

innovating diabetes care in Turkey

Diabetes is a public health crisis, and nowhere in Europe is this more evident than in Turkey. Through partnerships with the healthcare community and the government, Novo Nordisk is committed to reducing the social and economic burden of diabetes – now and in the future.

contents

the challenge	3
the burden of diabetes	3
a healthcare system in transition	5
challenges in diabetes care	7
our approach	8
our value proposition	8
our history	9
creating shared value	10
we invest in local R&D capabilities to create knowledge that improves patient care	10
we put innovation and patient needs on the public agenda	12
we build diabetes care capabilities among healthcare professionals	14
we help people with diabetes take better care of themselves	16
value for society	18
value for Novo Nordisk	19
future perspectives	20
innovating diabetes care together	20
about this case study	21
methodology	21
references	22
about the Blueprint for Change Programme	23

Executive summary

At one in every seven people, Turkey has the highest diabetes prevalence in Europe. By 2035, more people with diabetes will live in Turkey than in any other country in Europe. Moreover, HbA_{1c} – a measurement of blood sugar and diabetes control – is considerably higher among Turkish people with diabetes than in other European countries.

Why does this matter? Poor diabetes control can lead to debilitating complications, such as kidney failure and amputation. These outcomes – largely preventable – are both tragic and costly. In Turkey, 23% of healthcare expenditures are attributable to diabetes. Three-quarters of diabetes costs result from complications. Improving diabetes control to recommended levels could save Turkish society as much as 24 billion euros between now and 2035.

Together with partners, we work to address this by focusing on areas where we can have the biggest positive impact, and in the process create shared value for society and our company:

- We invest in local R&D capabilities to create knowledge that improves patient care. This includes conducting clinical trials, which first of all allows us to develop safe, efficient and innovative medicines, but can also improve patient care practices and institutional research capabilities
- We put innovation and patient needs on the public agenda and argue how innovation may contribute to strengthening patient adherence and blood sugar control
- We build diabetes care capabilities among healthcare professionals so that patients have better access to qualified physicians and nurses
- We help people with diabetes take better care of themselves so they are better able to reach recommended treatment targets and live lives free from complications.

In essence, this is about innovating diabetes care in Turkey; not only by making innovative medicines accessible to patients, but also by rethinking how the diabetes challenge is addressed. Among these efforts, a common theme emerges: no single entity can improve diabetes care alone. What can be accomplished in partnership is greater than what any single actor can achieve. Combining each party's competencies into a unified vision and actions for improving diabetes care can help Turkey achieve results that benefit both the individual and society.

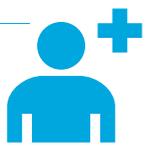
THE CHALLENGE

In social and economic terms, diabetes is costly. Achieving control of diabetes is key to avoiding debilitating complications, unnecessary mortality and excess costs to the healthcare system. Consequently, there is a need to innovate and rethink diabetes treatment and care to improve the health of people with diabetes.

the burden of diabetes

Turkey has the highest diabetes prevalence in Europe. About one in every seven adults in Turkey, or 7.2 million in all, lives with diabetes. By 2035, Turkey will also have the highest absolute number of people with diabetes in Europe – almost 12 million.¹

Diabetes takes a significant social and economic toll. Uncontrolled diabetes can lead to disabilities and complications² (Figure 1). The progression of diabetes can also be life-threatening and reduce life expectancy by around 5–10 years.³ In 2013, about 60,000 deaths in Turkey were diabetes-related.⁴



Lowering a patient's HbA_{1c} level by a single percentage point is associated with a 21% decrease in the risk of developing complications⁶

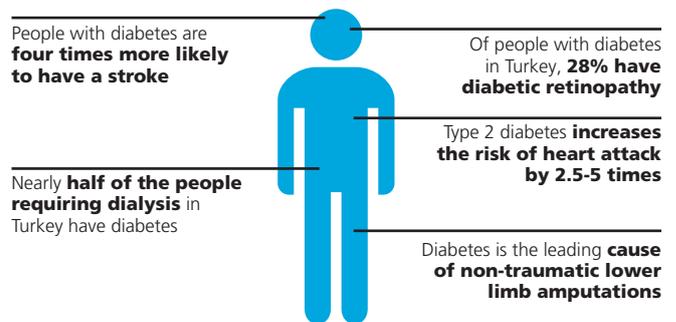
Health burden of diabetes

Lowering HbA_{1c} levels and achieving treatment targets is key to reducing complications and mortality (Box 1). Control begins with an understanding of the condition. The rule of halves⁵,^A says that only half of people with diabetes are diagnosed. In Turkey, the rule holds true^{1,2} (Figure 2); only 55% of people with diabetes have been diagnosed⁴. The rest are living unaware of their condition. Not all who are diagnosed with diabetes receive care, and the evidence suggests that only about half who receive care achieve treatment targets. Fewer than half of those reach desired outcomes, which means living free of diabetes-related complications.

Figure 1

STROKE AND HEART COMPLICATIONS

CAN RESULT FROM NOT REACHING TREATMENT TARGETS
Potential complications from diabetes



Box 1

HbA_{1c} – A WAY TO MEASURE WHETHER TREATMENT TARGETS HAVE BEEN ACHIEVED

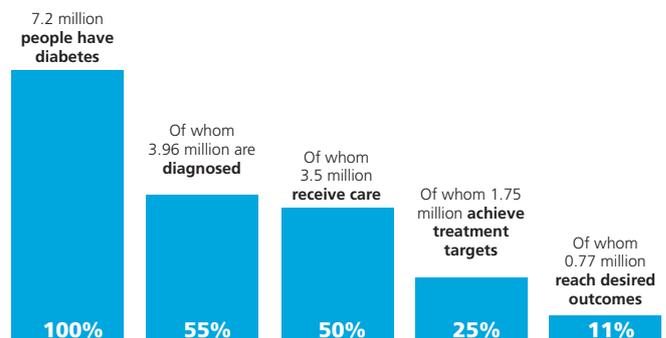
When treating people with diabetes, the goal is to reduce and stabilise blood sugar to the level of a person without diabetes. Healthcare professionals can assess a person's average blood sugar over time by measuring glycated haemoglobin, also called HbA_{1c}.

HbA_{1c} is used as an indicator of how well diabetes is controlled. People with diabetes achieve treatment targets when HbA_{1c} is maintained at 7% or below.⁷ A level higher than 7% is associated with an increased risk of complications.

Figure 2

ONLY 55% OF PEOPLE WITH DIABETES ARE DIAGNOSED

The rule of halves in Turkey



A. The rules of halves is a general model to describe the diabetes situation. Specific conditions vary from country to country.⁵

In Turkey, people living with diabetes have an average HbA_{1c} level of 10.6%.⁸ This is far above both the level recommended by treatment guidelines, which is 7%⁷, and the average HbA_{1c} level in comparable European countries^{8, 9, 10, 11} (Figure 3). Poor HbA_{1c} control may explain the fact that almost 60% of all Turkish diabetes patients have at least one complication.¹²

Economic burden of diabetes

About 23% of the Social Security Institution’s (SGK) total health expenditures in Turkey are attributable to diabetes and its complications.¹³

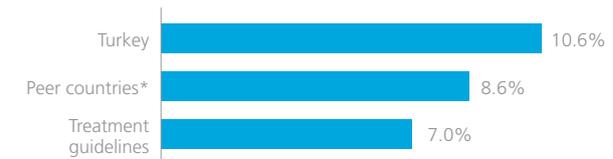
In Turkey, complications are a major driver of rising diabetes costs. Over the past several years, complications have consumed a steadily larger portion of total costs, while the relative direct cost of medicine, such as insulin, has shrunk¹³ (Figure 4). Today, complications account for three-quarters of the total cost of diabetes. The question, then, is how to break this curve and begin to reduce the social burden and associated costs of diabetes.

A small investment in better care can pay off through avoidance of costs. A single diabetes complication upon admission to hospital adds 60% to a patient’s treatment costs. Four complications add more than 500%.¹⁴

With complications dominating diabetes costs, there is value in making diabetes care a national health priority to reverse this trend.

Figure 3

A VERY HIGH HbA_{1c} LEVEL AMONG PEOPLE WITH DIABETES IN TURKEY

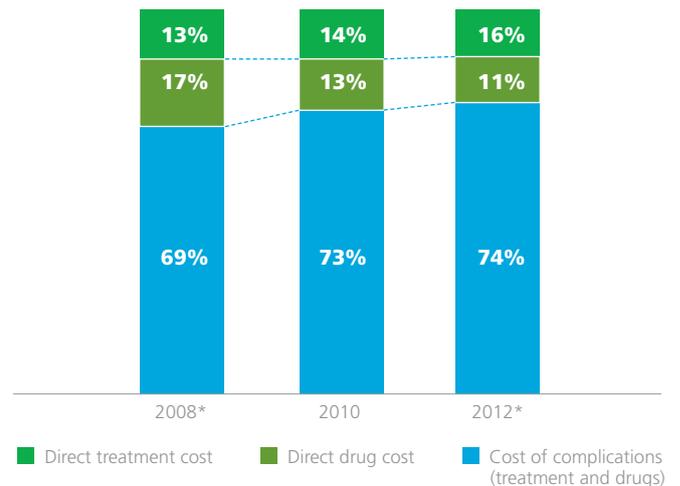


* Greece, Portugal, Spain, Italy and France. Weighted average of people with diabetes⁴

Figure 4

74% OF TOTAL DIABETES EXPENDITURES ARE DUE TO RELATED COMPLICATIONS

Total cost of diabetes to the Social Security Institution (SGK)



The Changing Diabetes® bus on tour raising awareness and providing care for people with diabetes, Izmir, 2009



a healthcare system in transition

The Turkish healthcare system has undergone substantial change since a sweeping reform programme was implemented in 2003 to make healthcare more accessible. At the time, 64% of the Turkish population had health insurance. Today, that share has risen to 87%.¹⁵

Through social security schemes, citizens have free access to primary and secondary healthcare. One of the effects of this has been an improvement in major health indicators. Since 2003, life expectancy has increased 2.3 years to 74.6 years and infant mortality rates have fallen.¹⁶

Patients in Turkey visit physicians eight times a year – more frequently than in peer countries.¹⁷ High demand for services has placed stress on the system. On a per-capita basis, Turkey has only half the number of physicians compared to Europe as a whole¹⁸ (Figure 5). One-fourth of people with diabetes say the time they spend with their physician is insufficient.¹⁹

Effects of health expenditure growth

To address these issues, the government has significantly increased public health spending²⁰ (Figure 6). Increased spending has challenged budgets, and a natural consequence is increased price pressure on pharmaceutical manufacturers. As a centralised purchaser, SGK has been an effective bargainer, driving down average medicine prices by 80% since 2002.²¹ Efforts to control volume, meanwhile, include advocacy of rational drug use, rules on prescribing²² and a longer process for approving new medicine²³.

The need to invest in innovation

Sheer numbers of people with diabetes and a high prevalence of complications suggest a need to innovate and rethink diabetes treatment and care in order to improve the health of people with diabetes.

For many people with diabetes, insulin is life-saving (Box 2). There has been great progress since the first isolation of insulin in 1921. The pace of product innovation is accelerating; today, patients have more choice and greater flexibility in treatment than they had even 15 years ago (Figure 13). Still, with HbA_{1c} levels unacceptably high, there is a need for innovative and tailor-made solutions where public and private organisations work together.

An example of a collaboration between public and private organisations is clinical research. Clinical research is the process where medicine is tested for safety and efficacy in people. It is a crucial part of medical research and

Figure 5

HALF THE PHYSICIANS

PER CAPITA COMPARED WITH THE REST OF EUROPE

Physicians per 100,000 population, 2011

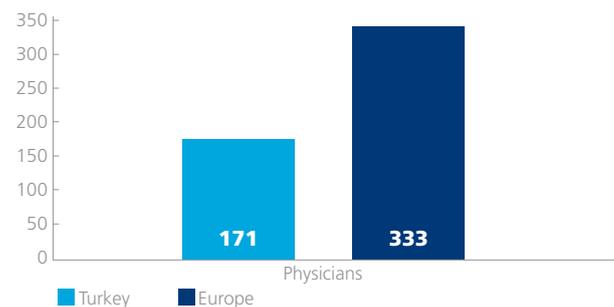
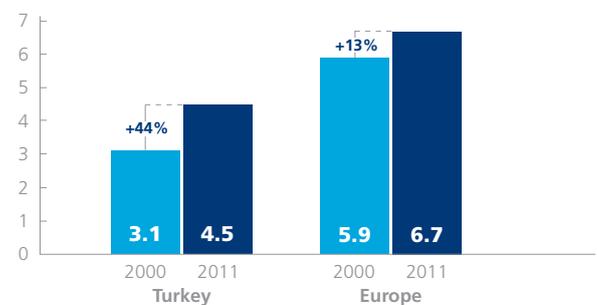


Figure 6

INCREASING HEALTH EXPENDITURES

MOVE TURKEY CLOSER TO THE LEVEL OF THE REST OF EUROPE

Government health expenditures, % of gross domestic product



Box 2

WHAT IS INSULIN AND WHY IS IT IMPORTANT?

Insulin is a hormone that helps the body use glucose, a kind of sugar, for energy. In type 1 diabetes, the pancreas no longer produces insulin and, consequently, blood glucose cannot enter the cells to be used for energy. In type 2 diabetes, either the pancreas does not produce enough insulin or the body is unable to use insulin correctly. If the pancreas is unable to produce enough insulin, it can be administered by injection or using an insulin pump. If insulin is not administered correctly in a timely manner, the situation can be life-threatening.²⁴

development (R&D). Patients who participate in clinical trials may benefit from better health outcomes and from the knowledge they gain about how to manage their diabetes.¹⁹

However, there are few clinical trials per capita in Turkey compared to other European countries^{25, 26} (Figure 7). This might be a reflection of limited investment in R&D by the pharmaceutical industry, which in 2011 totalled just 43 million euros – less than 1 euro per capita^{26, 27} (Figure 8).

It can be argued that an investment climate that is attractive for biotech R&D and clinical research can drive innovation in diabetes treatment and provide hope for better medical outcomes and improvements in patients' quality of life.

Figure 7

LESS THAN ONE-FOURTH AS MANY CLINICAL TRIALS

COMPARED WITH PEER COUNTRIES

Number of industry-sponsored clinical trials per million people, 2013

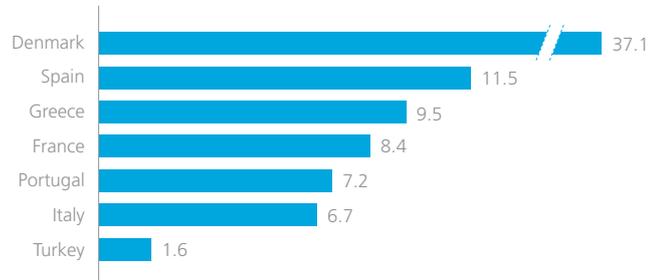
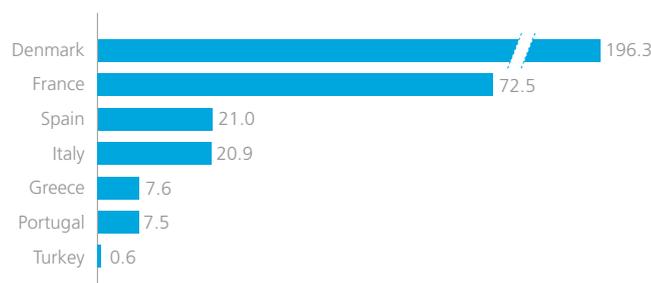


Figure 8

A FRACTION OF PHARMACEUTICAL R&D

IN TURKEY COMPARED WITH PEERS

Pharmaceutical industry investment in R&D, euros per capita, 2011



Guinness World Record for most blood sugar level tests (7,042) in 8 hours, Istanbul, 2012



challenges in diabetes care

Our approach to good diabetes care is rooted in the Universal Declaration of Human Rights, which defines the right to health as essential for an adequate standard of living.²⁸ Four key elements shape the right to health: availability, accessibility, affordability and quality for patients.²⁹ The World Health Organization identifies awareness as an additional critical element.³⁰

Together, these elements form a framework, representing five challenges that all need to be met to ensure good diabetes care for the patient (Figure 9).

Focus of this case study

The framework represents the basis for our research on how diabetes care can be strengthened in Turkey. This Blueprint for Change case study focuses on three key challenges (Figure 9), as these are where we can have the biggest positive impact in contributing to better health and reducing costly complications. For each, we show how we, at the local level in partnership with others, work to help people attain better control of diabetes.

We invest in local R&D capabilities and put innovation and patient needs on the public agenda

These activities create two primary benefits for patients. First, investments in domestic R&D through clinical trials generate the basis for developing safe and efficient products. Second, innovative products that result from these investments can meet the needs of patients, minimise complications and foster better health outcomes.

We build diabetes care capabilities among healthcare professionals

Knowledgeable healthcare professionals give better treatment and guidance to people with diabetes.

We help people with diabetes take better care of themselves

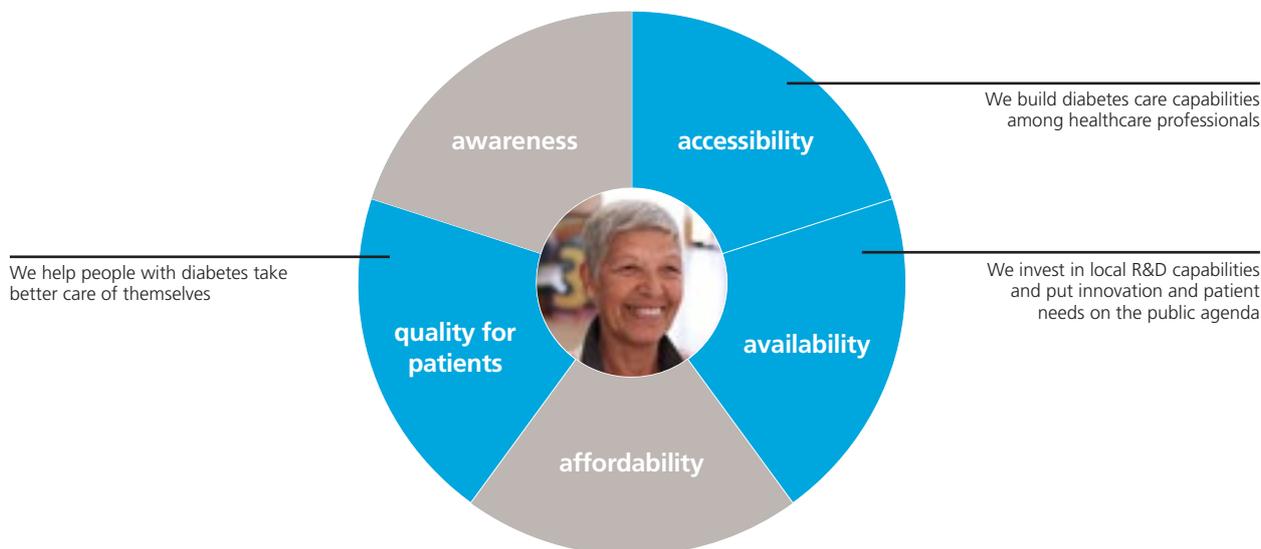
Through self-management training, we give patients the important skills and knowledge needed to take control of their diabetes.

In the course of our research, awareness and affordability did not turn out to be areas where we could have the most impact, in part because of systemic factors. For instance, when there is universal healthcare, affordability becomes less of an issue. However, the elements in the framework are interlinked and many of our highlighted activities therefore affect these two elements in an indirect manner. For example, when we support training of peer educators (page 16), sponsor a cycling team or invite policy-makers and key opinion leaders to roundtable discussions (page 12), it creates public attention, which ultimately contributes to raising general awareness about the needs of people with diabetes.

In this Blueprint for Change case study, we present what we have learned through discussions with a patient organisation, healthcare professionals, the Turkish Diabetes Association and the Turkish Diabetes Foundation. The findings presented are also based on perspectives shared by representatives of the Turkish Public Health Agency, the Ministry of Finance and the Turkish Medicines and Medical Devices Agency.

Figure 9

CHALLENGES IN DIABETES CARE WHERE WE CAN HAVE THE BIGGEST POSITIVE IMPACT



We help people with diabetes take better care of themselves

We build diabetes care capabilities among healthcare professionals

We invest in local R&D capabilities and put innovation and patient needs on the public agenda

OUR APPROACH

Through our Triple Bottom Line business principle, we create shared value for society and Novo Nordisk. We actively seek partnerships that build healthcare professionals' skills, share scientific advancements with policy-makers and provide innovative products to patients. These activities provide a foundation for better diabetes outcomes in Turkey.

our value proposition

At Novo Nordisk, we create value by putting the patient at the centre of everything we do. This philosophy is an expression of our Triple Bottom Line business principle, which means that we consider the financial, environmental and social impact of all our business decisions.³¹

We believe that what is good for people who live with diabetes is good for society and for our company. In conducting our business activities with a focus on patient and societal needs, we create value for all parties, including Novo Nordisk. We call this creating shared value.

Partnership approach

Our core competence is developing and making innovative products accessible to patients. We collaborate directly with partners to address complementary needs, such as patient education. For needs that are beyond our core competence, we may facilitate the bringing together of stakeholders with different competencies. All these activities are conducted with an understanding of the strengths that each entity brings to the value chain and how we can support their efforts.

“Our key contribution is to discover and develop innovative biological medicines and make them accessible to patients throughout the world.”

– THE NOVO NORDISK WAY^A

Our partnership approach reflects a sobering reality: no single entity can institute all of the success factors required to improve diabetes care and outcomes. What can be accomplished in partnership is greater than what any single actor can achieve alone.

We therefore believe it is important for private companies, non-governmental organisations and public institutions to agree on the challenges and apply their unique strengths together to resolve them (page 20). Through this vision and our strong track record of successful collaboration, we are striving to establish ourselves as a preferred partner in addressing the challenge of diabetes in Turkey.

The 50th Presidential Cycling Tour of Turkey, Kemer, 2014. ©Velolimages



our history

Novo Nordisk has more than 90 years' experience in bringing innovative products to market. Based in Denmark, we are a leading diabetes-focused biotech company, employing more than 40,700 people in 75 countries and marketing products in 180 countries.

We have had a business presence in Turkey since 1974 (Figure 10). In 1995, our Turkish affiliate was established, bringing us closer to patients and allowing us to engage with key stakeholders in Turkey. In 2007, we moved our regional headquarters for the Near East business area to Istanbul.

In Turkey, we have more than half of the insulin market measured in volume³², as we provide insulin to more than 530,000 people^{33, B}. Over the past decade, the number of people working for us has almost doubled; today, we employ more than 240 people in Turkey³³ (Figure 11).

A history of stakeholder engagement in Turkey

In keeping with the idea that no single actor can tackle the diabetes challenge alone, our efforts in Turkey have focused on collaborating with various stakeholders.

For healthcare professionals

We have hosted meetings in which we educate professionals about diabetes prevention, detection, progression and treatment. We have also trained peer educators – patients who create general awareness of diabetes in the community and teach others living with diabetes how to manage their condition.

For policy-makers

We have hosted and supported an International Diabetes Leadership Forum and Innovation Roundtable. At these summits, we shared our vision of what quality diabetes care looks like – and how care for people with diabetes can be improved in the future.

For patients

For all who envision a world where diabetes no longer interferes with living a fulfilling and productive life, we have sponsored a professional team of cyclists who themselves are living with diabetes. For the past two years, Team Novo Nordisk has participated in the Presidential Cycling Tour of Turkey to create diabetes awareness. To this day, the team continues to inspire by showing people with diabetes that their condition does not have to stop them from living out their dreams.

We will continue to build a better understanding of diabetes, to empower patients, to engage policy-makers in initiatives that encourage diabetes control and to introduce innovative quality products that address unmet needs.

Figure 10

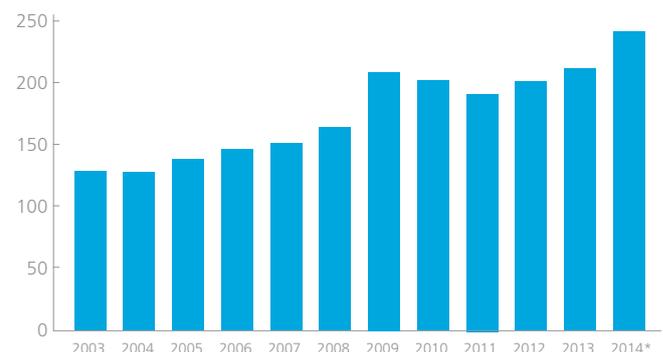
OUR HISTORY OF IMPROVING DIABETES CARE WITH PARTNERS

- 1974**
Import of diabetes medicine to Turkey
- 1995**
Our affiliate, Novo Nordisk Healthcare Products Ltd., is established
- First summer camp for children with diabetes
- 2003**
Launch of rapid-acting modern insulin and mix of long- and rapid-acting modern insulin
- 2005**
Launch of basal modern insulin
- 2007**
Our regional headquarters for the Near East business area is moved to Istanbul
- 2008–10**
Turkish Diabetes Control Project established, raising general awareness and providing training for healthcare professionals
- 2009**
Changing Diabetes® bus visits 11 Turkish cities to raise awareness and provide care
- 2011**
Kocaeli University R&D Cooperation Agreement signed
- Diabetes Peer Education Programme starts
- Diabetes Nurse Summit
- 2012**
Guinness World Record for most blood sugar level tests in 8 hours
- 2013**
Team Novo Nordisk participates for the first time in the Presidential Cycling Tour of Turkey
- Innovation Roundtable on Changing Diabetes Through Innovation
- International Diabetes Leadership Forum in Istanbul
- 2014**
Launch of GLP-1 on the private market

Figure 11

NEARLY DOUBLING OUR WORKFORCE IN A DECADE

Employees in Turkey



* September 2014

A. The Novo Nordisk Way is our values-based management system describing who we are, where we want to go and how we work.

B. The number of patients is estimated based on sales volume and dose usage per patient as defined by the World Health Organization.

CREATING SHARED VALUE

The complexity of the diabetes challenge in Turkey requires that we follow multiple paths with partners: Strengthening healthcare professional and local R&D capabilities generates knowledge that can improve patient care; placing diabetes on the public agenda can spur innovation and engaging patients in their own care completes a circle for success. Together, these actions generate value for society and for Novo Nordisk.

we invest in local R&D capabilities to create knowledge that improves patient care

The availability of high-quality treatments is a critical element in good diabetes care. Innovation creates quality products for patients. Novo Nordisk invests in innovation through research and development (R&D). In the last five years, we have reinvested between 14% and 15.8% of annual global sales in R&D. In 2013, this equated to 1.6 billion euros.^{34, 35}

In the R&D process, the vast majority of time, money and human resources is consumed by clinical research and development³⁶ (Figure 12), a key part of meeting patients' needs. Through clinical research and development, important data on product safety and efficacy are generated (Box 3). Products that are safe, effective and address patient needs better than those already on the market are put forward for regulatory approval.

One of the additional effects derived from clinical research and development is that it can facilitate 'learning by doing'. Through clinical research, participating hospitals and healthcare professionals (Box 4) are trained to follow a protocol that can improve their clinical capabilities and, in turn, help patients to better understand and manage their conditions. However, with low R&D levels in Turkey (Figure 8),

the number of industry-sponsored clinical trials, on a per capita basis, is less than one-fourth of that in comparable countries, such as Greece and Portugal (Figure 7). Thus, Turkey may not be gaining all the benefits made possible by clinical research.

Paths to value creation

Apart from bringing better treatment to patients, clinical research can yield other important benefits. It facilitates improvements in patient care practices among participating healthcare professionals, and it helps patients feel positive about their ability to achieve better control.¹⁹ Both are essential for optimising outcomes for people with diabetes.



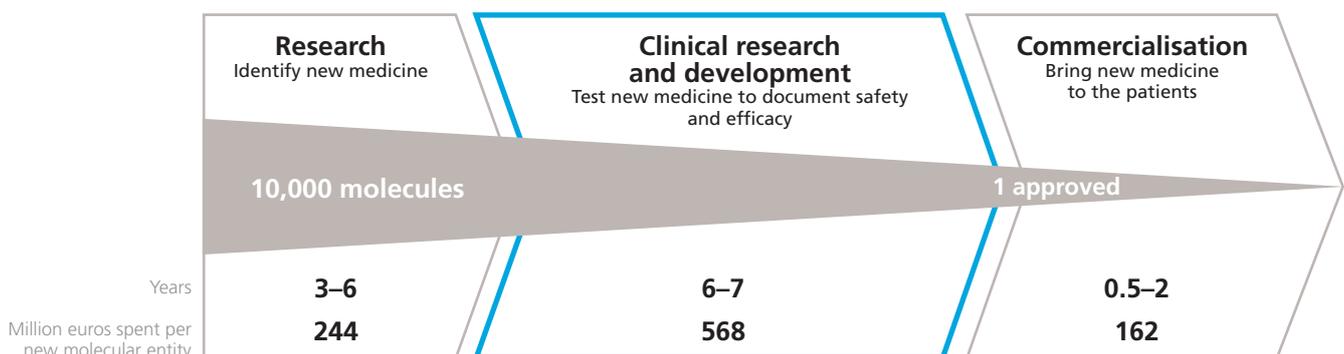
60% of physicians believe that participating in clinical trials has improved their clinical practice¹⁹

Healthcare professionals who engage in clinical research gain in-depth, usable knowledge about best practices in diabetes

Figure 12

CLINICAL RESEARCH IS A CENTRAL PART OF R&D

FOR ENSURING THE SAFETY AND EFFICACY OF PRODUCTS



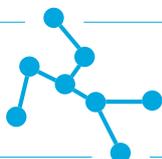
care. Healthcare professionals are often motivated to study medicine because they want to make a difference through their profession, and most who have participated in clinical research rate their experience as positive because, among other benefits, it leads to improved clinical care, which can result in better patient outcomes.¹⁹



97% of physicians believe that conducting clinical trials is beneficial for patient outcomes – both now and in the future¹⁹

Clinical research also creates a foundation for a local R&D infrastructure, which stimulates interest and investment in basic molecular research. Thus, by attracting more industry-sponsored clinical research, Turkey can strengthen local healthcare systems and build clusters of medical excellence while improving healthcare professionals' knowledge base. Ultimately, patients benefit from these advancements.

Of patients in Turkey who have participated in clinical research, nine out of 10 generally feel positive about the experience afterwards, as they achieve better HbA_{1c} control and improved overall well-being.¹⁹



Over the last 10 years, we have sponsored one-third of clinical trials on diabetes in Turkey²⁵

Novo Nordisk invests in local research

Since 2009, we have conducted 23 clinical trials in Turkey together with hospitals²⁵, engaging more than 600 specialists^A and 800 patients³³. As a result of these activities, totalling almost 1,500 patient years^B, we have contributed to the improvement of patient care in Turkey. We were, for instance, the first company in Turkey to conduct clinical trials of a new class of medicines called GLP-1 agonists, bringing new knowledge to 21 hospitals and their staff throughout Turkey.³⁷

Clinical research supports academic institutions' efforts to build research capabilities, which also enables them to strengthen their R&D talent pool. Our investments in R&D in Turkey extend beyond clinical research. Our collaboration with Kocaeli University (Box 5) has helped create an environment that not only improves faculty research capabilities today, but may also yield innovative, high-quality diabetes care for patients tomorrow.

A. Individual specialists may have participated in more than one trial.

B. One patient in a clinical trial for one year equals one patient year.



Signing of partnership agreement with Kocaeli University, Kocaeli, 2011. Left to right: Former Danish Ambassador to Turkey Ole Egberg Mikkelsen; General Manager, Novo Nordisk Turkey, Şebnem Avcı Tuna; Kocaeli University President Prof. Sezer Komsuoğlu and former Minister of Science, Industry and Technology Nihat Ergün

Box 3

PUTTING PATIENTS AT THE CENTRE

Clinical research must always be performed with the patient in mind. Novo Nordisk conducts clinical research for one reason: to generate data on the efficacy and safety of our products. This allows us to pursue innovation that meets patient needs. Other benefits for stakeholders are additional to this core purpose.

Box 4

INVESTIGATORS IN CLINICAL TRIALS

An investigator is a physician, typically at a hospital, who conducts a clinical trial on behalf of the sponsoring pharmaceutical company. The main role of the investigator is to serve and protect the interests of the trial participants and ensure that their safety, rights and privacy are maintained. When an investigator agrees to conduct a clinical trial on behalf of Novo Nordisk, they confirm that their trials have been planned and will be conducted according to local requirements and scientific and ethical guidelines.³⁸

Box 5

OUR PUBLIC-PRIVATE PARTNERSHIP WITH KOCAELI UNIVERSITY

Kocaeli University is one of Turkey's leading scientific research centres. Together with Kocaeli University, we work to increase diabetes awareness and to support scientific research on prevention and effective treatment of diabetes.

Since 2011, our joint activities have included:

- Opening of the Kocaeli University Faculty of Medicine, Research and Publication Support Unit
- Establishment of the Diabetes and Obesity Research Unit, which works in collaboration with Copenhagen University and the Hagedorn Research Institute
- Collaboration between Kocaeli and Copenhagen University Faculty of Health and Medical Sciences
- Support of studies by Kocaeli University academics
- Establishment of a vocational school podology programme
- Education programme for religious officials
- Healthy Kocaeli programme under the leadership of Kocaeli Provincial Administration

we put innovation and patient needs on the public agenda

Making medicines available to people with diabetes is essential for improvements in health status and life expectancy.²³



More than one out of three patients fails to take their insulin as prescribed³⁹

In part because of the dynamic lifestyles of our time, people with diabetes struggle to take their medicines as prescribed. This may prevent them from reaching treatment targets.³⁹ Strengthening patient adherence is a challenge that Novo Nordisk, along with our partners, is addressing through several initiatives, including the DAWN2™ study, which seeks to understand patients' diabetes attitudes, wishes and needs (Box 6).

Products that address convenience can benefit patients. In the past, such innovations have included insulin that requires fewer injections or can be dose-adjusted with meals (Figure 13). The uptake of modern insulin provides an example of how patients value innovative treatments: within three years of its broader introduction in Turkey in 2003, modern insulin was used by more than 50% of patients on insulin. Today, more than 90% of insulin sold in Turkey is modern insulin.³² This rapid acceptance suggests that innovation in insulin treatment meets patient needs. For some, the hope for future innovation is oral insulin treatment or even a cure.⁴⁰

Challenges to innovation

Developing and marketing new medicines is a process that takes, on average, 10–15 years and can cost as much as 1 billion euros^{35, 36} (Figure 12). For every 10,000 molecules

studied, only one will become a medicine that makes it to market.³⁶ A patient-focused regulatory approach and a pricing environment that favours R&D may encourage biotech companies to invest in the market.

At local level, biotech R&D has two primary advantages: First, it improves the potential for strengthened population health. A healthy population contributes to economic growth. The availability of innovative products that improve control of blood sugar may also be cost effective, having the potential

Box 6

DAWN2™ – A GLOBAL STUDY EXPLORING THE UNMET NEEDS OF PEOPLE WITH DIABETES

With more than 15,000 people participating across 17 countries, DAWN2™ is the largest study ever conducted to understand the psychosocial issues and needs of people with diabetes. The purpose of the study is to inspire new and sustainable ways to enable them to live healthy lives. The study is being conducted in collaboration with the International Diabetes Federation, the International Alliance of Patients' Organizations, Novo Nordisk and others.

Box 7

ISTANBUL DIABETES ROADMAP

The Istanbul Diabetes Roadmap describes a wide range of activities and initiatives for creating change for people with diabetes. The initiatives are described within three areas:

- Prioritise diabetes within the national healthcare framework
- Improve disease awareness and education about diabetes
- Establish and maintain country-specific data on diabetes

The Roadmap was an outcome of the International Diabetes Leadership Forum that took place in Istanbul in November 2013 with the participation of 300 political and healthcare leaders from more than 20 countries under the auspices of the Turkish Presidency.

Former United Nations Secretary-General Kofi Annan and Novo Nordisk Executive Vice President and Chief of Staffs Lise Kingo at the International Diabetes Leadership Forum, Istanbul, 2013



to decrease public health spending on costly complications. If better control could reduce HbA_{1c} levels in Turkey to those of treatment guidelines⁷, thousands of amputations and kidney failures could be avoided (Figure 16).

Second, R&D generates additional benefits for patients and healthcare professionals. These include patient education that can sustain health improvements and the building of professional capabilities and infrastructure.



We make no claim that we or innovation alone will reduce the average HbA_{1c} level in Turkey. The diabetes challenge is complex and requires partnerships among multiple stakeholders. We simply hope to make our contribution

Paths to value creation

We believe that people living with diabetes in Turkey can benefit from better access to innovative medical treatments. A healthy population benefits society through higher productivity and quality of life. Thus, we actively encourage an environment that places diabetes high on the national health agenda and recognises the value of innovation across the diabetes care spectrum.

At the International Diabetes Leadership Forum – held in Istanbul in November 2013 under the auspices of the Turkish Presidency, hosted by the Ministry of Labour and Social Security and the Social Security Institution (SGK), and supported by the Ministry of Health and Novo Nordisk – participants from the region gathered to share a vision of how investments in diabetes care can yield high returns for the millions of people with diabetes. This forum resulted in the development of the Istanbul Diabetes Roadmap (Box 7), a joint declaration containing goals and concrete actions to drive change for people with diabetes in Turkey as well as six other countries in the region.

The roadmap provided impetus for several initiatives throughout the region. Turkey also implemented two actions. Firstly, the Turkish government decided to extend the Turkish Diabetes Prevention and Control Plan for an additional five years, through to 2020. Secondly, in September 2014, the SGK was given the authority to develop alternative reimbursement models that could serve as a step towards rethinking access to innovative diabetes treatment and care.

The International Diabetes Leadership Forum followed the September 2013 Innovation Roundtable, in which we engaged key opinion leaders, non-governmental organisations and policy-makers to develop a mutual understanding of what could ensure a stronger commitment to innovation in Turkey. Participants came away with an awareness of how to encourage development of better diabetes treatment and the significance to patients of access to innovative medicines.

Figure 13

INNOVATION WITHIN INSULIN TREATMENT

FOR THE BENEFIT OF THE PATIENT

1921

Life-saving isolation of animal insulin

1973

Higher purity of animal insulin

1980s

Human insulin production in yeast cells: fewer allergic reactions and certainty of supply

2000s

Longer mode of insulin action and less variability, more stable control of blood sugar

Mix of long- and rapid-acting insulin, necessitating fewer injections

Rapid-acting insulin injected immediately before meal: flexible lifestyle and increased quality of life

2010s

New-generation insulin with lower risk of hypoglycaemic events and greater flexibility

Future

Once-weekly? Oral insulin? A cure?

we build **diabetes care capabilities** among healthcare professionals

For people with diabetes, the doctor-patient relationship is a lifeline. Patients visit their physician regularly, among other things to have their HbA_{1c} level checked and be examined for signs of diabetes progression.¹⁹ They also rely on other healthcare professionals to learn about lifestyle modifications that can keep them healthy, proper use of their medications and how to recognise and manage symptoms.

For patients in Turkey, effective time with the physician is scarce. There are too few specialists, and most have a workload that makes sufficient face time unrealistic. There are only 400 endocrinology and metabolic disorder specialists in Turkey – one for every 18,000 people with diabetes.^{1, 41} An endocrinologist may see as many as 900 patients per month¹⁹, leaving little time for each patient.



Only 65% of healthcare professionals have received postgraduate training in medical management of diabetes⁴²

Moreover, not enough healthcare professionals in Turkey have received postgraduate training in medical management of diabetes and less than half have been trained in nutritional management.⁴² If we are to make diabetes care more accessible, gaps in healthcare professional knowledge must be addressed. Training healthcare professionals in all aspects of diabetes care is an important way to leverage existing resources to fill these gaps, and two-thirds of healthcare professionals say they would welcome more training.⁴²

Paths to value creation

Optimal diabetes care requires a team of skilled healthcare professionals, including specialists, general practitioners, nurses, pharmacists and dieticians. Hence, our efforts to strengthen healthcare professionals' diabetes care capabilities are geared to the specific needs and skills of each discipline. Knowing that effective change is brought about through partnerships, we engage local and global partners in these activities.

Strengthening physicians' diabetes knowledge

Since 1995, we have participated in educational meetings for physicians and assistant doctors. Through roundtables, case study presentations, 'meet-the-experts' gatherings and webcasts, Novo Nordisk has supported the development of healthcare professionals by improving their understanding of diabetes. Similarly, at medical congresses and regional meetings of professional associations, we enable physicians, pharmacists, dieticians and nurses to gain insights into the latest scientific developments in diabetes care (Box 8).

Box 8

TRAINING PHYSICIANS WHILE MAINTAINING ETHICAL STANDARDS

In Turkey, we educate healthcare professionals in the use of medicine and about diabetes in general. Mindful of the need for ethical behaviour, we carry out these activities carefully. Interactions between a pharmaceutical company and healthcare professionals are highly regulated to prevent conflicts of interest.

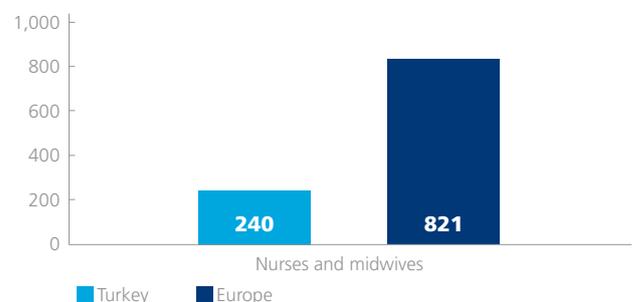
Although training of healthcare professionals is beyond our core competence, we believe that it is our responsibility to work with partners to address the need for highly qualified diabetes care professionals. This is part of our commitment to enable people to live full lives, free of complications.

Figure 14

LESS THAN A THIRD

OF NURSES AND MIDWIVES PER CAPITA COMPARED TO EUROPE

Nurses and midwives per 100,000 population, 2011



With the support of the Turkish Ministry of Health, we collaborate with several organisations on a large-scale educational initiative. Conducted in partnership with healthcare professional organisations, key opinion leaders and patient groups, the Turkish Diabetes Control Project has raised public awareness about diabetes and enabled training of general practitioners, diabetes nurses, dieticians and pharmacists in diabetes care and the importance of timely insulin treatment. Since 2008, meetings have been held in 17 cities across the country and more than 1,000 healthcare professionals have taken part in the training.

Broadening nurses' skills

The success of diabetes care relies in part on the ability of patients to manage their own conditions (page 16), and nurses have a central role in helping patients develop self-management skills (Box 9). Nurses teach patients about insulin, how to use it, how to perform blood sugar measurements and about diabetes complications.¹⁹



Educational meeting on diabetes management for endocrinologists and internist assistants, Antalya, 2008

On a per-capita basis, Turkey has less than a third of the nurses and midwives compared to other European countries¹⁸ (Figure 14). Only about 500 nurses are certified in diabetes care⁴³ – far too few to provide the patient support needed to improve health outcomes of diabetes – and, in fact, 86% of healthcare professionals in Turkey believe there should be more qualified diabetes nurses⁴².

“...apart from the innovations that Novo Nordisk makes in diabetes care, it also makes valuable contributions to the education of the related parties for raising awareness and improving the knowledge of diabetes care and prevention.”

“The educational collaboration of Novo Nordisk has always played a crucial role in the success of our major activities such as postgraduate certificate programmes, education for patients and care-givers, awareness projects, symposiums and congresses.”

– PROF. HASAN ILKOVA, HEAD OF THE TURKISH DIABETES ASSOCIATION

– PROF. NERMIN OLGUN, HEAD OF THE ASSOCIATION OF DIABETES NURSING

Diabetes Nurse Summit, Istanbul, 2011

In 2011, Novo Nordisk and the Association of Diabetes Nursing facilitated the Diabetes Nurse Summit, a creative two-day workshop designed by Steno Diabetes Center^A. To learn what people with diabetes experience, 50 nurses lived like patients for two days, monitoring blood sugar levels and diets.³³ Participants also gained a practical understanding of pregnancy and diabetes, foot care and how to encourage behavioural change – skills that they took back to their clinics.



A. Steno Diabetes Center is a world-leading institution for translating research into diabetes care. Internationally, Steno Diabetes Center supports and delivers training of healthcare professionals in best practices of diabetes management. Steno Diabetes Center is owned by Novo Nordisk.

we help people with diabetes take better care of themselves

About 95% of diabetes care is performed by the person with diabetes.⁴⁴ Proper self-management skills (Box 9) are therefore essential for reaching diabetes treatment targets and living a life free of complications. Good self-management is associated with lower HbA_{1c} levels.⁴⁵

“I tell my patients that diabetes is in your life from now on and you need to adjust your lifestyle. You must design your diet and exercise – everything – to your diabetes.”

– SPECIALIST IN INTERNAL MEDICINE, ANKARA

That means that people with diabetes must learn to make important choices on a daily basis. Doing so hinges on a thorough understanding of one’s own condition, how to manage it and how to recognise symptoms that require the help of a healthcare professional.



Half of the time, patients do not follow a healthy eating plan⁴⁶

The difficulty of adhering to self-care and treatment recommendations is reflected in the findings of our patient-centred study, DAWN2™ (Box 6). Many people with diabetes struggle to maintain healthy lifestyles and test their blood sugar levels as often as recommended. Some follow diet, exercise and testing recommendations less than half of the time.⁴⁶



Patients only test their blood sugar as recommended by their healthcare professional a third of the time⁴⁶

In Turkey, only about 28% of patients have participated in any diabetes-related educational activity⁴⁶, and many believe that insufficient training on diet, exercise and adherence to a treatment regimen contributes to their complications¹⁹. 20% have not learned about blood sugar measurement.¹⁹

Better self-management skills can make a world of difference for people with diabetes in Turkey.

Paths to value creation

Driving positive change through peer education

To help more people perform proper self-management, the Turkish Diabetes Foundation has partnered with Novo Nordisk and the World Diabetes Foundation^A to establish a peer education programme. The four-year project, established in 2011 and conducted with the full support of the Turkish Presidency, is called Diabetes Education Delivered by Peer Advisors. The programme trains diabetes patients to become peer educators who can bring knowledge to rural areas with limited outreach services.

Peer educators conduct training sessions in their local communities, where they are known and trusted. Participants can take part in 10 different sessions, each on a different aspect of diabetes care and self-management. Many attendees share similar experiences, making the programme an effective vehicle for driving positive behavioural change.⁴⁷

To date, the Turkish Diabetes Foundation has trained 33 peer educators throughout Turkey. Educators have held more than 11,000 training sessions, enabling nearly 20,000 patients to perform better self-management.⁴⁷ Ultimately, patients can use their new skills to achieve better control of their diabetes.



52% of patients with complications believe that medical non-adherence as a result of eg inflexible treatment is the cause of their complications¹⁹

Teaching proper use of insulin

Insulin helps many people control their blood sugar levels. However, only around half of people with diabetes have been taught what insulin is and a quarter have not received any training in insulin injection.¹⁹ For these patients, it is unclear how insulin works and how it can help them achieve better control of their diabetes. Pen educators help to fill this knowledge gap for people prescribed insulin.

Each year, about 60 pen educators teach 30,000 patients about proper use of insulin injection pens. Since 2010, this amounts to 120,000 people with diabetes.³³ Working out of local hospitals, our pen educators cover more than 40 cities in Turkey. The goal of the programme is to reduce



Summer camp for children with diabetes, Gebze-Izmit, 2011

complications stemming from non-adherence to treatment by instructing patients how to use an insulin injection pen.

Helping children to live with diabetes

It is not just adults who must learn to live with diabetes. From an early age, children with diabetes, too, must develop good self-management skills. Diabetes should not stop them from being able to live full lives.

It also should not stop them from being children. For many years, Novo Nordisk, in cooperation with Istanbul University's Paediatric Endocrinology Department and the Association of Children and Adolescents with Diabetes, has been running

summer camps for hundreds of children with diabetes. Here, children engage with other children in the summer camp rituals of sport, play and entertainment while building friendships and sharing experiences with other children just like them.

Equally important, the children learn how to use insulin, monitor their blood sugar and eat healthily. The self-management skills they learn can serve them for a lifetime – offering hope that they, too, can live a life free of diabetes-related complications.

Box 9

SELF-MANAGEMENT

Self-management refers to the set of skills a patient needs to manage his or her own diabetes. Proper self-management requires knowledge about the condition, how it should be treated and what a patient needs to do in terms of insulin use, blood sugar measurement and proper diet and exercise.

A. Novo Nordisk established the World Diabetes Foundation (WDF) as an independent and not-for-profit foundation supporting prevention and treatment of diabetes in the developing world. Through co-funded and sustainable projects with local partners, WDF focuses on diabetes prevention, awareness and access to care.

value for society

It will take the efforts of many people and organisations with diverse competencies, as well as government action, to help people with diabetes achieve better control of their condition and to reduce the cost of diabetes and its complications. The task is enormous, but the payoff from investing in reducing diabetes-related complications can be even greater.

Together with partners, we have contributed to this effort by providing more than 1,000 healthcare professionals with access to scientific knowledge, helping more than 140,000 patients since 2010 learn diabetes care skills and working to make innovation in diabetes care a priority. Our activities also have other positive effects on society, including local job creation.

Value of diabetes control

Imagine three people who, when diagnosed, each had an HbA_{1c} level of 10.6%, equalling the average level for Turkey (Figure 15). After one year, Ali's HbA_{1c} level had dropped significantly and Mustafa even achieved the level recommended by treatment guidelines⁷, but Yusuf's level remained unchanged. Ali and Mustafa can expect to live several years longer without complications of diabetes than Yusuf. To society, the value of a life without diabetes-related complications can be calculated in savings through avoidance of healthcare expenses and in increased productivity.

If, together with partners, we could contribute to a reduction in average HbA_{1c} for people with diabetes in Turkey to that of treatment guidelines⁷ by 2035, great human and economic achievements could be realised. During that time, 592,300 kidney failures could be avoided and Turkish society could save 24 billion euros^{35, A} (Figure 16).

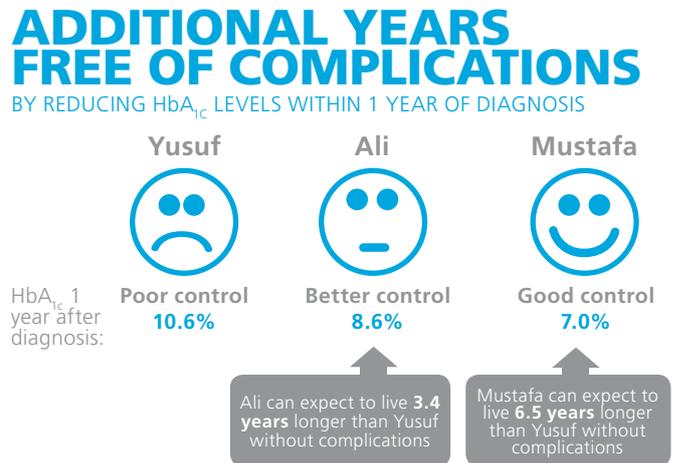
Better public understanding of diabetes can help to achieve this goal. Through sponsorship of Team Novo Nordisk and the Changing Diabetes[®] bus, among many other activities, we spread a message of healthy habits that can reduce diabetes risks. And by increasing healthcare professionals' knowledge, we hope to foster a culture of counselling about diets and active lifestyles that can forestall diabetes onset for 3.7 million people at risk today.⁴

Value of job creation

We directly employ more than 240 people in Turkey. Our activities create additional jobs outside Novo Nordisk through employment at our suppliers and the household consumption of employees. Actually, for every three jobs at Novo Nordisk, approximately four more are created in the surrounding economy.

Clinical research has a strong effect on job creation. For every person we employ in clinical research, six more jobs are created as part of the value chain (Figure 17).

Figure 15



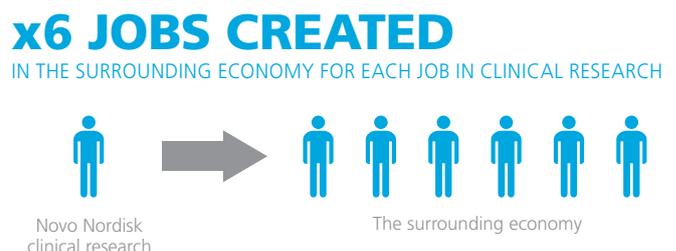
Note: Calculations are based on 20-year CORE diabetes model simulations. Yusuf, Ali and Mustafa are imaginary persons made up to illustrate the value of a lower HbA_{1c} level

Figure 16



Note: Calculations are based on 20-year CORE diabetes model simulations that assume that people with diabetes in Turkey reach an HbA_{1c} level of 7%. The average HbA_{1c} level in Turkey is 10.6%.⁸ International Diabetes Federation numbers have been used.⁴ There is no cost of intervention in this simulation

Figure 17



Note: Calculations are based on multipliers estimated using a standard Leontief input-output model.⁴⁸ Employee data are internal to Novo Nordisk. Jobs in the surrounding economy include indirect jobs created at suppliers and induced through household consumption

A. The result includes two types of saved costs: direct (cost of complications and management) and indirect (lost productivity due to premature death). Direct costs amount to 17 billion euros and indirect costs to 7 billion euros, eg as people with diabetes stay longer on the labour market.

value for Novo Nordisk

Our commitment to putting the patient at the centre of all that we do, our work to engage healthcare systems in a dialogue about improvement and our ability to make quality medicine available have generated significant value for Novo Nordisk.

Strong position in a growing market

The rapid growth of the insulin market in Turkey can be seen as an indicator of improved access to care since the implementation of Turkish healthcare reforms. Since 2003, the insulin market has grown at an average annual rate of 24%³² (Figure 18). Over this time, Novo Nordisk has maintained a favourable leadership position, with a market share consistently over 50%³², and today we provide diabetes care products to more than 530,000 people with diabetes in Turkey^{33, A}.

Projections about diabetes in Turkey suggest that insulin demand will not be slowing in the near term.¹ We seek to meet this need by making high-quality innovative products available.

Employee engagement

We believe that a company thrives when employees take ownership of its corporate mission and feel it has more than just sales at heart. The Novo Nordisk Way describes who we are, where we want to go and the values that characterise our company. Consistent with the Novo Nordisk Way, we invest in R&D, put patient needs on the public agenda, build healthcare capabilities, help people with diabetes to care for themselves and work towards the day diabetes is finally no more. Our employees appreciate the emphasis we place on shared value creation and support us in these efforts.

This may be reflected in our annual employee satisfaction survey, in which employees are asked to rate the company

A. The number of patients is estimated based on sales volume and dose usage per patient as defined by the World Health Organization.

on a scale of 1–5 (with five being the best) on various elements. These elements range from job satisfaction and work environment to support for our corporate mission and behaviour.

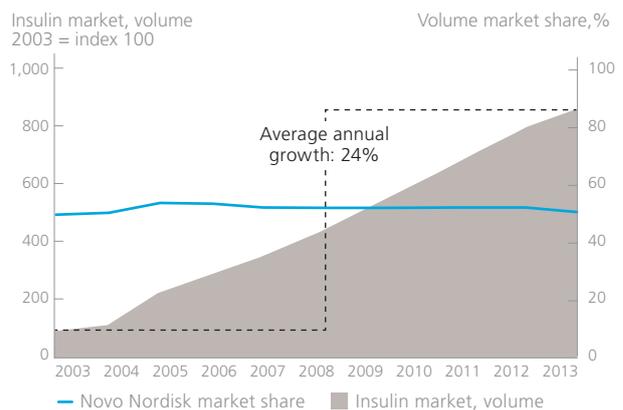
In Turkey, the employees' overall rating in 2013 was 4.3, well above our global target of 4.0. Employee support is also indicated by a low turnover rate – less than 1% among high performers³³ – indicating our ability to retain talented workers. Our low turnover rate may be linked to strong employee support for our mission to change and ultimately cure diabetes.

“I feel very lucky that I work for a company that commits itself to investing in finding a cure for diabetes and also putting patients and people at the centre of business.”

– NOVO NORDISK EMPLOYEE, ISTANBUL

Figure 18

A STRONG POSITION IN A FAST-GROWING MARKET



Idil Bayro, clinical project leader, Novo Nordisk, Turkey



FUTURE PERSPECTIVES

Given the current and projected future prevalence of diabetes in Turkey and the high costs associated with poor control, diabetes deserves special attention. We are committed to playing our part. We will contribute to innovating diabetes care in Turkey by making our innovative biotech medicines accessible to patients and by rethinking how we can jointly address the diabetes challenge.

innovating diabetes care **together**

We acknowledge that the diabetes challenge is complex and calls for innovative approaches. Our experience in Turkey has given us insights that can guide future actions. One thing we have learned is that the best way to turn ideas into actions is to work with partners, with each bringing their unique strengths to the table.

Diabetes must be considered a national health priority

If actions are not taken to improve diabetes control, costs will rise to unsustainable levels to the detriment of the individual and the economy due to the high prevalence and associated costs. Investing in improved diabetes care is an investment that Turkey cannot afford to neglect. Making diabetes a key priority is aligned with the overall priorities of the Turkish government, which has already taken steps towards this by extending its Turkish Diabetes Prevention and Control Plan until 2020.

High-quality and innovative medicine must be made available

This can benefit adherence and contribute to better diabetes control with positive implications for public health and the national healthcare budget. One example might be to explore alternative reimbursement models and the use of incentives that reward physicians for patients achieving good health outcomes.

Continuous investment in innovation

Innovation is a prerequisite for making improved treatment options available to patients. An environment that encourages investments in biotech R&D is likely to drive development of solutions that better meet patient needs. Only in this way will innovation be sustainable and patients ultimately benefit.

Innovating the way we work together

Addressing the diabetes challenge requires dialogue and collaboration among all stakeholders, including government, local authorities, non-governmental organisations and private companies. This could be around increasing awareness about the disease or creating a user-friendly patient registry on easily quantifiable metrics to better measure success. Such actions can help Turkey achieve better HbA_{1c} control and improved economic and social outcomes (Figures 15 and 16).

A step on the way is the International Diabetes Leadership Forum in Turkey in 2013, where partnerships led to breakthroughs in addressing systemic and local issues. The goals and strategies incorporated into the Istanbul Diabetes Roadmap (Box 7) and later set in motion through public policy are addressing unmet needs and helping to promote diabetes prevention, timely diagnosis and optimal treatment.

To scale up the efforts that have been started, we invite both public and private organisations to join us in taking actions to implement sustainable solutions and work with us in our ambition to innovate diabetes care in Turkey.

Ayşe Naz Baykal, Turkey. Ayşe has type 1 diabetes



ABOUT THIS CASE STUDY

This Blueprint for Change case study is one of a series of studies where we strive to measure the value created through our Triple Bottom Line business principle. For this, we have developed a methodology for documenting the value created for society and for Novo Nordisk.

methodology

This case study integrates a knowledge-based approach with actions for engaging stakeholders to strengthen diabetes care in Turkey. We use empirical data to make the business case for our Triple Bottom Line business principle and its contribution to a sustainable future.

Drivers of shared value creation

Our goal is to identify best practices in diabetes management and actions that can have the greatest impact. We examine the inter-relatedness of drivers of shared value creation⁴⁹ and identify those that could yield the greatest value for society and Novo Nordisk.

We use a model with five challenges for diabetes care (Figure 9) to guide our understanding of what creates the greatest value for people with diabetes while also generating significant value for Turkish society and for our company. We consider activities that maximise benefits and minimise risks for all parties in both the short and long term.

Assessment of impact and value creation

The observations and conclusions of this case study build on our understanding of the shared value concept⁴⁹ and our Triple Bottom Line business principle. Societal value creation includes broader general awareness, improved accessibility to knowledgeable healthcare professionals, availability and affordability of quality treatment, and care, and increased quality of life for patients.

Measurable benefits for the company include employee satisfaction, low turnover rates and maintaining a leadership position in a growing market.

Data collection and analysis

Data collection and analysis were conducted simultaneously, allowing our interpretation of the data and conclusions to develop side by side. We applied qualitative and quantitative research to gain a holistic understanding of diabetes care in Turkey.

Interviews

We conducted interviews with internal and external stakeholder groups, including a patient organisation, healthcare professionals, the Turkish Diabetes Association, the Turkish Diabetes Foundation, and representatives of the Turkish Public Health Agency, the Ministry of Finance, the Turkish Medicines and Medical Devices Agency, and Novo Nordisk management in Turkey.

Market research

To gain insights into the needs and challenges of patients and physicians, we enlisted a local market research company to interview 30 patients and 26 physicians (endocrinologists, specialists in internal medicine and general practitioners). These interviews qualified hypotheses and shaped a questionnaire that was completed by 100 patients and 130 physicians.

Desk research

We also researched quantitative data and academic papers. To support interviews and scientific findings, we used internal data, some of which are confidential. We generalised confidential information and indexed figures to prevent disclosure of sensitive information.

External review

Jette Steen Knudsen, Shelby Collum Davis Professor of International Business at the Fletcher School for Law and Diplomacy, Tufts University, USA, and Sebastien Mazzuri, Associate Director, FSG, Geneva, Switzerland, served as external reviewers for this case study.

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about the Blueprint for Change Programme

The Blueprint for Change Programme aspires to set a standard for measuring and optimising the impact of our activities. Through this process, we analyse the Triple Bottom Line business principle in practice, enhancing our understanding of how we as a business create value.

Through a series of case studies, we provide insight into current and emerging sustainable business approaches, as well as best practices for creating shared value.

This is the seventh Blueprint for Change case study. Other cases have analysed climate change and CO₂ reduction, as well as our approach to meeting diverse challenges to changing

diabetes in collaboration with partners across the world in countries such as China, the United States, Bangladesh, Indonesia and India.

We do not present final answers, but rather a work in progress that invites stakeholders to share their own views. We showcase how partnerships can co-innovate sustainable solutions to complex societal issues.

By definition, a blueprint is a guide or plan that gives instructions on how to take an idea and turn it into action. We want to inspire leaders to take action and to implement innovative and sustainable solutions to the vast complex issues they face.



Figure 19

TURNING IDEAS INTO ACTION

A joint platform to address the diabetes challenge

A collaboration between the Indonesian Ministry of Health and Novo Nordisk is an example of how a previous Blueprint for Change case study has been used. In 2013 they launched a joint platform to guide efforts to address the rising prevalence of diabetes and associated costs in Indonesia. The platform is built on findings from the Blueprint for Change case study on diabetes in Indonesia and its implications for action and will serve as a basis for collaboration between various stakeholders.



Basuki Tjahaja Purnama, Lieutenant Governor of Jakarta, takes questions after the launch of the platform based on the Blueprint for Change case study, Jakarta, 2013



Zual Gözütok with one of her daughters. Zual has type 2 diabetes

Zual's story

Zual Gözütok is 62 years old and lives in Istanbul. She was diagnosed with type 2 diabetes at the age of 40. To stay in good control of her diabetes, Zual watches her diet and makes sure to exercise regularly. Because Zual's diabetes is well managed, she is able to live a life where she can focus on the things she enjoys, such as trekking and spending time with her daughters.

get in touch

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the **Blueprint for
Change** Programme

About Novo Nordisk

Headquartered in Denmark, Novo Nordisk is a global healthcare company with more than 90 years of innovation and leadership in diabetes care. The company also has leading positions within haemophilia care, growth hormone therapy and hormone replacement therapy. We believe that a healthy economy, environment and society are fundamental to long-term value creation. This is why we manage our business in accordance with the Triple Bottom Line business principle and consider the financial, environmental and social impact of our business decisions. The strategic commitment to corporate sustainability has brought the company onto centre stage as a leading player in today's business environment, recognised for its integrated reporting, stakeholder engagement and consistently high sustainability performance. For more information, visit novonordisk.com/sustainability

