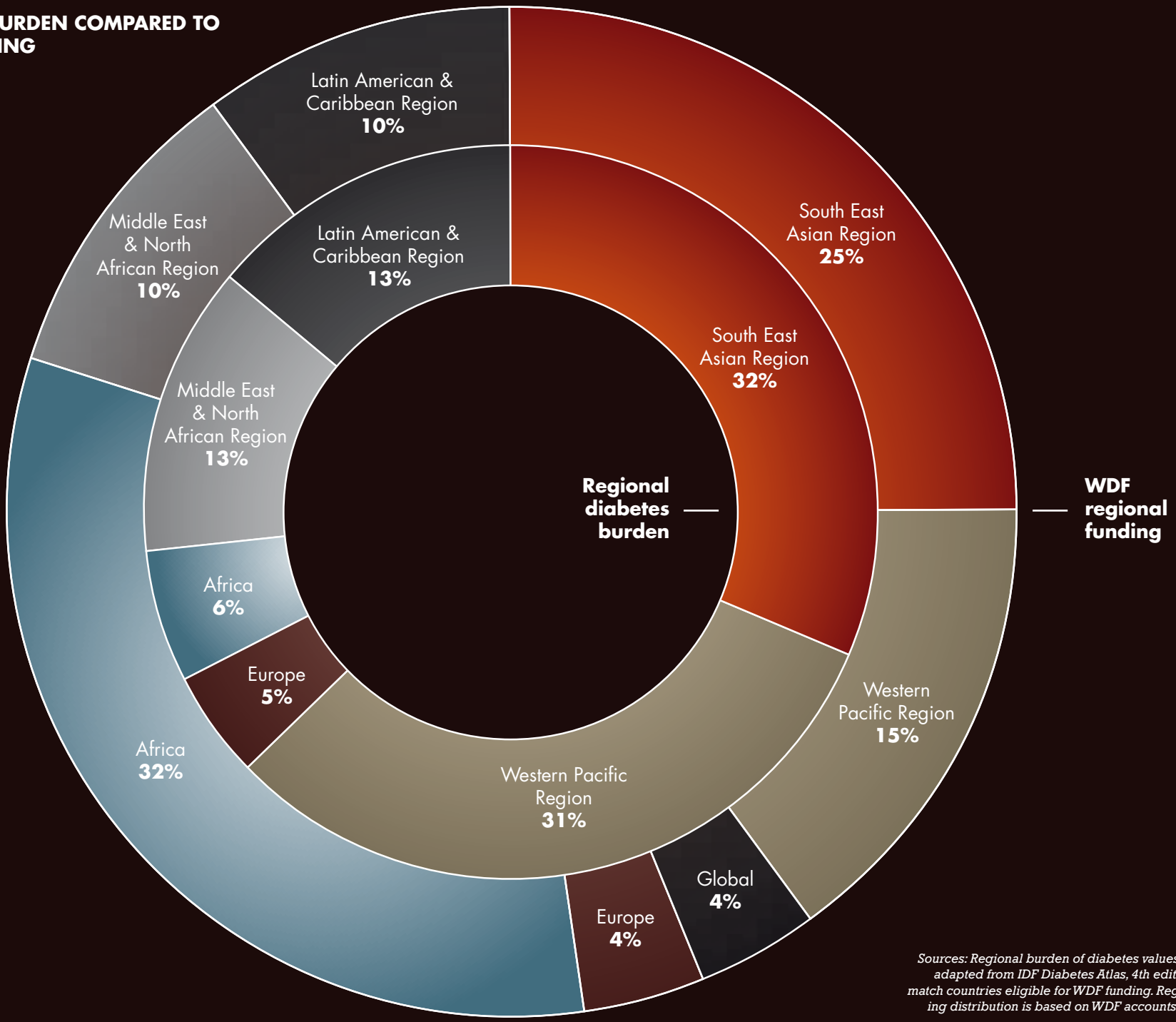
The United Nations Political Declaration on prevention and care for non-communicable diseases in September 2011 did not mention any concrete commitments on the link between diabetes and TB. The World Diabetes Foundation strongly believes that not recognising and addressing this link has the potential to jeopardise the previous gains in TB prevention and control, as well as being detrimental to the health of those with both diabetes and TB. The Foundation will therefore continue to support projects to address the prevention and care of diabetes and TB and advocate for recognition of the threat of this double disease burden at the highest political levels.

MAKING A DIFFERENCE: REGIONAL BURDEN COMPARED TO FUNDING

The World Diabetes Foundation strives to fund projects in regions where resources for diabetes prevention and treatment are scarce and the projected future burden of diabetes is high. Our guiding principle is to allocate funding to areas where we believe it can make a lasting difference.

The South East-Asia Region and the Western Pacific Region, which combined account for 63% of people living with diabetes in countries eligible for World Diabetes Foundation project funding, receive 40% of the Foundation's funds, whereas the African and Middle East and North African Regions receive 42% of the funds despite accounting for only 19% of people living with diabetes in countries eligible for funding from the Foundation.

REGIONAL DIABETES BURDEN COMPARED TO WDF REGIONAL FUNDING



Sources: Regional burden of diabetes values have been adapted from IDF Diabetes Atlas, 4th edition, 2009 to match countries eligible for WDF funding. Regional funding distribution is based on WDF accounts 2002-2011.

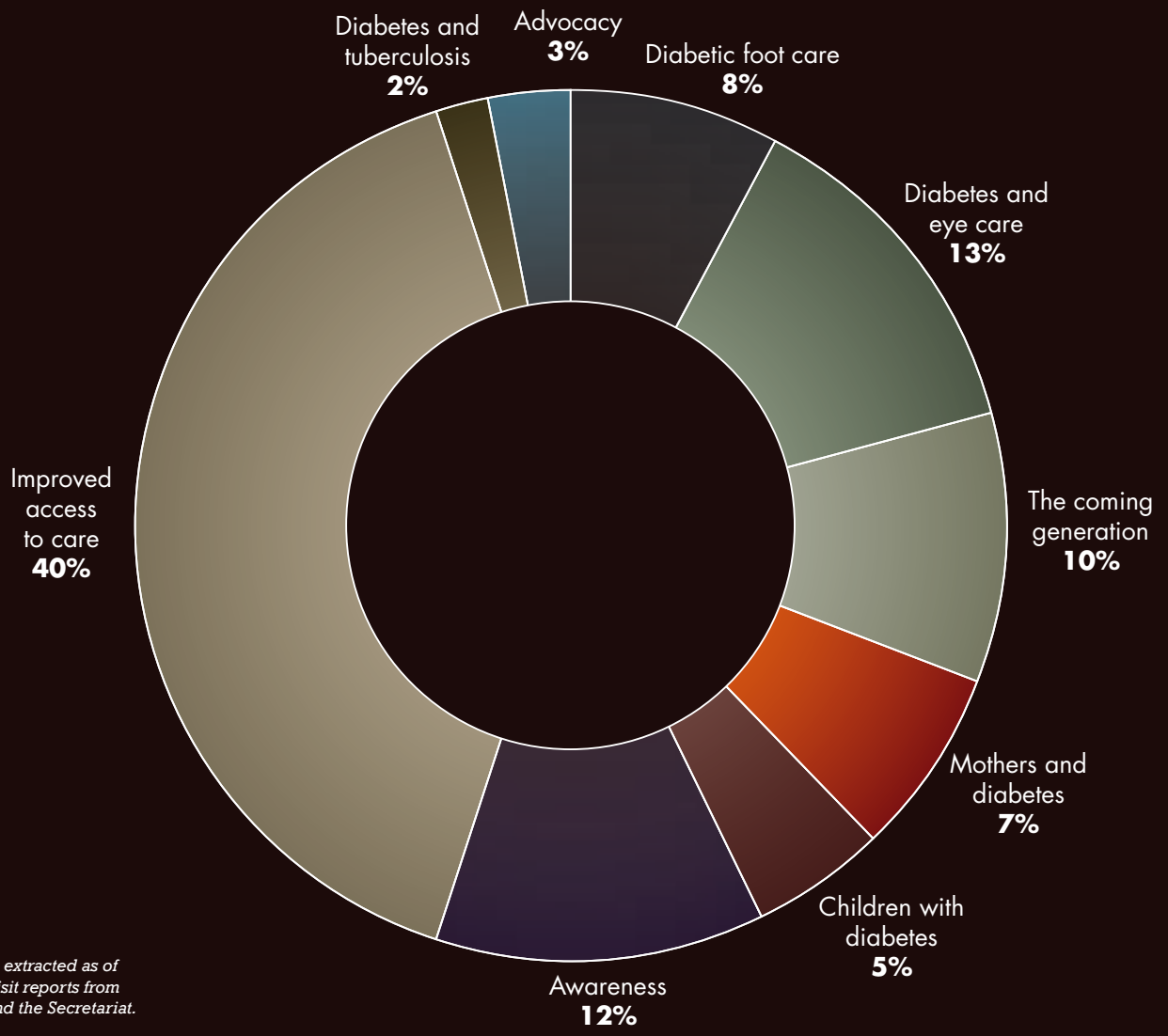
WDF FOCUS AREAS AND IMPACT INDICATORS

From 2002 to 2011, the World Diabetes Foundation has funded 278 projects in 100 countries, focusing on awareness, education and capacity building at the local, regional and global level.

By the end of 2011, the total project portfolio had reached USD 259.4 million, of which USD 89.95 million were donated by the World Diabetes Foundation.

The largest proportion (40%) of the Foundation's funding is spent on strengthening health care systems and building health care capacity, followed by creating awareness and primary prevention.

The World Diabetes Foundation operates with eight focus areas as depicted in the chart below. In addition, a substantial amount of funding is also allocated to creating awareness activities that are often an integrated part of the local projects.



Source: All accumulated results mentioned have been extracted as of December 2011 from semi-annual reports and field visit reports from World Diabetes Foundation implementing partners and the Secretariat.

Improved access to care

The largest share of the World Diabetes Foundation's funding is spent on strengthening health care systems and building health care capacity. This focus area includes diabetes screening, awareness camps and establishment of clinics. Access to care is improved by making diagnostic equipment available and training staff to detect not only diabetes, but also some of the most critical yet easily preventable and treatable complications.

5,230
Clinics strengthened/established
(including mobile clinics)

153,759
Health care professionals trained
(42,305 doctors, 43,160 nurses, 68,294 paramedics)

1.5 million
Patients treated at
established clinics

21,000
Awareness/screening
camps organised

5.8 million
People screened
for diabetes

Diabetic foot care

Diabetes related lower-limb amputations are among the most devastating complications, and the majority can be prevented by relatively simple and low-cost measures. By facilitating the training of health care professionals in diabetic foot care, the World Diabetes Foundation has contributed to saving thousands of feet from unnecessary amputation.

11,947
Health care professionals
trained in diabetic foot

416,846
Patients with high-risk
feet screened

50,554
Feet provided with
treatment and care

The coming generation (primary prevention)

The coming generation is the main target group for activities involving primary prevention. The World Diabetes Foundation defines primary prevention as an action to prevent diabetes. The Foundation supports major primary prevention and health promotion projects in developing countries to develop comprehensive, sustainable models for promoting healthy living.

191,102
School teachers trained

222,597
Parents reached and sensitised

551,153
School children reached

Children with diabetes

Many children in the developing world die prematurely because their diabetes is not detected and treated in time. This is further emphasised by poor access to health care and availability and affordability of life-saving treatment. The World Diabetes Foundation supports and collaborates with other organisations to develop sustainable initiatives to address these issues as well as to lobby local governments to find a long-term solution.

6,454
Children provided with care (type 1 diabetes)

Diabetes and eye care

More than half of people who have lived with diabetes for 10 years or more will develop diabetic retinopathy – a complication which can lead to blindness. The World Diabetes Foundation therefore supports sustainable programmes that facilitate the training of health care professionals in proper screening of diabetic retinopathy and eye care to prevent blindness among poorer population groups.

683,334
People screened for diabetic retinopathy

101,265
Cases of diabetic retinopathy detected (13% of those screened)

77,811
Patients received sight saving treatment

Mothers and diabetes

An important focus area for the World Diabetes Foundation is the issue of women and diabetes. Focusing on gestational diabetes is a low-cost intervention both to improve maternal and child health as well as to prevent future diabetes. Providing screening and care to mothers at risk of gestational diabetes is likely to have a multi-generational impact on the beneficiaries as well as on health care systems and budgets.

99,850
Women screened for diabetes

2,242
Clinics strengthened

Advocacy – building a global alliance

Over the last 10 years, the World Diabetes Foundation has contributed to raising global awareness about diabetes as a health development issue by providing funding for initiatives such as Diabetes Action Now, the IDF Diabetes Atlas, IDF Africa Clinical Practice Guidelines and Training, promotion for the UN Resolution on Diabetes, the Copenhagen Donor Conference on the Emerging Burden of Chronic Diseases, the initiative on Women, Diabetes and Development at the UN in New York and the Expert Meeting on Indigenous Peoples, Diabetes and Development in Denmark..

In addition, the World Diabetes Foundation also contributed to the approval of a Collaborative Framework for Care and Control of TB and Diabetes developed by the Stop TB Department at the WHO and the International Union Against Tuberculosis and Lung Diseases (IUATLD).

The World Diabetes Foundation has funded and organised regional diabetes Summits in Hanoi, Nairobi, Chennai and Salvador de Bahia that provided significant strategic platforms to create networks for advocacy, sharing of best practice and bringing the issue of diabetes and associated neglected focus areas to the forefront at the donor and policy level.

5
Regional
Diabetes Summits

1
Donor Conference
on NCDs

2
Expert
Meetings

8
Strategic Consultative
Meetings

Diabetes and tuberculosis

In an effort to establish collaboration to understand the dual burden of diabetes and tuberculosis the World Diabetes Foundation has funded several pilot programmes to develop sustainable models for an integrated approach in developing countries. Recent evidence indicates that diabetes triples the risk of developing tuberculosis. The increasing prevalence of diabetes is therefore threatening a resurgence of tuberculosis.

6,357
Health care professionals trained in
diabetes/tb screening/management

104
Health care facilities
established or strengthened

10,854
People with tuberculosis
screened for diabetes

1 million
People reached through
awareness activities

FUNDRAISING FOR A BETTER FUTURE

For people with diabetes in developing countries every dollar counts. Privately donated funds can help bridge the resource gap. It only costs approximately USD 15,000 to set up a basic outpatient clinic which can provide access to care for poor and disadvantaged people. Since 2002, Novo Nordisk employees have taken action through the World Diabetes Foundation's fundraising programme, which aims at setting up clinics and providing essential support for children with type 1 diabetes.

Over the years, funds have been raised through individual employee donations, fundraising efforts by Novo Nordisk managers and the Take Action programme - a volunteer initiative where employees can undertake social initiatives or donate a monthly amount from their pay-check to support a charitable cause.

Apart from raising much needed funds, the value of the Take Action events and private donations lies in the awareness which they help create and the opportunity for the individual employee to get involved in community work.

''The Take Action programme is quite unique as it offers employees a very concrete and meaningful pathway for changing the course of diabetes. Providing life-saving support to children living with type 1 diabetes, or establishing clinics for care that create access to regular follow-up, medical supplies and vital patient education in self-management that would otherwise be out of their reach,'' explains Ms. Benita Bertram, Administration and Programme Manager of the World Diabetes Foundation. However, there are no quick fixes. The local partner has to be in the driver's seat and willing to make the extra effort to change the reality on the ground. ''Small successful pilots have been an 'eye opener' which have later paved the way for more comprehensive and sustainable care programmes,'' she explains, stressing the importance of building local capability before making the big leap.

IMPACT
As the founder of the World Diabetes Foundation, Novo Nordisk A/S and its employees share our mission.

SINCE 2002, NOVO NORDISK EMPLOYEES HAVE CONTRIBUTED OVER USD 1.8 MILLION, WHICH HAS SO FAR FACILITATED THE STRENGTHENING AND ESTABLISHMENT OF 53 CLINICS IN 14 COUNTRIES AND SUPPORTED THE CARE OF 1,100 CHILDREN LIVING WITH TYPE 1 DIABETES IN DEVELOPING COUNTRIES.

IN TOTAL, THE WORLD DIABETES FOUNDATION HAS RAISED USD 4.3 MILLION FROM FUNDRAISING INITIATIVES SINCE 2002.

53
Clinics established in 14 countries

1,100
Children provided with care (type 1 diabetes)

PROVIDING MOBILE CARE IN THAILAND

On 26 November 2008, more than 200 prominent guests including two royal families – Their Royal Highnesses Frederik, the Crown Prince and Mary, the Crown Princess of Denmark and Her Royal Highness Princess Soamsawali and Her Royal Highness Princess Bajrakitiyabna of Thailand - graced a charity dinner at the residence of the former Royal Danish Ambassador to Thailand, Mr. Michael Sternberg. Each guest paid a significant sum to dine and the funds raised were earmarked to support a mobile eye clinic in the Northern Province of Thailand.

IMPACT IN THAILAND

2
Mobile eye care vans established

1,650
Health care professionals trained

800,000
People screened for diabetic retinopathy

12,620
People provided with laser treatment

The celebration on 26 November was related to the visit of the Danish Crown Prince and Princess along with a delegation of Danish business entities, marking the official celebrations of 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, illustrating the Danish business community's support to corporate social responsibility. After the charity event, eye care in rural Thai areas was one step closer to becoming a reality. Profits from the fundraiser amounted to USD 25,000.

While this was indeed a sizeable amount, it was not sufficient to establish the mobile unit, so an additional USD 406,927 was donated by the World Diabetes Foundation to set up two advanced mobile eye care units in collaboration with the Ministry of Public Health in Thailand, the implementing partner, which has carried all the running costs associated with the mobile units and provided the health care staff needed to operate the units.

The mobile eye care units were a replication of a model developed in India and have helped bring state of the art diagnosis and treatment of diabetic retinopathy to the very doorstep of patients in remote rural areas. The advanced, fully equipped mobile eye care units have visited small towns and villages in Northern Thailand and provided diabetes-related eye care on the spot in the van. The mobile units enabled local ophthalmologists and specialists to access diagnostic and therapeutic equipment. In addition to this, video conferencing capabilities allowed for consultations with specialists at the nearby provincial hospital. The mobile eye care units have now been integrated into the existing health care structure as part of the national efforts for combating diabetes.

To overcome the barriers to access to care and the vast distances involved, 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 van, screening, consultation and treatment facilities are brought to poor and disadvantaged people in rural areas.

FUNDRAISING FOR ACCESS TO CARE IN CAMBODIA

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

IMPACT IN CAMBODIA

9
Diabetes clinics have been established and strengthened

16,100
Patients treated through the established clinics

515
Health care professionals trained

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

Every day in Cambodia, many children and adults with diabetes die because they cannot receive the basic care and treatment they need to survive and many more die before a diagnosis can even be made. The ambition of the initiative was to help the World Diabetes Foundation raise a sizeable amount to support its initiatives in Cambodia. The proceeds from ticket sales and corporate sponsorships amounted to USD 45,356.

This money, along with donations from other fundraisers within Novo Nordisk A/S, was used by the World Diabetes Foundation to help establish new diabetes clinics at regional hospitals in Siem Reap and Kratie to improve access to diabetes care. In addition, the World Diabetes Foundation coordinated the establishment of two container clinics in Battam Bang and Kampong Thom. Since 2007, volunteers from the Cambodian Diabetes Association, the Foundation's local partner, have run the project with the help of donations from Novo Nordisk A/S, containers sponsored by Maersk Shipping A/S and equipment from other private sponsors. The presence of these clinics has helped increase awareness of diabetes and its complications and further enabled and strengthened access to treatment. Overall the World Diabetes Foundation funding has helped establish nine clinics in total. Eight of these clinics are based in the public health system and run by health professionals within the public health system. One additional clinic is operated at the Kossamak Hospital in Phnom Penh which is a private hospital enduring the highest patient load.

WORLD **DIABETES** FOUNDATION

CODE OF CONDUCT

Our aim is to alleviate human suffering related to diabetes and its complications among those least able to withstand the burden of the disease.

1. We will recognise people with diabetes and related diseases as dignified humans in all our activities and communications.

2. We will display respect for the culture and values of the communities and countries within which we work.

3. We will facilitate the UN Millennium Development Goals by striving to reduce the beneficiaries' vulnerability – addressing basic needs but also promoting development of sustainable solutions.

4. We will give support regardless of race, gender or creed of the recipients in the developing world based upon assessment of needs and capabilities to meet these needs.

5. We will promote local ownership of sustainable initiatives in co-operation with governments, private institutions and civil society.

6. We will help build and strengthen local capacity to ensure that the recipients are empowered as key players in the development process.

7. We will seek to support and create synergy between both top-down and bottom-up approaches that apply participation and partnership as both a means and a goal.

8. We will be accountable to both those we seek to assist and those from whom we accept resources.

9. We will adopt and require our partners to adopt a zero tolerance policy to corruption and bribery.

10. We will be open and transparent, and report on the impact of our work, and the factors limiting or enhancing that impact.

The World Diabetes Foundation Board of Directors in action, Hvidøre, Denmark, March 2012.

ABOUT THE WORLD DIABETES FOUNDATION

The World Diabetes Foundation was established in 2002 through a commitment of DKK 1.1 billion (approximately USD 195 million) to be allocated during the period 2001 - 2017 by Novo Nordisk A/S.

The Foundation is registered as an independent trust and governed by a Board of six experts in the field of diabetes, access to health and development assistance. The World Diabetes Foundation raises funds from other sources to support specific projects ensuring a multiplier effect; for every USD spent, the Foundation is able to raise approximately USD 2 in cash or as in-kind donations from other sources.

We hope that our anniversary publication shows that it is possible to tackle the challenges posed by diabetes in the developing world and that the efforts of the World Diabetes Foundation are starting to have an impact. Our 10 year anniversary marks just the beginning of a more hopeful future for people with diabetes in the developing world.

We thank our sponsors, project partners and well-wishers for their support.

For more information, please visit: **www.worlddiabetesfoundation.org**