

THIRD EDITION

# Diabetes

## The Policy Puzzle: Is Europe Making Progress?



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Some 90 years ago, insulin was first used successfully to treat a young man dying of diabetes. Consequently, the world changed for those with this life-threatening condition. Over subsequent decades, the management of diabetes has improved greatly and people with the condition who have access to professional care and education and self-management skills can expect realistically to live healthier and longer lives. This expectation requires health systems to implement key knowledge of diabetes care into daily practice. It is evident from this survey that this goal has not yet been realized fully in European healthcare systems.

More than 20 years ago, European governments meeting under the aegis of the World Health Organization (WHO) unanimously agreed a series of recommendations to tackle the diabetes epidemic – the St Vincent Declaration. The evidence that the disease has reached epidemic proportions is overwhelming. It is extending into particularly vulnerable populations of children and immigrants. Against this background, in 2006, both the European Parliament and the Council of Ministers called for a coherent pan-European strategy to take up urgently the disease as a European public health priority. Regrettably, little positive action has been taken to fulfill this.

The International Diabetes Federation-European Region (IDF Europe) and the Foundation of European Nurses in Diabetes (FEND), together with Primary Care Diabetes Europe (PCDE) and the European Alliance for Research in Diabetes (EURADIA), have collaborated in producing a whole-of-Europe audit – an advance on the 2008 edition – to document further the epidemic and the disparate national policies and practices that currently exist. We applaud this important work.

The basis for action lies in an objective and factual assessment of the situation. This audit provides just that.

Europe, through the scientific research community, has an increasing knowledge and understanding of some of the causes of diabetes. However, continued investment in basic, clinical and environmental research must be continued and sustained. We are also learning to share information on what constitutes best practice in the prevention and treatment of this disease. Unfortunately, this audit reveals the continuing gap between our knowledge and the healthcare that our citizens receive in most European countries.

As members of the European Parliamentary Diabetes Working Group (EDWG), we have daily contact with other European parliamentarians and with many of our constituents who live with the burden and risks of diabetes. Concerted political action is required urgently across all Europe States and with national diabetes associations and relevant European NGOs. Action now can improve lives and make best practice a reality across the whole of Europe.

A coherent strategy on diabetes public awareness, research, prevention and treatment, and long-term monitoring is a sine qua non. Unified European action led by the EU, the Council of Europe and WHO is vital if the wellbeing of our citizens and the economies of European nations are to be protected.

In September 2011, Heads of State and Government and representatives of State and Government attended a UN High-Level Meeting in New York on non-communicable diseases. The resulting Political Declaration of the UN General Assembly can be found in the UN summit report.

Let us act now!

## MEMBERS OF THE EUROPEAN PARLIAMENT - JOINT CHAIRS OF EDWG

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# PREFACE

This audit covers the entire European region and is a departure from the previous two, which were confined mainly to EU Member States. FEND and IDF Europe have joined forces with EURADIA and PCDE in recognizing the burden of diabetes in the whole of Europe. We share a conviction that providing sustained and comparative documentary evidence on the epidemic levels and disparity of diabetes care across the European region will persuade governments and health providers that action to deal with this condition is urgent.

This update on the 2008 report on national policies and practices relating to the prevention, screening and management of diabetes is published amidst an explosion in diabetes incidence, not only in Europe, but throughout the industrialized world. According to IDF, diabetes affects around 366 million people worldwide.

In Europe, prevalence estimates now stand at 8.1% of the population aged between 20 and 79 years. This means that 52.8 million people are living with diabetes in the whole of Europe. This is forecast to rise to 64 million by 2030. Despite this background, our audit reveals striking differences in the relative priorities that the countries surveyed place on research, prevention, treatment, management and self-management of this often-preventable chronic disease.

This audit represents a vital contribution to our common fight against diabetes by compiling data and national practices in a way that helps to promote best practice and facilitates the task of national and European policy makers to make diabetes a national, European and global priority. The excel-

lent state of knowledge and consensus about risk factors, prevention and treatment of diabetes argues for an intense campaign and coherent strategy to combat diabetes and its complications. In addressing the complications of diabetes, we take a holistic approach embracing the systemic, societal and economic factors that place huge burdens on nation states.

While national practices do vary and comparable data may be imperfect, the report tells a compelling story about the need for coordinated action.

In September 2011, Heads of State and Government attended a UN High-Level Meeting in New York on NCDs. A consensus was reached and the related Political Declaration of the UN General Assembly can be found in the UN summit report ([www.idf.org/advocacy/UN-summit-NCDs](http://www.idf.org/advocacy/UN-summit-NCDs)).

Our organizations, representing all aspects of diabetes from research to care delivery, firmly uphold the view that international organizations, such as the EU, the Council of Europe and WHO, in partnership with national governments and relevant NGOs, should come together to implement and establish, without further prevarication, national diabetes centres in every European country to address the challenge of diabetes from primary prevention through to healthcare delivery. Furthermore, there is a need for European Diabetes National Reference Centres to co-ordinate data collection, monitoring and education and training.

Only by acting together can we have an impact on the diabetes epidemic in Europe.

## JOINT CHAIRS OF THE EDITORIAL REVIEW BOARD

### Anne-Marie Felton

Co-chair, Policy Puzzle Editorial Review Board  
President, Foundation of European Nurses in Diabetes



### Michael Hall

Co-chair, Policy Puzzle Editorial Review Board  
Honorary Consultant and Board Member, International Diabetes Federation – Europe



These organizations contributed to the third edition of the Policy Puzzle:

# EURADIA

*Alliance for European Diabetes Research*

\* *research funding information contributed by EURADIA*

# F E N D

Foundation of European Nurses in Diabetes



**International  
Diabetes Federation  
Europe**

# PCDE

primary care diabetes europe



# EXECUTIVE SUMMARY

## THE ESCALATING EPIDEMIC

- The increasing prevalence of type 1 and type 2 diabetes, resulting in serious major complications, ranging from cardiovascular diseases to kidney failure, amputation and blindness, shows no signs of abating. Now a global epidemic, the situation in Europe has continued to deteriorate over the last three years, further exacerbated by the growing obesity problem throughout the region.
- In the 47 European countries included in this audit, there are now 52.8 million people living with diabetes aged between 20 and 79 years.
- Diabetes prevalence rates across the 47 countries vary widely – from 2.6% in Azerbaijan to 12.7% in Portugal. There are at least 15 countries where more than 9% of the adult population has diabetes. Eastern European countries predominate on this list.
- While the problem is largely due to the growing prevalence of type 2 diabetes and an ageing population, the increasing number of people with type 1 diabetes is also a contributing factor.
- Approximately half of the countries in this audit have a functioning diabetes register. However, most report that the registers are incomplete. There is a lack of agreed clear criteria for data collection. This results in an underestimation of the size of the diabetes problem – at both the national and European levels.

## A GROWING COST BURDEN

- Whilst there is still a paucity of information about the costs of this disease, some conclusions can be drawn about the spending on diabetes.
- The cost burden of diabetes across the 47 countries is growing in response to the increasing prevalence.
- For 2011, 20 of the 47 countries indicate that they predict to spend in excess of 9% of their total health expenditure on diabetes.
- There are currently no up-to-date European studies apart from the 5<sup>th</sup> edition of the IDF Diabetes Atlas, which estimated the amount spent on diabetes. This makes meaningful comparisons on the cost burden between European countries difficult.
- Current estimates of the cost of diabetes are, however, considered to be underestimates – especially due to the lack of consideration for both direct and indirect costs associated

with the disease and its extremely expensive complications, such as stroke, myocardial infarction, amputation, blindness and end-stage kidney disease.

- The absence of reliable data remains a barrier to assessing the true cost burden of diabetes on individuals, healthcare systems and economies in Europe. It also prevents governments from assessing the impact and effectiveness of national diabetes policies and programmes.

## NATIONAL DIABETES PLANS – SLOW PROGRESS

- Since the last audit in 2008, there has been slow progress in the development of diabetes plans.
- Despite the growing diabetes prevalence rates and increasing cost burden of the disease, as well as the repeated calls for actions from the European and international health community, the progress made by European governments in introducing national diabetes plans remains unacceptably slow. Where such plans have been agreed, their roll out is often prolonged and implementation and monitoring delayed by a lack of political commitment.
- 25 of the 47 countries in this audit reported having a national plan in place, including: Austria, Azerbaijan, Croatia, Cyprus, Czech Republic, Denmark, Finland, Hungary, Israel, Lithuania, Macedonia, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Turkey, Ukraine and the UK. The other 22 countries reported not having a national plan or framework.
- A number of countries have taken steps in the last two years to either introduce a national plan or renew their efforts on diabetes. Azerbaijan, Hungary, Lithuania, Macedonia, Slovenia, Sweden, Turkey and Ukraine have all introduced a new national plan in the last two years, with Israel in the process of publishing theirs.
- The 25 national plans/frameworks vary according to their content and scope, with some more focused on primary prevention and others more targeted at tackling secondary complications. Areas of omission in some plans include the systematic screening of high-risk groups with the aim of reducing complications, different treatment options for type 1 and type 2 diabetes, appropriate care for those with gestational diabetes and for pregnant women with diabetes. Denmark reports a National Diabetes Plan specifically targeted at its ethnic population, 'Strategy for efforts related to diabetes towards immigrants'.

- In countries where national policies are implemented, such plans lack robust monitoring and evaluation systems to assess the effectiveness of implementation and review of the plans.
- In a number of countries, while national plans have been adopted, a lack of adequate human and financial resources is preventing appropriate implementation.
- In relation to diabetes research, EURADIA advocates continued support for diabetes funding under the current and future EU Framework Programmes for Research, as well as national research programmes. Funding should be in relation to the direct and indirect costs of this disease to individuals and society, and the European diabetes research effort needs to be well coordinated.

## ACCESS TO CARE

- In general, there is reasonable access to basic diabetes treatment in countries across Europe. However, access to more advanced treatments and technologies, such as insulin pump therapy, professional foot care and fast- and slow-acting insulin analogues, is more restricted in a number of European countries.
- Health budget reforms are adversely affecting the availability of prescribed treatments offered free of charge to people with diabetes.
- Human resources have been highlighted as a problem in many countries, which report insufficient doctors and nurses specially trained in diabetes. Some countries report that increased healthcare cuts are reducing the number of staff available to treat diabetes. Others report that healthcare staff do not have the opportunity to receive training in their own country and must conduct their diabetes specialist training abroad.
- There are 5 million nurses delivering healthcare in Europe. In the face of the epidemic of diabetes it is unacceptable that the specialty of diabetes nursing is not recognized in all countries.
- It is noted that there is a difficult transition for children with diabetes when they reach their 18<sup>th</sup> birthday and transfer into the adult healthcare system. Aged 18 and above, many young people lose entitlements to free medication and must pay more for their diabetes treatment.
- In many countries, it was not possible to carry out a definitive assessment of access to care in part due to the differing perceptions/ experiences of patient organizations compared to those of healthcare authorities.
- Many countries offer reviews but uptake among people with diabetes is only approximately 50%. The reasons behind this low uptake need to be explored and resolved.
- In the low to middle income countries within Europe, economic problems are often compounded by the instability of governments, government institutions and governance. This raises concerns over the provision of health care, availability of essential medicines and basic services for people with diabetes.
- It is noteworthy, for example, in Finland – one of the leading countries for diabetes prevention care and management – that treatment costs per person with diabetes have fallen slightly. This is said to be due largely to the sustained programmes and their effects on early initiation of care before the onset of long-term complications. This reflects Finland's cross-sectorial 'Health in all Policies' philosophy.

# WHAT IS DIABETES?

Diabetes is a chronic disease that occurs when the pancreas does not produce enough insulin (the hormone that regulates blood glucose), or when the body cannot effectively use the insulin it produces. Uncontrolled diabetes results in hyperglycaemia (raised blood glucose), which over time causes damage to blood vessels, nerves and other tissues.<sup>1</sup> Combined with disturbances in lipid metabolism (dyslipidemia), raised blood pressure (hypertension) and smoking, this often leads to serious complications such as cardiovascular disease, retinopathy (impaired vision and blindness) and nephropathy (kidney disease).

## TYPE 1 DIABETES

is characterized by a complete deficiency of insulin production. Without regular and reliable access to insulin, people with type 1 diabetes will die. Symptoms include excessive excretion of urine, thirst, constant hunger, weight loss, vision changes and fatigue. Onset of symptoms can be rapid.

## TYPE 2 DIABETES

results from the body's relative lack, or ineffective use of insulin (insulin resistance). Type 2 diabetes represents over 90% of all cases of diabetes around the world, and is associated with being overweight, excess abdominal obesity and physical inactivity. Symptoms may be similar to those of type 1 diabetes, but are often less marked. As a result, the disease may be diagnosed several years after onset, once complications have already arisen. Until recently, this type of diabetes was seen only in adults but it is now also occurring in obese children and adolescents. Type 2 diabetes is a largely preventable disease, the complications of which can also be delayed through evidence-based interventions.

## GESTATIONAL DIABETES

is high blood glucose which starts or is first diagnosed during pregnancy. This occurs because pregnancy hormones can reduce the action of insulin. Factors that put a woman at risk of developing gestational diabetes include being overweight before pregnancy.

In several European countries, diabetes and its complications have caused the greatest increase of deaths over the past 20 years. Diabetes is ranked among the leading causes of cardiovascular disease, blindness, renal failure and lower limb amputation. About 75% of people with diabetes die of cardiovascular events - the number one cause of death in Europe. People with type 2 diabetes have a 2-4 times higher risk of coronary heart disease than the overall population.

Of great concern is that children and adolescents are also now developing type 2 diabetes, largely due to the high levels of obesity in these age groups. Estimates suggest that 1 in 5 children in Europe is overweight and that each year 400,000 children become overweight.

While diabetes is reported to be the fourth main cause of death, these statistics are likely to be an underestimate given the total number of people with diabetes in Europe. Diabetes related deaths are based on death certification, which only records deaths directly attributable to diabetes rather than to its long term complications and other associated co-morbidities such as cardiovascular disease.

The public health challenge posed by diabetes is very considerable. Only by substantially increasing public awareness of diabetes and its complications, and through primary prevention measures, early detection and evidence-based management of the disease, will the growing epidemic and its financial costs be minimized.

## REFERENCE

- 1 World Health Organization (WHO). [www.who.int/mediacentre/factsheets/fs312/en/index.html](http://www.who.int/mediacentre/factsheets/fs312/en/index.html)

FEND and IDF Europe have joined forces with EURADIA and PCDE to publish this audit at a time when, despite considerable political awareness of the health risks of diabetes and the knowledge that the disease is largely preventable, Europe is faced with epidemic growth of the disease. This comprehensive audit of diabetes policies across the European region serves as an update to the previous editions and introduces new countries from outside the EU.

## AIMS AND OBJECTIVES

By providing an overview of the situation in the European region, the audit provides strong evidence to supra national and national decision makers of the urgent need to address diabetes through targeted policy action. It does this by highlighting the growth in diabetes prevalence, forecasts for the future, the cost burden to governments and, crucially, policies that provide the framework for the prevention, early diagnosis and control of the disease. It aims to measure progress in the development of national diabetes plans across Europe since the first report carried out in 2005.

The existence of a national diabetes plan or framework is understood to be an indication that diabetes has been made a government priority, and that measures (with appropriate allocated funding) will be put in place to address the growing disease burden and its costly complications.

The importance of national plans was widely recognized in 1989, when many of the countries surveyed in this audit signed the St Vincent Declaration,<sup>1</sup> which was supported by WHO-Europe, and thereby committed themselves to multiple initiatives to combat diabetes. Unfortunately, many countries have failed to fulfil one of the key requirements stipulated by the Declaration – the introduction of national plans to combat diabetes.

Subsequent declarations from the EU Council of Ministers,<sup>2</sup> Members of the European Parliament<sup>3</sup> and, most recently, UN Resolution 61/225<sup>4</sup> reflect the global consensus on the importance of national diabetes plans and raise the question as to why there has been so little progress to date. In September 2011, Heads of State and Government attended a UN High-Level Meeting in New York on non-communicable diseases (NCDs). A consensus was reached and the Political Declaration of the UN General Assembly can be found in the summit report.<sup>5</sup>

While the audit carries a warning of the burden of diabetes on individuals, their families and governments, it also carries a message of hope in that some countries are succeeding in at least curbing the growth of the disease. Where possible, it high-

lights best practice across Europe, together with the priorities and recommendations of stakeholders, with the aim of raising standards of care for people living with diabetes.

## METHODOLOGY

This audit was researched, prepared, revised and finalized during the period June to October 2011, based on a combination of desk research, direct contact with national diabetes stakeholders and expert review, carried out by the editors and staff employed by IDF Europe.

### PHASE 1: STAKEHOLDER QUESTIONNAIRES

Information was gathered from each country on diabetes prevalence, the cost of diabetes, relevant policies, guidelines and practices, and the outlook for future diabetes initiatives through a pre-defined questionnaire designed by diabetes experts and translated into 23 different languages. This questionnaire was sent to IDF Member Associations, Ministries of Health and other leading national diabetes institutions.

### PHASE 2: DESK RESEARCH

Between July and September 2011, country profiles were built through a range of sources, including the stakeholder questionnaires, government and diabetes association websites, scientific literature and media reports. Where information was lacking, interviews were carried out with national stakeholders representing health ministries, diabetes organizations and the medical community.

Stakeholder representatives were identified with the support of IDF Europe's and FEND's national members based on the individual's knowledge of and/or involvement in national diabetes policies and initiatives. A list of the organizations participating in the interviews is included. At the end of each country report.

The information obtained during interviews has not been attributed to individual stakeholders. However, in some cases, interviewees agreed to on-the-record comments, which have been included.

# INTRODUCTION

## WOMEN'S HEALTH

This new audit has collected data on the outcomes of diabetes in pregnancy and gestational diabetes. Not all countries were able to provide this information, which is an important area that needs urgent attention. This paucity of information demands a thorough enquiry within the next year.

It is the first time that data from the whole European region on diabetes in pregnancy and gestational diabetes has been investigated. In collecting this information, we are supporting the new IDF Model Approach to the Measurement of GDM Prevalence, which will be launched concurrently with this publication.

## THE IDF MODEL APPROACH

Base global prevalence rates for Gestational Diabetes (GDM) are currently inaccessible, due to inconsistent criteria and data collection methodologies in different regions. To address this, IDF will launch the IDF Model Approach to the Measurement of the Prevalence of GDM at the IDF World Diabetes Congress in December 2011 in Dubai. This will provide a preferred practice model for collecting GDM prevalence data, and facilitate the establishment of global and regional GDM prevalence estimates. To demonstrate its feasibility, IDF plans to undertake a pilot study of the GDM Model in order to determine its effectiveness, and then roll this out to all regions. The findings of the pilot study will be used to influence government policy, and will be disseminated to all relevant stakeholders.

## IDF DIABETES ATLAS (5<sup>TH</sup> EDITION)

We are appreciative of IDF for their co-operation and for permitting us to use the data on diabetes set out in the Diabetes Atlas 5<sup>th</sup> edition, which will be published at the same time as this audit. This edition of the Policy Puzzle includes Diabetes Atlas figures from 2011 and the predicted projections for 2030.

It is important to note that Diabetes Atlas estimates are for people with diabetes, including those who are undiagnosed. National estimates are often based on data from health systems, which reflect only people with diagnosed diabetes and omit any attempt to quantify those with diabetes who have not been diagnosed. The Atlas takes the best data sources available for each country (ideally population-based surveys using an oral glucose tolerance test) and applies the age-specific rates to population estimates from the UN Population Division.

## PHASE 3: EXPERT REVIEW

Finally, in October 2011, the draft audit was submitted for review to an Editorial Review Board of European experts in the field of diabetes. A list of the Editorial Board and staff is provided in the annex.

This audit provides a description of our knowledge on the current diabetes policy environments based on the best available factual information and stakeholder opinions.

Significant efforts were made in the preparation of each country report to consult a range of diabetes stakeholder groups. Information was provided by the majority of groups. However, where no responses were received within a given time period, including from health ministries, reports were written using the best information available.

Recognizing that there may have been new developments in some countries since this audit was carried out, or that there may be a need for further explanation and clarification of some country chapters, IDF Europe and FEND welcome feedback. Please send any comments to [info@idf-europe.org](mailto:info@idf-europe.org).

## STRUCTURE AND SCOPE

The audit comprises 47 individual country reports, an analysis of key findings and, in conclusion, a series of national and European policy recommendations.

This third edition of the audit has been extended to the greater European region and in addition to the countries included in the second edition, now includes seventeen new countries: Albania, Armenia, Azerbaijan, Belarus, Faroe Islands, Georgia, Iceland, Israel, Kyrgyzstan, Macedonia, Moldova, Norway, Russian Federation, Serbia, Switzerland, Ukraine and Uzbekistan.

Each country report is set out according to the following sections:

- Country overview – key diabetes statistics and highlights of national policy framework
- Diabetes prevalence – overview of the latest diabetes prevalence rates from international and national data sources
- Cost of diabetes – estimates, where available, of the cost burden of diabetes
- Government health priorities – overview of current health priorities, including diabetes
- National diabetes plan/framework – detailed summary of existing policies targeted at diabetes prevention, screening, and management
- Policy focus – focus on national diabetes policies and initiatives targeted at high risk groups
- Access to care – overview of the reimbursement status and access to essential diabetes treatments and technologies, and women's health.
- Outlook – expected developments and recommendations for the future from key stakeholders

## DATA SOURCES

For prevalence and data prediction, this audit relies on the diabetes prevalence rates reported in the IDF Diabetes Atlas (5<sup>th</sup> edition) published in 2011. This is currently the only comparative data source available for the whole of Europe. As a result, the figures quoted in this report may not correspond exactly with prevalence estimates from the national health authorities or from professional and patient associations.

Concerning the cost burden of diabetes, there are also very few comparative data sources available. In many cases, there is even an absence of national cost estimates. Where available, national studies are referenced. However, it remains difficult to make significant comparisons across Europe based on this information.

This third edition includes a section from EURADIA, who supplied information from the EU-funded project DIAMAP – a road map for diabetes research in Europe (FP7 200701). The DIAMAP project included a survey of diabetes research activity and funding across the EU between 2005 and 2008 (published in 2010). Information on diabetes research funding practices in the EU is given on page 152, while further details can be found on the DIAMAP website ([www.DIAMAP.eu](http://www.DIAMAP.eu)) with searchable databases and full report available for download.

## REPORT FUNDING

The Policy Puzzle was funded by FEND and IDF Europe with generous unrestricted educational grants from Lilly Diabetes, Novartis Pharma AG and Sanofi. EURADIA and PCDE provided valuable assistance in kind. The project has been carried out with full transparency and independently from its funding sources.

## REFERENCES

- 1 *The St-Vincent Declaration (1989)*, [www.idf.org/webdata/docs/SVD%20and%20Istanbul%20Commitment.pdf](http://www.idf.org/webdata/docs/SVD%20and%20Istanbul%20Commitment.pdf)
- 2 *Council of Ministers, Health Council Conclusions (June 2006)*, [www.consilium.europa.eu/uedocs/cms\\_Data/docs/pressdata/en/lsa/89847.pdf](http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/lsa/89847.pdf)
- 3 *European Parliament, Written Declaration (April 2006)*, [www.europarl.europa.eu/sides/getDoc.do?reference=P6\\_TA\(2006\)0185&language=EN](http://www.europarl.europa.eu/sides/getDoc.do?reference=P6_TA(2006)0185&language=EN)
- 4 *United Nations, Resolution 61/225 (Dec 2006)*, [www.unitefordiabetes.org/assets/files/UN\\_Resolution.pdf](http://www.unitefordiabetes.org/assets/files/UN_Resolution.pdf)
- 5 [www.idf.org/advocacy/UN-summit-NCDs](http://www.idf.org/advocacy/UN-summit-NCDs)





## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	3.0%	3.6%
<b>Estimated number of people with diabetes</b>	64,110	89,060
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	4.7%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	No	
<b>National register</b>	No	
<b>Developments since 2008</b>	<ul style="list-style-type: none"> <li>● Introduction of screening programmes and World Diabetes Day awareness campaigns in regions of Albania, especially Tirana</li> </ul>	
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>● <b>National Guidelines on Diabetes Diagnosis, Treatment and Follow-up</b>, published in 2011</li> <li>● National Diabetes Register (2012-2013)</li> <li>● Albanian Diabetes Association (2011-2012) is planning nationwide training for general practitioners to introduce diabetes educators into the healthcare system as a formally recognized professional group.</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Albania in 2011 is 3.0% of the adult population, representing approximately 64,110 people. The Atlas forecasts that the prevalence rate will rise to 3.6 % by 2030.

According to national data, the prevalence of diagnosed diabetes is 0.94%; the age-adjusted prevalence was 1.15% in 2005. In the Tirana district, which has the largest number of people with diabetes and endocrinologists, the prevalence of diabetes is 1.4%; age-adjusted, it was 2.17% in 2006. Diabetes prevalence based on the number of people who take medication for diabetes was 1.57% in 2010. Each year, up to 3500 people are diagnosed with diabetes – an incidence of 0.9/1000 people per year.<sup>1</sup>

Since 2008, in different regions of Albania, notably Tirana, regular screening programmes and awareness campaigns have shown an ongoing increase in the number of people with diabetes who are unaware of their condition.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 4.7% of the total health budget is spent on diabetes. According to sources in Albania, the direct cost of outpatient treatment for a person with diabetes without complications is EUR 13.43 per month. The direct cost of outpatient treatment for a person with diabetes complications is EUR 34.80 per month. The direct cost of a one-day stay in hospital is EUR 20.60 per day.<sup>2</sup>

## GOVERNMENT HEALTH PRIORITIES

According to health professionals in Albania, diabetes is regarded as a health priority, as are obesity and cardiovascular disease.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is no national diabetes plan in Albania, nor does Albania conduct regular audits or reviews of the quality of diabetes care provided. However, the first attempt to obtain some idea of the status

of diabetes in Albania was made in 2005, with the ALBDIAB Study. This produced some data on prevalence and demographics, as well as prevalence of chronic complications and metabolic control.<sup>2</sup>

The implementation of a national register and care plan for people with diabetes in Albania is due to begin in 2012. The first step towards developing these tools will be the introduction of national guidelines for diagnosis, treatment and follow-up, which will be published in 2011.

Although no specialist training in diabetes management is currently available, the Albanian Diabetes Association has a strategy in place for the formal introduction of diabetes educators into the healthcare system. A national programme to provide training for general practitioners to become diabetes educators will establish this new profession and, it is hoped, expand access to care throughout Albania.

## ACCESS TO CARE

Albanian healthcare services are funded through a combination of taxation and statutory insurance. While the state remains the principal source of healthcare financing, its contribution shrank from around 84% in 1990 to less than 60% in 1999, as other funding – especially out-of-pocket payments – increased. The majority of people without a waged income, including children, women who work at home and the elderly, are automatically covered by the state health insurance scheme, but basic health services in rural communities are largely underfunded.<sup>3</sup>

Diabetes treatments, technology and services are provided free of charge or are at least partially reimbursed, where they are available.

### FULL REIMBURSEMENT

- Injectable insulin and pen needles
- Lipid testing
- Retinopathy screening
- Structured education
- Professional dietary advice
- Ophthalmological assessment
- Dentistry (children and elderly only)

### NO REIMBURSEMENT

- Blood glucose monitoring meters and strips
- Self-monitoring blood pressure meters
- Micro- and macroalbuminuria
- Psychological assessment
- Podiatry

### NOT AVAILABLE

- Insulin pumps and accessories

The leading diabetes care providers include people with diabetes, family doctors, diabetes specialists and pharmacists. According to the Ministry of Health, all people with diabetes have the opportunity to undergo a regular diabetes check-up carried out by a health professional with training in diabetes care. From the perspective of people with diabetes, the status of care is considered to be better in urban centres compared to rural areas, where provision is sub-optimum.

Although people with diabetes are eligible for an annual or biennial check-up, endocrinologist specialists and the Albanian Diabetes Association estimate that fewer than 50% of people with diabetes receive this service. The Ministry of Health, on the other hand, puts that figure at higher than 50%. The check-up covers the following: eyes, lower limbs, blood pressure, pulse, neural sensation, blood glucose control, medication, quality of life, lipids, balance, an electrocardiogram and urinalysis.

Structured education for people with diabetes is available only in the capital, Tirana. Hospitals in the smaller cities, Elbasan and Korça, offer some form of education but this is not available regularly. People with diabetes who do not have access to these facilities can also access diabetes education provided by the Albanian Diabetes Association, public-sector outpatient polyclinics and private facilities. Ethnic minority communities receive education in their own languages.

## WOMEN'S HEALTH

Data is available on pregnancy outcomes in women with gestational diabetes and established diabetes. Pre-pregnancy counselling is also available.

## OUTLOOK

Over the next two years, Albania faces a number of difficulties in diabetes care, research and education. There is a lack of qualified personnel to monitor and treat people with diabetes, especially those on insulin, as well as a lack of diabetes educators. The lack of psychologists and training for psychologists to assess the psychological impact of diabetes have been identified as a major challenge. No national strategy exists for the prevention of obesity.

A number of actions have been identified as being essential to stimulate the interest of the Albanian government in the prevention and treatment of diabetes. These include the publication of data on the health status of people with diabetes in Albania in order to reveal the gravity of the current situation; research on the degree of satisfaction of people

with diabetes regarding available healthcare services; a promotional campaign, involving the Albanian Diabetes Association, endocrinologists, general practitioners and the media, to highlight the risks of late diagnosis and inadequate treatment and encourage more efficient diagnosis and follow-up.

"Diabetes is considered by the Ministry of Health as a disease that is constantly growing and with huge social costs – economic and health – and which has an important role in health policy."

*Petrit Vasili,  
Ministry of Health*

## CONSULTED ORGANIZATIONS

- Ministry of Health
- Albanian Diabetes Association
- Institute of Insurance and Healthcare

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.0%	10.1%
<b>Estimated number of people with diabetes</b>	191,650	227,450
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.7%	

## Policy framework

<b>National plan</b>	No	<ul style="list-style-type: none"> <li>Local professionals are preparing a draft of a national diabetes programme to be discussed and agreed in 2012.</li> </ul>
<b>Guidelines</b>	No	
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>Reportedly including 'almost all people with diabetes'</li> </ul>
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>Development and negotiation of a national programme for diabetes</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Armenia in 2011 is 9% of the adult population, representing approximately 191,650 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 10.1%.

The Armenian Diabetes Association estimates that the prevalence in 2009 was 1.9% and 2.15% in 2010. In 2009, the total number of registered people with diabetes was 50,358 – of whom 9,219 had type 1 diabetes.<sup>1</sup>

The Republican Endocrinology Centre of Armenia estimates that current prevalence stands at 2.15% of the adult population.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 11.7% of the total health budget is spent on diabetes.

It is reported by the Ministry of Health that expenses for diabetes amount to EUR 32,130.

## GOVERNMENT HEALTH PRIORITIES

The Republican Endocrinology Centre of Armenia reports that diabetes is recognized as a health priority. The Armenian government has initiatives and national programmes in place that deal with diabetes indirectly, such as its policy on chronic illness.

According to a 2009 WHO report, there is a degree of awareness among the Armenian population of the most significant behavioural risk factors for non-communicable diseases, including type 2 diabetes.<sup>3</sup> However, changes in behavioural patterns are difficult to achieve and success has been limited. The current lifestyle of the population must be improved if the incidence of chronic diseases, such as diabetes, cardiovascular diseases and cancers is to be reduced.

## NATIONAL DIABETES PLAN/ FRAMEWORK

According to WHO, one of the acknowledged responsibilities of the Ministry of Health is to develop and implement government-supported health programmes for diabetes.<sup>4</sup> However, Armenia does

not have a national diabetes programme. Local professionals are working to develop and propose such a programme to the Ministry of Health in 2012. Provision for screening is to be included in the future national programme. It has been reported that the 2006 UN Resolution (61/225) on diabetes had a positive impact on diabetes care.

There are no national or governmental guidelines in place for the prevention, screening or treatment of diabetes. The government of Armenia encourages healthy lifestyles via food labelling and the promotion of healthy living in newspapers and on television and radio. Over the past five years, public facilities have undergone a programme of expansion, enabling growing numbers of people to take part in sporting activities.

## POLICY FOCUS

There are no programmes in Armenia that focus specifically on children and diabetes. It is hoped that the draft of the new national programme, to be discussed in 2012, will include sections focusing on children and gestational diabetes.

## ACCESS TO CARE

Following a 1999 government decree, drugs prescribed by outpatient care services for the treatment of specific conditions, including diabetes, are provided free of charge. The distribution of insulin has improved over the last few years and access to insulin treatment is now universally available. Selected population groups considered socially vulnerable are entitled to free medicines, including, among others, people with disability, war veterans, orphans and children from families with four or more children under the age of 18 years, and all children under the age of three years. Other selected groups are required to make part-payments at reduced rates.<sup>4</sup> Insulin pumps and consumables (meters, lancets, test strips) are not compensated by the public healthcare system. Indeed, underfunding of public healthcare, including services for the prevention and treatment of diabetes, has been reported. Information on medication is as follows:

### FULL REIMBURSEMENT

- Injectable insulin and pre-filled syringes
- Retinopathy screening
- Structured education
- Ophthalmology specialist assessment

### RESTRICTED REIMBURSEMENT

- Blood glucose monitoring strips/meters (only children)
- Self-monitoring blood pressure meters (only children)

### NO REIMBURSEMENT

- Insulin pumps and accessories
- Lancets
- Lipid testing
- Micro- and macroalbuminuria
- Psychological assessment
- Nutritional/dietary advice
- Podiatry specialist advice
- Dentistry

Although Armenia suffers from a deficit of trained healthcare professionals, especially in rural areas, specialist training in diabetes management is available and provided by healthcare professionals.<sup>4</sup>

Annual check-ups are provided free of charge for all people with diabetes and treatment is usually provided by nurses, family doctors, endocrinologists, dieticians, podiatrists and ophthalmologists. All Armenians with diabetes are offered free yearly blood glucose and cholesterol tests and ophthalmological evaluation.

Screening programmes exist, although these are not regular and are normally small local programmes without public funding. High-risk groups, such as people aged over 45 years, constitute the target population.

People diagnosed with diabetes are offered diabetes self-management education. However, ethnic minority groups are not provided with educational material in their own languages.

Various programmes are run in hospitals and outpatient units or are hosted by the Armenian Diabetes Association. After diagnosis, people with diabetes are entitled to annual check-ups, which include examinations of eyes, feet, BMI and blood pressure, assessment of peripheral sensitivity, and general blood and urine tests. Adjustments to treatment regimens are also made during annual visits to the specialist.

## WOMEN'S HEALTH

A national diabetes register is monitored by the Ministry of Health. Pregnancy outcomes are monitored in women with gestational diabetes and established diabetes, although not at a national level. The Armenian Association of Diabetes hopes for the release in 2012 of data on gestational diabetes, as they have identified a recent rise in the number of cases. Prenatal counselling services exist for women with diabetes who intend to have children.

## OUTLOOK

The Armenian Diabetes Association believes that the lack of financial resources and the insufficient number of specialized healthcare professionals, such as podiatrists, dieticians and psychologists, will constitute the greatest challenges.

The introduction of a national diabetes programme should help to improve access to care. The Armenian Diabetes Association will take up an active role in the development and publication of informative materials on diabetes for general practitioners, endocrinologists and people with diabetes. The Association intends to organize 'diabetes schools' in all regions of Armenia.

## CONSULTED ORGANIZATIONS

- Armenian Diabetes Association
- Republican Endocrinology Centre
- City Endocrinology Health Centre

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1. Armenian Diabetes Association. *Report on the status of diabetes in Armenia*. Yerevan, 2011.
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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.1%	11.1%
<b>Estimated number of people with diabetes</b>	570,990	717,360
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	9.9%	

## Policy framework

<b>National plan</b>	Yes	● <b>Austrian Diabetes Plan (2005)</b>
<b>Guidelines</b>	Yes	● <b>Austrian Diabetes Association (2009)</b> ● <b>Ministry of Health</b>
<b>National register</b>	No	
<b>Developments since 2008</b>	● 2009 update of the <b>Austrian Diabetes Association Guidelines for diabetes</b>	
<b>Planned actions</b>	● Implementation of the 2006 <b>Disease Management Programme</b> throughout the country ● Creation of a national diabetes register	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Austria in 2011 is 9.1% of the adult population, representing approximately 570,990 people.

The Atlas forecasts that the prevalence rate will rise to 11.1% by 2030.

However, the Austrian Federal Ministry of Health, Family and Youth, which takes its data from ATHIS 2007 Statistics Austria, estimates the rate at 6-7% of the adult population.

According to the Austrian Health Survey 2006-2007,<sup>1</sup> 6% of respondents were reported to have diabetes (a combined average of 5% of men and 6% of women), 94% of whom were diagnosed in the previous 12 months. The survey also revealed that 16% of people over the age of 60 years have diabetes.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 9.9% of the total health budget is spent on diabetes.

There are few national cost estimates available regarding the burden of diabetes in Austria. While the Ministry of Health estimates that the annual cost of diabetes at the federal level is EUR 1 million, a 2006 report by the Upper Austrian Regional Health Fund

estimates the cost of diabetes at approximately EUR 11 million per year.<sup>2</sup> There is no update on this figure available for 2011.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is identified by the government as a priority, along with disease prevention, and has been since 2005 with the publication of its national diabetes plan. Austria's presidency of the European Union (January-June 2005) also identified diabetes prevention as a health policy priority.

A National Action Plan on Nutrition, which aims to promote and support healthy living, is available on the Ministry of Health website. A National Plan for Physical Activity is to be developed and made available.

## NATIONAL DIABETES PLAN/ FRAMEWORK

During the first half of 2005, the Federal Ministry of Health, Family and Youth drew up the Austrian Diabetes Plan<sup>3</sup> with contributions from different health-care experts. Implementation of the six-year Plan is the responsibility of the Federal Ministry and the Association of Social Insurance Companies, with significant involvement from the Austrian Diabetes Association.

## MAIN PRIORITIES OF THE AUSTRIAN DIABETES PLAN

- Primary prevention
- Care and services for people with diagnosed diabetes
- Education for people with diabetes on improved self-care
- Guidelines and protocols for standards of care
- Information systems
- Supply of medications
- Supply of equipment
- Research
- Prevention and treatment of diabetes complications
- Prevention of type 2 diabetes
- Development of diabetes awareness in the community

One component of the plan included the introduction in 2006 of the Disease Management Programme for type 2 diabetes. Based on the US and German national initiatives for diabetes, the Austrian Diabetes Plan provides people with diabetes with access to and reimbursement for diabetes treatment. Diabetes education programmes are also offered in each of Austria's regional states.

The Plan establishes a target reduction of 30% in the number of newly diagnosed cases of diabetes by 2020 through a focus on lifestyle factors. Information campaigns have been developed to raise awareness, and a system has been implemented to encourage people to undergo a medical check-up.

People with diabetes had the opportunity to contribute to the Austrian Diabetes Plan. Major challenges to implementation included financial and labour-related issues, regional budgets, ethnic diversity and immigration-related factors, varying levels of political support, and the specific differences between regions in the execution of the Disease Management Programme's 'active therapy'.

## THE PLAN ALSO SETS OUT THREE PRINCIPAL TARGET AREAS FOR FUTURE RESEARCH

- Primary goals involving diagnosis to identify diabetes, with a focus on type 2 diabetes, especially with regard to gender and social background
- Secondary goals focusing on information by way of an ongoing review (1-5 years) of estimated rates of incidence and changes in the gender distribution of the disease, as well as regional and social disparities
- Tertiary goals focusing on the impact of a diabetes register and registers of complications

A key element of the Disease Management Programme for diabetes was implemented via the Department of Social Security website with the publication of the Type 2 Diabetes Patient Handbook. Designed and developed to serve as a companion and guide to managing diabetes, the handbook contains important diabetes information and practical advice on day-to-day disease management.<sup>4</sup> The website also provides information on a number of other services to support people with diabetes.

Although the national plan has been adopted, it has not yet achieved full implementation due in part to the structure of regional competencies for health, which allows each region to implement the Disease Management Programme according to its own criteria. Another key challenge is the availability of financial resources: there is deep concern that there is insufficient funding available for the health-care system to address diabetes.

In 2004, 2007 and most recently 2009, the Austrian Diabetes Association published diabetes guidelines,<sup>5</sup> and the Ministry of Health has produced Federal-level guidelines in disease management for type 2 diabetes. It is hoped that these Ministry of Health recommendations will improve the quality of treatment and care for the people affected by diabetes by providing individualized treatment and care.

There is no national register of people with diabetes.

## POLICY FOCUS

The Ministry of Health focuses on the nutritional health of children by providing educational documents, such as a food pyramid poster and a project report on healthy eating, *Healthy eating right from the start!* This includes nutritional advice for infants aged 0-3 years, as well as practical advice for the periods of pregnancy and lactation.<sup>6</sup>

## ACCESS TO CARE

Reimbursement in Austria is considered complex, as it is dependent on the federal and regional governments and the social insurance system. Reimbursement frequently depends on the individual needs of the patient and his or her participation in diabetes education programmes.

The Ministry of Health has, however, highlighted its open-door policy for general practitioners, in which patients can ask to be screened for diabetes. A large percentage of these screenings result in a first diagnosis of diabetes.

## FULL REIMBURSEMENT

- Insulin and injection devices (pens)
- Insulin pumps and accessories
- Retinopathy screening
- Blood glucose monitoring strips and meters
- Lancets.

## RESTRICTED REIMBURSEMENT

- Lipid testing (in hospitals only)
- Micro- and macroalbuminuria (in hospitals only)
- Structured education (one-to-one or group) in certain regions (Styria, Salzburg, Carinthia and Vienna).

## NO REIMBURSEMENT

- Blood pressure meters for self-monitoring
- Inhaled insulin
- Psychological assessment

The principal providers of diabetes care in Austria are: the patients themselves, nurses, family practitioners, diabetes specialists, nutritionists and dieticians, pharmacists and ophthalmologists.

Structured education is provided for people with diabetes – in a hospital or community health centre or via a general practitioner – once a year for most patients. People with diabetes are offered annual check-ups. However, it is thought that fewer than 10% of people with diabetes actually attend these. The following factors are assessed: eyes, feet, BMI, blood pressure, pulse, HbA<sub>1c</sub>, quality of life and socio-economic circumstances, neural sensation, cognitive functioning, medication, albuminuria.

## WOMEN'S HEALTH

Austria has pregnancy outcome data for women with gestational diabetes and those with established diabetes.<sup>7</sup> Austria also offers pre-pregnancy counselling.

## OUTLOOK

The Federal Ministry of Health identify their most serious challenges over the next two years as the countrywide implementation of the Disease Management Programme for diabetes and the creation of a diabetes register. According to the Austrian Diabetes Association, greater commitment is required from the Government to providing information and education to the population.

According to the Federal Institute for Quality in Healthcare (*Gesundheit Österreich GmbH*), the greatest challenges over the next two years will be related to the increasing prevalence and incidence in diabetes, especially the increasing numbers of immigrants with diabetes.

The Austrian Diabetes Association believes that major challenges in the near future will arise from

the increasing number of people with diabetes, financial and political issues, the lack of provision for specialist training in endocrinology and metabolism, the nationwide implementation of Disease Management Programme 'active therapy' and the creation of a national diabetes register. Moreover, the Association believes that a number of issues need to be brought to the attention of the Federal Government, including those relating to health policy advocacy, the adoption of the Austrian Diabetes Charter by all stakeholders, and a parliamentary inquiry on diabetes.

The process of implementation of the Austrian Diabetes Plan is ongoing, including the roll out by regional administrations of the Disease Management Programme. The Austrian Diabetes Association suggests that numerous improvements need to be made to the Programme, including the addition of information and education for school children and adolescents about the consequences of being overweight and the need for a healthy lifestyle. The Association also stresses the need for additional data on diabetes and calculations of the costs of complications.

For its part, the Ministry of Health recognises the need for additional action to promote healthy eating to avoid obesity and metabolic syndrome, major risk factors of type 2 diabetes.

"We are convinced that the problem of diabetes and its associated health risks can be tackled only with a nationwide coordinated approach. We have to establish intelligent and efficient structures, the main aim of which should be behavioural modifications in the lifestyle of every individual."

*Raimund Weitgasser,  
President of the Austrian Diabetes Association*

## CONSULTED ORGANIZATIONS

- Federal Institute for Quality in Healthcare
- Federal Ministry of Health
- Austrian Diabetes Association

## REFERENCES

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	2.6%	3.4%
<b>Estimated number of people with diabetes</b>	167,140	260,020
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	4%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Diabetes Programme</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Approval of a clinical protocol for type 2 diabetes</li> <li>● No official monitoring of the use of the protocol</li> </ul>
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>● Managed by a department of the Ministry of Health and including more than 50% of the known cases</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Azerbaijan in 2011 is 2.6% of the adult population, representing approximately 167,140 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 3.4% of the population. According to the Department of Statistics and Information of the Ministry of Health, the official rate of prevalence is 1.52%.

## COST OF DIABETES

The IDF Diabetes Atlas 2011 (5<sup>th</sup> edition) estimates that 4% of the total health budget is spent on diabetes.

Reported expenditure on diabetes stands at around EUR 11.4 million – approximately 4% of total health spending.

## GOVERNMENT HEALTH PRIORITIES

The Government recognizes diabetes as a national priority. A presidential act was issued in 2003 regarding state provision of care for people with diabetes and enforced by an order for implementation issued by the President's office in 2004.

The Cabinet of Ministers adopted the National Diabetes Programme for the period 2005-2009.

In 2006, the Ministry of Finance allocated funding for diabetes on a specific budget. This increased gradually from EUR 6 million in 2006 to EUR 19.2 million in 2009.<sup>1</sup>

NATIONAL DIABETES PLAN/  
FRAMEWORK

A new five-year National Diabetes Programme was approved in November 2010. Its implementation began in January 2011.

## MEASURES INCLUDED IN THE PROGRAMME

- Primary prevention of type 2 diabetes
- Treatment and care for people diagnosed with diabetes
- Self-management education
- Clinical guidelines for the management of type 2 diabetes
- Provision and distribution of specific medication
- Provision of self-monitoring systems and consumables
- Diabetes research and means to raise public awareness about diabetes.

# AZERBAIJAN

The coordinator of the programme is the Ministry of Health of Azerbaijan. The Azerbaijan Diabetes Society, under agreement with the Ministry, will coordinate implementation in 2011 and 2012.

It is reported that the structure of the programme to date does not respond fully to the needs of people with diabetes in the country. Diabetes associations were consulted regarding the draft programme but their suggestions were not necessarily taken into consideration in the final format. Other major challenges the programme faces include: a lack of sufficient funding, lack of research activities and insufficient levels of medication and self-monitoring consumables.

No national or regional screening programmes to detect diabetes are in place.

## ACCESS TO CARE

Insulin is freely distributed. Children are offered pens while adults reportedly use syringes. Insulin pumps and consumables are not subsidized by the healthcare system. Blood glucose test strips are offered but provision is considered to be less than optimal. The cost of annual medical check-ups is supported by the healthcare system. However, fewer than 50% of people with diabetes reportedly use this service.

People with diabetes, nursing and other medical personnel, endocrinologists and ophthalmologists carry out diabetes management. People diagnosed with diabetes receive self-management education in hospitals upon diagnosis and thereafter when needed. Ethnic groups do not receive training in their own languages.

Annual medical check-ups include examinations of eyes and feet, BMI and blood pressure measurement, assessment of neuropathy, general tests for blood and urine, and adjustments to the treatment regimen.

It is reported that adequate management of diabetes is hindered by insufficient medical supplies, shortcomings in the diabetes knowledge of healthcare professionals and cultural stereotypes regarding diabetes. There are gaps between the existing legislation for diabetes and levels of implementation in both urban and rural areas. In order to address some of the relevant factors, the Ministry of Health requested that the Azerbaijan Diabetes Society engage in monitoring implementation of the National Diabetes Programme. A contract was signed to this effect in 2008.

## WOMEN'S HEALTH

There are no special records regarding the outcome of pregnancies of women with gestational diabetes or established diabetes. Women with diabetes do receive some structured prenatal counselling.

## OUTLOOK

People with diabetes and specialists are looking forward to the implementation of the new National Diabetes Programme.

"It is of crucial importance to unite for diabetes, involving all stakeholders and to combine their efforts and expertise. In this regard, the triangle comprised of governmental institutions, national and local associations and international organizations is central to bridging gaps between legislation and reality."

*Mominat Omarova,  
President, Azerbaijan Diabetes Society*

## CONSULTED ORGANIZATIONS

- Azerbaijan Diabetes Society
- Azerbaijan Association of Endocrinology, Diabetology and Therapeutic Education

## REFERENCE

1. *Report on the status of diabetes in Azerbaijan, the annual EEC meeting, Samarkand 2010*

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.4%	11.2%
<b>Estimated number of people with diabetes</b>	676,630	744,680
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● Clinical protocols for the diagnosis and treatment of diabetes
<b>National register</b>	Yes	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Belarus in 2011 is 9.4% of the adult population, representing approximately 676,630 people. The Atlas forecasts that the prevalence rate will rise to 11.2% by 2030.

According to the Ministry of Health, the prevalence rate is 2.1%. The official incidence rate is 2.2/1000 per year. The Ministry of Health estimates that 40% of the population is overweight.

In 2008, 186,226 people were registered with diabetes (1.9% of the population) – of whom, 13,333 have type 1 diabetes; 172,306 have type 2 diabetes; and 587 have another type of diabetes. There are 1410 children (aged under 18 years) with diabetes, 31 of whom have type 2 diabetes. According to a report by IDF Europe, the incidence of diabetes increased from about 0.8 per 1000 in 1995 to 2.67 per 1000 in 2008 – a more than three-fold increase in 13 years. In 2008, the highest incidence was registered in the region of Vitebsk (3.23/1000 per year) while the lowest was in the region of Minsk (2.32/1000 per year).<sup>1</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 11% of the total health budget is spent on diabetes. There are no public data regarding the costs of diabetes in Belarus.

## GOVERNMENT HEALTH PRIORITIES

Although diabetes is treated as a health priority in Belarus, the government is concentrating its public health efforts on tuberculosis, cancer prevention, alcohol misuse, HIV infection and cardiology.

Attempts are being made to improve healthy lifestyles among the population through increased funding for sports centres around the country. However, these will not be free of charge and are likely to remain inaccessible to people on a reduced income. However, a number of facilities, such as running tracks offer free access.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is no national programme for diabetes. The Ministry of Health intends to promote such a programme in the near future.

Belarus has established clinical guidelines, which were implemented in 2006. They include clinical protocols for the diagnosis and treatment of diabetes. Procedures exist for screening for diabetes and observation of people with the condition by general practitioners following American Diabetes Association and IDF guidelines.

Belarus has a National Diabetes Register, which is managed by the Belarusian Centre of Medical Technologies. Adult screening programmes are reported to be in place at regional level.

### POLICY FOCUS

Belarus has ratified an inter-parliamentary assembly agreement on the medical services needed to manage diabetes.

## ACCESS TO CARE

People with diabetes in Belarus have relatively good access to care and treatment, which is offered free of charge. Geographically, coverage is comprehensive and the majority of the population reportedly can access care easily. Many primary care facilities have the required equipment to assess a person with diabetes – professional glucometers, equipment to determine HbA<sub>1c</sub>, ophthalmology clinics, diabetic foot clinics, albuminuria testing. Secondary care hospitals with laboratory facilities often treat more complex cases. Eye examinations are provided in the capital, Minsk, at three ophthalmology clinics. Laser treatment is offered in two clinics.

Access to medication is sometimes complicated for people with diabetes. A range of medicines is available but only a limited number are reimbursed by the healthcare system. Belarus has its own producer of glucose-lowering medications – insulin and two types of oral medications.

All children under the age of 18 years are fully covered by the health insurance system and receive free insulin and pens. According to a recently approved law, as of 2010 all people who develop diabetes before the age of 18 will continue to receive cartridges (and imported human insulin) after their 18<sup>th</sup> birthday. Other groups of insulin-dependent people use syringes on a daily basis with a mixture of local and international insulin. Insulin pumps are not common in Belarus as they are not

reimbursed by national health insurance and are too costly for the majority of the population. Adults over the age of 18 with a registered degree of disability have the right to one measuring strip per day free of charge from their local pharmacy, as do all young people under the age of 18 years.

Locally produced meters can be acquired on a cost-share basis: 90% for children and 50% for adults with a registered degree of disability. The cost of blood glucose meters and test strips is considered to be too high for the average citizen.

Analogues are only prescribed if high levels of motivation and skills for self-monitoring have been identified. It is estimated that 31,800 people receive treatment with insulin – all people with type 1 diabetes and 9.7% of people with type 2 diabetes. Around 11% (3500) use a pen. In 2008 34.3% received animal insulin. It has been reported that treatment with animal insulin ceased in 2010.

The availability of oral medication is dependent in most cases on each local administration's contribution to its health budgets. If the contribution is generous, modern and/or expensive medicines may be available. Widely used oral medications include gliclazide, metformin and glibenclamide. Glimepiride and gliquidone are used less frequently.

Self-management education is offered at the time of diagnosis and when needed thereafter. Training programmes are offered in hospitals and outpatient units. There is no common curriculum and no special provision for ethnic minority groups.

People with diabetes are offered free annual check-ups that include examination of eyes, feet, BMI, blood pressure, general blood and urine tests and, for certain groups, HbA<sub>1c</sub> assessment. These annual tests are provided free of charge.

A lack of healthcare specialists with training in diabetes has been reported – one per hospital in many cases. Sometimes this can force nurses who are less specialized in diabetes to prescribe medications that are normally prescribed by doctors.

## WOMEN'S HEALTH

In some cases, pregnant women with diabetes are offered insulin pumps and the necessary training. Pens and imported insulins are also provided to pregnant women with diabetes, as well as structured prenatal counselling services.<sup>1</sup> Pregnancy outcomes in women with gestational diabetes and established diabetes are recorded and monitored.

## OUTLOOK

Fears exist that due to the current financial difficulties, the quality of delivered insulin may suffer.

The Belarusian State Medical University believes that the challenges over the next few years will result from financial cuts throughout the country.

Recent legislation makes it illegal to buy medications directly from a pharmacy without a prescription. All people with diabetes must now go through their doctors to receive medication.

## CONSULTED ORGANIZATIONS

- Belarusian State Medical University
- Belarusian Humanitarian Non-Governmental Organization Children's Diabetes

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## COUNTRY OVERVIEW

### Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.6%	7.6%
<b>Estimated number of people with diabetes</b>	514,900	603,520
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.4%	

### Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Guidelines for good medical practice – type 2 diabetes</b><sup>1</sup></li> </ul>
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>● The <b>Belgian diabetes register</b> maintains the register.<sup>2</sup> This register is limited to newly diagnosed people with diabetes aged under 40 years.</li> </ul>
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● <b>INAMI 2009</b> chronic disease management 'care trajectories for type 2 diabetes' project</li> <li>● <b>Zoet Zwanger</b>,<sup>3</sup> a prevention project targeting women with gestational diabetes put in place in the Flanders region in 2009</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● From 2012 to 2015, the Flemish diabetes association is planning activities for the prevention of diabetes as a partner organization of the Flemish authorities.</li> <li>● Regional authorities have set goals for healthy food and exercise uptake but implementation is proving slow.</li> </ul>

### DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Belgium in 2011 is 6.6% of the adult population, representing approximately 514,900 people. The Atlas forecasts that the prevalence rate will rise to 7.6% by 2030.

### COST OF DIABETES

According to the IDF Diabetes Atlas (5<sup>th</sup> edition), in 2011, 7.4% of total health expenditure is spent on diabetes care and treatment.

### GOVERNMENT HEALTH PRIORITIES

Diabetes is not a current priority for the federal government. However, there is broad consensus among diabetes stakeholders that it should be given a greater priority.

Conventions on the diabetic foot and on insulin pumps were implemented in 2008.<sup>4</sup> In 2009, a contract of continuous care and chronic disease management was put in place at national level.<sup>5</sup>

The Federal government implemented the National Food and Health Plan (2005-2010).<sup>6</sup> In addition, a number of initiatives are also planned for the future.

In the Flanders region, pregnancy outcome data is gathered by the perinatal registry. However, the collection of specific follow-up data for pregnancies in women with diabetes is limited to a few centres.

In 2009, Institut National d'Assurance Maladie-Invalidité (INAMI) launched a chronic disease management project called 'care trajectories for type 2 diabetes'. This project was based on two pilot programmes in Aalst and Leuven. In 2009, care pathways were introduced with the objective of organizing multidisciplinary care for people with chronic disease.<sup>7</sup> People with type 2 diabetes or chronic renal insufficiency are able to agree on a care contract for four years with their general practitioner and corresponding medical specialist. From 1 September 2009, home nurses (having participated in the required diabetes educator training) are involved in providing self-management education to people with type 2 diabetes. Initial outcomes of this chronic disease management programme will be available in 2012.

The Diet and Exercise Action Plan<sup>8</sup> is a policy framework for activities on nutritional habits and physical activity that is currently being implemented. Stimu-

lating good nutritional habits and physical activity are central to the preventive policy in the fight against obesity of the Flemish authorities for which specific goals have been set. However, there is currently no diabetes-related health goal.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in Belgium.

Following the UN resolution on Diabetes in 2006, the Belgian Senate adopted in 2007 a resolution on diabetes asking the federal government to put in place a national diabetes plan. The main obstacle to developing and implementing the plan lay in the multiple layers of government resulting from the country's federal structure, where all competencies are divided between federal, regional (Wallonia and Flanders) and linguistic or so-called community levels. While treatment is a national issue, prevention is regional – and diabetes requires both. This division of responsibilities has led to the current fragmented situation, where there is no national diabetes programme providing a coherent structure for the entire country. Since 2005, general practitioners and patients have been calling for a single spokesperson and one official group of experts to represent them and advise the health authorities representing patients, universities and doctors. To date, no steps appear to have been taken to improve this situation.<sup>9</sup>

In October 2005, the two diabetes associations, in collaboration with other health institutes, published voluntary diabetes guidelines targeted at general practitioners. These guidelines<sup>10</sup> set out recommendations for good medical practice for the care of people with type 2 diabetes and include all aspects of diabetes care from early detection through to treatment.

These guidelines, which are regularly updated by the associations of general practitioners,<sup>11</sup> are designed to inform the best diagnostic or therapeutic decisions for the general practitioner and the person with diabetes. In May 2011, the Belgian Diabetes Association published an updated version of its Diabetes Guide, which targets both people with diabetes and practitioners.

### POLICY FOCUS

A prevention project for gestational diabetes exists which includes long-term follow-up for women who develop gestational diabetes. Future projects and increased action will address chronic disease management, lifestyle improvement, healthy eating, urban planning and physical exercise.

## ACCESS TO CARE

In Belgium, all people with diabetes have access to diabetes medication, technologies and care, and are offered annual reviews by medical professionals. It is estimated that around 50% of people with diabetes benefit from this annual review, which includes testing of eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, neural sensation, blood screening, microalbuminuria and a review of medication and quality of life.<sup>12</sup>

Audits reviewing the quality of specialized diabetes care provided in Belgium are conducted regularly. *Initiatief voor Kwaliteitsbevordering en Epidemiologie bij Diabetes* (IKED) and *Initiative pour la Promotion de la Qualité et Épidémiologie du Diabète sucré*<sup>13</sup> (IPQED) are quality-improvement initiatives carried out in Flanders and Wallonia diabetes medical centres respectively. Comparable initiatives are currently not in place in primary care.

With the IKED/IPQED data, a study on the quality assurance of all Belgian multidisciplinary diabetes centres treating people with diabetes on insulin therapy was carried out over a period of five years. The study revealed that 50% of the centres initiated quality-promoting initiatives and significant improvements in rates of testing for risk factors were identified.<sup>14</sup>

All medicines for people with diabetes are fully reimbursed in Belgium as they are listed in Reimbursement Category A,<sup>15</sup> which refers to vital medication. The National Institute for Sickness and Invalidity Insurance is responsible for specific restrictions and criteria governing medical prescriptions, including those for people with diabetes. Health insurance reimburses treatment supplied by licensed dieticians and podiatrists, subject to certain conditions. For insulin-dependent people requiring a minimum of two injections per day, all self-monitoring material (test strips, glucose meters), education, external administration and quality control are fully reimbursed.

People with diabetes who are covered by health insurance can apply for a diabetes passport, which gives the holder the right to two visits to a dietician and two visits to the chiropodist (for people presenting a risk of developing diabetic foot problems) each year at the expense of the health insurance system. The continuous care initiative, implemented in 2009, also provides full reimbursement for visits to the general practitioner or specialist, in addition to structured education and blood glucose testing material. This is limited to people treated with one or two injections of insulin per day (or incretin mimetic), or on a maximal dose of oral blood glucose-lowering medication. An estimated 70,000 people with type 2 diabetes have access to this system.

Diabetes organizations, primary care and diabetes medical centres provide structured education for people with diabetes and their families.

# BELGIUM

Educational courses and activities are often organized at regional or local level. Provision of information to ethnic minority communities in their own languages is not systematic. Support usually depends on local availability.

Both the Flemish Diabetes Association and the Belgian Diabetes Association still express their concern at the premiums paid by people with diabetes when applying for life insurance and/or hospitalization insurance. Indeed, they still have trouble finding an insurance company and are sometimes required to pay three times the price for hospitalisation or life insurance.<sup>16</sup>

## WOMEN'S HEALTH

Zoet Zwanger (*Sweet Pregnant*) is a prevention project supported by the Flemish government, which appeals to women with gestational diabetes and their care providers. It aims for long-term follow-up of diabetes risk after pregnancy. The first phase of the project, running from 2009 to 2012, is coordinated by the Flemish Diabetes Association and is implemented in cooperation and consultation with Flemish Association for Obstetrics and Gynecology and the Domus Medica group of general practitioners.<sup>3</sup> Preliminary results of this initiative will be available soon.

## OUTLOOK

Belgian diabetes associations hope that diabetes will become a priority at federal and regional levels and lead to the creation of a diabetes plan with one spokesperson and one official diabetes expert group to advise the government and health authorities.

Challenges expected to arise include the growing prevalence of type 2 diabetes and limited resources due to the current economic situation. The structure of the Belgian government adds to the complexity of systems for diabetes prevention, treatment and care. Outlining the economic impact of diabetes, such as the cost of treatment and loss of income, illustrate the importance of diabetes to decision and policy makers.

"Although different initiatives in diabetes care have been taken over the last years, we still lack an overarching plan for the future. This should now be our objective."

*Flemish Diabetes Association*

"Our expectations for the future include a specific and coherent diabetes management strategy including a National diabetes plan and a national diabetes coordination group as well as the establishment of a reliable and evidence based diabetes database."

*Belgian French-speaking Diabetes Association*

## CONSULTED ORGANIZATIONS

- Flemish Diabetes Association
- Belgian French-speaking Diabetes Association
- Advisor Federal Service of Health, Food Chain Safety and Environment Directorate-General for the Organization of Healthcare Establishments

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.3%	10.9%
<b>Estimated number of people with diabetes</b>	531,550	528,810
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	10.2%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● Bulgarian Association for Endocrinology guidelines, <b>Endocrinology and Metabolic Disease</b> (2005)
<b>National register</b>	No	
<b>Developments since 2008</b>	● Bulgarian Diabetes Association updated 2008-2011 programmes of activities	
<b>Planned actions</b>	● Adoption of a national programme for prevention, early diagnostics and treatment of diabetes and its complications	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Bulgaria in 2011 is 9.3% of the adult population, representing approximately 531,550 people. The Atlas forecasts that the prevalence rate will rise to 10.9% by 2030.

The Bulgarian Association of Endocrinology estimates the prevalence to be 7% of the adult population.<sup>1</sup> According to the Bulgarian Diabetes Association, this figure is closer to 8.3%.<sup>2</sup>

Figures from the Bulgarian Ministry of Health show that in 2006, the National Health Insurance System provided treatment to 237,231 people – 2.5% of the population.<sup>3</sup>

A 2006 study by the Bulgarian Association of Endocrinology revealed that in 2000, the prevalence rate for diabetes was approximately 8.3% but that another 2.3% of the population had pre-diabetes. The same study revealed that approximately 40% of the people with diabetes in Bulgaria were unaware of their condition, and that approximately 70% of those diagnosed were poorly treated or not treated at all.<sup>4</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 10.2% of the total health budget is spent on diabetes.

The Bulgarian Ministry of Health quotes the cost of treating people diagnosed with diabetes under the National Health Insurance Fund in 2006 as EUR 34 million.

## GOVERNMENT HEALTH PRIORITIES

There is a marked difference of opinion between the two diabetes associations in Bulgaria as to whether or not diabetes is considered by the government as a health priority. The Diabetes Association believes that it is; the Association of Endocrinology believes that it is not. The current focus of government health priorities is on the fight against childhood obesity through healthy eating. Figures from the Bulgarian Ministry of Health website show that 11.7% of children aged 3-6 years are overweight and 5.6% of all children are obese. One of the Ministry's measures is to offer nutritional advice for children.<sup>5</sup>

A draft National Health Strategy 2007-2013<sup>3</sup> identifies as government health priorities the promotion of disease prevention, raising awareness about

the importance of healthy lifestyles, and limiting environmental and behavioural risk factors. Diabetes was not mentioned in the Activity Report of the Ministry of Health for the period 2009- 2010.<sup>6</sup>

The government is striving towards ongoing health-care reform aimed at tackling major challenges, such as the need to increase the healthcare budget, improve standards of medical education, combat the loss of trained personnel from the healthcare sector, combat corruption in hospitals and deal with the state health insurance monopoly.

In January 2008, Bulgaria's Minister of Health announced that funding for the country's health-care system would increase by almost 19% to BGN 2.3 billion (USD 1.9 billion) in 2008.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in Bulgaria. Future initiatives are to be announced, which are the responsibility of the Ministry of Health, the Bulgarian Association of Endocrinology and the Bulgarian Diabetes Association.

The Ministry of Health has stated that prevention is Bulgaria's current priority with regard to diabetes. It is currently developing a National Strategy for Prevention of chronic non-communicable diseases, which will cover diabetes and other non-infectious chronic diseases. This strategy is also expected to include a national programme for prevention, early diagnosis and treatment of diabetes and its complications.

Overall, the Ministry of Health has reported that there is a need to improve care for diabetes patients through coordinated actions at national level, by improving outpatient care and secondary prevention, setting up effective screening programmes for diabetes and creating an electronic register of patients, as well as improving the training of general practitioners with regard to diabetes and increasing public awareness.<sup>3</sup>

In 2005, the Ministry of Health endorsed the Bulgarian Association for Endocrinology's guidelines, which are aimed at health professionals and remain the principal guide for diabetes treatment in Bulgaria.<sup>7</sup> These guidelines stipulate that general practitioners should carry out annual examinations of all people over the age of 18 years covered by the National Health Insurance. These examinations should include the analysis of blood glucose levels and other possible diabetes indicators, including protein, glucose, ketones and pH levels in urine.

Pilot programmes for diabetes prevention, screening and treatment are currently in place in a limited number of academic institutions, such as university hospitals and research institutes. However, they are functioning outside governmental policy provisions.

There is no national register in Bulgaria, although the Bulgarian Diabetes Association believes that a national diabetes register is necessary to give precise information on the status of diabetes and thus improve provision for care.

## POLICY FOCUS

Bulgaria or the Bulgarian Diabetes Association does not have specific programmes targeting women, children or immigrants for special prevention and treatment initiatives.

The current government is implementing a programme for the construction of bicycle paths and sports facilities and children's playgrounds. However, this initiative appears inadequate to combat the growing non-communicable disease challenge. Although healthy nutrition has begun gaining popularity quite recently, there is still no effective policy in place to limit smoking.

In August 2011, guidance from the Ministry of Health ruled that children aged 3-7 years must receive a portion of fruit and vegetables every day in schools, camps and orphanages to reduce their risks of type 2 diabetes.<sup>8</sup>

Ethnic minority communities are not provided with education in their own languages.

## ACCESS TO CARE

General practitioners are responsible for the outpatient supervision and care of all registered patients with diabetes, according to the National Framework Agreement 2006, which is a type of standard contract for all insured Bulgarians. In addition, insulin-dependent and paediatric patients benefit from additional care by endocrinologists, through regular examinations at intervals depending on the status of their disease. People included in the risk group are also entitled to a preventive annual check-up with a specialist.

The National Health Insurance Fund fully covers the expenses for the basic treatment of insulin-dependent patients, oral drugs for non insulin-dependent patients and the drugs necessary for the treatment of diabetes complications. According to the Ministry of Health, treatment with insulin analogues is also available (criteria for this type of treatment have been developed to respond to the medical guidelines on diabetes of the Bulgarian Association of Endocrinology).<sup>9</sup>

## REIMBURSED

- Injectable conventional and analogue insulins
- Glucometers
- Blood-glucose test strips and measuring instruments – only for insulin-dependent people with diabetes
- Lipid testing – cholesterol and triglycerides
- Lancets – only for insulin-dependent people with diabetes
- Retinopathy screening (once per year)
- Outpatient treatment
- Micro- and macroalbuminuria (rarely)
- Dentistry

## NOT REIMBURSED BUT AVAILABLE

- Self-monitoring blood pressure meters

These treatments and services are only available to registered and insured people with diabetes and budgetary constraints mean that they are not always fully reimbursed. The main complaint is that some of the highly priced oral blood glucose-lowering medications are not reimbursed at all.<sup>4</sup>

Access to a number of treatments and technologies is restricted due to limited or no availability, or because it is not reimbursed. Insulin pumps and inhalable insulin are not available, while structured education (one-to-one and groups) is limited to some university hospitals. There is no reimbursement of self-monitoring blood pressure meters, micro- and macroalbuminuria tests and psychological support.

People who are covered by health insurance are normally offered an annual or biennial review. It is thought that this represents over 50% of the population.<sup>10</sup> Factors reviewed include BMI, blood pressure, HbA<sub>1c</sub>, blood screening, urinalysis and a review of current medication. The main diabetes care providers in Bulgaria include people with diabetes, general practitioners and diabetes specialists.

## OUTLOOK

The Medical Biological Unit at the National Sports University in Sofia reported that the main challenges over the next two years will come from the lack of established schools and specialists trained to provide education for people with diabetes. Input from independent international experts and feedback from diabetes organizations in Bulgaria might help to avoid mistakes made in other settings – for example, those relating to political lobbying, and corruption among the medical specialists and pharmacists.

The Bulgarian Diabetes Association believes that the biggest challenge lies in the implementation of a national diabetes programme and register. Clinical examination and diagnoses need to improve; around 40% of the people living with diabetes are undiagnosed.<sup>2</sup> According to the Association, government interest in diabetes prevention and treatment will be stimulated by information on diabetes coming from the UN, WHO and the European Parliament.

“Epidemiological studies show that Bulgaria is a country with excessively high prevalence of obesity and type 2 diabetes, and with the highest mortality from cardiometabolic diseases in Europe. Urgent efforts are needed to raise health awareness and promote healthy lifestyles at the population level.”

*Temelkova-Kurktschiev*  
Associate Professor of Endocrinology,  
National Sports University Sofia, Bulgaria

## CONSULTED ORGANIZATIONS

- Bulgarian Association of Endocrinology
- Medicobiological unit – National Sports University Sofia
- Bulgarian Diabetes Association

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.6%	7.4%
<b>Estimated number of people with diabetes</b>	218,840	228,790
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.8%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Programme of Diabetes Care with Particular Initiative in Prevention and Early Detection</b> (2007)</li> <li>● Annual reports produced every year</li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Professional Guidelines for Diabetes Treatment (1994)</li> </ul>
<b>National register</b>	Yes	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Implementation of new guidelines for the clinical treatment of diabetes (2009)</li> <li>● Action plan for prevention and reduction of obesity 2010-2012</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Implementation of a government resolution on diabetes</li> <li>● Further implementation of the national diabetes programme</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Croatia in 2011 is 6.6% of the adult population, representing approximately 218,840 people. The Atlas forecasts that the prevalence rate will rise to 7.4% by 2030.

According to WHO, diabetes is one of the top 10 disease-related causes of death in Croatia, with approximately 2% of the population dying from diabetes each year.<sup>1</sup>

According to the National Diabetes Register of Croatia (2010), the prevalence rate of diabetes among the adult population is 9.2% and 6.1% among people of working age.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes for 2011 was 7.8% of the total healthcare expenditure.

Figures from the National Institute for Health Insurance indicate that spending on diabetes constituted 11.5% of the total healthcare budget in 2009.

According to the Ministry of Health, the direct budget for treatment of people with diabetes and diabetes-related complications in Croatia in 2010 was 7-8% of the total healthcare budget.<sup>3</sup>

## GOVERNMENT PRIORITIES

According to the Ministry of Health and the Croatian Diabetes Association, diabetes is identified as a government health priority along with cardiovascular disease, breast cancer and colon cancer. Diabetes is also dealt with in the context of other national healthcare priorities, such as the Obesity Prevention Action Plan, where diabetes is treated as one of the most important consequences of obesity.<sup>4</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

Croatia has a comprehensive framework for diabetes prevention and care involving both a framework and guidelines. Introduced in 2007, the National Programme of Diabetes Care with Particular Initiative in Prevention and Early Detection was put in place to improve the management

of diabetes care. The Programme is the responsibility of multiple organizations, including the following:

- The Ministry of Health and Social Welfare
- The Croatian National Institute of Public Health
- The Reference Centre for Diabetes
- The Reference Centre for Diabetes in Pregnancy
- Professional sections of the Croatian Medical Association
- Primary care facilities and general practitioners, paediatricians, gynaecologists, nurses and pharmacists
- Associations of people with diabetes
- County National Institutes of Public Health
- District (regional) and local governments.

These organizations are responsible for the monitoring and evaluation of the programme at the local level. They regularly update data on diabetes education, prevention, pregnancy outcomes and chronic disease complications. At the national level, monitoring and evaluation is carried out by the Reference Centre for Diabetes, which regularly reports to the Ministry of Health. Long-term evaluation of the programme will cover incidence, prevalence and mortality.

#### MAIN PRIORITIES OF THE PROGRAMME INCLUDE

- Early detection
- Care and services for people with diagnosed diabetes
- Education for people with diabetes for improved self-care
- Guidelines, protocols for standards of care
- Information systems
- Diabetes complications
- Development of community awareness
- Evaluation of the programme
- Training for primary care teams, pharmacists and people in educational institutions who work with young people with diabetes
- Quality of healthcare.

People with diabetes were given the opportunity to contribute to or comment on this framework. Particular difficulties with its implementation include restraints on regional budgets and human resources.

In September 2007, Croatia's professional guidelines for diabetes treatment were updated. These guidelines are applied in the screening and the clinical treatment of diabetes, and their use is partially monitored by the Ministry of Health.

Since 2004, mandatory registration requires that all physicians working in diabetes record outcomes in both primary and secondary care.<sup>5</sup> To date, there are a total of 110,804 people registered with diabetes, with 35,643 people added in 2010 (6.17% with type 1 diabetes, 91.93% with type 2 diabetes and 0.96% with gestational diabetes).<sup>5</sup> The register, which is managed by Vuk Vrhovac University Clinic-Reference Centre, is thought to include around 50% of the diabetes population.<sup>6</sup>

A health service yearbook was published in 2009, which monitors health statistics indicators on morbidity and mortality from diabetes and associated diseases.<sup>3</sup>

#### POLICY FOCUS

In June 2011, the Croatian parliament adopted a resolution on diabetes<sup>7</sup> with the aim of reducing diabetes morbidity and mortality. It proposes all relevant institutions undertake the steps that are appropriate within the scope of their responsibilities in support of the prevention, early detection and treatment of diabetes.

#### ACCESS TO CARE

Access to new and existing diabetes treatments is handled by the National Insurance Agency.<sup>8</sup> Diabetes therapies in Croatia are reimbursed with some exceptions, which are partially covered.<sup>9</sup>

#### FULL REIMBURSEMENT

- Injectable insulin and pens, inhalable insulin, insulin pumps and accessories
- Blood glucose monitoring strips and meters (for people on two or more injections per day)
- Lancets (for people on two or more injections per day)
- Lipid testing
- Micro- and macroalbuminuria
- Retinopathy screening
- Structured education (carried out in small groups)
- Specialist ophthalmology assessment
- Psychological assessment
- Dentistry

#### RESTRICTED REIMBURSEMENT

- Self-monitoring blood pressure meters
- Thiazolidinediones
- Acarbose
- Benzoic acid derivatives

## NOT AVAILABLE

- Podiatry

The principal providers of diabetes care in Croatia include people with diabetes, nurses, general practitioners, diabetes specialists, nutritionists and dietitians.

Structured diabetes education is provided regularly, usually in hospitals or by general practitioners. Its frequency varies: from one-off education at diagnosis to repeated education during check-ups, on average two times a year. Ethnic minorities are not provided with education in their own languages.

Fewer than 50% of people with diabetes receive annual or biennial reviews.<sup>3</sup> These cover eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, quality of life, neural sensation, blood screening, review of medication and urinalysis, creatinine, total cholesterol, lipids, triglycerides and review of a self-management diary.

Screening programmes are in place to identify those at risk of developing diabetes, which take place at local and national levels. In 2008, the Reference Centre for Diabetes launched a pilot project on the use of strips for urine glucose measurement, which has been delivered to high-risk groups.

## WOMEN'S HEALTH

The Reference Centre for Diabetes in Pregnancy collects data on pregnancy outcomes in women with established and gestational diabetes. Prenatal counselling is available for women with diabetes.

## OUTLOOK

Some stakeholders believe that the best way to improve prevention, screening and treatment of diabetes in Croatia is through continuous professional education. They also believe that the best way to stimulate government interest in diabetes prevention and treatment is through a comprehensive effort including joint actions with the government, the Reference Centre and diabetes associations in accordance with an EU Council Recommendation on diabetes.<sup>6</sup>

According to the Ministry of Health, major challenges over the coming two years include making improvements in early diagnosis, reducing diabetes complications by 20% within five years of implementation of the national programme, and achieving equality of pregnancy outcomes in women with diabetes compared to those without diabetes.

## CONSULTED ORGANIZATIONS

- Ministry of Health and Social Welfare of the Republic of Croatia
- Vuk Vrhovac University Clinic, Merkur Clinical Hospital

## REFERENCES

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3. Written interview with the Ministry of Health, August 2011
4. Action plan for prevention and reduction of overweight 2010-2012 [www.mzss.hr/ministarstvo/strategije\\_i\\_planovi](http://www.mzss.hr/ministarstvo/strategije_i_planovi)
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6. Written interview with a doctor at Merkur Clinical Hospital; August 2011
7. The Official Gazette 70/2011. [narodne-novine.nn.hr/default.aspx](http://narodne-novine.nn.hr/default.aspx)
8. Health Systems in Transition - Vol. 8 No. 7 2006, Croatia- Health System Review.
9. Vuk Vrhovac University Clinic response to written questionnaire, December 2007

# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	10.1%	12.0%
<b>Estimated number of people with diabetes</b>	81,840	117,080
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.5%	

## Policy framework

<b>National plan</b>	Yes	● <b>National Diabetes Plan</b>
<b>Guidelines</b>	Yes	
<b>National register</b>	Yes	
<b>Developments since 2008</b>	● Improvements in the Cyprus Diabetes Register	
<b>Planned actions</b>	● Cyprus Diabetes Register to be rolled out in all health centres by 2013 and to include additional data, such as family history, exercise and self-monitoring ● Update of the existing Action Plan on diabetes	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Cyprus in 2011 is 10.1% of the adult population, representing 81,840 people. The Atlas forecasts that the prevalence rate will rise to 12.0 % by 2030.

Official data from the Ministry of Health states that 6.8% of the adult population has been diagnosed with diabetes while an estimated 3.5% of the adult population remains undiagnosed.<sup>1</sup>

The Cyprus Diabetes Association reports that the national prevalence rate was 10.3% in 2006<sup>2</sup> but is now estimated to be around 12%.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) puts spending on diabetes at 11.5% of total health expenditure in 2011.

There are no official figures on the estimated cost of diabetes in Cyprus. The Cyprus Diabetes Association estimates the minimum cost per person to be EUR 3,900 per year.<sup>3</sup>

## GOVERNMENT HEALTH PRIORITIES

The Ministry of Health has identified diabetes prevention as a priority. A committee including representatives of the Ministry of Health, the Cyprus Diabetes Association, the Cyprus Medical Association and the Cyprus Associations of Dietetics, works to raise public awareness of diabetes prevention, diagnosis and treatment.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The National Diabetes Plan<sup>4</sup> was developed by the National Coordinating Committee for Diabetes.

## PRIORITIES OF THE PLAN

- Primary prevention
- Early detection
- Prevention of diabetes complications
- Care and services
- Self-management education
- Guidelines and protocols for standards of care
- Information systems
- Medication and equipment
- Research
- Treatment of micro- and macrovascular complications

Under the existing policy framework, state hospitals should operate a specialized diabetes clinic staffed by diabetologists and other trained medical staff. Diabetes stakeholders, including the Cyprus Diabetes Association, are carrying out an evaluation of the National Diabetes Plan. Although the Ministry of Health is coordinating this review, the main obstacle to implementing the national plan is reported to be a lack of political support.

One of the plan's key tools is training for health-care personnel. Since 2008, diabetes management training has been made available to specialized doctors and nurses in urban areas. Diabetes healthcare personnel have been involved in training partnerships with health centres outside Cyprus to help improve the provision of care at diabetes centres, including 25 nurses who qualified as diabetes specialist nurses in the UK. Cyprus reportedly does not suffer from a lack of human resources but recognition exists that this may be a problem in the future.

The Ministry of Health supports the development of guidelines for diagnosis and care and has invested in training for diabetes healthcare providers. The publication and distribution of guidelines, together with the provision of training for general practitioners, is central to the national diabetes plan. However, the use of guidelines is not monitored throughout the country.

An electronic register was created in 2007 by the Ministry of Health in order to analyse trends in and determinants of the population's health. Since 2007, implementation has been underway. It is hoped that countrywide implementation will be achieved by 2013. The first report on the progression of the diabetes register was presented to the European Union in September 2011. This included the involvement of five health centres and 772 people with diabetes, the quality of care in these health centres and trends in epidemiology.

## POLICY FOCUS

Cyprus is focusing on the early detection of diabetes in high-risk groups, such as the elderly.

## ACCESS TO CARE

Under the current medical scheme, people with diabetes with an annual income of less than EUR 38,000 are eligible for free medical treatment and medication, while those with a higher income are eligible for free medication only.

Care is delivered at the five large hospitals and 32 rural health centres on the island. At state hospitals, people with diabetes are entitled to free insulin (all types with pens), oral medications and other drugs to treat complications. Lipid testing, micro- and macroalbuminuria tests and retinopathy screening are all offered without charge by state laboratories. Strips, glucose meters and self-monitoring blood pressure meters have to be bought privately. The main care providers in Cyprus include nurses, family practitioners, diabetes specialists, psychologists, nutritionists and dietitians, pharmacists and ophthalmologists.

Long-acting insulin and analogues are included on the state pharmaceutical list; a system of co-payments exists for the analogues. The Ministry of Health is expected to add oral agents, such as glimepiride and sitagliptin during 2011.<sup>5</sup>

Government-funded screening programmes are in place to identify people at risk of developing diabetes who receive free medical services. Also, a national programme aims to increase public awareness on prevention and early detection of diabetes.

Structured education for people with diabetes is provided at hospitals by general practitioners or, increasingly, at specialist diabetes clinics. People with diabetes are normally offered this education at every clinic visit. Ethnic minority communities are not provided with education in their own languages.

More than 50% of the people with diabetes in Cyprus are offered annual or biennial reviews, which cover eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, neural sensation, cognitive function, blood screening, a review of social circumstances and urinalysis.

## WOMEN'S HEALTH

Cyprus collects pregnancy outcome data for women with gestational and established diabetes at the NAM III Government Hospital and the Larnaca Diabetes Reference Centre. Cyprus also offers prenatal counselling.

## OUTLOOK

The biggest challenge to Cyprus over the next two years will be the prevention and early detection of diabetes. Awareness of diabetes must be maintained at the ministerial level in order to stimulate government interest in prevention and care.

The Ministry of Health aims to develop a diabetes clinic with specialist personnel in each public-sector hospital. Its reported desire is to ensure universal access to a professional healthcare team in a diabetes clinic or urban or rural health centre. The Ministry plans to update the existing national diabetes plan.

## CONSULTED ORGANIZATIONS

- Cyprus Diabetes Association
- Ministry of Health

## REFERENCES

1. Ministry of Health of Cyprus, [www.moh.gov.cy](http://www.moh.gov.cy)
2. Loizou et al (2006). An epidemiology study on the prevalence of diabetes, glucose tolerance and metabolic syndrome in the adult population of the republic of Cyprus. *Diabetes care* 29(7) 1714-1715.
3. Cyprus Diabetes Association, Oral interview, December 2007
4. National Coordinating Committee for Diabetes, *Cyprus National Diabetes Plan, 2003*
5. Written interview with the Ministry of Health, August 2011

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.9%	8.3%
<b>Estimated number of people with diabetes</b>	557,390	659,750
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.0%	

## Policy framework

<b>National plan</b>	Yes	● <b>Second National Diabetes Programme</b> (2000)
<b>Guidelines</b>	Yes	● <b>Czech Diabetes Society's Comprehensive Diabetes Guidelines</b>
<b>National register</b>	No	
<b>Developments since 2008</b>	● Ongoing reform of the healthcare system	
<b>Planned actions</b>	● Implementation of the National Diabetes Programme (2011-2015)	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in the Czech Republic in 2011 is 6.9% of the adult population, representing approximately 557,390 people. The Atlas forecasts that the prevalence rate will rise to 8.3% by 2030.<sup>1</sup>

National statistics indicate that there were 749,000 people with diabetes registered either in diabetes centres or with general practitioners in 2006 – an increase of more than 10,000 since 2005.<sup>2</sup> Of these, 346,000 were men and 403,000 women.<sup>2</sup>

The incidence rates are growing for both type 1 diabetes and type 2 diabetes. If current trends continue, the number of people with diabetes in the Czech Republic will reach 1.5 million in 25 years.

According to the Institute of Health Information and Statistics, the rate of diabetes prevalence is 8%.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) puts spending on diabetes at 8% of total health expenditure in 2011.

## GOVERNMENT HEALTH PRIORITIES

Currently, the Czech government's health priorities focus on smoking prevention and combating cancer and cardiovascular diseases. Diabetes is not seen as a priority despite the emphasis on prevention in the national health programme, 'Health for all in the 21<sup>st</sup> Century'<sup>4</sup> and despite the existence of a National Diabetes Programme since 2000. In fact, in 2007, there were no officials working specifically on diabetes in the Ministry of Health.

In January 2007, a revised healthcare system took effect, which aims at resolving the under-funded health system and the resulting problem of over-crowding and low standards of healthcare services. Under the system, a payment of EUR 1 is required for each visit to a doctor or other health facility.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The country's second National Diabetes Programme dates from 2000. Prepared by the Czech Diabetes Society and the Ministry of Health, the National Diabetes Programme is based on the St. Vincent Declaration and covers treatment and prevention, education of healthcare workers, social and legal aspects, science and research. The programme emphasises primary prevention, early detection, guidelines, research and diabetes complications.<sup>5</sup>

The text of the National Diabetes Programme stipulates that implementation is the shared responsibility of the Czech Diabetes Society, the Ministry of Health and insurance companies, but in effect, the Czech Diabetes Society is solely responsible.<sup>6</sup> The programme does not specify who is responsible for the evaluation and control of the programme and only national statistics provide any information about its ongoing implementation. Due to a lack of an efficient monitoring system, it is difficult to assess the programme's effectiveness.

This National Diabetes Programme has been updated in draft form for the period 2011 to 2015 with input from people with diabetes. The plan will be monitored every two years.<sup>7</sup> Particular difficulties reported with the last draft were the lack of financial and political support.

Equally problematic for the diabetes community is the discrepancy between the real cost of diabetes treatment and the amount reimbursed by the insurance system.<sup>6</sup> The lack of relevant economic studies on cost-effectiveness of diabetes care does not help.

In order to highlight this problem, in January 2008, the Czech Diabetes Society launched MOET 2,<sup>8</sup> a one-year project which aims to prove that properly funded programme of daily care, including, for example, regular standard check-ups, will bring about cost savings in the long term by reducing complications and the consequent need for disability pensions. The project will cover 13,000 people with diabetes and is financially supported by pharmaceutical companies.<sup>6</sup>

The National Diabetes Programme is complemented by a comprehensive set of diabetes guidelines<sup>9</sup> drafted by the Czech Diabetes Society and implemented nationwide. These guidelines, which are updated every two years, set out multiple standards for the diagnosis and care of type 1 and type 2 diabetes. They also cover gestational diabetes, self-management standards for blood glucose, nephropathy, neuropathy, diabetic foot, retinopathy, nutrition and education. Other guidelines used in the country include those written by the European Association for the Study of Diabetes, IDF Europe and WHO. However, use of these guidelines is not monitored.<sup>10</sup>

## POLICY FOCUS

The needs of specific patient groups, such as children and pregnant women, are recognized in the national guidelines and in daily practice. Currently, these groups have privileged access to diabetes treatment and benefit from specific reimbursement rules.<sup>6</sup>

There are no special provisions for immigrants in the Czech Republic.<sup>3</sup>

## ACCESS TO CARE

The quality of diabetes treatment in the Czech Republic is generally considered to be high. However, a clear distinction exists between the treatment provided by diabetes centres and that offered by general practitioners or private diabetes specialists. Reimbursement restrictions set by the health insurance administration mean that people treated by private diabetes specialists have limited access to the best diabetes care.<sup>6</sup> In contrast, diabetes centres provide wider access to new technologies and educated professionals because they receive better financial support.<sup>6</sup>

Almost all prescribed diabetes treatments, technologies and services are fully reimbursed in the Czech Republic. People pay a minimum contribution for some drugs. Insulin pens, insulin pumps and their accessories are fully reimbursed. Blood glucose monitoring strips and meters are free up to 1,000 per year for people on insulin; up to 100 free for those taking blood glucose-reducing drugs; and 50 for people relying only on diet to manage their diabetes. Self-monitoring blood pressure meters are not covered by reimbursement. People with diabetes have the right to 100 lancets per year.<sup>6</sup>

Lipid testing, albuminuria and retinopathy screening belong to standard treatments. However, due to limited financial resources for reimbursements, doctors are restricted in the number of prescriptions they can write for these treatments (especially in case of people treated by general practitioners or private diabetologists).<sup>6</sup> Diabetes education, however, is rarely reimbursed, and in most cases is provided by nurses who carry out this role on top of their regular nursing duties.<sup>3</sup> Diabetes organizations offer some education for people with diabetes. Psychological care is not funded.<sup>6</sup>

One of the most important achievements of the Czech Diabetes Society was the establishment of 24 specialized outpatient foot clinics. This network aims to reduce the number of amputations.

There are national screening programmes in place to identify those at risk of developing diabetes, which are funded by the Ministry of Health. They target high-risk groups, such as the elderly and pregnant women.<sup>6</sup>

## WOMEN'S HEALTH

The Czech Diabetes Society collects pregnancy outcome data for women with gestational diabetes or established diabetes. Pregnant women also receive preconception counselling.

## OUTLOOK

Challenges over the next two years include implementation of the National Diabetes Programme 2011-2015, improvement of diabetes screening and complex care for people with diabetes, including provision for co-morbidities and complications.<sup>9</sup>

In order to stimulate government interest in diabetes there needs to be improved communication and support between government and civil organizations.

## CONSULTED ORGANIZATIONS

- Czech Diabetes Society
- University Hospital, Pilsen

## REFERENCES

1. *IDF Diabetes Atlas (third edition) 2007*, p. 60-61
2. *Institute of Health information and Statistics of the Czech Republic, Healthcare and Health Services in the Czech Republic 2006 in statistical data*, July 2007
3. *Czech FEND, Response to written questionnaire and Oral interview*, October 2007
4. *Health Ministry, 'Health for All in the 21st Century'*,
5. *Czech Diabetes Society, National Diabetes Programme*
6. *Czech Diabetes Society and Union of Diabetic Patients, Joint response to written questionnaire*, November 2007, and oral interview, December 2007
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8. *Czech Diabetes Society, MOET DM2, 2008*
9. *Written interview with the Czech Diabetes Society, August 2011*

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.5%	8.0%
<b>Estimated number of people with diabetes</b>	299,470	331,020
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.5%	

## Policy framework

<b>National plan</b>	Yes	● <b>Diabetes Action Plan</b> (2003)
<b>Guidelines</b>	Yes	● <b>National Board of Health Diabetes Guidelines</b> (1994)
<b>National Register</b>	Yes	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Facts on Diabetes 1996-2009</li> <li>● National Board of Health (2010)</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Denmark in 2011 is 7.5% of the adult population, representing approximately 299,470 people. The Atlas forecasts that the prevalence rate will rise to 8.0% by 2030.

According to figures from the Danish Ministry of the Interior and Health and the National Board of Health, there are an estimated 250,000 people diagnosed with diabetes – approximately 25,000 with type 1 diabetes. It is estimated that a further 150,000 Danes are unaware that they have type 2 diabetes. According to the Danish government, an average person with type 2 diabetes has the condition for between six and 10 years before being diagnosed. As a result, the number of people with type 2 diabetes may be as high as 300,000.<sup>1</sup> The risk of dying of diabetes is twice as high in Denmark as compared to Sweden.<sup>2</sup>

The Danish Diabetes Association reports that the prevalence of diabetes according to the National Board of Health was 4.9% in 2010. According to the national diabetes register, there are an average of 27,000 newly diagnosed cases per year.<sup>3</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.5% of the total health budget is spent on diabetes.

## GOVERNMENT HEALTH PRIORITIES

In 2008, the Ministry of Health published a prevention programme for chronic diseases. This includes a specific Disease Management Programme for diabetes, which involves a comprehensive multi-disciplinary, multi-sectoral response and is aimed at ensuring the use of evidence-based recommendations. It contains a description of tasks and covers communication and collaboration between all the parties involved in diabetes care. Several regions have developed regional programmes for diabetes.

A number of trials, studies and experimental programmes are supported by the Danish government fund for diabetes research projects. One large treatment study, for example, looks at the effects of physical activity on specific cardiovascular diseases in people with type 2 diabetes, and another is testing the hypothesis that individualized

therapy based on pathophysiological knowledge results in better diabetes care.

Another government-backed study is a randomized intervention, the SOK project, which is piloting a collaborative interface between general practice and hospital diabetes outpatient clinics. Its aim is to improve the quality of treatment for people with chronic diseases, and to create more coherent pathways across health service sectors.

## NATIONAL DIABETES PLAN/ FRAMEWORK

In 2003, Denmark launched the Diabetes Action Plan.<sup>5</sup> While the National Board of Health is responsible for its overall implementation, the majority of the actions are carried out regionally.<sup>5</sup>

The plan prioritizes prevention of type 2 diabetes and the reduction of complications. It also seeks to guarantee optimal care for people with diabetes to improve quality of life and life expectancy.<sup>5</sup> The overarching goal of the Danish Diabetes Action Plan is to halt the rise in numbers of people with type 2 diabetes.

The National Diabetes Register, which contains data on all people diagnosed with diabetes, aims to provide an overview of the rise in diabetes, provide quality control of diabetes care, and serves as a research base.

Although diabetes has been recognized as a government priority, the Danish Diabetes Association believes that a considerable number of the proposed actions included in the National Plan have not yet been implemented. It is thought that over the last few years, the National Board of Health has not pushed for their implementation.<sup>6</sup>

The National Board of Health is responsible for developing diabetes guidelines in Denmark.<sup>6</sup> Activities of the regional authorities are currently based on a set of guidelines developed in 1994. These focus on prevention of late complications through education to promote improved self-care and monitoring of blood glucose, and the organization of diabetes clinics and communication between primary and secondary carers.

## POLICY FOCUS

Denmark has set aside about EUR 80 million for the period between 2010 and 2012 to reinforce the treatment of people with chronic disease, including those with diabetes. The aim is to develop and implement chronic disease management programmes, education and self-care for people with chronic diseases. The Chronic Disease Management Programme describes combined and coordinated efforts towards a specific chronic condition. It is based on evidence and contains a precise description of who does what, where and when throughout the care process.

In June 2011, the Danish parliament passed a law amending taxation on chocolate and confectionary, as well as on ice cream, mineral water and tobacco. The law aims to increase taxes on ice cream, chocolate, candy and sugar-sweetened soft drinks; lower taxes on sugar-free drinks; and to restructure and increase taxes on cigarettes and tobacco.

The Ministry of Interior Affairs and Health gave EUR 175,000 for a film about health and preventing disease. Available in six languages, the film targets ethnic minorities in Denmark and serves as a visual introduction to the Danish health system.

## ACCESS TO CARE

Denmark's health insurance scheme provides for the reimbursement of approved diabetes medicines, including insulin. However, individuals must pay a portion themselves. For people with chronic diseases, this sum is restricted to a maximum of EUR 458 per year.<sup>6</sup>

Insulin needles and pens are provided free of charge. Blood glucose strips are free of charge for insulin-treated diabetes people, who also get 50% reimbursement on blood glucose meters. For those on oral medication, the maximum number of reimbursable strips is set at 150 per year.

Insulin pumps and accessories are currently free of charge, but the situation is problematic according to the Danish Diabetes Association. Since there is no budget specifically allocated for insulin pumps either at the national or regional levels, hospitals are forced to cover the costs, and must therefore prioritize between different treatments. Therefore, the number of pump users in Denmark has remained relatively low (among both children and adults) compared to other Nordic countries.

Monitoring of blood pressure, cholesterol and albuminuria are carried out by healthcare professionals free of charge. There is no reimbursement for self-monitoring equipment bought by people with diabetes. Treatment by doctors and specialists (including eye screening) are free of charge.

In most cases, people with diabetes must cover the costs of psychologists. However, if they are referred to a psychiatrist, there is a better chance of receiving reimbursement. Individual education and advice are provided free of charge by general practitioners and in hospitals.

In primary care, general practitioners who have a collective agreement with the public healthcare system are obliged to carry out systematic monitoring of the people with diabetes in their care.

## OUTLOOK

At the European level, the implementation of European guidelines on cardiovascular disease and diabetes, lowering taxes on healthy foods and beverages, and raising taxes on unhealthy products, would be welcomed. The Danish Diabetes Association believes that a ban on advertisements for unhealthy food and beverages to children in all mass media, including the Internet, also would be beneficial. Detailed nutrition labels that include the amount of sugar and carbohydrates are necessary. The Association also would like to see the removal of labelling for 'foods for diabetics'.<sup>6</sup>

## CONSULTED ORGANIZATIONS

- Danish Diabetes Association
- Ministry of the Interior and Health

## REFERENCES

1. Danish Ministry of the Interior and Health, *Healthy throughout Life website on public health*, [www.folkesundhed.dk/show-page.asp?ID=51](http://www.folkesundhed.dk/show-page.asp?ID=51)
2. Danish Diabetes Association, *More Danes Die of Diabetes*, [www.diabetes.dk/wm6026](http://www.diabetes.dk/wm6026)
3. *Facts on Diabetes 1996-2009*, National Board of Health, 2010
4. Danish Diabetes Association, *questionnaire*, August 2011
5. *Diabetes Action Plan, 2003*, [www.im.dk/publikationer/diabetes-beh/handlingsplan.pdf](http://www.im.dk/publikationer/diabetes-beh/handlingsplan.pdf)
6. Danish Diabetes Association, *Oral interview*, 3 December 2007

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.1%	10.3%
<b>Estimated number of people with diabetes</b>	90,710	95,530
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	10.3%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Guidelines on Type 1 Diabetes Treatment</b> (1998)</li> <li>● <b>Guidelines on Type 2 diabetes Treatment</b> (1999)</li> <li>● <b>Diabetic Ketoacidosis Treatment in Children</b> (2003)</li> </ul>
<b>National register</b>	No	
<b>Planned actions</b>	No	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Estonia in 2011 is 9.1% of the adult population, representing approximately 90,710 people. The Atlas forecasts that the prevalence rate will rise to 10.3% by 2030.

Estonia's Health Statistics Database estimates that the diabetes prevalence rate is 3-4% of the total population (2009).<sup>1</sup> However the Ministry of Social Affairs believes that there is no accurate data available.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 10.3% of the total health budget is spent on diabetes.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is not identified as one of the government's health priorities, which focus on the prevention of cardiovascular diseases, cancer and HIV/AIDS.<sup>2</sup> The Ministry of Health and Social Affairs reports that there are no plans for future programmes, guidelines, initiatives or other national activities on diabetes.<sup>3</sup> However, diabetes is dealt with in the context of other national healthcare priorities, such as the Public Health Development Plan, which aim to promote health at both the national and the local levels.

The 2003 reform of the Estonian healthcare system reorganized the procedure for public funding and the network of hospitals, improved quality and accessibility of medical care in general and improved efficiency in primary care, including training and integrating general practitioners.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in Estonia. Diabetes is dealt with in the context of the National Health Plan 2009-2020. The Plan was designed to prevent premature mortality and improve quality of life. The plan recognizes that increased frequency of chronic diseases, including diabetes, and chronic disease risk factors, such as excess weight and high blood pressure, are a major problem area.<sup>4</sup>

A programme on the prevention of cardiovascular diseases includes a number of health promotion measures, including those relating to nutrition and physical activity, which are also relevant to the prevention of diabetes.<sup>5</sup>

A day-care centre exists for young people with overweight aged 7-18 years at the Children's Hospital of Tallinn, where examinations are provided for chronic disease risk factors. An interdisciplinary team including a physician, nurse, dietician, psychologist and kinesiologist provides care and education. Follow-up examinations are scheduled after one, three and six months.

Since 2006, the Estonian Health Insurance Fund, in cooperation with the Estonian Society of Family Doctors, has introduced a bonus system for general practitioners. One of the objectives of this system is to monitor people with chronic disease, with a focus on type 2 diabetes and hypertension.<sup>6</sup>

In the late 1990s, the Estonian Society of General Practitioners and the Estonian Society of Endocrinologists issued practice guidelines for type 2 diabetes based on IDF's 1991 guideline. These are still followed. These guidelines include a description of diabetes risk groups, diagnostic criteria, principles for treatments and monitoring and suggestions for specialist referral. They also list the tests, analyses and procedures that need to be carried out at certain intervals. General practitioners make suggestions for treatment and renew prescriptions, which are issued every six months at most, enabling general practitioners to see people with diabetes at least twice a year.<sup>7</sup> Guidelines in use cover type 1 diabetes, type 2 diabetes and ketoacidosis in children.

Currently, there are no screening facilities in place to identify diabetes in the population and no plans to introduce screening. People with diabetes are offered annual or biennial reviews; more than 50% of people with diabetes population take up this treatment. The reviews cover eyes, legs, BMI, blood pressure, HbA<sub>1c</sub>, medication and microalbuminuria. The main care providers in Estonia include general practitioners, diabetes specialists, nutritionists and dieticians.

## WOMEN'S HEALTH

Estonia does not offer preconception counselling for women with diabetes.

### POLICY FOCUS

There are no specific policy provisions for different sectors of the population living with diabetes in Estonia.

## ACCESS TO CARE

The Estonian Health Insurance Fund finances medical care and treatment for people who are covered by the National Health Insurance system. The Fund reimburses diabetes treatment. In 2006, treatment was reimbursed for 39,441 people with diabetes.

The Fund reimburses the following diabetes treatments and supplies:

### FULLY REIMBURSED

- Injectable insulin and pens
- Micro- and macroalbuminuria – through general practitioners and specialists
- Retinopathy screening – through ophthalmologists
- Structured education (one-to-one/group) – one-to-one with a diabetes nurse; in groups in different centres provided by private medical companies

### PARTIALLY REIMBURSED

- Insulin pumps and accessories – 100% for children up to four years old
- Blood glucose monitoring strips
- People with type 1 diabetes receive 90% reimbursement on 600 strips per year
- People with type 2 diabetes on insulin therapy receive 90% reimbursement on 300 strips per year
- People with type 2 diabetes on oral medication receive 90% reimbursement on 100 strips per year
- Children, women who are pregnant or breast-feeding receive 90% reimbursement on 1200 strips per year
- Lipid testing (by general practitioners and different specialists) with different percentages of reimbursement for different groups

### NOT REIMBURSED

# ESTONIA

- Blood glucose meters not reimbursed but often sponsored by pharmaceutical (insulin-producing) companies
- Self-monitoring blood pressure meters but often sponsored by pharmaceutical (insulin-producing) companies
- Lancets
- Psychological assessment
- Dentistry

There is specialist training for health professionals on diabetes.

## OUTLOOK

According to the Estonian Ministry of Health, future changes will include improvements in diabetes education and psychological support, including for family members.

## CONSULTED ORGANIZATIONS

- Estonian Diabetes Association
- Ministry of Social Affairs

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## COUNTRY OVERVIEW

### Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.5%	8.0%
<b>Estimated number of people with diabetes</b>	299,470	331,020
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.5%	

### Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	No	
<b>National register</b>	No	
<b>Planned actions</b>	No	

The Faroe Islands have been a self-governing dependency of the Kingdom of Denmark since 1948. Operation of the healthcare system is a Faroese matter, but control in regards to the health standards is a Danish responsibility, therefore the two countries have the same prevalence and spending figures.

### DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in the Faroe Islands in 2011 is 7.5% of the adult population, representing approximately 299,470 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 8.0% of the population.

According to the Faroese Diabetes Association, there is no national register for diabetes care so it is hard to estimate the prevalence of diabetes. However, the association tends to use the same prevalence data for type 1 and type 2 diabetes as Denmark, as they are part of the Danish healthcare system.

### COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.5% of the total health budget is spent on diabetes.

### GOVERNMENT HEALTH PRIORITIES

The government of the Faroe Islands is aware of the problem of diabetes and has tried to take action in the past. However, it is difficult to ascertain whether diabetes is treated as a health priority. There has been a recent downscaling of outpatient clinics for diabetes in hospitals due to financial budget cuts.

### NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan or framework in use. The Faroese Diabetes Association has been pushing the government recently to produce this plan, but nothing has materialized.

Apart from the education medical professionals receive during their training, there are no national guidelines in the treatment of diabetes.

## POLICY FOCUS

The government has policies to promote healthy eating in the general population. This includes a 'health day' where healthy foods and sports are promoted.

## ACCESS TO CARE

Access to diabetes treatment is overall reasonably good in the Faroe Islands as all patients have access to diabetes medicines, insulin and technology. Children under the age of 18 years and those in retirement have free access to all care and treatment. Adults of working age must contribute EUR 215 per year to receive full access to treatment, care and medication. Insulin, pumps, accessories, blood glucose monitoring strips (four per day), lancets, lipid testing, microalbuminuria and retinopathy screening, structured education, podiatry (twice per year) and ophthalmologist assessment are all fully reimbursed. Self-monitoring blood pressure meters must be paid for by the patient. Psychological assessment is reimbursed by the healthcare insurance system, but is not offered as a matter of course to those with diabetes.<sup>1</sup>

All people with diabetes have access to a regular diabetes review undertaken by a healthcare professional with specialist training in diabetes.

A general practitioner or nurse normally does this.

Many doctors from the Faroe Islands complete their training in Denmark and as it stands, there is only one healthcare professional specialized in diabetes in the Faroe Islands, who only devotes 50% of the time to seeing patients. There is a need for more healthcare professionals in diabetes as current waiting lists to see an endocrinologist can be up to 14 months. Many people with diabetes receive their treatment and education from a general practitioner or nurse.

Access to diabetes education is quite good as the Faroese Diabetes Association hold regular meetings with people with diabetes to help them adapt to their new diagnosis, or work with parents

who have newly diagnosed children. Local medical centres also hold educational groups of 5-10 people to teach them how to use their insulin and pumps and let them talk about any problems they may encounter.

There is currently no screening for diabetes in the general population or in high-risk groups, such as those over 45 years or obese people.

The Faroe Islands does not conduct regular audit or review of the quality of the diabetes care provided.

## OUTLOOK

According to the Faroese Diabetes Association, the greatest challenges over the next two years are improved access to insulin and pumps, which should be more widely available for those with diabetes, more organized education on self-treatment and organized eye screening.

The Faroese Diabetes Association believes the government is accessible, but it cannot react in the necessary manner to improve diabetes care due to limited resources.

The biggest challenge to diabetes care is the lack of healthcare professionals specialized in diabetes, as there is only one endocrinologist in the country who works part time.

## CONSULTED ORGANIZATION

- Faroese Diabetes Association

## REFERENCE

1. Oral interview with the Faroese Diabetes Association, September 2011.

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	8.7%	9.6%
<b>Estimated number of people with diabetes</b>	340,320	375,760
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	9.7%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Development Programme for the Prevention and Care of Diabetes</b></li> <li>● <b>Programme for the Prevention of type 2 diabetes 2003-2010</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Multiple guidelines</li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● In 2010, the Ministry of Social Affairs and Health developed a strategy for Socially Sustainable Finland 2020.</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Follow up of National Diabetes Plan</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Finland in 2011 is 8.7% of the adult population, representing approximately 340,320 people. The Atlas forecasts that the prevalence rate will rise to 9.6% of the population by 2030.

The Finnish Diabetes Association, however, reports that diabetes already affects 10% of Finland's adult population.<sup>1</sup> There are approximately 280,000 people with type 2 diabetes and 40,000 people with type 1 diabetes.<sup>2</sup> According to population studies, at least 200,000 Finns have type 2 diabetes without knowing it.<sup>1</sup> Moreover, at least a third, and possibly up to half, of the Finnish population have a genetic predisposition to type 2 diabetes.<sup>3</sup>

The incidence of type 1 diabetes is the highest in the world.<sup>4</sup> According to the latest population survey by the National Public Health Institute, if current trends continue, type 2 diabetes will affect more than half a million people in Finland.<sup>3</sup>

About 500,000 Finns have impaired glucose tolerance and run a marked risk of developing type 2 diabetes. In fact, 5-10% of these people develop diabetes every year.

Regional differences exist in the prevalence of diabetes. The prevalence of type 1 diabetes is

greatest in eastern Finland and lowest in the north. Type 2 diabetes is most common in the centre and southeast, while the lowest figures are observed on the west coast. Regional differences stem from hereditary factors, the environment and lifestyle.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 9.7% of the total health budget is spent on diabetes. The overall costs of treating people with diabetes and the additional costs due to diabetes have increased strongly. Between 1998 and 2007, treatment costs increased 83%.

Treatment costs per person with diabetes, however, have fallen slightly in recent years. Improved early diagnostics have identified people with diabetes, enabling them to initiate care procedures before they develop long-term complications.

## GOVERNMENT HEALTH PRIORITIES

The national programme on health promotion aims to promote its Health in all Policies approach, focusing on the prevention of lifestyle-related diseases, such as type 2 diabetes.

## NATIONAL DIABETES PLAN/ FRAMEWORK

Finland's national plan 'Development Programme for the Prevention and Care of Diabetes' (DEHKO) for the period 2000-2010 is widely considered a model for the prevention, management and treatment of diabetes.<sup>5</sup>

Coordinated by the Finnish Diabetes Association and funded by the Finnish Slot Machine Association, DEHKO was endorsed by the Ministry of Social Affairs and Health. It was a comprehensive 10-year programme for the primary prevention of type 2 diabetes and the prevention and care of diabetes complications in people with type 1 diabetes and type 2 diabetes. It focused on three main areas:

- Primary prevention of type 2 diabetes
- Improvement of diabetes care (both type 1 and type 2 diabetes)
- Supporting self-care of people with diabetes.

The Ministry of Social Affairs and Health recently developed a new strategy: Socially Sustainable Finland 2020. Its purpose is to achieve a socially sustainable society in which all people are treated equally and have the opportunity to actively participate, and in which the health and functional capacity of the entire population is adequately supported. The strategy is based on the premise that equality, mental and material wellbeing, gender equality and economic, social and ecological sustainability contribute to the balanced development of society. It does not concentrate on diabetes or non-communicable diseases specifically but aims to build a better welfare system through new health policies and structural changes.<sup>6</sup>

For more than 20 years, the Finnish Diabetes Association has published recommendations for health professionals on diabetes prevention, treatment and care. The latest recommendations are related to diet<sup>7</sup> and drivers licenses and traffic safety for people with diabetes.<sup>8</sup>

The Finnish Medical Society has also developed guidelines using the latest evidence-based data for type 2 diabetes, including guidelines on retinopathy, nephropathy and overall treatment of diabetes. Forthcoming guidelines will include diabetes during pregnancy and foot care.<sup>9</sup>

## POLICY FOCUS

The Finnish diabetes plan does not include any specific focus or particular initiative with regard to children, women or immigrants. Women and children, like other sub-groups benefit from the current Finnish initiatives, but immigrants are not mentioned as a separate group, probably due to their limited numbers in Finland.

## ACCESS TO CARE

In Finland, access to diabetes medication and treatment is generally fully reimbursed.

### FULL REIMBURSEMENT

- Injectable insulin and pens
- Insulin pumps and accessories
- Blood glucose monitoring strips/meters
- Lancets

### FULL REIMBURSEMENT (INCLUDED IN THE ANNUAL PRIMARY HEALTHCARE FEE)

- Micro- and macroalbuminuria
- Retinopathy screening
- Lipid testing
- Structured education (one-to-one/group)
- Psychological assessment

### NO REIMBURSEMENT

- Self-monitoring blood pressure meters (in certain cases, meters are lent to patients)

### NOT AVAILABLE

- Inhalable insulin

The main care providers in Finland include people with diabetes, nurses, general practitioners, diabetes specialists, psychologists, nutritionists, dieticians, podiatrists, pharmacists and ophthalmologists.

Counselling and training courses for people with diabetes are held around the year at the Diabetes Centre in Tampere, the national headquarters of the Finnish Diabetes Association. The courses are attended by between 1,700 and 1,800 people each year. Of these, around 1,300 are people with diabetes and their family members, and some 500 are healthcare professionals. Education and further training are also organized for healthcare professionals. Several seminars and basic and advanced courses are held every year. Tailor-made education and counselling are also offered for healthcare professionals.

Screening and prevention were rolled out as part of the Dehko action plan, with screening and preventative practices taking place throughout the country. There are no plans to introduce a national screening programme, as local screening activities are considered sufficient for the time being.<sup>10</sup>

People with diabetes are usually offered annual and biennial reviews with over 50% of the population receiving a check-up. Aspects covered in the review include eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, blood screening, albuminuria and a review of medication.

Ethnic minority communities are provided with education in their own languages.

## WOMEN'S HEALTH

Finland collects pregnancy outcome data for women with gestational diabetes and established diabetes, which is compiled in an unpublished report, FinDMII. There is also nationwide preconception counselling.

## OUTLOOK

Finland is considered to be the first country in the world to have introduced a comprehensive diabetes programme. Its effectiveness reflects continuous monitoring, evaluation and revision in line with countrywide developments.

Together with prevention, the key challenge in Finland lies in improving glycaemic control in people with type 1 diabetes, building a good-quality care monitoring system and increasing healthcare providers' diabetes know-how at all levels of healthcare.<sup>11</sup>

Challenges will also include how to economically respond to rapidly growing numbers of people with type 2 diabetes and to the need for healthcare resources and personnel.

An update of the previous national diabetes programme might be integrated into a plan to improve care for non-communicable diseases and the general health reform that is included in the new government programme.

"The Health in All Policies approach has been the cornerstone of the Finnish health policy for many years. Such an overarching policy is not contradictory to disease-specific programmes such as DEHKO. Both approaches are needed to overcome the non-communicable disease epidemic."

*Liisa-Maria Voipio-Pulkki*  
Ministry of Social Affairs and Health

## CONSULTED ORGANIZATION

- Department of Social and Health Services The Ministry of Social Affairs and Health Finland

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.3%	8.2%
<b>Estimated number of people with diabetes</b>	3,237,590	3,888,060
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.3%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● The French Health Authority is revising and establishing a new set of good practice guidelines for the treatment of type 2 diabetes, which will be published in the first half of 2012.<sup>1</sup></li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● National Plan to Improve the Quality of Life of People Living with Chronic Disease (2007-2011)</li> <li>● Continuous care and support telephone service, 'Sophia' (2007-2011)</li> <li>● Law on hospital reforms (2009)</li> <li>● National Obesity Plan (2010-2013)</li> <li>● National collective agreement between independent physicians and the national health insurance plan (2011)</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Third National Nutrition and Health Programme 2011-2015</li> <li>● Updated guidelines for the treatment of type 2 diabetes (expected 2012)</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in France in 2011 is 7.3% of the adult population, representing approximately 3,237,590 people. The Atlas estimates that the prevalence rate will rise to 8.2% of the population by 2030.

National figures indicate lower prevalence rates. The French Institute for Public Health Surveillance reported a prevalence rate of 4.4% in 2009.<sup>2</sup> The difference between the prevalence figures arises from the fact that the Institute for Public Health Surveillance data rely only on people receiving care; the data do not include people with diabetes who are not being treated and those who are undiagnosed.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.3% of the total health budget is spent on diabetes.<sup>3</sup>

## GOVERNMENT HEALTH PRIORITIES

In France, diabetes is considered as a government priority. Although the National Diabetes Programme has not been renewed, the government has sought to tackle diabetes in a broader context, through initiatives focusing on improved nutrition and movement and the prevention of chronic diseases.

The state council cancelled guidelines for the treatment of type 2 diabetes and management of type 1 and type 2 diabetes in 2011. Following this, the French Health Authority has been given the mission of revising and establishing a new set of good practice guidelines for the treatment of type 2 diabetes. These new guidelines will be published in the first half of 2012.<sup>1</sup>

The state law of 21 July 2009 on hospital reforms relating to patients, health and territories was an important recent policy development.<sup>4</sup> This has reinforced the regionalization of healthcare and health management, notably through the establishment of regional health agencies. As a result, the role of pharmacists has also evolved.

The National health insurance fund and three organizations of doctors (La Confédération des Syndicats Médicaux Français, La Fédération Française des Médecins Généralistes and Le Syndicat des Médecins Libéraux) signed in July 2011 a national collective agreement between independent physicians and the National Health Insurance Plan.<sup>5</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in France following the expiration in 2005 of the National Programme for the Prevention and Management of Type 2 Diabetes 2002-2005.

In October 2007, the government launched the second survey of people with diabetes.<sup>6</sup> The Institute for Public Health Surveillance and its partners<sup>7</sup> believe that this second survey is necessary to update the initial 2001-2003 study in order to mark the progress made in combating diabetes and to identify upcoming challenges.<sup>8</sup> Study findings have been widely disseminated.

In April 2007, the government launched the National Plan to Improve the Quality of Life of People Living with Chronic Disease 2007-2011.<sup>9</sup> The Plan identifies four objectives:

- Help people to improve their understanding of their disease in order to help them to manage more efficiently
- Extend medical care to prevention
- Ease day-to-day life for those affected
- Improve understanding of the consequences of the disease on quality of life.

Only about 5% of people with diabetes currently receive health education. The Plan emphasizes education to achieve the four goals outlined above. According to the French Health Authority, the Plan seeks to:

- Inform and educate people to help them understand their disease, detect the initial symptoms of potential complications, acquire the right reflexes, improve cooperation with health professionals and improve quality of life
- Integrate therapeutic education into medical training
- Train doctors and medical students in therapeutic education.

With regard to disease management, the Plan seeks to foster better coordination and to further develop personalized disease management programmes. These programmes will include prevention and patient education activities as well as information on the disease, its treatment and available medical and paramedical care options.

'Sophia' is a continuous care and support telephone service which aims to improve the quality of life of people living with diabetes, and is also part of the National Plan to Improve the Quality of Life of People Living with Chronic Disease (2007-2011). Financed by the National Health Insurance Fund, Sophia is provided to users free of charge. Nursing professionals act as health counsellors and are available by telephone to give support, information and advice to people on the management of their diabetes. The health counsellors act as intermediaries between general practitioners and people with diabetes with the aim of limiting health complications. 'Sophia' is currently being piloted in a limited number of departments. Results to date have been positive and plans exist for the roll out of 'Sophia' to all French departments by the beginning of 2013.

The French Diabetes Association has developed an 'expert patient' educational programme, which aims to deliver continuous care and support via a network of people with diabetes. This programme is designed to complement the therapeutic education provided by the 'Sophia' initiative.

## POLICY FOCUS

The French health authorities are tackling diabetes in the broader framework of the fight against chronic disease and the promotion of improved nutrition, both of which are the subjects of national framework plans. Indeed, the government has identified nutrition as a major public health challenge. In 2010, upon completion of the second National Programme for Nutrition and Health 2006-2010, the Ministry of Health launched the Third National Nutrition and Health Programme 2011-2015.<sup>10</sup> In addition, the government recently launched the Obesity Plan (2010-2013).<sup>11</sup>

The National Nutrition and Health Programme and the Obesity Plan aim to take a cross-sectoral approach to healthy living, mobilizing competencies and resources from several areas, including the ministries and departments responsible for nutrition, education, consumer affairs, sports, social cohesion, higher education and research.

Epidemiological studies have been carried out to provide organizations and policy makers with up-to-date, evidence-based data and information on rates of diabetes prevalence, incidence and mortality, socio-economic and quality-of-life factors and those relating to diabetes care and management and the risk of complications.

## ACCESS TO CARE

The social security assures that diabetes falls under medical cover for long-term illness, which means that people with diabetes benefit from 100% reimbursement of all treatment and supplies. In France, people with diabetes undergo a complete yearly medical exam at hospital, which involves nutritionists and other diabetes-related specialists.

The French Diabetes Association strives to keep the organization of treatment coherent and informed, which will facilitate the application of a combination of strategic medical approaches alongside support from friends and family.

## OUTLOOK

Continued roll out of the nutritional and chronic disease plans is expected to improve health education, disease management and guidance, and help to take prevention beyond the prescription of medical care towards greater patient autonomy and improved quality of life.

Results from the ENTRED survey (2007-2010) compared with 2001 ENTRED survey data illustrate that the health of people living with type 2 diabetes in France is improving. However, further progress remains to be made.<sup>12</sup>

In recent years, the government and the national health sector have undergone restructuring. The system for ensuring clinical pharmacological safety in France is scheduled for review in October 2011.<sup>1</sup>

## CONSULTED ORGANIZATION

- French Diabetes Association

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"The French Diabetes Association believes that a healthy diet, physical exercise, quality of life and the environment, as well as the exchange of experiences with other people with diabetes are all important for good diabetes management."

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	3.3%	4%
<b>Estimated number of people with diabetes</b>	104,640	112,610
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	4.3%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Guidelines for General Practitioners on the Management of Blood Glucose</b></li> </ul>
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>● Only for children</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Georgia in 2011 is 3.3% of the adult population, representing approximately 104,640 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 4% of the population.

Diabetes specialists do not have precise data regarding the number of people with diabetes in Georgia. According to the Department of Epidemiological Studies of the Ministry of Health, the rate of prevalence stands between 5% and 7%.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 4.3% of the total health budget is spent on diabetes.

The only known costs are for the procurement of insulins. The Ministry of Labour, Social Affairs and Health estimates that health expenditure on diabetes represents 0.7% of the total health budget.

## GOVERNMENT HEALTH PRIORITIES

The Government reportedly considers diabetes a national priority.

## NATIONAL DIABETES PLAN/FRAMEWORK

The country does not have a national diabetes programme, but there are reports that such a programme will be considered in the future. There are no national or regional screening programmes for early detection of diabetes, or any prevention programmes. International support is seen as a potential solution to improve the delivery of care for people with diabetes in Georgia.

Guidelines exist for general practitioners on the management of blood glucose. These are produced locally based on guidelines produced by IDF, the European Association for the Study of Diabetes and the American Diabetes Association.

## POLICY FOCUS

Major challenges are underfunding and the need for restructuring of the health system.

More work has to be done at the international level to have the countries of eastern European included in the development programmes of institutions like the EU and the World Health Organization.

## ACCESS TO CARE

Insulins and pens are offered universally free of charge, although pumps, blood glucose meters and test strips are not provided to adults. Children receive meters and test strips and have access to training programmes at hospitals upon diagnosis. Adults have access to self-management at the Georgian Diabetes Centre, where treatment is also available on request.

Regular consultations are provided free of charge to children and certain other groups. Endocrinologists manage overall care for people with diabetes.

Less than 50% of the people with diabetes receive an annual medical check-up. This includes assessments of eyes and feet, BMI, HbA<sub>1c</sub>, measurement of blood pressure, evaluation of quality of life, assessment of peripheral sensitivity, general blood and urine tests and adjustments of the existing treatment regimen.

## WOMEN'S HEALTH

Georgia does not record pregnancy outcomes in women with gestational diabetes or established diabetes. The Georgian Diabetes Union records such data, which it publishes at local and international meetings.

Structured programmes for prenatal counselling for women with diabetes are provided by the Georgian Union of Diabetes and Endocrine Associations in a close co-operation with the Child Diabetes Association.

## OUTLOOK

It is expected that the adults will have access to compensated or free oral medication and other diabetes self-management supplies.

"Diabetes requires the involvement of the whole of society, although each person with diabetes has ultimate responsibility for his or her health".

*Georgian Union of  
Diabetes and Endocrine Associations*

## CONSULTED ORGANIZATIONS

- Society of Georgian Endocrinologists
- Georgian Union of Diabetes and Endocrine Associations

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	8%	9.5%
<b>Estimated number of people with diabetes</b>	5,022,230	5,585,060
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.6%	

## Policy framework

<b>National plan</b>	No	<ul style="list-style-type: none"> <li>● In preparation</li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Group of the Scientific Medicine Association's National Care Guidelines (2000)</li> <li>● German Healthcare Professional Diabetes Association Guidelines for the Treatment and Care of Diabetes</li> </ul>
<b>National register</b>	Yes	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● The National Diabetes Action Forum continues to prepare its National Diabetes Programme, 'Diabetes Agenda 2010'</li> <li>● Introduction of National Diabetes Register</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Completion of National Diabetes Programme</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Germany in 2011 is 8% of the adult population, representing over 5 million people. The Atlas forecasts that the prevalence rate will rise to 9.5% by 2030.

Data from the Robert Koch Institute shows that overall prevalence in the population aged over 18 is 9% (9.3% in women and 8.2% in men).<sup>1</sup> According to the KORA Studies, diabetes prevalence is almost 9%.<sup>2</sup>

The German Diabetes Foundation reports that around 300,000 new cases are identified each year, according to health insurance data.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.6% of the total health budget is spent on diabetes.

A 2011 report on the direct costs of diabetes in Germany found that between 2000 and 2007, the administrative prevalence of treated diabetes rose continuously in Germany, from 6.5% to 8.9%. Direct costs per person with diabetes, calculated using the unit costs reimbursed by statutory health and nursing care insurances, rose from EUR 5,197

to EUR 5,726 – an increase of 10.2%. Incremental per-capita costs were EUR 2,400 in 2000 and EUR 2,605 in 2007 – up 8.5%. However, the total direct cost burden of diabetes in Germany grew from EUR 27.8 billion to EUR 42.0 billion – an increase of 51.1%. The incremental diabetes-related cost burden increased from EUR 12.9 billion to EUR 19.1 billion, an increase of 48.6% over the same period.<sup>3</sup>

Treatment costs of the underlying illness (including prescriptions and medical consultations) were around EUR 542 per person with diabetes in 2001. But the total cost of the treatment of diabetes-associated complications was much greater – averaging EUR 1,563. Total excess cost per person per year was almost EUR 4,000. As the prevalence of diabetes is increasing in Germany each year by around 5%, a marked increase is expected in health service costs. Restrictions and measures to reduce treatment costs, as planned or already partly introduced, may in future actually lead to an increase in the costs incurred in the diagnosis and treatment of diabetes complications.<sup>4</sup>

According to Germany's Federal Statistical Office, the cost of diabetes care (outpatient and inpatient treatment, care and rehabilitation services and drugs) was EUR 6.34 billion in 2008. That represents 2.5% of health spending on diseases.<sup>5</sup>

## GOVERNMENT HEALTH PRIORITIES

German public health policy is focused on disease prevention and addresses population issues, such as healthy living and active lifestyles. Diabetes has been prioritized under Germany's Disease Management Programme 2002, and is included in the Ministry of Health's 'Health Goals' launched in September 2007.

According to the German Diabetes Foundation, diabetes is not recognized as a healthcare priority. It is dealt with in the context of other national healthcare priorities, such as the national guideline and disease management programmes.

The German healthcare system is currently undergoing a major reform focusing on a number of areas, which include health insurance and social security, and financing structures.

Germany currently uses evidence-based national guidelines for prevention, screening and treatment of diabetes, which have been in use since 2000. However, the implementation of these guidelines is not monitored. There are screening programmes in place at local levels to identify those at risk of developing diabetes. However, many of these programmes are not funded by the government and are not carried out regularly.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in Germany. An umbrella organization involving the German Diabetes Foundation and diabetes experts is working on producing a national diabetes plan for Germany, with input from politicians at the Ministry of Health. This plan was attempted some years ago but encountered a number of problems getting off the ground.<sup>6</sup>

Germany has implemented structured treatment programmes for type 1 and type 2 diabetes under the National Disease Management Programme. The Programme provides education, treatment and care for all insured people with diabetes, covering an estimated 2 million people with the condition. Each disease area covered in the Disease Management Programme has specific quality targets, which must be reached within two years of the programme's inception. Every six months, doctors record and update individual treatment results. It is estimated that the current Programme holds information on only 50% of people with diabetes; the German Diabetes Foundation is extending outreach to the remaining 50% to help improve diabetes care.

Although the Disease Management Programme is supported widely, some healthcare professionals question its effectiveness due to the variety of styles and standards of implementation between regions and healthcare practices.

Concerns have also been expressed over the future of the Programme due to the large and increasing number of people receiving treatment and the resulting strain on the healthcare system. The degree of paperwork required by healthcare professionals is also said to be undermining the advantages of the system. For example, every six months, doctors are expected to update results on each patient's condition, which must then be sent to the patient. The time spent on paperwork is said to be outweighing the time spent providing care.

Germany uses evidence-based national guidelines, which were published in 2009 – updated from guidelines published in 2000.<sup>7</sup> Guidelines also exist for gestational diabetes: evidence-based guidelines for diagnosis, therapy and follow-up published in 2011.<sup>8</sup> In addition, the German Healthcare Professional Diabetes Association has published specific guidelines for the treatment and care of diabetes.<sup>9</sup>

A national diabetes register was implemented in 2011. It was introduced to improve the prognosis of people with the condition. It is hoped that the register will build individualized tailored therapy and lead to the optimization of quality of care.<sup>9</sup>

All legally insured people aged 35 years and above are entitled to a health examination every two years to detect chronic diseases, such as type 2 diabetes and cardiovascular diseases.

## POLICY FOCUS

The German Diabetes Foundation recommends the inclusion in health policy of health promotion strategies for nursery and primary school children, including a minimum of one hour of physical activity per day and the provision of healthy school meals. The Foundation recognizes the need for a policy focus on food labelling, with clear nutritional guidelines on all food products.<sup>10</sup>

## ACCESS TO CARE

People in Germany who are covered by national health insurance have access to treatment and care through the Disease Management Programme. The current reimbursement status of diabetes treatments can be summarized as follows:

### FULL REIMBURSEMENT

- Injectable insulin and pens, insulin pumps and accessories
- Lancets
- Lipid testing
- Micro- and macroalbuminuria
- Retinopathy screening
- Structured education

## RESTRICTED REIMBURSEMENT

- Blood glucose monitoring strips and meters
- Self-monitoring blood pressure meters
- Psychological assessment
- Nutritional/dietary advice
- Podiatry
- Ophthalmological assessment
- Dentistry

Germany's healthcare reforms appear to be giving a bigger role to regulatory authorities, such as the Institute for Quality and Efficiency in Healthcare and statutory health insurance providers in decisions relating to reimbursement. Diabetes medications appear to have been particularly affected, leading to growing controversy. In 2006, the Institute for Quality and Efficiency in Healthcare ruled against the reimbursement of analogue insulin.<sup>11</sup> These developments are of increasing concern to the entire diabetes community.

The main care providers in Germany are people with diabetes, nurses, general practitioners, diabetes specialists, and nutritionists and dieticians. Ethnic minority communities are provided with educational information in their own languages.

Germany offers structured education for people with diabetes, which takes place at hospitals, with general practitioners and at community health centres. People with diabetes are usually offered yearly and two-yearly reviews but less than 50% of these people actually receive the review. Aspects covered include eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, blood screening and a review of medication.

There are currently no screening programmes in place to identify those at risk of developing diabetes and no plans to introduce a screening programme in the future.

## WOMEN'S HEALTH

Germany has pregnancy outcome data for women with gestational diabetes through local gestational diabetes programmes. However, there is no pregnancy outcome data for women with established diabetes.

## OUTLOOK

The main challenges over the next two years have been identified as the need for a national diabetes plan along with a diabetes register, the promotion of education among young people and the creation of care structures. Increased and intensive discussion is required in order to stimulate government interest in diabetes prevention and treatment.

"Prevention will only work if the people at risk and the prevention managers receive incentives. Resolutions, declarations and guidelines will only help to improve care if the healthcare providers are adequately reimbursed. Integrated care is not a matter of regulations; it must be developed in the mind of the healthcare providers."

*German Diabetes Foundation*

## CONSULTED ORGANIZATIONS

- Diabetes DE
- German Diabetes Foundation
- Robert Koch Institute - Department of Epidemiology and Health Monitoring

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.0%	8.3%
<b>Estimated number of people with diabetes</b>	603,360	713,990
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.7%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Joint Hellenic National Centre for the Research</b></li> <li>● <b>Prevention and Treatment of Diabetes Mellitus and its Complications</b></li> <li>● <b>Greek Diabetes Federation and others</b></li> </ul>
<b>National register</b>	No	
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>● New guidelines for type 1 diabetes are being developed</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Greece in 2011 is 7% of the adult population, representing approximately 603,360 people. The Atlas forecasts that the prevalence rate will rise to 8.3% of the adult population by 2030.

The Hellenic National Centre for the Research, Prevention and Treatment of Diabetes Mellitus and its Complications (HNDC)<sup>1</sup> estimates diabetes prevalence in Greece to be around 10%, while an additional 20% of the population have impaired glucose tolerance.<sup>2</sup>

The Greek Diabetes Association believes that the prevalence rate is between 8% and 10% of the population.<sup>3</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 7.7% of the total health budget is spent on diabetes.

## GOVERNMENT HEALTH PRIORITIES

The Greek national health strategy prioritizes disease prevention in general, rather than focusing on any individual disease. However, Greek authorities recognize the implications of diabetes for life expectancy, and the importance of diabetes healthcare costs. The government prioritizes prevention, treatment and education for people with diabetes and medical staff.

Healthcare reform in Greece has been ongoing for several decades, yet there has been little progress made in achieving significant change. Disease-specific initiatives, including those targeted at diabetes, have subsequently failed to receive the necessary attention to appear on the national health policy agenda.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in Greece and no future plans to create one. The Ministry oversees a number of organizations and institutions, including the National Centre for Diabetes Mellitus (EKEDI), which is responsible for monitoring and coordinating research, prevention and treatment.<sup>4</sup> However, it has been reported that EKEDI's Diabetes Task Force is not very active.<sup>5</sup>

According to some diabetes specialists, initiatives in Greece stem mainly from the private sector and in most cases are targeted at providing information on diet and exercise for the prevention of type 2 diabetes. The Greek Ministry of Health has some national guidelines for tackling obesity and takes instructions from the EU ruling on food labelling.

The HNDC<sup>6</sup> and the Diabetes Task Force draft national guidelines for healthcare professionals. HNDC translated and issued the European Association for the Study of Diabetes guidelines on evidence-based nutritional approaches to the treatment and prevention of diabetes. In 2003, the Greek Endocrinology Society adopted scientific guidelines for diabetes diagnosis and monitoring of type 2 diabetes, which are based on the 1999 IDF guidelines for diabetes care, the 1999 WHO Consultation report on the definition, diagnosis and classification of diabetes and the 2002 American Diabetes Association standards of medical care. According to the Hellenic Diabetes Federation, preparations are underway for type 1 diabetes guidelines.

HNDC regularly organizes, alongside the Ministry of Health and other bodies, seminars and symposia for health professional training and offers scholarships for post-graduate training abroad. However, the Greek Diabetes Association reports that no specific training programme exists for the management of diabetes and not all people with the condition have access to healthcare professionals who have had training in diabetes.

## POLICY FOCUS

The Greek Diabetes Association organizes biennial conferences involving leading experts in paediatric health, and diabetes workshops for young people in various cities.<sup>7</sup> The Association introduced the Child Health Passport, which is designed to help parents to track their child's health development.

## ACCESS TO CARE

Although all people with diabetes do not get access to regular testing by a health professional with specific diabetes training, access to diabetes treatments in terms of reimbursement is satisfactory.<sup>8</sup> All medication and medical appliances for diabetes are provided free of charge. Upon referral by a doctor, people with diabetes can receive an insulin pump and diabetes medication free of charge. For further treatment, they are expected to co-finance 25% of the cost. Medical tests are also free.

Specialized centres for diabetes exist in a number of state and private hospitals. In Attica, the wider Athens region, there are about 28 centres and every main Greek city has at least one. There are approximately 79 centres nationwide.

More than 50% of people with diabetes in Greece undergo annual or biannual reviews. During this review, checks are carried out on eyes, BMI, blood pressure and pulse, HbA<sub>1c</sub>, blood tests, urinalysis and neural sensation.

## WOMEN'S HEALTH

According to the Greek Diabetes association there is no data on the outcome of women with established or gestational diabetes.

## OUTLOOK

Some progress has been made in Greece during the last few years. Diabetes is publicly recognized as an important issue, especially given the country's diabetes prevalence rate and related healthcare costs. Current initiatives tend to be seen as one-off actions that do not fall into a broader coordinated action plan. Whether or not these ad hoc measures are sufficient remains to be seen. An ongoing need exists in Greece for increased human resources, particularly specialists in diabetes.

For the last decade, modernization of the Greek national health system has remained a key unsolved issue. Successive governments have neglected to prioritize the prevention and treatment of specific diseases, including diabetes.

The Hellenic Diabetes Federation believes that diabetes policy is moving too slowly and there have been no real updates since 2008. It is not optimistic about the outlook for change and improvement in diabetes care. The Federation would like to see a national centre of excellence for diabetes, which could respond to the needs of people with diabetes and act as a national hub for diabetes professionals.

## CONSULTED ORGANIZATION

- Hellenic Diabetes Federation

## REFERENCES

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5. *Greek Diabetes Association, Oral interview, August 2011*
6. *Hellenic Centre for Infectious Diseases Control and the Diabetes Task Force, national guidelines to healthcare professionals, [www.keel.org.gr/home/](http://www.keel.org.gr/home/)*
7. *[www.elodi.org](http://www.elodi.org)*
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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.6%	8.4%
<b>Estimated number of people with diabetes</b>	568,380	599,420
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.6%	

## Policy framework

<b>National plan</b>	Yes	
<b>Guidelines</b>	Yes	● <b>Advisory Board Board of Internal Medicine Guidelines</b> (2002)
<b>National register</b>	Yes	
<b>Planned actions</b>	● Ongoing comprehensive reform of the healthcare system	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Hungary in 2011 is 7.6% of the adult population, representing approximately 568,380 people. The Atlas forecasts that the prevalence rate will rise to 8.4% by 2030.

The Hungarian Diabetes Association estimates the prevalence rate of type 2 diabetes in the overall population to be around 7.5%.<sup>1</sup> The Ministry of Health estimates the prevalence rate to be 8% in women and 7% in men. The Ministry of National Resources of the Republic of Hungary uses a figure of 7.6%.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.6% of the total health budget is spent on diabetes.

According to the Hungarian Diabetes Association, this figure is approximately 13%. The Ministry of National Resources reports that there are no accurate data relating to the cost of diabetes.

## GOVERNMENT HEALTH PRIORITIES

According to the Ministry of Health, diabetes is recognized as a health priority. There is an established professional protocol for the treatment of diabetes and the majority of diabetes medications are reimbursed by the state.

Hungary promotes healthy lifestyles through a product tax law. It was introduced in September 2011 to reduce the consumption of unhealthy products, facilitate the consumption of healthy foods and improve health service finance.<sup>3</sup>

Also, the Hungarian Association of Healthy Cities has been set up as part of a national initiative to prevent chronic disease and promote health and wellbeing through urban planning to facilitate, enable and support a healthy lifestyle.<sup>3</sup>

Regulations are being prepared to promote health in schools. These include healthy diet through the provision of nutritious school meals, daily physical education and physical activity and health education.

## NATIONAL DIABETES PLAN/ FRAMEWORK

A national diabetes plan was introduced in the summer of 2011 with actions every year from 2011 to 2015.

Diabetes is dealt with in the context of a wider health framework. However, diabetes receives special attention in terms of prevention, screening and care.<sup>3</sup>

Diabetes prevention is managed under the Johan Béla National Public Health Programme for the Decade of Health, as well as through national policy on nutrition and physical activity.<sup>4</sup> Screening programmes target high-risk groups, such as the elderly, and the Ministry of Health has a diabetes screening working group. Between 2008 and 2011, the Hungarian Diabetes Society conducted risk-based screening studies with a national scope. The Ministry of Health supported the last study, which involved 70,000 people.

Hungary conducts a regular audit of primary healthcare indicators, including the frequency of HbA<sub>1c</sub> testing and eye examination. The Hungarian Diabetes Society occasionally performs regional studies, with the primary objective of professional-scientific analysis.

Although cardiovascular disease is one of the main priorities of the national programme, its link to diabetes is not highlighted. The Johan Béla Programme notes that over the past decade, effective prevention has significantly reduced cholesterol and blood pressure levels in Hungary, although the rate of obesity and diabetes has continued to rise. It states that Hungary's focus on reducing high cholesterol levels and hypertension, while focusing on keeping obesity and type 2 diabetes prevalence from rising "appears realistic".<sup>4</sup>

To achieve this objective, the Programme has worked towards developing professional and organizational methods to improve the diagnosis of hypertension and diabetes, and improve the quality and efficiency of care.

Prevention and care are not organized centrally, leaving screening and care in the hands of individual doctors. Type 1 diabetes is mainly the responsibility of diabetologists, while the majority of people with type 2 diabetes are treated by their general practitioner.<sup>5</sup>

There are professional guidelines in place, which were introduced in April 2011. A number of organizations are involved in the development and implementation of these guidelines, including the Ministry of National Resources, the Professional Medical College: Division of Family Medicine and Internal Medicine, Endocrinology, Diabetes and Metabolism and the Hungarian Diabetes Society. Implementation and revision of the guidelines are ongoing. Reported difficulties with implementation include financial constraints and ethnic variations.

Organizations representing people with diabetes were given the opportunity to contribute to the final guidelines.<sup>6</sup>

There is a national register of people with diabetes, which is monitored by the National Health Insurance Fund. The register includes all people with diabetes who bought diabetes medications at least four times in the previous 12 months. The information contained in the database is suitable for planning and to verify whether or not care is performed according to professional recommendations.<sup>3</sup>

## POLICY FOCUS

There are currently no provisions targeting specific sectors of the population living with diabetes, such as children, women or immigrants.

## ACCESS TO CARE

Since 1996, the Hungarian Diabetes Association has played an important role in improving diabetes prevention and care, and has encouraged the creation of diabetes outpatient clinics, which are recognized by the Hungarian health insurance system. Since 2005, the accreditation and administration of diabetes outpatient clinics is carried out via the Association's website.

As well as offering consultations and laboratory facilities, these clinics are well equipped in terms of infrastructure and resources, including personnel – diabetologists, specialized nurses, dieticians.<sup>5</sup> There are 134 accredited diabetes outpatient clinics for adults and 22 children's clinics functioning throughout the country. As a result of the work of the outpatient clinics, the incidences of diabetes eye damage and kidney failure have decreased significantly in recent years, as have amputations.<sup>5</sup>

Psychological care, on the other hand, is less effective and less widely available, probably because of the increasing number of people with diabetes who suffer depression coupled with the lack of expertise and reimbursement for this kind of treatment.<sup>5</sup>

The outpatient clinics are unable to accommodate all people with diabetes. General practitioners continue to treat the majority of people living with diabetes. For this reason, the Hungarian Diabetes Association considers it very important to provide better training for doctors.

The Hungarian Health Insurance System reimburses the majority of diabetes treatments and technologies to varying degrees.<sup>5</sup>

## FULL REIMBURSEMENT

- Injectable insulin and pens up to 100% for children and adults who require multiple daily injections; up to 70% for other adults
- Lipid, urine, HbA<sub>1c</sub> testing for all people with diabetes twice a year
- Retinopathy screening and regular control for all people with diabetes
- Podiatry – within the framework of diabetes care
- Psychological assessment – where justified

## PARTIAL REIMBURSEMENT

- Insulin pumps – 90% for children and about 85% for adults
- Blood glucose monitoring strips – 100% for children and 50% for adults
- Lipid testing and albuminuria once a year
- Blood glucose meters up to 70% for those who require more than three injections of insulin per day
- Oral diabetes medication – between 50% and 90%
- Special consultations, such as nephrology and neuropathy at a standard fee of EUR 12
- Dentistry
- Insulin pumps – 90% for children and about 85% for adults

People with diabetes are normally offered annual reviews, although there is no accurate data to show what percentage of the population receives a review. According to some estimates, two thirds of the people with diabetes are reviewed.

Ethnic minorities do not receive diabetes education in their own languages.

## WOMEN'S HEALTH

There is no nationwide outcome data for pregnant women with established or gestational diabetes. However, the National Institute of Obstetrics and Gynaecology keeps local records of its patients. Preconception counselling is offered to all pregnant women.

## OUTLOOK

Over the next two years, the government sees the need for increased emphasis on the use of new medication to control blood glucose. It also recognizes the importance of treating diabetes in the larger public health arena in order to reduce associated cardiovascular risk factors. The government reports the need for increased financial resources to support nationwide projects to this effect.

## CONSULTED ORGANIZATIONS

- Hungarian Association of Diabetic Patients
- Ministry of National Resources of the Republic of Hungary

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	3.9%	4.8%
<b>Estimated number of people with diabetes</b>	8,610	12,830
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	5.0%	

## Policy framework

<b>National plan</b>	No	<ul style="list-style-type: none"> <li>● National diabetes programme being developed</li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Clinical guidelines for type 2 diabetes, last revised in 2011</li> <li>● Clinical guidelines for diabetes in pregnancy being revised in 2011</li> </ul>
<b>National register</b>	No	<ul style="list-style-type: none"> <li>● Plans for a register were rejected by the Icelandic Data Protection Authority</li> </ul>
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Intensified campaigns by the Icelandic Diabetic Association to increase awareness of diabetes</li> <li>● Increased activities around World Diabetes Day including meetings in parliament and media activities</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Completion of National Diabetes Programme</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Iceland in 2011 is 3.9% of the adult population, representing approximately 8,610 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 4.8% of the population.

According to the population survey conducted by the Heart Preventive Clinic in Reykjavík, in the years 2004-2007 the prevalence of type 2 diabetes in 25-84 year old people was 6% in men and 3% in women, which means that there are 5,500 males and 3,000 females in the country with type 2 diabetes, including the undiagnosed.<sup>1</sup>

The prevalence for type 2 diabetes seems to be less in Iceland than in the Scandinavian and other north European countries. Of special interest is the low incidence of blindness from diabetic retinopathy in Iceland after preventive activities were introduced in 1980 (0.5%)<sup>2</sup> and end stage renal failure<sup>3</sup> compared to other countries.

The incidence of childhood diabetes in Iceland has been increasing for the last 35 years at an average rate of 3.0% per year.<sup>4</sup>

It is estimated that there are about 800 people with type 1 diabetes in the country (population of Iceland: 318,500) giving a prevalence of 0.25%.

Both type 1 diabetes and type 2 diabetes are on the increase, more so type 2 diabetes as is the case elsewhere. Also, concomitant with the increasing prevalence of overweight in young women, we have been seeing a marked increase in gestational diabetes.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 5.0% of the total health budget is spent on diabetes. There are no country statistics yet.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority in Iceland. Diabetes care became centralized in Iceland in 1974, when an outpatient diabetes clinic was opened at Landspítali, University Hospital, Reykjavík. Later, an outpatient clinic for children and adolescents with diabetes was established at the Paediatric department of the hospital. Most of the people with type 1 diabetes have attended these clinics and in most cases there is a regular follow-up.

People with type 2 diabetes are followed partly by general practitioners and partly (the more complicated cases) by the outpatient clinic or practising specialists.

A committee appointed by the Icelandic Directorate of Health has made extensive clinical guidelines for type 2 diabetes, last revised in 2011. Also guidelines have been made for treatment of diabetes in pregnancy.

## NATIONAL DIABETES PLAN/FRAMEWORK

There is currently no national diabetes plan or framework. However, a National Diabetes Programme is in preparation, which is due to be released in 2012. This plan aims to improve diabetes care by 2020 in Iceland and to decrease the incidence of diabetes and its complications. This is being prepared by the Ministry of Health.

There is currently no national diabetes register in Iceland. There have been requests for a register, which would act in a similar way to the national cancer register, already in place, but it has not been implemented since the Data Protection Authority will not allow it.

## POLICY FOCUS

In recent years, there has been a policy focus on pregnant women with gestational diabetes. Pregnant women have easy access to care via their local community health centre. Those who are diagnosed with gestational diabetes and treated can receive diabetes reviews from their midwives who help to monitor their diabetes, while those who need insulin are followed by the maternal and diabetes clinics at the University Hospital. An initiative is planned to increase the involvement of the local community health centres in the diagnosis and treatment of gestational diabetes in order to help deal with the forecasted challenge of gestational diabetes which has risen in the last decade and is bound to rise further due to new diagnostic criteria.

## ACCESS TO CARE

Iceland has a good level of diabetes care. Most of the diabetes treatments, technologies and services are free or partially reimbursed for people with diabetes. Insulin and oral hypoglycaemic agents are totally reimbursed, but needles and glucose strips are partially reimbursed. Insulin pumps are fully reimbursed, but the number of people receiving pumps is limited by a yearly quota. People attending the diabetes clinic from areas outside the Reykjavík area receive travel grants.

The majority of people with diabetes receive at least an annual or biennial review which covers eyes, feet, BMI, blood pressure and pulses, HbA<sub>1c</sub>, quality of life, nerve sensation, cognitive function, blood screening, education review, life circumstances and microalbuminuria.

The main healthcare providers for people with diabetes in Iceland include the nurses, dieticians, general practitioners, diabetes specialists and ophthalmologists.

Diabetes education is constantly given at the diabetes clinics, especially by nurses and dieticians. Courses are held for diabetes patients, for instance, for those who use pumps. Educational programmes about diabetes have been produced and shown on national television. Icelandic diabetologists and diabetes nurses lecture regularly for health personnel including general practitioners. Diabetes educational videos designed for use on mobile phones aimed at young people with diabetes are being produced by paediatric diabetologists.

The Icelandic Diabetic Association established in 1971 has played a considerable part in diabetes education with meetings and the publication of pamphlets and a diabetes magazine. The association is responsible for various activities to increase diabetes knowledge and awareness among the public and politicians, such as World Diabetes Day.

Last year a film about diabetes was made on the initiative of the association and shown repeatedly on national television.

People with acute problems in diabetes care have instant access to a diabetes specialist. However for more chronic problems there is a shortage of diabetes nurses and diabetologists in the country. Although the diabetes nurse is not a recognized profession there are some nurses who dedicate 100% of their time to diabetes care and treatment. They can receive training in Iceland, the USA and Scandinavia to further their personal development. However, there is a shortage of nurses who work in this position.

## OUTLOOK

Since 2008, Iceland suffered an economic crisis and this situation has affected the healthcare system. Due to financial cuts at a time when the prevalence and incidence of diabetes is constantly on the increase, the service to our patients could be at risk. One of the challenges to care in Iceland is that the waiting list for the transition of older teenagers from the children's to adults services is increasing due to shortage of doctors and nurses in the adult clinic.

## CONSULTED ORGANIZATIONS

- The Diabetes Clinic, Landspítali University Hospital, Reykjavík, Iceland
- Icelandic Heart Association
- Icelandic Diabetic Association

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.1%	7.5%
<b>Estimated number of people with diabetes</b>	191,380	278,850
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.7%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Irish College of General Practitioners' Guidelines on Diabetes Care (2008)</b></li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Establishment in 2008 of an Expert Advisory Group to advise on improved delivery of diabetes care across the country</li> <li>● Establishment in 2010 of a national diabetes working group to implement the findings of the Expert Advisory Group</li> <li>● Feasibility study on the development of a diabetes register<sup>1</sup></li> <li>● National data sources which can be accessed from a central location – Primary Care Reimbursement Service</li> <li>● Making Chronic Conditions Count – a systematic approach by the Irish Public Health Institute</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● A national diabetes register</li> <li>● National screening programme for diabetic retinopathy</li> <li>● Implementation of a national programme for diabetic foot care</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Ireland in 2011 is 6.1% of the adult population, representing approximately 191,380 people. The Atlas forecasts that the prevalence rate will rise to 7.5 % by 2030.

A 2010 report by the Institute of Public Health in Ireland forecast that the prevalence rate in the Republic of Ireland would be 5.2% (193,200 adults) in 2015, and rise to 5.9% (232,600) by 2020.<sup>2</sup>

The report made a number of recommendations for chronic diseases. It called for stronger emphasis on prevention and tackling inequalities using a social-determinants-of-health and life-course perspective, and stressed the importance of building information systems to support these efforts.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 7.7% of total health expenditure is spent on diabetes. The Diabetes Federation of Ireland puts an even higher estimate of up to 15% of the total health budget.

## GOVERNMENT HEALTH PRIORITIES

The Health Service Executive has recognized diabetes as a health priority in Ireland. Its Expert Advisory Group on diabetes provides a platform for health professionals and people with diabetes to participate in the health transformation programme by influencing and setting operational policy, strategy and quality standards.<sup>3</sup> The Advisory Group identified retinopathy screening as a priority service in need of development.<sup>4</sup>

Regional health priorities have been shaped in line with overall health budget cuts: in the south of Ireland, there was a 3.25% decrease from the 2010 budget.<sup>5</sup> Recent Health Service Executive efforts have focused on standardizing care and implementing proven solutions to save lives, prevent complications, remove waiting lists and maximize use of resources. A national diabetes working group was established in 2010 to try to implement the recommendations of the Expert Advisory Group report.

## NATIONAL DIABETES PLAN/ FRAMEWORK

In 2008, the National Retinopathy Screening Committee developed a framework for a national screening service, which has been approved by the Health Service Executive with the endorsement of the Irish College of Ophthalmologists and patient groups. The report stressed the effectiveness of early detection through a population-based screening programme, which will seek to identify all diagnosed people with diabetes and offer them annual screening, followed by treatment as necessary. The Health Service Executive has made available initial funding to the National Cancer Screening Service, which will be responsible for delivery of the programme. It is hoped that the programme will begin in 2012, but lack of human resources and economic uncertainty may delay this initiative.

The Health Service Executive produced a feasibility study on the establishment of a national diabetes register. One of the key priorities of the programme is to set up a register of all people with diabetes in order to facilitate organized care and screening for complications. The Health Service Executive made key recommendations on how a register can best be established and maintained. The lack of integration and development of healthcare systems, and particularly clinical systems, were identified as barriers to building a national register. These shortcomings, and in particular the lack of a unique identifier, have militated against the provision of disease registers in the past.<sup>6</sup> It is hoped the national retinopathy screening programme will provide a template for the national diabetes register.

The Health Service Executive and Diabetes Federation of Ireland report that professionals in Ireland use the Irish College of General Practitioners guidelines (2008), as well as guidelines from the American Diabetes Association, the European Association for the Study of Diabetes and SIGN guidelines. Use of these guidelines is not monitored.

## POLICY FOCUS

Pregnant women with gestational diabetes are entitled to up to five additional visits to their doctor. In terms of childhood disability, a domiciliary care allowance is granted for diabetes sufferers when a high degree of additional care and attention is required.

The National diabetes working group, in conjunction with the national paediatric programme, is looking at paediatrics, particularly in terms of the standards and the planning of care given to children and the delivery of insulin pump therapy. This also forms part of a wider policy that is looking at the regionalization of paediatric hospitals.

Immigrants with diabetes are not a target of government health policy.

## ACCESS TO CARE

Access to diabetes treatments is considered to be good in Ireland: it is one of 16 conditions covered by the Long-Term Illness Scheme<sup>7</sup>, which provides medication and supplies to patients free of charge, regardless of income. The scheme pays automatically and fully for most treatments, including insulin, meters and test strips. Insulin pumps are reimbursed on the basis of clinical need, requiring a referral from a doctor. Some diabetes treatments, technologies and services are free at the point of delivery or at least partially reimbursed. These include injectable insulin and pens, insulin pumps and accessories, blood glucose monitoring, lancets, lipid testing, nutritional/dietary advice, podiatry and albuminuria. The main care providers have been recognized as people with diabetes, nurses, general practitioners, diabetes specialists and nutritionists/dieticians.

Structured diabetes education and psychological support for people with type 1 diabetes and those with type 2 diabetes are usually found in hospitals and specialist centres, which means that there are shortfalls in this type of care in some remote areas. Around 50% of people with diabetes receive reviews annually or biannually. Aspects reviewed depend on the health centre involved but generally include eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, nerve sensation, a blood screen, a review of medication and life circumstances and microalbuminuria. Making such services more widespread is a key goal of Ireland's primary care strategy, which is currently being rolled out as part of an ongoing reform of the health system. Ethnic minority communities can receive education in their own languages.

There are no screening programmes in place and no identified plans to introduce any.

## WOMEN'S HEALTH

Ireland records pregnancy outcome data for women with gestational and established diabetes. Local centres publish their own data but these are not published in a national document. The west-coast region of Ireland produces outcome data for women with gestational and established diabetes through the ATLANTIC DIP Diabetes in Pregnancy studies.<sup>8</sup> ATLANTIC DIP aims to improve the outcomes of pregnancy for women with diabetes by promoting evidence-based best practice before, during and after pregnancy. Ireland offers preconception counselling to women with diabetes.

## OUTLOOK

Over the next two years, recognized challenges to diabetes care, research and education include the delivery of the national diabetic retinopathy screening programme, improved integrated care for people with type 2 diabetes, the employment of extra podiatrists and the roll out of a national foot care programme and a national diabetes register.

Regarding the national diabetes register, the 2010 feasibility study sets recommendations for its implementation and highlights key changes that need to take place. Different steps have been identified which will need to be addressed in the next few years for the establishment of the register, such as the remobilization of primary health-care teams and the creation and maintenance of a diabetes register or a list of people with diabetes for each general practitioner. Practice nurse involvement in this would be critical.

Financial cutbacks have been recognized as a major barrier to diabetes care and research. In order to stimulate government interest in diabetes prevention, more advocacy campaigns for services need to be in place to emphasize the importance of investing in diabetes care.

"To ensure people with diabetes receive the best healthcare possible requires resource and we need our politicians to recognize the need for improved services and deliver the resource for our patients."

*Diarmuid Smith,  
National Clinical Lead for Diabetes*

## CONSULTED ORGANIZATIONS

- Diabetes Association of Ireland
- Health Service Executive

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	8.5%	9.6%
<b>Estimated number of people with diabetes</b>	400,310	595,480
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.2%	

## Policy framework

<b>National plan</b>	Yes	● To be published
<b>Guidelines</b>	Yes	● Israel Diabetes Association guidelines (for type 1 diabetes published in 2010; for type 2 diabetes to be published 2012)
<b>National register</b>	Yes	
<b>Developments since 2008</b>	● Overall increase in awareness of diabetes and lifestyle issues – restaurants providing special menus, appearance of 'healthy restaurants'	
<b>Planned actions</b>	● Campaign to promote healthy diets in nurseries and primary schools; prohibition of sale of sugar-sweetened beverages in educational institutions	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Israel in 2011 is 8.5%, representing approximately 400,310 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 9.6% of the population. However, the Ministry of Health has estimated a prevalence rate of 6.0%.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 11.2% of the total health budget is spent on diabetes.

The Ministry of Health has estimated the cost of diabetes to be 20.0% of the total healthcare budget in 2010.

The discrepancy between these figures may stem from differing definitions of diabetes. In 2011, the Ministry of Health changed its definition and reported that diabetes is the fourth-leading cause of mortality in Israel.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority in Israel. The Israeli health system provides a high standard of care to the population as a whole, which is noteworthy given the relatively moderate level of

resources allocated to healthcare in general. Factors accounting for this strong performance include universal healthcare coverage, a relatively young population, good access to high-level primary care services throughout the country and the development of a national healthcare system that is predominantly publicly financed and government regulated, while allowing competition among providers.<sup>1</sup>

The National Diabetes Council, created by the Ministry of Health, includes members of the Israel Diabetes Association, hospital managers, doctors and nurses. The Council meets every two months to advise the government on diabetes. A recent objective was to raise awareness and promote healthy lifestyles from an early age.

A database to evaluate the status of diabetes and its complications and the various costs involved in treatment is under development. The National Diabetes Council will produce official guidelines for the diagnosis, follow-up and treatment of diabetes and for setting immediate and long-term target values. Indices for evaluating treatment success also will be defined. The Council will also promote basic and clinical diabetes research, and set up a gene database – all under the auspices of a large research fund dedicated to furthering research in Israel.<sup>2</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

The Ministry of Health and the National Diabetes Council are developing a National Diabetes Plan, which will cover the following areas: primary prevention, early detection, care and services for people with diagnosed diabetes, guidelines, protocols for standards of care, research, treating micro- and macrovascular complications and the promotion of community awareness.

The Israel Diabetes Association identifies the dissemination of guidelines among diabetes professional teams as a key priority. It has issued guidelines for type 1 diabetes, type 2 diabetes, diabetes during pregnancy, and the diabetic foot.

The Ministry of Health has created a national register of people with diabetes and estimates that 50% of people with diabetes are included.

### POLICY FOCUS

The National Diabetes Council is developing lifestyle education programmes to be incorporated into primary school curricula. These programmes impart obesity and diabetes prevention messages to children and families, as well as medical and nursing schools, and will be taught at diabetes schools run by the Israel Diabetes Association.

## ACCESS TO CARE

Healthcare in Israel is universal and participation in a medical insurance plan is compulsory. Healthcare coverage, including medicines and treatment, is provided by four Health Maintenance Organizations, which are subsidized by the government. All Israeli citizens are entitled to a uniform benefits package, whichever their provider, and treatment is funded for all citizens regardless of their financial status. This translates into good care for people with diabetes. Most diabetes treatments, supplies and services are free or partially reimbursed. Lipid testing and albuminuria are provided, as well as psychological assessment and structured education when needed. This is given at no cost or upon minimal payment.

The Israel Diabetes Association provides education through its 18 branches all over the country. It also provides an open-house lecture once a month and produces a twice weekly, 30-minute diabetes education programme on television, which is transmitted nationally. The Health Maintenance Organizations have also begun organizing their own structured education. Diabetes education is also offered at diabetes schools, which help people with diabetes to adapt to their new diagnosis, and offer advice on nutrition and medication.

Israel has national screening programmes for those people at risk of developing diabetes. These programmes are carried out annually for people above 45 years.

People with diabetes are usually offered an annual review covering the following: eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, nerve sensation, blood screening, a review of medication, and microalbuminuria.

In Israel, most physicians who work in diabetes are specialized endocrinologists. Diabetes nursing is a popular profession. Professional education for doctors and nurses is common at many hospitals, where continuous training and development is offered.

### OUTLOOK

The biggest challenge to diabetes over the next two years is the fight against the growing prevalence of the disease. 2012 will be declared 'war against obesity year', during which there will be an emphasis on improving diet and physical activity.

Also on the agenda are the allocation of budgets and resources for new diabetes schools, and improved cover for elderly and disabled people.

## CONSULTED ORGANIZATION

- Israel Diabetes Association

## REFERENCES

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.8%	9.5%
<b>Estimated number of people with diabetes</b>	3,560,390	4,238,250
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.3%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Italian Standards for Diabetes Care (2009-2010)</b></li> </ul>
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Development of education and training for professionals at regional and local level</li> <li>● Gaining Health campaign</li> <li>● Increasing involvement of local stakeholders in the law-making process</li> <li>● Introduction of new potentially innovative drugs by the Italian Drugs Agency with monitoring projects that seek to define the future role of that new medicine in clinical practice</li> <li>● Italian Standards of care for Diabetes Mellitus 2009-2010</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Italy in 2011 is 7.8% of the adult population, representing approximately 3,560,390 people. The Atlas forecasts that the prevalence rate will rise to 9.5% by 2030.

In 2009, the National Institute for Statistics reported that 4.8% of the Italian population was affected by diabetes (5% women and 4.6% men).<sup>1</sup> For the 45 to 74 year-old age group, the prevalence is higher among men, while for those above 75 years, the rate is higher among women. Concerning the geographical distribution, the south of Italy is most affected by diabetes, with 5.6% prevalence, followed by the centre with 4.9%, and the north at 4.8%.<sup>1</sup>

The Centre for Disease Prevention and Control at the Ministry of Health estimates that up to 3 million people have type 2 diabetes. However, given the number of people unaware that they are living with the disease, this estimate could be as high as 6 million people. It is reported that 12% of Italians aged over 56 years have diagnosed type 2 diabetes.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.3 % of the total health budget is spent on diabetes. The Ministry of Health estimate is 9%.

## GOVERNMENT HEALTH PRIORITIES

The Centre for Disease Prevention and Control published the National Prevention Plan 2010-2012.<sup>3</sup> The Plan focuses on the prevention of diabetes complications and cardiovascular risks, and addresses issues relating to infectious diseases, vaccination, cancer screening and accident prevention.

Under the Plan, regional projects based on operational guidelines developed by the Centre for Disease Prevention and Control are aimed at preventing complications through the adoption of integrated disease management programmes.

## NATIONAL PREVENTION PLAN'S DIABETES-RELATED OBJECTIVES

- Early identification of diabetes in the high-risk population
- Preparation of protocols for integrated diabetes management
- Definition of care pathways
- Provision of outpatient management by primary care professionals
- Provision of specialist treatment and diabetes education
- Implementation of information systems and databases to facilitate the management and evaluation of programmes.

The Gaining Health campaign,<sup>4</sup> a joint initiative launched in July 2011 by central government, regions and autonomous provinces and associations, was designed to encourage the adoption of behaviours that can counter the onset of chronic diseases, including diabetes.

Gaining Health involves four specific programmes to address healthy eating, tobacco control, alcohol abuse and physical activity. The campaign aims to raise awareness, particularly among young people, of the importance of an active lifestyle, promote sport among people with disabilities and propose correct aesthetic models.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no National Diabetes Plan in Italy, but diabetes is addressed under the National Prevention Plan, which includes the project for the Integration, Management and Assistance of Diabetes.<sup>5</sup> The Plan also makes national recommendations for obesity prevention, where diabetes is referred to as one of the main consequences of obesity.

As implementation of the National Prevention Plan is almost entirely dependent on the regions, budget constraints often undermine implementation. For example, while targeted training and education of professionals is improving across the country, the use of information technology to store and share clinical data varies greatly between regions.

In 2010, the Association of Medical Diabetologists and the Italian Diabetes Society produced the Italian Standards for Diabetes Care<sup>6</sup> for health professionals.

## POLICY FOCUS

The 2011-2013 draft healthcare programme anticipates the following objectives for diabetes:

- Improve diabetes prevention awareness, care and treatment through the provision of information, education, training and development of basic and clinical research
- Prevent or delay the onset of diabetes through early recognition of people who are at risk
- Reduce complications and premature death in people with established diabetes
- Standardize care, with special attention to socially vulnerable people
- Ensure diagnosis and assistance for women with gestational diabetes and improve maternal and child outcomes in pregnant women with established diabetes
- Improve quality of life and care for young people with diabetes
- Improve health service capacity through strategies to rationalize provision and ensure appropriateness of services
- Promote empowerment of people with diabetes and the wider community
- Sustain and promote appropriate intersectoral policies.

## ACCESS TO CARE

People with diabetes receive free treatment for their condition. Depending on their region of residence, however, some people may have to pay certain health costs. These are often related to new technologies. For example, some regions do not provide reimbursement for insulin pumps and accessories. Some have also introduced an income threshold beyond which people pay part of their health costs. Self-monitoring blood pressure meters are not reimbursed.

Italian legislation also sets out the criteria for specialist diabetes centres established by the regional authorities. Currently, Italy has more than 600 specialist centres.

## OUTLOOK

According to the Centre for Disease Prevention and Control, notwithstanding improvements achieved to date, one of Italy's main challenges lies in improving the poor levels of health awareness and diabetes knowledge. Many people with diabetes do not pursue a healthy lifestyle and medical compliance remains poor.

In general, diabetes associations would like to see a more constant flow of information and dialogue with the relevant national and regional institutions. At the EU level, they advocate further commitments on prevention policies. The main problems observed by the associations include long waiting lists and the lack of specialized personnel and adequate medical equipment. However, all of these issues affect each region differently.

"The main challenge is to maintain a good level of economically sustainable care and, with limited resources, it is necessary to rationalize and optimize their use, with common sense as a guide."

*Italian Ministry of Health*

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.5%	9.0%
<b>Estimated number of people with diabetes</b>	801,180	1,128,240
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	10.6%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	No	
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>● Less than 50% of people with diabetes are included</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Ministry of health to carry out audit of diabetes services and establish complaints process for people with diabetes</li> <li>● National diabetes programme under development</li> <li>● The curriculum for diabetes education is to be restructured</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Kazakhstan in 2011 is 7.5% of the adult population, representing approximately 801,180 people. The Atlas forecasts that the prevalence rate will rise to 9.0% by 2030.

The national diabetes register is updated every month by endocrinologists in each of the country's regions. Although endocrinologists may access local data, countrywide data are only available to senior officials of the Ministry of Health.

According to the Ministry of Health, the incidence rate is 137/1000 per year and the official prevalence is 1.3%.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 10.6% of the total health budget is spent on diabetes.

Currently, no official data are available on the cost of diabetes in Kazakhstan. IDF and the Diabetes Association of the Republic of Kazakhstan (DARK) are finalizing a study to evaluate the socio-economic impact of diabetes on communities (data available in December 2011).

## GOVERNMENT HEALTH PRIORITIES

The government's current health priorities include diabetes, tuberculosis, HIV/AIDS and cancer. The healthcare system in Kazakhstan is currently in transition,<sup>1</sup> and viewed widely as reactive – focused on treatment with few prevention or screening programmes in place. Policy in the area of health is developed mainly on an ad hoc basis and according to budgetary limitations. Health services are administered by regional authorities, which have considerable autonomy in running their local health services. There is currently no system for collecting feedback on the effectiveness of pieces of legislation or for regularly improving the legislation.<sup>2</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

There are no attempts to develop a national plan for diabetes.

In 2008 the Ministry of Health implemented an Action Plan to involve NGOs in the development of health policy. DARK was invited to help in improving diabetes care and primary and secondary prevention, and provide information and support for people with diabetes. The Ministry of Health

together with DARK developed and approved a single method of teaching in the country's more than 120 diabetes schools, which follow World Health Organization guidelines for diabetes self-management education techniques.

DARK organizes annual diabetes events, involving scientific conferences and round tables with the participation of doctors and the public. The Ministry of Health classified ongoing work with DARK as effective and intends to continue collaborating with the group in the future.<sup>3</sup>

## POLICY FOCUS

DARK is lobbying the government to ensure the provision of quality medication and specific medical equipment for people with diabetes in Kazakhstan. The association is consulted in the development of documentation for national tenders. The Ministry of Health is to audit diabetes services and set up a system to collect and analyze care-related complaints from people with diabetes. The association is also monitoring the way the existing legislation is implemented locally, covering all areas relating to the procurement of medication and distribution of services. With the healthcare system undergoing reform, the evidence gathered by DARK will be submitted to the government in order to contribute to improvements in the existing system.<sup>4</sup>

## ACCESS TO CARE

In Kazakhstan, the medical system ensures basic services for adults and children with diabetes. Most services, including insulin treatment, are provided free of charge, and oral diabetes medication is included on the essential drug list.

The national government funds glucometers and 300 test strips per year for insulin-dependent patients. Treatment for people with non-insulin dependent diabetes is partially reimbursed by public funds anywhere up to 50%, depending on the region.

For people with diabetes, only endocrinologists may prescribe fully reimbursable treatments, such as insulin or blood glucose-lowering medication. However, a shortage of endocrinologists is reported. There are no specialized diabetes units. Diabetes-related services are provided in general health units – polyclinics, health centres or hospitals. There is no reference centre for diabetes.<sup>2</sup>

People with diabetes do not receive training in the public health units. The local diabetes associations offer education programmes. The current diabetes education programme is being reorganized. Health promotion activities in schools are performed only by private organizations.

Many people with diabetes do not take advantage of the free quarterly medical check-ups provided by law, which include examination of the eyes and heart, determination of BMI, blood pressure, general tests for blood and urine, and tests for neuropathy. Many people with diabetes do not feel that training and information received in the clinics is adequate to ensure proper self-management. Moreover, people with diabetes located in rural regions often have difficulties accessing medical services and essential medication. Treatment of diabetes complications is carried out mainly at the patient's expense.

## WOMEN'S HEALTH

Data on gestational diabetes and established diabetes during pregnancy are recorded in the diabetes register. There is no dedicated counselling service for women with diabetes who plan to have a child.

## OUTLOOK

Education for people with diabetes and healthcare professionals is a key area for future improvement. Other areas of concern include the quality of insulin delivery devices.

## CONSULTED ORGANIZATION

- Diabetes Association of the Republic of Kazakhstan

## REFERENCES

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3. Ministry of Health website available at [www.mz.gov.kz/index.php?wokka=Rus/GrazhdanskijForum](http://www.mz.gov.kz/index.php?wokka=Rus/GrazhdanskijForum)
4. Report on activities of the DARK, Yerevan 2011 (IDF Europe Intranet)

# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	4.9%	6.6%
<b>Estimated number of people with diabetes</b>	154,230	277,100
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.2%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● Clinical guidelines for type 2 diabetes since 2009
<b>National register</b>	No	
<b>Planned actions</b>	● Implementation of National Diabetes Plan	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Kyrgyzstan in 2011 is 4.9% of the adult population, representing approximately 154,230 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 6.6% of the population.

The Ministry of Health reports that there are currently 33,190 people with diabetes registered in Kyrgyzstan; 2,175 with type 1 diabetes, 30,806 with type 2 diabetes, and 209 children with type 1 diabetes.<sup>1</sup> The official incidence rate is 85.6/1000 per year.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 7.2 % of the total health budget is spent on diabetes. The Diabetes Association of Kyrgyzstan reports that the total price of insulin purchase in 2010 was USD 970,000.

## GOVERNMENT HEALTH PRIORITIES

While diabetes is not a national priority, non-communicable diseases as a group (cardiovascular diseases, diabetes, cancers and lungs diseases)

are a high priority in Kyrgyzstan. Diabetes specialists reportedly face a lack of funding and attention from governmental officials, and the 2006 Law on Diabetes is reported as not working properly due to lack of financial resources.

The Coordinating Council for Control of non-communicable diseases, of which the Diabetes Association of Kyrgyzstan is a member, was created in 2011. A National Programme on Prevention and Control is being developed.

## NATIONAL DIABETES PLAN/ FRAMEWORK

Kyrgyzstan does not have a national diabetes programme, although discussions are expected between the Ministry of Health and the Diabetes Association of Kyrgyzstan in order to develop one.

Clinical guidelines have been in place since 2009 for primary healthcare personnel to treat type 2 diabetes. However, there is no system for monitoring the use of these guidelines.<sup>1</sup>

## POLICY FOCUS

The country underwent a drastic change of government and political instability in 2010. The major areas of concern are related to the fact that prevention programmes do not work, and diabetes care does not receive adequate funding.

## ACCESS TO CARE

Primary care clinics do not have the necessary equipment to perform screening and provide basic care, which hinders timely diagnosis and prevention of severe complications.

Public awareness about risk factors, prevention and self-management is virtually non-existent. Misconceptions are widespread regarding diabetes, screening and diagnosis, leading to fear of stigmatization and social exclusion. Elderly people with diabetes face particular problems due to poverty and illiteracy.

Insulin and syringes or oral blood glucose-lowering medication are provided free of charge, according to need. All brands and types of insulin are available but insulin pumps are not. Insulin can also be purchased in private pharmacies. Treatment of late complications, such as retinopathy, neuropathy and ulcers, reportedly require significant out-of-pocket contributions, with patients expected to bring their own drugs, supplies (such as syringes) and food while in hospital.

Medical units send estimates of their medication requirements for the coming year to the Ministry of Health. Pharmaceuticals for public sector health facilities are procured centrally on a competitive tender basis. Health facilities can also purchase drugs directly. They can use funds from the mandatory health insurance to purchase drugs that are not included in the essential drugs list (including those used to treat diabetes complications) but this is limited to 10% of total procurement costs. Problems remain relating to irregular delivery of insulin and variations in the types and brands available.

People with type 1 diabetes can access rapid-acting and long-acting insulins. The best treatment is offered to children, who receive analogues and pens. Glucose meters and test strips are offered free of charge to children only.

The national health system covers only part of the costs of the medication needed for the treatment

of type 2 diabetes (only glibenclamide).

Upon diagnosis, people with diabetes are offered training courses, which are supported by the diabetes associations. Different ethnic groups are offered health services and training in their own languages.

Diabetes schools are being created throughout the country. Self-management supplies must be purchased out of pocket by people with diabetes. Financial difficulties prevent many people with diabetes from receiving oral blood glucose-lowering medication.<sup>1</sup>

It is reported that more than 50% of people with diabetes are using the free annual check-ups that include examination of eyes and feet, determination of BMI, HbA<sub>1c</sub> testing, blood pressure, general tests for blood and urine, and adjustments to the existing treatment scheme. People with diabetes receive health services from general practitioners, endocrinologists and ophthalmologists.

## WOMEN'S HEALTH

Gestational diabetes is not specifically reported or monitored, nor are outcomes in pregnant women with established diabetes. There are no specialized counselling services for women with diabetes who want to plan a pregnancy.

## OUTLOOK

The biggest challenge in diabetes care according to the Diabetes Association of Kyrgyzstan is low financing and insufficient attention to diabetes on the part of the country's government, including the Ministry of Health. It is reported that there is a severe shortage of human and financial resources, and the general practitioners lack skills in diabetes management, supervision and support. Most people with or at risk of diabetes are never referred to secondary or tertiary levels of the healthcare system.

The biggest challenges over the next two years according to the Ministry of Health will be caused by the lack of available funds for medication and supplies to self-manage diabetes, and population screening.

Public policy can be improved in the fields of prevention, awareness and protection of elderly people with diabetes and other chronic diseases. The Diabetes Association of Kyrgyzstan monitors the enforcement of existing laws regarding diabetes. There is an urgent need for increased awareness and equality, and improved access to good-quality care.

"We put all our efforts into ensuring that our diabetes patients have a quality life. To achieve this, we strive to attract all possible resources."

*Roza Sultanalieva,  
Ministry of Health*

## CONSULTED ORGANIZATIONS

- Diabetes Association of Kyrgyzstan
- Ministry of Health
- Chief Endocrinologist of the Kyrgyz Republic

## REFERENCE

1. *Written interview with the Ministry of Health, August 2011.*

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.7%	11.5%
<b>Estimated number of people with diabetes</b>	166,260	168,910
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	10.9%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Prevention, Diagnosis and Treatment of Type 2 diabetes</b> (2007)</li> <li>● <b>Rational pharmacotherapy guidelines for treatment of diabetes within the reimbursement system</b> (2007)</li> </ul>
<b>National register</b>	Yes	
<b>Planned Actions</b>	● Public Health Guidelines Draft for the period 2011 to 2017	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Latvia in 2011 is 9.7% of the adult population, representing approximately 166,260 people. The Atlas forecasts that the prevalence rate will rise to 11.5% by 2030.

National statistics, however, suggest a lower prevalence rate of 3.9% of the population diagnosed with diabetes as of 1 January 2011. This figure corresponds to 72,654 people, of whom 15,000 are said to be insulin-dependent.<sup>1,2</sup>

According to the Latvian Diabetes Association, type 2 diabetes is increasing steadily at up to 9,000 new cases every year.

## COST OF DIABETES

Data from the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes is 10.9% as a total of health expenditure. According to the Latvian Ministry of Health, expenditure on diabetes in 2006 represented approximately 18.6% of the total healthcare budget.

## GOVERNMENT HEALTH PRIORITIES

The Latvian Diabetes Association says that diabetes is not considered a health priority, as it is not recognized as a serious condition by the Latvian government. However, diabetes is included in the Public Health Strategy (2002-2010)<sup>3</sup> and in a Ministerial policy document on nutrition.<sup>4</sup> The main priorities of the Latvian Ministry of Health include measures to promote health.<sup>5</sup>

The 2001 Public Health Strategy was formed between the Ministry of Health and the World Health Organization to enhance public health guidelines.<sup>6</sup> A recent conference aimed to discuss and shape the direction of public health in Latvia between 2011 and 2017 included input from different stakeholders outside the healthcare system, including representatives from local government, education, the environment, private industry and civil society. The Ministry of Health sees the re-shaping of public health policy as important in determining priorities and appropriate actions for improving quality of life. The new policy documents do not target diabetes specifically but related risk factors are covered in the context of non-communicable diseases. The Ministry of Health will encourage self-regulation by the food industry to restrict advertising of unhealthy products and emit advertising to promote healthy living.

Regarding physical activity, several campaigns have been carried out with the aim of informing the public on how to spend leisure time in an active way. A special physical activity programme is planned for schools for children with health problems.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is no national plan for diabetes in Latvia and the Latvian Diabetes Association believes there are no plans for the government to create one. The UN resolution (61/225) on diabetes made no impact on diabetes care within the country.

According to the Latvian Diabetes Association, the main problems in diabetes care in Latvia are the lack of state funding for treatment and control of diabetes and complications; diabetes education centres and education units have been abolished. The Association says that diabetes nurses are not working in teams because the state does not fund nurses' work. Little information reaches the community about diabetes risk factors, symptoms and prevention.

The Latvian government says that patients can receive medicine and medicinal devices reimbursement with a prescription from a family doctor or specialist. In 2010, there were 73 healthcare institutions (contracted with the Health Payment Centre) and 113 endocrinologists and 5 children endocrinologist, which performed healthcare of diabetes patients.

In 2007, the Latvian Diabetes Association, in cooperation with the Latvian Association of Endocrinologists, issued a set of new guidelines for type 2 diabetes for endocrinologists, general practitioners, nurses, foot care specialists and other specialists involved in diabetes care. These guidelines have not been updated or monitored.

Latvia has a national diabetes register. It is continuously updated and maintained by the Health Economic Centre, which is supported by the Ministry of Health.

## POLICY FOCUS

The Latvian government is maintaining its policy focus on activities promoting healthy eating and physical activity. However, the Latvian Diabetes Association considers an increased effort is required on more practical activities that focus on children, women and immigrant populations. The Association will continue advocating the important danger of diabetes to the Latvian government to ensure it receives increased attention.

## ACCESS TO CARE

All Latvian citizens are entitled to state-funded healthcare. However, due to recent economic pressures, the country has faced a 25% reduction in the healthcare budget during the last two years.<sup>8</sup> People are fully or partially reimbursed by the social security system for most diabetes treatments. Insulin and oral diabetes medications are reimbursed at 100%. Certain advanced treatments are either not yet reimbursed or reimbursed with restrictions. The Latvian Diabetes Association believes that co-payments for partially reimbursed medication are too high, reducing access for many people.<sup>9</sup>

### FULL REIMBURSEMENT

- Injectable insulin – not pens, which are donated by pharmaceutical companies
- Oral blood glucose-lowering drugs
- ACE inhibitors for microalbuminuria
- Micro- and macroalbuminuria tests (depending on available budget)
- Treatment of diabetes neuropathy including pain therapy
- Lipid testing (depending on available budget)
- Retinopathy screening (depending on available budget)

### PARTIAL REIMBURSEMENT

- Blood glucose monitoring strips (150 strips per month at 100% reimbursement for pregnant women and children up to 18 years; 75% for people on insulin up to 120 strips per month; 50% for people treated on oral agents up to 30 strips per month)
- 50% reimbursement for lipid-lowering drugs

### NO REIMBURSEMENT

- Insulin pumps and accessories
- Glucose meters (usually donated by pharmaceutical companies)
- Self-monitoring blood pressure meters
- Lancets
- Psychological assessment
- Dieticians

Not all people with diabetes have access to an endocrinologist, mainly because some regional centres do not employ such a specialist. The situation in the capital, Riga, is considered better as there are endocrinologists in 14 out of 16 outpatient clinics. The main providers of diabetes care in Latvia include general practitioners and diabetes specialists.

The Latvian Diabetes Association repeatedly points out the need for diabetes nurses to be included in diabetes teams for screening to be financed by the state. Latvia has no screening programmes in place and there are no plans to introduce one.

Since 1 July 2011, family doctors have started a Quality Improvement System. The main goal of this system is to promote the family doctor's active involvement in disease prevention, to ensure more effective management of patients with chronic diseases.

## THE QUALITY IMPROVEMENT SYSTEM INCLUDES:

- people with type 2 diabetes are measured for (HbA<sub>1c</sub>)
- people with diabetes can receive peripheral pulse examination and recording, and foot examination once a year
- people with diabetes can receive consultation on diet, smoking cessation and physical activities

In 2010 glucose concentration in blood was measured in more than 400,000 outpatient patients and glucose load tests were performed in more than 8000 outpatient patients. There are diabetes foot care cabinets in the 43 healthcare institutions across the country.

## WOMEN'S HEALTH

Latvia does not collect pregnancy outcome data in women with either gestational diabetes or established diabetes. However, preconception counselling is provided.

"Human rights for healthcare become such only when they have real content. There is a big difference and inequality in availability of healthcare between EU Member States. We must implement united standards in cattle breeding and milk cooling, yet there are no such standards in healthcare."

*Ingvars Rasa,  
President of the Latvian Diabetes Association*

## CONSULTED ORGANIZATIONS

- Latvian Diabetes Association
- Ministry of Health of The Republic of Latvia

## REFERENCES

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7. Latvian Diabetes Association, New Guidelines for Type 2 Diabetes in Latvia, 2007, [www.diabets-asoc.lv/Anglu\\_valoda/what\\_does\\_lda\\_do/saturs\\_what\\_does\\_lda\\_do.htm](http://www.diabets-asoc.lv/Anglu_valoda/what_does_lda_do/saturs_what_does_lda_do.htm)
8. Interview with the Latvian Diabetes Association, August 2011
9. Latvian Diabetes Association, Response to written questionnaire, August 2011

## OUTLOOK

The main challenges recognized by the Latvian Diabetes Association over the next two years include the financial scarcity reinforced by the economic crisis. The Latvian Diabetes Association say that government funding for medication will decrease and waiting lists for healthcare professionals will increase. Moreover, the proportion of medical treatment reimbursed by the government is also going to decrease.

The Association believes that EU recommendations on diabetes could be very helpful to force the Ministry of Health to work out long-term perspective for diabetes prevention, screening and care.

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.6%	11%
<b>Estimated number of people with diabetes</b>	235,880	247,160
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.2%	

## Policy framework

<b>National plan</b>	Yes	● <b>National Programme for Diabetes Control</b>
<b>Guidelines</b>	Yes	● Ministry of Health guidelines, reviewed in 2005
<b>National register</b>	No	
<b>Developments since 2008</b>	● Recognition and reimbursement of diabetes nurses and podiatrists (2010)	
<b>Planned actions</b>	● Extension of the National Programme for Diabetes Control ● Update of recommendations for diagnosis and treatment	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Lithuania in 2011 is 9.6% of the adult population, representing approximately 235,880 people. The Atlas forecasts that the prevalence rate will rise to 11% by 2030.

According to the Lithuanian Diabetes Association, there were 74,700 people with diabetes in 2009, out of whom 74,000 were over 18 years old – an estimated prevalence of 2.3%.<sup>1</sup>

According to data from the Lithuanian Health Information Centre, the prevalence of endocrine, nutritional and metabolic diseases is 9.1% in adults and 3.2% in people under 18 years old.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the cost of diabetes for 2011 is approximately 11.2% of the total health budget.

Reimbursements for diabetes from the 2010 budget of the Compulsory Health Insurance Fund amount to approximately EUR 20.6 million. Expenses for diabetes outpatient services in 2010 comprised 0.5% overall expenses for total outpatient services; expenses for hospital medical services comprised

0.8% overall spending on hospital medical services; expenses for diabetes rehabilitation services comprised 0.2% of overall expenses for medical rehabilitation. Total expenses for these services comprised 0.7% of overall expenses for reimbursement of outpatient, hospital and medical rehabilitation services.

## GOVERNMENT HEALTH PRIORITIES

The public reports of the Ministry of Health do not include the major chronic diseases as indicators.<sup>3</sup> According to the Lithuanian Diabetes Association, diabetes does not rank among the major health priorities of the Lithuanian government. These priorities are currently said to be HIV/AIDS, tuberculosis and cardiovascular diseases. However, the Association believes that the 2006 UN resolution on diabetes served to increase the attention paid to diabetes by the government, particularly by the Health Minister.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The Diabetes Control Programme 2009-2011 was prepared and approved in November 2008. The Programme covers primary prevention, early

detection, research and community awareness programmes. Funding for monitoring is not yet available.

A working group was set up by the Ministry of Health in 2010 and prepared a draft ministerial order to regulate the reimbursement of diabetes diagnostics and treatments from the budget of the Compulsory Health Insurance Fund.

Screening programmes are approved and funded at national level and focus on men over 40 and women over 50 years old. Diabetes prevention programmes are included in the standards of operation for primary care doctors. Diabetes nurses and podiatrists were recognized and financially compensated starting in 2010.

## POLICY FOCUS

Physical activity was promoted successfully via the National Food and Nutrition Strategy 2003-2010. Analysis of the epidemiological status of obesity in Lithuania has been carried out by Kaunas University of Medicine. The Department of Physical Education and Sports is implementing programmes to promote physical activity. The Ministry of Education and Science emphasizes the benefits of reducing obesity and promoting physical activity in schools and colleges.

## ACCESS TO CARE

Insulin and oral medications are reimbursed and there is restricted provision of self-monitoring supplies.

### FULL REIMBURSEMENT

- Injectable insulin and oral medications (companies often donate pens and needles)
- Four HbA<sub>1c</sub> assessments per year
- Medication for neuropathy-related pain

### PARTIAL REIMBURSEMENT

- Blood glucose monitoring strips (1,800 strips per year for children up to 18 years; 900 strips for adults with type 1 diabetes; 300 strips for adults with type 2 diabetes on insulin; 150 strips for adults with type 2 diabetes on oral medication; 600 strips for pregnant woman with established diabetes; 150 strips for woman with gestational diabetes)
- Lipid testing and microalbuminuria – free in hospitals; in clinics, only total cholesterol once per year
- Insulin pumps are compensated for children and pregnant women – consumables for pumps are partially compensated (about EUR 87 per month)

### NO REIMBURSEMENT

- Glucose meters
- Self-monitoring blood pressure meters (some donated by pharmaceutical companies)
- Psychological assessment
- Dieticians
- Structured education

Self-management education is available in hospitals or outpatient units upon diagnosis. Resources are made available by diabetes organizations to complement the public provision for diabetes education.

It is reported that more than 50% of people with diabetes use the annual check-ups that include examinations of eyes and feet, determination of BMI, blood pressure and HbA<sub>1c</sub>, assessment of quality of life and peripheral sensitivity, general blood and urine tests, and adjustments of the existing treatment scheme.

## WOMEN'S HEALTH

Pregnancy outcomes in women with established diabetes or gestational diabetes are monitored. Structured prenatal counselling is available for women with diabetes.

## OUTLOOK

A proposal has been made to enable general practitioners to carry out standardized yearly evaluations in people with diabetes.

The Lithuanian Diabetes Association believes that EU recommendations on diabetes could be helpful in encouraging the Ministry of Health to adopt a long-term perspective for diabetes prevention, treatment and care.

## CONSULTED ORGANIZATIONS

- Lithuanian Diabetes Association
- Ministry of Health of the Republic of Lithuania

## REFERENCES

1. Report of the Lithuanian Diabetes Association on the status of diabetes (March 2011) source LHIC
2. Lithuanian Health Information Centre, [www.lhic.lt/index.htm](http://www.lhic.lt/index.htm)
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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	5.6%	6.5%
<b>Estimated number of people with diabetes</b>	21,100	30,120
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	6.6%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● Based on IDF Clinical Guidelines for Type 2 Diabetes
<b>National register</b>	No	
<b>Developments since 2008</b>	● Various awareness campaigns	
<b>Planned actions</b>	● Increased government involvement with diabetes stakeholders	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Luxembourg in 2011 is 5.6% of the adult population, representing approximately 21,100 people. The Atlas forecasts that the prevalence rate will rise to 6.5% by 2030.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 6.6% of the total health budget is spent on diabetes.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is a national priority in Luxembourg. A number of initiatives, activities and research relating to diabetes management and prevention are being carried out, and the Luxembourg Diabetes Association plays a key role. However, none of these have been undertaken in the context of an official national plan.<sup>1</sup>

Diabetes is dealt with in the context of the national programme on promoting healthy eating and physical activity. Diabetes is also taken into account in the context of other national health priorities, such as the national chronic disease policy,

prevention of cardiovascular disease and improvement of type 2 diabetes prevention and diabetes management.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national plan for diabetes in Luxembourg. Diabetes is being tackled indirectly through a non-binding national health programme, Health for All.

According to the Ministry of Health, clinical guidelines for prevention, screening and treatment of diabetes exist. However, there is currently no monitoring system in place to measure their implementation and impact. The Ministry affirms that screening programmes are in place for those at risk of developing diabetes. However, the Luxembourg Diabetes Association feels that in reality this is not the case.

School doctors examine almost 70,000 students between the ages of four and 18 years. Glucose testing forms part of this systematic intervention.<sup>2</sup> The determination of glucose or glycaemia results generally form part of periodic check-ups by general practitioners, but there is no specific national programme for early detection of diabetes.

Moreover, according to the Luxembourg Diabetes Association an official national screening programme is not being envisaged.

The Luxembourg Diabetes Association and La Maison du Diabète regularly organize courses and meetings for their members. However, the Ministry of Health does not provide structured education for people with diabetes. The Association is also responsible for the communication of diabetes recommendations to people with diabetes, but these are neither monitored nor their impact evaluated.

## POLICY FOCUS

Under the Health for All programme, Luxembourg has prioritized early screening in high-risk groups, notably for gestational diabetes in pregnant women.

## ACCESS TO CARE

In Luxembourg, the reimbursement of treatment, which is overseen by the national sickness reimbursement scheme, is generally considered to be quite comprehensive.

Injectable insulin, insulin pens and pumps, and some other accessories, are 100% reimbursed, as are blood glucose test strips and lancets. Lipid testing is reimbursed only if performed at a hospital, although children receive between 80% and 100% reimbursement regardless of where testing is carried out. Blood glucose monitoring meters are distributed per family every five years. Albuminuria and retinopathy are screened during medical consultations and are reimbursed as such – at the standard rate of 90%. Retinopathy screening, specialized ophthalmological assessments and dentist care are also partially reimbursed. Self-monitoring blood pressure meters are not reimbursed, neither are psychological care, educational activities, podiatry care or nutritionist consultations. Structured education and psychological support are performed by patient associations and doctors, who are not paid for that type of care. Inhalable insulin is not available in Luxembourg.

The principal care providers include people with diabetes, nurses, family practitioners, diabetes specialists, nutritionists/dieticians, podiatrists and ophthalmologists.

Annual or biennial reviews are usually offered to people with diabetes. Both the Ministry of Health and the Luxembourg Diabetes Association estimate that around 50% of people with diabetes receive this exam. Eyes, BMI, blood pressure and pulse, HbA1c and blood tests are habitually reviewed, whereas feet, neural sensitivity and microalbuminu-

ria testing depends on the doctor.

## WOMEN'S HEALTH

Pregnancy outcome data for women with gestational diabetes does not exist. In 2009, the Ministry of Health put in place a system to monitor health during birth. In the future, the Ministry hopes to have national data on pathologies in pregnant women.

## OUTLOOK

In the next two years, challenges in diabetes care, research and education include: improvement of early detection and prevention, improved accessibility to medication for all, especially for immigrant populations, and improved management of chronically ill children in school infrastructures.

Increased awareness and promotion of health and preventive actions, better organization of primary care and the importance of quality health-care information are identified as key actions to stimulate government interest in diabetes prevention and treatment.

## CONSULTED ORGANIZATIONS

- Luxembourg Diabetes Association
- Luxembourg Ministry of Health

## REFERENCES

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	8.9%	10.5%
<b>Estimated number of people with diabetes</b>	134,930	165,980
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.4%	

## Policy framework

<b>National plan</b>	Yes	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>Developed using international recommendations</li> </ul>
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>More than 50% of people with diabetes recorded</li> </ul>
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>National register fully implemented in all regions (2011)</li> <li>Update of the national diabetes plan (2010)</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>Implementation of new Diabetes Strategy with focus on preventing type 2 diabetes</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Macedonia in 2011 is 8.9% of the adult population, representing approximately 134,930 people. The Atlas estimates that the prevalence rate will rise to 10.5% in 2030.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the spending on diabetes as a percentage of total health expenditure is 11.4%.

## GOVERNMENT HEALTH PRIORITIES

The government of Macedonia does not recognize diabetes as a priority. However, some national and local policies encourage healthy lifestyles.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The National Diabetes Plan was introduced in 2001 and updated in 2010. The Plan covers healthcare services for people with diabetes, clinical protocols for treatment and the use of information systems. Difficulties relating to implementation of the Plan include regional underfunding, a lack of specialists and sustainability measures, and a shortage of specialized training. The plan was developed without the consultation of groups representing people with diabetes.

In 2008, a national register was introduced in the Skopje region and throughout the country in 2011. All people on insulin therapy are now registered and diabetes centres and pharmacies are connected online via a central server. Every contact of a person with diabetes with the healthcare system is recorded.

There are no screening or prevention programmes at either the national or regional levels. Screening programmes for diabetes are under consideration.

The UK National Institute for Health and Clinical Excellence guidelines were adopted for use in Macedonia. Work is underway to implement the American Diabetes Association guidelines.

## POLICY FOCUS

New technologies have been implemented in type 1 diabetes care services. Current focus is on pregnancy and diabetes and private sector healthcare.

## ACCESS TO CARE

People diagnosed with diabetes are offered self-management education programmes. The programmes are offered at hospitals upon diagnosis. Ethnic minorities are provided training in their own languages.

Insulin and delivery supplies are available free of charge, including insulin pumps and consumables. Regular medical examinations are also offered free of charge. However, test strips for type 1 and type 2 diabetes are not reimbursed. Health check-ups include examinations of eyes and feet, determination of BMI, HbA<sub>1c</sub> and blood pressure, assessment of peripheral sensitivity, general blood and urine tests, and adjustments of existing treatment.

Diabetes education has been provided in Macedonia for more than 10 years. All people with diabetes have group education but sessions are conducted by volunteers and education is not sponsored by the government. The Macedonian Diabetes Association believes that education should be covered by the Ministry of Health in order to make it more easily accessible for larger numbers of people with diabetes.

Nurses, general practitioners and diabetes specialists perform diabetes management.

## WOMEN'S HEALTH

Macedonia does not monitor the outcomes of pregnancies in women with gestational diabetes or established diabetes. Prenatal counselling services are available for women with diabetes who intend to have children.

## OUTLOOK

Preventive programmes, including regular annual check-ups, must be made a priority.

The biggest challenge to diabetes care over the next two years will be the introduction of new oral medications and analogue insulins.

The Macedonian Diabetes Association believes that the government should take greater responsibility for diabetes care and more attention should be paid by international associations.

## CONSULTED ORGANIZATION

- Macedonian Diabetes Association

# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.5%	11.1%
<b>Estimated number of people with diabetes</b>	30,110	36,100
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.2%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● European Diabetes Policy Group guidelines for diabetes treatment</li> <li>● International guidelines</li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Publication of <b>Non-Communicable Disease Strategy</b>, which includes diabetes (2010)</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Continued advocacy to build a national diabetes framework</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Malta in 2011 is 9.5% of the adult population, representing approximately 30,100 people. The Atlas forecasts that the prevalence rate will rise to 11.1% by 2030.

The World Health Organization predicts that by 2030 Malta will have 57,000 people with diabetes.<sup>1</sup> Roughly 22% of the population is obese and a further 36% overweight – among the highest levels in Europe.<sup>2</sup>

Diabetes accounts for one in four premature deaths occurring before the age of 65 years. Cardiovascular disease, the leading cause of death in Malta, is responsible for nearly two-thirds of diabetes-related deaths.<sup>3</sup>

Malta's rates of childhood obesity and diabetes are among the highest in the world.<sup>4</sup> Gestational diabetes is also a particular problem, affecting 1.8% of all pregnant women, and remains an important cause of miscarriages.<sup>5</sup>

## COST OF DIABETES

Data from the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes is 11.2% of total health expenditure.

There is concern about the lack of information on the indirect costs of diabetes. Methodological difficulties in gathering this data have revolved around either direct care issues or quality of life issues. A study from 2005 reported considerable interest in developing standardized guidelines to collect this information, but there has been little progress since then.<sup>3</sup>

There are few data available on the costs associated with diabetes prevention, screening and care. The high incidence of chronic conditions, including obesity and diabetes, together with increased drug and device costs and an ageing population are reported to be putting a significant financial burden on the Maltese healthcare system. The question has been asked as to how Malta will sustain its high-quality system in the face of increasing costs.<sup>4</sup>

## GOVERNMENT HEALTH PRIORITIES

With its Strategy for the Prevention and Control of Non-communicable Disease 2010, the Maltese Ministry of Health is shifting its emphasis from treatment or curative services to preventive services, reflecting of the huge burden of preventable disease. Non-communicable diseases, such as coronary heart disease, stroke and diabetes, are responsible for about 82% of deaths in Malta. The Ministry of Health recognizes that chronic non-communicable diseases are linked by common modifiable risk factors, which require a coordinated strategic response.

## NATIONAL DIABETES PLAN/ FRAMEWORK

There is currently no national diabetes plan in place in Malta.

In 2010, local authorities and the World Health Organization European Region launched the National Strategy for the Prevention and Control of Non-communicable Diseases. The Strategy highlights the importance of diabetes, and outlines prevention and treatment goals. The Maltese Diabetes Association hopes that this document will be the first step towards ensuring Malta has its own tailor-made national diabetes plan.<sup>2,6</sup>

That plan will aim to recruit more doctors to specialize in diabetes and endocrinology in order to cope with the increasing workload and improve the provision of diabetes prevention and care. The Maltese Diabetes Association acknowledges that growing numbers of doctors are pursuing studies in this area. However, it is still felt that a large deficit of diabetes specialists remains. The Maltese Diabetes Association also recommends that government authorities invest in other expertise, such as psychologists and dieticians, who are essential in comprehensive diabetes care. The government aims to increase foot care services and recruit the services of vascular surgeons specialized in diabetes. Diabetes facilities in Malta have improved greatly in recent years.

Diabetes prevention is not recognized as a health priority by the Maltese government. There are no government guidelines in use for the prevention, screening and treatment of diabetes. Nor are there any screening programmes in place to identify those at risk of developing diabetes with no future plans to introduce such a programme.

A National Steering Committee on Diabetes operates within the Ministry of Health but rarely meets. Tasked with overseeing and improving diabetes prevention and care, the Committee functions as an informal network between health professionals, the Maltese Diabetes Association and national authorities.

Malta uses the guidelines of the European Diabetes Policy group (1998-1999) as the basis for diabetes treatment. Practitioners also commonly refer to

international guidelines, such as those of IDF, the European Association for the Study of Diabetes, and the American Diabetes Association.

## POLICY FOCUS

Development of the National Strategy for the Prevention and Control of Non-communicable Diseases includes initiatives to promote healthy nutrition and physical activity, including school-based projects to prevent obesity and diabetes in young people.

## ACCESS TO CARE

Malta provides structured education for people with diabetes in hospitals and community health centres. The frequency of educational sessions depends on individual needs. It is estimated that over 50% of people with diabetes are offered an annual or biennial review, which includes eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, neural sensation, blood screening, a review of medication, life circumstances and microalbuminuria.

Full reimbursement is restricted to those treatments that are included in the government's list.<sup>7</sup> Above the age of 36 years, certain treatments – lancets and blood glucose monitoring strips and meters – are not refunded and routine screening stops.

### FULL REIMBURSEMENT

- Injectable insulin and pens
- Lipid testing
- Albuminuria
- Retinopathy screening
- Structured education
- Psychological assessment

### RESTRICTED REIMBURSEMENT

- Blood glucose monitoring strips, meters and lancets (these are reimbursed fully only for people with type 1 diabetes aged below 36 years; 100 strips per month are given to pregnant women with type 1 diabetes and type 2 diabetes irrespective of age and women with gestational diabetes)

### NO REIMBURSEMENT

- Self-monitoring blood pressure meters

### NOT AVAILABLE

- Inhalable insulin
- Insulin pumps and accessories

## WOMEN'S HEALTH

Malta has pregnancy outcome data for women with gestational diabetes but not for women with established diabetes. Preconception counselling is available.

## OUTLOOK

Due to the dramatic increase in diabetes in the Maltese population, the Maltese Diabetes Association has a number of major calls to action over the next few years.

A national diabetes plan is essential; the association is in communication with health authorities to ensure a plan will materialize.

Every person living with diabetes should have access to all the necessary tools to manage their condition, including insulin pumps and other lifesaving interventions, like kidney and pancreas transplants. The Association calls for universal free entitlement to blood glucose strips and meters.

A large part of the health budget should be dedicated to diabetes research and health education.

There needs to be a structured and effective educational programme for health professionals and people with diabetes. It is also important the government carry out a detailed study of the organization structure within diabetes and endocrine departments to ensure that diabetes teams are complete with all the necessary expertise. As well as diabetes consultants and diabetes specialist nurses, it is important that the teams include sufficient experts, such as psychologists and dieticians.

"A national diabetes plan would improve the quality of diabetes treatment and care, ensuring that this is accessible in all communities. Government expenditure to embark on a national diabetes plan for Malta should be seen as an investment to reduce the public and personal costs of diabetes."

*Anna Zammit Mckean,  
President of the Maltese Diabetes Association*

## CONSULTED ORGANIZATIONS

- Ministry of Health, Elderly and Community Care
- Maltese Diabetes Association
- Diabetes and Endocrine Centre, Mater Dei Hospital

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# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	3.1%	3.8%
<b>Estimated number of people with diabetes</b>	80,030	89,410
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	4.4%	

## Policy framework

<b>National plan</b>	Yes	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Clinical Protocol for Diabetes</b></li> </ul>
<b>National register</b>	Yes	<ul style="list-style-type: none"> <li>● Approximately 50% of people diagnosed with diabetes registered</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Implementation of national retinopathy and foot projects</li> <li>● Implementation of the newly approved National Diabetes Programme (2011-2016)</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Moldova in 2011 is 3.1% of the adult population, representing approximately 80,030 people. The Atlas estimates that the prevalence rate will rise to 3.8% by 2030.

Figures from the Ministry of Health show that the number of people registered with diabetes in 2009 was 51,951 and approximately 55,000 in 2011. The official rate of prevalence in 2009 was 1.45%. In the last 10 years, there has been a 100% increase in the rates of prevalence and incidence. The Ministry of Health recognized that their diabetes figures are probably very much lower than the real number.

## COST OF DIABETES

Data from the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes is 4.4% of total health expenditure.

The estimated cost of implementing the National Diabetes Programme in 2011 is approximately EUR 1.53 million.

## GOVERNMENT HEALTH PRIORITIES

For the period 2008 to 2011, governmental priorities include: to improve the legal framework, improve the effectiveness of core medical services, ensure adequate funding for the health system, and implement a pilot project to test high-technology procedures in the medical infrastructure.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The National Diabetes Programme, in place since 1996, is being assessed and adjusted for further implementation (2011-2016).

The programme addresses the issues of prevention, early diagnosis, diabetes management, education, medical practice standards, procurement

and distribution of diabetes medication, diabetes research, treatment of vascular complications and raising awareness among the general population. The Ministry of Health and the Association of Research of Chronic Diseases are responsible for implementing the Programme. Groups representing people with diabetes have been consulted regarding design and implementation.

At present, implementation is hindered by the financial crisis, reduced regional budgets, migration and problems attracting and training new specialists.

The Association for Research of Chronic Diseases manages the national diabetes register, which is collected at the regional level and passed to the Ministry of Health. However, it has been noted that there are big failings in this registry as patients who have not seen the doctor in three years are removed. The Ministry of Health has recognized that the register is not comprehensive and the diabetes epidemic is worse than government figures estimate.

There are national professional guidelines for type 2 diabetes which were introduced in 2008. There are no guidelines for type 1 diabetes.

## ACCESS TO CARE

Under the National Programme, there are screening programmes for early diagnosis of diabetes. Diabetes education is offered at hospitals, in outpatient units or via general practitioners at the moment of diagnosis and on request.

It is estimated that fewer than 50% of people with diabetes take up the offer of annual medical tests, which cover eyes, feet, blood pressure, BMI, cognitive functions, blood and urine tests. These services are free of charge.

Diabetes medication is compensated by the health system. Insulins and delivering devices are officially available universally. However there are huge shortages of free medication and many people with diabetes pay out of pocket for their treatment. Insulin pumps may be prescribed for children and some costs compensated, as well as for pregnant women and people with a low income. Self-monitoring devices and test strips are not compensated by the system. People wishing to test their HbA<sub>1c</sub> levels can only do this in two private health clinics in the country.

There are about 40 specialist diabetes centres and general practitioners or endocrinologists perform regular diabetes management.

In regards to human resources for health there is no specialist training for diabetologists and physicians must complete their diabetes training within a endocrinologist's training. There is also no specialist training for diabetes nurses.

## WOMEN'S HEALTH

While programmes for prenatal counselling are provided, there is no special record of gestational diabetes or pregnancies in women with established diabetes. There are also no specialist services for women with diabetes who are pregnant.

## OUTLOOK

A National Diabetes Eye and Foot Project will be implemented in the next two to three years, with the aim to reduce the number of high-impact complications. The project involves opening two reference centres, training of healthcare professionals with a mobile unit around the country and finally national screening. It is planned that all healthcare professionals working in diabetes get trained to help screen people for the disease.

## CONSULTED ORGANIZATION

- Association for the Study of Chronic Diseases

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.3%	8.8%
<b>Estimated number of people with diabetes</b>	881,630	1,094,580
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.5%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Ministry of Health, Welfare and Sport's Diabetes Action Programme</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● Dutch College of General Practitioners guidelines</li> <li>● Government guidelines on diabetes and pregnancy</li> <li>● Dutch Institute for Healthcare guidelines</li> </ul>
<b>National Register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Updated Diabetes Action Programme</li> <li>● The 'bundled-payment' concept approved for nationwide implementation</li> <li>● Nationwide care audits in 2008 and 2010</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Reaching the goals of Diabetes Action Programme</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in the Netherlands in 2011 is 7.3% of the adult population, representing approximately 881,630 people. The Atlas forecasts that the prevalence rate will rise to 8.8% by 2030.

The number of people with diabetes is thought to be increasing by 70,000 each year. There are an estimated 250,000 people living with undiagnosed diabetes.<sup>1</sup>

A 2009 publication estimated that there are 740,000 people with diabetes living in the Netherlands.<sup>2</sup>

## COST OF DIABETES

Data from the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes is 8.5% of total health expenditure.

## GOVERNMENT HEALTH PRIORITIES

A 2006 prevention policy, 'Opting For a Healthy Life'<sup>3</sup> focused on five specific national public health priorities, including diabetes, smoking, obesity, alcohol abuse and depression.

The objectives outlined under the diabetes priority section were as follows:

- the number of people with diabetes may not rise by more than 15% between 2005-2025
- 65% of people with diabetes should not develop complications

The Health Ministry targets prevention in groups of people with a high risk of developing diabetes – young people with overweight, people with a low income, immigrants, pregnant women and people with undiagnosed diabetes.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The National Diabetes Action Plan is in place. Produced by the Netherlands Diabetes Federation, the Plan will function until 2013, targeting the environmental conditions and instruments required to halt the alarming rise in the number of people affected by diabetes.<sup>4</sup>

In 2007, the Ministry of Health approved the introduction of a 'bundled-payment' approach for integrated chronic care, initially on an experimental basis, with a focus on diabetes. In 2010, the concept was approved for nationwide implementation for diabetes and other chronic conditions. Under this system, insurers pay a single fee to a principal contracting entity or care group to cover healthcare services for a fixed period. A care group comprises multiple healthcare providers – often exclusively general practitioners. The care group assumes both clinical and financial responsibility for all assigned patients in the diabetes care programme. The care group either delivers services itself or subcontracts to other healthcare providers.

General decisions about services to be covered in the diabetes care bundle were made at the national level and follow the Dutch Diabetes Federation Healthcare Standard for type 2 diabetes. The Standard is limited to generic diabetes care and specifies the treatment activities to be included. Diabetes services are provided free of charge, since they are covered by the standard insurance package that all Dutch citizens must carry.

The introduction of bundled payment for diabetes care has had positive consequences, including improvements in care delivery processes and transparency of delivered care, and negative ones, including antitrust concerns and limited choice for people with diabetes. In addition, there are still several key unknowns: how best to take coexisting conditions into account, how to avoid shifting the costs of healthcare services outside the care bundle, and what the effect will be on overall costs of care. Nevertheless, findings from a recent report seem relevant to the implementation of accountable care organizations (vehicles for implementing comprehensive payment reform and redesign of the healthcare system in an effort to control growth in healthcare costs and improve value) and as more information becomes available on the effects of bundled payment on the quality, accessibility and affordability of care, it can be used in optimizing policies regarding these new delivery models.<sup>5</sup>

The Netherlands Diabetes Federation conducted audits in 2008 and 2010 to investigate the quality of care received by people with diabetes. The 2010 audit described the optimum quality of care. A principal conclusion from the audit was that care does not yet meet the desired standard.

Positive findings include that blood and eye tests happen at least once a year in all cases, and normally more often, and that respondents were well aware of their personal targets and had a good general knowledge of what they needed to self-monitor.

Disappointing results from the audit showed that the determination of BMI was not carried out in most respondents, examination for signs of diabetes complications had not been adequately carried out and the majority of people had no care plan.<sup>6</sup>

Long-standing guidelines<sup>7</sup> from the Dutch College of General Practitioners are still widely used and respected by most general practitioners and specialists. Revised in 2006, key changes included recognition of metformin as the first step in treatment and a limited place for thiazolidinedione. Since 2006, there have also been government guidelines on diabetes and pregnancy.

1998 guidelines from the Dutch Institute for Healthcare are also still extensively used.<sup>8</sup> There is currently no indication that these will be revised.

There are also a large number of guidelines, both multi and mono-disciplinary, which are available on the websites of the relevant professional groups.<sup>9</sup>

## POLICY FOCUS

The new Diabetes Action Programme targets high-risk groups, including immigrants. Its objective is to raise awareness of the importance of healthy lifestyles.

## ACCESS TO CARE

Diabetes treatment is generally well reimbursed by the National Health Insurance scheme. The Health Insurance Act gives everyone the right to a basic reimbursement package. People are entitled to full reimbursement for treatment for type 1 diabetes and for type 2 diabetes.

Additionally, almost all medicines for diabetes are reimbursed in the basic package.

## FULLY REIMBURSED

- Injectable insulin and pens
- Insulin pumps and accessories
- Lancets
- Blood glucose monitoring strips and meters (type 1 diabetes and insulin-dependent type 2 diabetes)

- Self-monitoring blood pressure meters
- Specialist nutritional advice (up to four hours per year)
- Podiatry (on referral only)
- Psychological assessment (indication only)
- Dentistry (only with additional health insurance)

Physiotherapy is no longer reimbursed as part of the standard package; people with diabetes must take supplementary insurance to be reimbursed.

Ethnic minorities receive educational materials in their own languages in writing and sometimes by bilingual educators.

According to the Ministry of Health, people with diabetes are offered annual and biennial reviews, with over 50% of the population taking up assessments of eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, blood screening, medication review and urinalysis.

There is no national register for diabetes in the Netherlands.

Screening in the Netherlands is carried out to identify those most at risk. However, this is not funded by the government and is not carried out regularly. People targeted for screening include those aged 45 years and older, overweight people, ethnic groups and low-income groups.<sup>10</sup>

The Netherlands provides structured education for people with diabetes, which takes place at hospitals with general practitioners and at community health centres.

## WOMEN'S HEALTH

The Netherlands keeps pregnancy outcome data for women with gestational diabetes and established diabetes. Preconception counselling is offered to women with diabetes who wish to conceive. Government care guidelines focus on women with established diabetes and those with gestational diabetes.

## OUTLOOK

According to the Ministry of Health, the greatest challenges include preventive care, understanding the impact of the bundled payment approach on healthcare and multi-morbidity. Diabetes is already very high on the government agenda in the Netherlands and focus in the future will be on improving the interventions already in place.

## CONSULTED ORGANIZATIONS

- Ministry of Health
- Netherlands Diabetes Federation

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	5.9%	6.5%
<b>Estimated number of people with diabetes</b>	202,080	251,760
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	6.8%	

## Policy framework

<b>National plan</b>	Yes	
<b>Guidelines</b>	Yes	
<b>National register</b>	Yes	
<b>Developments since 2008</b>	<ul style="list-style-type: none"> <li>Continued implementation of the National Diabetes Strategy (2006-2011)</li> <li>National Clinical Guidelines on Diabetes (2009)</li> <li>Patient version of National Clinical Guidelines (2010)</li> </ul>	
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>Use of standardized computer-based diabetes files in primary and hospital diabetes care</li> <li>Update and implementation of Clinical Guidelines</li> <li>Development of better information and training materials for ethnic minority groups</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Norway in 2011 is 5.9% of the adult population, representing approximately 202,080 people. The Atlas forecasts that by 2030 the prevalence rate will rise to 6.5% of the population.

In 2006, the Ministry of Health estimated that there were around 120,000 people with diabetes (25,000 with type 1 diabetes).<sup>1</sup> Based on the Health Survey in Nord-Trøndelag study and the prescription registry, that number in 2011 is estimated to be 192,000.

The National Diabetes Plan estimates that among non-western immigrants, diabetes prevalence in parts of Oslo is 7% in women and 6% in men.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 6.8% of the total health budget is spent on diabetes.

According to the Norwegian Diabetes Association, the direct costs of diabetes represented 1.3% of the

total healthcare budget in 2005.<sup>2</sup> According to the Ministry of Health and Care Services, the economic impact of diabetes in Norway is not known, but the Ministry estimated that diabetes treatment would occupy a larger share of health spending in the future.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority in Norway. In 2006, the Ministry of Health and Care Services created the National Diabetes Strategy, which entails targets for diabetes prevention, research and treatment.<sup>1</sup> The main objectives of the strategy include prevention to reduce the countrywide progress of type 2 diabetes and its complications, such as the 500 amputations that take place every year. The importance of promoting healthy lifestyles through broader public health policy actions is included, encouraging a minimum of 30 minutes of exercise a day, labelling of healthy foods, providing lanes for cycling, conserving parks and green spaces, increasing nutritional education and promoting tobacco-free initiatives.

The reduction of social inequalities is also a key objective of the Strategy. Health inequalities exist in terms of which patients reach their treatment goals. Important measures to reduce this gap have been introduced in the national guidelines by enhancing clinical recommendations for diagnosis and treatment, using national quality registers for diabetes and training of people with diabetes and their families. For primary and secondary care, it is important to initiate close cooperation to deal with people who are at risk of developing diabetes, and to ensure good systems of diagnosis and monitoring. Effective interaction between providers at different service levels is also of great importance as this is not always satisfactory at present.

Referral systems are targets for improvement. Increased coordination and cooperation for individual patient follow-up between the different sectors along the treatment pathway involves strengthening the Directorate of Health at a central government level. Communications between the National Diabetes Association and other groups have been increased and immigrant communities were involved in the planning of the strategy. Another area of the strategy aims to increase cooperation between hospitals and municipal services.

Through use of the Finnish risk assessment questionnaire, which is available on-line ([www.diabetesrisiko.no](http://www.diabetesrisiko.no)), it is hoped to reduce the number of people who have undiagnosed diabetes. People answer a survey to obtain their risk score; approximately 100,000 people have scored themselves to date.

Challenges with implementation of this framework included financial constraints, regional budget allowances and the ownership of resources.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The Norwegian Directorate of Health produces clinical guidelines. The latest guidelines (2009) have been expanded to include more hospital-specific areas, such as treatment of ketoacidosis, and treatment of hyperglycaemia in acute myocardial infarction and stroke.<sup>3</sup> The primary audience of the guidelines include doctors and nurses working with diabetes in primary care and specialist health services, but they are also of use to other health professionals, particularly in community health services. In terms of screening and prevention of diabetes, there are professional guidelines prepared but no current plans to introduce them.

There is an adult national register in Norway, although less than 10% of the people with diabetes are included. There is also a register for children with diabetes, which includes more than 95% of all young people with diabetes up to 18 years. The registry is maintained by Oslo University Hospital.<sup>4</sup> Norway keeps comprehensive birth registries, which include outcome data for women with gestational diabetes and established diabetes.<sup>5</sup>

## POLICY FOCUS

The Ministry of Health and Care Services department says that it is important to have effective and rational procedures to prevent and delay serious diabetes complications, namely vision loss, and that special attention must be given to young women with type 2 diabetes and pregnant women with diabetes.

The National Diabetes Strategy includes information on diabetes and pregnancy, and diabetes in children and adolescents. Immigrant populations are included. The treatment of diabetes in ethnic minorities, especially immigrants in the first generation, often involves special challenges.

## ACCESS TO CARE

The Norwegian healthcare system is built on the principle of equal access to services. All people with health insurance are granted free care, including medications, in public hospitals. Individuals pay part of the cost of treatment by a general practitioner or specialist treatment as an outpatient; visits to a psychologist or psychiatrist and for certain prescriptions up to EUR 225.<sup>6</sup> Hospital stays are fully reimbursed.

Norway offers structured education for people with diabetes in hospitals and outpatient departments at diagnosis and during annual or biennial reviews. All physiological aspects are reviewed including eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, quality of life, nerve sensation, blood screening, medication review and albuminuria.

## FULL REIMBURSEMENT

- Injectable insulin and pens
- Insulin pumps and accessories
- Blood glucose monitoring strips and meters (unlimited for both type 1 and type 2 diabetes)
- Lancets
- Lipid testing
- Albuminuria
- Retinopathy screening
- Structured education
- Psychological support
- Nutritional/dietary advice
- Specialist ophthalmology assessment

## NO REIMBURSEMENT

- Self-monitoring blood pressure meters

## OUTLOOK

According to the Norwegian Diabetes Association, the greatest challenges over the next two years will include the roll out and financing of the National Strategy for Diabetes, which is in its final year; insuring education for people with type 2 diabetes; coordinating healthcare services; implementing diabetes teams in all major hospitals; educating municipal healthcare providers in diabetes care; ensuring that policy makers prioritize prevention; and establishing diabetes registers with 100 % coverage.

In order to stimulate government interest in diabetes prevention and treatment, there needs to be increased awareness among the general public and policy makers, with reliable data to back up arguments and policy changes.

"The main challenges in Norway are to identify the undiagnosed, implement the national clinical guidelines and the computer based quality of care registers and improve care for ethnic minorities."

*Tore Julsrud Berg,  
Director Diabetes Strategy,  
Norwegian Directorate of Health*

## CONSULTED ORGANIZATIONS

- Norwegian Diabetes Association
- Norwegian Directorate of Health
- Ministry of Health

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	10.6%	12.2%
<b>Estimated number of people with diabetes</b>	3,057,460	3,409,530
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	12.4%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● <b>Clinical Guidelines for Diabetes Treatment (2011)</b>
<b>National Register</b>	No	
<b>Developments since 2008</b>		● Programme for the Prevention and Treatment of Diabetes in Poland for 2010-2013

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Poland in 2011 is 10.6% of the adult population, representing approximately 3,057,460 people. The Atlas forecasts that the prevalence rate will rise to 12.2% by 2030.

According to the latest figures for Poland, 1.3 million people have been diagnosed with diabetes (3.4% of the population) of whom 254,000 are children. It is assumed that some 750,000 people have diabetes but are undiagnosed. The country also reports a staggering number of foot amputations – 14,000 per year. In terms of clinical outcomes, more than 70% of the adult population with type 2 diabetes has values of the HbA<sub>1c</sub> greater than 7%. Since 2008, the country does not have a National Diabetes Programme, in spite of the efforts to promote one.<sup>1</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the spending on diabetes as a percentage of total health expenditure is 12.4%. The cost of the treatment is assessed at the level of EUR 591 million per year.<sup>1</sup>

## GOVERNMENT HEALTH PRIORITIES

Diabetes is not a national health priority in Poland. Poland's National Health Programme 2007-2015 did not include diabetes as a strategic priority; its main priorities were cancer, coronary diseases and mental illnesses. The Programme, whose main aim is to "improve the health and quality of life of patients as well as overcoming healthcare inequalities" mentions diabetes in passing, calling for changes in dietary habits as one of the basic ways to fight illnesses, and recommending early healthcare for people at risk of diabetes complications. Promotion of healthy living is targeted through the promotion of physical exercise with a national campaign on television and radio.<sup>2</sup>

NATIONAL DIABETES PLAN/  
FRAMEWORK

Poland does not have a National Diabetes Programme. The newly established Coalition Against Diabetes intends to propose a new version of a National Diabetes Programme. Underfunding is seen as the main challenge for adequate healthcare services for people with diabetes.

The main objectives of the Programme for the Prevention and Treatment of Diabetes in Poland 2010-2013 are to improve public awareness of diabetes and healthy lifestyles, promote diabetes education and training for people with diabetes and their families and selected professional groups, and improve the quality of care. Nurses and midwives are to be included within the scope of the Programme to take on the role of diabetes educators. Long-term goals include increased public awareness, reduced morbidity and mortality from diabetes complications, and reduced economic impact from disability and premature mortality.<sup>3</sup>

The government reportedly shows limited interest in diabetes. Consequently, coverage in terms of specialized or trained personnel is poor; education is neglected in most health centres as the diabetes educator is not officially recognized and compensated. However, in 2011 the Ministry of Health produced a document in which it recognized the need for diabetes educators.<sup>4</sup> The system for reimbursing diabetes medication is reported to be unsatisfactory: reimbursements are given for an unlimited number of test strips while long-acting insulin and other modern oral products are not covered.<sup>1</sup> The Ministry also met doctors from the University of Warsaw to discuss the provision of care and supplies for diabetes.

Poland does not have a national diabetes register. There are reported local diabetes registers for certain populations, such as a register for elderly people in Krakow. There are no plans to introduce a nationwide register.

In 2010, the Polish Diabetes Association initiated a programme for diabetes educators. The programme is recognized and monitored by the Ministry of Health. 120 general practitioners attended the training sessions.<sup>5</sup>

## POLICY FOCUS

The Polish Diabetes Association says that approximately 2,000 schools throughout the country provide structured education for people with diabetes and training sessions organized by the Polish Diabetes Association with a group of primary care doctors and volunteers.<sup>2</sup>

Children in Poland receive a relatively good standard of care and medication. However, after their 18<sup>th</sup> birthday, they stop receiving vital medication, such as insulin pumps.<sup>6</sup>

## ACCESS TO CARE

Reimbursement for diabetes treatments can range from full reimbursement, via a lump sum, to a 50% patient contribution.<sup>7</sup> A proportion of the costs of short-acting insulin analogues and blood glucose monitoring strips and meters is also reimbursed. Long-acting insulin is not universally reimbursed.

People under 26 years and pregnant women have free access to insulin pump accessories (needles and infusion sets) although there is a monthly limit.<sup>8</sup> While insulin pumps are not reimbursed by the central government, most children can obtain them free via paediatric clinics.

Self-monitoring blood pressure meters, podiatry care and lancets are not reimbursed in Poland. Dentistry is partly reimbursed.

Lipid testing, albuminuria and retinopathy screening are covered in annual reviews. However, strict financial limits mean that implementation has been poor. For the same reasons, access to psychologists is also very limited.<sup>9</sup> Check-ups include examination of eyes and feet, determination of BMI, blood pressure and HbA<sub>1c</sub>, assessment of quality of life, assessment of peripheral sensitivity, general blood and urine tests, and adjustments to existing treatment regimens. More than 50% of registered people with diabetes undergo regular reviews.<sup>10</sup>

Certain schools offer special support for young people with diabetes, mainly by allowing extra testing time during exams for people who need to perform diabetes tests and adjustments. Some others, however, are reported to have denied access to children with diabetes in their classes.<sup>11</sup>

The main diabetes care providers in Poland are people with diabetes, nurses, general practitioners, diabetes specialists, psychologists, dieticians, podiatrists and ophthalmologists.

People with diabetes have access to self-management education upon diagnosis at hospitals and outpatient units. Ethnic minorities have access to training programmes in their own languages.

According to the Polish Federation of Diabetes Educators there is a large deficit of trained health-care personnel.<sup>6</sup>

## WOMEN'S HEALTH

Poland monitors pregnancy outcomes in the women with established diabetes or gestational diabetes. Women with diabetes wishing to become pregnant are advised to tell their general practitioner, who can organize preconception counselling and specialist services, such as additional blood tests. These women are then referred to clinical specialists.<sup>6</sup>

## OUTLOOK

The diabetes community has specifically underlined the need for increased financial resources.

Among the suggested areas for improvement is the need for greater access to insulin pumps. Access to long-acting analogues is also strongly advocated. Associations in Poland would like everyone under 26 to have access to these treatments free of charge.<sup>12</sup>

The biggest challenges over the next two years will be the gradual increase in the number of people with type 1 diabetes and type 2 diabetes, which will provoke growing pressure on healthcare finances and other resources.

In order to stimulate government interest, the involvement of the Polish Diabetes Association (the 'patient' organization) is required alongside the Polish Society of Diabetology (representing healthcare professionals) to raise awareness among politicians of diabetes issues and the financial benefits of primary and secondary prevention.<sup>2</sup> According to the Polish Diabetes Association, IDF advocacy at the Ministry of Health might succeed where the Association has not been able to garner more intensive government involvement.

"The biggest problem in Poland is the lack of reimbursement for long-acting insulins and new oral medications for type 2 diabetes. There is no governmental interest in prevention and education for the treatment of diabetes."

*Andrzej Bauman, Polish Diabetes Association*

## CONSULTED ORGANIZATIONS

- Polish Diabetes Association
- Polish Federation of Diabetes Educators
- Ministry of Health

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12. *Oral interview with the Polish Diabetes Association, August 2011*

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	12.7%	15.2%
<b>Estimated number of people with diabetes</b>	1,021,360	1,200,600
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	13.2%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Programme for Diabetes Prevention and Control</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Diabetes Dossier for practitioners</b></li> <li>● <b>Diabetics' Guide for people with diabetes</b></li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Epidemiological study on national and regional prevalence (2009)</li> <li>● Creation of the Diabetes Observatory</li> <li>● Guidelines issued</li> <li>● Extension of retinopathy screening</li> <li>● Monthly foot inspections in 30% of primary care centres</li> <li>● Integrated diabetes management in five regions</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Review of the National Diabetes Plan</li> <li>● Extend foot and retinopathy screening</li> <li>● Reduce diabetes-related hospital admissions</li> <li>● Reduce diabetes-related amputations</li> <li>● Coordination of primary prevention efforts with other chronic diseases</li> <li>● Integrated coordination of the primary healthcare</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Portugal in 2011 is 12.7% of the adult population, representing 1,021,360 people. The Atlas forecasts that the prevalence rate will rise to 15.2% by 2030.

The first nationwide Epidemiology Study, PREVA-DIAB,<sup>1</sup> (2009) put the diabetes prevalence rate at 12.3% (of the total population aged between 20 and 79 years) – approximately 983,000 people. A significant difference in the rate of prevalence was seen between men and women.

It appears that there is an inverse relationship between educational level and prevalence of diabetes in the Portuguese population: the higher the educational level, the lower the prevalence of diabetes.

Nearly 90% of the population with diabetes were overweight or obese. An obese person had four times the risk of developing diabetes compared to a person who is not overweight.

In 2009, type 1 diabetes affected 2,600 children and young people aged 0-19 years, which corresponds to 0.1% of the population in this age group – revealing no significant changes over the previous year.

The prevalence of gestational diabetes in mainland Portugal in 2009 was 3.9% of the mothers who used the National Health Service during that year – a significant increase compared to previous years. Women giving birth under National Health Service care represented more than 80% of all births registered in Portugal in 2009.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the spending on diabetes in 2011 as a percentage of total health expenditure is 13.2%.

According to the Health Expenditure Structure in Diabetes – CODE-2 study, diabetes expenditure represented a direct cost of between EUR 1.05 billion and EUR 1.25 billion in 2009 – an increase of 15% on the previous year, and representing 6% and 8% of total health expenditure.

According to the National Diabetes Observatory, in 2009, diabetes costs (for people diagnosed with diabetes aged between 20 and 79 years) amounted to EUR 850 million.<sup>2</sup>

## GOVERNMENT HEALTH PRIORITIES

Diabetes is one of the government's health priorities and is to be integrated into the National Health Plan 2011-2016.

The inclusion of diabetes indicators, including those relating to treatment at all levels of care, will be one of the tools of the Plan.

The priorities and strategic objectives of the current National Health Plan have been translated into 40 intervention programmes, validated in each area of intervention by scientific commissions.

## NATIONAL DIABETES PLAN/ FRAMEWORK

In November 2007, the Ministry of Health launched the National Programme for Diabetes Prevention and Control<sup>3</sup> as a key element of its National Health Plan. The Plan is based on the Finnish diabetes prevention model, and integrates a preventive element into the existing policy framework to establish a comprehensive health policy on diabetes.

The Plan's overall objectives include the reduction of diabetes prevalence, morbidity and mortality; reductions in major complications, such as cardiovascular disease, neuropathy, nephropathy, amputation and retinopathy; and integrated programme management. Specifically, the Plan addresses the following challenges in line with objectives of the overall National Health Plan:

- Improved data collection – systematic computerized data collection supported by the National Observation Centre
- Improved diabetes education and professional training – improving academic recognition of diabetes, distribution of the Guide of the Person with Diabetes and the Manual of Therapeutic Education, and dissemination of diabetes information to people with diabetes and their families
- National screening for retinopathy, diabetic foot disease and microalbuminuria

- New classification and diagnosis methods approved by the Portuguese Diabetology Society; distribution of the Manual of Best Practices of Diabetes Vigilance to healthcare professionals in primary, secondary and tertiary care<sup>3</sup>
- Endocrinology and Referencing Network – dissemination of useful information, such as contact points and schedules for consultations for screening and treatment of diabetes.

The Plan created small diabetes care units within medical centres<sup>4</sup> to bring treatment closer to people with diabetes. The Portuguese Diabetes Association suggested that these units include multidisciplinary teams in order to respond efficiently to the needs of people with diabetes.<sup>5</sup> According to the Portuguese Diabetes Association, the Plan is likely to be reviewed in 2012. Financial difficulties have affected implementation of the Plan largely because it never had financial autonomy or a specific budget.

## POLICY FOCUS

The National Programme for Diabetes Prevention and Control addresses the population as a whole, and provides for general awareness campaigns on diabetes and lifestyle factors. It nonetheless identifies specific target populations, including people with diabetes, pregnant women and other risk groups. The plan provides a questionnaire in order to help healthcare professionals to identify risk groups.

## ACCESS TO CARE

Portugal, like many other EU countries, is striving to contain and even reduce its healthcare costs. Insulin products and accessories are reimbursed entirely.<sup>6</sup> The government provides insulin pumps to 100 people with diabetes, who can access the pumps via certified diabetes centres and after selection based on the specific guidelines of the National Programme for Diabetes Prevention and Control and the Directorate General of Health. In 2011, this provision was extended to 30 pregnant women and 40 children under the age of five years. However, some self-monitoring products are still not reimbursed. Reimbursement of oral medication has recently been reduced from 100% to 85%. Lipid analyses are reimbursed under the same conditions as other medical analyses and albuminuria testing is free of charge. Retinopathy screening is covering more than 50% of the country.

## OUTLOOK

The diabetes Plan gave new impetus to the fight against diabetes. The current challenge lies in its ongoing implementation.

Portugal's patient organizations believe that Europe has a major role to play in improving diabetes prevention and care. They suggest that existing disparities between member states could be reduced via the centralization of authorization for marketing and reimbursement of new drugs. There is also agreement on the need for harmonized data collection across the EU.

The Portuguese Diabetology Society has called for the EU, through its various funding mechanisms, to invest in diabetes research. Both the Portuguese Diabetes Association and the Portuguese Diabetology Society have called for general EU guidelines and a coherent European benchmarking system.

It is felt by both organizations that priority should be given to the National Plan for the Prevention and Control of Diabetes, specifically to finance prevention and education programmes. Integrated care is also a priority alongside achieving reductions in amputations, and a minimum 50% increase in eye monitoring.

"The economic crisis should have minimal impact on the quality of care for people with diabetes. Only investment now will lead to gains in the future."

*Portuguese Diabetes Association*

## CONSULTED ORGANIZATIONS

- Portuguese Diabetology Society
- Portuguese Diabetes Association
- Directorate General of Health of the Ministry of Health

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.2%	11.1%
<b>Estimated number of people with diabetes</b>	1,506,300	1,708,740
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	10.8%	

## Policy framework

<b>National plan</b>	Yes	● <b>National Programme for Diabetes and other Metabolic Diseases</b>
<b>Guidelines</b>	Yes	
<b>National register</b>	Yes	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Romania in 2011 is 9.2% of the adult population, representing approximately 1,506,300 people with diabetes. The Atlas estimates that the prevalence rate will rise to 11.1% by 2030.

Official prevalence based on registered cases is 6.5% but specialists estimate that it might be as high as 10%.

## COST OF DIABETES

Data from the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes is 10.8% of total health expenditure.

The overall budget for diabetes care has been reduced. However, spending on diabetes has risen as a percentage of the overall health budget.

## GOVERNMENT HEALTH PRIORITIES

- Increase the effectiveness of hospital units
- Restructure health service care packages
- Increase the effectiveness of the health insurance system
- Improve management of human resources.

NATIONAL DIABETES PLAN/  
FRAMEWORK

Funds allocated in 2010 to the National Programme for Diabetes and other Metabolic Diseases amount to approximately EUR 57,731,000, representing 1.47% of total health expenditure.

Representatives of people with diabetes are regularly invited to express their opinions on the National Programme for Diabetes and other Metabolic Diseases. There are reported difficulties relating to reduced funding, lack of personnel driven in part by migration of medical personnel, and lack of space in the public system.

The national diabetes register, which is managed by the National Institute for Statistics, has been implemented in more than half of all districts.

## POLICY FOCUS

Diabetes educators, as a profession, remain unrecognized. In these circumstances, without official recognition diabetes education will continue to be overshadowed and displaced by other clinical functions.

## ACCESS TO CARE

All people have access to regular diabetes check-ups carried out by specialist healthcare professionals. Due to the current financial crisis, however, the allocation of some treatments is restricted. The number of test strips, for instance, was reduced to 400 strips per year for adults with type 1 diabetes.

## FULL REIMBURSEMENT

- Injectable insulin and pens
- Insulin pumps and accessories
- Blood glucose monitoring strips and meters (for people on insulin)
- Lipid testing
- Retinopathy screening
- Structured education
- Nutritional/dietary advice
- Ophthalmological assessment

## PARTIAL REIMBURSEMENT

- Psychological assessment

## NO REIMBURSEMENT

- Self-monitoring blood pressure meters
- Lancets
- Albuminuria
- Podiatry
- Dentistry

Diabetes medication is distributed through public pharmacies on prescription.

## WOMEN'S HEALTH

There are no special records for gestational diabetes or for pregnant women with established diabetes. Prenatal counselling programmes exist; registered women with diabetes receive special support and counselling from their specialist. Gestational diabetes is managed with input from a diabetologist.

## OUTLOOK

Awareness needs to be raised on the preventability of diabetes and the potential to manage diagnosed diabetes effectively via proper education.

The results of a 2008 health census were never published. A political decision is needed in order to make public the findings regarding the impact on Romania's public health status of the recent two-year investment in screening.

"A great deal of resources are being spent on managing diabetes and its complications, yet there is a very unclear policy regarding prevention and diagnosis."

*Maria Mota, University of Medicine and Pharmacy, Craiova*

## CONSULTED ORGANIZATION

- University of Medicine and Pharmacy, Craiova

## COUNTRY OVERVIEW

### Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	11.5%	13.9%
<b>Estimated number of people with diabetes</b>	12,593,150	14,113,090
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	13.2%	

### Policy framework

<b>National plan</b>	Yes	● Implemented in 1996 for 15 years
<b>Guidelines</b>	Yes	
<b>National register</b>	Yes	

### DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in the Russian Federation in 2011 is 11.5% of the adult population, representing approximately 12,593,150 people. The Atlas forecasts that the prevalence rate will rise to 13.9% by 2030.

The official prevalence rate for the Russian Federation is 2.55%. The Moscow region registered an increase of about 5% in the number of new cases between 2010 and 2011.<sup>1</sup>

### COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes in 2011 represents approximately 13.2% of the total health budget.

Over the past five years, the Moscow region registered annual increases in diabetes spending of between 14% and 30% per year.<sup>1</sup>

### GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority. The Ministry of Health and Human Development broadly prioritizes improving accessibility to and quality

of care – primarily through the implementation of national projects in health and hygiene – and promoting healthy lifestyles. Improving the health status of children and mothers, ensuring quality and safety of drugs and other medical products and preventing disease all count among specific health priorities.<sup>2</sup>

The federal government was one of the initiators of a ministerial conference on non-communicable diseases in 2011. The president of the Russian Diabetes Federation met the prime minister recently to discuss the needs and priorities of people with diabetes.

In 2009, a standard for school meals was introduced, prohibiting sweetened drinks and trans-fat acids. Grilled products, deep-fried dishes, mayonnaise and sour cream are also banned. It is now compulsory for schools to provide three physical education lessons per week. Also, there has been an increase over the last three years in the number of food products carrying nutritional labelling.<sup>3</sup>

In 2010, a federal law established 502 centres to promote healthy lifestyles, which have attracted more than 2 million people. In the same year, long-term legislation was adopted on nutrition and healthy lifestyles.<sup>1</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

Designed for an implementation period of 15 years, the National Diabetes Plan (1996) covers primary prevention, early detection, care and services for people diagnosed with diabetes, education, the use of information technology, the supply of medication and devices, research, treatment of vascular complications and increasing community awareness. The plan includes monitoring activities performed by institutions of the Ministry of Health and Social Development and the Federal Service on Surveillance in Healthcare and Social Development.

Major challenges to implementation include financial constraints, insufficient regional budgets, and a lack of political support, human resources and special education for health professionals. The lack of public access to the national database and regional and ethnic differences were also cited as challenges. People living with diabetes were not given the opportunity to contribute to the Plan.

The Federation uses clinical guidelines for the treatment of diabetes based on international recommendations and last updated in 2009. Implementation of the guidelines is monitored. Screening programmes are in place at the national and local levels, which are supported by the public budget and target high-risk groups.

There is a national register for diabetes, which, according to the Russian Diabetes Federation includes nearly all people diagnosed with diabetes. It is monitored by the National Institute of Endocrinology of the Health Ministry.

## POLICY FOCUS

The country faces a lack of trained healthcare personnel and relatively low salaries for health professionals. Private health services might offer an alternative for the existing system.

## ACCESS TO CARE

Medication and devices for insulin treatment are provided free of charge. Insulin pumps are reimbursed for children. Blood glucose meters and test strips are free for children and reimbursed for everyone else. Self-monitoring blood pressure meters, psychological assessment and nutritional advice are not free for anyone.

In the Moscow region, there is a high percentage (24%) of people with diabetes being treated with insulin. Of these, 45% receive analogue insulins, while the rest use human insulins. Between 2006 and 2010, the number of people using insulin pumps rose 10-fold.<sup>1</sup>

Structured education programmes are available at hospitals and outpatient units upon diagnosis and as needed (on average every five years). The availability of these programmes depends on public funds. Patient organizations try to make up any shortfall in provision. The Russian Diabetes Federation also produces a newspaper and maintains a web forum.<sup>4</sup> Ethnic minorities are not provided with educational material in their own languages.

All people with diabetes are expected to have annual check-ups and more than 50% are thought to take up this opportunity. The check-ups include examinations of eyes, feet, BMI, blood pressure, HbA<sub>1c</sub>, neuropathy, blood and urine tests. These are provided free of charge. Dentistry services are reimbursed only for people with a low income.

Besides self-management, health services for people with diabetes are offered by general practitioners, diabetes specialists and specialists in podiatry and ophthalmology. People with diabetes are not always treated as partners in discussing treatment schemes. Interruptions are often encountered in the provision of medication and supplies.

## WOMEN'S HEALTH

Data are kept on pregnancy outcomes in women with gestational diabetes and established diabetes – not in all regions, however. Specialized counselling services are provided for women with diabetes wanting to have children – again, not in every region.<sup>5</sup>

## OUTLOOK

The biggest challenges over the next two years will be budget cuts, insufficient funding and the absence of a healthcare workforce.

There is room for improvement in terms of demonstrating the effectiveness of diabetes prevention and tailoring treatment systems to the best effect.

The Moscow Diabetes Association believes government action can be stimulated through research to demonstrate the economic benefits of investing in early detection and diagnosis of diabetes and its complications, as well as interventions based on nutrition and physical activity.

## CONSULTED ORGANIZATIONS

- Institute of Diabetes
- Moscow Diabetes Association
- Saint Petersburg Diabetes Association

## REFERENCES

1. *Report on the situation of diabetes in the region of Moscow, Moscow Diabetes Association, Yerevan 2011 (IDF Europe Intranet)*
2. *The Report on the results and main activities of the Ministry of Health and Social Development of the Russian Federation and the budget planning for 2011 and for the period up to 2013 (www.minzdravsoc.ru/ministry/budget)*
3. *Written interview with Russian Diabetes Federation, August 2011*
4. *www.diabetes.org.ru*
5. *Ministry of health website www.minzdravsoc.ru/*

# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	9.4%	10.5%
<b>Estimated number of people with diabetes</b>	671,020	752,040
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.0%	

## Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	
<b>National register</b>	Yes	
<b>Developments since 2008</b>	<ul style="list-style-type: none"> <li>● Strategy for prevention and control of chronic NCDs</li> <li>● European DE-PLAN for the prevention of type 2 diabetes</li> </ul>	
<b>Planned Actions</b>	<ul style="list-style-type: none"> <li>● Course in management of type 2 diabetes prevention to be organized by the Diabetes Association of Serbia</li> <li>● Translated EU (IMAGE) guidelines for the prevention of type 2 diabetes to be sent to all diabetes stakeholders in the healthcare system</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Serbia in 2011 is 9.4% of the adult population, representing approximately 671,020 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 10.5%.

According to the Institute for Public Health, the official prevalence rate for Serbia is 8.2%.<sup>1</sup> Mortality data for diabetes are kept by the Institute of Public Health.

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes represents 11% of the total health budget. There are no official data regarding the costs of diabetes in Serbia.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a public health priority. An expert committee within the Ministry of Health deals specifically with diabetes.<sup>2</sup> Prevention and

monitoring is dealt with in the context of prevention and monitoring of NCDs within the Strategy for Prevention and Control of Chronic Non-Communicable Diseases (2008).<sup>3</sup> This Strategy highlights the region Vojvodina as having significantly higher diabetes-related mortality rates than the rest of the country. The main problems identified to the implementation of this programme relate to financial and political support, sustainability and human resources.

## NATIONAL DIABETES PLAN/ FRAMEWORK

Serbia does not have a specific national programme for diabetes, although the National Expert Commission for Diabetes is planning to develop such a programme. Moreover, in 2009, the Ministry of Health adopted the National Plan for Prevention and Early Detection of Type 2 Diabetes,<sup>4</sup> which includes references to primary prevention, early detection, diabetes care and services, self-management education, supply of medication, and

treatment of vascular complications. Screening focuses on people older than 45 years – considered a high-risk group.

Challenges to implementation include shortages of funding, lack of political support and sustainability measures, and lack of qualified human resources.

The Serbian Institute for Public Health manages the national diabetes register, where less than 50% of the known cases have been recorded.<sup>5,6</sup>

Serbia uses professional guidelines at the national level, which were first drafted in 2002 and last updated in 2011. Use of these guidelines is not monitored.<sup>5</sup>

## POLICY FOCUS

There is an urgent need to implement fully the National Programme for prevention and early detection of type 2 diabetes. The implementation of legal regulations and the existing problems in the organization of diabetes care require attention at the national level.

## ACCESS TO CARE

People with diabetes have good access to medication and supplies, and most people have access to trained diabetes specialists.<sup>2</sup> Medication and devices, including insulin pumps and consumables, are offered for free to children and pregnant women. Blood glucose meters and test strips are offered free of charge to women and children and some other groups. Regular check-ups are provided free of charge; self-measuring blood pressure meters, albuminuria, psychological assessment, podiatry and dentistry are not provided free of charge to anyone.

### FULLY REIMBURSED

- Blood glucose level measuring strips
- Lancets
- Albuminuria
- Retinopathy
- Structured education

### FREE FOR CHILDREN AND PREGNANT WOMEN

- Injectable insulin and pens
- Insulin pumps and accessories
- Nutritional and dietary counselling
- Ophthalmological assessment

### NOT REIMBURSED

- Psychological support
- Podiatry
- Dentistry

People with diabetes are offered self-management education at hospitals and other healthcare institutions, and by patient associations. However, these are not provided on a regular basis. Therapeutic education is not funded by the healthcare system. Ethnic minorities have education material available in their own languages; the Diabetes Association of Serbia is interested in initiating services for minority and refugee groups, which are numerous in Serbia.

It is reported that less than 50% of people with diabetes have annual health check-ups, which include examinations of eyes and feet, determination of BMI, blood pressure, and HbA<sub>1c</sub>, assessment of peripheral sensitivity, general urine tests, and adjustment of the present treatment scheme.

Diabetes is self-managed and managed by diabetes nurses, general practitioners, diabetes specialists, nutritionists and ophthalmologists.

National screening programmes are being used to identify at-risk individuals (over 45 years of age). These are partly funded by the government but not conducted on a regular basis.<sup>5</sup> There are plans to improve and fully implement a national screening programme.

## WOMEN'S HEALTH

Pregnancy outcomes in women with established diabetes or gestational diabetes are not monitored or reported. Prenatal counselling services are available.

## OUTLOOK

The Diabetes Association of Serbia feels that there needs to be constant reminding of the long-term benefits and savings to be gained from implementation of a prevention and early detection programme for type 2 diabetes and implementation of recommendations for good disease control. The Association calls for the government to control the implementation of legal regulations and acts of law, and remove existing obstacles to the organization of diabetes care.

"The Republic Institute for Health Insurance has not recognized the importance of diabetes prevention and good regulation for decreasing long-term treatment expenses for complications. That is one of the biggest problems in Serbia."

*Miodrag Djordjevic,  
Chairman of the Diabetes Association of Serbia*

## CONSULTED ORGANIZATIONS

- Diabetes Association of Serbia
- Diabetes Research Association of Serbia
- Republic Expert Committee on Diabetes
- Institute for Public Health

## REFERENCES

1. *The Serbian Institute for Public Health*
2. *Written interview with Professor Predrag Djordjevic, August 2011*
3. [www.minzdravlja.info/downloads/Zakoni/Strategije/Strategija%20Za%20Prevenciju%20i%20Kontrolu%20Hronicnih%20Nezaraznih%20Bolesti.pdf](http://www.minzdravlja.info/downloads/Zakoni/Strategije/Strategija%20Za%20Prevenciju%20i%20Kontrolu%20Hronicnih%20Nezaraznih%20Bolesti.pdf)
4. [www.minzdravlja.info/downloads/Zakoni/Strategije/Nacrti/Nacrt%20Strategije%20Primarne%20Zdravstvene%20Zastite.pdf](http://www.minzdravlja.info/downloads/Zakoni/Strategije/Nacrti/Nacrt%20Strategije%20Primarne%20Zdravstvene%20Zastite.pdf)
5. *Written interview with Diabetics Association of Serbia, August 2011*
6. [www.batut.org.rs](http://www.batut.org.rs)

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.7%	8.3%
<b>Estimated number of people with diabetes</b>	275,500	347,710
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.4%	

## Policy framework

<b>National plan</b>	Yes	● <b>National Diabetes Programme</b>
<b>Guidelines</b>	Yes	● Multiple guidelines
<b>National register</b>	Yes	● People with type 1 diabetes only
<b>Planned actions</b>	● Update of the National Diabetes Plan ● Establishment of three paediatric care centres sponsored by the Slovakian Diabetes Society	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Slovakia in 2011 is 6.7% of the adult population, representing approximately 275,500 people. The Atlas forecasts that the prevalence rate will rise to 8.3% by 2030.

The National Endocrine and Diabetes Institute of Slovakia estimates that the current rate of diabetes prevalence is 7.5%.<sup>1</sup> The Slovakian Diabetes Society puts the rate at 7%.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes in 2011 represents approximately 8.4% of the total health budget.

The Slovakian Diabetes Society reports that the direct cost of diabetes as a percentage of the total healthcare expenditure was not published in 2010. However, in 2001 it was 15% of the total healthcare budget.<sup>3</sup>

## GOVERNMENT HEALTH PRIORITIES

According to the National Endocrine and Diabetes Institute and Slovakian Diabetes Society, diabetes is recognized as a health priority. The government's main health priority is its Cardiovascular Disease Programme, which includes diabetes as a main risk factor. The Ministry also considers that diabetes is a Government priority as demonstrated by the existence of a National Diabetes Programme.<sup>4</sup>

Diabetes is also dealt with in the wider context of other chronic diseases such as the fight against obesity.

## NATIONAL DIABETES PLAN/ FRAMEWORK

Slovakia's National Diabetes Programme covered the period 2002-2006. It is currently being updated but has not yet been published. The Programme is the responsibility of the Ministry of Health.

People with diabetes and patient organizations were involved in writing the Programme. The Programme covers the main aspects of diabetes prevention, treatment and care:

- Primary prevention
- Early detection
- Care and services for people with known diabetes
- Self-management education
- Guidelines for standards of care
- Information systems
- The supply of medication and equipment
- Complications
- Prevention of type 2 diabetes
- Development of community awareness
- Psychological and behavioural issues
- Dispensary care
- Education for healthcare personnel
- Research.

Financial difficulties were reported as being the major challenge to implementation. The Programme was partially implemented. However, there were difficulties in the roll out of all projects due to financial restrictions by the Ministry of Health. Insufficient resources are said to plague the entire healthcare system.

Diabetes is also dealt with in the larger public health context in the Report on health condition of the Slovak people between 2006 and 2008.<sup>3</sup>

The Slovakian Diabetes Society published multiple national guidelines, including those for the diagnosis and treatment of type 1 diabetes, type 2 diabetes and gestational diabetes. These guidelines are for diabetologists and primary care practitioners. Health professionals also use the guidelines produced by the American Diabetes Association, which are monitored.

There is no national register of all adults with diabetes but one is being prepared. A national register of young people with type 1 diabetes<sup>3</sup> is monitored by the Paediatric Diabetology Centre of the Paediatric University Hospital, Bratislava.

In 2010, the first group of diabetes educators were given the status of licensed professionals. All people with diabetes are entitled to diabetes self-management training. Knowledge tests are performed at the end of the training period and if the test is not passed, self-monitoring supplies are not offered free of charge. The status of educators is similar to that of doctors.<sup>5</sup>

Slovakia also produces a regular audit of the quality of diabetes care, which is published by the National Health Information Centre.<sup>6</sup>

## POLICY FOCUS

According to the Association of Diabetic Patients of Slovakia, the National Programme includes specific provisions for children and women with diabetes.

## ACCESS TO CARE

Slovakia has a partly private health insurance system, entailing co-payments by patients. Slovaks must subscribe to a compulsory public healthcare insurance and pay for healthcare services. According to the Association of Diabetic Patients of Slovakia, not all prescribed diabetes treatments are reimbursed. The list below explains which treatments are reimbursed.<sup>4</sup>

In 2011, the Slovak Government decided to increase the number of free test strips for children to 2400 per year.

### FULL REIMBURSEMENT

- Injectable insulin
- Insulin pumps and accessories
- Lancets (200 per year)
- Lipid testing
- Micro- and macroalbuminuria
- Retinopathy screening
- Structured education
- Psychological support

### RESTRICTED REIMBURSEMENT

- Blood glucose strips and meters (50 to 100 strips per month)

### NO REIMBURSEMENT

- Self-monitoring blood pressure meters

### NOT AVAILABLE

- Inhalable insulin

Screening programmes are in place at both the national and regional levels, which are funded by the government. These are carried out annually and biennially during a preventive examination. The whole population undergoes these preventive measures.

All people with diabetes undergo annual check-ups and reviews by a range of specialists.

The principal diabetes care providers in Slovakia are people with diabetes, nurses, diabetes specialists, pharmacists, educators and ophthalmologists.

## WOMEN'S HEALTH

Slovakia collects data on pregnancy outcomes in women with gestational diabetes and established diabetes.<sup>6</sup> The health service also offers preconception counselling.

## OUTLOOK

According to the Association of Diabetic Patients of Slovakia, more investment and better health insurance coverage are necessary for the prevention and treatment of diabetes. Over the next two years, the Association expects that more blood glucose test strips will be reimbursed. According to the Slovakian Diabetes Society, the National Diabetes Programme needs updating as well as increased financial support.

The government is planning to extend the current National Diabetes Plan and renew the guidelines for type 1 diabetes.

"Adequate funding for thorough implementation of the National Diabetes Programme is necessary to enhance the quality of complex care for people with diabetes in Slovakia."

*Andrea Bukovská,  
Diabetes Educator, University Hospital Martin,  
Association of Diabetic Patients of Slovakia,  
Slovakian Diabetes Society*

## CONSULTED ORGANIZATIONS

- National Endocrine and Diabetes Institute
- University Hospital Martin
- Slovakian Diabetes Society
- Association of Diabetic Patients of Slovakia

## REFERENCES

1. Interview with contact at National Endocrine and Diabetes Institute, August 2011.
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6. National Health Information Centre, 2009. Annual Report (A Ministry of Health of the Slovak Republic) 2-01 on ambulatory diabetes care for 2003. Summary for the territory: Slovak Republic. Bratislava: NHIC, 2009.

## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	10.3%	12.5%
<b>Estimated number of people with diabetes</b>	160,420	192,020
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.3%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Diabetes Prevention and Care Development Programme</b> (2010-2020)</li> <li>● <b>Diabetes Action Plan</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● For type 2 diabetes</li> </ul>
<b>National register</b>	No	<ul style="list-style-type: none"> <li>● People with type 1 diabetes only</li> </ul>
<b>Developments since 2008</b>	<ul style="list-style-type: none"> <li>● Implementation of the Diabetes Action Plan</li> </ul>	
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>● Guidelines for type 1 diabetes in adults</li> <li>● Guidelines for type 1 diabetes in children and adolescents</li> </ul>	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Slovenia in 2011 is 10.3% among the adult population, representing approximately 160,420 people. The Atlas forecasts that the prevalence rate will rise to 12.5% by 2030.

According to the Ministry of Health, diabetes affects around 125,000 people, 6.25 % of the total population.<sup>1</sup> Of these, 53,000 people are treated with oral medication, around 16,000 are treated with insulin and 10,500 are treated with combined therapies.<sup>1</sup> The first cases of type 2 diabetes in children were diagnosed in 2010.<sup>2</sup>

The Slovenian Diabetes Association reports that there is no national register to monitor changing prevalence. Data from the European Health Interview Survey questionnaire (2007) on all areas of health and healthcare in Slovenia found a diabetes prevalence of 6.9% (121,000 people) among the population aged 15 years and above.<sup>3</sup> Results from the CINDI Health Monitor surveys in Slovenia (2009) estimated that diabetes prevalence was 6.9% (of people aged 20 to 75 years).<sup>4</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates estimates that the spending on diabetes as a percentage of total health expenditure is 11.3%.

New data on the total direct costs will be available at the end of 2011.<sup>5</sup> The Slovenian Public Health Institute is currently analyzing the cost situation, which will form part of the data feeding into the forthcoming National Action Plan on diabetes.

Known costs are those relating to consumption of diabetes medications, which accounted for 5.5% of the total expenditure for medicines in 2010, and the cost of consumption of medical and technical devices for diabetes, which accounted for 33% of the total expenditure for medical and technical devices.<sup>6</sup>

According to the Institute of Public Health, the costs of diabetes medications reached around EUR 20 million in 2007 (6.5% of the total pharmaceutical expenditures) and the cost of medical aids for people with diabetes was approximately EUR 13.5 million (30% of the total expenditure on

medical aids). The Institute estimates that 60% of the costs of diabetes care are direct costs, which add up to 15 % of total health expenditure.<sup>7</sup>

## GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority in Slovenia. In the public health field, the government's priorities focus on tackling alcoholism and smoking, and during its EU presidency (January to June 2008), Slovenia highlighted cancer prevention.<sup>8</sup>

According to the Ministry of Health, there has been a renewed interest in diabetes management lately because of the rising prevalence rate, negative lifestyle developments, advances in diabetes technology and the reorganization of diabetes healthcare personnel.

## NATIONAL DIABETES PLAN/ FRAMEWORK

In April 2010, the Government of Slovenia adopted the Diabetes Prevention and Care Development Programme 2010-2020 and the related Diabetes Action Plan.<sup>7,9</sup> This Programme sets out a new approach to diabetes management, including specific measures ranging from public health to rehabilitation. The Diabetes Action Plan seeks to ensure an integrated approach to combatting diabetes and providing care. There is a wide recognition of the need for a better-integrated and coordinated approach to avoid people getting lost in the system as they pass from general practitioners to specialists. Accessibility is also an important consideration. The Plan's second objective is to reinforce disease prevention, including faster detection of people at high risk of developing type 2 diabetes.

The Plan will be monitored by the Ministry of Health over the next 10 years. Particular challenges to implementation include financial difficulties, sustainability of human resources and training issues.

In 2011, the Slovenian guidelines on type 2 diabetes were renewed and a chapter on high-risk individuals and early detection was added. Guidelines on type 1 diabetes in adults and on children with type 1 diabetes are to be published.

The Slovenian government has implemented strategies aimed at reducing some of the risk factors that lead to diabetes.<sup>10,11</sup> These programmes make reference to prevention of diabetes, but do not propose specific steps to tackle the disease.

## POLICY FOCUS

Care for children with diabetes is included in the Diabetes Action Plan, as well as prevention and early diagnosis. Special care is provided for pregnant women with gestational diabetes, including extensive screening in all pregnant women.

Tackling inequalities in health is considered a priority at all levels of healthcare. A process has been launched with strong political commitment that will result in a strategy on tackling health inequalities, which will address all non-communicable diseases.

The government supports health promotion activities for children, including the use of a diabetes quiz developed by the Slovenian Diabetes Association in cooperation with the National Education Institute of Primary and Secondary Schools.

There are national initiatives against tobacco and misuse of alcohol. A national strategy on food and nutrition promotes healthy diets for all age groups.

## ACCESS TO CARE

Most diabetes treatments are provided free as part of the compulsory health insurance scheme. The availability and accessibility of drugs and medical devices for diabetes is considered to be good.

Specifically, insulin pumps are free for children and adolescents with type 1 diabetes aged up to 18 years. Indications were broadened recently and insulin pumps were made freely available for adults with type 1 diabetes with hypoglycaemia unawareness, women during the preconception period, pregnancy and throughout lactation, and to certain other adults with type 1 diabetes. Continuous glucose monitoring systems are covered by health insurance for all children with type 1 diabetes aged up to seven years, for pregnant women with type 1 or type 2 diabetes who use intensive insulin therapy and all people with diabetes with hypoglycaemia unawareness.

Some treatments for type 2 diabetes are limited. At present, oral medications, insulin and incretin system-based therapies are reimbursed to varying degrees. Diabetes devices are free for people on insulin and those about to start insulin therapy. However, blood glucose strips and lancets are free for all other groups up to a certain monthly amount. There is no reimbursement for blood pressure meters and lipid testing. Podiatry is not available and therefore also not on the health insurance scheme; dentistry is only partially available. Availability of psychological care is not widespread.

A screening programme for cardiovascular diseases is in place that also identifies those at risk of developing diabetes.

Structured education is available in specialist outpatient clinics. Some general practitioners provide additional education. The Slovenian Diabetes Association feel that access to education is not adequate and large variations in provision exist between regions. Ethnic minority communities are provided with information in their own languages.

People are normally offered annual or biennial check-ups. However, the Slovenian Diabetes Association estimates that less than 10% of people with diabetes undergo these reviews. Aspects reviewed in the check-up are eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, quality of life, nerve sensation, cognitive function, blood screening, a medication review, environmental factors and urinalysis.

## WOMEN'S HEALTH

Data are available on pregnancy outcomes in women with gestational diabetes and established diabetes. These are collected by the Perinatal Information System of the Republic of Slovenia. Preconception counselling is also provided.

## OUTLOOK

Promotion of family medicine teams and the coordination of primary and secondary care are key challenges for the next two years. More translational research and research into sustainable quality development are needed. Teams at the primary and secondary level need education and continual support to take over new roles in diabetes care and management of people at high risk.

In order to stimulate government interest in diabetes prevention and treatment, the Slovenian Diabetes Association believes that all interested professional groups must communicate in a way that is comprehensible to healthcare policy makers in order to convey important findings from respective professional fields. This means ensuring that findings can be assessed from the point of financial and human resource sustainability. The power of these groups lies in the integration with diabetes associations and joint actions at different levels of healthcare, since diabetes management requires multidisciplinary involvement.

"The Diabetes Prevention and Care Development Programme 2010-2020 is the result of the integration of the most important stakeholders. However, the very variable collaborations between institutions and partners is reflected by excellent synergies in some fields, while other activities are still conducted in an un-coordinated way."

Jelka Zaletel,  
Slovenian Diabetes Association

## CONSULTED ORGANIZATIONS

- Slovenian Diabetes Association
- Sector for Health Promotion and Healthy Lifestyles, Ministry of Health

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	8.1%	10.6%
<b>Estimated number of people with diabetes</b>	2,840,110	3,931,710
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.6%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Diabetes Strategy</b></li> <li>● Multiple regional plans adopted in about two thirds of Autonomous Communities</li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Health System Clinical Practice Guideline on Type 2 Diabetes</b></li> <li>● <b>Clinical Guidelines for Type 1 Diabetes</b> (unpublished)</li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Completion of clinical guidelines for type 1 diabetes and type 2 diabetes</li> <li>● Andalusia launched its second Diabetes Plan (2009-2013)</li> <li>● Review of National Diabetes Strategy</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Exploitation of research data; publications on diabetes and obesity, eating patterns in relation to risk factors, physical activity and genetic aspects</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Spain in 2011 is 8.1% of the adult population, representing approximately 2,840,110 million people. The Atlas forecasts the prevalence rate will rise to 10.6% by 2030.

The first national epidemiological study of type 2 diabetes, the di@bet.es Study,<sup>1</sup> a joint initiative between the Centre for Biomedical Research in Diabetes and Associated Metabolic Diseases, the Spanish Diabetes Society and the dissolved Spanish Diabetes Federation, estimated an adult prevalence rate of 13.8%. About half of those adults were unaware of having diabetes (6.7%).

The prevalence of gestational diabetes was 8.8% according to the diagnostic criteria of the National Diabetes Data Group and 11.8% using the Carpenter and Coustan criteria.<sup>2</sup>

A number of earlier studies suggest a much higher rate of diabetes-related deaths in the southern regions of Spain, such as Andalusia, Ceuta, Melilla

and the Canary Islands, compared with the rest of the country. The risk of dying from diabetes in southern regions is three times greater than in the north.<sup>3</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the spending on diabetes as a percentage of total health expenditure is 8.6%.

The Spanish Diabetes Society estimates the overall healthcare cost per person with diabetes is approximately EUR 3,000 per year, and the total countrywide cost due to diabetes in Spain to be EUR 9.3 billion per year. This represents 20% of total health spending.

## GOVERNMENT HEALTH PRIORITIES

Diabetes is a health priority in Spain. It is the focus of one of the Strategic Plans within the countrywide Plan for the Quality of Health and Sanitary Products.

The main health priorities in Spain include promoting healthy lifestyles, research and innovation, and improving the coherence of the public healthcare system. Diabetes became a priority in 2006, when the Health Ministry adopted its National Diabetes Strategy, which established common priorities and strategic guidelines for the entire country.

In 2002, the public healthcare system was decentralized. The central government sets minimum standards, which are implemented by regional authorities. Each region adapts the National Diabetes Strategy to its local needs. About two-thirds of the Autonomous Communities have a Diabetes Advisory Council comprising representatives of the regional governments, professionals, scientific societies and patient groups.<sup>4</sup>

Diabetes also benefits from policy initiatives to promote healthy lifestyles and to combat cardiovascular diseases: the 2005 strategy on nutrition, physical activity and prevention of obesity<sup>5</sup> and the 2006 strategy to fight cardiovascular diseases.

## NATIONAL DIABETES PLAN/ FRAMEWORK

Adopted in 2006, the Spanish National Diabetes Strategy provides the long-term strategic framework for diabetes policy across the country. Agreed by the Inter-territorial Council with the active involvement of scientific societies, patient groups and the Autonomous Communities, the Strategy has a 20-year lifespan.<sup>6</sup>

A main objective of the Diabetes Strategy is to harmonize information and data registration systems across the country. The Strategy includes the following components:

- Promotion of healthy lifestyle and prevention
- Screening and diagnosis
- Treatment and follow-up
- Treatment of other related diseases and special situations
- Training, education, research and innovation
- Information and evaluation systems.

In 2010, the Health Ministry reviewed the National Strategy and the results are to be published in 2011. Efforts have focused on creating common indicators to measure developments in each Autonomous Community.

Clinical guidelines exist for type 1 and type 2 diabetes. The National Health System Clinical Practice Guideline on Type 2 Diabetes was published in 2008<sup>7</sup> and the Clinical Guide for Type 1 Diabetes, although complete, has yet to be published.

Andalusia, the Autonomous Community with the largest population and one of the highest diabetes prevalence rates, has implemented the second

Andalusian Diabetes Plan (2009-2013). This aims to guarantee integrated assistance and care, and addresses a range of areas, including prevention, screening and treatment, education and raising awareness of healthy lifestyles, and early detection of diabetes-related diseases and determinants. Research and innovation are another key focus. The Andalusian health services, in cooperation with professional and patient associations, have set their own professional guidelines.

Catalonia has a primary care system that allows doctors to register clinical histories, making it possible to consult data and carry out some statistical studies.

In the Basque country, good coordination has been achieved between primary care and specialized care, to the direct benefit of people with diabetes.

The Community of Madrid recently carried out a study<sup>8</sup> of the level of control of cardiovascular risk factors and prevalence of chronic complications in people with type 2 diabetes. It found that integrated control was observed in only 4.5% of registered people with diabetes – demonstrating the difficulty of achieving good control of type 2 diabetes.

## POLICY FOCUS

The National Diabetes Strategy includes special measures targeting children, elderly people and pregnant women. There are no specific actions targeting immigrants, although there is growing concern and awareness about the need to address this group. The strategy aims to help children to take active control of their diabetes before they become adults.

The Andalusian Diabetes Plan includes specific measures that address women (sexual education, screening and treatment during pregnancy) and children (education on healthy lifestyles).

## ACCESS TO CARE

Most people with diabetes are covered by the National Social Security System and pay 40% of the cost of their prescribed medication. For pens and insulin (five pens which each contain 300 units of insulin) people have to pay EUR 3. Retired people have free access to all diabetes medicines.

Diabetes treatments and visits to health centres and hospitals are free. However, reimbursement of medicines is restricted. The National Health System reimburses injectable insulin and pens, inhalable insulin, insulin pumps and accessories, blood glucose monitoring strips and meters, self-monitoring blood pressure meters, lancets and lipid testing. Basic products, including lancets, carry a cost to the person with diabetes of less than 10%. Some

diabetes medications can be prescribed only by certain specialists, not by general practitioners.

There is no national education and patient awareness programme but most of the Autonomous Communities run diabetes education programmes at the primary care level. Structured education can be one-to-one or in groups depending on the health centre or hospital.

In most hospitals and in many health centres, there are psychiatrists and some psychologists; endocrinologists and primary care doctors refer patients to these specialists when required.

Spain is starting to introduce telemedicine. The Centre for Biomedical Research in Diabetes and Associated Metabolic Diseases has a very interesting project about telemedicine applied to diabetes and in Andalusia, telemedicine is being applied at hospitals.

## WOMEN'S HEALTH

There are specific units of preconception care at the large hospitals. Problems arise in women with type 2 diabetes or gestational diabetes who are followed by primary care doctors and have other additional risk factors, such as obesity hypertension or older age. In these cases, assessments can be limited or non-existent.

## OUTLOOK

Multiple challenges and initiatives will shape diabetes care, research, education and prevention over the next few years.

Implementation of the National Strategy recommendations throughout the country will allow performance to be measured, to test whether objectives have been reached in terms of effectiveness (attainment of treatment goals), efficiency (cost compared with other services), patient satisfaction, etc.

Analyses will evaluate the various priorities for ongoing education, with special attention to therapeutic education, prevention, early diagnosis, treatment and complications.

The establishment of integrated research units and diabetes groups will be promoted in primary care and special care in the Autonomous Communities.

Longitudinal epidemiological studies will be promoted, involving cooperation between multiple centres, into the associations between risk factors for diabetes and vascular complications. Translational research will be enhanced and research strengthened into health disparities based on gender inequalities, class, ethnicity and place of residence.

"We need to make sure patients can become more independent through structured education nationwide. In some cases, we can use telemedicine. Education must be a priority for doctors, nurses and people with diabetes."

Sonia Gaztambide Saenz,  
Spanish Diabetes Society

## CONSULTED ORGANIZATION

- Spanish Diabetes Society

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	5.7%	6.1%
<b>Estimated number of people with diabetes</b>	386,370	432,700
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	6.4%	

## Policy framework

<b>National plan</b>	Yes	
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Board of Health and Welfare's Guidelines for Diabetes Care</b></li> <li>● <b>Guidelines for Health Promotion in Healthcare</b></li> </ul>
<b>National register</b>	Yes	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Revised national guidelines for diabetes prevention</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● The National Board of Health and Welfare are preparing dietary recommendations for people with diabetes</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Sweden in 2011 is 5.7% of the adult population, representing approximately 386,370 people. The Atlas forecasts that the prevalence rate will rise to 6.1% by 2030.

Rates have been rising over recent years, and vary from 2% to 4.5% according to different studies.<sup>1</sup>

The estimated number of people diagnosed with diabetes in Sweden is 360,000;<sup>1</sup> an estimated 80,000 have undiagnosed type 2 diabetes.

Second to Finland, Sweden has the highest reported nationwide annual incidence of type 1 diabetes in the world. From 1978 to 1997, the incidence of type 1 diabetes among young people aged 0 to 15 years almost doubled in Sweden, with the largest increase among children aged up to 5 years.<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes represents 6.4% of the total health budget.

According to the Swedish Society for Endocrinology, an estimated 8% of Sweden's healthcare budget is allocated to diabetes.<sup>3</sup>

## GOVERNMENT HEALTH PRIORITIES

In the Swedish healthcare system, responsibility for health and medical care is shared by the central government, county councils and municipalities. The Health and Medical Service Act regulates the responsibilities of the county councils and municipalities, giving the councils and municipalities a degree of autonomy in this area. The role of the central government is to establish guidelines for care and set the political agenda for health. Government policy traditionally avoids disease-specific national plans in the belief that all diseases are equally important for those affected.

Attitudes are, however, now shifting away from this policy, as reflected by the implementation of a plan for cancer prevention.

Although diabetes is not a specific government priority, it receives attention through initiatives to combat lifestyle diseases and obesity, especially in children, where diabetes remains a growing concern.<sup>4</sup>

## NATIONAL DIABETES PLAN/FRAMEWORK

The National Board of Health and Welfare implemented national diabetes guidelines in September 2010.<sup>5</sup> These guidelines for diabetes care include recommendations for type 1 and type 2 diabetes in the domains of screening, prevention, glucose control, prevention of cardiovascular disease, prevention of complications in pregnancy, early detection, education for improved self-care, guidelines, information systems, equipment, research and psychological and behavioural issues.<sup>6</sup> It is presumed that this framework will be in place for three to five years, with regular reviews. The guidelines will be monitored with information taken from the National Diabetes Register and presented annually in each region.

Sweden also introduced preliminary Guidelines for Health Promotion in Healthcare in 2010. These emphasize the importance for healthcare workers of regularly talking to people about the importance of living habits in preventing or delaying the onset of diabetes. These guidelines place a higher emphasis on advanced, tailored counselling and health education.<sup>7</sup>

The National Diabetes Register was created in 1996 by the Swedish Society for Diabetology and is currently one of the most comprehensive in the world. There are 305,100 people registered, thought to be 80% of all people with diabetes in Sweden.<sup>8</sup> Managed by diabetes doctors appointed by and funded by the Swedish National Board for Health and Welfare and the Swedish Association of Local Authorities and Regions, the register measures the quality of diabetes treatment in Sweden to determine compliance with the guidelines by hospitals, care centres and clinics, and thus help to identify problem areas.<sup>9</sup> It also contributes to improving the influence and participation of people with diabetes in their care. There is a joint register specifically for children and adolescents, which contains data on more than 90% of children and adolescents with diabetes. This register helps to evaluate the implementation of the treatment programme for juvenile diabetes. Anyone with an interest in diabetes, including people with the condition and the general public, can access annual reports on quality indicators for the country.

Diabetes in Sweden is also dealt with in the context of other national health priorities, such as the Den-

tal and Pharmaceutical Benefits Agency, which is responsible for reimbursement of insulin pumps and devices. The Agency is planning economic restrictions in the reimbursement of devices for diabetes medication and other supplies. The local regions will cover costs.

## POLICY FOCUS

The National Board of Health and Welfare publishes guidelines on both diabetes care and health promotion activities. In terms of general health promotion, the Swedish National Institute of Public Health implements programmes in the population, but not specific programmes against diabetes.

## ACCESS TO CARE

According to the National Diabetes Register, 372,300 people received diabetes medication in 2010. All insulin-related treatments are reimbursed. Injectable insulin and pens, inhalable insulin, and insulin pumps and accessories are 100 % reimbursed,<sup>1</sup> as are blood glucose monitoring strips, lancets, lipid testing, albuminuria and retinopathy screening. People pay a small fee for structured education and psychologists, although most of the cost is reimbursed.<sup>3</sup> People are not reimbursed for self-monitoring blood pressure meters. However, in some local regions, it is possible to use a self-monitoring blood pressure meter at the healthcare centre or borrow one for use at home.<sup>10</sup>

Access to new and existing diabetes treatments is handled by the national reimbursement agency, Pharmaceutical Benefits Board.<sup>3</sup> Sweden adopts new and innovative treatments and medicines rapidly.<sup>4</sup> However, Health Technology Assessment is under discussion in Sweden.

There are currently no screening programmes in place to identify those at risk for developing diabetes. However, national guidelines from 2010 recommend opportunistic screening but do not suggest general screening. The likelihood of a national screening programme being introduced depends on the findings of future studies. A recent clinical trial, which assessed the efficacy of a screening programme to identify people in the community with undiagnosed type 2 diabetes and subsequently evaluate an intensive multi-factorial treatment intervention, showed a 17% reduction in risk for the intervention group compared with the standard group.<sup>11</sup>

The Swedish Council on Health Technology Assessment has the government's mandate to assess comprehensively healthcare technology from medical, economic, ethical and social standpoints. During 2010, an evaluation of different diets for peo-

ple with diabetes was carried out.<sup>12</sup> This report will form the base for the National Board of Health and Welfare dietary recommendations.

Structured diabetes education normally takes place at hospital or the community health centre mainly when requested by the person with diabetes or doctor. Registered people with diabetes are offered annual or biennial reviews; more than 50% receive these reviews, which cover all areas of diabetes, including lipid analysis.

The main care providers in Sweden are people with diabetes, nurses, general practitioners, diabetes specialists and ophthalmologists. Diabetes care centres in Sweden have specialized diabetes nurses, who provide education and distribute and explain the correct use of medical devices. Hospitals have special diabetes teams.<sup>13</sup> Ethnic minority communities receive education in their own languages.

## WOMEN'S HEALTH

Sweden collects pregnancy outcome data in women with gestational diabetes through local registration in some – but not all – regions.<sup>14</sup> Data are not collected on pregnancy outcomes in women with established diabetes. Preconception counselling is offered to all pregnant women.

## OUTLOOK

The challenges expected in Sweden over the next two years relate to the implementation of patient-focused diabetes care, research and education. Also, health-promotion activities within healthcare and in the broader societal context will be increasingly important.

## CONSULTED ORGANIZATIONS

- Swedish Diabetes Association
- Ministry of Health and Social Affairs – Unit for Public Health and Healthcare
- The Swedish Association of Diabetology
- Swedish Association of Diabetes Nurses
- Section for Endocrinology and Diabetology of the Swedish Paediatric Society
- The Swedish Association of Clinical Dietitians

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## COUNTRY OVERVIEW

### Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.4%	8.7%
<b>Estimated number of people with diabetes</b>	423,780	511,450
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	8.2%	

### Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	
<b>National register</b>	No	
<b>Developments since 2008</b>	<ul style="list-style-type: none"> <li>● Intensified lobbying</li> </ul>	
<b>Planned actions</b>	<ul style="list-style-type: none"> <li>● Primary and secondary prevention programmes</li> </ul>	

### DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Switzerland in 2011 is 7.4% of the adult population, representing approximately 423,780 people. The Atlas forecasts that the prevalence rate will rise to 8.7% of the population by 2030.

According to the Switzerland Diabetes Association and the Federal Office for Health, there are no reliable estimates of prevalence or incidence in Switzerland.

### COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 8.2% of the total health budget is spent on diabetes.

According to the Switzerland Diabetes Association and the Federal Office for Health, there are no reliable estimates of diabetes costs. However, data on individual areas, such as drugs or hospitalizations, are available. The costs of outpatient treatment cannot be estimated because there are no data available on health insurance invoices.

### GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority by the government.

### NATIONAL DIABETES PLAN/ FRAMEWORK

There is no national health plan within Switzerland targeting diabetes specifically. However, the Switzerland Diabetes Society has plans to introduce a regional framework of activities aimed at general practitioners and schools.<sup>1</sup> There are no plans at the moment to introduce a national diabetes plan.

The Federal Office of Health has a number of initiatives aimed at promoting healthy lifestyles. The National Programme for Nutrition and Physical Activity 2008-2012 sets out a national strategy for the promotion of a balanced diet and adequate exercise. The Programme defines long-term objectives and priority areas for action at the national level and forms the basis for cooperation between different actors. A variety of partners were involved in drafting the Programme, including NGOs working closely with the Federal Office of Public Health,

the Federal Office for Sport and Health Promotion Switzerland. Cooperation between relevant groups will be key to successful implementation.<sup>2</sup> A Federal Law exists on disease prevention and health promotion.<sup>3</sup>

Guidelines are in use. Normally professionals use adapted international guidelines, as well as guidelines for specific subject areas, such as pregnancy or travel. These are not national guidelines and are not legally binding. Their use is not monitored.<sup>1</sup>

There is currently no national register for people with diabetes. The Switzerland Diabetes Association conducts regular reviews of diabetes care, which are available upon request.

## POLICY FOCUS

The Switzerland Diabetes Association provides information in languages spoken by ethnic minorities. A nutrition council offers culturally sensitive advice. This is a priority of the Association and has the support of the Red Cross.

## ACCESS TO CARE

Switzerland provides good medical coverage for all people with diabetes. All groups receive insulin injections and pens, insulin pumps and accessories, blood sugar measuring strips, blood pressure measuring equipment for self-monitoring, lancets, lipid tests, albuminuria, retinopathy screening, structured education, psychological evaluations, dietary advice, podiatry and eye specialist services. The key care providers in Switzerland are people with diabetes, general practitioners, diabetes consultants and dietary specialists.

There is no nationwide screening programme in place to identify those at risk of developing diabetes, and there are no plans to introduce one.

Switzerland offers structured education for people with diabetes at hospitals and healthcare centres, and by general practitioners and the Switzerland Diabetes Society. This education takes place at least once a year.

People with diabetes are offered a medical review once a year. More than 50% of people with diabetes receive a check-up. Aspects reviewed include eyes, feet, BMI, blood pressure and pulse, HbA<sub>1c</sub>, quality of life, nerve sensation, cognitive function, blood results, a medication review and albuminuria.

## WOMEN'S HEALTH

Data are not collected at the national level on pregnant women with gestational diabetes or established diabetes. However, preconception counselling is offered.

There is no special focus on women in terms of diabetes prevention and care, with the exception of women with gestational diabetes. Pregnant women are tested and treated appropriately when necessary.

## OUTLOOK

The Federal Office for Health and the Switzerland Diabetes Society report that the biggest challenges over the next two years will be to improve the collection and storage of diabetes data and reduce regional differences in care.

It is also reported that little extra work needs to be done to highlight the importance of diabetes to the government as the interest is already there and initial measures have been introduced – legislation on prevention, strategy to ensure quality care, electronic patient records.

## CONSULTED ORGANIZATIONS

- Federal Office for Health
- Switzerland Diabetes Society

## REFERENCES

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	7.4%	9.5%
<b>Estimated number of people with diabetes</b>	3,502,270	5,920,810
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	11.1%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Diabetes Plan (2011)</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>Turkish Endocrinology and Metabolism Diabetes Guideline (2010)</b></li> <li>● <b>Professional Guidelines published by the Turkish Diabetes Foundation (2011)</b></li> </ul>
<b>National register</b>	Yes	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● Diabetes National Plan launched in 2011</li> <li>● Reform of the health insurance system underway</li> </ul>
<b>Planned actions</b>		<ul style="list-style-type: none"> <li>● Completion of the health insurance reform</li> </ul>

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Turkey in 2011 is 7.4% of the adult population, representing approximately 3,502,270 people. The Atlas forecasts that the prevalence rate will rise to 9.5% by 2030.

According to the Ministry of Health, the prevalence rate is 13.7%. The Ministry reports that diabetes prevalence increased by 90% between 1998-2010.<sup>1</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 11.1% of the total health budget is spent on diabetes.

## GOVERNMENT HEALTH PRIORITIES

According to the Ministry of Health, diabetes is a health priority in Turkey. Diabetes is not considered to be a priority for the government according to the stakeholders in the diabetes community. According to the Turkish Diabetes Foundation, up to 25 million people in Turkey do not take part in a health insurance scheme.

## NATIONAL DIABETES PLAN/ FRAMEWORK

A National Diabetes Plan was implemented in 2011. The Plan will remain in place for four years. The main components for the plan include:

- Primary prevention
- Early detection
- Care and services
- Self-management
- Protocols for standards of care
- Information systems
- Research
- Treatment of vascular complications
- Development of social awareness.

The Prime Ministry and the Ministry of Health, Social Security, Finance, Agriculture, Education and the Municipalities are responsible for the implemen-

tation and monitoring of the Plan, which will be monitored by regular assessment workshops.<sup>2,3</sup> The main challenges to the success of the Plan include sustainability and human resources. People with diabetes were also involved in the development of the plan.

Two sets of guidelines are in place in Turkey: the Turkish Endocrinology and Metabolism Diabetes Guideline (2010) and the Professional Guidelines published by the Turkish Diabetes Foundation (2011).

Nationwide projects are being implemented mainly by NGOs. Diabetes 2020: Vision and Targets – Turkey is a nationwide project, which was initiated in 2009.<sup>4</sup> Implemented under the auspices of the Ministry of Health, it is coordinated by the Turkish Diabetes Foundation and supported by IDF Europe and WHO. The Let's Stop Diabetes Project, which is also coordinated by the Turkish Diabetes Foundation, is a nationwide project started in 2011 and implemented under the auspices of the Presidency of the Turkish Republic.

The Ministry of Health also targets diabetes in the wider non-communicable disease context – promoting healthy lifestyles through nutrition and physical activity initiatives against obesity. However, these reportedly only take place in the more developed parts of the country.

The Turkish Diabetes Foundation coordinates a regional diabetes programme, the South-eastern Anatolia Diabetes Support Project. The Project established a set of educational and preventive programmes targeted at people with diabetes and healthcare professionals, and created Insulin Support Units. Following its success, two further projects were established in neighbouring regions: the Eastern Anatolia Project and CukurovaDIAB.<sup>5</sup>

A legal aid office, set up by the Turkish Diabetes Federation, defends people with diabetes who cannot afford legal support. The creation of this office reflects the vulnerable position of many people with diabetes – often unaware of their rights and facing discrimination due to widespread lack of awareness, as well as an obscure reimbursement system.<sup>6</sup>

The Ministry of Health Family Medicine Information Systems controls the National Diabetes Register.

There are national screening programmes in place to monitor people who might be at risk of developing diabetes. These take place via a general practitioner.

## POLICY FOCUS

There are no provisions targeted at specific groups of people but NGOs have put in place some programmes targeting schoolchildren, teachers, police officers and prisoners.

## ACCESS TO CARE

While the authorities reimburse some medical supplies, Turkey has a fragmented insurance system, so reimbursement of diabetes medication and supplies depends on each person's health insurance. Moreover, the degree of reimbursement may depend on whether or not a person seeks treatment in a public hospital and/or if healthcare professionals have granted authorization.

### FULLY REIMBURSED

- Injectable insulin and pens
- Dentistry
- Ophthalmological assessment
- Retinopathy screening
- Albuminuria

### PARTIALLY REIMBURSED

- Insulin pumps and accessories
- Podiatry
- Nutritional advice
- Psychological assessment
- Structured education

### NOT REIMBURSED

- Self-monitoring blood glucose monitors
- Lancets

The principal diabetes care providers in Turkey are people with diabetes, nurses, diabetes specialists, nutritionists and general practitioners.

People who are diagnosed with diabetes are offered a yearly review but it is thought that less than 50% of people with diabetes attend this review. Annual check-ups cover eyes, feet, BMI, hypertension, HbA<sub>1c</sub>, nerve sensation, blood screening, a review of medication and urine analysis.

## WOMEN'S HEALTH

According to the Turkish Diabetes Foundation, no outcome data are collected on women with gestational diabetes or established diabetes. Preconception counselling is not provided.<sup>7</sup>

## OUTLOOK

Ensuring quality of care remains a major challenge due to inadequate training for primary healthcare providers. Diabetes education is not identified in the performance system, leading to poor quality. Also, financial and procedural obstacles to research need to be overcome.

In order to increase government attention on diabetes, NGOs believe that civil society should be involved in the Ministry of Health efforts to prevent and control diabetes.

## CONSULTED ORGANIZATIONS

- Ministry of Health
- Turkish Diabetes Foundation

## REFERENCES

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2. *Written interview with the Ministry of Health, August 2011.*
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7. *Written interview with the National Diabetes Association, 2011.*

# COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	3.5%	4.0%
<b>Estimated number of people with diabetes</b>	1,195,980	1,207,600
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	4.3%	

## Policy framework

<b>National plan</b>	Yes	● <b>National Diabetes Programme 2009-2013</b>
<b>Guidelines</b>	Yes	
<b>National register</b>	No	● Regional registers only
<b>Developments since 2008</b>	● Implementation of National Diabetes Programme	

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Ukraine in 2011 is 3.5% of the adult population, representing approximately 1,195,980 people. The Atlas forecasts that the prevalence rate will rise to 4.0% by 2030.

Western regions of Ukraine have lower diabetes prevalence than other regions. Reported life expectancy for a person with type 1 diabetes is approximately 40 years.<sup>1</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that spending on diabetes represents 4.3% of the total health budget.

## GOVERNMENT HEALTH PRIORITIES

The government promotes healthy lifestyles through public initiatives against smoking and alcohol misuse, as well as healthy eating and physical activity. Mass media is used to diffuse these and other public health messages.

## NATIONAL DIABETES PLAN/ FRAMEWORK

The National Diabetes Programme 2009-2013<sup>2</sup> focuses on preventive measures, early diagnosis, standards of care, guidelines for self-management and treatment, drug supply, awareness and treatment of vascular complications. The Council of Ministers and the Ministry of Health are responsible for implementation of the Programme and diabetes organizations will carry out monitoring. The biggest challenges to the success of the programme will be restrictions on overall finance and regional budgets, human resources, training and access to the diabetes database. The instability of the political system represents another obstacle, as well as repeated and ongoing restructuring of the health system. People with diabetes were given an opportunity to contribute to the programme.

Screening activities are reportedly underway at national level but these are not consistently carried out.

National protocols are in place for diagnosis and treatment of type 1 and type 2 diabetes. Relevant departments of the Ministry of Health monitor implementation of these guidelines.

## POLICY FOCUS

A political question remains over the use of either only locally produced insulins or a combination of these and imported insulins. This dilemma relates principally to uncertainties around the quality of the local products.

## ACCESS TO CARE

Diabetes treatment is provided free of charge and care is provided nationwide. Medical facilities have the necessary instruments to assess the health status of people with diabetes. Usually, more complex cases are referred to the higher levels, where laboratories and clinical health professionals can assess each case and offer appropriate solutions. Where funding is inadequate, as is the case in many city polyclinics, monitoring might be carried out with financial contributions from people with diabetes – paying for test strips, for instance.

In theory, each of the 25 regions should have endocrinologists in its regional and district units but not all positions are filled with specialists. In some locations, professional advice may be offered only in certain centres. There is one endocrinologist for approximately every 1,000 people with diabetes.

Type 1 diabetes treatment in children is generally intensive – several shots of insulin a day, with a combination of rapid and long-acting insulins. In recent years, diabetes professionals, with the support of diabetes associations, managed to insure that children receive trusted brands of insulin and modern means of administration. For many adults, treatment for type 1 diabetes is also intensive but there are still places where treatment consists of two shots of insulin per day. Very few people are treated with an insulin pump. The government does not compensate the cost of these.

About 15% of people with type 2 diabetes receive insulin or a combination of insulin and oral medication. Most oral medications are available (with the exception of DPP4 inhibitors), but none are supported by central government. The availability of free oral medication depends in most cases on the local administration. Pregnant women and children receive blood glucose monitoring strips and lancets free of charge.

Through the National Diabetes Programme, insulin is universally provided free of charge. A prescription system for insulin was adopted in 2009. There is no

compensation for oral medication. When first designed, the Programme indicated that the central government would provide funds for insulins and local governments would provide for oral medication and self-monitoring supplies. However, due to the lack of coordination, the local money went to supplement the insulin budget.

Many specialists are not entirely convinced that the insulin distribution systems – based mostly on private companies – are meeting necessary safety standards.

According to national protocols, people with diabetes should undergo a check-up for nephrology, neuropathy and cardiovascular conditions once a year. Specialists can recommend more frequent check-ups if needed. Children are recommended more frequent check-ups. It is estimated that less than 50% of people with diabetes actually undergo annual check-ups. These include examinations of eyes and feet, measurements of blood pressure and BMI, assessment of neuropathic conditions, general tests of blood and urine, HbA<sub>1c</sub> and adjustment of the existing treatment scheme.

Blood glucose levels are tested in most district facilities and their cost is covered by the outpatient clinic or by the person with diabetes. Children are expected to undergo an HbA<sub>1c</sub> evaluation every three months – free of charge at hospitals. Less frequent testing is offered for adults.

Diabetes education is offered in most cases in endocrinology departments of polyclinics and hospitals. Training in hospitals is offered mostly to people with type 1 diabetes and in outpatient units mostly to people with type 2 diabetes. In some regions, the local diabetes associations provide training sessions for people with diabetes and their families. Training programmes are offered in Ukrainian and Russian.

Management of diabetes is carried out through self-management and by medical assistants, endocrinologists, podiatrists and ophthalmologists.

There is no national register. However, there are local or regional registers, hosted by different health institutions, such as the Endocrinology Centre, paediatric clinics or the Institute of Endocrinology and Metabolism.

Ethnic minorities are not offered education in their own languages.

## WOMEN'S HEALTH

The Ministry of Health monitors the outcomes of pregnancies in women with established diabetes and gestational diabetes. There are structured pre-natal counselling services for women with diabetes.

## OUTLOOK

In March 2009, the government adopted a law legislating for a national register and the system of reimbursement for diabetes-related health services. A National Diabetes Register is an objective to be accomplished.<sup>2</sup>

The biggest challenges in Ukraine relate to national funding for diabetes treatment, prevention and screening. The International Diabetes Association of Ukraine recognizes the need for raised public awareness of diabetes issues and HbA<sub>1c</sub> and albuminuria assessment for all people with diabetes.

## CONSULTED ORGANIZATIONS

- International Diabetes Association of Ukraine
- Ukrainian Diabetes Federation

## REFERENCES

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## COUNTRY OVERVIEW

## Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	6.8%	7.5%
<b>Estimated number of people with diabetes</b>	3,063,910	3,645,860
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.7%	

## Policy framework

<b>National plan</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Service Framework for Diabetes (2001)</b></li> </ul>
<b>Guidelines</b>	Yes	<ul style="list-style-type: none"> <li>● <b>National Institute for Health and Clinical Excellence</b></li> <li>● <b>General Medical Services Contract</b></li> <li>● <b>Quality Outcomes Framework</b></li> </ul>
<b>National register</b>	No	
<b>Developments since 2008</b>		<ul style="list-style-type: none"> <li>● National Diabetes Audit 2009-2010</li> <li>● Several clinical practice guidelines</li> <li>● NHS Scotland Diabetes Action Plan (2010)</li> <li>● NHS Diabetes website</li> </ul>

*There are four publicly funded national healthcare systems in the UK, each of which are responsible to their own devolved governments in England, Wales, Scotland and Northern Ireland.*

## DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in the UK in 2011 is 6.8% of the adult population, representing approximately 3,063,910 people. The Atlas forecasts that the prevalence rate will rise to 7.5% by 2030.

The National Diabetes Audit for England and Wales (2009-2010) estimated that the average prevalence of diagnosed diabetes was 4.35 %; a 5.3 % increase since 2008-2009 and a 33.4% rise since 2003-2004.<sup>1</sup>

The National Health Service Information Centre reported that prevalence in 2009-2010 was 4.3% (England 5.4%, Wales 4.9%, Scotland 4.1%, Northern Ireland 3.7%).<sup>2</sup>

## COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 7.7% of total health expenditure is allocated to diabetes.

In 2008, the Health Service was spending EUR 1.2 million per hour, 10% of its yearly budget, treating diabetes and its complications – EUR 10.5 billion a year.<sup>3</sup> Between the beginning of 2002 and September 2008 the number of diabetes items prescribed increased by 73.3% and the total cost rose by 93.2%.<sup>4</sup>

Expenditure is increasing in secondary care, particularly for oral diabetes drugs. In the year ending September 2008, there were 1.5 million short-acting insulin items prescribed at a cost of EUR 89.7 million – an increase of 10.5% in the number of items and 12.1% in the total cost compared to the year ending September 2007.

People with type 1 diabetes spend an additional estimated EUR 697 million per year managing their condition.<sup>5</sup>

## GOVERNMENT HEALTH PRIORITIES

The government recognizes diabetes as a health priority. The different nations that make up the UK attempt to tackle obesity and promote healthy lifestyles through general public health strategies.

An All Party Parliamentary Group for Diabetes raises the profile of diabetes and its prevention within the House of Commons.<sup>6</sup>

## NATIONAL DIABETES PLAN/ FRAMEWORK

England adopted the National Service Framework for Diabetes<sup>7</sup> in 2001.

The 10-year Framework sets out multiple standards for diabetes care and prevention with the goal of enabling people with diabetes or at risk of developing diabetes to manage their illness and lifestyle. Published in 2010, the latest review of the Framework<sup>8</sup> noted progress in many areas.

## PREVENTION

There has been good progress in tackling childhood obesity. However, obesity levels are still too high and focus has shifted further to teenagers and adults.

A professional group focuses on what needs to be done to enable national and local care services to tackle health inequalities in diabetes care. It includes people with type 1 diabetes and people with type 2 diabetes, people from minority ethnic populations, clinicians, older adults and those with specific expertise in the health inequalities field.

## CLINICAL CARE

Following recommendations by the International Federation of Clinical Chemistry to introduce a new reference measurement, HbA<sub>1c</sub> are now given only in mmol/mol (as of 1 October 2011).

The National Institute for Health and Clinical Excellence produced a Commissioning Guide to support commissioning insulin pump services to tackle the regional variations in the provision of pumps. The National Health Service Centre for Evidence-based Purchasing provided a Buyers' guide on Insulin Pumps. The Health Service is considering ways in which a sustainable insulin pump therapy service can be established.

## CHILDREN WITH DIABETES

According to a 2009 Royal College of Paediatrics and Child Health report, there are 22,947 children and young people with diabetes in England – 20,488 with type 1 diabetes; 328 with type 2 diabetes; 320 have other types of diabetes. Regional paediatric networks have been established to promote and coordinate best practice and service improvements.

## DETECTION AND MANAGEMENT OF LONG-TERM COMPLICATIONS

People with diabetes are still not receiving all nine of the recommended care processes, such as foot care and retinopathy screening.

The UK has multiple guidelines for diabetes: National Institute for Health and Clinical Excellence guidelines in England and the Scottish Intercollegiate Guidelines Network in Scotland.

Scotland's Diabetes Action Plan (2010)<sup>9</sup> aims to improve the health of people with diabetes and reduce health inequalities. It includes sections on maintaining vascular health, foot care, eye care, preventing renal disease, positive pregnancy outcomes, care for people from minority ethnic communities, children, young people and families, structured education, insulin therapy, reducing emergency admissions and inpatient care.

Wales has a National Service Framework for Diabetes.<sup>10</sup>

The implementation and success of these guidelines is not monitored at a national level.

## POLICY FOCUS

### Children

All National Service Framework standards relate to children and adolescents. The National Institute for Health and Clinical Excellence published comprehensive clinical guidelines on the diagnosis and management of type 1 diabetes in children, young people and adults. A Department of Health report<sup>11</sup> recommended ways to improve care for young people with diabetes.

### Women

Guidelines on diabetes and pregnancy offer advice from preconception to the postnatal period.<sup>12</sup>

### Immigrants

The report of the Patient Education Working Group recognized the need to ensure that educational programmes are accessible to a broad range of people, taking into account culture, ethnicity, disability and geographical issues.<sup>13</sup>

## ACCESS TO CARE

The National Health Service is universally free at the point of use, meeting defined standards and criteria. The UK has a relatively restrictive policy towards specific technologies, such as insulin pumps, where people have to meet specific criteria to have free access.

If a person with diabetes is not taking tablets or insulin, they are not entitled to free medication (although the provision of services is free). If a person with diabetes is prescribed insulin or tablets to manage their diabetes, they are exempt from payments.

People with diabetes, particularly type 2 diabetes, receive most of their care and support in primary care, although general practice prescribers may be advised and influenced by specialists in secondary care.

## FREE HEALTHCARE SERVICES FOR ALL

- Insulin pumps and accessories – only about 5% of people on insulin use a pump
- Lipid testing
- Albuminuria
- Retinopathy screening – annual, over the age of 12 years
- Structured education – only about 30% of people with diabetes have access; there is no structured education for children
- Psychological assessment – very limited
- Nutritional/dietary advice
- Podiatry
- Ophthalmological assessment

## FREE FOR PEOPLE ON ORAL MEDICATIONS OR INSULIN

- Injectable insulin and pens
- Oral medication
- Blood and urine testing
- Lancets

## RESTRICTED

- Blood glucose monitoring strips and meters are not free to all; if deemed by a healthcare professional to be needed, they can be accessed free

Screening programmes are in place throughout the UK, which are fully funded by the government. In England, a process assesses the risk of developing heart disease, stroke, type 2 diabetes or kidney disease in people aged between 40 and 74 every four years.<sup>14</sup> In Scotland, there is no programme specific to diabetes but screening programmes target poor areas. Wales and Northern Ireland have no screening initiatives at present.

According to the Health Commission Survey 2007, only 11% of people with type 2 Diabetes report being offered structured education.

There is no national diabetes register in the UK. However general practitioners maintain their own registers for people aged over 17 years, which are aggregated by the National Health Service Information Centre for the Quality and Outcomes Framework payment mechanism.

The main care providers in the UK are people with diabetes, nurses, general practitioners, diabetes specialists, psychologists, nutritionists and dietitians, podiatrists and ophthalmologists.

## OUTLOOK

Major changes to the Health Service in England mean that different aspects of diabetes care will be paid for by different parts of the service. This means that there is the potential for an individual's care to be provided by multiple providers and therefore a great risk that services will fragment. The biggest challenge to diabetes care in England is the reform of commissioning structures, combined with EUR 23.3 billion of efficiency savings.

In the rest of the UK, major cuts to budgets are likely to impact on diabetes services. Cost-cutting initiatives are resulting in fewer diabetes specialist nurse posts and there are concerns that further specialist services will be reduced in the future.

Achieving a good model for paediatric diabetes education will be a challenge; several pilots are under way. There is a need to extend education to all people with diabetes, although because education is seen as a 'soft area' of care, it is facing budgetary cuts.

Diabetes UK will continue to lobby the government and the Department of Health to ensure that diabetes is high on the agenda. Diabetes UK is planning to mobilize volunteers at a local level, where decisions are taken on commissioning and planning care.

Best practice examples from across Europe, or an EU recommendation on diabetes that includes national screening programmes, may motivate the government to take action.

"There needs to be an awareness-raising process and a clear plan with concerted action by government, local authorities, employers, patients groups and others to raise the profile of diabetes. We need to make sure that the huge amount of money currently being spent on the complications of diabetes is spent more effectively."

*Barbara Young,  
Chief Executive of Diabetes UK*

## CONSULTED ORGANIZATIONS

- Diabetes UK
- National Institute for Health and Clinical Excellence
- Department of Health

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## COUNTRY OVERVIEW

### Key statistics

	IDF ATLAS 2011	IDF ATLAS 2030
<b>Estimated national diabetes prevalence</b> (% of total population aged 20-79)	5.0%	6.8%
<b>Estimated number of people with diabetes</b>	812,940	1,546,700
<b>Spending on diabetes as a % of total health expenditure in 2011</b>	7.7%	

### Policy framework

<b>National plan</b>	No	
<b>Guidelines</b>	Yes	● <b>National Standard for Diagnosis and Treatment of Endocrine Diseases</b>
<b>National register</b>	Yes	
<b>Developments since 2008</b>	● Foot and eye rooms opened in all regional endocrine dispensaries <sup>1</sup>	
<b>Planned actions</b>	● Project to improve the standards of care and self-management in children with type 1 diabetes	

### DIABETES PREVALENCE

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that the diabetes prevalence rate in Uzbekistan in 2011 is 5% of the adult population, representing approximately 812,940 people. By 2030, the Atlas forecasts that the prevalence rate will rise to 6.8%.

In 2011, Uzbek officials estimated that the total number of people with diabetes is 122,460 (0.43%), of whom, 19,411 have type 1 diabetes and about 1,663 are children and adolescents. Specialists recognize that for every person diagnosed with diabetes, there might be up to 10 undiagnosed but living with the condition.

A report on the activities of endocrinology services between 2007 and 2009 placed diabetes prevalence at between 5% and 6%.<sup>2</sup>

### COST OF DIABETES

The IDF Diabetes Atlas (5<sup>th</sup> edition) estimates that 7.7% of the total health budget is spent on diabetes.

The cost of diabetes per person per year was estimated to be approximately EUR 600.<sup>2</sup>

### GOVERNMENT HEALTH PRIORITIES

Diabetes is recognized as a health priority as it is included in an official list of social diseases.

### NATIONAL DIABETES PLAN/ FRAMEWORK

There is no national programme for diabetes. The National Centre for Endocrinology is expected to propose such a programme. There are no national or regional screening programmes. Again, such programmes are expected in the future.

The government implements prevention and treatment of diabetes within a legislative framework to tackle chronic diseases. The Uzbekistan Public Health Ministry and the Centre for the Scientific and Clinical Study of Endocrinology are responsible for diabetes services.<sup>3</sup>

National register data for people with type 1 diabetes are updated twice a year, and once every three years for people with type 2 diabetes. The system uses a simplified EURODIAB chart, as certain medical tests are not available in all areas. More than 50% of the known cases have been registered.

## POLICY FOCUS

At present, there is an agreement between the Ministry of Finance and the Ministry of Health to ensure full coverage of insulin treatment. Health system reform was initiated in 2007 and diabetes is listed as a condition that should receive full compensation for services and medication.

## ACCESS TO CARE

Citizens are allocated to a city, local or rayon medical unit for free diabetes services. For specialized free services, people have access to the oblast or republican facilities where available. There are no geographical restrictions to medical services.

Injectable insulin pens and pumps, retinopathy screening, structured education, podiatry and ophthalmology specialists are free for everyone.

In order to access free medication, people with diabetes must receive a prescription from a public sector medical professional. Only specialist doctors can prescribe insulin and glucose-lowering drugs.

Most diabetes-related services are provided free of charge. Certain fees might apply if treatment is carried out in a general hospital and if a special diet or certain medical services are required. According to existing laws, people with diabetes are exempt from meal charges at public health centres.

Diabetes is not classified as a separate medical speciality. It is included in the wider field of endocrinology. There are no specialized units for the treatment and management of diabetes. Diabetes services are provided in endocrinology departments; there is no reference centre for diabetes even if units have the title 'Diabetes Centre'.

People with diabetes are admitted to inpatient endocrinology units on average between one and six times a year. The average stay is about 10 to 12 days. All inpatient units and the Republican Institute of Endocrinology have training facilities and the time spent in such units is used to deliver training sessions for people with diabetes and family members. The training facilities are well resourced with support materials and handouts, which are provided in Uzbek and Russian. Members of ethnic groups are trained in their own languages.

Outpatient units might have one endocrinologist but in most cases they do not. In units without an endocrinologist, people with diabetes need to travel to the oblast polyclinic or dispensary in order to receive prescriptions, undergo tests, receive additional advice or be referred. Most children with diabetes need to travel to the oblast dispensary or the Institute of Endocrinology.

The health system covers 25% to 40% of the costs of insulin treatment – approximately 25% from the republican budget and the rest from other local or private sources, humanitarian aid and donations like Insulin for Life and IDF's Life for a Child programme. Children and adolescents receive 100% free insulin therapy; adults' insulin needs are approximately 25% subsidised. Insulin is purchased in pharmacies.

Syringes are the most common delivery device and are paid for by each person with diabetes. Pens are used only by those who can afford to buy them.

The health system covers up to 30% of the costs of oral medication for type 2 diabetes.<sup>4</sup>

More than 50% of registered people with diabetes receive annual medical check-ups, which include examinations of eyes and feet, determination of BMI and HbA<sub>1c</sub>, measurement of blood pressure, general tests for blood and urine, and adjustment of the treatment scheme.

## WOMEN'S HEALTH

Pregnancy outcomes in women with gestational diabetes or with established diabetes are not specifically monitored on a large scale. Data on pregnancy outcomes in women with diabetes have been reported in local medical journals – the last report in 2004 using data from 2001. Structured prenatal counselling is offered to women with diabetes.

## OUTLOOK

Specialists and people with diabetes look forward to the implementation of a National Programme for diabetes.

The Endocrinology and Diabetology Association of Uzbekistan is undertaking a countrywide project (2011 to 2013), which aims to improve standards of care and self-management in children with type 1 diabetes. Healthcare professionals will receive training to help improve diabetes knowledge and skill among children and their parents. 30 chief paediatric endocrinologists working at diabetes schools will be trained to meet new standards for children's care; 350 paediatricians and endocrinologists will be trained in diagnosis and treatment; 140 nurses from district polyclinics and dispensaries will be trained in the provision of diabetes self-management education to children and parents.

A mobile clinic will be established in order to carry out screening for diabetes and complications and registration in less accessible areas. The mobile diabetes team will involve four doctors and four nurses.

To raise awareness among the general population, a comprehensive information campaign is to be launched, which will include television programmes and advertisements and magazine articles.

## CONSULTED ORGANIZATIONS

- Association of Endocrinologists of the Republic of Uzbekistan
- Umid-D (Samarkand NGO for people with disabilities and people with diabetes)

## REFERENCES

1. *Written interview with Prof. Said Ismailov, Association of Endocrinologists of the Republic of Uzbekistan, August 2011*
2. *Written interview with "Umid-D", August 2011*
3. *Report on the status of diabetes in Uzbekistan, UMID, Yerevan 2011*
4. *IDF Europe report on the status of diabetes in Uzbekistan, (2007)*

The research carried out in each of the 47 European countries revealed a number of compelling trends, which have important implications for national, pan-European policy makers and people with diabetes. The following section contains an analysis of the research as well as an indication of the key findings in the areas of diabetes prevalence, cost of diabetes care, national diabetes plans/frameworks and access to care.

## DIABETES PREVALENCE

The diabetes statistics collected in the course of this audit paint a clear picture of continued deterioration across much of Europe. While the 47 countries surveyed have very different starting points, reflected in their current prevalence rates, the real threat lies in the rate of growth and the predicted future increases that point to an accelerating diabetes epidemic ahead.

According to the IDF Diabetes Atlas (5<sup>th</sup> edition):

- The average diabetes prevalence in the European Region (aged 20-79) is 8.1% of the population.
- This represents 52.8 million people throughout Europe.
- The forecast is for this prevalence rate to rise to 9.5% of the population, representing 64 million people, by 2030.

It is important to note that the IDF Diabetes Atlas (5<sup>th</sup> edition) estimates are for the total number of people with diabetes, including those undiagnosed. National estimates are often based on data from health systems, so they only reflect people diagnosed with diabetes. The Atlas takes the best data sources available for each country (ideally population-based surveys using OGTT) and applies the age-specific rates to population estimates from the UN Population Division.

## HIGH/LOW COUNTRY PREVALENCE

Looking at the current prevalence rate of individual countries in Europe, the IDF Diabetes Atlas (5<sup>th</sup> edition) shows the following:

In 2011, there are 14 European countries with a predicted diabetes prevalence rate (people aged between 20 and 79 years) of more than 9%. This is expected to rise to 23 countries by 2030.

According to the latest IDF statistics, Portugal and the Russian Federation have the highest prevalence rates in Europe for adults aged 20 to 79, with 12.7% and 11.5% respectively. Close behind are Poland, Slovenia and Cyprus, with 10.6%, 10.3% and 10.1%

respectively. Other countries exceeding rates of 9% include Armenia, Austria, Belarus, Bulgaria, Estonia, Latvia, Lithuania, Malta, Romania and Serbia. Countries forecast to join this group by 2030 include Finland, Germany, Israel, Italy, Kazakhstan, Macedonia, Spain and Turkey.

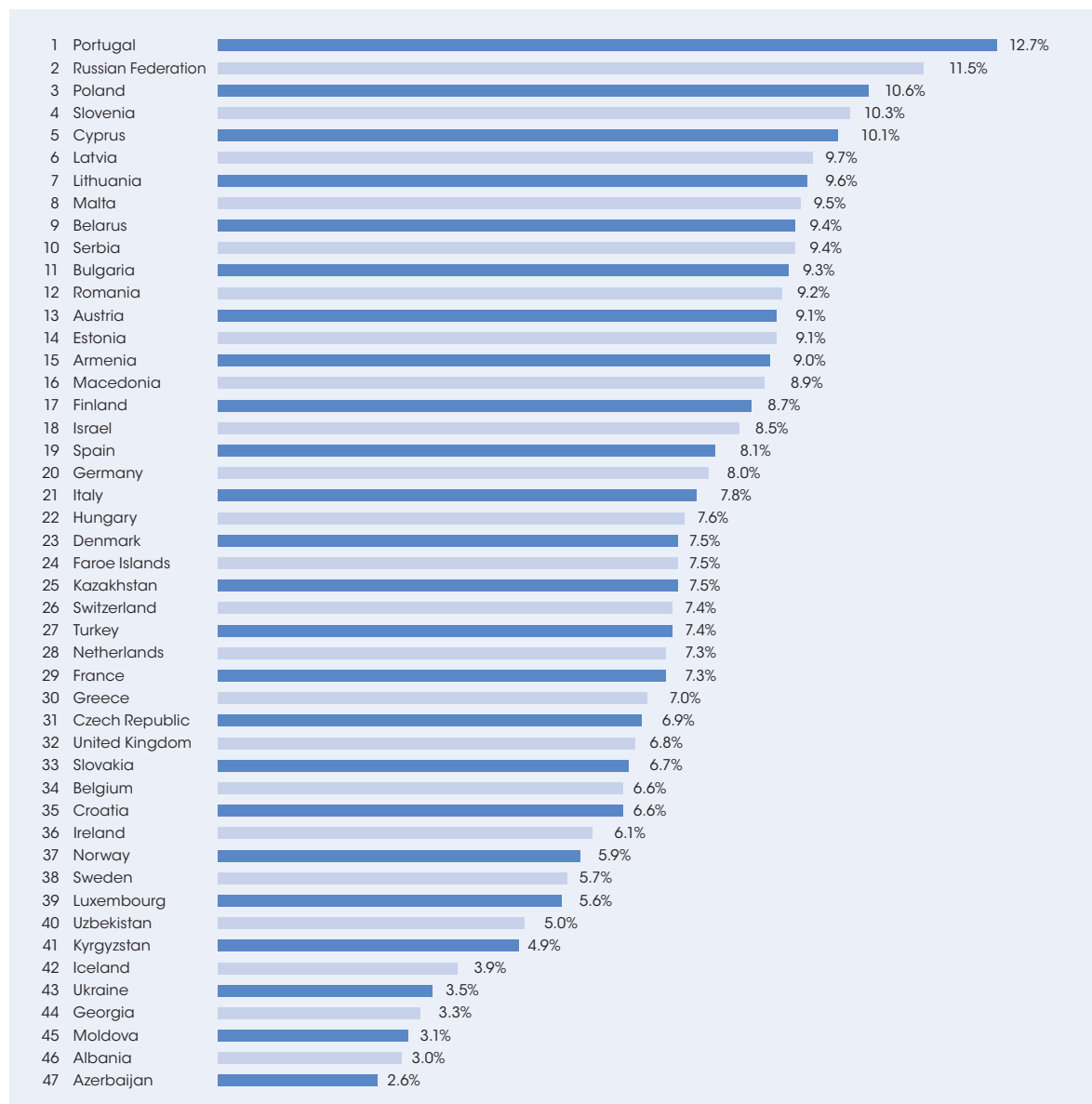
Azerbaijan is the country with the lowest prevalence rate, reported at 2.6%. Other countries with prevalence rates below 6% include Albania (3%), Moldova (3%), Georgia (3.3%), Ukraine (3.5%), Iceland (3.9%), Kyrgyzstan (4.9%), Uzbekistan (5%), Luxemburg (5.6%), Sweden (5.7%) and Norway (5.9%).

## KEY FINDINGS

- Despite some efforts to combat the disease at the national level, overall prevalence is rising throughout Europe. In the 47 countries covered by this audit, the average prevalence rate forecast for 2030 represents a 1.4% increase over the rate in 2011.
- Even for countries with a relatively low rate of diabetes prevalence, the predicted growth rates highlight major challenges for healthcare systems in the next 20 years.
- Most countries with high prevalence rates have not yet introduced national diabetes plans (see **Table 4**).
- Beyond the IDF Diabetes Atlas (5<sup>th</sup> edition), there is a significant lack of comparative prevalence data across Europe, making reliable comparisons between countries very difficult.
- Although the situation has marginally improved, there remain few comprehensive national diabetes registers in European countries and an absence of clear criteria for data collection.
- In many countries, data collected at the national level are likely to be an underestimate due to the limited number of registered people with diabetes.
- Many countries stressed concern about the growing obesity problem and the emergence of type 2 diabetes in young people.

# ANALYSIS AND KEY FINDINGS

**Table 1:** *Estimated national diabetes prevalence 2011 (% of total population aged 20-79), IDF Diabetes Atlas (5<sup>th</sup> edition)*



## COST OF DIABETES

The costs of diabetes and its complications have major implications for healthcare systems in Europe. Reliable comparisons are difficult to make in the absence of pan-European cost studies; data available at the national level vary widely. Definitions of scope are often unclear, particularly with regard to direct and indirect costs. In most cases, there is no consideration of the cost of diabetes to the individual, society and the economy through lost productivity. Data also vary according to the healthcare structure with national, regional and local governments each playing a different role (and incurring different costs) in diabetes care delivery.

Based on the data available, this audit has tried to indicate the level of annual spending on diabetes per country, where possible, as a percentage of total healthcare expenditure. Overall, these data demonstrate the growing cost burden of diabetes to governments at a time when health budgets are under the increasing strain of an ageing population and severe budget cuts.

In Europe, the cost of diabetes as a percentage of healthcare spending varies. The IDF Diabetes Atlas (5<sup>th</sup> edition) makes estimates on diabetes spending as a percentage of total healthcare expenditure in 2011. It reports that spending varies from 13.2% in Portugal and the Russian Federation to 4% in Azerbaijan.

# ANALYSIS AND KEY FINDINGS

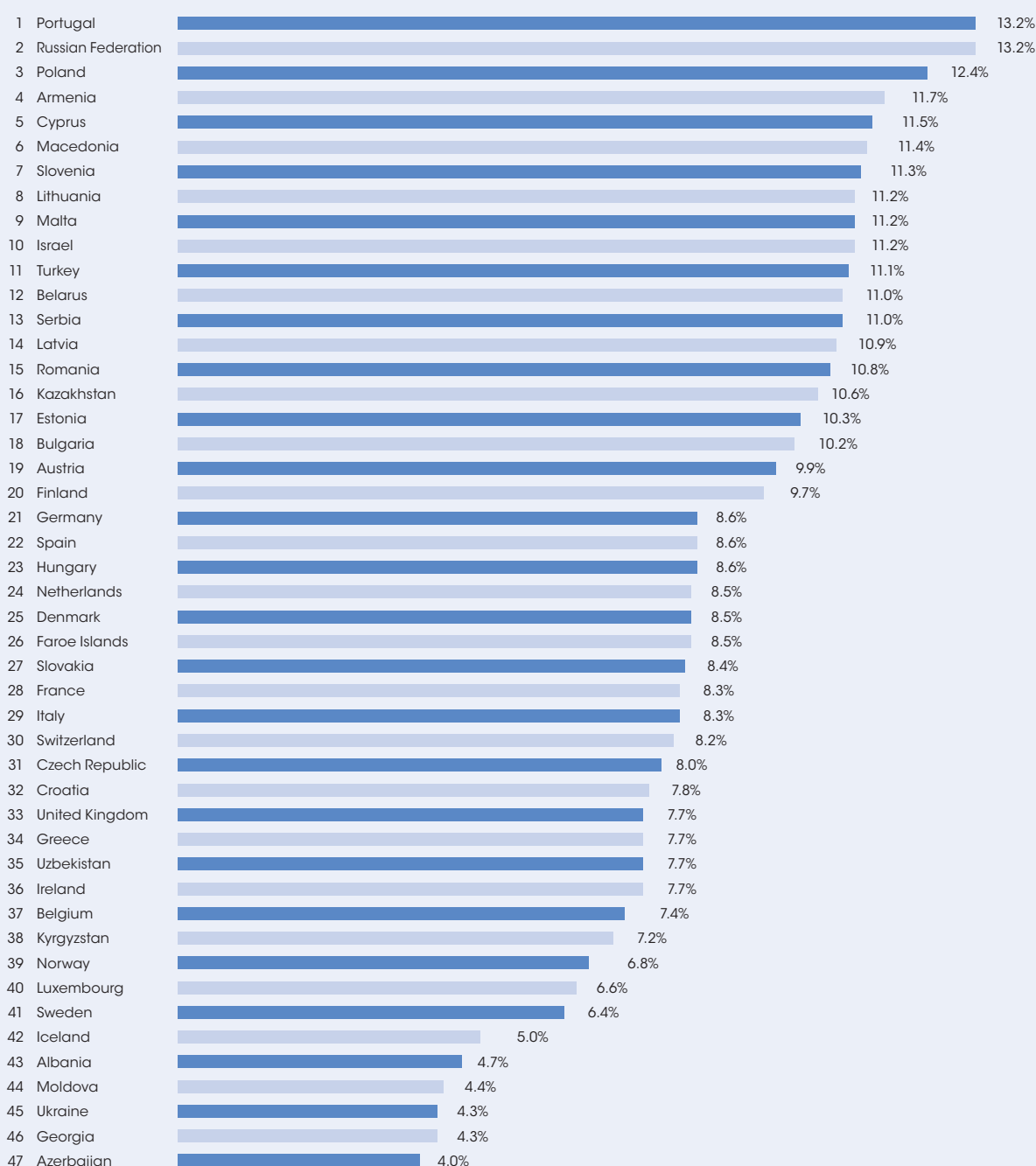
Based on available data, the cost burden of diabetes and its complications in Europe is significant and growing. In many countries, diabetes is responsible for more than 10% of total healthcare spending.

The current estimated cost of diabetes is expected to be a gross underestimation because indirect as well as direct costs are often not factored in.

Outside the IDF Diabetes Atlas (5<sup>th</sup> edition) there are, to our knowledge, no attempts at a pan-European study on the cost of diabetes, preventing reliable comparisons between the different countries.

The lack of comparable data undermines efforts to anticipate the current and future economic impact of the disease and understand the effectiveness of national diabetes policies.

**Table 2:** Spending on diabetes as a % of total healthcare expenditure in 2011, IDF Diabetes Atlas (5<sup>th</sup> edition)



# ANALYSIS AND KEY FINDINGS

## NATIONAL DIABETES PLANS/ FRAMEWORKS

National Diabetes Plans should be supported nationally, resourced by government and regularly monitored and reported in consultation with healthcare professionals and representatives of people with diabetes. Plans and frameworks should set out a comprehensive programme to establish national standards for healthcare services available to people with diabetes. They should address the provision of facilities, professional staffing, access to medication and technologies

and education for professionals and people with diabetes.

In the last two years, several countries have taken steps to either introduce national plans or renew their efforts on diabetes. Azerbaijan, Hungary, Lithuania, Macedonia, Slovenia, Sweden, Turkey and Ukraine have introduced new national plans in the last two years, with Israel in the process of publishing theirs.

Of the 47 countries in this audit, 22 reported having no national diabetes plan or framework. Those with a national plan are included in **Table 3**.

**Table 3:** *Countries with a national diabetes plan/framework*

Country	National Diabetes Plan/Framework
<b>Austria</b>	Austrian Diabetes Plan
<b>Azerbaijan</b>	National Diabetes Programme approved in November 2010 and implementation initiated in January 2011
<b>Croatia</b>	National Programme of Diabetes Care with Particular Initiative in Prevention and Early Detection
<b>Cyprus</b>	Cyprus National Diabetes Plan
<b>Czech Republic</b>	National Diabetes Programme dates from 2000 and is being rolled out over 10 years subject to periodic reviews
<b>Denmark</b>	Denmark is the only country with a National Diabetes Plan especially geared towards its ethnic population: Strategy for efforts related to diabetes towards immigrants
<b>Finland</b>	Development Programme for the Prevention and Care of Diabetes for the period 2000-2010
<b>Hungary</b>	National Diabetes Plan 2011
<b>Israel</b>	Not published
<b>Lithuania</b>	Diabetes Control Programme 2009-2011
<b>Macedonia</b>	First produced in 2001 and revised in 2010
<b>Moldova</b>	Designed for five years, after which it is assessed and adjusted
<b>Netherlands</b>	Diabetes Action Programme 2005-2009
<b>Norway</b>	National Diabetes Strategy
<b>Poland</b>	National Programme For Prevention of Lifestyle Diseases 2010-2011 with a module dedicated to diabetes
<b>Portugal</b>	National Programme for Diabetes Prevention and Control
<b>Romania</b>	National Programme for Diabetes and other Metabolic Diseases
<b>Russian Federation</b>	15-year plan introduced in 1996
<b>Slovakia</b>	National Diabetes Programme, approved in 2000
<b>Slovenia</b>	Diabetes Prevention and Care Development Programme 2010-2020 and related Action Plan
<b>Spain</b>	National Diabetes Strategy 2006
<b>Sweden</b>	National Diabetes Guidelines 2010
<b>Turkey</b>	National Diabetes Control Programme 2011
<b>Ukraine</b>	State programme, Diabetes 2009-2013
<b>UK</b>	National Service Framework for Diabetes 2001

# ANALYSIS AND KEY FINDINGS

The 25 national plans/frameworks (see **Table 3**) vary according to their content and scope, with some more focused on primary prevention and others more targeted at tackling secondary complications. Areas that appear to be omitted from some plans include the systematic screening of high-risk groups with the aim of preventing type 2 diabetes and reducing diabetes complications. We highlight specifically the urgent need for structured and appropriate care for women with gestational diabetes and pregnant women with established diabetes.

There is evidence that some countries have monitoring and evaluation systems in place to assess

progress in implementing policies. However, the majority do not. It is worth quoting WHO Director General, "What gets measured, gets done".

In some countries, a national plan has been adopted but the lack of adequate human and financial resources is preventing full implementation of declared policies.

It is noteworthy that the majority of the countries that do not have a plan or framework have a national diabetes prevalence higher than 6% (see **Table 4**).

**Table 4:** Countries with no national diabetes plan or framework and their estimated national diabetes prevalence (% of total population aged 20-79), IDF Diabetes Atlas (5<sup>th</sup> edition)

Country	Prevalence rate %	Country	Prevalence rate %
Albania	3,0	Iceland	3,9
Armenia	9,0	Ireland	6,1
Belarus	9,4	Italy	7,8
Belgium	6,6	Kazakhstan	7,5
Bulgaria	9,3	Kyrgyzstan	4,9
Estonia	9,1	Latvia	9,7
Faroe Islands	7,5	Luxembourg	5,6
France	7,3	Malta	9,5
Georgia	3,3	Serbia	9,4
Germany	8,0	Switzerland	7,4
Greece	7,0	Uzbekistan	5,0

Armenia, Belarus, Bulgaria, Estonia, Germany, Latvia, Malta and Serbia have a national prevalence greater than 8% and no national diabetes plan or framework. Their rates of diabetes prevalence are predicted to grow significantly by 2030. It should be noted that in the Policy Puzzle 2<sup>nd</sup> edition, 2008, Bulgaria, Germany, Ireland, Italy, Lithuania, Malta and Slovenia indicated their intention to implement

a national plan, but have not yet done so. France has not renewed its 2005 national plan.

A number of countries reported that they are addressing diabetes through other national health plans and initiatives, for example through national programmes to tackle obesity and promote healthy living plans (see **Table 5**).

**Table 5:** Countries currently addressing diabetes through national health plans and other initiatives

Country	Initiatives for diabetes
Belgium	National care trajectories for type 2 diabetes
Germany	Diabetes prioritized in Germany's Disease Management Programme
Iceland	Action Plan due in 2012
Italy	National Prevention Plan 2010-2011-diabetes complications and cardiovascular risks, infectious diseases, vaccination, cancer screening and accident prevention
Latvia	Diabetes included in Public Health Strategy and Ministerial policy document, Health Nutrition 2003-2013
Luxembourg	National programme promoting healthy eating and physical activity
Malta	Strategy for the Prevention and Control of NCDs 2010
Serbia	Strategy for Prevention and Monitoring of Chronic

# ANALYSIS AND KEY FINDINGS

## KEY FINDINGS

- Only 25 of the countries in this audit in 2011 have a national diabetes plan, despite the growing prevalence rates and increasing cost burden of the disease.
- Some countries regard current efforts to address diabetes risk factors in the context of broader prevention and health promotion policies as sufficient to tackle diabetes.
- A few countries have introduced specific policies into their national plan that target high-risk groups, such as women at all stages of pregnancy, from preconception to the postnatal period. Other high-risk groups include ethnic minorities and children.
- There are varying standards of implementation, monitoring and evaluation in those countries with a national diabetes plan. In these countries, there is little evidence of measurable targets to assess the impact and cost-effectiveness of their plan.
- In a few countries, limited budgets allocated to the national diabetes plan are restricting the implementation of policy proposals.
- In some countries, organizations of people with diabetes and healthcare professionals have reported serious difficulties accessing and engaging with decision makers in ministries of health.

## GUIDELINES

Diabetes guidelines (also called protocols or practice guidelines) are documents, usually developed by professionals in consultation with people with diabetes, which aim to guide clinical management decisions and set criteria for diagnosis, management and treatment to assist good clinical practice and self-care.

Of the 47 countries in this audit, 43 indicated the availability of national guidelines. Many of the guidelines were written in the countries themselves with input from diabetes organizations and/or the ministry of health. A number of countries use guidelines from IDF, ADA or NICE and adapt them for their own use.

Albania, Armenia, Portugal and Turkey do not have national guidelines for the treatment of diabetes.

## NATIONAL REGISTER

A national register of people with diabetes is kept in 23 out of the 47 countries in this audit. Some national registers are monitored by the ministry of health or national health insurance organizations. Many of the registers are incomplete, with some reporting that less than 50% of people with diabetes

are registered. Some cover only limited populations of people with diabetes – for example, only children with type 1 diabetes or only people with diabetes younger than 40 years at the time of diagnosis.

A number of countries across the EU have joined EUBIROD to help build national registers. EUBIROD is a three-year public health project, which started on 1 September 2008, and is sponsored by the EU in the Health Information Strand of the Public Health Programme. It aims to implement a sustainable European Diabetes Register through the coordination of existing national and regional frameworks and the systematic use of the new technology. Primary analyses of these registers are now taking place to assess the implementation of the programme.

## ACCESS TO CARE

A closer look at access for people with diabetes to available treatments and technologies, including the reimbursement policies of national governments, has revealed a number of significant and, in some cases, worrying trends. Unfortunately, a definitive assessment of access to care was not possible in many countries, due to the differing responses of diabetes organizations and those of the health administration regarding reimbursement levels. Clearly accessible information on access to care for people with diabetes represents another gap in our pan-European picture of diabetes policies.

Most of the countries covered by this audit have obligatory national healthcare schemes that provide reimbursement for or free access to essential diabetes treatment. Access to insulin, for instance, appears to be generous by global standards. However, interviews suggest that free access on paper does not match up to reality, especially in some of the poorer countries and rural areas of Europe. Some respondents stated that there is no specialist training in diabetes for healthcare staff, notably in Albania, Azerbaijan, Georgia, Greece, Luxembourg and Moldova.

Not all countries offer people with diabetes access to regular diabetes review carried out by a healthcare professional with training in diabetes. Those include Austria, Belgium, Croatia, France, Greece, Hungary, Ireland, Kazakhstan, Luxembourg, Moldova, Norway and Portugal.

Many countries that offer people with diabetes regular annual reviews reported very low uptakes. We recommend a critical analysis of why, and suggest that appropriate measures be instituted to improve uptake.

In Europe, those countries classed as low to middle income countries often have economic problems compounded by the instability of governments, government institutions and governance. This raises concerns over the provision of healthcare, access

and availability of essential medicines and basic services for people with diabetes. Assistance from international agencies providing humanitarian aid and donations like Insulin for Life and IDF's Life for a Child programme, are life saving but cannot meet the needs of all in a sustained manner.

The lack of skilled human resources has been highlighted as a major problem. In some countries, there are insufficient diabetes specialist nurses and doctors. In many countries, the specialty of diabetes nursing is not recognized officially as an integral component in the provision of comprehensive interdisciplinary diabetes care. Some countries reported that increased healthcare cuts are reducing the number of personnel available to treat diabetes. Others reported that healthcare staff do not have the opportunity to training in their own country and must seek training abroad.

Many countries report a difficult transition from paediatric to adult care. Aged 18 and older, many young people lose significant social benefits, including medication and self-monitoring equipment, and have to pay or pay more for their diabetes treatment. These adjustments can be difficult.

## WOMEN'S HEALTH

This edition of the Policy Puzzle has included a section on women's health, including questions about outcome data on gestational diabetes and established diabetes in pregnancy. This audit finds that many countries reported collecting data on outcomes in women with gestational diabetes and established diabetes. However, this information was not easily accessible and it was not clear how these data are used to improve the health of women and their children.

# DIABETES RESEARCH FUNDING

An overview of diabetes research funding practices in mainly EU Member States between 2005-2008 was made from a survey carried out as part of the EU-funded EURADIA-DIAMAP project (FP7 200701). The DIAMAP Road Map Report was published in 2010 and is available together with a searchable database at [www.DIAMAP.eu](http://www.DIAMAP.eu). A summary of the survey methodology and major results is presented below.

Responses from organizations that completed the DIAMAP survey questionnaire (some organizations responded but were unable to obtain the information requested) are summarized here. Organizations are not individually identified because anonymity was assured and it had been stated that data would only be made available in summarized format. However, all organizations assisting DIAMAP are listed on the interactive map under 'Databases' of the DIAMAP website ([www.DIAMAP.eu](http://www.DIAMAP.eu)).

The information provided in the full report is summarized into countries that responded to the DIAMAP survey. It should be noted that each country is made up of data summarized from several organizations.

Organizations were categorized as government (departments or ministries) or NGOs – either diabetes-specific or general science. It should be emphasized that the responses summarized here are for national organizations providing funding at the national level. European or international funding is only included here in relation to funding totals.

The overall approaches to funding were examined to ascertain whether a 'bottom-up' approach is taken when broad requests for funding applications are published, or specific diabetes funds are made available. In most cases, a bottom-up approach is taken at the national level by government or general science NGOs but in some cases there is a mix of diabetes-specific calls and a bottom-up approach.

It was asked if there was a specific national plan or strategy for funding diabetes research or whether this was included as part of the national diabetes plan. When a research plan was available, this was usually included as part of the national diabetes plan and such information is included elsewhere in this document.

In many cases, government funding was not managed directly by government ministries but by agencies or consortia (such as the Spanish Biomedical Research Centre in Diabetes and Associated Metabolic Disorders, which specifically manages diabetes research, or the National Institute of Health Research in the UK, which manages research for health and social care). Research funding approaches may also include support for small businesses with seed funding for innovative ideas.

The manner in which applications are selected included peer review by national and international external experts. Sometimes, funding was only available for members of funding organizations. On receipt of funding, recipients may be asked to report back and this included reporting during and at the end of the project period. Other measures included visits to research centres, review and analysis of publications and citations in the post-funding period, follow-up of the utility of results, and generation of jobs and further research projects.

The survey gathered information on the approximate percentage of research funding spent on diabetes in relation to other diseases. The results were provided in quartiles (0-25%, 26-50%, 51-75%, 76-100%) and in the majority of countries, this was indicated as between 1% and 25% of total health research funding. These figures reflect government and general science NGO expenditure, not that of diabetes-specific organizations.

Share of funding was also examined to provide an approximate breakdown for type 1 and type 2 diabetes. In almost all cases, funding for type 2 diabetes research was considerably greater than that for type 1 diabetes. However, it should be noted that most organizations do not maintain information broken down in this way.

Of the funding for type 2 diabetes research, the percentage spent on obesity research was examined. When a response was provided, most organizations spent between 30% and 50% of type 2 diabetes funding on obesity research, although the range extended from 5% to 70%. Other forms of diabetes were also mentioned as funding targets (monogenic diabetes, gestational diabetes, among others) although several organizations mentioned they had included such categories under the headings of type 1 or type 2 diabetes. Again, most organizations do not maintain data allowing detailed analysis.

At the national level, the funding for research from governments and NGOs was applied across the range of research fields (basic science, clinical research, clinical trials, epidemiology and health service research) in most countries. However, all (or almost all) countries in the survey indicated they funded basic science research and clinical research, while clinical trials, epidemiology and health service research was less-widely funded.

# THE EURADIA-DIAMAP PROJECT

It should be emphasized that international funding from European or international organizations or from industry was not included in this part of the survey. This survey did not examine research activity, which was another part of the DIAMAP project.

Individual professions and their receipt of direct funding for research were examined. Medical/scientific professionals were overwhelmingly supported. However, it is likely that the majority of funding allocated to larger research projects would go to the institute responsible and then be allocated within the project. From that point, many other research posts may be funded for different professionals. Further detail on allocation of funds was not possible to distinguish in this survey. However, around half the countries responding indicated that they funded nursing and allied health professionals directly (the level of funding was not requested).

Origins of support for NGOs were examined and the findings summarized. The reason for distinguishing the origin of funds was to try to ensure that they were not counted twice in the calculations of total funding (i.e. funding from industry may initially support an NGO, which then supports a research project that emerged in other sections of the DIAMAP questionnaire). It was noticed that funding for NGOs (diabetes-specific and general science) came approximately equally from industry, private contributions from the public and government when examined across all countries.

## GENERAL CONSIDERATIONS

The DIAMAP Road Map Report undertook a survey of funding used to support diabetes research across mainly the EU (for the years 2005 to 2008) but also included other European countries, for which data were submitted serendipitously. The funding survey and questionnaire were advertised and circulated through the different EURADIA NGO and industry partners and the website. Governments and NGOs were also contacted individually after a systematic Internet search or from an existing EURADIA database of organizations.

Significant efforts were made to contact and consult a wide range of public and private funding bodies from which a varied quantity and quality of information was received. According to the data, total diabetes-specific research funding (across the EU) was in the approximate range of EUR 240 million to EUR 340 million annually for the years 2005 to 2008 (**Table 1**). Given the limitations of the data, this is probably an underestimate: the true total is likely to be closer to EUR 500 million annually.

As a comparison, Table 1 below indicates the sources of research funds from both national government and NGO sources (as discussed here) along with European and International sources and industry (discussed in the DIAMAP report).

**Table 1:** Sources of research funds from 2005 to 2008 (inclusive), estimated funds spent on research into diabetes and/or its complications<sup>1</sup>

	EUR 2005	EUR 2006	EUR 2007	EUR 2008 <sup>3</sup>
<b>NGOs/charities<sup>2</sup></b>	61,449,986	64,886,046	76,786,102	78,841,809
<b>National governments</b>	90,569,735	128,099,865	187,337,072	127,633,448
<b>European Commission<sup>4</sup></b>	87,786,640	56,586,266	67,189,775	79,913,882
<b>Private company/enterprise</b>	705,073	691,199	448,072	1,221,340
<b>Pharmaceutical companies</b>	4,470,930	4,422,257	4,721,257	4,752,918
<b>Estimated total</b>	244,982,364	254,685,633	336,482,278	292,363,397
<b>National Institutes of Health (USA) (USD 40,636,367) Funds marked for Europe</b>	<a href="http://projectreporter.nih.gov/reporter.cfm">http://projectreporter.nih.gov/reporter.cfm</a>			30,698,447
<b>Grand total</b>	244,982,364	254,685,633	336,482,278	323,061,844

1. DIAMAP Road Map for Diabetes Research in Europe. Road Map Report. EURADIA. Dusseldorf, 2010; 191.

2. Includes funding from sources such as Juvenile Diabetes Research International and the European Foundation for the Study of diabetes

3. Amount for 2008 may not be complete because statistics were not finalized when information was gathered

4. Calculations based on total project grant award divided by total project months multiplied by project months in the year of interest, e.g. 2005-2008

# CONCLUSIONS AND RECOMMENDATIONS

This audit is a vital contribution to our common fight against diabetes. It seeks to compile the best available data on the disease and its complications and on related national policies in a way that helps to identify best practice. Data presented herein should facilitate national and European policy makers in their efforts to accord the prevention and treatment of diabetes the highest priority at the national, European and global levels. Acknowledging that national practices vary and comparable data may be imperfect, these weaknesses do not justify inaction or procrastination. Current knowledge about risk factors, prevention and treatment constitutes an argument for intense, sustained campaigns and a coherent strategy across Europe.

Some positive changes have taken place in the diabetes policy environment since the first Policy Puzzle diabetes audit in 2005. However, the growing obesity epidemic and an ageing population confirm the future trajectory of rising diabetes prevalence rates in Europe – predicted to reach an average of 9.5% of the total European population by 2030. This is a burden national healthcare systems will find impossible to bear.

We applaud the countries that have a national diabetes plan or policy framework in place. However, without established plans, the other 22 countries will find it extremely challenging to respond to the mounting public health crisis provoked by diabetes. They are strongly encouraged to implement the types of actions undertaken by other European countries and recommended by international declarations.

In the absence of visible progress, and in response to the identified gaps in national diabetes policies, we emphasize the need for a coordinated and comprehensive European diabetes strategy. Such a strategy should be based on a series of Europe-wide, EU and national policy recommendations.

The third edition of the Policy Puzzle takes a whole-European-region approach. Our recommendations are aimed at national governments, their heads of state, ministries of health, the Council of Europe, the EU institutions, the EU commissioners, WHO-Europe and relevant NGOs.

We are profoundly concerned, that many of the recommendations that followed the repeated calls for action made in the last audit in 2008 have not been addressed. In the light of the escalating diabetes epidemic, it is regrettable that greater progress has not been made at the national level to address this Europe-wide major public health issue. This is now more urgent than ever.

It is disturbing to note that there remain some countries that do not fund the whole range of essential medicines necessary to manage diabetes. A few countries are unable to fund treatment for people with diabetes who have established complications of the disease. This clearly places people with

diabetes and their families at a serious disadvantage. Details of these problems can be found in the individual country reports.

We congratulate the commitment and sustained advocacy of NGOs with their governments to ensure that these recommendations are fully implemented by the next audit, scheduled for 2013.

## POLICY RECOMMENDATIONS FOR EUROPEAN HEADS OF STATE, NATIONAL GOVERNMENTS AND EUROPEAN INSTITUTIONS

- **Establish and implement national diabetes primary prevention programmes.**

All European States should initiate the development of a national diabetes primary prevention programme. There are a limited number of countries with established diabetes primary prevention programmes. Examples of these include EU-funded, widely supported initiatives under the Public Health Action Programme in the area of obesity and chronic disease – including the D-Plan, IMAGE and SWEET projects. The EU has a justifiable role to play in sharing the results of these projects across Europe and encouraging uptake of their recommendations in national diabetes policies. The EU recently made a resolution targeting NCDs and calls on its Member States to scale up their primary prevention programmes for diabetes.

- **Compile report and disseminate information on the current epidemiological status of diabetes across the 47 countries, by establishing a set of common measurement criteria.**

*"What gets measured, gets done"* – Margaret Chan, Director-General, World Health Organization, UN High-Level Meeting on NCDs, September 2011

Without timely, accurate and comparable data on the impact of diabetes, European and

# CONCLUSIONS AND RECOMMENDATIONS

national policy makers do not have a clear picture of the scope of the diabetes problem and cannot therefore begin to tackle the disease effectively. Funding should be allocated to support population-based diabetes surveys as well as the creation and maintenance of national diabetes registers.

- **Establish diabetes as a Europe-wide and EU health priority by developing a European diabetes strategy that addresses the disease in a coordinated, strategic and comprehensive manner.**

There are significant potential gains to be made from addressing diabetes at the European level while respecting the nation states' responsibility for health service delivery. Europe's decision makers must build on and extend the current health policy focus on primary disease prevention in order to tackle the chronic diseases, such as diabetes, that are adversely affecting Europe's citizens.

- **Create an incentive for coordinated action among countries in partnership with the Council of Europe and relevant EU institutions through Recommendations for diabetes prevention, early diagnosis and control.**

Such joint Recommendations will promote a critical focus for action, around which EU and non-EU states can improve the health of citizens and ensure a high level of care for people with diabetes. Recommendations will support national governments in prioritizing diabetes as a public health imperative and in establishing the necessary national action plans to tackle the disease effectively.

- **Encourage cooperation between countries in the exchange of good practice as regards prevention, screening and control of diabetes by creating a European diabetes forum for action and monitoring.**

There are already examples of individual countries looking to others for best practice in shaping their own national diabetes programme. For example, Germany has collaborated with Finland to develop a new prevention programme based on the well-respected Finnish programme. European institutions, such as the European Commission, should encourage governments to learn from the successes and failures of their respective diabetes policies with a view to raising standards, reducing inequalities and optimizing healthcare resources.

- **Formalize and repeat this pan-European audit every two to three years.**

Disseminate the results to all European Commissions, the European Centre for Disease Control,

the Council of Europe, WHO-Europe and all national governments. All institutions have a valuable role to play in benchmarking exercises, such as the one carried out in this report. By reporting regularly on the existence and implementation of national diabetes plans, this will enable European policy makers to assess the extent to which the current measures to address diabetes are working effectively. The European Centre for Disease Control is ideally placed to coordinate action, highlight policy gaps and identify areas that would benefit from further national and pan-European policy action.

- **Ensure continued support for diabetes funding under the current and future EU Framework Programmes for Research as well as national research programmes. Funding should be in relation to the direct and indirect costs of this disease to individuals and society. The European diabetes research effort needs to be well coordinated.**

The EU-funded DIAMAP road map for diabetes research in Europe has identified gaps and highlighted strengths in European research in order to provide guidance for shaping the future strategy for diabetes research in Europe.

## RECOMMENDATIONS EMERGING FROM THE DIAMAP ROAD MAP REPORT INCLUDE:

- Creating a new common infrastructure to facilitate the European diabetes research efforts and revolutionize the translation of basic science innovations to benefit all people with diabetes, including special populations, such as people in hospitals and institutions, children, older adults, pregnant women, new-born babies and socially deprived groups
- Developing genetic and epidemiological approaches for prediction and prevention of type 1 diabetes and type 2 diabetes
- 'Curing' and preventing diabetes by restoring and preserving beta cell mass and function.
- Developing lifestyle intervention strategies with individualized diet and exercise approaches to prevent type 2 diabetes and obesity, based on specific genetic traits (genetics and phenotyping as a platform for individualized medicine)
- Studying and validating new ways of preventing and treating vascular complications of diabetes
- Improving coordination of European diabetes research by fostering collaboration between European academic institutions and industry, as well as public and private funding agencies
- Evaluating progress and return on investment as a result of implementation of the DIAMAP road map strategy for prevention and improved treatment of diabetes.

# CONCLUSIONS AND RECOMMENDATIONS

## NATIONAL POLICY RECOMMENDATIONS

- **At three-yearly intervals, collect, register, monitor and manage comprehensive diabetes epidemiological data based on agreed common measurement criteria.**

The starting point for any comprehensive and credible national diabetes policy is the availability of accurate and representative data on the extent and magnitude of the disease, as well as its projected growth rates, in order to assess the most appropriate action. National diabetes registers are considered to be of significant value to the individual, public health authorities and policy planners at the national and local levels. The development of a standard dataset is also critical in producing genuinely comparable data between different states.

- **Collect, register and manage comprehensive health economic data on the direct and indirect costs of diabetes prevention and management.**

Governments have limited financial resources to allocate to healthcare expenditure. In order to optimize those resources in the area of diabetes and reach informed policy decisions, governments require accurate and representative health economic data on the current and future financial impact of diabetes. Only then is it possible to assess the most appropriate and cost-effective interventions for tackling the disease.

- **Develop, implement and monitor a national diabetes plan for evidence-based disease prevention, screening and control. These plans should:**

- Define measurable targets for timely implementation
- Create an evaluation system to track health outcomes and cost-effectiveness
- Receive appropriate financial support.

National plans often lack specific targets and/or a monitoring system to assess the implementation and effectiveness of diabetes policies. Without such information on outcomes, it is extremely difficult to define best practice. Strong political commitment to invest in the necessary infrastructure and systems of care is essential to ensure the successful implementation of national policy, to ensure equity of access and to provide quality of care to people with diabetes throughout Europe. To achieve this, there must be adequate allocation of both human and financial resources.

- **Ensure continued access to high-quality diabetes treatments and technologies. Ensure that new methods of assessing the cost-effectiveness of treatments and technologies take sufficient account of the potential impact on quality of life.**

Governments are under increasing pressure to contain healthcare spending and one of the key targets for savings is the provision of free access to treatments. Governments should, however, focus on the long-term cost burden of inadequate treatment of diabetes (hospitalization, blindness, amputation) when considering short-term cost savings on individual treatments and technologies.

- **Provide all people with diabetes easy access to a high-quality primary and secondary care teams.**

The ever-increasing prevalence of diabetes means that the comprehensive role of the primary care team (including physicians, nurses, dieticians, pharmacists, psychologists) becomes ever more important in empowering those living with the condition, aiming to support them day by day in their self-management and priority setting. The multidisciplinary primary healthcare team, supported by motivated diabetes specialists, is ideally placed to deliver accessible proactive care of high quality, to all in need.

- **There are 5 million nurses delivering healthcare in Europe. In the face of the diabetes epidemic, it is unacceptable that the specialty of diabetes nursing is not recognized in all countries.**

Where specialist diabetes nursing is recognized, evidence shows significant reductions of hospital admissions and readmissions for avoidable complications. Furthermore, education and counseling for people with diabetes and their families enables them to self-manage their condition appropriately, and promotes and sustains empowerment.

- **Encourage the development of structured therapeutic diabetes education and psychological support for people with diabetes and their families.**

Education and psychological support empowers people with diabetes and their key carers to maintain effective self-management. Access to these services should be an integral part of comprehensive diabetes care provision throughout their lives.

- **Women need targeted policies at all stages of pregnancy, from preconception to the postnatal period. Other groups at high risk of developing diabetes include children, ethnic minorities and migrants.**

In order to begin to reduce diabetes prevalence among specific high-risk groups, there is a need to develop and implement targeted prevention, screening and management programmes.

- **UN General Assembly Political Declaration from the UN High-Level Meeting in September 2011 should be implemented across Europe and further strengthened by setting and monitoring appropriate targets.**

The Political Declaration on NGOs (A/66/L.1) was unanimously accepted and agreed by the UN General Assembly on 19 September 2011.

# ABBREVIATIONS AND ACRONYMS

ADA	American Diabetes Association
BMI	Body mass index
DARK	Diabetes Association of the Republic of Kazakhstan
DG-SANCO	Directorate General for Health and Consumers, European Commission
DIAMAP	Road Map for Diabetes Research in Europe
EASD	European Association for the Study of Diabetes
EUBIROD	European Best Information through Regional Outcomes in Diabetes
EUR	Euro
EURADIA	Alliance for European Diabetes Research
FEND	Foundation of European Nurses in Diabetes
GDM	Gestational diabetes
HbA <sub>1c</sub>	Glycosylated haemoglobin
IDF	International Diabetes Federation
ISPAD	International Society for Pediatric and Adolescent Diabetes
NCD	Non-communicable disease
NICE	National Institute for Health and Clinical Excellence
OGTT	Oral glucose tolerance test
PCDE	Primary Care Diabetes Europe
USD	US dollar
WHO	World Health Organization

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