JANE WAJIRA Jane has type 2 diabetes and lives in Kenya

# Base of the Pyramid programme

EFFECTIVENESS, SCALABILITY, SUSTAINABILITY AND SHARED VALUE

















# BASE OF THE PYRAMID PROGRAMME

In 2010, Novo Nordisk established the Base of the Pyramid (BoP) programme to identify innovative and sustainable solutions that support an integrated approach to diagnosis, treatment and control of diabetes for the working poor living at the base of the economic pyramid.

BoP works through public–private partnerships to improve access to diabetes care. This model promotes shared responsibility between Novo Nordisk, government and various local stakeholders, and is aligned with the United Nations Sustainable Development Goals (SDGs). Through these collaborations, Novo Nordisk aims to create shared value by developing scalable, sustainable and profitable solutions that increase access to diabetes care for the working poor as well as provide value to Novo Nordisk's business.

This brochure presents some of the key findings from an independent evaluation conducted by University College London (UCL) of the effectiveness, scalability, sustainability and shared value of the programme in Kenya.

BoP programmes are also being implemented in Ghana and Nigeria in partnership with local stakeholders, and a programme will be launched in Senegal in 2017.

# **BOP IN KENYA**

#### IMPROVING ACCESS TO QUALITY CARE FOR PEOPLE WITH DIABETES

In Kenya, diabetes affects approximately 2.2% of the adult population, equalling 478,000 people.<sup>1</sup> This number is expected to more than double by 2040 to more than 1.1 million people.<sup>1</sup> Currently, around 60% of people with diabetes in Kenya remain undiagnosed.<sup>1</sup>

People with diabetes can live long and healthy lives if their diabetes is detected and managed well.<sup>2</sup> However, undetected or poorly managed diabetes can lead to severe complications that include loss of vision, cardiovascular disease, end-stage renal disease and amputation of the lower extremities. In 2015, 8,700 people died from diabetes-related causes – almost all of them were under the age of 60.<sup>1</sup>

People with diabetes in Kenya face a range of barriers in accessing diabetes care. These include affordability of care, geography and the associated transport and time costs of accessing care, lack of awareness about diabetes and its symptoms and the general inadequacy of the healthcare system.

In 2012, Novo Nordisk initiated the BoP programme in Kenya as an innovative public–private partnership to develop a model for improving access to care for people with diabetes. The objective was to bring stakeholders together to find solutions to the systemic and personal barriers that people with diabetes face in accessing care.

#### **BOP KENYA PARTNERS**

- Novo Nordisk
- Kenyan Ministry of Health
- Phillips Pharmaceuticals Ltd
- Local county governments
- Mission for Essential Drugs and Supplies (MEDS)
- Kenya Conference of Catholic Bishops (KCCB)
- Christian Health Association Kenya (CHAK)
- Kenya Defeat Diabetes Association (KDDA)

#### **FIVE PILLARS FOR ACTION**

The five pillars for action, which were defined and agreed upon by the partners, work to ensure:

- Stable and affordable insulin supply
- Access to quality care delivered by trained healthcare professionals
- Improved self-management through patient education
- Increased awareness of diabetes
- Early diagnosis of diabetes through screening

### **SCALING UP**

The BoP programme in Kenya was scaled up from pilot projects in two counties in 2012 to 28 of Kenya's 47 counties by the end of 2016.



#### JANUARY – SEPTEMBER 2012 BoP piloted in two counties

(Nyeri and Dagoretti divison of Nairobi)

# PROGRAMME MILESTONES

		JANUARY 2012 – SEPTEMBER 2012
Stable and Affordable supply Of insulin	Novo Nordisk entered into memorandums of understanding (MoUs) with the programme partners and worked with national distributors to regulate the cost structures and coordinate the supply of insulin	The price of insulin to the patient was reduced from a mean price of 1,000 Kenyan shillings (about 10 US dollars) in Dagoretti and 850 shillings (about 8 dollars) in Nyeri to 500 shillings (about 5 dollars)
ACCESS TO QUALITY CARE DELIVERED BY TRAINED HEALTHCARE PROFESSIONALS	Healthcare professional training was provided in the form of educational activities and support materials	46 healthcare professionals from 24 faith-based organisations were trained in comprehensive diabetes care 119 diabetes lay educators were trained
IMPROVED SELF- MANAGEMENT THROUGH PATIENT EDUCATION	A network of diabetes support groups was established under the Kenya Defeat Diabetes Association to provide patient support and educa- tion	An external evaluation found that 68% of patients surveyed in Nyeri and 72% in Dagoretti believed that the availability of insulin had improved. More than half of patients had expe- rienced improvements in their blood glucose levels
INCREASED AWARENESS OF DIABETES	Awareness-raising activities were conducted at national level, especially as part of World Diabetes Day	
EARLY DIAGNOSIS OF DIABETES THROUGH SCREENING	Free diabetes screening was provided in intervention counties	

PHASE 1



#### SEPTEMBER 2012 – JUNE 2013

BoP scaled up to 14 additional counties (Kirinyaga, Embu, Kiambu, Muranga, Meru, Tharaka Nithi, Nakuru, Nyandarua, Uasin Gishu, Kisii, Machakos, Makueni, Mombasa and Kilifi)



#### SEPTEMBER 2013 – DECEMBER 2014

BoP scaled up to 12 additional counties (Kisumu, Migori, Homa Bay, Nyamira, Kakamega, Vihiga, Bungoma, Siaya, Busia, Kitul, Lalkipia and Nairobi)

All data are as per county reports over the duration of the BoP programme in Kenya. Data are on file.

PHASE 2 SEPTEMBER 2012 – JUNE 2013	PHASE 3 SEPTEMBER 2013 – DECEMBER 2014	PHASE 4 JANUARY 2015 – DECEMBER 2016	<b>RESULTS FOR PHASES 1–4</b>
Access to insulin at a fixed price was expanded to an additional 32 facilities	Continued efforts to improve access to insulin	Continued efforts to improve access to insulin	Over the duration of the programme, <b>insulin demand increased</b> annually. Due to reduced financial constraints, there is greater consistency in demand, procurement and the supply chain
More than 200 healthcare professionals were trained in comprehensive diabetes care, and more than 400 healthcare professionals were trained via continued medical education (CME) 107 diabetes lay educators were trained	<ul> <li>691 healthcare professionals (85 previously trained in phase 2) were trained using the Buddy Doctor Initiative (BDI) curriculum</li> <li>164 healthcare professionals were trained in treating to target</li> <li>105 diabetes lay educators were trained</li> </ul>	444 healthcare professionals were trained by physicians previously trained using the BDI curriculum	More than <b>1,500 healthcare</b> <b>professionals</b> have been trained in diabetes care and, through the BDI, physicians are empowered to share their knowledge with and train other healthcare professionals
Information Education Communica- tion (IEC) materials on diabetes were introduced and used in 79% of participating facilities 36 diabetes patient support groups were established	17 diabetes patient support groups were established	Three diabetes centres of excellence established in Kakamega, Mombasa and Nakuru counties	<ul> <li>46 patient support groups have been established over the duration of the programme</li> <li>Three diabetes Centres of Excellence have been established</li> </ul>
	Diabetes educational video was developed	A total of 1.5 million people reached through radio/TV awareness campaigns	<b>1.5 million people</b> have been reached through radio/TV awareness campaigns
		19,106 people were screened through a BoP awareness activity in Meru, Tharaka Nithi, Embu and Nairobi counties.	<b>19,106 people</b> have been screened through BoP awareness activities in Meru, Tharaka Nithi, Embu and Nairobi counties

### **ABOUT THE** ASSESSMENT

UCL conducted an assessment of the BoP programme in Kenya to establish the current impact of the programme.

The objectives of this evaluation were to:

- assess the extent to which BoP Kenya is scalable
- explore whether BoP is sustainable in Kenya
- understand whether all partners share value in the Kenvan BoP scheme
- investigate whether BoP Kenya has improved access to diabetes care.

The Rapid Assessment Protocol for Insulin Access (RAPIA), an approach developed to provide a national situational analysis of diabetes care, was adapted to examine health infrastructure and diabetes care pathways in Kenya. At national level, the RAPIA was applied in a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis of the BoP through a total of 15 in-depth interviews with key stakeholders, including all the BoP partners, asking about access to diabetes care, sustainability, scalability and shared value.

At individual and county health system levels, RAPIA was adapted to explore the impact of the BoP on access to diabetes care through a comparison of two counties: Meru, an intervention county, and Trans Nzoia, a control county. Data were collected from people with diabetes, medical staff, community health workers, pharmacists, lab technicians and health service administrators.

# **BOP ASSESSMENT**



CONTROL COUNTY

Trans Nzoia is a county located approximately 390 km north-west of Nairobi. It has a population of almost 1 million people, of whom around 20% live in urban areas.<sup>7</sup> According to World Bank estimates, Trans Nzoia's GDP per capita is 349 US dollars.<sup>5</sup>

Trans Nzoia's health system includes public, private and faith-based organisations (FBOs). There are a total of 54 public facilities, 15 FBOs, five non-governmental organisations and 78 private sector-owned facilities.8

#### MERU INTERVENTION COUNTY

Meru is a county located approximately 300 km north-east of Nairobi. It has a population of almost 1.6 million people, of whom around 16% live in urban areas.<sup>3,4</sup> According to World Bank estimates, Meru's GDP per capita is 533 dollars.⁵

Meru's health system spans public and private organisations and FBOs. There are a total of 116 public facilities, 44 FBOs, three non-government organisations and 20 private sector-owned facilities. Around 58% of all services are run through the government.6

### IMPROVING ACCESS TO INSULIN

### Stable and affordable supply of insulin

#### MERU INTERVENTION COUNTY

## Insulin consistently available at a set price

The price of one unit of Mixtard<sup>®</sup> insulin was successfully controlled to 500 Kenyan shillings (about 5 US dollars) in Meru. Insulin was available to purchase via government clinics for 200 shillings (about 2 dollars), however it was frequently out of stock, meaning that it was often necessary to travel long distances to major centres to purchase it. In addition, the improved regularity of supply has effectively established a price ceiling of 500–600 shillings (about 5-6 dollars) both within participating facilities and in surrounding markets and private pharmacies in Meru.

Given high rates of government stock-outs of insulin and other medicines, consistency of supply was highly valued. However, some patients felt that 500 shillings (about 5 dollars) was still relatively expensive, especially combined with expenses such as travel costs.

#### TRANS NZOIA CONTROL COUNTY

## Fluctuation in availability and price of insulin

There was greater fluctuation in insulin prices through FBOs and private facilities compared to Meru, with reports of the price of insulin increasing to as much as 2,000 shillings (about 19 dollars) per vial. This meant patients who had not budgeted for fluctuations in price were limited in the terms of the amount of insulin they could buy and were subsequently undertreated.

One strength of BoP is the ability to price-regulate vials of insulin to 500 Kenyan shilling at consumer level. This has ensured a more consistent demand and supply cycle."

> UCL, Evaluating Novo Nordisk's Base of the Pyramid programme in Kenya



### WORKING BEYOND MEDICINE

#### Access to quality care by trained healthcare professionals

MERU INTERVENTION COUNTY TRANS NZOIA CONTROL COUNTY

#### Training efforts are highly valued by healthcare professionals but can be difficult to access

Through the BoP programme, Novo Nordisk provided training in the form of printed resources and educational activities for healthcare professionals. The printed materials were greatly valued, and in high demand. Training events were centrally located, meaning that staff had to travel long distances. Training was offered annually to one or two staff per facility. This meant that not all staff were able to access the training and that there was greater demand for the training activities.

#### Healthcare professional training was driven by clinics and not universally available Healthcare professional training was highly dependent on the facility and whether any key staff were able to drive this. One motivated staff member in the town of Kitale was instrumental in accessing BoP training for her FBO clinic staff members, despite the BoP not being formally implemented in the Trans Nzoia.

# Improved self-management through patient education

MERU INTERVENTION COUNTY

# Access to resources is a challenge for patient support

Multiple diabetic support groups (DSGs) were established in Meru both FBOs and the government. However, these DSGs relied heavily on individual members taking the time to attend the group, which normally coincided with a diabetes clinic day.

In addition, DSGs suggested models of support via joint purchasing of glucometer devices and strips to share among the patient group. These diabetes-related consumables are often out of reach for many. TRANS NZOIA CONTROL COUNTY

### Access to resources is a challenge for patient support

Issues similar to those encountered in Meru were expressed by DSGs in Trans Nzoia to do with feeling undersupported and under-resourced. As in Meru, DSGs are run by motivated individuals who seek to do what they can with limited resources. Thus, with a small amount of educational material and financial resources, the DSGs were confident they could deliver broad community support services such as community peer education.

# Increased awareness of diabetes

#### MERU INTERVENTION COUNTY

#### Limited awareness of diabetes and BoP continues to be a challenge

Limited outreach activities were undertaken as part of the BoP in Meru. This has resulted in low awareness of diabetes and no branding of the BoP programme or Novo Nordisk. There was local enthusiasm for such outreach activities, and this represents an opportunity for Novo Nordisk to impact diabetes awareness in the community.

#### TRANS NZOIA CONTROL COUNTY

#### Dedicated individuals promote diabetes awareness

Although outreach and screening activities were not present in Trans Nzoia, an annual march was organised as part of World Diabetes Day to encourage greater awareness and education about diabetes. This was coordinated by the Kitale DSG alongside the main government referral hospital in Kitale.

# Early diagnosis of diabetes through screening

#### MERU INTERVENTION COUNTY

#### Screening initiatives were organised but regular funding was a challenge

Novo Nordisk ran some free screening activities when the BoP programme was launched in Meru, as well as during the awareness campaign in 2015. These were based at FBO facilities and involved free blood glucose testing alongside education. This campaign was highly successful in attracting patients to healthcare facilities and improving initial contact with the healthcare system. However, these campaigns were reportedly short lived.

#### TRANS NZOIA CONTROL COUNTY

## No screening or early diagnosis initiatives available

There were no coordinated community screening or early diagnosis activities in place in Trans Nzoia. This meant that people presented at later stages of their disease and with advanced complications, placing a higher burden on the healthcare system due to the need for more intense care and resources.



# LOOKING FORWARD

#### SUSTAINABILITY, SHARED VALUE AND SCALABILITY OF BOP

In the context of the rising prevalence of non-communicable diseases in low- and middle-income countries, access to care is essential. BoP demonstrates that cross-sector approaches to improving access to diabetes care can have sustainable success while generating shared value for all.

#### Sustainability

The price point of insulin was seen as a balance between charity and profit, and as a way to ensure the financial sustainability of the programme. The lower/controlled price of insulin has led to an increase in orders placed at national level, however it has not yet translated into a financially sustainable model for Novo Nordisk. Despite this, a secure system of insulin ordering, procurement and supply now exists as a result of BoP.

#### Shared value

At national level, it was apparent that all partners had a strong sense of shared value in BoP. Despite reports that national BoP partner organisations felt stretched financially to provide services (insulin, education or staff support), they felt that the service they provided was an important one.

#### Scalability

MEDS is a key supplier of insulin, not only in Kenya but also in the rest of East Africa. The benefit of the price reduction of insulin has therefore passed nationally (via charities, government clinics and FBOs) and internationally to countries including Uganda that have also placed orders. There is also a possible spillover effect of the low price of insulin via BoP into non-intervention counties.

BoP has recently scaled up its diabetes services to include government facilities. This model of care is delivered via centres of excellence (CoEs), which offer centralised and comprehensive care to patients in three Kenyan counties. There is support for BoP at higher levels of government, and this may potentially translate into the programme being expanded into more government services around the country.

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A FULL VERSION OF UCL'S EVALUATION REPORT CAN BE ACCESSED AT: http://ighe.org/publications For more than 90 years, Novo Nordisk has been changing diabetes. Our key contribution is to discover, develop and manufacture better biological medicines and make them accessible to people with diabetes throughout the world. However, it takes more than medicine to defeat diabetes. Our Changing Diabetes<sup>®</sup> commitment focuses on the greatest unmet needs: addressing diabetes risk factors in urban areas, ensuring that people with diabetes are diagnosed earlier and have access to adequate care in order to be able to live their lives with as few limitations as possible. Working in partnerships, we will continue to drive change to defeat diabetes with an unfailing belief: it can be done.

Discover more about BoP at novonordisk.com/bop





changing diabetes®

